PLANNING BOARD
PORTSMOUTH, NEW HAMPSHIRE

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

7:00 PM Public Hearings begin **May 19, 2022**

AGENDA

I. APPROVAL OF MINUTES

A. Approval of April 21, 2022 Minutes

II. DETERMINATIONS OF COMPLETENESS

SUBDIVISION REVIEW

A. The request of **Elizabeth B Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Preliminary and Final Subdivision approval.

B. The request of **4 Amigos LLC (Owner),** for property located at **1400 Lafayette Road** and **951 Peverly Hill Road** requesting Preliminary and Final Subdivision approval

SITE PLAN REVIEW

C. The request of **Elizabeth B. Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Site Plan Review approval.

III. 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 **Donald Lowell Stickney III (Owner),** for property located at **213 Jones Avenue** requesting Conditional Use Permit under section 10.814 of the Zoning Ordinance and modification of the standards set forth in Sections 10.814.40 or 10.814.52 through 10.814.56, to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit totaling 886 square feet of living area. Said property is shown on Assessor Map 222 Lot 69 and lies within the Single Residence B (SRB) district. (LU-22-34)

IV. 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 **Donald Lowell Stickney III (Owner),** for property located at **213 Jones Avenue** requesting Wetland Conditional Use Permit under Section 10.1017 of the Zoning Ordinance to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit totaling 886 square feet of living area. Said property is shown on Assessor Map 222 Lot 69 and lies within the Single Residence B (SRB) district. (LU-22-34)

B. The request of **2422 Lafayette Road Associates, LLC (Owner),** and **Waterstone Properties Group Inc. (Applicant),** for property located at **2454 Lafayette Road, Unit 9** requesting Amended Site Plan Review Approval for the alteration of the commercial pad and sidewalk, rerouting the existing sewer line, relocation of bicycle racks, and the expansion of Unit 9 from an existing footprint of 1,833 s.f. to 3,650 s.f +/- and to then divide the space into two units equaling 1,155 s.f. +/- and 2,400 s.f. +/-. Said property is shown on Assessor Map 273 Lot 3 and lies within the Gateway Corridor (G1) District. (LU-22-46)

C. The request of **Elizabeth B Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Preliminary and Final Subdivision approval to subdivide 1 existing lot with 81,046 square feet of lot area, and 69.83 feet of street frontage into 3 lots as follows: Proposed Lot 1 with 18,646 square feet of lot area and no street frontage; Proposed Lot 2 with 18,756 square feet of lot area and no street frontage; Proposed Lot 3 with 43,644 square feet of lot area and 69.83 feet of street frontage. The existing buildings will remain and be on Proposed Lot 3. Said property is shown on Assessor Map 147 Lot 18 and lies within the General Residence A (GRA) and Historic Districts. (LU-21-23)

D. The request of **Elizabeth B. Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Site Plan Review approval for the construction of two two-unit structures and improvement to the existing structures to create a total of eight units on three lots with associated utilities, connections and site improvements. Said property is shown on Assessor Map 147 Lot 18 and lies within the Historic and General Residence A (GRA) Districts. (LU-21-23)

E. The request of **4 Amigos LLC (Owner),** for property located at **1400 Lafayette Road** and **951 Peverly Hill Road** requesting Preliminary and Final Subdivision approval to subdivide one existing lot with 223,416 square feet of lot area and 789.91 feet of frontage on Peverly Hill Road and 576.28 feet of frontage on Lafayette Road into two lots as follows: Proposed Lot 1 with 111,415 square feet of lot area and 467.63 feet of frontage

on Peverly Hill Road, Proposed Lot 2 with 137,276 square feet of lot area with 325.59 feet of frontage on Peverly Hill Road and 576.28 feet of frontage on Lafayette Rd. Said property is located on Assessor Map 252 Lot 7 and lies within the Gateway Center (G2) District. (LU-22-80)

F. The request of **4 Amigos LLC (Owner),** for property located at **1400 Lafayette Road** and **951 Peverly Hill Road** requesting an amendment and a 1-year extension for the previously approved Site Plan and Conditional Use Permit for a Development Site according to the requirements of Section 10.5B40 of the Zoning Ordinance and Site Plan Review approval for the construction of a 53-unit Garden and Townhouse Style residential development consisting of 6 structures with a combined total footprint of 37,775 +/- s.f. and 122,000 +/- GFA with associated grading, lighting, utilities, stormwater management, landscape improvements and community space. Said property is located on Assessor Map 252 Lots 4, 5, and 7 and lies within the Gateway Center (G2) District. (LU-20-12)

V. DESIGN REVIEW APPLICATION – PUBLIC HEARING

A. The request of **EightKPH LLC (Owner),** for property located at **161 Deer Street** to be known as **88 Maplewood Avenue** Design Review for the demolition of the existing one story commercial building and the construction of a four story building with a penthouse. Said property is shown on Assessor Map 125 Lot 17-3 and lies within the Character District 5 (CD5). (LUPD-22-7)

VI. CITY COUNCIL REFERRALS

A. Hold a Public Hearing and consider a recommendation to the City Council for Zoning Ordinance Amendments to Building Height standards.

B. Consider a recommendation to City Council for an application from **Sherilyn Burnett Young of Rath Young, and Pignatelli** on behalf of the applicant **Margot Thompson and Edward Thompson** to request that the Portsmouth City Council apply for an Urbanized Shoreland Exemption pursuant to RSA 483-B:12 for the property located at **57 Salter Street**, Tax Map 102, Lot 32 in the City of Portsmouth, located along the shores of the Piscataqua River.

VII. OTHER BUSINESS

VIII. ADJOURNMENT

https://us06web.zoom.us/webinar/register/WN_VkrVF3sTS-WybcMRubgd-A

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

Memorandum

To:	Planning Board
From:	Beverly Mesa-Zendt, Planning Director Stefanie L. Casella, Planner
Date:	May 13, 2022
Re:	Recommendations for the May 19, 2022 Planning Board Meeting

I. APPROVAL OF MINUTES

Planning Department Recommendation

Board members should determine if the draft minutes include all relevant details for the decision making process that occurred at the April 21, 2022 meeting, and vote to approve meeting minutes with edits if needed.

Please note that minutes for the Special Meetings that took place on March 30, 2022 and on May 5, 2022 will be provided and available for approval at the June Planning Board Meeting

II. DETERMINATION OF COMPLETENESS

SUBDIVISION REVIEW

(A) The request of **Elizabeth B Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Preliminary and Final Subdivision approval.

(B) The request of **4 Amigos LLC (Owner),** for property located at **1400 Lafayette Road** and **951 Peverly Hill Road** requesting Preliminary and Final Subdivision approval

Planning Department Recommendations

1) Vote to determine that these applications are complete according to the Subdivision Regulations, (contingent on the granting of any required waivers under Section VI of the agenda) and to accept the applications for consideration.

SITE PLAN REVIEW

(C) The request of **Elizabeth B. Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Site Plan Review approval.

Planning Department Recommendations

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

III. 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 **Donald Lowell Stickney III (Owner),** for property located at **213 Jones Avenue** requesting Conditional Use Permit under section 10.814 of the Zoning Ordinance and modification of the standards set forth in Sections 10.814.40 or 10.814.52 through 10.814.56, to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit totaling 886 square feet of living area. Said property is shown on Assessor Map 222 Lot 69 and lies within the Single Residence B (SRB) district. (LU-22-34)

IV. 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 **Donald Lowell Stickney III (Owner),** for property located at **213 Jones Avenue** requesting Wetland Conditional Use Permit under Section 10.1017 of the Zoning Ordinance to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit totaling 886 square feet of living area. Said property is shown on Assessor Map 222 Lot 69 and lies within the Single Residence B (SRB) district. (LU-22-34)

It is recommended that Item III.A and IV.A be discussed together and voted on separately.

A motion is required to consider these items together.

Project Review, Decisions, and Recommendations

This application went before the Conservation Commission and is set to be heard at the Zoning Board of Adjustment on May 17, 2022. Please see below for more information.

Staff Review | Detached Accessory Dwelling Unit Standards 10.814

The Portsmouth Zoning Ordinance defines a detached accessory dwelling unit as:

An accessory dwelling unit that is constructed within an accessory building on a lot containing one single-family dwelling. A detached accessory dwelling unit may be connected to the single-family dwelling by an unenclosed structure (such as a breezeway) or by an unconditioned space.

In granting a conditional use permit for an accessory dwelling unit, the Planning Board may modify a specific standard set forth in Sections 10.814.52 through 10.814.56, including requiring additional or reconfigured off-street parking spaces, provided that the Board finds such modification will be consistent with the required findings in Section 10.814.60.

Staff Review and Analysis

Required Standards (10.815.30)	Meets Standard	Does Not Meet Standard	Comments
10.814.51 In a General Residence district, the combination of the principal dwelling and the DADU shall comply with the minimum lot area per dwelling unit specified for the district. (For example, the required lot area for a single-family dwelling with a DADU in the GRA district is 7,500 sq. ft. per dwelling unit multiplied by 2 dwelling units, or 15,000 sq. ft.) In a Single Residence or Rural district, a lot with a DADU shall comply with the minimum lot area for the district, but need not comply with the minimum lot area per dwelling unit.	√		Minimum required lot is 15,000 SF. Existing lot area is 62,528 SF (1.4354 acres)
10.814.52 The DADU shall not have more than two bedrooms and shall not be larger than 750 sq. ft. gross floor area; except that the maximum gross floor area shall be 1,000 sq. ft. if the lot area is 2 acres or more.		√	Existing 886 SF structure exceeds 750 SF
10.814.53 The DADU shall be clearly subordinate to the principal single-family dwelling in scale, height and appearance.	√		
10.814.531 The façade area of the DADU that faces a street on which the lot has frontage shall be no more than 40 percent of the combined visible façade areas of the principal single-family dwelling and the DADU facing the same street.		√	42% proposed
10.814.532 The building height of the DADU shall be less than the building height of the principal single-family dwelling.	√		
10.814.533 The DADU shall be architecturally consistent with the principal dwelling through the use of similar materials, detailing	√		Architecturally consistent
10.814.54 The DADU shall be separated from the single-family dwelling by at least 20 feet.	√		45.5’ separation
10.814.55 The front wall of the DADU shall be set back at least 10 feet further from the front lot line than the existing front wall of the single-family dwelling.		√	Existing structure is 33.3’ from front lot line and proposed new primary will be 30.1’ from lot line.
10.814.56 No portion of the DADU shall be located in any required front yard, regardless of the location of the single-family dwelling.	√		30’ setback observed

Request for Modifications:

The applicant requests the following modifications to 10.815.30 pursuant to Section 10.815.50 of the Zoning Ordinance:

1. 10.814.52 to exceed 750 square feet floor area (886 s.f. exists);
2. 10.814.531 to exceed 40% combined façade (42% proposed); and
3. 10.814.55 to permit the DADU to be set back less than 10 feet further from the front lot line than the primary dwelling (3.2 feet closer to the lot line than existing structure proposed).

Staff Analysis

Staff recommends approval of the modifications for the following reasons:

1. The total SF of the existing structures is reasonable and subordinate to the proposed 1,824 SF proposed primary structure and still less than the maximum 1000 SF contemplated in the ordnance.
2. The total lot size is 4X the required lot area for the use and well meets the requirements set forth in the ordinance.
3. Adequate space for off-street parking is available on site.
4. Although the ordinance seems to anticipate that existing structures will serve as primary structures, a flexible application of this standard allows for the addition of much needed housing units in the least impactful way for neighborhoods where existing lot sizes significantly exceed the minimum lot sizes.
5. A flexible interpretation of the ordinance meets the spirt and cited intent of state law for the provisions of ADUs including:
   - Benefits for aging homeowners, single parents, college graduates with high student debt, caregivers and disabled persons; and
   - Integrating affordable housing into the community with minimal negative impact.

Planning Board Review Criteria

Before granting a conditional use permit for an attached or detached ADU, the Planning Board shall make the following findings (10.814.60):

Required Findings (10.814.60)	**Applicant Analysis**
10.814.61 Exterior design of the ADU is consistent with the existing principal dwelling on the lot.	*Applicant Response* *No changes to the existing structure are proposed with the exception of updates to the existing façade with siding and window treatments with material to match the new, primary dwelling. This satisfies the requirement that the exterior design be consistent with the primary dwelling (10.814.61).*
10.814.62 The site plan provides adequate and appropriate open space, landscaping and off-street parking for both the ADU and the primary dwelling.	*Applicant Response: The site plan provides for a second driveway to service the new primary residence, and proposes 90.9% open space where the zoning ordinance requires 40%. This satisfies the requirements of 10.814.62.*

Required Findings (10.814.60)	Applicant Analysis
10.814.63 The ADU will maintain a compatible relationship to adjacent properties in terms of location, design, and off-street parking layout, and will not significantly reduce the privacy of adjacent properties.	*Applicant Response. The proposed DADU is a standalone structure which already exists, thus, its compatibility with adjacent properties in terms of location, design, parking layout, and privacy is satisfied (10.814.63) and it will not in any manner result in excessive noise, traffic or parking congestion (10.814.64). The proposed new structure is fully compliant with zoning.*
10.814.64 The ADU will not result in excessive noise, traffic or parking congestion.	*See above.*

Conservation Commission

The Conservation Commission reviewed the application at the April 13, 2022 meeting. The See below for analysis of criteria as stated in Section 10.1017.50 Of the Zoning Ordinance.

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

The previous project proposed a detention basin in the buffer where this project proposes to build a berm to capture the same area of stormwater runoff. The berm will essentially utilize the rear yard as a detention area to minimize the outflow from the culvert

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

This is the second design for detaining the stormwater from the site. The applicant has stated that due to the topography and limited area on the site for detention this is the best location. There is grading and stone riprap proposed as an emergency spillway if the earthen berm is filled to capacity.

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

The proposed berm and detention area is all earthen with no impervious surface. The area where the berm is proposed will be vegetated and provide some limited habitat and water quality function to the adjacent wetland similar to how it exists today.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.

The applicant has limited their impact to the buffer by changing the design to one that appears to work with the landscape of the site better. It will require some earthwork and could pond water during rain events but overall there should be limited impact to the vegetation on the site and no new impervious surfaces in the buffer. In fact, the proposed plantings will enhance the buffer for wildlife and water quality above how it currently functions.

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

The proposed berm design appears to reduce the impact a great deal while succeeding in the goal of not increasing flow to the city's 15 inch culvert pipe under Jones Avenue. The plantings proposed should result in a net benefit for the wetland buffer.

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

The applicant is proposing an extensive planting plan to enhance the buffer on the site.

The Commission voted unanimously to recommend approval of the Wetland Conditional Use Permit to the Planning Board

Zoning Board of Adjustment

The applicant is seeking a variance from Section 10.1114.31 to allow a second driveway on a lot where only one driveway is allowed. This application will be heard at the May 17, 2022 BOA meeting. Staff will give an update on the project at the PB meeting.

Planning Department Recommendation

1) Vote to grant a modification to the requirements set forth in section *10.815.30*

2) Vote to find that the application meets the requirements set forth in Section 10.814.60 of the Zoning Ordinance and to grant the Conditional Use Permit.

3) Vote to find the application satisfies the criteria set forth in Section 10.107.50 of the Zoning Ordinance.

4) Vote to grant the Wetland Conditional Use Permit as presented.

IV. 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 **2422 Lafayette Road Associates, LLC (Owner),** and Waterstone Properties Group Inc. (Applicant), for property located at **2454 Lafayette Road, Unit 9** requesting Amended Site Plan Review Approval for the alteration of the commercial pad and sidewalk, rerouting the existing sewer line, relocation of bicycle racks, and the expansion of Unit 9 from an existing footprint of 1,833 s.f. to 3,650 s.f +/- and to then divide the space into two units equaling 1,155 s.f. +/- and 2,400 s.f. +/-. Said property is shown on Assessor Map 273 Lot 3 and lies within the Gateway Corridor (G1) District. (LU-22-46)

Project Review, Decisions, and Recommendations

The proposed project will amend the commercial pad along the eastern property line of the site which was previously approved in October 2012 and constructed in 2013. The Portsmouth Green site previously received an additional Site Plan approval from the Planning Board in April 2016 for the construction of a 4-story residential building in the rear of the site and two (2) new commercial pads in the plaza's existing front parking lot. The residential building was completed in the fall of 2017. The project site received an Amended Site Plan approval from the Planning Board in December 2018 for the commercial pads near the entrance to the plaza. Construction of those commercial spaces was completed in 2020. Site Plan approval was also granted from the Planning Board in December 2021 for the demolition of the existing cinema and the construction of a 5-story residential building.

This application went before the Technical Advisory Committee Meeting on April 5, 2022. Please see below for more information.

Technical Advisory Committee (TAC)

The Committee voted to recommend approval to the Planning Board with the following stipulations:

1. Replace existing sewer manhole 2494.
2. Show location of water service on plans.
3. A trip generation memo to address the change in trips and traffic from existing to the proposed will be provided.

All the stipulations, as listed above, have been resolved in the updated submission as presented to the Planning Board.

Planning Department Recommendations

1) Vote to grant amended site plan approval with the following stipulations.

Conditions Precedent (to be completed prior to the issuance of a building permit):

1.1 *The site plan, off-site easements to benefit the development, and any other private easements shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

1.2 *A general description of easement plans and deeds for which the City is a grantor or grantee shall be submitted to the City with the following information for review and approval by City Council:*

- *Summary narrative describing the general location and purpose of the easement.*
- *A location map identifying the general location of the easement.*

1.3 *The Applicant or its engineer shall submit a copy of a completed Land Use Development Tracking Form using the Pollutant Tracking and Accounting Program (PTAP) online portal currently managed by the UNH Stormwater Center or similar form approved by the City.*

Conditions Subsequent:

1.4 *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;*

1.5 *A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted to the City's Planning and Public Works Departments.*

1.6 *Any easement plans and deeds for which the City is a grantor or grantee shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

IV. 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 **Elizabeth B Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Preliminary and Final Subdivision approval to subdivide 1 existing lot with 81,046 square feet of lot area, and 69.83 feet of street frontage into 3 lots as follows: Proposed Lot 1 with 18,646 square feet of lot area and no street frontage; Proposed Lot 2 with 18,756 square feet of lot area and no street frontage; Proposed Lot 3 with 43,644 square feet of lot area and 69.83 feet of street frontage. The existing buildings will remain and be on Proposed Lot 3. Said property is shown on Assessor Map 147 Lot 18 and lies within the General Residence A (GRA) and Historic Districts. (LU-21-23)

D. The request of **Elizabeth B. Larsen Trust of 2012 (Owner),** for property located at **668 Middle Street** requesting Site Plan Review approval for the construction of two two-unit structures and improvement to the existing structures to create a total of eight units on three lots with associated utilities, connections and site improvements. Said property is shown on Assessor Map 147 Lot 18 and lies within the Historic and General Residence A (GRA) Districts. (LU-21-23)

It is recommended that Item IV.C and IV.D be discussed together and voted on separately.

A motion is required to consider these items together.

Project Review, Decisions, and Recommendations

This application has been before the Technical Advisory Committee and the Zoning Board of Adjustment. Please see below for more information.

Technical Advisory Committee (TAC)

This project went before TAC in two stages. On September 7, 2021 the Committee voted to recommend Subdivision Approval to the Planning Board with the following stipulations:

1. In order to prevent segmentation from the Site Plan Review requirements, construction of a structure on either lot that will contain more than one dwelling unit shall require site plan approval.
2. Fee simple transfer of the exclusive use area is highly recommended in order to minimize future land use conflicts between the effected lots.
3. The sewer line shall be reconfigured and approved by DPW (prior to Planning Board approval).
4. The sewer profile shall be added to the plan set.
5. The right of way and utility easement over Chevrolet Ave (approximately 6' off the edge of pavement) shall be provided.
6. Milling and overlay of the full road width for length of the disturbance area shall be required and, the sidewalk shall be repaired or replaced (as needed and determined by the DPW).

7. Subject to DPW review and approval temporary pavement shall be required at time of construction. Such paving shall be to the existing pavement depth and, after a winter season the street shall receive a full mill and overlay.

After further planning for the development of the new lots the project team applied for Site Plan review approval in accordance with stipulation 1. Stipulations 1 through 5 have been satisfied through the Site Plan review process. Stipulations 6 and 7 have been listed as recommended conditions of Subdivision approval to the Board.

At the April 5, 2022 TAC meeting, the Committee voted to recommend approval to the Planning Board with the following stipulations:

Items to be addressed before Planning Board submittal:

1. Include easement plan in the plan set. Please identify all easements with unique identifiers corresponding to easement table listing all easements and purpose.
2. Water service material to be copper within right of way with brass curb stop.
3. Water service to existing dwelling is corrected to show 1" pipe on plan.
4. Show 1" water services to the 4 new condo units on plans.
5. Sewer service to be abandoned must be abandoned and capped outside of SMH 2395.
6. Proposed sewer manhole to be located in Chevrolet roadway outside of the driveway alignment.
7. Line showing the limited common area will be removed from the plan set and only described within the Home Owners Association and condominium documents.
8. Condominium site plan will be removed from the plan set.
9. Snow Storage should be moved so as not to conflict with the blow off hydrant.
10. Shared driveway easement documentation needs to be provided for lots 147/18 and 147/19.
11. Add drainage easement on lot 18-2 for lot 18-1.
12. Off-site easements (driveway and utility) must be signed and submitted to the City Council.
13. Mailbox must be relocated so the mail carrier can access from Chevrolet Ave.

Item to be addressed before construction:

14. Three sets of condominium documents total shall be submitted to the City for review by the Legal Department.

Stipulations 1 – 13 have been satisfied with the updated plan set provided to the Planning Board. Stipulation 14 has been listed as recommended conditions of Site Plan approval.

Board of Adjustment (BOA)

At the July 27, 2021 Board of Adjustment meeting the Board granted the following variances as presented:

1) A Variance from Section 10.521 to allow 114' and 100' of frontage on a private way where 100' of frontage on a formally accepted street or other road approved by the Planning Board and constructed to City subdivision standards.

2) A Variance from Section 10.521 to allow 69.83' of frontage on Middle Street where 100 feet is required.

3) A Variance from Section 10.512 to allow construction of a structure on a lot with access to a private right of way.

Planning Department Recommendations

1) *Vote to grant preliminary and final subdivision approval with the following stipulations:*

1.1 *Milling and overlay of the full road width for length of the disturbance area shall be required and, the sidewalk shall be repaired or replaced (as needed and determined by the DPW).*

1.2 *Subject to DPW review and approval temporary pavement shall be required at time of construction. Such paving shall be to the existing pavement depth and, after a winter season the street shall receive a full mill and overlay.*

1.3 *Lot numbers as determined by the Assessor shall be added to the final plat.*

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

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

1.6 *The final plat and all easement deeds shall be recorded concurrently at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

2) *Vote to grant Site Plan approval with the following stipulations:*

Conditions Precedent (to be completed prior to the issuance of a building permit):

2.1 *Prior to the issuance of a building permit, three sets of condominium documents total shall be submitted to the City for review by the Legal Department.*

2.2 *The site plan, off-site easements to benefit the development, and any other private easements shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

2.3 *A general description of easement plans and deeds for which the City is a grantor or grantee shall be submitted to the City with the following information for review and approval by City Council:*

- *Summary narrative describing the general location and purpose of the easement.*
- *A location map identifying the general location of the easement.*

2.4 *The Applicant or its engineer shall submit a copy of a completed Land Use Development Tracking Form using the Pollutant Tracking and Accounting Program (PTAP) online portal currently managed by the UNH Stormwater Center or similar form approved by the City.*

Conditions Subsequent:

2.5 *Any easement plans and deeds for which the City is a grantor or grantee shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

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 to the City's Planning and Public Works Departments.*

IV. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature.
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E. The request of **4 Amigos LLC (Owner),** for property located at **1400 Lafayette Road** and **951 Peverly Hill Road** requesting Preliminary and Final Subdivision approval to subdivide one existing lot with 223,416 square feet of lot area and 789.91 feet of frontage on Peverly Hill Road and 576.28 feet of frontage on Lafayette Road into two lots as follows: Proposed Lot 1 with 111,415 square feet of lot area and 467.63 feet of frontage on Peverly Hill Road, Proposed Lot 2 with 137,276 square feet of lot area with 325.59 feet of frontage on Peverly Hill Road and 576.28 feet of frontage on Lafayette Rd. Said property is located on Assessor Map 252 Lot 7 and lies within the Gateway Center (G2) District. (LU-22-80)

F. The request of **4 Amigos LLC (Owner),** for property located at **1400 Lafayette Road** and **951 Peverly Hill Road** requesting an amendment and a 1-year extension for the previously approved Site Plan and Conditional Use Permit for a Development Site according to the requirements of Section 10.5B40 of the Zoning Ordinance and Site Plan Review approval for the construction of a 53-unit Garden and Townhouse Style residential development consisting of 6 structures with a combined total footprint of 37,775 +/- s.f. and 122,000 +/- GFA with associated grading, lighting, utilities, stormwater management, landscape improvements and community space. Said property is located on Assessor Map 252 Lots 4, 5, and 7 and lies within the Gateway Center (G2) District. (LU-20-12)

It is recommended that Item III.A and IV.B be discussed together and voted on separately.

A motion is required to consider these items together.

Project Review, Decisions, and Recommendations

The requested Site Plan and Conditional Use Permit (CUP) approval extension was originally granted at the April 30, 2020 Planning Board meeting. An extension of these approvals were granted in April of 2021 and the application is now before the Planning Board for a second extension with amendments (Please reference Section 2.14 Approval Expiration and Extension of the Site Plan Review Regulations). For convenience, the original Letter of Decision and 1-Year Extension Request Letter of Decision have been included in the May 19, 2022 Planning Board meeting packet.

The project team is also seeking Subdivision Approval. This application is running concurrently with the request for Site Plan and CUP extension with amendments. Both requests have been review by the Technical Advisory Committee. Please see below for more details.

Site Plan and CUP Extension and Amendment Review – Technical Advisory Committee (TAC)

At the Technical Advisory Committee meeting on May 3, 2022, the Committee voted to recommend approval to the Planning Board for the Site Plan and CUP extension and amendment request with the following stipulations:

Items to be addressed prior to Planning Board approval:

1. The crossing at West Road will be included as it was part of the original approval.
2. A note to the plan will be added for any dead ended water services to include either a fire hydrant or a flushing hydrant.
3. Domestic water service will be changes to come directly from water main and not from the fire service.
4. Each condo will have individual water services, shutoffs, and meters.
5. Leak detection and access easement to the city -from the original approval will still be applicable.
6. SMH3 will be changed to a 5' manhole to accommodate the inside drop.
7. Applicant will request a waiver from the Planning Board for Section 9.3 of the Site Plan regulations to have the dumpsters located within 20' of lot line.
8. 7 Bike racks will be added adjacent to the southern patio area between buildings C and E.
9. Textured area between buildings E and D will be removed.
10. All easements will be identified with unique identifiers and corresponding easement table that lists all easements and their purpose.

Prior to Building Permit Issuance:

11. The sprinkler and riser room will be included in the building plans and will be incorporated within the existing footprint.

Conditions 1-10 have been satisfied in the updated plan that has been provided to the Planning Board. Condition 11 has been listed as a recommended condition of approval.

Subdivision Review – Technical Advisory Committee (TAC)

At the Technical Advisory Committee meeting on May 3, 2022, the Committee voted to recommend Subdivision approval to the Planning Board with the following stipulation:

Items to be addressed prior to Planning Board approval:

1. A sewer easement to the benefit of proposed Lot 5 will be granted across Lot 7.

Condition 1 has been satisfied with the updated plan as provided to the Planning Board.

Planning Department Recommendations

1) *Vote to grant Preliminary and Final Subdivision approval with the following stipulations.*

1.1*. Lot numbers as determined by the Assessor shall be added to the final plat.*

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

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

1.4 *The final plat and all easement deeds shall be recorded concurrently at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

2) *Vote to grant waiver to section 9.3.5 of the Zoning Ordinance to allow dumpster to be located within 20 feet of the property line.*

3) *Vote to grant a 1-year extension of the Site Plan and Conditional Use Permit approval with presented amendments and all original conditions (as approved on April 30, 2020 under LU-20-12) in addition to the following stipulations:*

Conditions Precedent (to be completed prior to the issuance of a building permit):

3.1 *The sprinkler and riser room will be included in the building plans and will be incorporated within the existing footprint.*

3.2 *The site plan, off-site easements to benefit the development, and any other private easements shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

3.3 *A general description of easement plans and deeds for which the City is a grantor or grantee shall be submitted to the City with the following information for review and approval by City Council:*

- *Summary narrative describing the general location and purpose of the easement.*
- *A location map identifying the general location of the easement.*

3.4 *Summary narrative describing the general location and purpose of the easement.*

3.5 *A location map identifying the general location of the easement.*

3.6 *The Applicant or its engineer shall submit a copy of a completed Land Use Development Tracking Form using the Pollutant Tracking and Accounting Program (PTAP) online portal currently managed by the UNH Stormwater Center or similar form approved by the City.*

Conditions Subsequent:

3.7 *Any easement plans and deeds for which the City is a grantor or grantee shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*

3.8 *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;*

3.9 *A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted to the City's Planning and Public Works Departments.*

V. DESIGN REVIEW – PUBLIC HEARING

A. The request of **EightKPH LLC (Owner**), for property located at **161 Deer Street** *to be known as* **88 Maplewood Avenue** requesting Design Review for the demolition of the existing one story commercial building and the construction of a four story building with a pent house. Said property is shown on Assessor Map Lot and lies within the Character District 5 (CD5)**.** (LUPD-22-7)

State Regulatory Context

This item is a request for Design Review under the Site Plan Review Regulations. Under the State statute (RSA 676:4,II), the Design Review phase is an opportunity for the Planning Board to discuss the approach to a project before it is fully designed and before a formal application for Site Plan Review is submitted. The Design Review phase is not mandatory and is nonbinding on both the applicant and the Planning Board.

Although the State statute calls this pre-application phase "design review," it does not encompass review of architectural design elements such as façade treatments, rooflines and window proportions. Rather, it refers to site planning and design issues such as the size and location of buildings, parking areas and open spaces on the lot; the interrelationships and functionality of these components, and the impact of the development on adjoining streets and surrounding properties.

Site Plan Regulations

The process as outlined in Section 2.4.3 of the Site Review Regulations is that the Board first has to determine that the request for design review includes sufficient information to allow the Board to understand the project and identify potential issues and concerns, and, if so, vote to accept the request and schedule a public hearing. Completion of the design review process also has the effect of vesting the project to the current zoning provided the project application is submitted within 12 months.

Design review discussions must take place in a public hearing. At the conclusion of the public hearing process, the Board makes a determination that the design review process for the application has ended.

At the April 21, 2022 meeting, the Planning Board determined that the applicant had provided sufficient information and accepted the request for Design Review and set the public hearing.

Site Plan Review Regulations – Article 2, Section 2.4.3: Design Review Phase

1. The applicant may request to meet with the Board for nonbinding discussions of a potential application that involve more specific design and engineering details than in the preliminary conceptual consultation phase.

2. A request for design review accompanied by all plans and exhibits shall be submitted to the Planning Department at least 14 days prior to the date of a scheduled meeting of the Board via the City's online permitting system as well as in hard copy. The total number of hard copies required shall be determined by the Planning Director.

3. The request for design review shall include enough of the information listed in Section 2.5.3(1) and plans displaying enough of the information listed in Section 2.5.4(3) so that the Board is able to review the project. Detailed engineering of infrastructure and utilities are not required at the design review phase, but the information listed in Section

2.5.4(3) should be displayed in sufficient detail to enable the Board to understand the proposed project and identify potential issues and concerns.

4. At a regular meeting of the Planning Board, the Board shall determine if the request for design review includes sufficient information to allow the Board Site Plan Review Regulations 6 November 2020 to understand the project and identify potential issues and concerns, and shall vote on whether to accept the request for design review and to schedule a public hearing. If the Board determines that the request does not describe the proposed project in sufficient detail, it shall notify the applicant of the specific deficiencies that need to be addressed.

5. Design review discussions shall take place in a public hearing at a regularly scheduled meeting of the Planning Board, after notice to abutters, holders of conservation, preservation, or agricultural preservation restrictions, and the general public as required by State statute.

6. At any public meeting of the Planning Board, the Board may determine that the design review process of an application has ended and shall inform the applicant in writing within 10 days of such determination.

Planning Department Recommendations

Planning Board should review relevant sections of the Zoning Ordinance and Site Plan Review Regulations with the applicant.

At the closure of discussion, vote to find the design review process is complete.

VI. CITY COUNCIL REFERRALS – PUBLIC HEARING

A. Hold a Public Hearing and consider a recommendation to the City Council for Zoning Ordinance Amendments to Building Height standards.

On February 7, 2022, the City Council established the Land Use Committee to look at diversifying land use regulations within the City. As part of the first package of amendments, the Land Use Committee has focused on advancing the citywide housing goals identified by City Council in their 2022-2023 Goals. These objectives were refined on February 27, 2022 and include:

1. Increase diversity of housing types and price points;
2. Remove regulatory barriers for housing diversification in neighborhoods (ADUS) – context sensitive design and consideration to impacts to traffic, on street parking and other infrastructure impacts;
3. Restructure incentives to deliver greater public benefit in workforce housing construction; and
4. Identify and maximize partnerships, coalitions, and funding opportunities to deliver affordable housing.

Regulatory Amendment Work Plan

On April 9, 2022, the Land Use Committee approved transmittal of the draft 2021 Regulatory Amendment Work Plan to City Council. The work plan consists of three phases:

1. **Phase 1: Code Clean-Up – Building Height Standards.**
   Purpose: Improve regulatory implementation and align with legislative intent. Eliminate ambiguous sections that result in unintended consequences.
2. **Phase 2: Accessory Dwelling Unit Amendments**
   Purpose: Remove barriers and expand the number of eligible properties for ADUs and Senior Housing Facilities.
3. **Phase 3: Incentive Amendments**
   Purpose: Adjust incentives to place a higher emphasis on Workforce Housing.

Phase 1 Amendments Recommendation

On April 18, 202, the City Council approved the work plan and transmitted proposed Phase 1 amendments to the Planning Board for review and a recommendation **(Attachment A).** On May 05, 2022 the Planning Board held a work session to review proposed Phase 1 amendments. At that time, staff presented a revised document that was developed in consultation with the City Attorney's office. The revised document, provided in **Attachment B,** included formatting corrections and language improvements that provided for more clear and consistent interpretation. At the May 5th work session, the Planning Board also requested revisions. Those revisions are more fully summarized in **Attachment C – Issues Matrix.** A final recommended set of amendments, that reflect issues raised by the Planning Board, is provided as **Attachment D.** Please note, Planning Staff are still evaluating a modification, if needed, to the definition of *existing grade plane* in order to deal with situation where a reduction in the existing grade is proposed. If needed, staff will present a modified definition at the Public Hearing on May 19th.

Planning Department Recommendation

Vote to recommend approval to amendments to the Zoning Ordinance as provided in Attachment D.

VI. CITY COUNCIL REFERRAL

B. Consider a recommendation to City Council for an application from **Sherilyn Burnett Young of Rath Young, and Pignatelli on behalf of the applicant Margot Thompson** and Edward Thompson to request that the Portsmouth City Council apply for an Urbanized Shoreland Exemption pursuant to RSA 483-B:12 for the property located at **57 Salter Street**, Tax Map 102, Lot 32 in the City of Portsmouth, located along the shores of the Piscataqua River.

Background

On April 25, 2022, Mayor Deaglan McEachern received a request from Sherilyn Burnett Young on behalf of the applicants Margot Thompson and Edward Thompson to request that the Portsmouth City Council apply for an Urbanized Shoreland Exemption pursuant to RSA 483-B:12 for the property located at 57 Salter Street. If granted, this would exempt the Property from the provisions of the Shoreland Water Quality Protection Act. The City applied for and was granted such an Exemption once before, in 2007, for Tax Parcel 106, Lot 54 at 99 Bow Street.

On May 2, 2022, the City Council requested that the item be placed on an agenda of the Planning Board for a report back and recommendation.

The Property in question, 57 Salter Street, is the site of a structure that has a portion located over water. This Property has been renovated. In order to complete the renovation, the property had to be in compliance with and get appropriate permits for compliance with the State Wetland regulations under RSA 482-A (Fill and Dredge in Wetlands) and RSA 483-B (Shoreland Water Quality Protection Act). The State issued an administrative order, finding that the Property has been converted to a residential structure over the water which is prohibited under RSA 482-A and violated set back requirements under 483-B. The Thompsons have appealed the administrative order and have agreed to move the property back if the State grants the shoreline exemption. However, as individuals, they may not apply for a Urbanized Shoreland Exemption. The Thompsons have asked the City to apply for this Urbanized Shoreland Exemption and if approved by the State, the property will be exempt from the requirements of RSA 483-B. The specifics of that exemption are listed below.

NH RSA 483-B: 12 Shoreland Exemptions.

I. The governing body of a municipality may, in its discretion, request the commissioner to exempt all or a portion of the protected shoreland within its boundaries from the provisions of this chapter if the governing body finds that special local urbanization conditions as defined in RSA 483-B: 4, XXV, exist in the protected shoreland for which the exemption is sought.

II. If the governing body of a municipality requests such an exemption, it shall submit evidence of existing and historical patterns of building and development in the protected shoreland in demonstration of the special local urbanization conditions. Such evidence shall address:

(a) Current and past building density.

(b) Commercial, industrial, or residential uses.

(c) Municipal or other public utilities.

(d) Current municipal land use regulations which affect the protected shoreland.

(e) Designation as a downtown, community center, central business district, or urbanize area or urban cluster as delineated by the United States Census Bureau.

(f) Any other information which the commissioner may reasonably require.

III. With the advice of the office of energy and planning, the commissioner shall approve or deny the request for an exemption and shall issue written findings in support of his decision. A request for an exemption shall be approved only if the municipality demonstrates, using the evidence required under paragraph II, that special conditions of urbanization exist along the portion of shoreland to be exempted.

IV. The Pease development authority, division of ports and harbors may request an exemption under this section for all or a portion of any land purchased, leased, or otherwise acquired by it pursuant to RSA 12-G:39.

RSA 483-B: 4, XXV defines urbanization with the following:
"Urbanization" means the concentrated development found in the sections of towns or cities where there has been an historic pattern of intensive building for residential, commercial, industrial, or mixed uses such that it contributes to or constitutes the municipality's downtown, community center, or central business district and wherein all vegetative buffers have been depleted, impervious surfaces are in excess of 50 percent, and residential uses are of at least 10 dwelling units per acre.

Project Review, Decisions, and Recommendations

Historic District Commission approvals were received for all work associated with the residential conversion.

Planning Department Recommendation

Deliberations should include consideration of the criteria for urbanization identified in RSA 483-B: 4, XXV (above).

Consider a recommendations to the Portsmouth City Council on the application for an Urbanized Shoreland Exemption pursuant to RSA 483-B:12 for the property located at 57 Salter Street, Tax Map 102, Lot 32 in the City of Portsmouth, located along the shores of the Piscataqua River.

VII. OTHER BUSINESS

VIII. ADJOURNMENT

City of Portsmouth **Planning Board**

Donald L Stickney, III
Application for a Detached ADU

213 Jones Avenue, Portsmouth

Applicant's Narrative

Donald Stickney is the owner of the property at 213 Jones Avenue.

The property is situated at a bend in Jones Avenue and is on its southern side, across from the metal yard. Lot size is 62,528 square feet. The 100 foot wetlands buffer encumbers a significant portion of the southern portion of the lot.

The existing structure on the property is a 36' x 24' single story dwelling with two bedrooms. It sits just over 33 feet from the front lot line on Jones Avenue.

Mr. Stickney is seeking a conditional use permit in order to construct a new, modern single family residence on the eastern side of the property and to convert the existing dwelling into a Detached Accessory Dwelling Unit (DADU). The property would be kept in common ownership with the Applicant occupying one of the dwelling units as his primary place of residence. Open space, building coverage, parking and setbacks are all compliant with the zoning ordinance under this proposal.

No changes to the existing structure are proposed with the exception of updates to the existing façade with siding and window treatments with material to match the new, primary dwelling. This satisfies the requirement that the exterior design be consistent with the primary dwelling (10.814.61).

The site plan provides for a second driveway to service the new primary residence, and proposes 90.9% open space where the zoning ordinance requires 40%. This satisfies the requirements of 10.814.62.

The proposed DADU is a stand alone structure which already exists, thus, its compatibility with adjacent properties in terms of location, design, parking layout, and privacy is satisfied (10.814.63) and it will not in any manner result in excessive noise, traffic or parking congestion (10.814.64). The proposed new structure is fully compliant with zoning.

Because the applicant is seeking to take advantage of the existing conditions and built environment of the property by converting the existing dwelling into the DADU, the following waivers pursuant to 10.814.70 are being sought:

10.814.52 to exceed 750 square feet floor area (886 s.f. exists);

10.814.531 to exceed 40% combined façade (42% proposed); and

10.814.55 to permit the DADU to be set back less than 10 feet further from the front lot line than the primary dwelling (3.2 feet proposed).

Again, the existing conditions drive the need for the requested waivers. The existing dwelling, built in 1951 according to city tax records, is extremely small by modern standards, but is slightly larger than the maximum permitted for a DADU (although it does comply with the two bedroom requirement). It cannot be set back more than ten feet from the proposed primary dwelling without that dwelling violating the front yard setback requirement.

The Applicant meets all the requirements of the ordinance for the granting of a conditional use permit for the DADU.

Respectfully Submitted,

Date: February 22, 2022

Christopher P. Mulligan

Christopher P. Mulligan, Esquire
Attorney for the Applicant


213



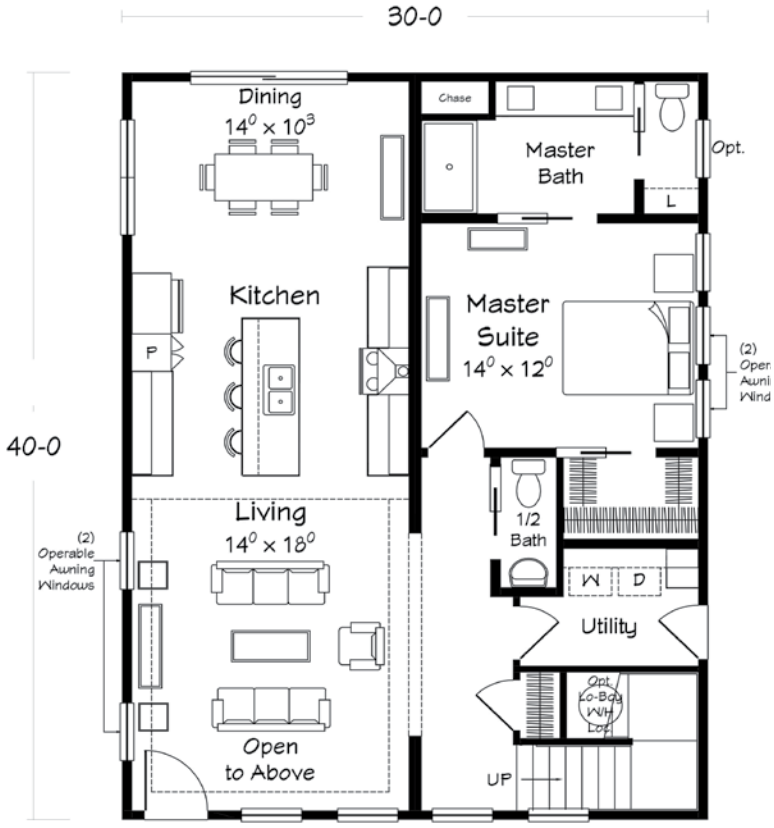
Modern Living Series

Aries Two Story

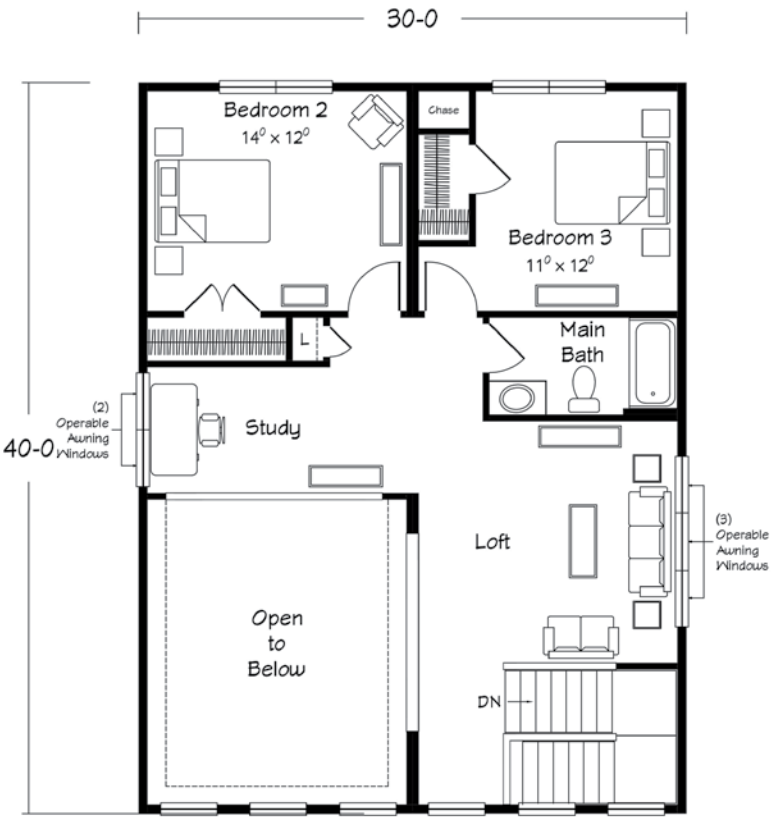


3 bedrooms and 2.5 baths • 2,148 SQ. FT.

3/12/4.5/12 sawtooth roof pitch; vaulted ceilings in Living Room. Open loft style floorplan.



First Floor



Second Floor

Artists renderings depict buildings as can be built on a typical site. Rendering may include optional or site installed features. Refer to Ritz-Craft's Modern Living Benchmark Series Specifications for standard included features.

Ritz-Craft
Custom Building Simplified™

Ritz-Craft
Custom Building Simplified

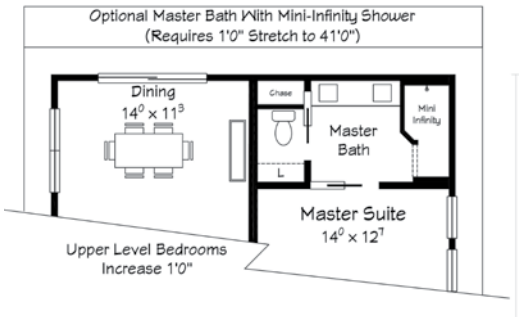
Aries Two Story



- 2-Story vaulted ceiling in Living Room
  Large galley style kitchen with island/bar
- Open floorplan with kitchen open to adjacent dining and living areas
- All family areas face the rear yard



- Nicely sized bedrooms with plenty of closet space
- Large master bedroom with private bath featuring double bowl vanities, private toilet area and 60” shower base with tiled walls



Interior views may include optional features. Refer to standard specifications for included items.

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

30 March 2022

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Application for CUP Approval, Tax Map 222, Lot 69, 213 Jones Avenue

Dear Chair Chellman and Planning Board members:

On behalf of Donald Stickney we submit herewith the attached Application for Conditional Use Permit; Wetland. In support thereof, we are submitting a proposed Site Plan set with the associated exhibits and requirements. This proposal is to add a new structure on this existing parcel and re-use the existing structure as a Detached Accessory Dwelling Unit. The proposed dwelling unit and associated utility connections are shown on the Site Plans. The parking required for the proposed dwelling will be contained in the proposed garage.

This City of Portsmouth Wetland Conditional Use Permit Amendment request is for 1,776 square feet of disturbance within the 100' City of Portsmouth Wetland Buffer. No direct wetland impact is proposed. The wetland is a poorly drained palustrine scrub-shrub broad leaved deciduous wetland system that is seasonally flooded and or saturated. The work in the buffer consists of the construction of a proposed berm. Buffer Plantings associated with this request will occur in the wetland buffer; but those plantings are not included as impact area since there will be no change in the grade or preparation of the surface.

The property currently drains to a 15 inch culvert under Jones Avenue. In order to properly address the impact of the project on area drainage the application proposes to construct a proposed berm and create a drainage detention area in the existing back yard; the location being within the wetland buffer, requiring this request for Conditional Use. The need for the detention area is to not increase flow to the city's 15 inch culvert pipe under Jones Avenue. The location of the proposed berm within the wetland buffer is due to the existing topography of the parcel as well as the limited area available for the site development outside the wetland buffer and the Ordinance regulations requiring that a detached ADU be located behind the primary structure. The site plan for stormwater will also include a drip apron on the street side of the proposed single family dwelling and a porous driveway. The reasoning and justification for the impact is included in the attached submission, and detailed below.

According to the City of Portsmouth Zoning Ordinance, Article 10.1017.50 Criteria for Approval, the proposal shall comply with the following criteria:

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

The proposal is to construct a berm to create a drainage detention area within the 100' City of Portsmouth Wetland Buffer. The portion of the lot located within the 100 foot wetland buffer is impacted by a finger of wetland on the east side of the property that causes the buffer line to jut up to the north on the east side of the lot. Given that the proposed project includes an increase in impervious surface, the increase must be mitigated and the peak flow attenuated. The proposed berm location is within a mowed area and therefore does not require the removal of any naturally vegetated buffer area to achieve construction goals. The property is a larger residential lot in a residential zone where detached ADU's are allowed. The lot topography creates the opportunity to create an area to temporarily detain run-off for a short period of time during a storm event by creating a berm. The berm needs to be partially located within the wetland buffer due to the topography of the property. The work consists of site grading.

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

The property is a larger residential lot in a residential zone where detached ADU's are allowed. Detached ADU's are allowed but they cannot be placed in front of the primary structure. The location of the existing structure; which will become the detached ADU, allows for the new structure, which will become the primary residence, to be placed on the east side of the lot. This location is near the culvert which drains the property under Jones Avenue. Adding impervious area to the lot requires that potential storm water run-off increases are managed. The lot is sloped from back to front making placement of drainage detention near the drainage exit at the front of the lot difficult due to the requirement that the primary structure be placed in that location. Drainage mitigation for the new structure can be achieved with the placement of a berm across the lot. The berm slows down the flow of water from the back of the lot sufficiently to allow the proposed development to not increase the flow to the culvert under Jones Avenue; therefore achieving the storm water goals. The introduction of a porous driveway and a drip apron also serve to reduce, as much as possible, the potential impact of the new impervious area. Due to the topography of the lot, the requirement that the berm be constructed to reach high points of the lot on either side, and the fact that the wetland buffer extends closer to the front of the lot on the east side of the lot, there is no area feasible to propose the detention area, required to mitigate the construction impact, while avoiding the 100' City of Portsmouth Wetland Buffer.

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

The proposal will not impact the existing wetland resource and its current functions and values. The proposed berm is located as need to provide the function required, given site topography. The wetland area currently functions as an area which collects and conveys

storm water run-off; that function is not interrupted by the placement of a berm in the buffer. This area collects run-off from surrounding properties and conveys the run-off across the locus parcel and as such storm water runoff is currently being collected and detained in this area. The location of the proposed development run-off will be downstream from the buffer area. The proposed stone drip apron and porous driveway will provide stormwater treatment from the proposed building. Flow from the proposed development does not flow to the wetland resource and therefore will have no impact on the wetland resource. The wetland buffer will be enhanced with some buffer plantings. The regrading of a portion of the buffer is a temporary impact to the ground surface that will be managed for erosion. The redevelopment will also involve the replacement of the existing septic system that does not meet current codes. Although expanded modestly to the new flow, the improved system meeting current design standards is an improvement. It is our belief therefore that the project will have no adverse impact on the wetland functional values and the surrounding properties, and will allow expansion of much needed housing in the community on an existing, developed lot.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.

The area within the 100' City of Portsmouth Wetland Buffer proposed to be impacted is an existing lawn area, not a woodland. The owner, not as a part of this application but as a part of his long term desires for the property, has undertaken tree plantings within the wetland buffer, those are buffer enhancements and they are shown on the plan. This application shows an additional 3,640 square foot area of the buffer which will be planted, in accordance with Ordinance Section 10.1017.25 Wetland Buffer Enhancement, to achieve a return to a natural vegetated state. There will be no alteration of the natural vegetated state to achieve construction goals; other than the temporary disruption to construct the berm.

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

The project represents the alternative with the least adverse impacts to areas and environments while allowing reasonable use of the property. As stated above, the proposal provides stormwater mitigation in the only area feasible, due to the lot topography. That function currently exists in that location. Placing the development downstream from the resource is the least impacting alternative to the environment.

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

The owner, not as a part of this application, has undertaken tree plantings within the wetland buffer, those are buffer enhancements and they are shown on the plan. This application shows an additional 3,640 square foot area of the buffer which will be planted, in accordance with Ordinance Section 10.1017.25 Wetland Buffer Enhancement, to achieve a return to a natural vegetated state.

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Existing Conditions Plan C1 – This plan shows the current property improvements on the property.
- CUP ADU Site Plan C2 – This plan shows layout of the proposed dwelling with Zoning Information, waiver requests, setbacks and lot coverages.
- CUP Wetlands Site Plan C3 – This plan shows layout of the proposed dwelling with the proposed wetland buffer impacts and square footages.
- Erosion Control and Grading Plan C4 – This plan shows the proposed site grading and erosion control measures.
- Septic and Utility Plan C5 – This plan shows layout of the proposed septic system and site utilities.
- Detail Sheets D1 and D2 – These plans shows the construction details for the project.

We look forward to your review of this submission and our in person presentation at the Planning Board meeting. For the reasons stated, we respectfully request the Planning Board grant the Wetland Conditional Use Permit. Thank you for your time and attention to this proposal.

Sincerely,

John Chagnon

John R. Chagnon, PE
CC: 213 Jones Avenue Team

Planning Department
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Re:Donald Stickney of 213 Jones Avenue to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit.

I am writing to express my full support of what Donald is trying to do with his property located at 213 Jones ave. Donald has lived at 213 Jones for 14 years, prior to buying the property he rented it from us. As neighbors go, you could not ask for a better one to live next to. 8 years ago when my late husband could no longer put out seeds and peanuts for the birds every morning Donald took over. Whether it's shoveling for me, hanging up my daily newspaper on a hook, or helping with the computer, Donald is always willing to help.

The project will allow him to stay here as my neighbor with his two young daughters and wife.

Alice Wentworth
215 Jones Ave Portsmouth NH 03801
x Alice Wentworth

Planning Department
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Re: Donald Stickney (Owner), for property located at 213 Jones Avenue to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit.

I am writing to express my full support of what Donald is trying to do with his property located at 213 Jones ave. Donald is a great neighbor and is always willing to help if you've got a problem, like this winter when our sump pipe broke and he came over to help us fix it. This project will give him, wife Narra, and two young girls the space they need to stay on Jones ave as our neighbors.

Thank you,
Nicole Bergeron
X NB 9/9/22
216 Jones Ave Portsmouth NH 03801

Planning Department
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Re: The request of Donald Lowell Stickney III (Owner), for property located at 213 Jones Avenue requesting Conditional Use Permit under section 10.814 of the Zoning Ordinance and modification of the standards set forth in Sections 10.814.40 or 10.814.52 through 10.814.56, to construct a new single family residence and convert the existing residence into a Detached Accessory Dwelling Unit totaling 886 square feet of living area. Said property is shown on Assessor Map 222 Lot 69 and lies within the Single Residence B (SRB) District.

My name is Peter Evans, Owner, for property located at 323 Jones Avenue and I am writing in response to the above referenced application. I am writing to express my full support of what Donald is trying to do with his property located at 213 Jones ave. The project will give his family of 4 the space needed to stay on Jones ave and continue to be a member of the community we have here.

Thank you for your time and consideration

Peter Evans

X 30 APR 2022

Planning Department
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Re:Donald Stickney owner 213 Jones Avenue ADU and new single family residence.

I am writing to express my full support of what Donald is trying to do with his property located at 213 Jones ave. Donald is a great neighbor and often helps clear snow for us in the winter.

The project will allow him to stay here as our neighbor with his wife and two daughters.

Richard Staples
264 Jones Ave Portsmouth NH 03801

X Richard C Staples Jr

Planning Department
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Re: Donald Stickney of 213 Jones Avenue ADU and new single family residence.

I am writing to express my full support of what Donald is trying to do with his property located at 213 Jones ave. Donald has been a great neighbor and we'd hate to see him move. He's the kind of neighbor that you can borrow tools from, ask to snowblow your driveway if you're out of town, or just lend you a hand.

Ryan Marshall

X _____ 4/8/22

296 Jones Ave Portsmouth NH 03801

Planning Department
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

Re:Donald Stickney owner 213 Jones Avenue detached accessory dwelling unit and new single family residence.

I am writing to express my full support of what Donald is trying to do with his property located at 213 Jones ave. Donald is a great neighbor and maintains a roadside water station for dogs on Jones ave.

The project will allow him to stay here as my neighbor with Narra, Avalina, and Emery.

Thomas Kelly
176 Jones Ave Portsmouth NH 03801

X 

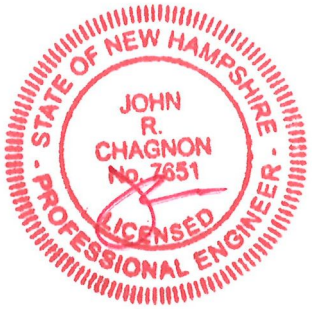
DRAINAGE ANALYSIS

STICKNEY RESIDENCE
PROPOSED DADU

213 JONES AVENUE
PORTSMOUTH, NH

PREPARED FOR
DONALD STICKNEY

06 APRIL 2022



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jrc@ambitengineering.com
(Ambit Job Number 531.01)

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EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the Proposed DADU and new Residence at the property known as 213 Jones Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 222 as Lot 69. The total size of the associated drainage area is 186,102± square-feet (4.272 acres). The total size of the lot is 62,528± square-feet (1.435 acres).

The development will provide for a new driveway and single family residence. The development has the potential to increase stormwater runoff to adjacent properties, 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 peak runoff 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, planning board, 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 222 as Lot 69. Bounding the site to the north is Jones Avenue, a metal yard, and a private residence. The site is bounded on the east by a private residence. The site is bounded to the south by City property. The site is bounded to the west by a residence. A vicinity map is included in the Appendix to this report.

The proposed development will include a driveway and residence with utilities. This report includes information about the existing site and the proposed building 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. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

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.

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 10.0 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 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 three soil types:

Soil Symbol	Soil Name and Slopes
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky
299	Udorthents, smoothed
799	Urban land-Canton complex, 3 to 15 percent slopes

Chatfield-Hollis-Canton complex has a hydrological soil group rating of B, with depths to the restrictive feature of 20 to 41 inches and water table of greater than 80 inches.

Udorthents has an unknown hydrological soil group rating, assumed A from test pit data, with depths to the restrictive feature and water table of greater than 80 inches.

Urban land-Canton complex has a hydrological soil group rating of A, with depths to the restrictive feature and water table of greater than 80 inches.

Multiple test pits were conducted on the site for the proposed septic system, with an approximate infiltrative rate of 16 minutes per inch and a depth to SHWT of 17".

A copy of the custom soil survey for this project site as well as test pit data is included in the Appendix to this report.

The physical characteristics of the site consist of gently sloped (0-15%) grades that generally slope from the middle of the lot to the north and south. Elevations on the site range from 31 to 37 feet above sea level.

The existing site is developed and consists of an existing building and a driveway. Some of the contributing areas to the site contain roads and residences. There are wetlands on the property near the proposed development, though the flow from the proposed development will not flow to those wetlands.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0270F (effective date January 29, 2021), the project site 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 in the Appendix.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as two subcatchment basins (E1 and E2) based on localized topography and discharge location. Subcatchment E1 contains the north half of the lot and adjacent areas, and drains to a culvert on the north edge of the lot, discharge point DP1. Subcatchment E2 contains the south half of the lot, and flows to discharge point DP1.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	To Design Point
E1	94,535	12.0	62	5.47	12.18	DP1
E2	91,567	12.4	63	5.49	12.00	DP1

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 as three subcatchment basins, (P1, P1a, and P2). Subcatchments P1 and P1a combined match the area of subcatchment E1, and drain to Discharge Point DP1. Subcatchment P2 remains identical to subcatchment E2. Subcatchments P1a and P2 drain to a ponding area created by a proposed berm surrounding the adjacent wetland buffer. The ponding area has a high flow bypass that drains to DP1.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	50-Year Runoff (CFS)	Design Point
P1	54,487	11.7	63	3.35	7.31	DP1
P1a	40,048	10.5	66	2.93	6.05	DP1
P2	91,567	12.4	63	5.49	12.00	DP1

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 0.831 acres (19.44%) in the pre-development condition to 0.904 acres (21.17%) in the post-development condition. The project proposes the construction of a detaining berm on site, reducing the peak flow discharge from the site.
Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for each design point. The comparison shows the reduced flows as a result of the detaining berm.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	2.76	1.12	5.34	3.10	7.13	7.07	N edge culvert

Note that all post-development peak discharges are either equivalent or less than the existing peak discharges.

OFFSITE INFRASTRUCTURE CAPACITY

The discharge point downstream of the proposed development is an existing 15" culvert beneath Jones Avenue. The proposed peak flows draining to that culvert are at or below existing peak flows, therefore no impact to City infrastructure is anticipated.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of gravel areas that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

CONCLUSION

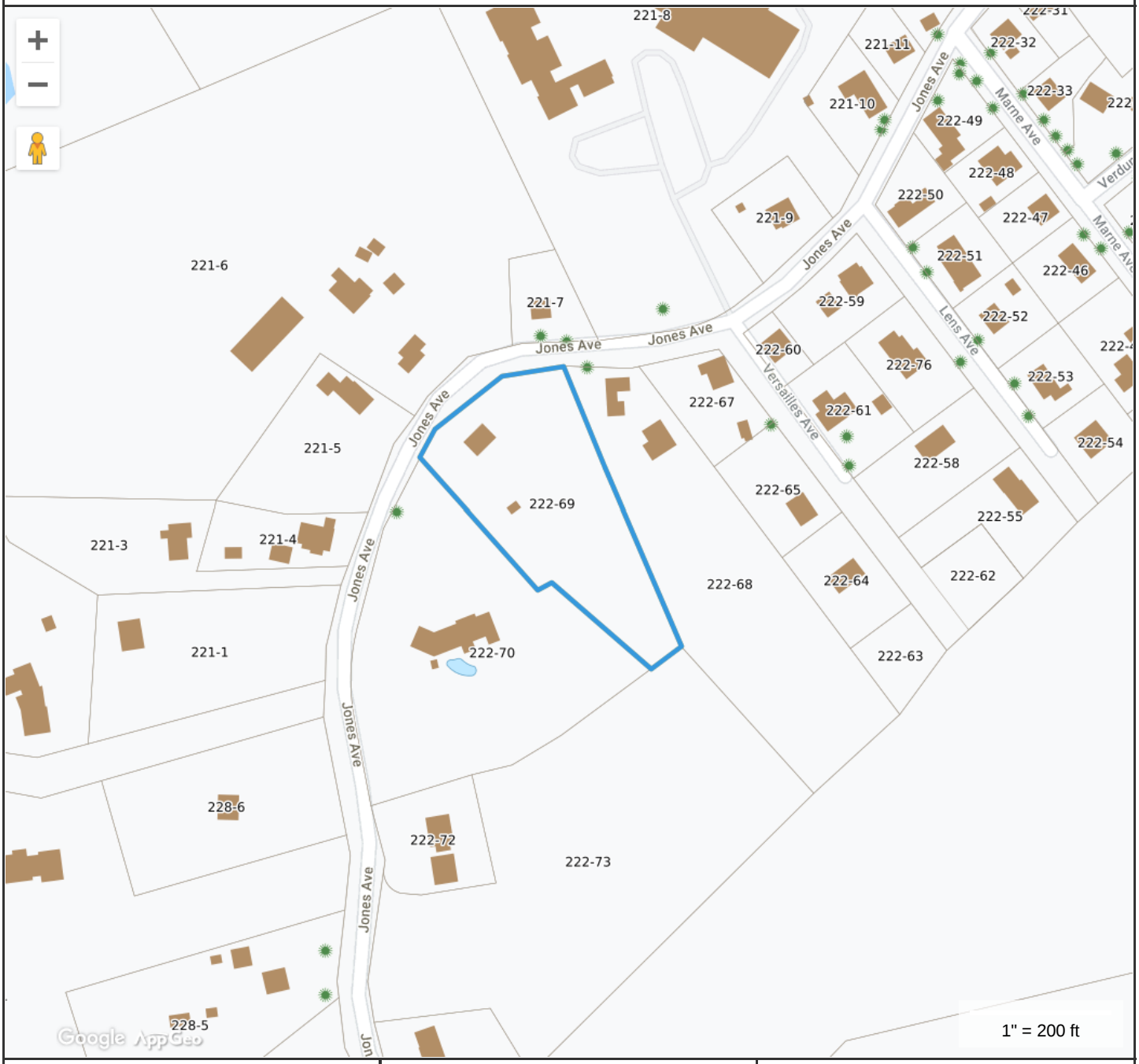
The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the detaining berm, the post-development runoff rates are reduced to be equivalent or below the pre-development runoff rates. Erosion and sediment control practices 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 10.0* copyright 2013.

APPENDIX A

VICINITY (TAX) MAP



Property Information

Property ID	0222-0069-0000
Location	213 JONES AVE
Owner	STICKNEY DONALD LOWELL III

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.

APPENDIX B

TABLES, CHARTS, ETC.

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	70.759 degrees West
Latitude	43.060 degrees North
Elevation	0 feet
Date/Time	Wed, 09 Feb 2022 11:20:24 -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	0.82	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.93	**1yr**	2.36	2.82	3.23	3.95	4.56	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.22	3.58	**2yr**	2.85	3.44	3.95	4.69	5.34	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.07	4.59	**5yr**	3.61	4.41	5.05	5.95	6.72	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.90	3.76	4.88	5.54	**10yr**	4.32	5.33	6.10	7.13	7.99	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.15	2.78	3.63	4.75	6.18	7.12	**25yr**	5.47	6.84	7.83	9.05	10.07	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.76	**50yr**	1.79	2.53	3.30	4.33	5.67	7.40	8.60	**50yr**	6.55	8.27	9.45	10.84	12.00	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.17	6.78	8.87	10.40	**100yr**	7.85	10.00	11.42	13.00	14.31	**100yr**
200yr	0.68	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.63	6.14	8.10	10.63	12.58	**200yr**	9.41	12.09	13.80	15.59	17.06	**200yr**
500yr	0.80	1.32	1.72	2.49	3.49	4.78	**500yr**	3.01	4.39	5.78	7.73	10.24	13.51	16.18	**500yr**	11.96	15.56	17.74	19.84	21.54	**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	0.72	0.88	**1yr**	0.63	0.86	0.92	1.33	1.68	2.24	2.50	**1yr**	1.99	2.41	2.87	3.19	3.91	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.33	3.07	3.46	**2yr**	2.71	3.33	3.83	4.56	5.09	**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	3.80	4.20	**5yr**	3.36	4.04	4.73	5.55	6.26	**5yr**
10yr	0.39	0.59	0.74	1.03	1.33	1.60	**10yr**	1.15	1.57	1.80	2.39	3.05	4.38	4.88	**10yr**	3.88	4.69	5.46	6.43	7.22	**10yr**
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.74	5.91	**25yr**	4.20	5.69	6.68	7.83	8.71	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.17	**50yr**	1.53	2.12	2.35	3.07	3.92	5.36	6.83	**50yr**	4.74	6.57	7.77	9.09	10.06	**50yr**
100yr	0.54	0.81	1.02	1.47	2.01	2.47	**100yr**	1.74	2.41	2.63	3.41	4.34	6.03	7.89	**100yr**	5.34	7.58	9.03	10.56	11.61	**100yr**
200yr	0.59	0.89	1.13	1.64	2.28	2.82	**200yr**	1.97	2.75	2.94	3.77	4.78	6.77	9.11	**200yr**	5.99	8.76	10.50	12.30	13.43	**200yr**
500yr	0.69	1.02	1.32	1.91	2.72	3.36	**500yr**	2.35	3.29	3.41	4.30	5.44	7.88	11.01	**500yr**	6.97	10.58	12.81	15.06	16.27	**500yr**

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	3.17	**1yr**	2.64	3.05	3.59	4.38	5.05	**1yr**
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	3.71	**2yr**	3.03	3.57	4.10	4.85	5.64	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.88	2.54	3.25	4.35	4.97	**5yr**	3.85	4.78	5.39	6.38	7.17	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.35	6.21	**10yr**	4.73	5.97	6.83	7.85	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.52	2.96	4.07	5.15	7.78	8.35	**25yr**	6.88	8.03	9.15	10.35	11.42	**25yr**
50yr	0.67	1.02	1.27	1.83	2.47	3.13	**50yr**	2.13	3.06	3.60	5.00	6.33	9.74	10.46	**50yr**	8.62	10.06	11.44	12.74	13.97	**50yr**
100yr	0.79	1.20	1.50	2.16	2.97	3.82	**100yr**	2.56	3.73	4.38	6.16	7.77	12.18	13.10	**100yr**	10.78	12.60	14.30	15.71	17.10	**100yr**
200yr	0.93	1.39	1.77	2.56	3.57	4.66	**200yr**	3.08	4.56	5.34	7.59	9.55	15.28	16.43	**200yr**	13.52	15.80	17.90	19.36	20.93	**200yr**
500yr	1.15	1.71	2.20	3.20	4.55	6.05	**500yr**	3.92	5.92	6.94	10.03	12.57	20.63	22.17	**500yr**	18.26	21.32	24.09	25.52	27.35	**500yr**

Powered by ACIS Northeast Regional Climate Center

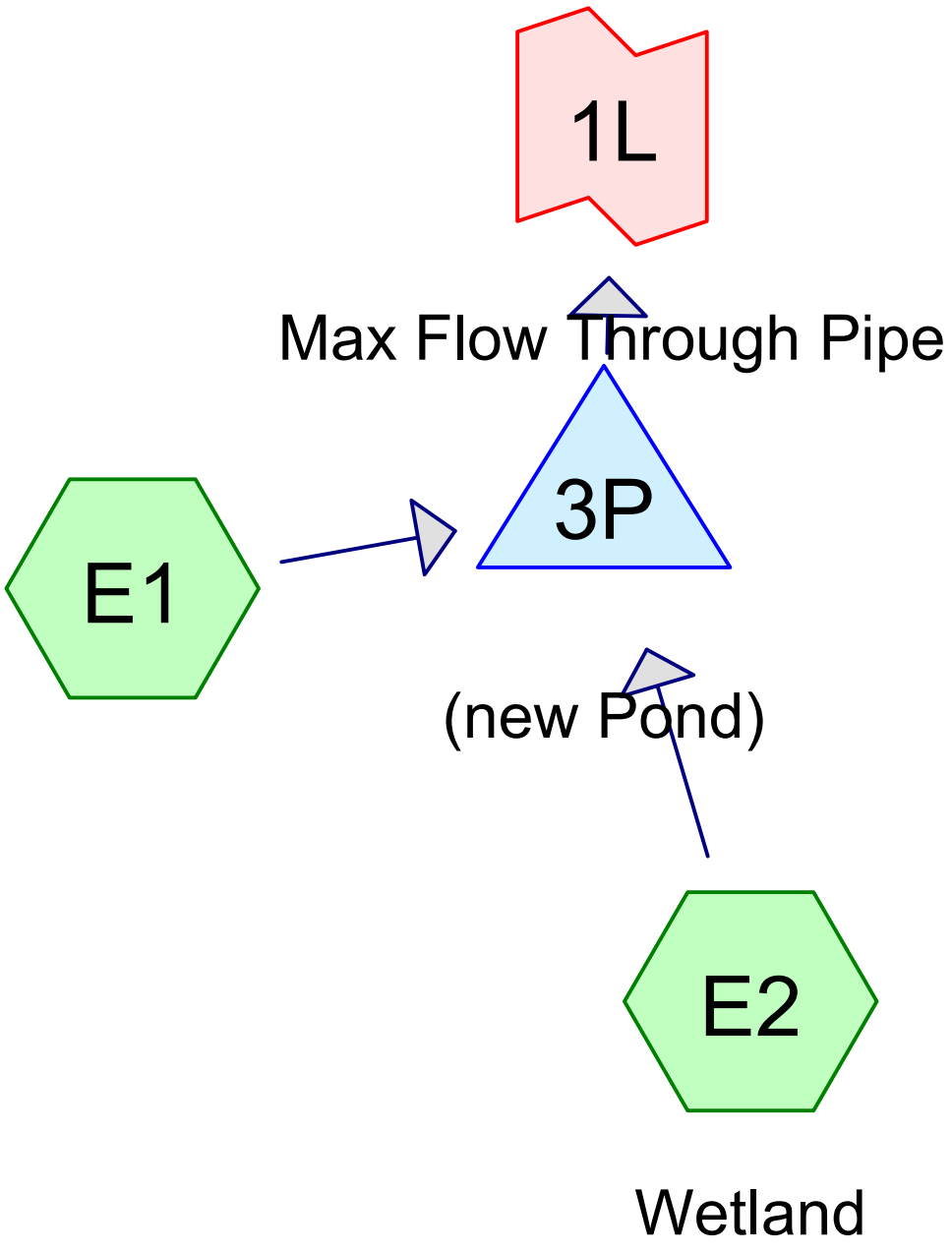
RIPRAP SIZING (Isbash)	(100-yr, 24-hour storm)	
Max height in channel	0.34	ft
width of channel	10	ft
side slopes	3	:1
Cross sectional area	3.75	sf
Q	7.24	cfs
V	1.93	ft/s
Gs	2.65	
g	32.20	ft/s^2
C	1.2	
Bottom half of equation	153.01	
D50	0.29	in

$$D_{50} = \frac{V_a^2}{2gC^2(G_s - 1)}$$

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 2022-02-09 Existing Conditions David T
Prepared by Ambit Engineering, Printed 2022-04-06
HydroCAD® 10.10-7a s/n 00801 © 2021 HydroCAD Software Solutions LLC

Project Notes

Defined 5 rainfall events from output (34) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.70	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.61	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.11	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.51	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.746	54	1/2 acre lots, 25% imp, HSG A (E1, E2)
0.981	70	1/2 acre lots, 25% imp, HSG B (E1, E2)
0.333	39	>75% Grass cover, Good, HSG A (E1)
1.217	61	>75% Grass cover, Good, HSG B (E1, E2)
0.013	96	Gravel surface, HSG B (E2)
0.171	98	Paved parking, HSG A (E1)
0.118	98	Paved parking, HSG B (E1)
0.003	98	Roofs, HSG A (E1)
0.106	98	Roofs, HSG B (E1, E2)
0.583	55	Woods, Good, HSG B (E1, E2)
4.272	**63**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.254	HSG A	E1, E2
3.019	HSG B	E1, E2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
4.272		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.746	0.981	0.000	0.000	0.000	1.727	1/2 acre lots, 25% imp	E1, E2
0.333	1.217	0.000	0.000	0.000	1.550	>75% Grass cover, Good	E1, E2
0.000	0.013	0.000	0.000	0.000	0.013	Gravel surface	E2
0.171	0.118	0.000	0.000	0.000	0.289	Paved parking	E1
0.003	0.106	0.000	0.000	0.000	0.109	Roofs	E1, E2
0.000	0.583	0.000	0.000	0.000	0.583	Woods, Good	E1, E2
1.254	**3.019**	**0.000**	**0.000**	**0.000**	**4.272**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	3P	30.41	30.32	43.5	0.0021	0.013	0.0	15.0	0.0

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

Subcatchment E1: Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>0.62"
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=1.86 cfs 0.113 af

Subcatchment E2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>0.67"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=1.94 cfs 0.117 af

Pond 3P: (new Pond) Peak Elev=31.58' Storage=789 cf Inflow=3.80 cfs 0.229 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=2.76 cfs 0.229 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=2.76 cfs 0.229 af
Primary=2.76 cfs 0.229 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 0.229 af Average Runoff Depth = 0.64"
80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac

Summary for Subcatchment E1:

Runoff = 1.86 cfs @ 12.06 hrs, Volume= 0.113 af, Depth> 0.62"
Routed to Pond 3P : (new Pond)

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=3.70"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		**Lag/CN Method,**

Summary for Subcatchment E2: Wetland

Runoff = 1.94 cfs @ 12.06 hrs, Volume= 0.117 af, Depth> 0.67"
Routed to Pond 3P : (new Pond)

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=3.70"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 0.64" for 2-yr event
Inflow = 3.80 cfs @ 12.06 hrs, Volume= 0.229 af
Outflow = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af, Atten= 27%, Lag= 5.3 min
Primary = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 31.58' @ 12.15 hrs Surf.Area= 2,541 sf Storage= 789 cf

Plug-Flow detention time= 2.8 min calculated for 0.229 af (100% of inflow)
Center-of-Mass det. time= 1.8 min (836.2 - 834.4)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.76 cfs @ 12.15 hrs HW=31.58' (Free Discharge)
1=Culvert (Barrel Controls 2.76 cfs @ 3.01 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 0.64" for 2-yr event
Inflow = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af
Primary = 2.76 cfs @ 12.15 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, 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

Subcatchment E1: Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>1.65"
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=5.47 cfs 0.298 af

Subcatchment E2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>1.72"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=5.49 cfs 0.301 af

Pond 3P: (new Pond) Peak Elev=32.43' Storage=4,786 cf Inflow=10.96 cfs 0.599 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=5.34 cfs 0.598 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=5.34 cfs 0.598 af
Primary=5.34 cfs 0.598 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 0.599 af Average Runoff Depth = 1.68"
80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac

Summary for Subcatchment E1:

Runoff = 5.47 cfs @ 12.05 hrs, Volume= 0.298 af, Depth> 1.65"
Routed to Pond 3P : (new Pond)

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=5.61"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		**Lag/CN Method,**

Summary for Subcatchment E2: Wetland

Runoff = 5.49 cfs @ 12.05 hrs, Volume= 0.301 af, Depth> 1.72"
Routed to Pond 3P : (new Pond)

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=5.61"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 1.68" for 10-yr event
Inflow = 10.96 cfs @ 12.05 hrs, Volume= 0.599 af
Outflow = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af, Atten= 51%, Lag= 8.9 min
Primary = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 32.43' @ 12.20 hrs Surf.Area= 7,462 sf Storage= 4,786 cf

Plug-Flow detention time= 6.4 min calculated for 0.596 af (100% of inflow)
Center-of-Mass det. time= 5.9 min (818.0 - 812.1)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.34 cfs @ 12.20 hrs HW=32.43' (Free Discharge)
1=Culvert (Barrel Controls 5.34 cfs @ 4.35 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 1.68" for 10-yr event
Inflow = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af
Primary = 5.34 cfs @ 12.20 hrs, Volume= 0.598 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, 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

Subcatchment E1: Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>2.62"
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=8.82 cfs 0.474 af

Subcatchment E2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>2.72"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=8.74 cfs 0.476 af

Pond 3P: (new Pond) Peak Elev=32.97' Storage=9,952 cf Inflow=17.56 cfs 0.950 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=6.50 cfs 0.949 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=6.50 cfs 0.949 af
Primary=6.50 cfs 0.949 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 0.950 af Average Runoff Depth = 2.67"
80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac

Summary for Subcatchment E1:

Runoff = 8.82 cfs @ 12.04 hrs, Volume= 0.474 af, Depth> 2.62"
Routed to Pond 3P : (new Pond)

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=7.11"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		**Lag/CN Method,**

Summary for Subcatchment E2: Wetland

Runoff = 8.74 cfs @ 12.05 hrs, Volume= 0.476 af, Depth> 2.72"
Routed to Pond 3P : (new Pond)

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=7.11"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 2.67" for 25-yr event
Inflow = 17.56 cfs @ 12.05 hrs, Volume= 0.950 af
Outflow = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af, Atten= 63%, Lag= 11.3 min
Primary = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 32.97' @ 12.23 hrs Surf.Area= 11,412 sf Storage= 9,952 cf

Plug-Flow detention time= 10.8 min calculated for 0.949 af (100% of inflow)
Center-of-Mass det. time= 10.5 min (813.0 - 802.5)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.49 cfs @ 12.23 hrs HW=32.97' (Free Discharge)
1=Culvert (Inlet Controls 6.49 cfs @ 5.29 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 2.67" for 25-yr event
Inflow = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af
Primary = 6.50 cfs @ 12.23 hrs, Volume= 0.949 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, 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

Subcatchment E1: Runoff Area=94,535 sf 22.15% Impervious Runoff Depth>3.62"
Flow Length=301' Slope=0.0280 '/' Tc=12.0 min CN=62 Runoff=12.18 cfs 0.655 af

Subcatchment E2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>3.73"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=12.00 cfs 0.654 af

Pond 3P: (new Pond) Peak Elev=33.37' Storage=16,141 cf Inflow=24.18 cfs 1.309 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=7.13 cfs 1.308 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=7.13 cfs 1.308 af
Primary=7.13 cfs 1.308 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 1.309 af Average Runoff Depth = 3.68"
80.56% Pervious = 3.442 ac 19.44% Impervious = 0.831 ac

Summary for Subcatchment E1:

Runoff = 12.18 cfs @ 12.04 hrs, Volume= 0.655 af, Depth> 3.62"
Routed to Pond 3P : (new Pond)

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=8.51"

Area (sf)	CN	Description
19,255	54	1/2 acre lots, 25% imp, HSG A
3,107	70	1/2 acre lots, 25% imp, HSG B
14,517	39	>75% Grass cover, Good, HSG A
40,434	61	>75% Grass cover, Good, HSG B
128	98	Roofs, HSG A
2,612	98	Roofs, HSG B
7,461	98	Paved parking, HSG A
5,146	98	Paved parking, HSG B
1,875	55	Woods, Good, HSG B
94,535	62	Weighted Average
73,598		77.85% Pervious Area
20,938		22.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	301	0.0280	0.42		**Lag/CN Method,**

Summary for Subcatchment E2: Wetland

Runoff = 12.00 cfs @ 12.05 hrs, Volume= 0.654 af, Depth> 3.73"
Routed to Pond 3P : (new Pond)

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=8.51"

Area (sf)	CN	Description
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
12,573	61	>75% Grass cover, Good, HSG B
2,027	98	Roofs, HSG B
570	96	Gravel surface, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 3.68" for 50-yr event
Inflow = 24.18 cfs @ 12.04 hrs, Volume= 1.309 af
Outflow = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af, Atten= 71%, Lag= 13.6 min
Primary = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 33.37' @ 12.27 hrs Surf.Area= 20,119 sf Storage= 16,141 cf

Plug-Flow detention time= 16.2 min calculated for 1.304 af (100% of inflow)
Center-of-Mass det. time= 15.9 min (811.7 - 795.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	53,473 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	45	45	45
32.00	4,385	2,215	2,260
33.00	11,601	7,993	10,253
34.00	34,543	23,072	33,325
34.50	46,048	20,148	53,473

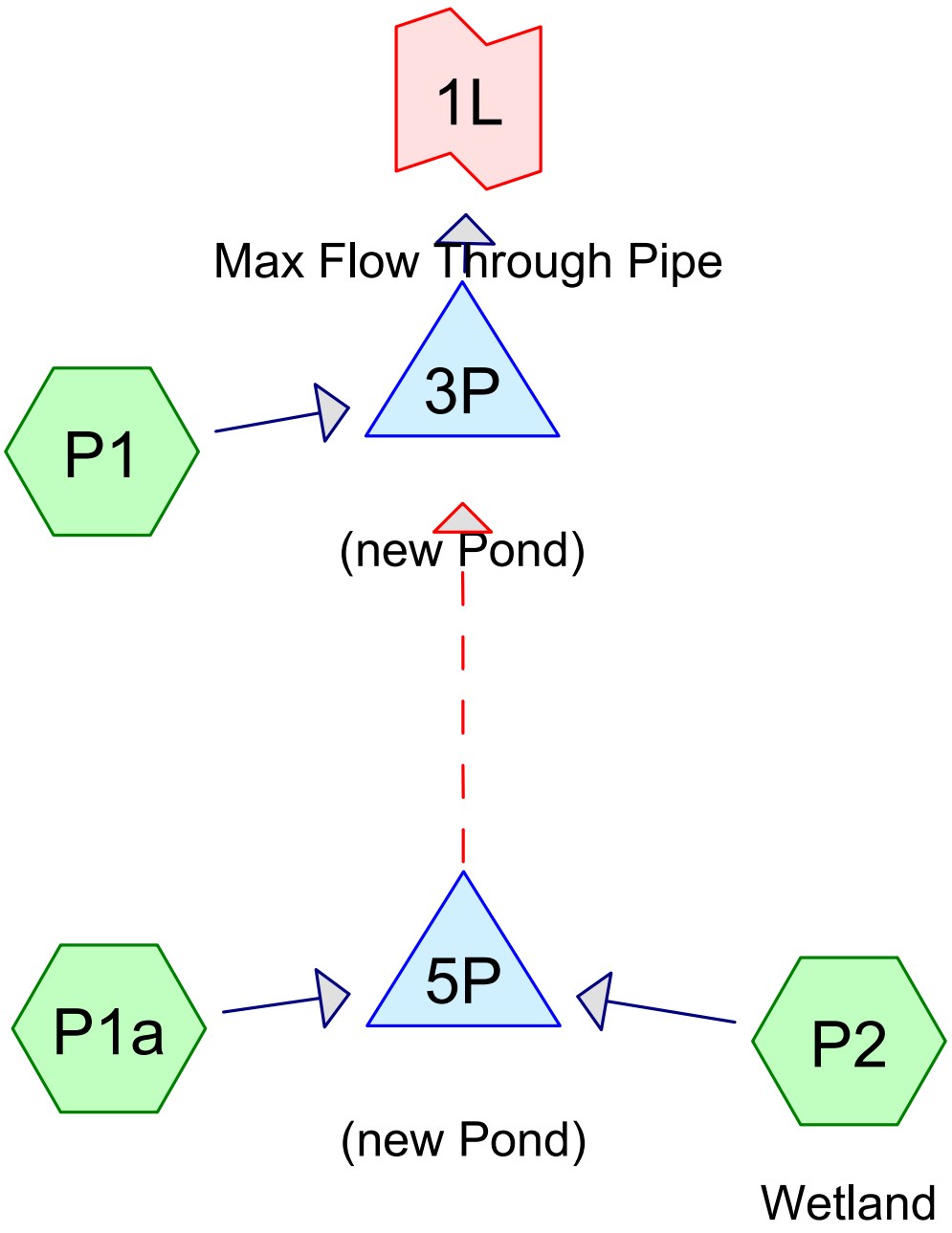
Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.13 cfs @ 12.27 hrs HW=33.37' (Free Discharge)
1=Culvert (Inlet Controls 7.13 cfs @ 5.81 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 4.272 ac, 19.44% Impervious, Inflow Depth > 3.67" for 50-yr event
Inflow = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af
Primary = 7.13 cfs @ 12.27 hrs, Volume= 1.308 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 2022-03-24 Design 4 Proposed Conditions David T
Prepared by Ambit Engineering, Printed 2022-04-06
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Project Notes

Defined 5 rainfall events from output (34) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.70	2
2	10-yr	Type II 24-hr		Default	24.00	1	5.61	2
3	25-yr	Type II 24-hr		Default	24.00	1	7.11	2
4	50-yr	Type II 24-hr		Default	24.00	1	8.51	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.746	54	1/2 acre lots, 25% imp, HSG A (P1, P1a, P2)
0.981	70	1/2 acre lots, 25% imp, HSG B (P1, P1a, P2)
0.263	39	>75% Grass cover, Good, HSG A (P1)
1.213	61	>75% Grass cover, Good, HSG B (P1, P1a, P2)
0.013	96	Gravel surface, HSG B (P2)
0.197	98	Paved parking, HSG A (P1)
0.118	98	Paved parking, HSG B (P1, P1a)
0.047	98	Roofs, HSG A (P1, P1a)
0.110	98	Roofs, HSG B (P1, P1a, P2)
0.583	55	Woods, Good, HSG B (P1a, P2)
4.272	**64**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.253	HSG A	P1, P1a, P2
3.019	HSG B	P1, P1a, P2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
4.272		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.746	0.981	0.000	0.000	0.000	1.727	1/2 acre lots, 25% imp	P1, P1a, P2
0.263	1.213	0.000	0.000	0.000	1.476	>75% Grass cover, Good	P1, P1a, P2
0.000	0.013	0.000	0.000	0.000	0.013	Gravel surface	P2
0.197	0.118	0.000	0.000	0.000	0.315	Paved parking	P1, P1a
0.047	0.110	0.000	0.000	0.000	0.157	Roofs	P1, P1a, P2
0.000	0.583	0.000	0.000	0.000	0.583	Woods, Good	P1a, P2
1.253	**3.019**	**0.000**	**0.000**	**0.000**	**4.272**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	3P	30.41	30.32	43.5	0.0021	0.013	0.0	15.0	0.0

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

Subcatchment P1: Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>0.67"
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=1.19 cfs 0.070 af

Subcatchment P1a: Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>0.81"
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=1.16 cfs 0.062 af

Subcatchment P2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>0.67"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=1.94 cfs 0.117 af

Pond 3P: (new Pond) Peak Elev=31.10' Storage=203 cf Inflow=1.19 cfs 0.070 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=1.12 cfs 0.068 af

Pond 5P: (new Pond) Peak Elev=33.77' Storage=7,777 cf Inflow=3.07 cfs 0.179 af
Outflow=0.00 cfs 0.000 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=1.12 cfs 0.068 af
Primary=1.12 cfs 0.068 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 0.248 af Average Runoff Depth = 0.70"
78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac

Summary for Subcatchment P1:

Runoff = 1.19 cfs @ 12.06 hrs, Volume= 0.070 af, Depth> 0.67"
Routed to Pond 3P : (new Pond)

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=3.70"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		**Lag/CN Method,**

Summary for Subcatchment P1a:

Runoff = 1.16 cfs @ 12.04 hrs, Volume= 0.062 af, Depth> 0.81"
Routed to Pond 5P : (new Pond)

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=3.70"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		**Lag/CN Method,**

Summary for Subcatchment P2: Wetland

Runoff = 1.94 cfs @ 12.06 hrs, Volume= 0.117 af, Depth> 0.67"
Routed to Pond 5P : (new Pond)

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=3.70"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 0.67" for 2-yr event
Inflow = 1.19 cfs @ 12.06 hrs, Volume= 0.070 af
Outflow = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af, Atten= 6%, Lag= 2.0 min
Primary = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 31.10' @ 12.09 hrs Surf.Area= 345 sf Storage= 203 cf

Plug-Flow detention time= 11.6 min calculated for 0.068 af (98% of inflow)
Center-of-Mass det. time= 4.6 min (837.2 - 832.6)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.10 cfs @ 12.09 hrs HW=31.09' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.10 cfs @ 2.32 fps)

Summary for Pond 5P: (new Pond)

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 0.71" for 2-yr event
Inflow = 3.07 cfs @ 12.05 hrs, Volume= 0.179 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 33.77' @ 20.00 hrs Surf.Area= 15,335 sf Storage= 7,777 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=32.00' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 0.65" for 2-yr event
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af
Primary = 1.12 cfs @ 12.09 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, 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

Subcatchment P1: Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>1.72"
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=3.35 cfs 0.179 af

Subcatchment P1a: Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>1.96"
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=2.93 cfs 0.150 af

Subcatchment P2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>1.72"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=5.49 cfs 0.301 af

Pond 3P: (new Pond) Peak Elev=31.67' Storage=475 cf Inflow=3.35 cfs 0.347 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=3.10 cfs 0.345 af

Pond 5P: (new Pond) Peak Elev=34.06' Storage=12,907 cf Inflow=8.36 cfs 0.451 af
Outflow=0.45 cfs 0.168 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=3.10 cfs 0.345 af
Primary=3.10 cfs 0.345 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 0.631 af Average Runoff Depth = 1.77"
78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac

Summary for Subcatchment P1:

Runoff = 3.35 cfs @ 12.04 hrs, Volume= 0.179 af, Depth> 1.72"
Routed to Pond 3P : (new Pond)

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=5.61"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		**Lag/CN Method,**

Summary for Subcatchment P1a:

Runoff = 2.93 cfs @ 12.03 hrs, Volume= 0.150 af, Depth> 1.96"
Routed to Pond 5P : (new Pond)

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=5.61"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		**Lag/CN Method,**

Summary for Subcatchment P2: Wetland

Runoff = 5.49 cfs @ 12.05 hrs, Volume= 0.301 af, Depth> 1.72"
Routed to Pond 5P : (new Pond)

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=5.61"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 3.33" for 10-yr event
Inflow = 3.35 cfs @ 12.04 hrs, Volume= 0.347 af
Outflow = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af, Atten= 7%, Lag= 2.3 min
Primary = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 31.67' @ 12.08 hrs Surf.Area= 613 sf Storage= 475 cf

Plug-Flow detention time= 4.4 min calculated for 0.344 af (99% of inflow)
Center-of-Mass det. time= 2.4 min (884.9 - 882.5)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.04 cfs @ 12.08 hrs HW=31.65' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 3.04 cfs @ 3.10 fps)

Summary for Pond 5P: (new Pond)

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 1.79" for 10-yr event
Inflow = 8.36 cfs @ 12.04 hrs, Volume= 0.451 af
Outflow = 0.45 cfs @ 13.90 hrs, Volume= 0.168 af, Atten= 95%, Lag= 111.4 min
Secondary = 0.45 cfs @ 13.90 hrs, Volume= 0.168 af
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 34.06' @ 13.90 hrs Surf.Area= 20,305 sf Storage= 12,907 cf

Plug-Flow detention time= 241.2 min calculated for 0.167 af (37% of inflow)
Center-of-Mass det. time= 150.2 min (959.2 - 809.0)

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Secondary OutFlow Max=0.44 cfs @ 13.90 hrs HW=34.06' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.44 cfs @ 0.78 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 3.31" for 10-yr event
Inflow = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af
Primary = 3.10 cfs @ 12.08 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, 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

Subcatchment P1: Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>2.72"
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=5.33 cfs 0.283 af

Subcatchment P1a: Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>3.01"
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=4.49 cfs 0.231 af

Subcatchment P2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>2.72"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=8.74 cfs 0.476 af

Pond 3P: (new Pond) Peak Elev=32.20' Storage=893 cf Inflow=5.33 cfs 0.703 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=4.58 cfs 0.701 af

Pond 5P: (new Pond) Peak Elev=34.17' Storage=15,352 cf Inflow=13.18 cfs 0.707 af
Outflow=2.31 cfs 0.420 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=4.58 cfs 0.701 af
Primary=4.58 cfs 0.701 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 0.990 af Average Runoff Depth = 2.78"
78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac

Summary for Subcatchment P1:

Runoff = 5.33 cfs @ 12.04 hrs, Volume= 0.283 af, Depth> 2.72"
Routed to Pond 3P : (new Pond)

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=7.11"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		**Lag/CN Method,**

Summary for Subcatchment P1a:

Runoff = 4.49 cfs @ 12.02 hrs, Volume= 0.231 af, Depth> 3.01"
Routed to Pond 5P : (new Pond)

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=7.11"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		**Lag/CN Method,**

Summary for Subcatchment P2: Wetland

Runoff = 8.74 cfs @ 12.05 hrs, Volume= 0.476 af, Depth> 2.72"
Routed to Pond 5P : (new Pond)

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=7.11"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 6.75" for 25-yr event
Inflow = 5.33 cfs @ 12.04 hrs, Volume= 0.703 af
Outflow = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af, Atten= 14%, Lag= 3.9 min
Primary = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 32.20' @ 12.11 hrs Surf.Area= 1,109 sf Storage= 893 cf

Plug-Flow detention time= 3.4 min calculated for 0.701 af (100% of inflow)
Center-of-Mass det. time= 2.2 min (848.0 - 845.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.56 cfs @ 12.11 hrs HW=32.19' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 4.56 cfs @ 3.72 fps)

Summary for Pond 5P: (new Pond)

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 2.81" for 25-yr event
Inflow = 13.18 cfs @ 12.04 hrs, Volume= 0.707 af
Outflow = 2.31 cfs @ 12.41 hrs, Volume= 0.420 af, Atten= 82%, Lag= 22.3 min
Secondary = 2.31 cfs @ 12.41 hrs, Volume= 0.420 af
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 34.17' @ 12.41 hrs Surf.Area= 22,290 sf Storage= 15,352 cf

Plug-Flow detention time= 155.0 min calculated for 0.420 af (59% of inflow)
Center-of-Mass det. time= 76.2 min (875.9 - 799.7)

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Secondary OutFlow Max=2.31 cfs @ 12.41 hrs HW=34.17' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.31 cfs @ 1.35 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 6.72" for 25-yr event
Inflow = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af
Primary = 4.58 cfs @ 12.11 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, 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

Subcatchment P1: Runoff Area=54,487 sf 32.92% Impervious Runoff Depth>3.73"
Flow Length=301' Slope=0.0280 '/' Tc=11.7 min CN=63 Runoff=7.31 cfs 0.389 af

Subcatchment P1a: Runoff Area=40,048 sf 15.54% Impervious Runoff Depth>4.08"
Flow Length=301' Slope=0.0296 '/' Tc=10.5 min CN=66 Runoff=6.05 cfs 0.312 af

Subcatchment P2: Wetland Runoff Area=91,567 sf 16.64% Impervious Runoff Depth>3.73"
Flow Length=326' Slope=0.0280 '/' Tc=12.4 min CN=63 Runoff=12.00 cfs 0.654 af

Pond 3P: (new Pond) Peak Elev=33.33' Storage=3,284 cf Inflow=9.62 cfs 1.065 af
15.0" Round Culvert n=0.013 L=43.5' S=0.0021 '/' Outflow=7.07 cfs 1.063 af

Pond 5P: (new Pond) Peak Elev=34.32' Storage=18,857 cf Inflow=17.96 cfs 0.967 af
Outflow=5.89 cfs 0.676 af

Link 1L: Max Flow Through Pipe below 1,000.00 cfs Inflow=7.07 cfs 1.063 af
Primary=7.07 cfs 1.063 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 4.272 ac Runoff Volume = 1.356 af Average Runoff Depth = 3.81"
78.83% Pervious = 3.368 ac 21.17% Impervious = 0.904 ac

Summary for Subcatchment P1:

Runoff = 7.31 cfs @ 12.04 hrs, Volume= 0.389 af, Depth> 3.73"
Routed to Pond 3P : (new Pond)

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=8.51"

Area (sf)	CN	Description
11,451	39	>75% Grass cover, Good, HSG A
11,945	61	>75% Grass cover, Good, HSG B
17,056	54	1/2 acre lots, 25% imp, HSG A
486	70	1/2 acre lots, 25% imp, HSG B
8,594	98	Paved parking, HSG A
2,157	98	Paved parking, HSG B
1,497	98	Roofs, HSG A
1,301	98	Roofs, HSG B
54,487	63	Weighted Average
36,553		67.08% Pervious Area
17,935		32.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	301	0.0280	0.43		**Lag/CN Method,**

Summary for Subcatchment P1a:

Runoff = 6.05 cfs @ 12.02 hrs, Volume= 0.312 af, Depth> 4.08"
Routed to Pond 5P : (new Pond)

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=8.51"

Area (sf)	CN	Description
4	61	>75% Grass cover, Good, HSG B
28,330	61	>75% Grass cover, Good, HSG B
2,199	54	1/2 acre lots, 25% imp, HSG A
2,621	70	1/2 acre lots, 25% imp, HSG B
2,989	98	Paved parking, HSG B
1,470	98	Roofs, HSG B
1,875	55	Woods, Good, HSG B
560	98	Roofs, HSG A
40,048	66	Weighted Average
33,824		84.46% Pervious Area
6,224		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	301	0.0296	0.48		**Lag/CN Method,**

Summary for Subcatchment P2: Wetland

Runoff = 12.00 cfs @ 12.05 hrs, Volume= 0.654 af, Depth> 3.73"
Routed to Pond 5P : (new Pond)

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=8.51"

Area (sf)	CN	Description
12,573	61	>75% Grass cover, Good, HSG B
570	96	Gravel surface, HSG B
13,242	54	1/2 acre lots, 25% imp, HSG A
39,615	70	1/2 acre lots, 25% imp, HSG B
2,027	98	Roofs, HSG B
23,540	55	Woods, Good, HSG B
91,567	63	Weighted Average
76,326		83.36% Pervious Area
15,241		16.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	326	0.0280	0.44		**Lag/CN Method,**

Summary for Pond 3P: (new Pond)

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 10.22" for 50-yr event
Inflow = 9.62 cfs @ 12.12 hrs, Volume= 1.065 af
Outflow = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af, Atten= 27%, Lag= 12.7 min
Primary = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af
Routed to Link 1L : Max Flow Through Pipe

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 33.33' @ 12.33 hrs Surf.Area= 3,377 sf Storage= 3,284 cf

Plug-Flow detention time= 4.5 min calculated for 1.063 af (100% of inflow)
Center-of-Mass det. time= 3.5 min (832.0 - 828.4)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	6,169 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	45	0	0
31.00	297	171	171
32.00	769	533	704
33.00	2,464	1,617	2,321
34.00	5,232	3,848	6,169

Device	Routing	Invert	Outlet Devices
#1	Primary	30.41'	**15.0" Round Culvert** L= 43.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.41' / 30.32' S= 0.0021 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.06 cfs @ 12.33 hrs HW=33.33' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 7.06 cfs @ 5.75 fps)

Summary for Pond 5P: (new Pond)

Inflow Area = 3.021 ac, 16.31% Impervious, Inflow Depth > 3.84" for 50-yr event
Inflow = 17.96 cfs @ 12.04 hrs, Volume= 0.967 af
Outflow = 5.89 cfs @ 12.24 hrs, Volume= 0.676 af, Atten= 67%, Lag= 12.4 min
Secondary = 5.89 cfs @ 12.24 hrs, Volume= 0.676 af
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 34.32' @ 12.24 hrs Surf.Area= 24,861 sf Storage= 18,857 cf

Plug-Flow detention time= 123.4 min calculated for 0.676 af (70% of inflow)
Center-of-Mass det. time= 54.7 min (847.9 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	23,610 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	109	0	0
33.00	2,068	1,089	1,089
34.00	19,326	10,697	11,786
34.50	27,973	11,825	23,610

Device	Routing	Invert	Outlet Devices
#1	Secondary	34.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Secondary OutFlow Max=5.87 cfs @ 12.24 hrs HW=34.32' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 5.87 cfs @ 1.85 fps)

Summary for Link 1L: Max Flow Through Pipe

Inflow Area = 1.251 ac, 32.92% Impervious, Inflow Depth > 10.19" for 50-yr event
Inflow = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af
Primary = 7.07 cfs @ 12.33 hrs, Volume= 1.063 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

APPENDIX D

SOIL SURVEY INFORMATION

TEST PIT DATA

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

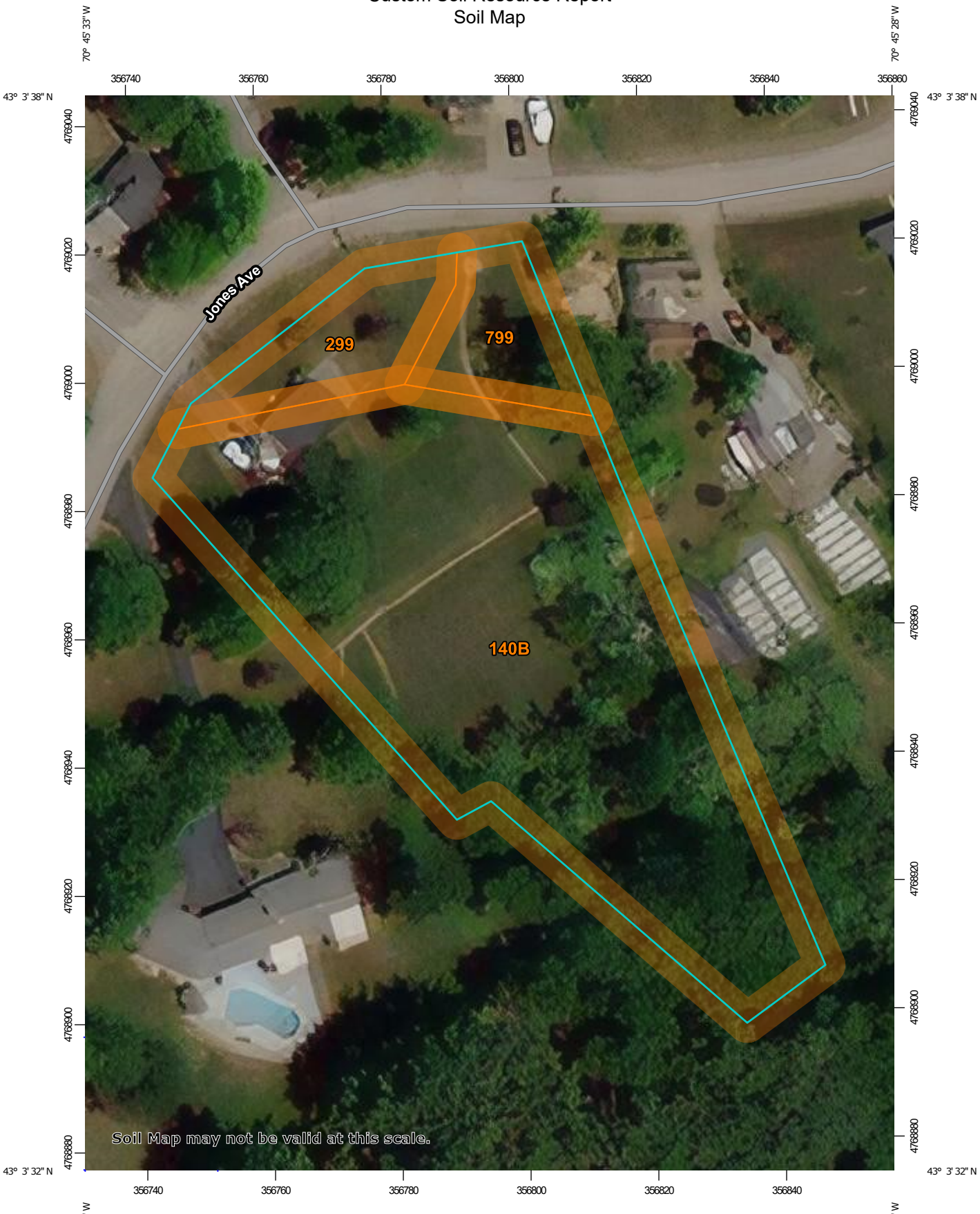
A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



February 9, 2022

Custom Soil Resource Report
Soil Map



Map Scale: 1:816 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 35 70 140 210

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 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Jun 14, 2017

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	1.2	83.0%
299	Udorthents, smoothed	0.1	9.2%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.1	7.8%
Totals for Area of Interest		**1.4**	**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.

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

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

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

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

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

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

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

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

Rockingham County, New Hampshire

140B—Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82m
Elevation: 380 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Chatfield, Very Stony

Setting

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

Typical profile

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

Properties and qualities

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

Interpretive groups

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

Hydric soil rating: No

Description of Hollis, Very Stony

Setting

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

Typical profile

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

Properties and qualities

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

Interpretive groups

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

Description of Canton, Very Stony

Setting

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

Typical profile

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

Properties and qualities

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

Interpretive groups

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

Minor Components

Newfields, very stony

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

Freetown

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

Walpole, very stony

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

Rock outcrop

Percent of map unit: 2 percent
Landform: Ridges, hills
Hydric soil rating: Unranked

299—Udorthents, smoothed

Map Unit Setting

National map unit symbol: 9cmt
Elevation: 0 to 840 feet
Mean annual precipitation: 44 to 49 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Properties and qualities

Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

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

Map Unit Setting

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

Map Unit Composition

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

Description of Canton

Setting

Parent material: Till

Typical profile

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

Properties and qualities

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

Interpretive groups

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

Minor Components

Udorthents

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

Squamscott and scitico

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

Walpole

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

Chatfield

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

Scituate and newfields

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

Boxford and eldridge

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

APPENDIX E

FEMA FIRM MAP

National Flood Hazard Layer FIRMette

FEMA

70°45'51"W 43°3'50"N



70°45'14"W 43°3'23"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

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 Cross Sections with 1% Annual Chance
- 17.5 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 2/10/2022 at 9:17 AM 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.

APPENDIX F

INSPECTION & LONG TERM MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
STICKNEY RESIDENCE & DADU

213 JONES AVENUE
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide Donald Stickney (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. 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 in maintaining 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.

Annual Report

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 Code Enforcement Officer, 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 both the quantity and 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 include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

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. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.
3. **Emergency Spillway:** Monitor accumulation of debris in emergency spillway monthly or after significant rain events. Remove sediments when they accumulate around the riprap stone. During construction, maintain inlet protection until all roadways and parking areas have been stabilized.

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

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

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.

Snow & Ice Management for Standard Asphalt and Walkways

Snow storage will be located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt storage areas shall be covered and located such that no direct discharges are possible to receiving waters from the storage site. Salt and sand shall be used as minimally as possible.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.



Figure 1: Lythrum salicaria, Purple Loosestrife. Photo by Liz West.



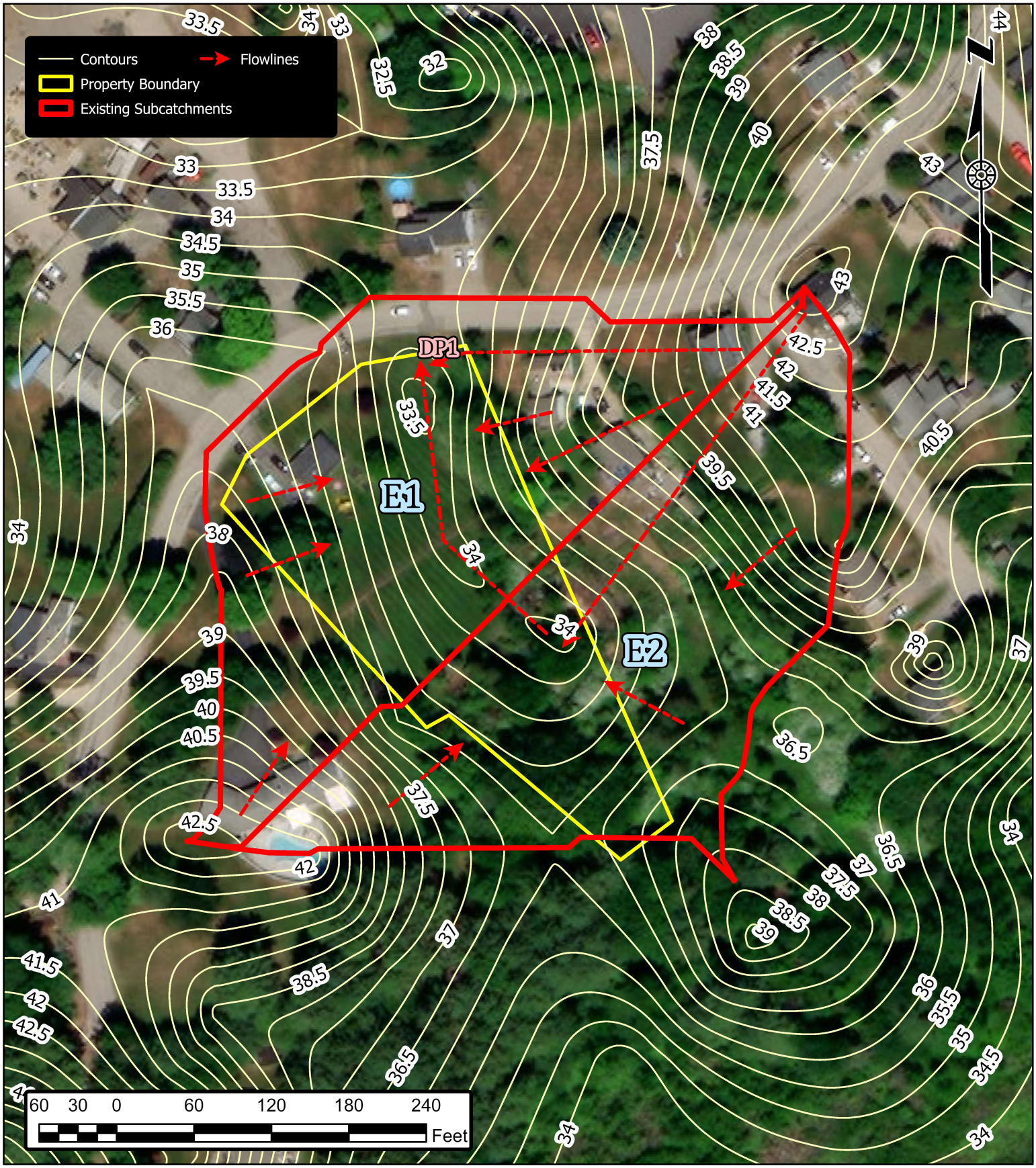
Figure 2: Phragmites australis. Photo by Le Loup Gris

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Diagram Of Existing Subcatchments

STICKNEY RESIDENCE
213 JONES AVENUE
PORTSMOUTH, N.H.

JOB NUMBER: 531.01
SCALE: 1" = 100'
SUBMITTED: 04-06-2022

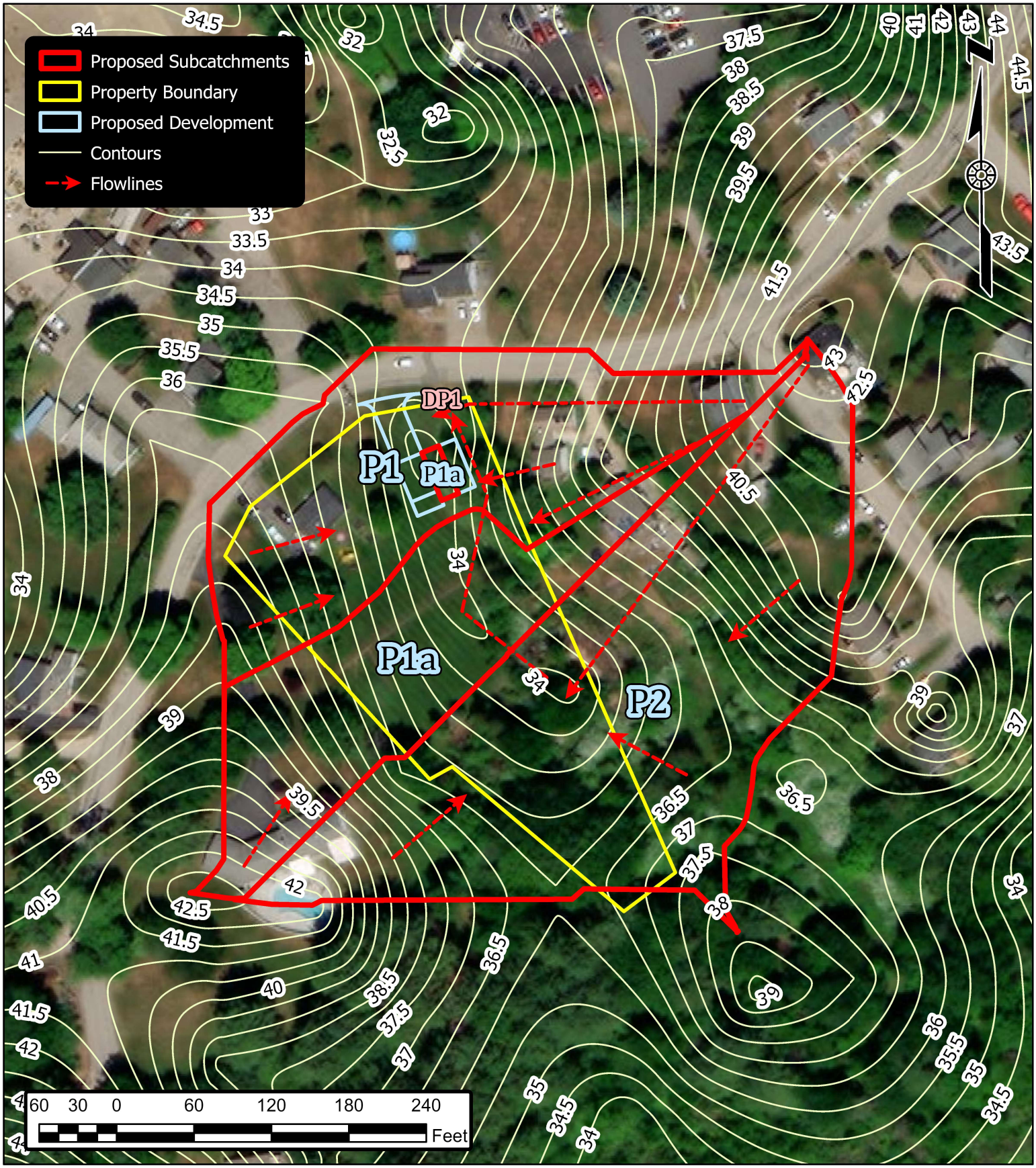


AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Diagram Of Proposed Subcatchments

STICKNEY RESIDENCE
213 JONES AVENUE
PORTSMOUTH, N.H.

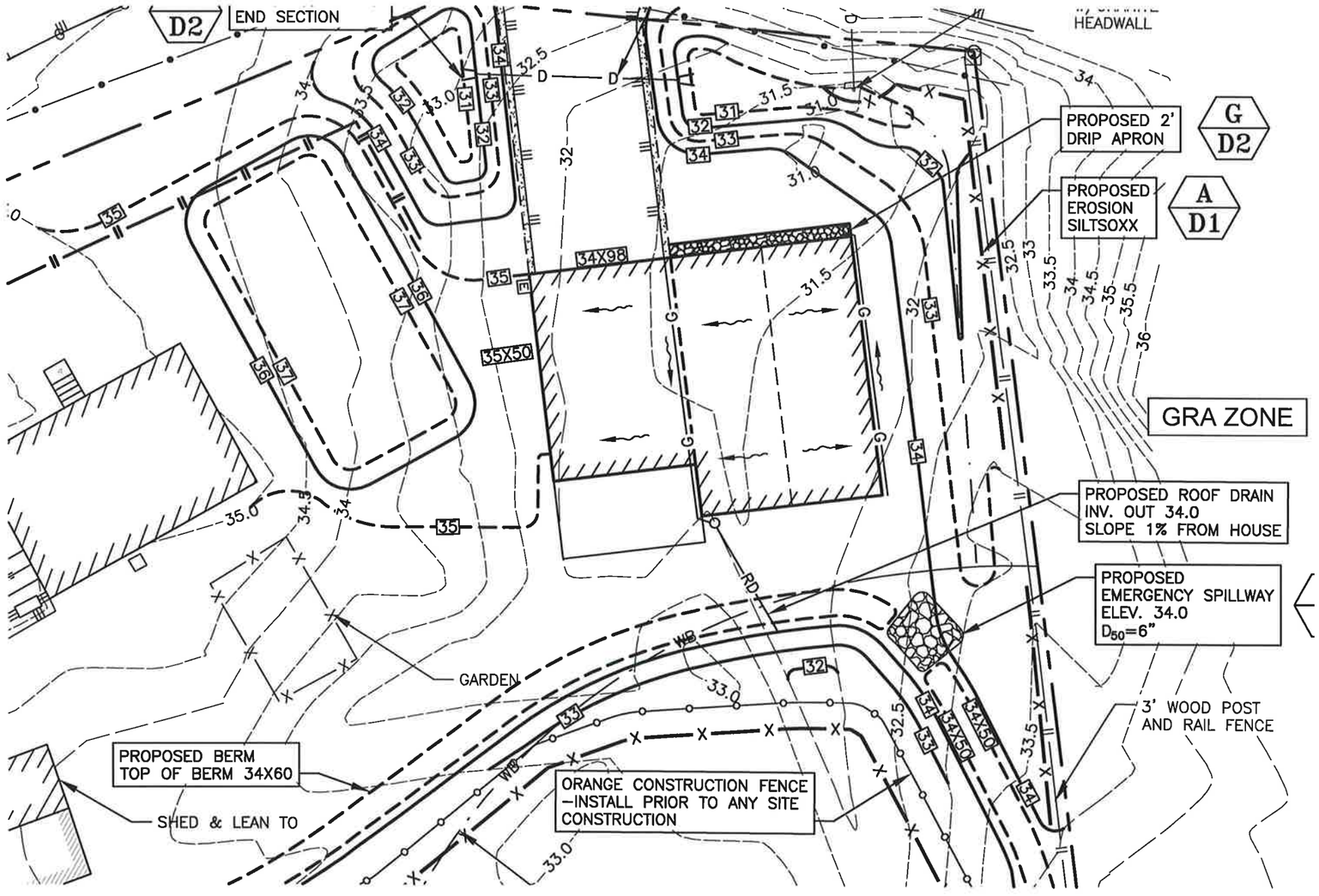
JOB NUMBER: 531.01
SCALE: 1" = 100'
SUBMITTED: 04-06-2022



ROOF DRAINAGE PLAN

OWNER: DONALD LOWELL STICKNEY III
PROPERTY LOCATION: 213 JONES AVENUE
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

1995 D-27773
MAGNETIC RCRD



STATE OF NEW HAMPSHIRE - JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER -

DEED REFERENCE: *5754/2748 & 6147/2092*

SCALE: 1"=20' MARCH 2022

GRAPHIC SCALE

10 0 10 20 30 40 50 FEET
3 0 5 10 15 METERS

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

FB 324 PG 60 531.01

J:\OBS\JN500s\JN530s\JN531\2021 ADU\Plans & Specs\Site\531.01 SITE 2022.dwg, 3/29/2022 1:45:17 PM, SHARP MX-3071 (0300380X00)

PROPOSED ADU
213 JONES AVENUE
PORTSMOUTH, NEW HAMPSHIRE
PERMIT PLANS

OWNER:

DONALD LOWELL STICKNEY III
213 JONES AVENUE
PORTSMOUTH, N.H. 03801
(603)988–7222

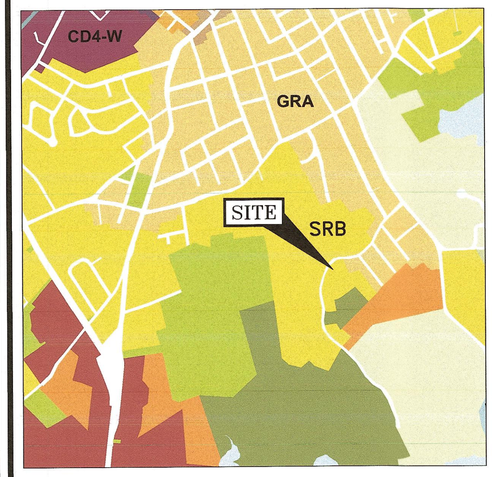
LAND SURVEYOR & CIVIL ENGINEER:

AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801–7114
TEL: (603) 430–9282
FAX: (603) 436–2315

ATTORNEY:

BOSEN & ASSOCIATES
266 MIDDLE STREET
PORTSMOUTH, NH 03801
TEL: (603)–427–5500

REQUIRED PERMITS
PORTSMOUTH CONDITIONAL USE PERMIT ADU: PENDING
PORTSMOUTH CONDITIONAL USE PERMIT WETLAND: PENDING



- R Rural
- SRA Single Residence A
- SRB Single Residence B
- GRA General Residence A
- GRB General Residence B
- GRC General Residence C
- GA/MH Garden Apartment/Mobile Home

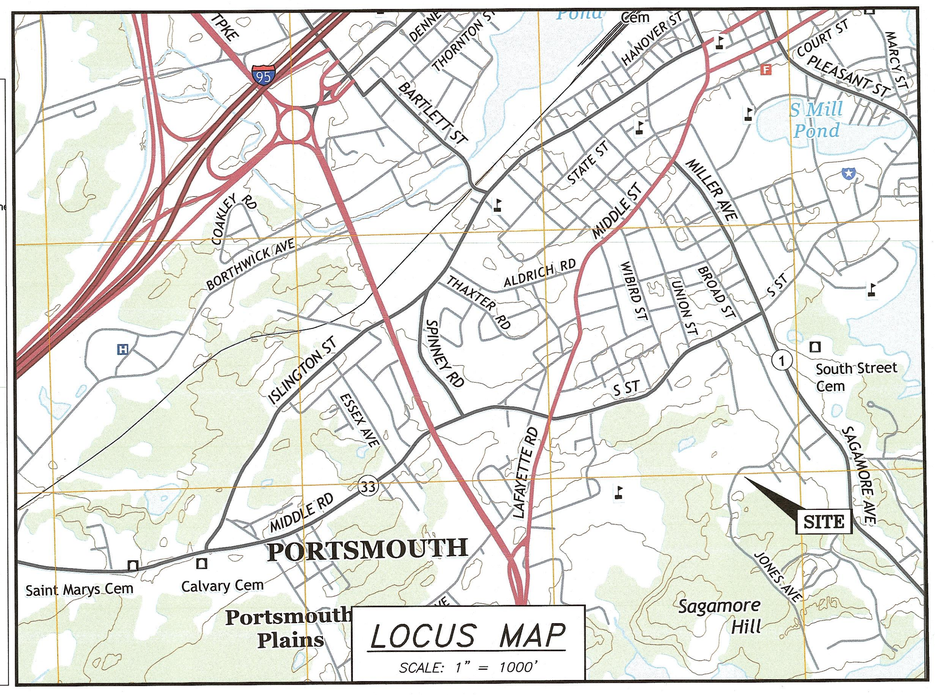
Mixed Residential Districts
- MRO Mixed Residential Office
- MRB Mixed Residential Business
- G1 Gateway Cooridor
- G2 Gateway Center

Business Districts
- GB General Business
- B Business
- WB Waterfront Business

Industrial Districts
- OR Office Research
- I Industrial
- WI Waterfront Industrial

Airport Districts
- AIR Airport
- AI Airport Industrial
- PI Pease Industrial
- ABC Airport Business Commercial

Other Districts
- M Municipal
- NRP Natural Resource Protection
- TC Transportation Corridor



LOCUS MAP
SCALE: 1" = 1000'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
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
	GRANITE BOUND w/IRON ROD FOUND

EXISTING	PROPOSED	
		PROPERTY LINE
		SETBACK LINE
FM	FM	FORCE MAIN
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	PG	GAS LINE
D	D	STORM DRAIN
FD	FD	FOUNDATION DRAIN
W	W	WATER LINE
FS	FS	FIRE SERVICE LINE
UE	UGE	UNDERGROUND ELECTRIC SUPPLY
		UNDERGROUND ELECTRIC SERVICE
OHW	OHW	OVERHEAD ELECTRIC/WIRES
		RETAINING WALL
		EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		UTILITY POLE
E	E	ELECTRIC METER
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD/PULLBOX
		WATER SHUT OFF/CURB STOP
C.O.	C.O.	PIPE CLEANOUT
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
W	WMH	WATER METER MANHOLE
#5		TEST BORING
TP 1		TEST PIT
LA		LANDSCAPED AREA

CI	CAST IRON PIPE
COP	COPPER PIPE
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
HYD	HYDRANT
℄	CENTERLINE
EP	EDGE OF PAVEMENT
EL.	ELEVATION
FF	FINISHED FLOOR
INV	INVERT
TBM	TEMPORARY BENCH MARK
TYP	TYPICAL

DIG SAFE
MA – ME – NH – RI – VT
1-888-344-7233
CALL TOLL FREE

INDEX OF SHEETS

C1 – EXISTING CONDITIONS PLAN
C2 – CUP ADU SITE PLAN
C3 – CUP WETLANDS SITE PLAN
C4 – EROSION CONTROL & GRADING PLAN
C5 – SEPTIC & UTILITY PLAN
D1–D2 – DETAILS

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
74 OLD DOVER ROAD
ROCHESTER, N.H. 03867
Tel. (603) 332–4227,
Ext. 555.5325
ATTN: MARK COLLINS
EMAIL:
mark.collins@eversource.com

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 6294–5147
ATTN: SUSAN DUPLISA
dupliseas@unitil.com

CABLE:
XFINITY BY COMCAST
180 GREENLEAF AVE.
PORTSMOUTH, N.H. 03801
Tel. (603) 266–2278
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
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427–5525
ATTN: JOE CONSIDINE
EMAIL:
jconsidine@fairpoint.com

APPROVED BY THE PORTSMOUTH PLANNING BOARD

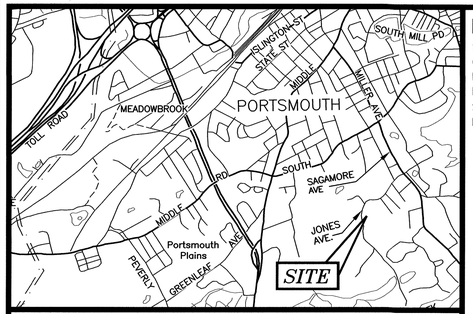
CHAIRMAN _____ DATE _____

PROPOSED ADU
213 JONES AVENUE
PORTSMOUTH, N.H.

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

PLAN SET SUBMITTAL DATE: 30 MARCH 2022

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LOCATION MAP SCALE: 1" = 2,000'

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

WETLAND NOTES:

1) WETLAND LINE DELINEATED BY STEVEN D. RIKER, CWS ON 8/25/21 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. TECHNICAL REPORT Y-87-1 (JAN. 1987). AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.

B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.2, USDA-NRCS, 2018 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEIWPCC WETLANDS WORK GROUP (2019).

C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).

D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1997).

E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.

2) WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.

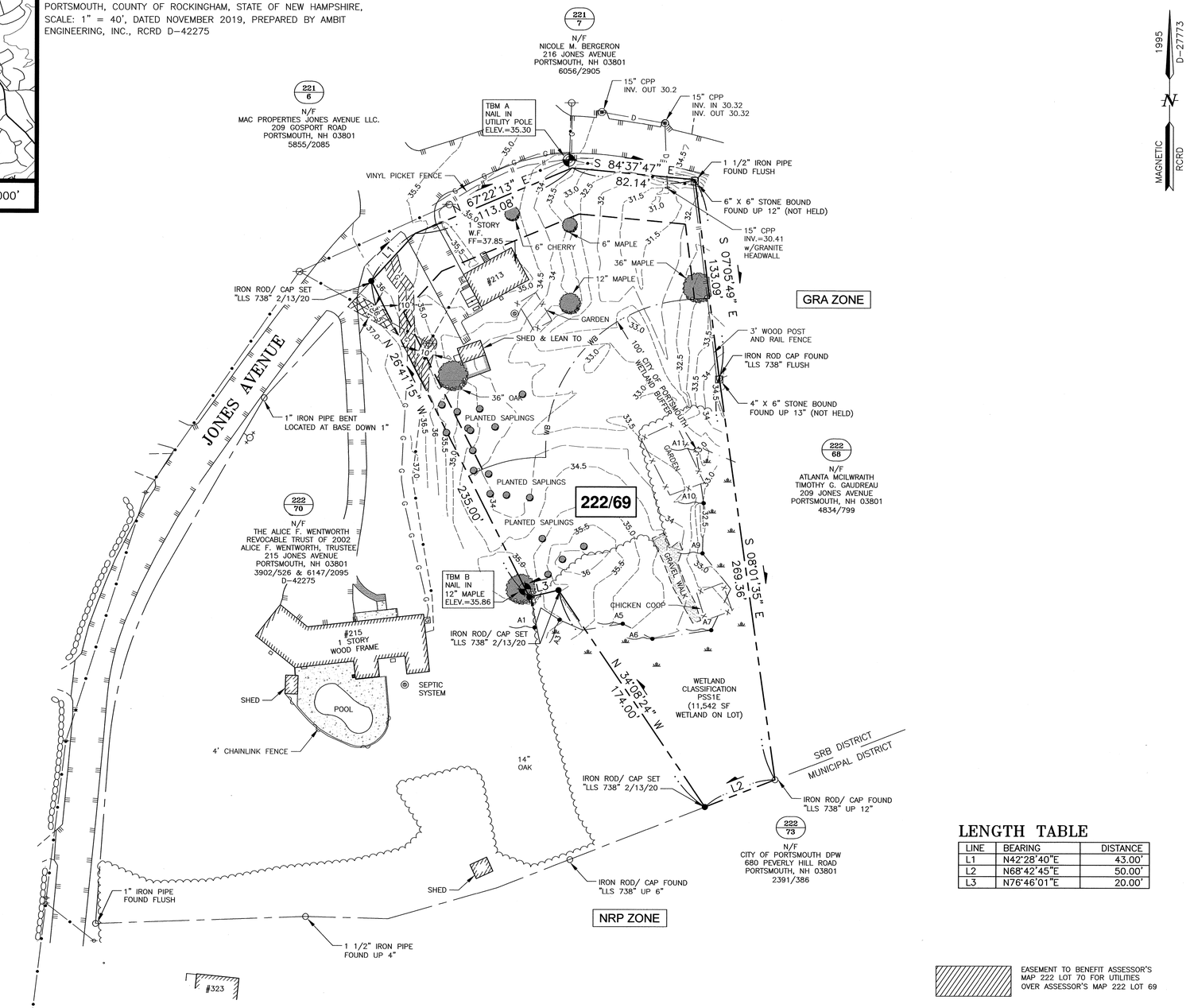
"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

2.11.22

JOHN R. CHAGNON, LLS DATE

REFERENCE PLAN:

1) LOT LINE RELOCATION PLAN TAX MAP 222 – LOTS 69 & 70, OWNERS: THE ALICE F. WENTWORTH REVOCABLE TRUST OF 2002 & DONALD LOWELL STICKNEY III, 213 & 215 JONES AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1" = 40', DATED NOVEMBER 2019, PREPARED BY AMBIT ENGINEERING, INC., RCRD D-42275



LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N42°28'40"E	43.00'
L2	N68°42'45"E	50.00'
L3	N76°46'01"E	20.00'

EASEMENT TO BENEFIT ASSESSOR'S MAP 222 LOT 70 FOR UTILITIES OVER ASSESSOR'S MAP 222 LOT 69

GRAPHIC SCALE

40 30 20 10 0 50 100 150 FEET
10 5 0 10 20 30 40 50 METERS

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 222 AS LOTS 69.

2) OWNER OF RECORD:
DONALD LOWELL STICKNEY III
213 JONES AVENUE
PORTSMOUTH, NH 03801
5754/2748 & 6147/2092
D-42275

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0270F. EFFECTIVE JANUARY 29, 2021.

4) EXISTING LOT AREA:
62,528 S.F.
1.4354 ACRES

5) PARCEL IS LOCATED IN SINGLE RESIDENCE B (SRB) DISTRICT.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	15,000 S.F.
FRONTAGE:	100 FEET
SETBACKS:	
FRONT	30 FEET
SIDE	10 FEET
REAR	30 FEET
MAXIMUM STRUCTURE HEIGHT:	35 FEET
MAXIMUM BUILDING COVERAGE:	20%
MINIMUM OPEN SPACE:	40%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON ASSESSOR'S MAP 222 LOT 69 IN THE CITY OF PORTSMOUTH.

8) VERTICAL DATUM IS NAVD88 (MEAN SEA LEVEL). BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

STICKNEY RESIDENCE
213 JONES AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	TBM A	2/11/22
1	FF, INVERTS	1/4/22
0	ISSUED FOR COMMENT	9/23/21

REVISIONS

SCALE: 1" = 40' SEPTEMBER 2021

EXISTING CONDITIONS PLAN

C1

FB 324 PG 60

531.01

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IMPERVIOUS SURFACE AREAS
TO PROPERTY LINE

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
BUILDING	886	886+1,824
STAIRS/STEPS	24+8	24+8
SHED	360	360
DECK & PATIOS	0	264
PORCH	51	51
BULKHEAD	37	37
PAVED DRIVE	1396	1396
GRAVEL APRON	0	79
TOTAL	2762	4929
LOT SIZE	62528	62528
% LOT COVERAGE	4.4%	7.9%

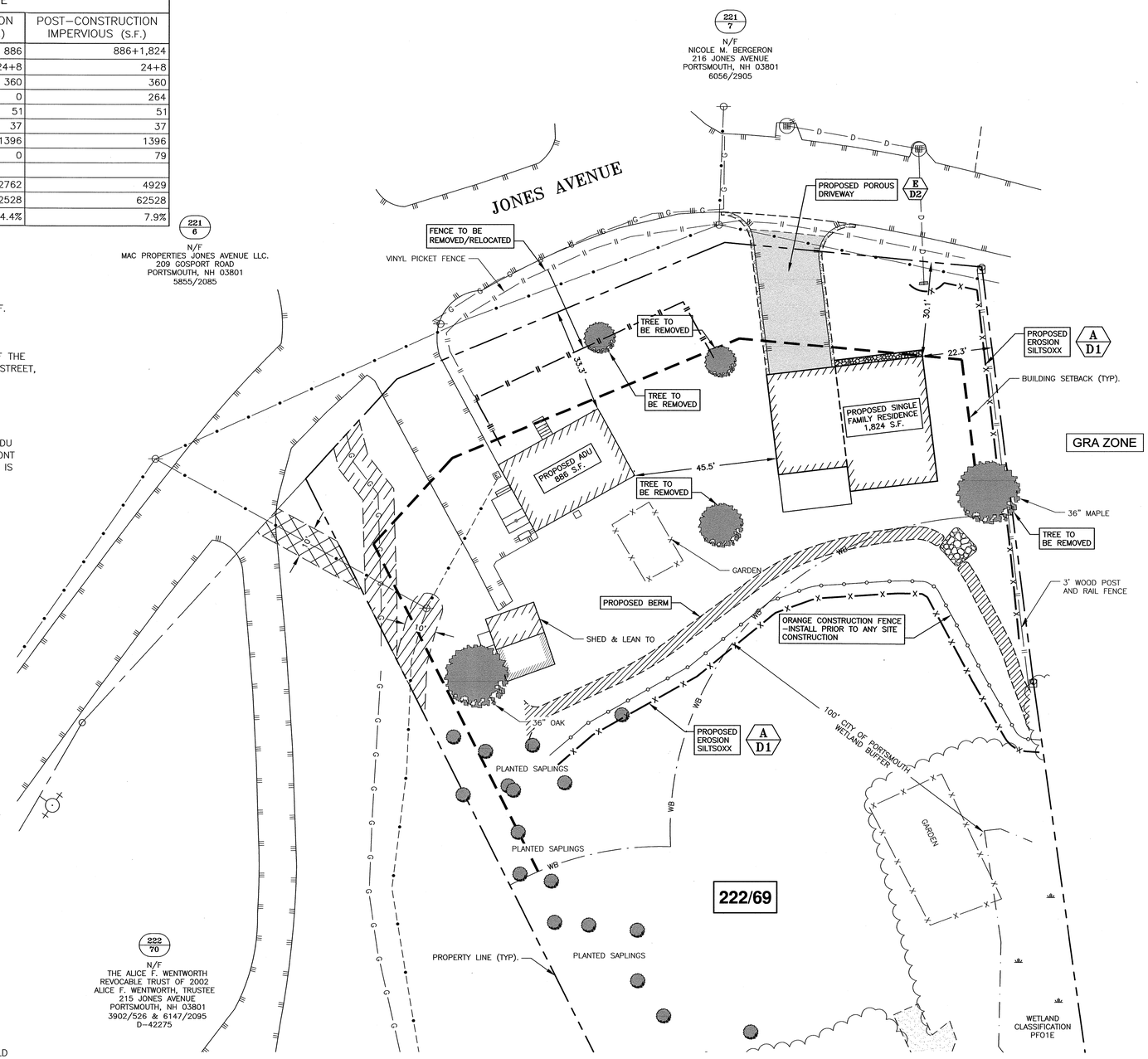
PROPOSED WAIVERS:

WAIVER FROM SECTION 10.814.52 TO PERMIT 886 S.F. TOTAL GROSS FLOOR AREA WHERE 750 S.F. IS THE MAXIMUM ALLOWED.

WAIVER FROM SECTION 10.814.53 TO PERMIT 42% OF THE COMBINED VISIBLE FAÇADE AREAS FACING THE SAME STREET, WHERE 40% IS THE MAXIMUM ALLOWED.

DADU FACADE: 36.4'
PRIMARY STRUCTURE FACADE: 50.0'

WAIVER FROM SECTION 10.814.55 TO PERMIT THE DADU FRONT WALL TO BE SET BACK 3.2 FT FROM THE FRONT SETBACK OF THE PRIMARY STRUCTURE WHERE 10 FT IS THE MINIMUM ALLOWED.



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."

3.20.22
JOHN R. CHAGNON, LLS DATE

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 222 AS LOTS 69.

2) OWNER OF RECORD:
DONALD LOWELL STICKNEY III
213 JONES AVENUE
PORTSMOUTH, NH 03801
5754/2748 & 6147/2092
D-42275

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0270F. EFFECTIVE JANUARY 29, 2021.

4) EXISTING LOT AREA:
62,528 S.F.
1.4354 ACRES

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6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	15,000 S.F.
FRONTAGE:	100 FEET
SETBACKS:	
FRONT	30 FEET
SIDE	10 FEET
REAR	30 FEET
MAXIMUM STRUCTURE HEIGHT:	35 FEET
MAXIMUM BUILDING COVERAGE:	20%
MINIMUM OPEN SPACE:	40%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 222 LOT 69 IN THE CITY OF PORTSMOUTH.

8) VERTICAL DATUM IS NAVD88 (MEAN SEA LEVEL). BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

PROPOSED DADU
213 JONES AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ADD BERM; ELIMINATE POND	3/20/22
0	ISSUED FOR COMMENT	2/11/22

REVISIONS

JOHN R. CHAGNON NO. 7651 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

SCALE: 1" = 20' FEBRUARY 2022

CUP DADU SITE PLAN

C2

FB 324 PG 60

531.01

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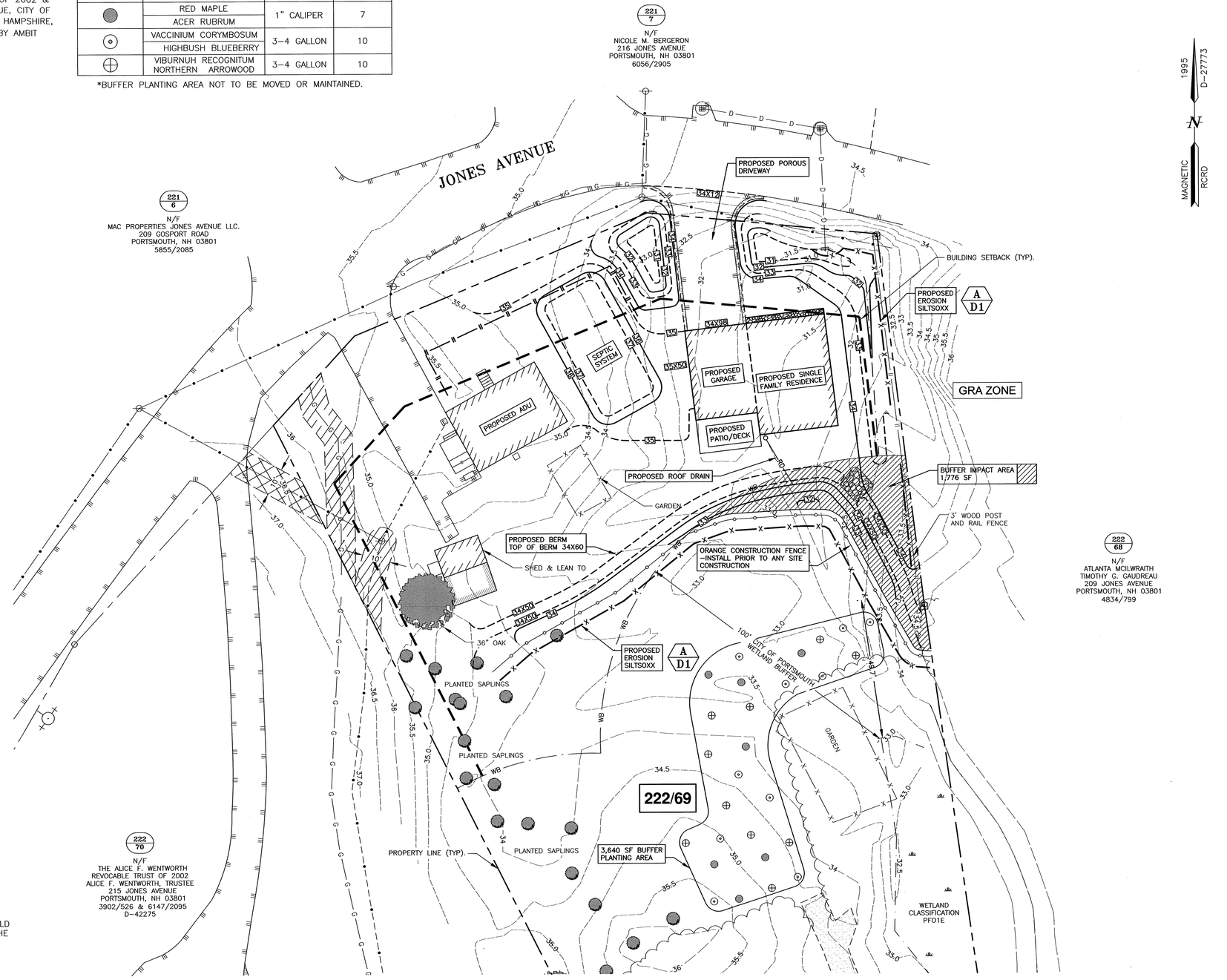
REFERENCE PLAN:

1) LOT LINE RELOCATION PLAN TAX MAP 222 – LOTS 69 & 70, OWNERS: THE ALICE F. WENTWORTH REVOCABLE TRUST OF 2002 & DONALD LOWELL STICKNEY III, 213 & 215 JONES AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1" = 40', DATED NOVEMBER 2019, PREPARED BY AMBIT ENGINEERING, INC., RCRD D–42275

BUFFER PLANTING SCHEDULE

SYMBOL	ITEM	SIZE	QTY
●	RED MAPLE	1" CALIPER	7
	ACER RUBRUM		
⊙	VACCINIUM CORYMBOSUM	3–4 GALLON	10
	HIGHBUSH BLUEBERRY		
⊕	VIBURNUH RECOGNITUM NORTHERN ARROWOOD	3–4 GALLON	10

*BUFFER PLANTING AREA NOT TO BE MOVED OR MAINTAINED.



GRAPHIC SCALE

10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR
NO. 738
JOHN R. CHAGNON
SIGNATURE

"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."

3.30.22

JOHN R. CHAGNON, LLS — DATE

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN — DATE

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 222 AS LOTS 69.

2) OWNER OF RECORD:
DONALD LOWELL STICKNEY III
213 JONES AVENUE
PORTSMOUTH, NH 03801
5754/2748 & 6147/2092
D–42275

3) 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.

4) 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.

5) 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).

6) PLANTING AND MAINTENANCE SHALL BE IN ACCORDANCE WITH NOFA STANDARDS FOR ORGANIC LAND USE.

7)THE PURPOSE OF THIS PLAN IS TO SHOW THE WETLAND BUFFER IMPACT ON ASSESSOR'S MAP 222 LOT 69 IN THE CITY OF PORTSMOUTH.

8) VERTICAL DATUM IS NAVD88 (MEAN SEA LEVEL). BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. (CONTOUR INTERVAL 0.5')

PROPOSED DADU
213 JONES AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ADD BERM, BUFFER PLANTING AREA	3/30/22
0	ISSUED FOR COMMENT	2/11/22

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7851
LICENSED
PROFESSIONAL ENGINEER

SCALE: 1" = 20'

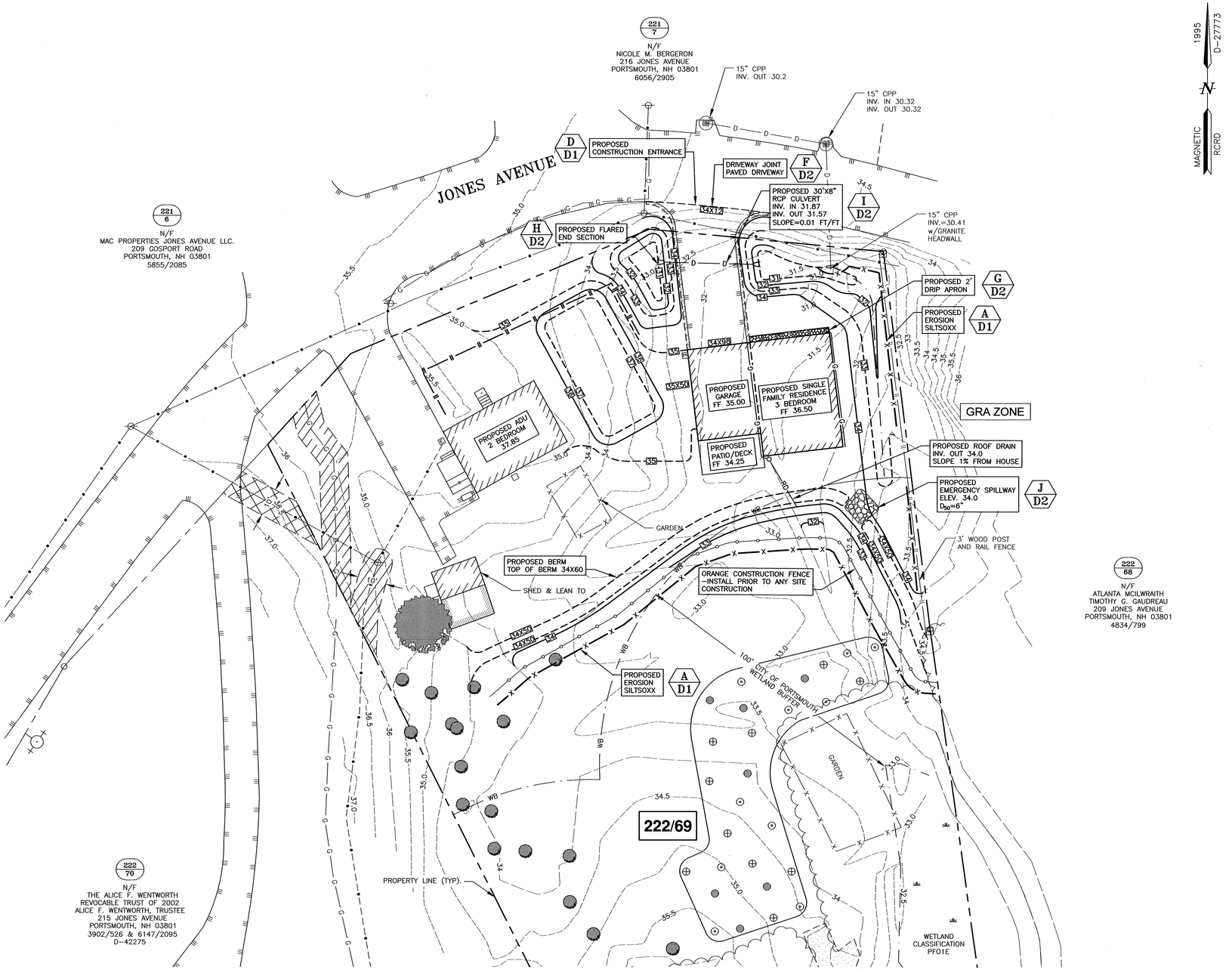
CUP WETLANDS SITE PLAN

C3

FB 324 PG 60

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GRAPHIC SCALE

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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."

3.30.22

JOHN R. CHAGNON, LLS — DATE

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN — DATE

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

NOTES:

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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) PLANTING AND MAINTENANCE SHALL BE IN ACCORDANCE WITH NOFA STANDARDS FOR ORGANIC LAND USE.

PROPOSED DADU
213 JONES AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ADD BERM	3/30/22
0	ISSUED FOR COMMENT	2/11/22

REVISIONS

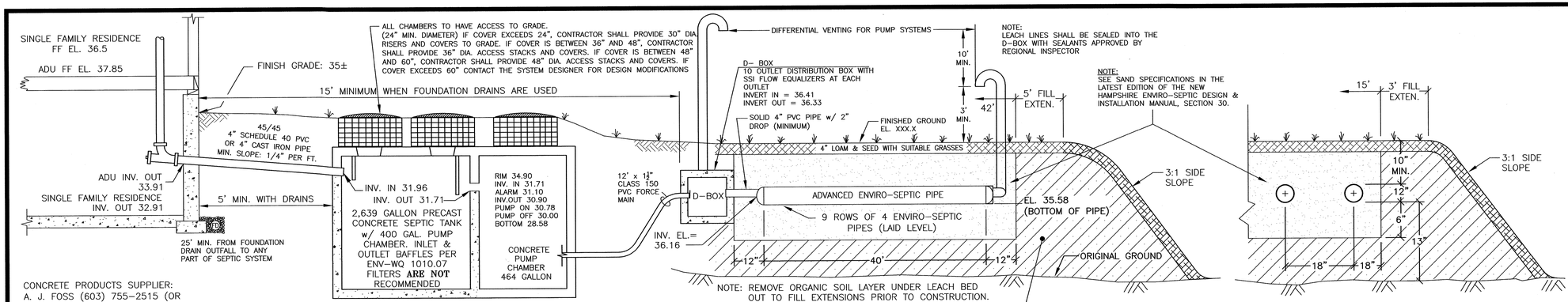
JOHN R. CHAGNON NO. 7851 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: 1" = 20'

GRADING, DRAINAGE & EROSION CONTROL PLAN — C4

FB 324 PG 60 — 531.01

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COLLECTION SYSTEM PROFILE

NTS

LEACH FIELD PROFILE

NTS

LEACH FIELD SECTION

NTS

CONCRETE PRODUCTS SUPPLIER:
A. J. FOSS (603) 755-2515 (OR APPROVED EQUAL)

LEGEND:

100	EXISTING CONTOUR
100	PROPOSED CONTOUR
TP	TEST PIT
PT	PERC TEST
ST	SEPTIC TANK
FF	FINISH FLOOR
INV.	INVERT
MIN.	MINIMUM
FD	FOUNDATION DRAIN

MINIMUM DISTANCES:
(UNLESS OTHERWISE GOVERNED BY LOCAL CODE)

SURFACE WATER TO:
TANK 75' – FIELD 75'
PRIVATE WELL TO:
TANK 75' – FIELD 75'
PRESSURE WATER LINE TO:
TANK 10' – FIELD 25'
SUCTION WATER LINE TO:
TANK 50' – FIELD 50'
PROPERTY LINE TO:
TANK 10' – FIELD 10'

HYDRAULIC CALCULATIONS:
PROPOSED FLOW: 750 GPD
FLOW PER DOSE: 750/10 = 75 GALLONS PER DOSE
REQUIRED STORAGE WITH PUMP CHAMBER STATION: 0.78'
HEAD LOSS CALCULATION:
STATIC HEAD + FRICTION HEAD
(36.41 – 30.0) + (0.12 x 4.01) = 6.89'
USE MEYERS SSM33 EFFLUENT PUMP
PUMP RUN TIME AT TDH = 75 GAL./30 GPM = 2.5 MINUTES

TEST PIT #1

Date:	10/28/21
Logged by:	STEVE RIKER
ESHWT:	17"
Observed Water:	22"
Restrictive layer:	23"
REFUSAL:	NONE TO 48"
Percolation rate:	16 min./inch

DEPTH	DESCRIPTION
0" – 17"	10YR 3/2 FSL, 6, F
17" – 23"	10YR 4/2 FSL, 6, F
23" – 48"	2.5YR 5/2 LOAMY CLAY, FIRM, MASSIVE

TEST PIT #2

Date:	10/28/21
Logged by:	STEVE RIKER
ESHWT:	17"
Observed Water:	NONE
Restrictive layer:	21"
REFUSAL:	NONE TO 53"
Percolation rate:	16 min./inch

DEPTH	DESCRIPTION
0" – 17"	10YR 3/2 FSL, 6, F
17" – 21"	10YR 4/2 FSL, 6, F
21" – 53"	2.5YR 5/2 LOAMY CLAY, FIRM, MASSIVE

SPACE RESERVED FOR N.H.D.E.S.

REVIEWED AND APPROVED
IN ACCORDANCE WITH THE REQUIREMENTS OF THE NH DEPT OF ENVIRONMENTAL SERVICES
WATER DIVISION
Date: 4/27/2022
#eCA2022042709

DESIGN INTENT:
THE PURPOSE OF THIS DESIGN IS TO MAINTAIN 2.5' ABOVE SEASONAL HIGH WATER TABLE & 2.5' ABOVE LEDGE OR ANY IMPERMEABLE SUBSTRATUM BY CONSTRUCTING THE BOTTOM OF THE PIPE AT ELEVATION 35.58 WHICH IS 13" ABOVE EXISTING GROUND AT THE HIGHEST POINT. (HP 34.5)

UTILITY 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.

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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)".

LOT LOADING CALCULATIONS (NHDES):

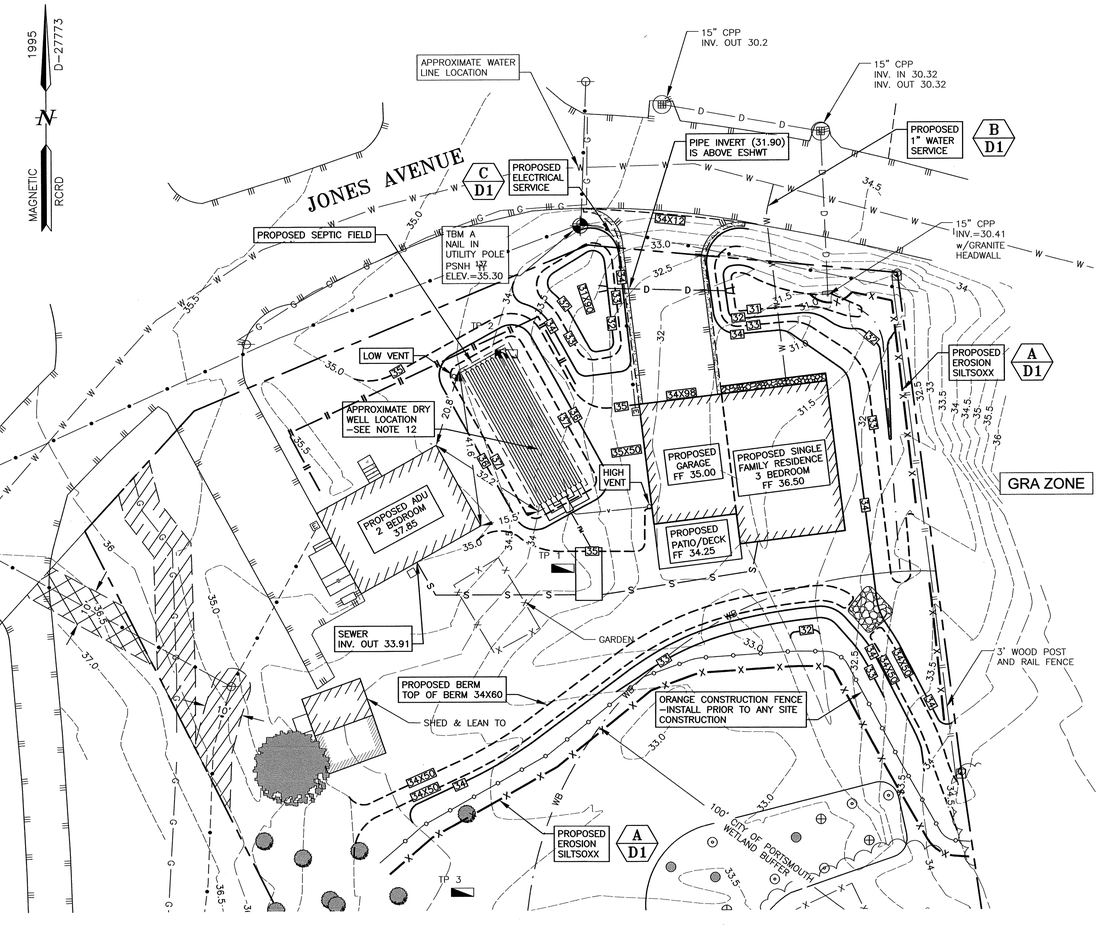
EXISTING LOT:
LOT SIZE: 62,528 S.F., 1.4354 ACRES
AREA OF WETLAND ON LOT: 11,542 S.F.
USABLE LOT AREA: 50,986 S.F.

ALLOWABLE LOADING:
((50,986/43,560)X2000)/1.76 = 1,330GPD

NOTE:
1/2' CONTOUR INTERVAL SHOWN

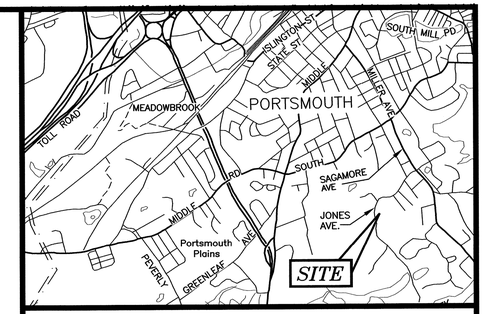
NEW HAMPSHIRE
Designer of Subsurface Disposal Systems
John R. Chagnon No. 785
Department of Environmental Services

THIS IS A DESIGN FOR AN ADVANCED ENVIRO-SEPTIC TREATMENT SYSTEM. ADVANCED ENVIRO-SEPTIC TREATMENT SYSTEMS ARE APPROVED BY NHDES AS AN ITA IN ACCORDANCE WITH PART Env-Ws 1024.08(c) AND 1024.10. THE SYSTEM IS DESIGNED IN ACCORDANCE WITH THE ADVANCED ENVIRO-SEPTIC DESIGN AND INSTALLATION MANUAL, NEW HAMPSHIRE EDITION. FOR INFORMATION, CALL 1-800-473-5298.



GRAPHIC SCALE
10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

Wetlands were delineated on the basis of hydrophytic vegetation, hydric soils and wetland hydrology in accordance with the techniques outlined in the "Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1", January 1987. The hydric soil component was determined by using the "Field Indicators for Identifying Hydric Soils in New England, Version 3", NEIWPCC Wetlands Work Group (April 2004).



LOCATION MAP 1" = 2000'

GRA ZONE

NOTES:

1) PROPOSED FLOW: PROPOSED 3 BEDROOM RESIDENCE & 2 BEDROOM ADU.
5 BEDROOMS TOTAL:
5 BEDROOMS X 150 GPD = 750 GPD
2) PROPOSED FIELD SIZE: AT 16 MINUTE PERC
CONVENTIONAL EFFLUENT DISPOSAL AREA: 1,688 S.F.
ADVANCED ENVIRO-SEPTIC REQUIRED LENGTH: 350 FEET
360 FEET OF ENVIRO-SEPTIC PIPE PROVIDED.
3) THIS PLAN IS PREPARED FOR SEPTIC SYSTEM DESIGN ONLY, IT IS NOT A BOUNDARY SURVEY.
4) FOUNDATION DRAINS: NONE PROVIDED
5) FLOOD HAZARD: LOT IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270F. EFFECTIVE JANUARY 29, 2021.
6) ANY CHANGES TO THE SPECIFICATIONS SHOWN HEREON SHALL BE SUBMITTED TO THE DESIGNER, IN WRITING, FOR APPROVAL PRIOR TO ANY CONSTRUCTION ON SAID CHANGES.
7) IN THE EVENT OF SYSTEM FAILURE: REBUILD IN PLACE.
8) WATER SUPPLY: CITY OF PORTSMOUTH
9) THE OWNER IS RESPONSIBLE TO OPERATE THIS SYSTEM WITHIN ITS DESIGN CAPACITY. THE AVERAGE DAILY FLOW TO THE LEACHFIELD SHOULD BE NO MORE THAN 1/2 ITS APPROVED DESIGN CAPACITY. FOR SUCCESSFUL OPERATION OF DISPOSAL SYSTEM, MAINTENANCE IS REQUIRED.
   - HAVE TANK PUMPED AS REQUIRED (3 YEAR MAXIMUM).
   - DO NOT DISPOSE BULKY WASTES, TOXIC MATERIALS, OR OIL INTO SYSTEM.
   - DO NOT DISPOSE GREASE INTO THE SYSTEM. CLEAN SEPTIC TANK FILTER WHEN PUMPING TANK.
   - DO NOT ALLOW VEHICLES OR LIVESTOCK ONTO SYSTEM UNLESS SPECIFICALLY DESIGNED FOR SUCH LOADS.
   - DO NOT USE COLORED TOILET PAPER.
   - CONSULT THE SYSTEM DESIGNER PRIOR TO PLACING ANY ADDITIONAL LOADING ON THE SYSTEM, SUCH AS: KITCHEN GARBAGE GRINDERS, HOT TUBS, WHIRLPOOLS, OR BACKWASH SYSTEMS.
10) THIS SEPTIC SYSTEM SHALL BE INSTALLED BY OR UNDER THE SUPERVISION OF A NHDES LICENSED INSTALLER. INSTALLER IS RESPONSIBLE FOR PLACING THE LEACH FIELD IN LOCATION SHOWN ON THIS PLAN, USING TIES PROVIDED. ANY DISCREPANCY BETWEEN THESE PLANS AND THE APPARENT FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGNER PRIOR TO CONSTRUCTION. SYSTEM MUST BE INSPECTED AND APPROVED BY NH-DES PRIOR TO BACKFILLING.
11) CONSTRUCTION APPROVAL FOR THIS SYSTEM SHALL EXPIRE 4 YEARS FROM DATE OF ISSUE.
12) EXITING DRY WELL AND SEPTIC SYSTEM SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH NHDES RULES AND REGULATIONS.

SOIL TYPE: 140B CHATFIELD-HOLLIS-CANTON & UDORTHENTS

BENCHMARK: SPIKE SET IN UTILITY POLE PSNH
DATUM: NAVD88 ELEV. 35.30

DISTANCE TO NEAREST SURFACE WATER: GREATER THAN 100'

DIRECTIONS TO SITE

FROM THE PORTSMOUTH TRAFFIC CIRCLE, EXIT THE TRAFFIC CIRCLE ONTO US-1 BYP S, TURN LEFT ONTO GREENLEAF AVE, SLIGHT LEFT ONTO LAFAYETTE RD, TURN RIGHT ONTO SOUTH ST, TURN RIGHT ONTO BROAD ST, TURN RIGHT ONTO JONES AVE, DESTINATION WILL BE ON THE LEFT.

PROPOSED DETACHED DADU
TAX MAP 222 LOT 69 SUBSURFACE DISPOSAL SYSTEM PLAN
213 JONES AVE, PORTSMOUTH, NH

REGISTRY: ROCKINGHAM
BOOK / PAGE: 5754/2748 & 6147/2092
NHDES SUBDIVISION APPROVAL NO.: PRE 1967
NHDES SYSTEM APPROVAL NO.: PENDING

OWNER: DONALD LOWELL STICKNEY III
213 JONES AVENUE
PORTSMOUTH, NH 03801

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

REVISED: 4/27/22
SCALE : AS SHOWN DATE : FEBRUARY 2022

C5

FB 324 PG 60 JOB 531.01

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CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILTSOXX AROUND THE LIMITS OF DISTURBANCE AND DRAINAGE CONSTRUCTION FENCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

CUT BRUSH AND TREES AS REQUIRED. STUMP SITE AND CLEAR TOPSOIL.

INSTALL FOUNDATION AND BACKFILL; ROUGH GRADE DRIVEWAY

ROUGH GRADE SITE, PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.

CONSTRUCT BUILDING & SEPTIC SYSTEM.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

FINISH ALL REMAINING LANDSCAPE WORK.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

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.

DUST CONTROL: 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.

SILT FENCES AND SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS—-CONSTRUCT SILT FENCE OR SILTSOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

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.

NOFA STANDARDS FOR ORGANIC LAND CARE

*REFERENCE NOFA STANDARDS FOR ORGANIC LAND CARE MANUAL FOR ALL LAND CARE PRACTICES AT THIS SITE.

NEW LAWN INSTALLATION

-ORDER OF PROCESSES:
1. SOIL TESTING. SOIL TYPE PREFERRED IS CLOSE TO NEUTRAL PH AND HAS A BALANCED FUNGAL TO BACTERIAL RATIO.
2. PLANTING BED PREPARATION WITH SOIL AMENDMENTS AS SPECIFIED BY SOIL TEST RESULTS.
3. SEEDING WITH AN APPROPRIATE MIX OF SEEDS BY HAND, USING A SPREADER OR SEED DRILLER, OR BY ORGANIC HYDROSEEDING.
4. WATERING FREQUENTLY BUT SHALLOWLY, MAINTAINING A "UNIFORMLY MOIST" SEEDBED DURING GERMINATION AND ESTABLISHMENT.

LAWN MAINTENANCE

-GRASS SHOULD BE ALLOWED TO GROW 3" OR TALLER IN HEIGHT PRIOR TO FIRST MOWING. GRASS CLIPPINGS SHOULD BE LEFT IN PLACE.
-REMOVE NO MORE THAN ⅓ OF GRASS LENGTH PER MOWING.

FERTILIZING

-ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

EROSION CONTROL NOTES

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:
LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO
THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	
SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)		
CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT. PER CITY OF PORTSMOUTH ZONING ORDINANCE, ARTICLE 10.1018.24 FERTILIZERS: THE USE OF ANY FERTILIZER IS PROHIBITED IN A WETLAND, VEGETATED BUFFER STRIP OR LIMITED CUT AREA; AND THE USE OF FERTILIZERS OTHER THAN LOW PHOSPHATE AND SLOW RELEASE NITROGEN FERTILIZERS IS PROHIBITED IN ANY PART OF A WETLAND BUFFER. ORGANIC FERTILIZERS ONLY. OMRI CERTIFIED PRODUCTS (ORGANIC MATERIALS REVIEW INSTITUTE) ARE PREFERRED.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

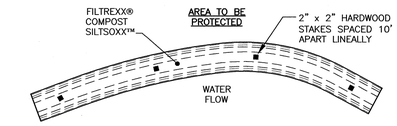
SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, 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% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

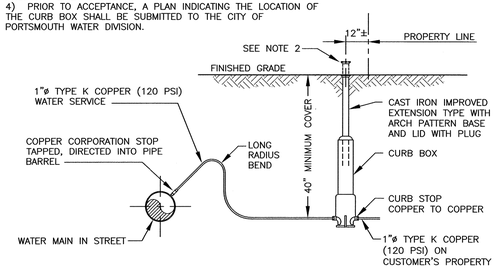
AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A/C4 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
NTS

NOTE:
1) INSTALLATION OF WATER MAIN TAP & CURB STOP & BOX SHALL ONLY BE PERFORMED BY THOSE AUTHORIZED BY THE PUBLIC WORKS DEPARTMENT.
2) IN AREAS OF HEAVY GROWTH THE CURB BOX COVER SHALL BE SET 6" ABOVE FINISH GRADE AND A WITNESS STAKE SET.
3) CURB BOX SHALL BE SET APPROXIMATELY 12" OUTSIDE PROPERTY LINE AS SHOWN.
4) PRIOR TO ACCEPTANCE, A PLAN INDICATING THE LOCATION OF THE CURB BOX SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH WATER DIVISION.



B/C5 WATER SERVICE CONNECTION
NTS

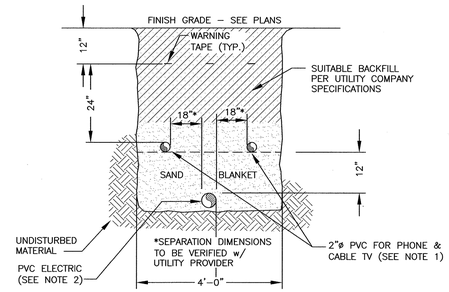
NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCHED. 40 FOR THE REMAINDER.

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.

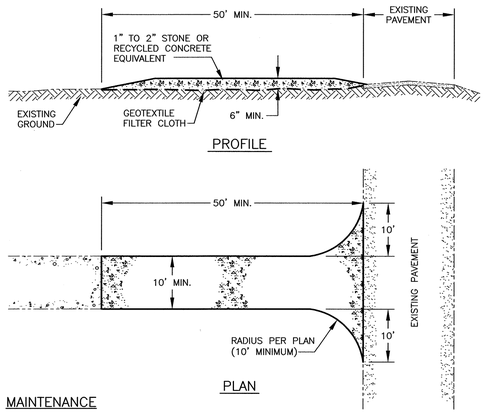
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)

4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT

5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANY'S PRIOR TO ANY CONSTRUCTION.



C/C5 BURIED ELEC/COMM CABLE
NTS



MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3) THE 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 CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE 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 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 PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

D/C4 STABILIZED CONSTRUCTION ENTRANCE
SUBSTITUTE FODS IF DESIRED
NTS

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

NOTES:

1) 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.

2) 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.

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).

PROPOSED DADU
213 JONES AVENUE
PORTSMOUTH, NH

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	2/11/22

REVISIONS



SCALE: AS SHOWN FEBRUARY 2022

EROSION NOTES & DETAILS

D1

FB 324 PG 60

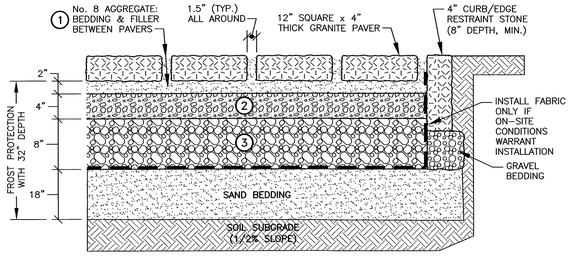
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J:\JOBS\JN500s\JN530s\JN531s\2021 ADU\Plans & Specs\Site\531.01 Details 2022.dwg, 2/23/2022 10:18:15 AM, Canon TX-3000.pc3

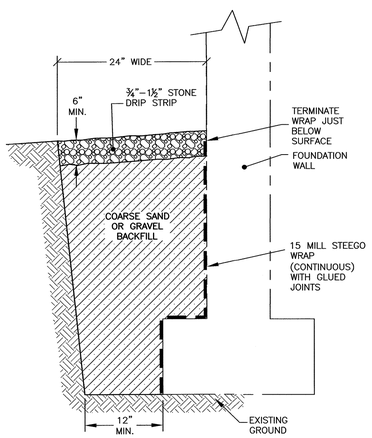
ASTM D 448 GRADATION TABLE

①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85–100	1" (25mm)	95–100	2.5" (63mm)	90–100
No. 4 (4.75mm)	10–30	1/2" (12.5mm)	25–60	2" (50mm)	35–70
No. 8 (2.36mm)	0–10	No. 4 (4.75mm)	0–10	1.5" 37.5mm)	0–15
No. 16 (1.16mm)	0–5	No. 8 (2.36mm)	0–5	3/4" (19mm)	0–5

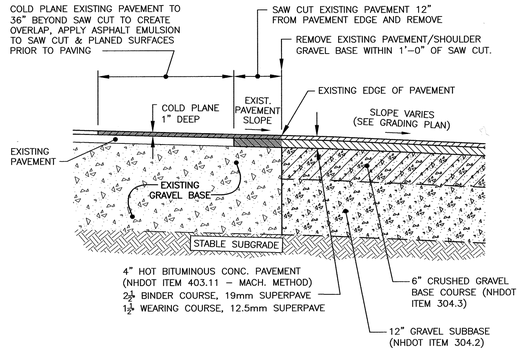
NOTES:
1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO–STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.
4) CONTRACTOR SHALL SUBMIT PROPOSED PAVER BLOCK TO PROJECT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.



E / C2 POROUS DRIVEWAY SECTION
NTS

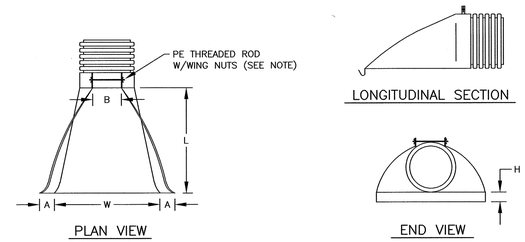


G / C4 STONE DRIP APRON (UNDER BUILDING DRIP LINE) NTS



NOTES:
1) PAVEMENT SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS – SECTION 401.
2) CRUSHED GRAVEL AND GRAVEL SUBBASE SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS – SECTION 304, TABLE 1E, AND SHALL BE COMPACTED AS INDICATED IN SECTION 304, 3.6 COMPACTION, AND 3.7 DENSITY TESTING, AND CITY OF PORTSMOUTH CONSTRUCTION STANDARDS, SECTION VIII B AND C.

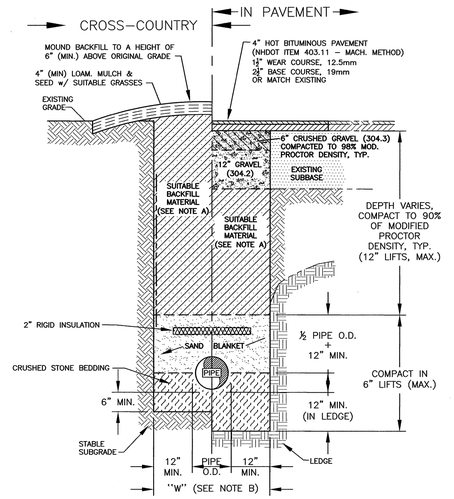
F / C4 PAVEMENT / PAVEMENT JOINT DETAIL
NTS



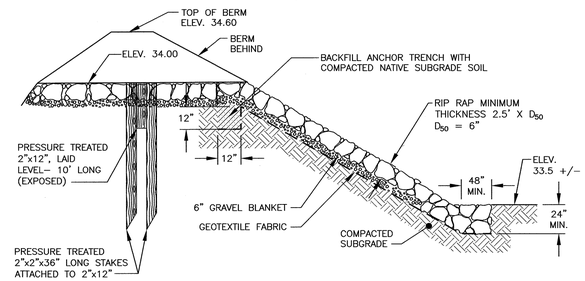
PART NO.	PIPE SIZE	A	B (MAX)	H	L	W
1210–NP	12" / 300 mm	6.5" / 165mm	10" / 254mm	6.5" / 165mm	25" / 635mm	29" / 735mm
1210–NP	15" / 375 mm	6.5" / 165mm	10" / 254mm	6.5" / 165mm	25" / 635mm	29" / 735mm
1810–NP	18" / 450 mm	7.5" / 190mm	15" / 380mm	6.5" / 165mm	32" / 812mm	35" / 890mm
2410–NP	24" / 600 mm	7.5" / 190mm	18" / 450mm	6.5" / 165mm	36" / 900mm	45" / 1140mm
3012–NP	30" / 750 mm	10.5" / 266mm	N/A	7.0" / 178mm	53" / 1345mm	68" / 1725mm
3612–NP	36" / 900 mm	10.5" / 266mm	N/A	7.0" / 178mm	53" / 1345mm	68" / 1725mm

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"–24", 30" & 36" END SECTIONS TO BE WELDED TO PIPE PER MANUFACTURERS RECOMMENDATIONS.

H / C4 ADVANCED DRAINAGE SYSTEM (ADS) FLARED END SECTION
OR APPROVED EQUAL NTS



I / C4 TYPICAL DRAINAGE PIPE TRENCH



J / C4 EMERGENCY SPILLWAY SECTION
NTS

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

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) PURSUANT TO RSA 483–B:9 11 (D), NO FERTILIZER SHALL BE APPLIED TO VEGETATION OR SOILS LOCATED WITHIN 25 FEET OF THE REFERENCE LINE OF ANY PUBLIC WATER. BEYOND 25 FEET, SLOW OR CONTROLLED RELEASE FERTILIZER MAY BE USED. SLOW RELEASE NITROGEN MUST CONTAIN NO MORE THAN 2% PHOSPHORUS, AND A NITROGEN COMPONENT WHICH IS AT LEAST 50% SLOW RELEASE NITROGEN COMPONENTS.

5) NO CHEMICALS INCLUDING PESTICIDES OR HERBICIDES OF ANY KIND, SHALL BE APPLIED TO GROUND, TURF, OR ESTABLISHED VEGETATION WITHIN THE WETLAND BUFFER, EXCEPT IF APPLIED BY HORTICULTURE PROFESSIONAL WHO HAVE AN APPLICATION LICENSE. NO CALCIUM CHLORIDE SHALL BE APPLIED WITHIN THE WETLAND BUFFER.

PROPOSED DADU
213 JONES AVENUE
PORTSMOUTH, NH

NO.	DESCRIPTION	DATE
1	DETAIL E, J	3/30/22
0	ISSUED FOR COMMENT	2/11/22

REVISIONS

STATE OF NEW HAMPSHIRE – JOHN R. CHAGNON NO. 9861 – LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN FEBRUARY 2022

DETAILS **D2**

FB 324 PG 60

531.01

J:\OBS\JNS00s\JNS30s\JNS31\2021 ADU\Plans & Specs\Site\531.01 Details 2022 REVISED.dwg 3/29/2022 1:16:59 PM, Canon TX-3000.pc3

W5008-008A
April 27, 2022

Mr. Rick Chellman, Chairman
City of Portsmouth Planning Board
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: Amended Site Review Permit Application
Proposed Building Expansion, 2454 Lafayette Road, Portsmouth, NH

Dear Chairman Chellman:

On behalf of 2422 Lafayette Road Associates, LLC (owner/applicant), we are pleased to submit one (1) set of hard copies of the following information to support a request for an Amended Site Review Permit for the above referenced project:

- One (1) full size & one (1) half size copy of the Site Plan Set, last revised April 27, 2022;
- TAC Comment Response Report, dated April 27, 2022;
- Amended Site Plan Overlay Exhibit, dated March 22, 2022;
- Fire Truck Turning Exhibit, last revised April 27, 2022;
- Trip Generation Letter, date April 8, 2022;
- Proposed Building Elevations, prepared by Landry Architects

The proposed project is located at 2454 Lafayette Road on properties identified as Map 273 Lot 3 on the City of Portsmouth Tax Maps and is located in the Gateway Neighborhood Mixed Use Corridor, G1 District. The existing parcel is approximately 18.7 acres and is bound by an access drive for Water County to the north, Water Country property to the east, Route One (Lafayette Road) to the south and Constitution Avenue to the west.

The proposed project will amend the commercial pad along the eastern property line of the site which was previously approved in October 2012 and constructed in 2013. The Portsmouth Green site previously received an additional Site Plan approval from the Planning Board in April 2016 for the construction of a 4-story residential building in the rear of the site and two (2) new commercial pads in the plaza's existing front parking lot. The residential building was completed in the fall of 2017. The project site received an Amended Site Plan approval from the Planning Board in December 2018 for the commercial pads near the entrance to the plaza. Construction of those commercial spaces was completed in 2020. Site Plan approval was also granted from the Planning Board in December 2021 for the demolition of the existing cinema and the construction of a 5-story residential building.

The enclosed Amended Site Plan package includes the demolition of the existing 1,833 SF diner located at the end of the eastern commercial building and replacing it with 3,650 SF of retail space. The proposed retail space will be divided into two separate spaces to accommodate two new tenants. In addition to the pad revision, the enclosed Site Plans reconfigure the sidewalk adjacent to the new retail spaces, relocate five (5) bicycle racks previously approved and constructed adjacent to the diner, and reroute the existing sewer line around the proposed retail pad.

Also enclosed is an Amended Site Plan Overlay Exhibit with the current proposed site revisions (in red) overlaid on the prior approved layout (in black). This amended proposal will result in a minor increase of impervious area from the prior approval by approximately 1,355 SF (±0.17% of the entire site). These changes have a negligible impact on the existing stormwater management system that treats and infiltrates the runoff generated by the plaza. Peak runoff rates in the Post Development stormwater calculations that were previously prepared for the project do not change.

We respectfully request to be placed on the Planning Board meeting agenda for May 19, 2022. If you have any questions or need any additional information, please contact Neil Hansen by phone at (603) 294-9213 or by email at nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Neil A. Hansen, PE
Project Manager

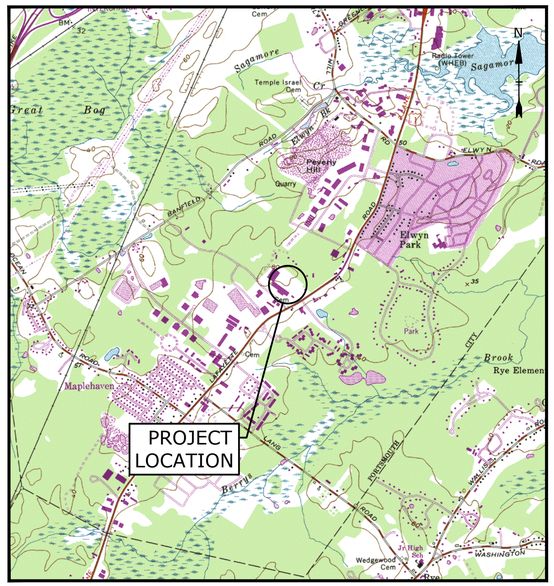
Patrick M. Crimmins, PE
Vice President

Cc: 2422 Lafayette Road Associates, LLC (via e-mail)

PORTSMOUTH GREEN
PROPOSED BUILDING EXPANSION

PORTSMOUTH, NEW HAMPSHIRE
AMENDED SITE PLAN DRAWINGS
MARCH 22, 2022
LAST REVISED: APRIL 27, 2022

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	04/27/2022
C-101	OVERALL APPROVED PLAZA PLAN	04/27/2022
C-101.1	EXISTING CONDITIONS / DEMOLITION PLAN	04/27/2022
C-102	OVERALL PROPOSED PLAZA PLAN	04/27/2022
C-102.1	SITE PLAN	04/27/2022
C-103	GRADING, DRAINAGE, EROSION CONTROL & UTILITIES PLAN	04/27/2022
C-501	EROSION CONTROL NOTES & DETAILS SHEET	04/27/2022
C-502	DETAILS SHEET	04/27/2022
C-503	DETAILS SHEET	04/27/2022



LOCATION MAP
SCALE: 1" = 2,000'

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

PREPARED BY:

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

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS - No. 12378 - LICENSED PROFESSIONAL ENGINEER - 4/27/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN - No. 15227 - LICENSED PROFESSIONAL ENGINEER - 4/27/22

OWNER:
2422 Lafayette Road Associates, LLC
c/o Waterstone Retail Development
250 First Avenue, Suite 202
Needham, Massachusetts 02494

SURVEY CONSULTANT:
Doucet Survey, Inc.
102 Kent Place
Newmarket, NH 03110

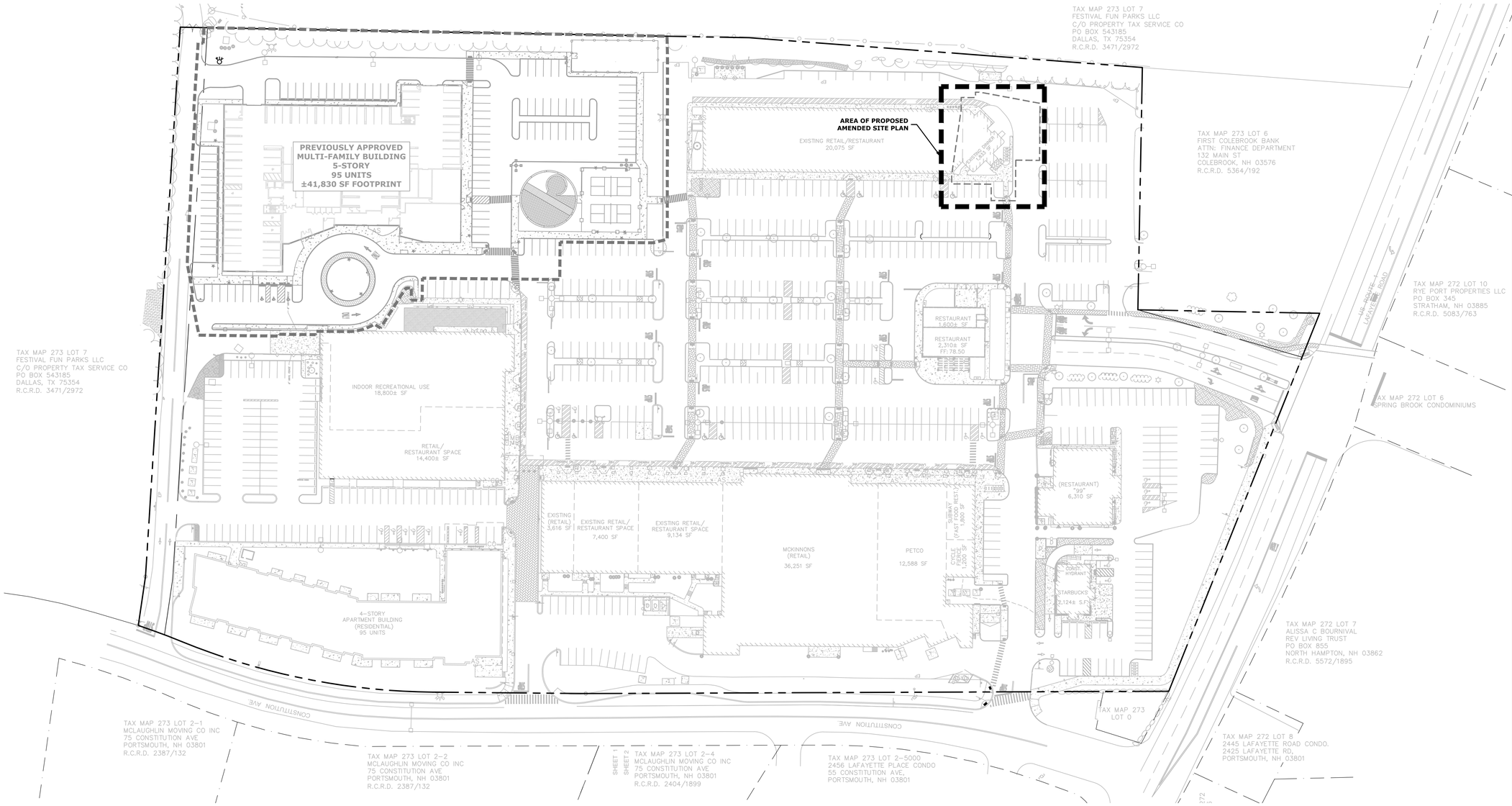
APPLICANT:
Waterstone Properties Group, Inc.
250 First Avenue, Suite 202
Needham, Massachusetts 02494

ARCHITECT:
Landry Architects, LLC
200 International Drive,
Suite 150
Portsmouth, NH 03801

PB SUBMISSION
COMPLETE SET 9 SHEETS

811 DigSafe MA-ME-NH-RI-VT

Last Save Date: April 25, 2022, 8:06 AM By: NAHANSEN
Plot Date: Monday, April 25, 2022 Plotted By: Neil A. Hansen
T&B File Location: J:\W\W5008 Waterstone Retail\008A - Portsmouth Green - Building 2 Expansion\Drawings, Figures\AutoCAD\Sheet\W5008-008A_C-CS.dwg Layout Tab: T&B_CS_22x34



EXISTING CONDITIONS PLAN NOTES:

1. **EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY PERFORMED BY DOUCET SURVEY INC. SEE REFERENCE PLANS.**
2. **HORIZONTAL DATUM BASED ON REFERENCE PLAN #5.**
3. **VERTICAL DATUM BASED ON REFERENCE PLAN #5.**

REFERENCE PLANS:

1. **"STANDARD BOUNDARY SURVEY MAP 273 - LOT 3 FOR LAYFAYETTE PLAZA, LLC" DATED FEBRUARY 2004 BY AMBIT ENGINEERING, INC. R.C.R.D. PLAN D-34306.**
2. **"CONDOMINIUM SITE PLAN OF PORTSMOUTH GREEN CONDOMINIUM FOR 2422 LAFAYETTE ROAD ASSOCIATES, LLC C/O WATERSTONE RETAIL, TAX MAP 273 LOT 3, 2454 LAFAYETTE ROAD (US ROUTE 1) PORTSMOUTH, NEW HAMPSHIRE" DATED OCTOBER 2016 BY DOUCET SURVEY, INC. TO BE RECORDED IN THE R.C.R.D.**
3. **"SOUTHGATE PLAZA RESIDENTIAL DEVELOPMENT, 2454 LAFAYETTE ROAD PORTSMOUTH NEW HAMPSHIRE SITE PLANS" DATED JANUARY 19, 2016 (REVISED SEPTEMBER 26, 2016) BY TIGHE & BOND CONSULTING ENGINEERS.**
4. **"PROPOSED EASEMENT PLAN" FOR 2422 LAFAYETTE ROAD ASSOCIATES, LLC C/O WATERSTONE RETAIL. DATED OCTOBER 26, 2016 BY DOUCET SURVEY, INC.**
5. **"TOPOGRAPHIC WORKSHEET OF PORTSMOUTH GREEN" FOR TIGHE & BOND, TAX MAP 273 LOT 3, 2454 LAFAYETTE ROAD (US ROUTE 1) PORTSMOUTH, NEW HAMPSHIRE" DATED DECEMBER 2017 BY DOUCET SURVEY, INC.**
6. **"AS-BUILT CONDOMINIUM SITE PLAN FOR 2422 LAFAYETTE ROAD ASSOCIATES, LLC OF PORTSMOUTH GREEN CONDOMINIUM, TAX MAP 273 LOT 3, 2454 LAFAYETTE ROAD (US ROUTE 1) PORTSMOUTH, NEW HAMPSHIRE" DATED AUGUST 25, 2020 BY DOUCET SURVEY, INC.**
7. **"PROPOSED MULTI-FAMILY DEVELOPMENT - PORTSMOUTH GREEN" SITE PLAN SET, COMPLETE SET 27 SHEETS, DATED AUGUST 5, 2021 (REVISED DECEMBER 8, 2021) PREPARED BY TIGHE & BOND CONSULTING ENGINEERS.**

Tighe&Bond

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STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
4/27/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
4/27/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
B	4/27/2022	PB Submission
A	3/22/2022	Amended Site Plan Review Submission

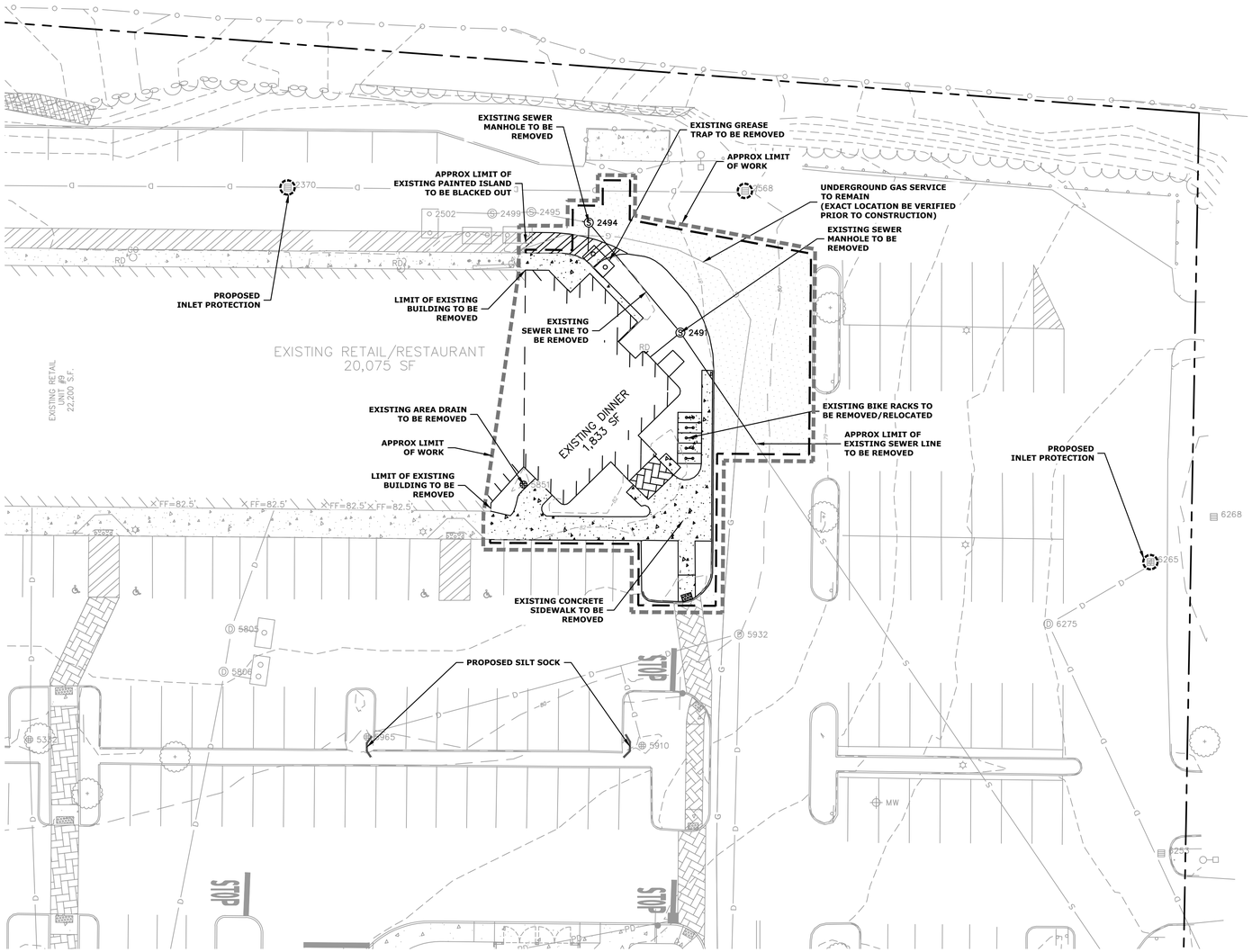
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DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

OVERALL APPROVED PLAZA PLAN

SCALE: AS SHOWN

C-101

Last Save Date: April 25, 2022 1:17 PM By: NAHANSEN
Plot Date: Tuesday, April 26, 2022 2:12 PM By: Neil A. Hansen
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LEGEND

- APPROXIMATE LIMIT OF PROPOSED SAW CUT
- LIMIT OF WORK
- PROPOSED SILT SOCK
- APPROXIMATE LIMIT OF PAVEMENT TO BE REMOVED
- PROPOSED CONSTRUCTION EXIT
- BUILDING TO BE REMOVED
- LOCATION OF PROPOSED BUILDING
- INLET PROTECTION SILT SACK

TBR	TO BE REMOVED
BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE

DEMOLITION NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
3. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
4. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
5. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. SAW CUT AND REMOVE PAVEMENT ONE (1) FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.
10. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK.
11. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE, AND SERVICES ANY ON OR OFF-SITE STRUCTURE TO REMAIN. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
12. PAVEMENT REMOVAL LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT REMOVAL MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT REMOVAL PRIOR TO BID.
13. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE PADS, UTILITIES AND PAVEMENT WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, CURBS, LIGHTING, MANHOLES, CATCH BASINS, UNDER GROUND PIPING, POLES, STAIRS, SIGNS, FENCES, RAMPS, WALLS, BOLLARDS, BUILDING SLABS, FOUNDATION, TREES AND LANDSCAPING.
14. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.
15. PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS/CURB INLETS WITHIN CONSTRUCTION LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INLET PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN EVENT OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED OR SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER.
16. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING BUSINESS AND HOME SERVICES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, COMMUNICATION, FIRE PROTECTION, DOMESTIC WATER AND SEWER SERVICES. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES AND SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
17. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
18. THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
19. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL UTILITIES TO BE REMOVED AND PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.

Tighe&Bond

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STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 4/27/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 4/27/22

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
B	4/27/2022	PB Submission
A	3/22/2022	Amended Site Plan Review Submission

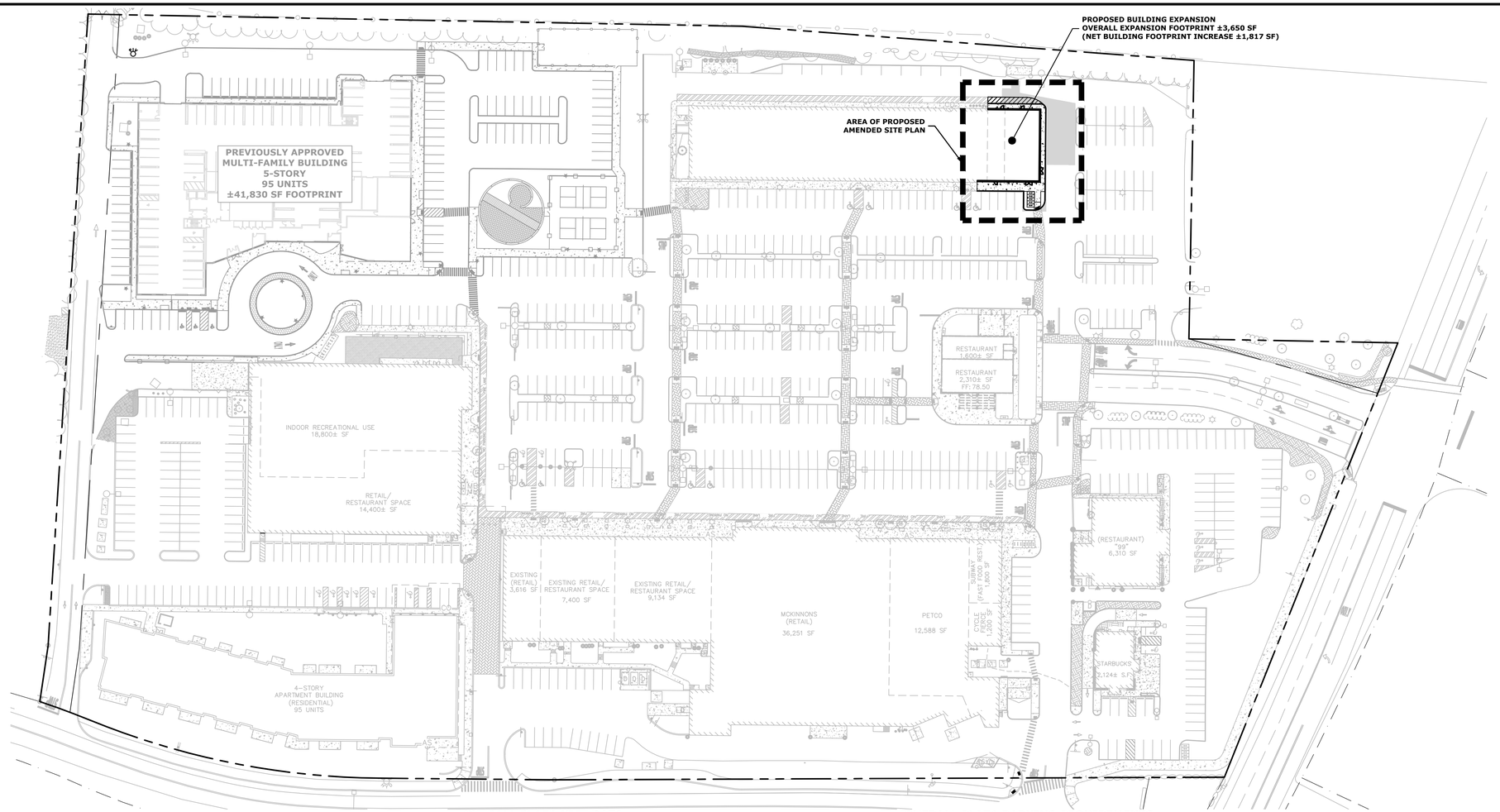
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FILE:	W5008-008A_C-DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: AS SHOWN

C-101.1

Last Save Date: April 25, 2022 1:17 PM By: NAHANSEN
Plot Date: Thursday, April 28, 2022 8:30 AM By: Neil A. Hansen
T&B File Location: I:\W\W5008 Waterstone Retail\008A - Portsmouth Green - Building 2 Expansion\Drawings, Figures\AutoCAD\Sheet\W5008-008A_C-DSGN.dwg Layout Tab: Exist



LEGEND

	PROPERTY LINE
	PROPOSED PROPERTY LINE
	PROPOSED EDGE OF PAVEMENT
	PROPOSED CURB
	PROPOSED BUILDING
	PROPOSED PAVEMENT SECTION
	PROPOSED CONCRETE SIDEWALK
	PROPOSED BRICK SIDEWALK
•	PROPOSED BOLLARD
BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE
30'R	PROPOSED CURB RADIUS
VGC	PROPOSED VERTICAL GRANITE CURB
SGC	PROPOSED SLOPED GRANITE CURB

OVERALL PLAZA SITE DATA:

LOCATION: TAX MAP 273, LOT 3

OWNER: 2422 LAFAYETTE ROAD ASSOCIATES, LLC
C/O WATERSTONE RETAIL DEVELOPMENT
250 FIRST AVENUE, SUITE 202
NEEDHAM, MASSACHUSETTS 02494

ZONING DISTRICT: GATEWAY CORRIDOR (G1)
PROPOSED USE: SHOPPING CENTER/RESIDENTIAL
PROPOSED LOT SIZE: ±18.71 ACRES (±814,896 SF)

OVERALL PLAZA BUILDING PLACEMENT & LOT STANDARDS

	REQUIRED	PROVIDED
BUILDING STANDARDS:		
MINIMUM LOT DEPTH:	NR	NR
MINIMUM STREET FRONTAGE:	50 FT	±450 FT
FRONT BUILDING SETBACK:	10 FT MIN, 30 FT MAX	± 419 FT[1]
MINIMUM SIDE BUILDING SETBACK:	15 FT	± 57 FT
MINIMUM REAR BUILDING SETBACK:	20 FT	± 52 FT
MINIMUM OPEN SPACE COVERAGE:	20%	±21.6%
FRONT LOT LINE BUILDOUT:	75%	0%[4]
BUILDING DESIGN STANDARDS:		
MAXIMUM BUILDING HEIGHT:	4 STORIES 50 FT	5 STORIES[2] <60 FT[2]
MINIMUM STREET FACING FACADE HEIGHT:	24 FT	>24 FT
MAXIMUM FINISHED FLOOR SURFACE OF GROUND FLOOR ABOVE SIDEWALK GRADE:	36 IN	<36 IN
MAXIMUM BUILDING FOOTPRINT:	NR	
MAXIMUM FACADE MODULATION LENGTH:	50 FT	<50 FT
MINIMUM STREET FACING FACADE GLAZING:	20% GROUND FLOOR	>20%
DEVELOPMENT SITE STANDARDS:[3]		
MINIMUM DEVELOPMENT SITE AREA:	20,000 SF	±814,896 SF
MINIMUM SITE WIDTH:	100 FT	±721 FT
MINIMUM SITE DEPTH:	100 FT	±1,137 FT
MINIMUM PERIMETER BUFFER FROM RESIDENTIAL, MIXED RESIDENTIAL, OR CD4-L1 DISTRICTS:	75 FT	N/A
MAXIMUM DEVELOPMENT BLOCK DIMENSIONS:		
BLOCK LENGTH:	800 FT	±1,137 FT[4]
BLOCK PERIMETER:	2,200 FT	±3,780 FT[4]
MAXIMUM BUILDING COVERAGE:	70%	25.6%
MINIMUM OPEN SPACE COVERAGE:	20%	±21.6%
FRONT LOT LINE BUILDOUT:	75%	0%[4]
DENSITY THRESHOLDS AND BONUSES:		
DWELLING UNITS PER ACRE:	16 UNITS	10.2 UNITS
DWELLING UNITS PER BUILDING:	36 UNITS	95 UNITS[1)(2)]
PLUS 1-STORY, MAX 10 FT	5 STORIES 60 FT	5 STORIES[2] <60 FT[2]

(1) - MODIFICATION OF STANDARDS ALLOWED AS PART OF CONDITIONAL USE PERMIT PER 10.5B74.30, APPROVED JANUARY 19, 2022.
(2) - ALLOWED BY CONDITIONAL USE PERMIT PER 10.5B72 FOR PROVIDING 20% WORK FORCE HOUSING AND PUBLIC REALM IMPROVEMENTS, APPROVED JANUARY 19, 2022.
(3) - USE OF DEVELOPMENT SITE STANDARDS ALLOWED BY CONDITIONAL USE PERMIT PER 10.5B40, APPROVED JANUARY 19, 2022.
(4) - EXISTING NON-CONFORMING CONDITION, MODIFICATION OF STANDARDS ALLOWED AS PART OF CONDITIONAL USE PERMIT PER 10.5B74.30, APPROVED JANUARY 19, 2022.

OVERALL PLAZA PARKING REQUIREMENTS

PARKING CALCULATIONS:

RETAIL:	1 SPACE PER 300 GFA
RESTAURANT:	1 SPACE PER 100 GFA
INDOOR RECREATION:	1 SPACE PER 4 PERSONS
RESIDENTIAL:	0.5 SPACES PER UNIT <500 SF 1 SPACE PER UNIT 500 SF - 750 SF 1.3 SPACES PER UNIT >750 SF

LOADING CALCULATIONS:

RETAIL:	0 SPACES FOR 0 - 10,000 SF 1 SPACE FOR 10,001 - 25,000 SF 2 SPACES FOR 25,001 - 60,000 SF
OTHER NON-RESIDENTIAL:	0 SPACES FOR 0 - 10,000 SF 1 SPACE FOR 10,001 SF - 40,000 SF

SHOPPING CENTER:				LOADING SPACES:	
RETAIL:	**AREA (SF):**	**MINIMUM**	**PROVIDED**	**MINIMUM**	**PROVIDED**
PETCO	±12,588			1	1
CYCLE FIERCE	±1,200			0	1
EXISTING RETAIL/RESTAURANT	±20,075			0	1
PROPOSED RETAIL AREA	±3,650			0	0
EXISTING RETAIL/RESTAURANT (MUSE)	±3,616			0	1
EXISTING RETAIL/RESTAURANT (SHIO JAPANESE)	±7,400			0	1
PROPOSED RESTAURANT (OLD BIG LOTS)	±14,400			1	1
INDOOR RECREATIONAL (PINZ)	±18,800			1	1
SUBWAY	±1,800			0	0
THE 99	±6,310			0	1
McKINNON'S	±36,251			2	3
RETAIL	±9,134			0	1
PROPOSED RESTAURANT	±1,600			1	0
PROPOSED RESTAURANT	±2,310			0	0
STARBUCKS	±2,124			0	1
TOTAL SHOPPING CENTER	±141,258	406 SPACES[1]		8	15
RESIDENTIAL:					
PREVIOUSLY APPROVED DWELLING UNITS	95 UNITS				
EXISTING DWELLING UNITS	95 UNITS				
VISITOR PARKING					
TOTAL:		654 SPACES[1]	795 SPACES	9	15

(1) - PER PARKING DEMAND ANALYSIS PERFORMED BY TIGHE & BOND DATED OCTOBER 18, 2021, BASED ON A TOTAL SHOPPING CENTER AREA OF ±139,441 SF.

	REQUIRED	PROVIDED
ACCESSIBLE SPACES (2% OF TOTAL):	15	32
VAN ACCESSIBLE SPACES (1 PER 6 ACCESSIBLE SPACES):	2	24
PARKING STALL SIZE:	8.5 FT X 19 FT	8.5 FT X 19 FT
DRIVE AISLE:	24 FT	24 FT, 26 FT

BIKE SPACES REQUIRED:

	REQUIRED	PROVIDED
SHOPPING CENTER:		
1 BIKE SPACE / 10 PARKING SPACES MAXIMUM OF 30 SPACES	30 SPACES	42 SPACES
RESIDENTIAL:		
EXISTING 95 DWELLING UNITS	19 SPACES	30 SPACES
PREVIOUSLY APPROVED 95 DWELLING UNITS	19 SPACES	20 SPACES

Tighe&Bond

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STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 4/27/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 4/27/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

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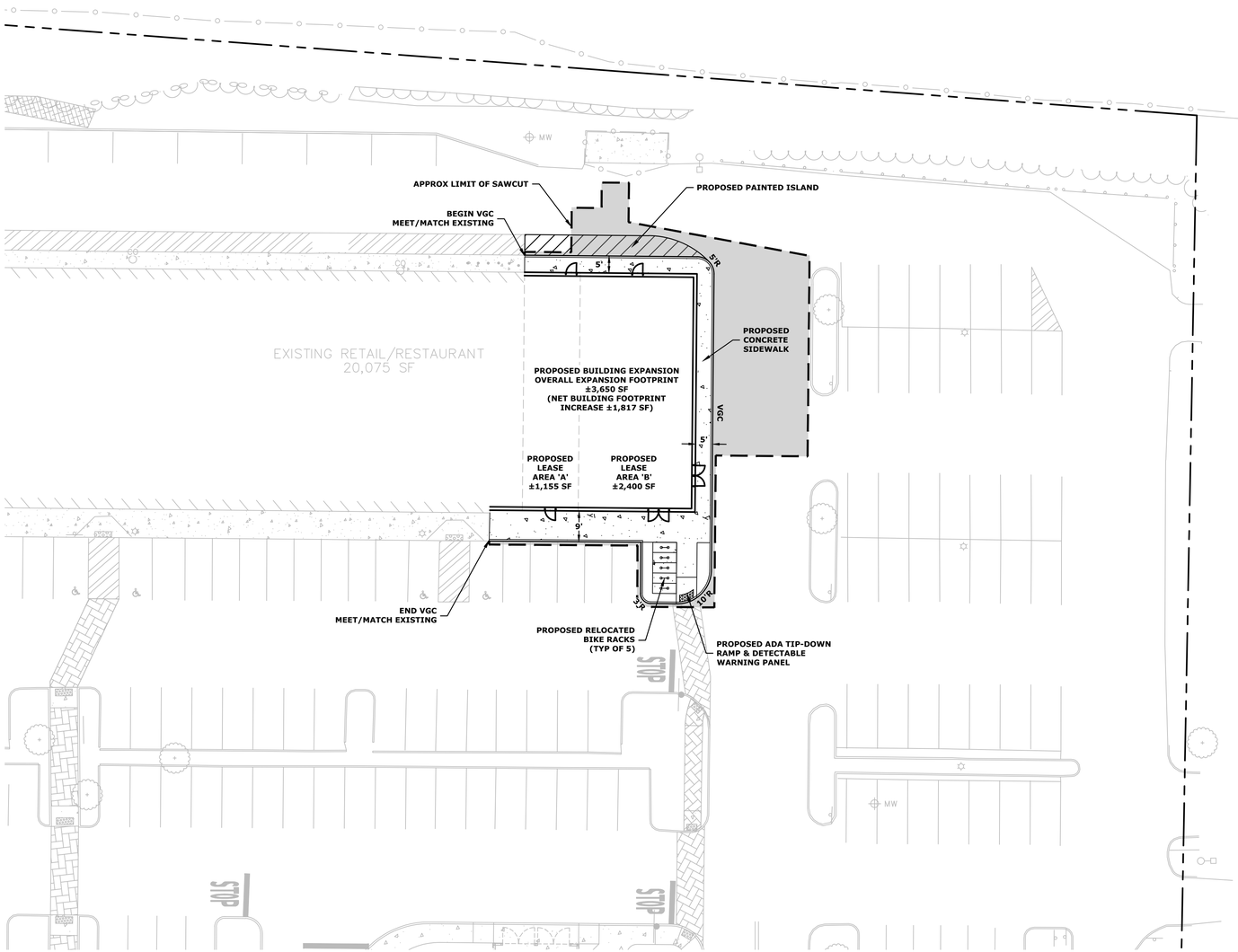
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OVERALL PROPOSED PLAZA PLAN

SCALE: AS SHOWN

C-102

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LEGEND

	PROPERTY LINE
	PROPOSED PROPERTY LINE
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	PROPOSED CURB
	PROPOSED BUILDING
	PROPOSED PAVEMENT SECTION
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BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE
30'R	PROPOSED CURB RADIUS
VGC	PROPOSED VERTICAL GRANITE CURB
SGC	PROPOSED SLOPED GRANITE CURB

SITE NOTES:

1. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F").
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
4. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
5. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
7. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
8. SEE ARCHITECTURAL/BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.
9. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
10. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION AT CURB LINE AFTER CONCRETE FORMS FOR SIDEWALKS AND PADS HAVE BEEN STRIPPED. COORDINATE WITH BUILDING CONTRACTOR.
11. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
12. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
13. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
14. THE APPLICANT SHALL HAVE A SITE SURVEY CONDUCTED BY A RADIO COMMUNICATIONS CARRIER APPROVED BY THE CITY'S COMMUNICATIONS DIVISION. THE RADIO COMMUNICATIONS CARRIER MUST BE FAMILIAR AND CONVERSANT WITH THE POLICE AND RADIO CONFIGURATION. IF THE SITE SURVEY INDICATES IT IS NECESSARY TO INSTALL A SIGNAL REPEATER EITHER ON OR NEAR THE PROPOSED PROJECT, THOSE COSTS SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE OWNER SHALL COORDINATE WITH THE SUPERVISOR OF RADIO COMMUNICATIONS FOR THE CITY.
15. PROPERTY MANAGEMENT SHALL BE RESPONSIBLE FOR TIMELY SNOW REMOVAL FROM ALL PRIVATE SIDEWALKS, DRIVEWAYS, AND PARKING AREAS. SNOW SHALL BE HAULED OFF-SITE AND LEGALLY DISPOSED OF WHEN NECESSARY TO MAINTAIN ADEQUATE SNOW STORAGE AREAS.
16. THE APPLICANT SHALL PREPARE A CONSTRUCTION MANAGEMENT AND MITIGATION PLAN (CMMP) FOR REVIEW AND APPROVAL BY THE CITY'S LEGAL AND PLANNING DEPARTMENTS.

SITE RECORDING NOTES:

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

Tighe&Bond

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STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – PATRICK CRIMMINS No. 12378 LICENSED
4/27/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – NEIL A. HANSEN No. 15227 LICENSED
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SITE PLAN

SCALE: AS SHOWN

C-102.1

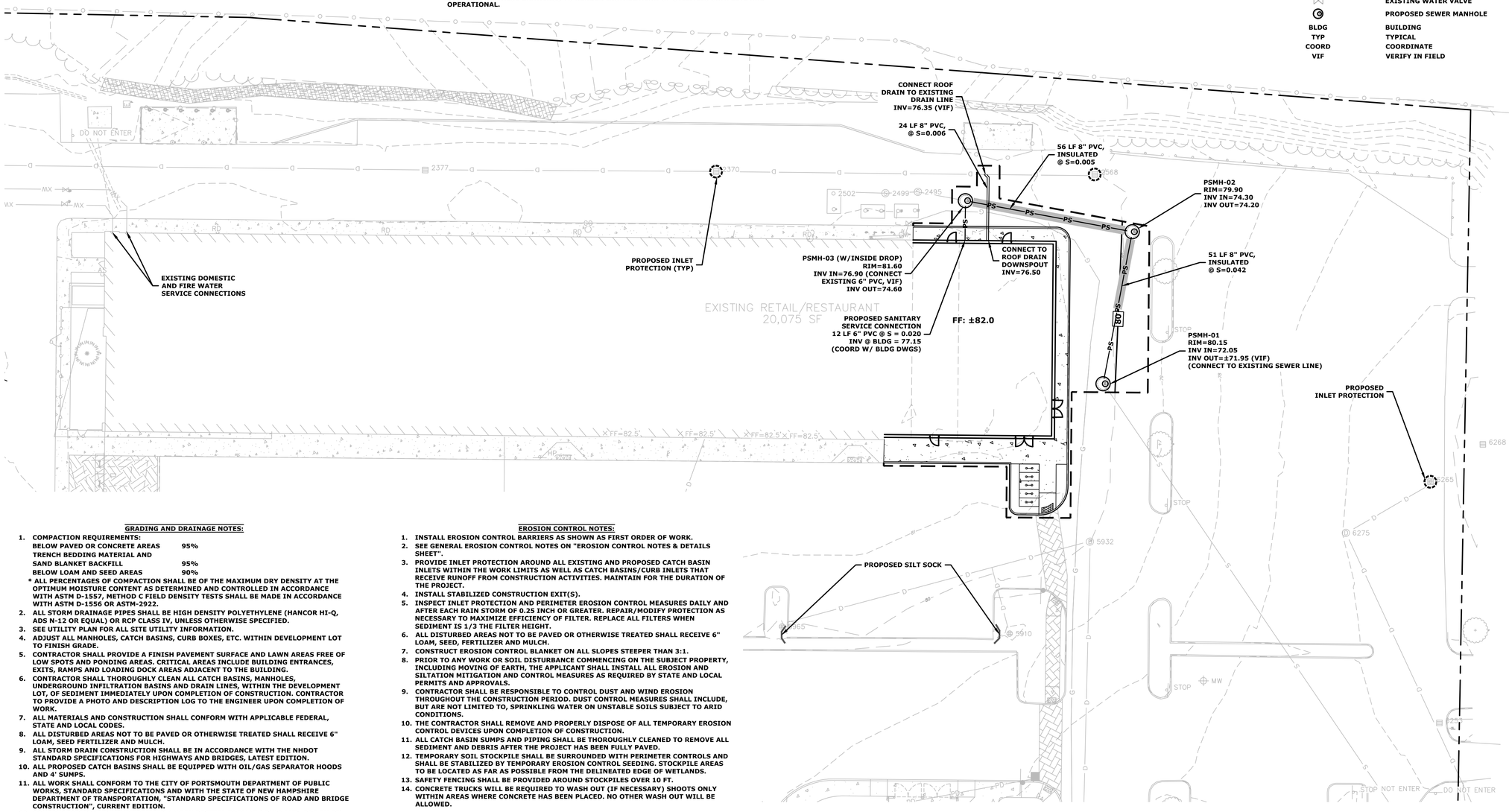
Last Save Date: April 25, 2022, 1:17 PM By: NAHANSEN
Plot Date: Tuesday, April 26, 2022, 11:21 AM By: Neil A. Hansen
T&B File Location: J:\W\W5008 Waterstone Retail\008A - Portsmouth Green - Building 2 Expansion\Drawings, Figures\AutoCAD\Sheet\W5008-008A_C-DSGN.dwg Layout Tab: Site

UTILITY NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - NATURAL GAS - UNITIL
   - WATER/SEWER - CITY OF PORTSMOUTH
   - ELECTRIC - EVERSOURCE
   - COMMUNICATIONS - COMCAST/FAIRPOINT/FIRST LIGHT
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
5. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
6. WATER, GAS, ELECTRIC AND TELECOMMUNICATIONS FOR BUILDING EXPANSION TO BE CONNECTED FROM EXISTING BUILDING. COORDINATE WITH BUILDING DRAWINGS.
7. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
8. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
9. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
10. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
11. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
12. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
13. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
14. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
15. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILES) TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
16. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
17. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
18. ALL SEWER PIPE WITH LESS THAN 6' OF COVER IN PAVED AREAS OR LESS THAT 4' OF COVER IN UNPAVED AREAS SHALL BE INSULATED.
19. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK WITH POWER COMPANY.
20. 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 AND EXISTING BUILDING WITH THE UTILITY COMPANY AFFECTED ABUTTER, AND ADJACENT TENANTS.
21. THE NEW BUILDING EXPANSION SHALL INCLUDE A SEPARATE KNOX BOX. EACH NEW TENANT SHALL HAVE A SEPARATE FIRE ALARM SYSTEM AND SHALL COMPLY WITH ANY APPLICABLE NFPA CODES AND STANDARDS. KNOX BOX LOCATIONS AND FIRE ALARM SYSTEMS SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH FIRE DEPARTMENT.
22. SHOP DRAWINGS SUBMITTALS SHALL BE SENT TO ENGINEER OF RECORD AND TO 3RD PARTY INSPECTOR AND PORTSMOUTH DPW FOR REVIEW/APPROVAL. ENGINEER OF RECORD SHALL INDICATE CONFORMANCE TO PLANS OR NOTE THE DEVIATION PRIOR TO SENDING TO 3RD PARTY INSPECTOR AND DPW.

LEGEND

8	PROPOSED MAJOR CONTOUR LINE
8	PROPOSED MINOR CONTOUR LINE
	PROPOSED SILT SOCK
	INLET PROTECTION SILT SACK
S S	EXISTING SANITARY SEWER
T T	EXISTING UNDERGROUND TELECOMMUNICATION
W	EXISTING WATER
G	EXISTING GAS
E	EXISTING UNDERGROUND ELECTRIC
OHW	EXISTING OVERHEAD UTILITY
PS PS	PROPOSED SANITARY SEWER
PS PS	PROPOSED SANITARY SEWER, INSULATED
	EXISTING CATCHBASIN
	EXISTING DRAIN MANHOLE
	EXISTING SEWER MANHOLE
	EXISTING HYDRANT
WV	EXISTING WATER VALVE
	PROPOSED SEWER MANHOLE
BLDG	BUILDING
TYP	TYPICAL
COORD	COORDINATE
VIF	VERIFY IN FIELD



GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

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

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

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. MAINTAIN FOR THE DURATION OF THE PROJECT.
4. INSTALL STABILIZED CONSTRUCTION EXIT(S).
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED WITH PERIMETER CONTROLS AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

Tighe&Bond

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – PATRICK CRIMMINS No. 12378 LICENSED
4/27/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – NEIL A. HANSEN No. 15227 LICENSED
4/27/22

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
B	4/27/2022	PB Submission
A	3/22/2022	Amended Site Plan Review Submission

PROJECT NO:	W5008-008A
DATE:	3/22/2022
FILE:	W5008-008A_C-DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

GRADING, DRAINAGE, EROSION CONTROL & UTILITIES PLAN

SCALE: AS SHOWN

C-103

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GENERAL PROJECT INFORMATION

PROJECT OWNER: 2422 LAFAYETTE ROAD ASSOCIATES, LLC
C/O WATERSTONE RETAIL DEVELOPMENT
250 FIRST AVENUE, SUITE 202
NEEDHAM, MASSACHUSETTS 02494

PROJECT NAME: PORTSMOUTH GREEN - PROPOSED BUILDING EXPANSION

PROJECT ADDRESS: 2454 LAFAYETTE ROAD
PORTSMOUTH, NH 03801

PROJECT MAP / LOT: MAP 273 / LOT 3
PROJECT LATITUDE: 43.036120 N
PROJECT LONGITUDE: -70.784829 W

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF DEMOLITION OF A PORTION OF AN EXISTING BUILDING AND THE CONSTRUCTION OF A PROPOSED BUILDING EXPANSION.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 0.3 ACRES.

SOIL CHARACTERISTICS

BASED ON THE NRCS WEB SOIL SURVEY FOR ROCKINGHAM COUNTY - NEW HAMPSHIRE THE SOILS ON SITE CONSIST OF MOSTLY URBAN SOILS WHICH HAVE UNKNOWN DRAINAGE PROPERTIES.

NAME OF RECEIVING WATERS

THE STORMWATER RUNOFF WILL BE COLLECTED IN A CLOSED DRAINAGE SYSTEM WHICH ULTIMATELY DISCHARGES TO THE LITTLE HARBOR.

CONSTRUCTION SEQUENCE OF MAJOR ACTIVITIES:

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

SPECIAL CONSTRUCTION NOTES:

1. THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.
2. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
3. LIMIT THE LENGTH OF EXPOSURE OF UNSTABILIZED SOIL TO 45 DAYS OR LESS.

EROSION CONTROL NOTES:

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

STABILIZATION:

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

DUST CONTROL:

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

STOCKPILES:

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

OFF SITE VEHICLE TRACKING:

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

VEGETATION:

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

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

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

CONCRETE WASHOUT AREA:

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

ALLOWABLE NON-STORMWATER DISCHARGES:

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

WASTE DISPOSAL:

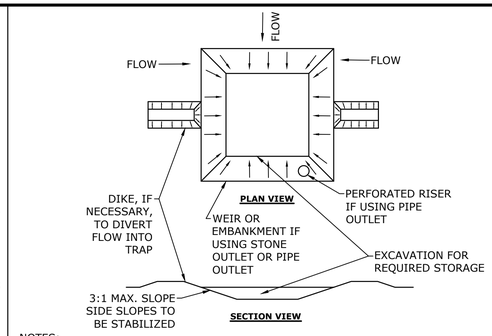
1. WASTE MATERIAL:
   - A. ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
   - B. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
   - C. ALL PERSONNEL SHALL BE INSTRUCTED REGARDING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

SPILL PREVENTION:

1. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
2. THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
   - A. GOOD HOUSEKEEPING - THE FOLLOWING GOOD HOUSEKEEPING PRACTICE SHALL BE FOLLOWED ON SITE DURING CONSTRUCTION:
     - a. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE;
     - b. ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
     - c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED;
     - d. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS;
     - e. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
     - f. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
   - B. HAZARDOUS PRODUCTS - THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
     - g. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
     - h. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION;
     - i. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
   - C. PRODUCT SPECIFIC PRACTICES - THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
     - a. PETROLEUM PRODUCTS:
       - a.1. ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE;
       - a.2. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
     - b. FERTILIZERS:
       - b.1. FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS;
       - b.2. ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER;
       - b.3. STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
     - c. PAINTS:
       - c.1. ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE;
       - c.2. EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM;
       - c.3. EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   - D. SPILL CONTROL PRACTICES - IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
     - a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES;
     - b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE;
     - c. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY;
     - d. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE;
     - e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED;
     - f. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
   - E. VEHICLE FUELING AND MAINTENANCE PRACTICE:
     - a. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPTMENT/VEHICAL FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY;
     - b. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY;
     - c. IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED;
     - d. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA;
     - e. CONTRACTOR SHALL REGULARLY INSPECT VEHICLES FOR LEAKS AND DAMAGE;
     - f. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

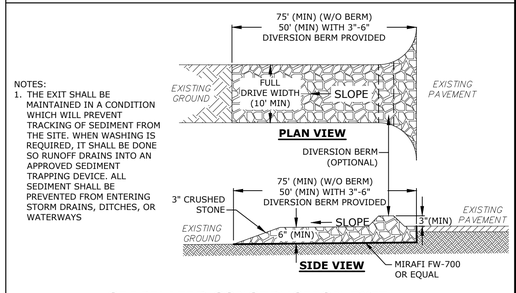
EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

1. THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
   - A. OBSERVATIONS OF THE PROJECT SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER;
   - B. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
   - C. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF INSPECTION.



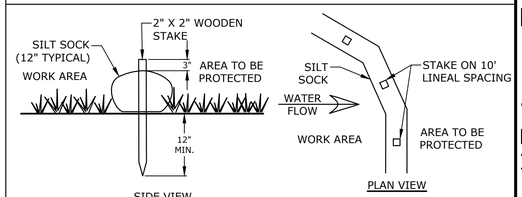
NOTES:
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING AREA TO A SINGLE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. TRAP OUTLET SHALL BE MINIMUM OF ONE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

SEDIMENT TRAP
NO SCALE



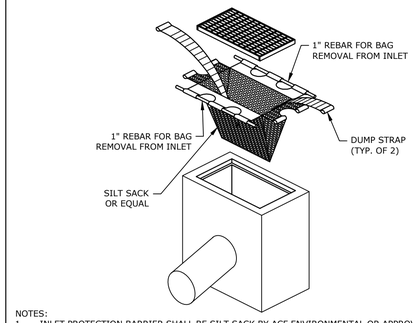
NOTES:
1. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT FROM THE SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE SO RUNOFF DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS

STABILIZED CONSTRUCTION EXIT
NO SCALE



NOTES:
1. SILT SOCK SHALL BE SILT SOXX BY FILTREXX OR APPROVED EQUAL.
2. SILT SOCK SHALL BE FILLED WITH FILTERMEDIA BY FILTREXX OR APPROVED EQUAL.
3. WHERE TWO SILT SOCKS ARE JOINED, A MINIMUM OF 2 FEET OF OVERLAP SHALL BE MAINTAINED.
4. SILT SOCKS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. CONTRACTOR TO INSTALL SILT SOCK IN J-HOOK OR SMILE CONFIGURATION TO LIMIT CONCENTRATION OF STORMWATER RUNOFF AT A SINGLE DISCHARGE POINT.

SILT SOCK
NO SCALE



NOTES:
1. INLET PROTECTION BARRIER SHALL BE SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL.
2. INLET PROTECTION BARRIER SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASINS LOCATED WITHIN THE LIMIT OF WORK.
3. SILT SACK SHALL BE INSPECTED REGULARLY AND MAINTAIN IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

INLET PROTECTION BARRIER
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS – No. 12378 – LICENSED PROFESSIONAL ENGINEER – 4/27/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN – No. 15227 – LICENSED PROFESSIONAL ENGINEER – 4/27/22

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
B	4/27/2022	PB Submission
A	3/22/2022	Amended Site Plan Review Submission

PROJECT NO:	W5008-008A
DATE:	3/22/2022
FILE:	W5008-008A_C-DTLS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

EROSION CONTROL, NOTES, & DETAILS SHEET

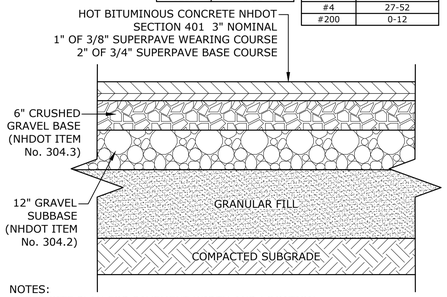
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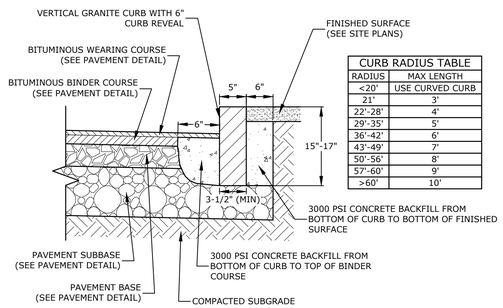
NHDOT ITEM No. 304.2 (GRAVEL)	
SIEVE SIZE	% PASSING
6"	100
#4	25-70
#200	0-12

NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)	
SIEVE SIZE	% PASSING
3"	100
2"	95-100
1"	55-85
#4	27-52
#200	0-12



NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.
5. CONTRACTOR SHALL CONFIRM THIS PAVEMENT SECTION WITH THE PROJECT'S GEOTECHINCAL ENGINEEER PRIOR TO CONSTRUCTION.

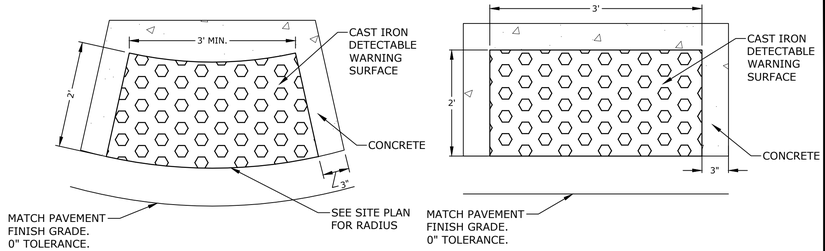
ON-SITE PAVEMENT SECTION
NO SCALE



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

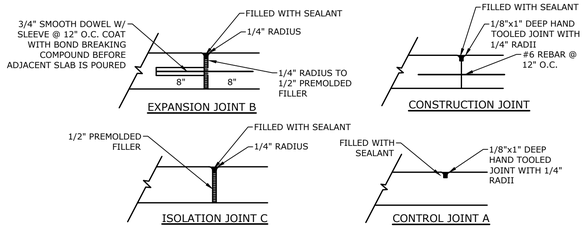
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE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

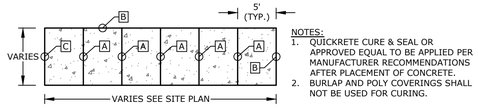
VERTICAL GRANITE CURB
NO SCALE



NOTES:
1. DETECTABLE WARNING SURFACE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

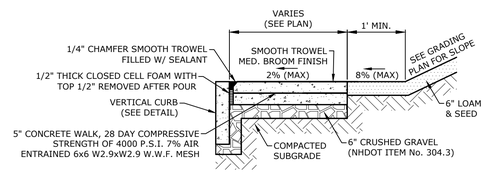
DETECTABLE WARNING SURFACE
NO SCALE



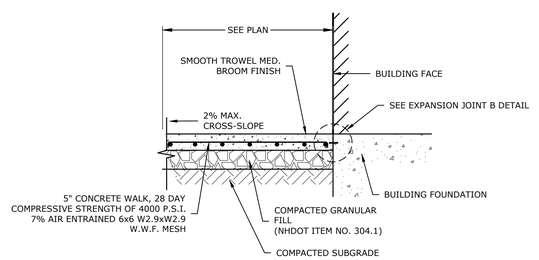


NOTES:
1. QUICKRETE CURE & SEAL OR APPROVED EQUAL TO BE APPLIED PER MANUFACTURER RECOMMENDATIONS AFTER PLACEMENT OF CONCRETE.
2. BURLAP AND POLY COVERINGS SHALL NOT BE USED FOR CURING.

PLAN VIEW

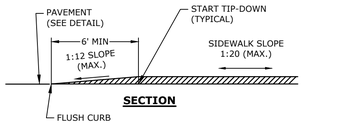


SECTION VIEW

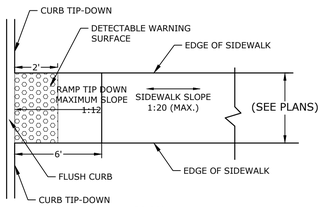


CONCRETE SIDEWALK SECTION VIEW @ BUILDING

CONCRETE SIDEWALK
NO SCALE



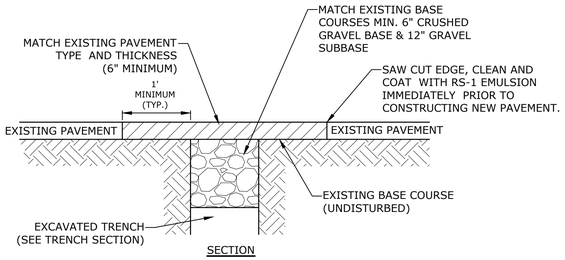
SECTION



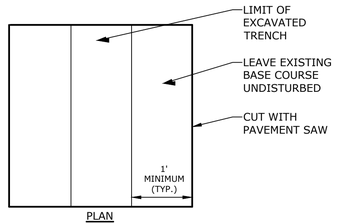
PLAN

NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. A 9" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
3. DETECTABLE WARNING PANEL SHALL BE CAST IRON WITH BLACK COATING

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



SECTION



PLAN

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

ROADWAY TRENCH PATCH
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – PATRICK CRIMMINS No. 12378 LICENSED
4/27/22

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – NEIL A. HANSEN No. 15227 LICENSED
4/27/22

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
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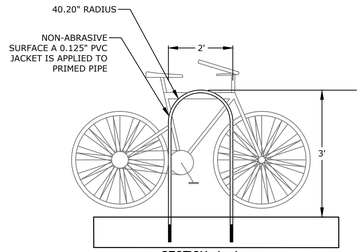
PROJECT NO:	W5008-008A
DATE:	3/22/2022
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DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

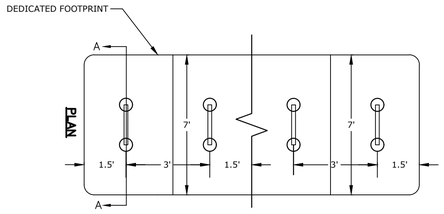
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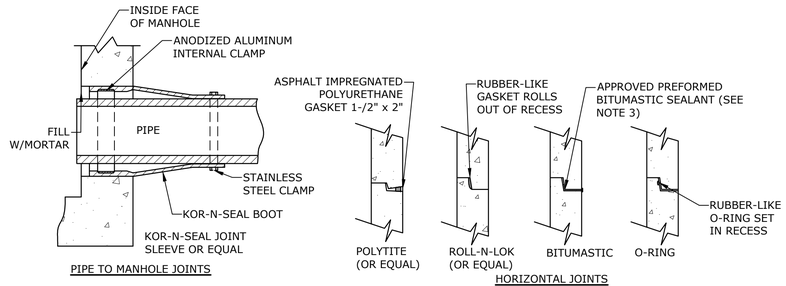
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SECTION A–A



BIKE RACK
NO SCALE

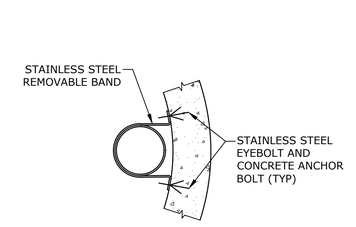


PIPE TO MANHOLE JOINTS

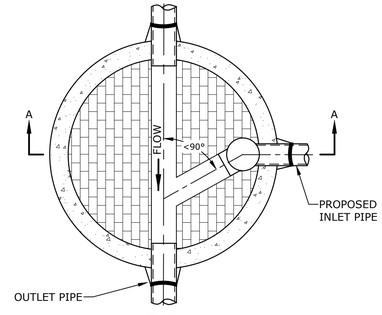
HORIZONTAL JOINTS

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

MANHOLE JOINTS
NO SCALE

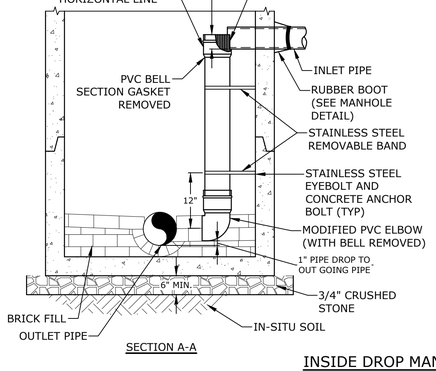


PIPE STRAP DETAIL



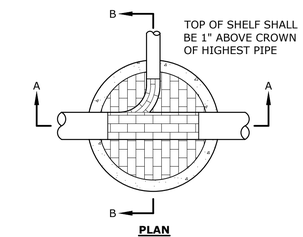
PLAN

NOTES:
1. RISER PIPE AND FITTINGS SHALL BE THE SAME DIAMETER AS THE INLET PIPE AND SHALL BE CONSTRUCTED OF SDR35 PVC PIPE.
2. SANITARY SEWER SHALL BE INSTALLED PER THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS.
3. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

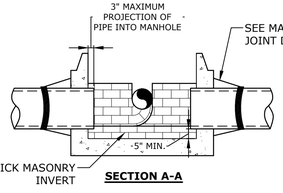


SECTION A-A

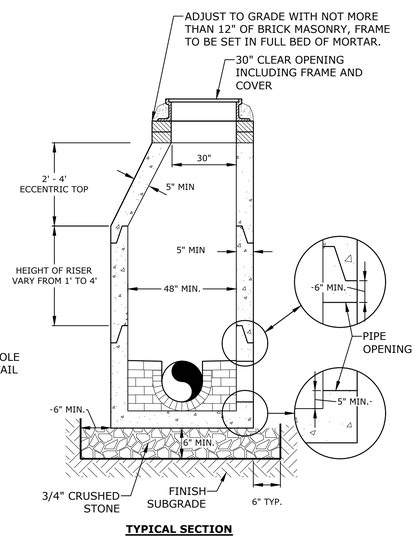
INSIDE DROP MANHOLE
NO SCALE



PLAN



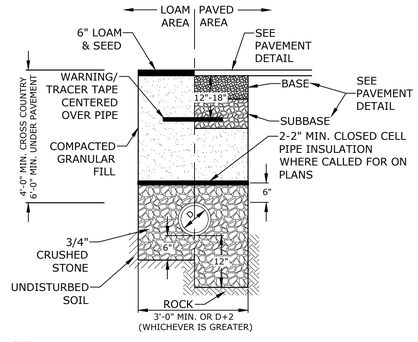
SECTION A-A



TYPICAL SECTION

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

SEWER MANHOLE
NO SCALE



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

SEWER SERVICE TRENCH
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 4/27/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 4/27/22

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
B	4/27/2022	PB Submission
A	3/22/2022	Amended Site Plan Review Submission

PROJECT NO:	W5008-008A
DATE:	3/22/2022
FILE:	W5008-008A_C-DTLS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-503

Last Save Date: March 23, 2022 8:21 AM By: CML
Plot Date: March 23, 2022 8:21 AM By: Neil A. Hansen
T&B File Location: J:\W\W5008 Waterstone Retail\008A - Portsmouth Green - Building 2 Expansion\Drawings, Figures\AutoCAD\Sheet\W5008-008A_C-DTLS.dwg Layout Tab: C-503

Portsmouth Green - City of Portsmouth TAC STIPULATION RESPONSE Date: April 27, 2022

City of Portsmouth TAC, April 8, 2022:			
	TAC Comment	**Applicant Response**	**Sheet**
TAC Stipulations from 4/8 Correspondence:			
1	Replace existing sewer manhole 2494.	Existing sewer manhole 2494 has been revised to be replaced and is now labelled as PSMH-03.	C-103
2	Show location of water service on plans.	The view on Sheet C-103 has been expanded to include the water service connections to the building. The proposed addition will use the buildings existing connections.	C-103
3	A trip generation memo to address the change in trips and traffic from existing to proposed will be provided.	A trip generation letter was prepared and submitted to the City of Portsmouth DPW and is included in the Planning Board Package. The proposed project will result in a reduction of 9 trips during the AM peak hour, 7 additional trips during the PM peak hour, and 4 additional trips during the Saturday peak hour.	

PROPOSED BUILDING EXPANSION
OVERALL EXPANSION FOOTPRINT ±3,650 SF
(NET BUILDING FOOTPRINT INCREASE ±1,817 SF)

PREVIOUSLY APPROVED
MULTI-FAMILY BUILDING
5-STORY
95 UNITS
±41,830 SF FOOTPRINT

INDOOR RECREATIONAL USE
18,800± SF

RETAIL/
RESTAURANT SPACE
14,400± SF

STORAGE SHEDS

4-STORY
APARTMENT BUILDING
(RESIDENTIAL)
95 UNITS

EXISTING
(RETAIL)
3,616 SF

EXISTING RETAIL/
RESTAURANT SPACE
7,400 SF

EXISTING RETAIL/
RESTAURANT SPACE
9,134 SF

MCKINNONS
(RETAIL)
36,251 SF

PETCO
12,588 SF

SUBWAY
(FAST FOOD RESTAURANT)
1,800 SF

CYCLE
FORGE
1,200 SF

RESTAURANT
1,600± SF

RESTAURANT
2,310± SF
FF: 78.50

(RESTAURANT)
"99"
6,310 SF

CONST. HYDRANT

STARBUCKS
2,124± S.F.

US ROUTE 1
LAFAYETTE RD

CONSTITUTION AVE

CONSTITUTION AVE

N

SCALE IN FEET
0 50' 100'
GRAPHIC SCALE

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
A	3/22/2022	Amended Site Plan Review Submission

PROJECT NO:	W5008-008A
DATE:	3/22/2022
FILE:	W5008-008A_C-DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

AMENDED SITE PLAN
OVERLAY EXHIBIT

SCALE: AS SHOWN

1 OF 1

Last Save Date: March 21, 2022 11:26 AM By: CML
Plot Date: March 21, 2022 Plotted By: Christine M. Langton
T&B File Location: J:\W\W5008 Waterstone Retail\008A - Portsmouth Green - Building 2 Expansion\Drawings, Figures\AutoCAD\Sheet\W5008-008A_C-DSGN.dwg Layout Tab: Amend Ex



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

LEGEND

VEHICLE OVERHANG

VEHICLE WHEEL BASE

SCALE IN FEET
0 30' 60'
GRAPHIC SCALE

Proposed Building Expansion

Waterstone Properties Group, Inc.

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
B	4/27/2022	PB Submission
A	3/22/2022	Amended Site Plan Review Submission

PROJECT NO:	W5008-008A
DATE:	3/22/2022
FILE:	W5008-008A_C-DSGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

FIRE TRUCK TURNING EXHIBIT

SCALE: AS SHOWN

1 OF 1

Last Save Date: April 25, 2022 1:17 PM By: NAHANSEN
Plot Date: Tuesday, April 26, 2022 8:32 AM By: Nathan Hansen
T&B File Location: J:\W\W5008 Waterstone Retail\008A - Portsmouth Green - Building 2 Expansion\Drawings, Figures\AutoCAD\Sheet\W5008-008A_C-DSGN.dwg Layout Tab: Fire-Truck

W5008-008A
April 8, 2022

Mr. Eric Eby, City Traffic Engineer
City of Portsmouth
Department of Public Works
680 Peverly Hill Road
Portsmouth New Hampshire

Re: **Trip Generation Analysis**
Portsmouth Green – Building 2 Expansion

Dear Eric:

Tighe & Bond has performed a trip generation analysis for traffic related to a proposed building expansion at Portsmouth Green on a parcel of land located at 2454 Lafayette Road that is identified as Map 273 Lot 3 on the City of Portsmouth Tax Maps.

This analysis was performed utilizing Institute of Transportation Engineers (ITE) Trip Generation Manual, latest edition. For purposes of analysis, we have compared the existing and proposed uses for the project area within the Plaza. The project area's existing use consists of 1,833 SF of restaurant space. This portion of building 2 will be demolished. The proposed building addition consists 3,650 SF retail space.

	Existing Diner	Proposed Retail	Net Trips
Weekday AM Peak Hour			
Trips Entering	10	5	-5
Trips Exiting	8	4	-4
Total Vehicle Trips	**18**	**9**	**-9**
Weekday PM Peak Hour			
Trips Entering	10	12	+2
Trips Exiting	7	12	+5
Total Vehicle Trips	**17**	**24**	**+7**
Saturday Peak Hour			
Trips Entering	10	12	+2
Trips Exiting	10	12	+2
Total Vehicle Trips	**20**	**24**	**+4**

Source: Institute of Transportation Engineering, Trip Generation, 11th Edition
Land Uses – 822 Strip Retail (<40k), 932 High-Turnover (Sit-Down) Restaurant

As depicted above, the proposed 3,650 SF of retail space in place of the existing 1,833 SF of restaurant use will result in a reduction of 9 vehicle trips during the Weekday AM Peak Hour, an increase of 7 vehicle trips during the Weekday PM Peak Hour and an increase of 4 vehicle trips during the Saturday Peak Hour. It is anticipated that with the limited number of increased vehicle trips there will be no resulting additional impact to the surrounding roadway network during peak hour times.

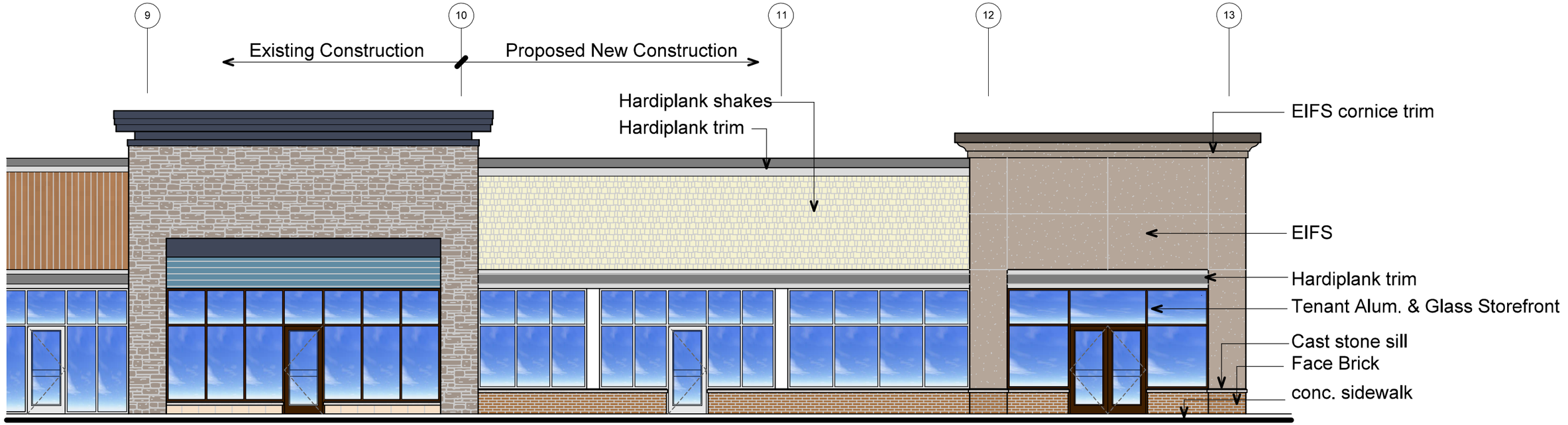
Please feel free to contact us if you have any questions or need any additional information.

Sincerely,

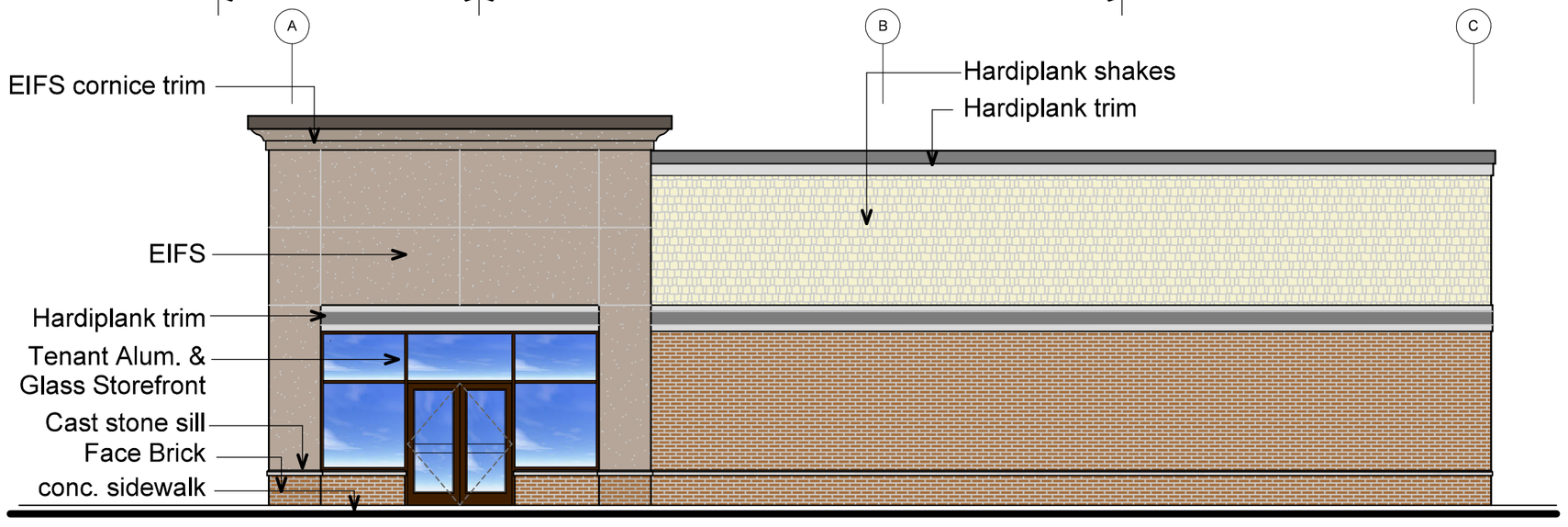
TIGHE & BOND, INC.



Neil A. Hansen, PE
Project Manager



Front Elevation



Side Elevation

WATERSTONE PROPERTIES

PORTSMOUTH GREEN

2454 Lafayette Road — Portsmouth, NH

03.21.2022 — 1/8"=1'-0"

Landry architects llc
200 International Dr. - Suite 150 - Portsmouth, NH 03801
Tel: 603.890.6414 www.landryarchitects.com

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

May 12, 2022

Portsmouth Technical Advisory Committee
Attn: Peter Stith
1 Junkins Avenue, Suite 3rd Floor
Portsmouth, NH 03801

RE: Subdivision & Site Plan Application
668 Middle Street, Portsmouth, NH
Tax Map 147, Lot 18
JBE Project No. 20686

Dear Mr. Stith,

On August 23, 2021, Jones & Beach Engineers, Inc., submitted a Subdivision Application on behalf of the applicant, Tuck Realty Corporation. The intent of this application is to subdivide Tax Map 147, Lot 18 into three proposed lots. The existing property has 2 structures on the lot. There is a front building situated along Middle Street that has 3 existing units in it. There is a rear carriage house that consists of 1 dwelling. Both existing buildings are staying on the property and will be converted into 2 condominiums, one condo as a single family and one condo as a 3 family. The carriage house has an existing garage in the rear that is accessed from Chevrolet Ave. There is an existing curb cut, fence and gate on Chevrolet that provides access to the carriage house garage.

Then we are proposing 2 frontage lots to be accessed from Chevrolet Avenue. These lots are more than double the required lot size and either meet or exceed the minimum frontage. We are proposing a common private drive for access to the duplexes on each lot. We need to extend the sewer to the site to provide connections for the 2 new lots.

Then on December 20, 2021, Jones & Beach Engineers, Inc., submitted a Site Plan Application on behalf of the applicant, Tuck Realty Corporation. We have already submitted the subdivision application and received approval from the Technical Advisory Committee with conditions. At the meeting, our Subdivision TAC approval was conditioned that if we propose more than one unit per lot, we will have to submit for a Site Plan approval. Our client would like to build a two-family house on each lot with a common driveway and therefore we are submitted a Site Plan application and received conditional TAC approval on this as well.

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: Michael Garrepy, Tuck Realty Corporation (via email)

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

April 26, 2022

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

RE: Response Letter – TAC Conditions of Approval
668 Middle Street, Portsmouth, NH
Tax Map 147, Lot 18
JBE Project No. 20686

Dear Mr. Chellman,

We are in receipt of comments from Beverly Mesa-Zendt, Planning Director, dated April 8, 2022. Review comments are listed below with our responses in bold.

PLANNER COMMENTS:

1. *Include easement plan in the plan set. Please identify all easements with unique identifiers corresponding to easement table listing all easements and purpose.*
RESPONSE: An easement plan has been included with the plan set.

2. *Water service material to be copper within right of way with brass curb stop.*
RESPONSE: Sheet C4 calls out 2" copper pipe.

3. *Water service to existing dwelling is corrected to show 1" pipe on plan.*
RESPONSE: This water service has been labelled as 1".

4. *Show 1" water services to the 4 new condo units on plans.*
RESPONSE: The size of the water service has been depicted as '1" (TYP.)' on Sheet C4.

5. *Sewer service to be abandoned must be abandoned and capped outside of SMH 2395.*
RESPONSE: The sewer service will be capped outside of SMH 2395, as noted on Sheet C4.

6. *Proposed sewer manhole to be located in Chevrolet roadway outside of the driveway alignment.*
RESPONSE: Proposed sewer manholes have been adjusted as discussed in the TAC meeting.

7. *Line showing the limited common area will be removed from the plan set and only described within the Home Owners Association and condominium documents.*
   RESPONSE: This sheet has been removed from the plan set.

8. *Condominium site plan will be removed from the plan set.*
   RESPONSE: The condominium site plan has been removed from the plan set.

9. *Snow Storage should be moved so as not to conflict with the blow off hydrant*
   RESPONSE: The snow storage does not conflict with the blowoff and the blowoff will be flush with the lawn.

10. *Shared driveway easement documentation needs to be provided for lots 147/18 and 147/19*
    RESPONSE: Driveway easement documents will be provided once finalized.

11. *Add drainage easement on lot 18-2 for lot 18-1.*
    RESPONSE: The drainage easement has been added to the plan set.

12. *Off-site easements (driveway and utility) must be signed and submitted to the City Council.*
    RESPONSE: The driveway and utility easement will be signed and submitted to the City Council.

13. *Mailbox must be relocated so the mail carrier can access from Chevrolet Ave.*
    RESPONSE: The mailbox has been relocated to Chevrolet Ave.

14. *Prior to construction, please include condominium documents. Site plan shows both existing buildings as condominiums and the new buildings will need documents as well. Three condominium documents in total.*
    RESPONSE: Condominium documents will be provided prior to construction.

Included with this response letter are the following:

1. One (1) Full Size Plan Set.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Joseph Coronati
Vice President

cc: Michael Garrepy, Tuck Realty Corporation (via email)
Tim Phoenix, Attorney (via email)
Wendy Welton, Art Form Architecture (via email)

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: Tuck Realty Corp. Date Submitted: 12/20/21

Application # (in City's online permitting): _____

Site Address: 668 Middle Street, Portsmouth, NH Map: 147 Lot: 18

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☒	Complete application form submitted via the City's web-based permitting program (2.5.2.1**(2.5.2.3A)**		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)**	Drainage Report & C3	
☒	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)**	C2, Note 2	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1E)**	LOA or Title Block	N/A
☒	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1F)**	C1	N/A
☒	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1G)**	Cover Sheet	N/A
☒	List of reference plans. **(2.5.3.1H)**	C1 Plan Reference Note	N/A
☒	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**
☒	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. **(2.5.4.1A)**	Required on all plan sheets	N/A
☒	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☒	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	C1 Note 4	N/A
☒	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
☒	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	N/A	N/A
☒	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	Cover Sheet & C2	N/A
☒	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	Revision Block, All Sheets	N/A
☒	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☒	Source and date of data displayed on the plan. **(2.5.4.2D)**	Plan Reference C1, A1 & C2	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.	Architectural Plans & 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 & C1	
☒	**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	
☒	**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	
☒	**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).	C1 & 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.	C1 & C4	

☒	**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)**	N/A	
	• 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.	C3 & Drainage report	
☒	**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.	L1	
☒	**11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)**	L1	
☒	**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.	L2	
☒	**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.	C1 Note 2/	
☒	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	A1	
☒	**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).	C2	
☒	**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.	C1 Note 3	

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)**	N/A	
☒	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	C3 & Drainage Report	
☒	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	N/A	
☒	Stormwater Management and Erosion Control Plan. **(7.4)**	Attached	
☒	Inspection and Maintenance Plan **(7.6.5)**	N/A	

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)**		
☐	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)**		
☐	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)**		

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)**		
☒	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)**		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)**		
☒	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)**		N/A

Applicant's Signature: Joseph Coronati **Date:** 12/20/21

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with the Preliminary or final plat and supporting documents and studies submitted in PDF format with the online application. Please consult with Planning staff for submittal requirements.

Owner: Elizabeth B. Larsen Trust of 2012, Elizabeth Larsen Trustee Date Submitted: 8/23/21

Applicant: Tuck Realty Corporation

Phone Number: 603-944-7530 E-mail: mgarrepy@gmail.com

Site Address 1: 668 Middle Street Map: 147 Lot: 18

Site Address 2: _____ Map: _____ Lot: _____

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☒	Completed Application form submitted via View Point (the City's web-based permitting program). **(III.C.2-3)**		N/A
☒	All application documents, plans, supporting documentation and other materials uploaded to the application form in View Point 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. **(III.C.4)**		N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☒	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**		☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☒	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**		☑ Preliminary Plat ☑ Final Plat	N/A
☒	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
☒	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**		☑ Preliminary Plat ☑ Final Plat	N/A
☒	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**		☑ Preliminary Plat ☑ Final Plat	N/A
☐ X	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**		☑ Preliminary Plat ☑ Final Plat	
☒	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**		☑ Preliminary Plat ☑ Final Plat	N/A
☒	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**		☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☒	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**		☑ Preliminary Plat ☑ Final Plat	
☒	**Preliminary Plat** Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**	Sheet C1 & C2 No new streets proposed	☑ Preliminary Plat ☑ Final Plat	
☐	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**	N/A - No new streets proposed	☑ Preliminary Plat ☑ Final Plat	
☐	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	N/A - not in flood plain	☑ Preliminary Plat ☑ Final Plat	
☒	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**	Sheets C1 & C2	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**	N/A - no state permits	☐ Preliminary Plat ☑ Final Plat	
☐	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**	N/A - not in flood zone	☐ Preliminary Plat ☑ Final Plat	
☒	Location of all permanent monuments. **(Section V.12)**		☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**1. Basic Requirements: (VI.1)**		
☒	a. Conformity to Official Plan or Map		
☒	b. Hazards		
☒	c. Relation to Topography		
☐	d. Planned Unit Development		
☐	**2. Lots: (VI.2)**		
☒	a. Lot Arrangement		
☒	b. Lot sizes		
☐	c. Commercial and Industrial Lots		
☐	**3. Streets: (VI.3)**		
☒	a. Relation to adjoining Street System		
☒	b. Street Rights-of-Way		
☒	c. Access		
☐	d. Parallel Service Roads		
☐	e. Street Intersection Angles		
☐	f. Merging Streets		
☐	g. Street Deflections and Vertical Alignment		
☐	h. Marginal Access Streets		
☐	i. Cul-de-Sacs		
☐	j. Rounding Street Corners		
☐	k. Street Name Signs		
☒	l. Street Names		
☐	m. Block Lengths		
☐	n. Block Widths		
☐	o. Grade of Streets		
☐	p. Grass Strips		
☐	**4. Curbing: (VI.4)**		
☐	**5. Driveways: (VI.5)**		
☐	**6. Drainage Improvements: (VI.6)**		
☒	**7. Municipal Water Service: (VI.7)**		
☒	**8. Municipal Sewer Service: (VI.8)**		
☒	**9. Installation of Utilities: (VI.9)**		
☒	a. All Districts		
☐	b. Indicator Tape		
☐	**10. On-Site Water Supply: (VI.10)**		
☐	**11. On-Site Sewage Disposal Systems: (VI.11)**		
☐	**12. Open Space: (VI.12)**		
☐	a. Natural Features		
☐	b. Buffer Strips		
☐	c. Parks		
☐	d. Tree Planting		
☐	**13. Flood Hazard Areas: (VI.13)**		
☐	a. Permits		
☐	b. Minimization of Flood Damage		
☐	c. Elevation and Flood-Proofing Records		
☐	d. Alteration of Watercourses		

☐	**14. Erosion and Sedimentation Control (VI.14)**		
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	**15. Easements (VI.15)**		
☒	a. Utilities		
☐	b. Drainage		
☒	**16. Monuments: (VI.16)**		
☒	**17. Benchmarks: (VI.17)**		
☐	**18. House Numbers (VI.18)**		

	Design Standards		
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
☐	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods	N/A	
☐	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction	N/A	
☒	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards		
☒	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction		

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

Applicant's/Representative's Signature: _____ **Date:** 8/22/21

dotloop signature verification: dtlp.us/aJuM-5NEk-LNmM

AUTHORIZATION

The undersigned, Elizabeth B. Larsen, Trustee of the Elizabeth B. Larsen Trust of 2012("Trust"), owner of the property located at 668Middle Street, Portsmouth, New Hampshire and further identified as Portsmouth Tax Map 147, Lot 18 (the "Property"), hereby authorize Tuck Realty Corporation ("Tuck") and its advisors Jones & Beach Engineers, Inc. and Hoefle, Phoenix, Gormley and Roberts, P.A., to file documents and appear before the Portsmouth Zoning Board of Adjustment, Planning Board, Technical Advisory Committee and/or Conservation Commission in all matters relating to applications by Tuck to the City of Portsmouth to permit the subdivision of and up to eight townhouses or similar structureson the Property.

Dated: January 27, 2021

By: Elizabeth B. Larsen dotloop verified 01/27/21 2:40 PM EST TGOV-SMJF-LFZY-ERRP

Elizabeth B. Larsen, Trustee
Elizabeth B. Larsen Trust of 2012

Letter of Authorization

I, W. Turner Porter, Tuck Realty Corporation, PO Box 190, Exeter, NH 03833, developer of property located in Portsmouth, NH, known as Tax Map 147, Lot 18, do hereby authorize Jones & Beach Engineers, Inc., PO Box 219, Stratham, NH, to act on my behalf concerning the previously-mentioned property. The parcel is located on 668 Middle Street in Portsmouth, NH.

I hereby appoint Jones & Beach Engineers, Inc., as my agent to act on my behalf in the review process, to include any required signatures.

Witness

W. Turner Porter
Tuck Realty Corporation

8/23/21
Date





065834

2012 DEC 20 PM 12: 04

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS that I, **Elizabeth B. Larsen**, unmarried, of 668 Middle Street, Portsmouth, Rockingham County, New Hampshire, 03801,

for consideration paid, grant to **Elizabeth B. Larsen, Trustee of The Elizabeth B. Larsen Trust of 2012** u/d/t dated December 11, 2012, of 668 Middle Street, Portsmouth, Rockingham County, New Hampshire, 03801,

with ***WARRANTY COVENANTS*** the following described real estate:

PARCEL I. A certain parcel of land with the buildings thereon, situate on Middle Street, in said Portsmouth, bounded and described as follows:

BEGINNING on Middle Street at land now or formerly of Blanche B. Lovell and running northwesterly by said Lovell's land seven (7) feet to an angle in the division line; thence turning and running North Eighty (80) degrees West by said Lovell's land, land now or formerly of William Conlon and Annie F. Pierce, land now or formerly of the Heirs of Ellen G. Walsh, land now or formerly of the Heirs of Victor Goss, and land now or formerly of Maurice J. and Elizabeth T. Ham, four hundred sixty-two (462) feet to the center of a stone post; thence turning and running North twenty-six (26) degrees West by land of the City of Portsmouth, formerly of the Frank Jones Brewing Company, one hundred six feet and six inches (106.6") to the center of a stone post; thence turning and running North fifty-nine (59) degrees East by land now or formerly of Coleman and Taccetta, formerly of the Frank Jones Brewing Company, two hundred twenty-seven and one half (227 ½) feet to land now or formerly of Florence Laighton; thence turning and running Southeasterly in a direct line by said Laighton's land four hundred forty-two and one half (442 ½) feet, more or less, to Middle Street; thence turning and running Southwesterly by said Street sixty-nine feet and ten inches (69 ft. 10 in.) more or less, to the place of beginning.

Together with a right of way thirty (30) feet wide across the northwesterly side of land now or formerly of said Laighton, adjoining the land now or formerly of said Coleman and Taccetta, formerly of said Brewing Company, and subject to similar right of way in said Laighton, her heirs and assigns, thirty (30) feet wide across the northwesterly side of the land herein conveyed, adjoining land now or formerly of said Coleman and Taccetta. Said rights of way are more fully

limited and defined in deed of William J. Moat to G. Ralph Laighton, dated 10 May, 1980, recorded in Rockingham Registry of Deeds, Book 512, Page 429, and an agreement of G. Ralph Laighton and Harry E. Boynton, dated May 31, 1913 and recorded in said Rockingham Registry of Deeds, Book 674, Page 341, to which reference is hereby made for a more complete description.

Also, those certain parcels of land located on Forest, Central and Elm Streets, Portsmouth, County of Rockingham, State of New Hampshire, bounded and described as follows:

PARCEL 1. BEGINNING at a point in the northeasterly sideline of Forest Street at the northwesterly corner of land now or formerly of DeCoff, being Lot No. 263 on Plan of Jackson Farm and Buckminster Field drawn by John W. Durgin, CE dated February 1955, recorded in Rockingham County Registry of Deeds and running northwesterly by the northeasterly sideline of Forest Street about 256 feet to the southerly corner of Lot No. 267 on said plan; thence turning and running southwesterly about one hundred feet to the point where the southeasterly sideline of Lot 216 on said plan is intersected by the easterly sideline of the property now or formerly of the State of New Hampshire and being the approach to the high level Piscataqua River Bridge; thence turning and running northerly along the easterly sideline of the said bridge approach land now or formerly of the State of New Hampshire to land now or formerly of the Boston & Maine Railroad; thence turning and running easterly by the right of way of the Boston & Maine Railroad to the northwesterly corner of Lot No. 263; thence turning and running southerly by the westerly line of Lot 263 to the point of beginning, said parcel comprising those portions of Lots 216 and 267 not taken by the State of New Hampshire for the approach to the Piscataqua Bridge, together with Lots 264, 265 and 266, and the stub of land on Forest Street westerly of the westerly sideline of Central Street and the stub of Central Street northerly of the northerly sideline of forest.

PARCEL 2. BEGINNING at a point in the northwesterly sideline of Elm Street at the southwesterly corner of Lot No. 237, the property now or formerly of Zamarchi, being the northeasterly corner of the parcel herein described and running southwesterly by said Elm Street 130 feet to a corner at Lot 234, the property now or formerly of the City of Portsmouth; thence turning and running northwesterly by said Lot 234 and Lot 221, the property now or formerly of the City of Portsmouth, 160 feet to the southeasterly side of Central Street; thence turning and running northeasterly by Central Street 101 feet to a corner at Lot No. 218, the property now or formerly of the City of Portsmouth, thence turning and running southeasterly by Lot 218 and Lot 237 to Elm Street and the point of beginning. Comprising Lots 219, 220, 235 and 236 on said Plan of Jackson Farm and Buckminster Field.

PARCEL 3. All my right, title and interest in and to the following streets or portions of streets, namely:

Central Street from the easterly sideline of the Piscataqua River Bridge approach to the southerly sideline of Forest Street.

That portion of Elm Street bounded northerly by Forest Street, southwesterly by land now or formerly of Zamarchi 200 feet, westerly by Elm Street, and northwesterly by Parcel 2 and land of Zamarchi 190 feet.

Forest Street from the westerly side of Cutts Street westerly to a line between the easterly corner of Lot 216 and the southeasterly corner of Lot 217.

These parcels are subject to such rights as the abutting owners and others may have the use thereof for access to their respective properties.

These parcels are also subject to an Easement to Northern Utilities, Inc. dated March 4, 2004, and recorded at Rockingham County Registry of Deeds in Book 4470, Page 2003.

Included in this conveyance is any and all personal property contents of the real estate.

Being the same premises conveyed to the Grantor by deed of The Wyman P. Boynton Revocable Trust of 1994 u/d/t dated September 1, 1994, recorded at Rockingham County Superior Court at Book 3980, Page 0209.

Dated this 11th day of December, 2012.

Witness

Elizabeth B. Larsen

State of New Hampshire
Rockingham, SS.

December 11, 2012

Personally appeared, before me, the above-named Elizabeth B. Larsen, 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 therein contained.

Notary Public/Justice of the Peace

RALPH R. WOODMAN, JR. JUSTICE MY COMMISSION EXPIRES JUNE 9, 2015 OF THE PEACE NEW HAMPSHIRE

Return To:
Legal Department
City Hall
1 Junkins Ave.
Portsmouth, NH 03801

ACCESS, UTILITY AND DRAINAGE EASEMENT DEED

PUBLIC LAND HOLDINGS LLC, a New Hampshire limited liability company with a mailing address of P.O. Box 190, Exeter, New Hampshire 03833 ("Grantor"), for due consideration, hereby grants to the CITY OF PORTSMOUTH, a municipal body politic, having a mailing address of 1 Junkins Avenue, Portsmouth, New Hampshire 30801 ("Grantee"), with QUITCLAIM COVENANTS, the following easements with respect to Grantor's real property situate on Chevrolet Avenue, Portsmouth, Rockingham County, New Hampshire, also identified as Portsmouth Tax Assessor's Map 147, Lot 18 (the "Premises"):

1. **Easement Area**: to construct, use, repair and replace a roadway for ingress and egress by foot and by vehicle by Grantee and members of the public, together with the right to install underground utilities, and storm water flowage under, over and across that area shown as "Proposed Right of Way and Sewer Easement to Benefit the City of Portsmouth and Proposed Lots 1 and 2" (the "Easement Area") on a plan entitled "Subdivision and Lot Line Adjustment Plan, 668 Middle Street, Portsmouth, NH, Sheet A1, dated November 11, 2020 and revised through _____, 2022, by Jones & Beach Engineers, Inc., recorded in the Rockingham County Registry of Deeds (the "Registry") as Plan #_____ (the "Plan"), which Easement Area is more particularly described as follows:

   Beginning at a proposed railroad spike on the easterly side of Chevrolet Ave. and the northeasterly corner of Lot 18 as shown on the above-referenced plan; thence running S 70° 24' 38" E a distance of 22.43 feet to a point; thence turning and running along a curve with a radius of 519.00 feet, S 45° 24' 52" W with an Arc Length of 22.21 feet; thence turning and running along a curve with a radius of 519.00 feet, S 51° 08' 07" W with an Arc Length of 81.43 feet to a point; thence turning and running S 55° 37' 48" W a distance of 0.87 feet to a point; thence turning and running S 55° 37' 42" W a distance of 19.70 feet to a point; thence continuing S 55° 37' 42" W a distance of 5.30 feet to a point; thence turning and running along a curve with a radius of 481.00 feet, S 54° 06' 57" W an Arc Length of 23.79 feet to a point; thence turning and running N 43° 50' 49" E a distance of 118.10 feet to a proposed railroad spike at the point of beginning.

2. **Purpose and Rights:** The Grantee shall have a permanent and non-exclusive easement and right of way in, under, across and over the Easement Area for the purpose of installing, maintaining, inspecting, removing, repairing, and replacing the roadway and

any utility and/or drainage lines and pipes, together with any associated infrastructure, equipment, outfall, swales and storm water flow. The Grantee shall have the right to remove trees, bushes, undergrowth and other obstructions interfering with the activities authorized herein and to take such other actions as may be necessary, useful or convenient for the enjoyment of the easement rights herein granted.

3. **Grantee's Responsibility to Restore:** Disturbed areas within the Easement Area and they shall be restored at the Grantee's expense.

4. **Grantor's Retained Rights:** Grantor retains the right to freely use and enjoy its interest in the Easement Area insofar as the exercise thereof does not endanger or interfere with the purpose of this instrument, including without limitation any rights of the public to safely utilize Chevrolet Avenue as a public way. Grantor shall not, however, erect any fence or other structure within the Easement Area, substantially change the grade or slope, install any pipes, or pave or asphalt the Permanent Easement Area without prior written consent of the Grantee.

5. **Personal Property.** It is agreed that all utility and drainage infrastructure and related facilities installed within the Easement Area, whether fixed to the realty or not, shall be and remain the property of the Grantee.

6. **Easement to Run with Land:** All rights and privileges, obligations and liabilities created by this instrument shall inure to the benefit of, and be binding upon, the heirs, devises, administrators, executor, successors and assignees of the Grantee and of the Grantor, the parties hereto and all subsequent owners of the Premises and shall run with the land.

MEANING AND INTENDING to describe and convey and easement over a portion of the premises conveyed to Grantor by Elizabeth B. Larsen, Trustee of the Elizabeth B. Larsen Trust of 2012 by deed dated December 21, 2021 and recorded at the Registry at Book 6367, Page 1660.

This is an exempt transfer per RSA 78-B:2(I).

Dated this ____ day of _____, 2022.

PUBLIC LAND HOLDINGS LLC

_____ By:_____

Witness Name:

Title

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

This instrument was acknowledged before me on _____, 2022, by _____, duly authorized _____ of Public Land Holdings LLC, on behalf of said limited liability company.

_____
Notary Public/Justice of the Peace
My Commission Expires:

NO-BUILD AND ACCESS EASEMENT DEED

KNOW ALL MEN BY THESE PRESENTS THAT PUBLIC LAND HOLDINGS LLC, a New Hampshire limited liability company with a mailing address of P.O. Box 190, Exeter, New Hampshire 03833 ("GRANTOR"), for consideration paid, grants to DAVID MARKOVSKY AND TAMARA LEIBOWITZ, individuals with a mailing address of 30 Aldrich Court, Portsmouth, New Hampshire 03801 and TRYGG ENGEN AND KAITLIN A. KOFFINK, individuals with a mailing address of 39 Aldrich Court, Portsmouth, New Hampshire 03801 (collectively, "GRANTEE"), with QUITCLAIM COVENANTS, the following:

A perpetual and permanent No Build and Access Easement on, across and over a portion of that certain tract or parcel of land situate on Chevrolet Avenue, Portsmouth, Rockingham County, New Hampshire, also identified as Portsmouth Tax Assessor's Map 147, Lot 19-1 (the "Premises"), identified as "Proposed 10' Wide Exclusive Use Easement Area in Favor of Lot 40 and 41" (the "Easement Area") on a plan entitled "Subdivision and Lot Line Adjustment Plan, 668 Middle Street, Portsmouth. NH, Sheet A1, dated November 11, 2020 and revised through _____, 2022, by Jones & Beach Engineers, Inc., recorded in the Rockingham County Registry of Deeds (the "Registry") as Plan #_____ (the "Plan"), which Easement Area is more particularly described as follows:

Beginning at an iron rod found on the southeasterly corner of Tax Map 147, Lot 18-1 as shown on the above-referenced plan; thence running S 84° 48' 30" W a distance of 119.28 feet to an 8"x8" bound; thence turning and running N 40° 00' 38" W a distance of 12.18 feet to a point; thence turning and running S 78° 55' 48" E a distance of 149.29 feet to a point; thence turning and running S 34° 15' 48" W a distance of 12.95 feet to an iron rod found at the point of beginning.

Grantee shall have the right to access, from Grantee's abutting properties and not via the Premises, and to use the Easement Area for any and all residential uses. Grantee shall bear all costs and liabilities of any kind related to the use, upkeep and maintenance of the Easement Area and shall keep the Easement Area free from any and all liens arising out of any work performed for, materials furnished or obligations incurred by Grantee.

Grantor shall not construct, install, place, plant or store anything whatsoever in the above-described Easement Area that would violate the purpose of the easement. Grantor further agrees that is shall not construct any buildings on the Premises within that area extending twenty (20) feet along the shared property boundary with Grantee, shown as "20' Voluntary Building Setback" on the Plan.

Said easement is perpetual, is binding on successors and assigns of the parties and shall run with the land.

Homestead rights do not apply to this conveyance.

Meaning and intending to describe and convey and easement over a portion of the premises conveyed to Grantor by Elizabeth B. Larsen, Trustee of the Elizabeth B. Larsen Trust of 2012 by deed dated December 21, 2021 and recorded at the Registry at Book 6367, Page 1660.

Executed this _____ day of _____, 2022.

PUBLIC LAND HOLDINGS LLC

_____ By:_____
Witness Name:
Title

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

This instrument was acknowledged before me on _____, 2022, by _____, duly authorized _____ of Public Land Holdings LLC, on behalf of said limited liability company.

_____
Notary Public/Justice of the Peace
My Commission Expires:

RETURN TO:

RECIPROCAL DRIVEWAY EASEMENT

This Reciprocal Driveway Easement made as of this ___ day of _____, 2022 between [TAX MAP 147, LOT 18-1 OWNER] (the "Lot 18-1 Owner") and [TAX MAP 147, LOT 18-2 OWNER] (the "Lot 18-2 Owner") (each an "Owner" and collectively, the "Owners").

RECITALS:

WHEREAS, the Lot 18-1 Owner is the owner of that certain property situated in the City of Portsmouth, County of Rockingham and State of New Hampshire, identified as Map 147, Lot 18-1 ("Lot 18-1") on plan entitled "Subdivision and Lot Line Adjustment Plan, 668 Middle Street, Portsmouth. NH, Sheet A1, dated November 11, 2020 and revised through _____, 2022, by Jones & Beach Engineers, Inc., recorded in the Rockingham County Registry of Deeds (the "Registry") as Plan #_____ (the "Plan");

WHEREAS, the Lot 18-2 Owner is the owner of that certain property situated in the City of Portsmouth, County of Rockingham and State of New Hampshire, identified as Map 147, Lot 18-2 ("Lot 18-2") on the Plan; and

WHEREAS, the Owners desire to grant certain easements upon Lot 18-1 and Lot 18-2 (collectively the "Lots"), which easements are intended to run to the benefit of and bind their respective lots indicated, and the owners from time to time of such lots or any portion thereof.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the Owners hereby covenant and agree that the Lots, and all present and future owners and occupants of the Lots shall be and hereby are subject to the terms, easements and conditions hereinafter set forth in this Agreement, so that said Lots shall be maintained, kept, sold and used in full compliance with and subject to this Agreement,

and, in connection therewith, the parties hereto on behalf of themselves and their respective successors and assigns covenant and agree as follows:

1. The Lot 18-1 Owner grants to the Lot 18-2 Owner a perpetual non-exclusive right and easement for vehicular and pedestrian travel over a portion of its property along the common lot line between Lot 18-1 and Lot 18-2 within that area identified on the Plan as "Proposed Shared Driveway Access Easement to Benefit Proposed Lots" which area is more particularly bounded and described as follows:

> Beginning at an iron rod on the easterly side of Chevrolet Ave. and the northeasterly corner of Lot 18-1 as shown on the above-referenced plan; thence running S 29° 50' 26" E a distance of 188.06 feet to a point; thence turning and running S 41° 58' 09" W a distance of 6.17 feet to a point; thence turning and running N 31° 44' 31" W a distance of 126.13 feet to a point; thence turning and running along a curve with a radius of 72.50 feet, chord bearing of N 24° 54' 13" W and arc length of 17.31 feet to a point; thence turning and running N 34° 19' 36" W a distance of 22.36 feet to a point; thence turning and running N 55° 37' 42" E a distance of 5.30 feet to an iron rod at the point of beginning.

2. The Lot 18-2 Owner grants to the Lot 18-1 Owner a perpetual non-exclusive right and easement for vehicular and pedestrian travel over a portion of its property along the common lot line between Lot 18-1 and Lot 18-2 within that area identified on the Plan as "Proposed Shared Driveway Access Easement to Benefit Proposed Lots" which area is more particularly bounded and described as follows:

Beginning at an iron rod on the easterly side of Chevrolet Ave. and the northwesterly corner of Lot 18-2 as shown on the above-referenced plan; thence running N 43° 50' 49" E a distance of 21.23 feet; thence turning and running S 34° 19' 36" E a distance of 27.57 feet to a point; thence turning and running along a curve with a radius of 47.50 feet, chord bearing of S 24° 54' 13' E and arc length of 11.34 feet to a point; thence turning and running S 31° 44' 31" E a distance of 126.12 feet to a point; thence turning and running S 41° 58' 09" W a distance of 18.83 feet to a point; thence turning and running N 29° 50' 26" W a distance of 188.06 feet to an iron rod at the point of beginning.

(the areas set forth in paragraphs 1 and 2 above, collectively, the "Driveway Easement Area")

The purposes of these reciprocal easements are to provide ingress and egress over the Driveway Easement Area from to Lot 18-1 and Lot 18-2.

The Owners shall jointly and equally share the burden and cost to maintain the Driveway Easement Area in good order, condition and repair the Driveway Easement Area. Notwithstanding the foregoing, damage by accident or casualty proximately caused by one of the parties hereto, their family, agents, representatives or invitees shall be undertaken at the sole expense of that party. Each Owner shall provide to the other

copies of estimates and proposals, and shall obtain the other's written approval prior to undertaking any activities within the Driveway Easement Area for which that Owner intends to seek monetary contribution from the other. Unless the nature and/or cost of any repair or maintenance is in dispute, each Owner shall reimburse the other within thirty (30) days of documentation of payment for such work.

If either the Lot 18-1 Owner or the Lot 18-2 Owner shall fail to operate, maintain and repair any portion of the Driveway Easement Area in accordance with such Owner's obligations hereunder, and if such failure has not been fully remedied after thirty (30) days prior written notice, the other Owner may perform such operation, maintenance or repair, in such manner as reasonably deemed necessary, for and on the account of the non-performing Owner. In the event of any emergency or other circumstances requiring earlier action (including specifically, but without limitation, failure to perform snow and/or ice removal in a timely fashion), no prior notice shall be required hereunder. In the event of such action, the non-performing Owner shall be required to reimburse the performing Owner, within thirty (30) days, for the actual and reasonable costs incurred in such performance, to the extent that the performing Owner was not financially responsible for such performance.

In the event of a dispute as to the need, nature, or cost of any particular intended expense, the Owners shall attempt to amicably resolve the dispute, failing which each shall be entitled to pursue any and all remedies at law or in equity.

This easement is perpetual, shall run with the land and is binding upon and enforceable by the Owners, and all future owners of the Lots.

IN WITNESS WHEREOF, the parties hereto have caused this Reciprocal Driveway Easement to be executed as of the day and year first above written.

LOT 18-1 OWNER

_____ _____

Witness [Name]

LOT 18-2 OWNER

_____ _____

Witness [Name]

The State of New Hampshire
County of _____ _____, 202__

Personally appeared the above-named, _____, known to me or satisfactorily proven to be the person whose name is subscribed to the above document and acknowledged that he executed the same for the purposes contained therein,

Before me,

_____
Notary Public/Justice of the Peace
Print Name:
My Commission Expires:

The State of New Hampshire
County of _____ _____, 202__

Personally appeared the above-named, _____, known to me or satisfactorily proven to be the person whose name is subscribed to the above document and acknowledged that she executed the same for the purposes contained therein,

Before me,

_____
Notary Public/Justice of the Peace
Print Name:
My Commission Expires:

March 21,2022

To Whom It May Concern,

I have reviewed the draft set of plans entitled "Site of Subdivision Plan Chevrolet Avenue Duplexes Tax Map 147, Lot 18, 668 Middle Street, Portsmouth, NH" prepared by Jones & Beach Engineering, Inc. including specifically the Utility Plan and agree to, in exchange for $7,500.00 from Tuck Realty Corp., grant the City of Portsmouth a sewer, drainage and roadwork easement over my property as shown on the Utility Plan.

Sincerely,

Catherine R. Whelan

Charles J Gaudet

Return To:
Legal Department
City Hall
1 Junkins Ave.
Portsmouth, NH 03801

ACCESS, UTILITY AND DRAINAGE EASEMENT DEED

CATHERINE R. WHELAN, an individual with a mailing address of P.O. Box 235, New Castle, New Hampshire 03801 ("Grantor"), for due consideration, hereby grants to the CITY OF PORTSMOUTH, a municipal body politic, having a mailing address of 1 Junkins Avenue, Portsmouth, New Hampshire 30801 (the "Grantee"), with QUITCLAIM COVENANTS, the following easement with respect to Grantor's real property situate on Chevrolet Avenue, Portsmouth, Rockingham County, New Hampshire, also identified as Portsmouth Tax Assessor's Map 147, Lot 19-1, (the "Premises"):

1. **Easement Area**: to construct, use, repair and replace a roadway for ingress and egress by foot and by vehicle by Grantee and members of the public, together with the right to install underground utilities, and storm water flowage under, over and across those areas shown as "Proposed Right of Way and Sewer Easement" and further identified as Easements Nos. 4 and 5 over Tax Map 147, Lots 18-1 and 18-2 on an "Easement Plan, 668 Middle Street, Portsmouth, NH for Tuck Realty Corporation, " by Jones and Beach Engineers, Inc. , dated March 22, 2022 and revised through _____, 2022, by Jones & Beach Engineers, Inc., recorded in the Rockingham County Registry of Deeds (the "Registry") as Plan #_____ (the "Plan").

2. **Purpose and Rights:** The Grantee shall have a permanent and non-exclusive easement and right of way in, under, across and over the Easement Area for the purpose of installing, maintaining, inspecting, removing, repairing, and replacing the roadway and any utility and/or drainage lines and pipes, together with any associated infrastructure, equipment, outfall, swales and storm water flow. The Grantee shall have the right to remove trees, bushes, undergrowth and other obstructions interfering with the activities authorized herein and to take such other actions as may be necessary, useful or convenient for the enjoyment of the easement rights herein granted.

3. **Grantee's Responsibility to Restore:** Disturbed areas within the Easement Area and they shall be restored at the Grantee's expense.

4. **Grantor's Retained Rights:** Grantor retains the right to freely use and enjoy its interest in the Easement Area insofar as the exercise thereof does not endanger or interfere with

the purpose of this instrument, including without limitation any rights of the public to safely utilize Chevrolet Avenue as a public way. Grantor shall not, however, erect any fence or other structure within the Easement Area, substantially change the grade or slope, install any pipes, or pave or asphalt the Permanent Easement Area without prior written consent of the Grantee.

5. **Personal Property.** It is agreed that all utility and drainage infrastructure and related facilities installed within the Easement Area, whether fixed to the realty or not, shall be and remain the property of the Grantee.

6. **Easement to Run with Land:** All rights and privileges, obligations and liabilities created by this instrument shall inure to the benefit of, and be binding upon, the heirs, devises, administrators, executor, successors and assignees of the Grantee and of the Grantor, the parties hereto and all subsequent owners of the Premises and shall run with the land.

MEANING AND INTENDING to convey an easement over a portion of the premises conveyed to the within Grantor by deed of Charles J. Gaudet dated May 8, 2007, and recorded at the Rockingham County Registry of Deeds (the "Registry") at Book 4798, Page 125.

This is an exempt transfer per RSA 78-B:2(I).

Dated this ____ day of _____, 2022.

Witness:_____ _____
Catherine R. Whelan

STATE OF NEW HAMPSHIRE
COUNTY OF_____

Personally appeared the above-named Catherine R. Whelan and acknowledged the foregoing instrument to be her free act and deed executed for the purposes contained therein.

_____
Notary Public/Justice of the Peace
My commission expires: _____

DRAINAGE ANALYSIS

SEDIMENT AND EROSION CONTROL PLAN

"Chevrolet Avenue Duplexes"
668 Middle Street
Portsmouth, NH 03801
Tax Map 147, Lots 18

Prepared for:

Tuck Realty Corporation
P.O. Box 190
Exeter, NH 03833



Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
December 20, 2021
REVISED February 15, 2022
REVISED March 22, 2022
JBE Project No. 20686

EXECUTIVE SUMMARY

Tuck Realty Corporation is proposing to subdivide the existing Map 147 Lot 18 at 668 Middle Street Portsmouth, creating two new lots with frontage on Chevrolet Avenue on which they propose to construct a total of 2 residential duplexes on the proposed parcels. The existing Map 147 Lot 18 has a 3-unit residential dwelling, a carriage house with a garage, and a barn. Much of the rear of the lot is wooded with some lawn area as well.

A drainage analysis of the entire site 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 (3.69"), 10 Year – 24 Hour (5.60"), 25 Year – 24 Hour (7.10"), and 50 Year – 24 Hour (8.50")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 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	1.35	1.35	3.53	3.13	5.56	4.81	7.55	6.78

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	0.146	0.184	0.343	0.409	0.524	0.607	0.706	0.801

The subject parcel is located in the General Residence A District. The subject parcels currently consist of the aforementioned 3-unit residential dwelling, a carriage house with a garage, and a barn, all of which is proposed to remain, with the expectation of the existing barn which will be demolished. The topography on the site defines two (2) subcatchment, which drains to one (1) analysis point at the north eastern corner of the site.

The proposed site development consists of the aforementioned two new lots with frontage on Chevrolet Avenue with the 2 residential duplexes with associated paved common driveway. The addition of the proposed impervious paved areas and buildings causes an increase in the curve number (C_n) and a decrease in the time of concentration (T_c), the net result being a potential increase in peak rates of runoff from the site. A stormwater management system was designed in order to treat additional site run-off and mitigate peak flow rates. The proposed site development divides the site into five (5) subcatchments. The proposed stormwater management system for the front of the site consists of a rain garden system and a catch basin control structure to filter runoff.

The City of Portsmouth's only regulation concerning volume is that it shall be reduced to the maximum extent practicable. There are slight increases at the analysis point during the design storms, however although this project will not require an Alteration of Terrain Permit, it meets the Alteration of Terrain (AoT) Bureau's Channel Protection requirement, stipulating that volume may not increase toward any analysis point by more than 0.1 acre-foot during the 2-Year 24-Hour storm event. The volumes from all analyzed storm events do not exceed this 0.1 acre-foot threshold.

The use of Best Management Practices per the NHDES Stormwater Manual have been applied to the design of this drainage 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 of this development.

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2.0 Existing Conditions Analysis

3.0 Proposed Conditions Analysis

4.0 Conclusion

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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 NRCS Soil Map
Appendix V Extreme Precipitation Estimates
Appendix VI 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 location. These analyses were accomplished using the USDA SCS TR-20 Method within the HydroCAD 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 (3.69"), 10 Year – 24 Hour (5.60"), 25 Year – 24 Hour (7.10"), and 50 Year – 24 Hour (8.50") 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 of runoff will be reduced from the existing condition, thereby minimizing any potential for a negative impact on abutting properties or erosion of the wetland system. This is accomplished through treatment of stormwater runoff and attenuation of peak flows resulting from storm events.

2.0 EXISTING CONDITIONS ANALYSIS

Based on NRCS Web Soil Survey, the soil type for the entire studied area was found to consist of "Urban land – Canton complex" (Map unit symbol 799). This classifies the soils as Hydrologic Soil Groups (HSG) B.

The existing property feature a main house and a carriage house with porches, a garage, a barn, and two gravel driveways. The site is otherwise covered by both woods and grass. The majority of the site is sloped toward the northeastern corner of the lot. This point where the lot drains to have been designated Analysis Point #1 (AP1). The area draining from the south to this point can be described as two subcatchments, Subcatchments 1S and 2S. Subcatchment 1S consists of existing dwelling units and associated driveways and utilities. Subcatchment 2S consists of woods and grassed areas along with a existing barn structure. This subcatchment experiences some grade change, with the highest elevations being roughly 12' higher than the lowest elevation at AP1.

3.0 PROPOSED CONDITIONS ANALYSIS

The addition of the proposed impervious driveway and the buildings causes an increase in the curve number (C_n) and a decrease in the time of concentration (T_c), the result being a potential increase in peak rates of runoff from the site. The proposed development, consisting of the aforementioned two residential duplex units with associated paved driveways as well as stormwater management features divide the subject parcel into five (5) subcatchments. Subcatchment 10S is comprised of the unchanged section of the lot, existing houses, gravel driveway, garage, etc. Subcatchment 20S consists of the remainder of 2S left after the placement of the driveway and houses. Subcatchments 21S is comprised of the proposed driveway and sidewalk. The runoff from subcatchment 21S is directed into the proposed rain garden (10P). After receiving treatment in the rain garden system, runoff will be directed into the existing City of Portsmouth drainage network. Subcatchments 22S and 23S consists of the proposed roof areas along with the proposed drip edges (3P and 4P). The roof areas are directed to the drip edges and any overflow will go to the proposed rain garden.

The site will be graded such that runoff from all the proposed impervious areas, will be treated, by way of the rain garden system.

According to the NH Stormwater Manual, bioretention systems (rain gardens) provide a pollutant removal efficiency of 90% for TSS and 65% for nitrogen, and infiltration basins (including subsurface ones) provide a removal efficiency of 90% for TSS and 60% for nitrogen. Runoff from all impervious surfaces with the exception of roofs is being directed toward one of these two types of treatment systems.

5.0 CONCLUSION

This proposed site development will have minimal adverse effect on abutting infrastructures and properties by way of stormwater runoff or siltation. Appropriate steps will be taken to eliminate erosion and sedimentation; these will be accomplished through the construction of a drainage system consisting of site grading, multi-stage discharge outlet structure, and rain garden system as well as 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 of runoff from the site will be reduced from the unmanaged post development condition to the analysis point during all storms.

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

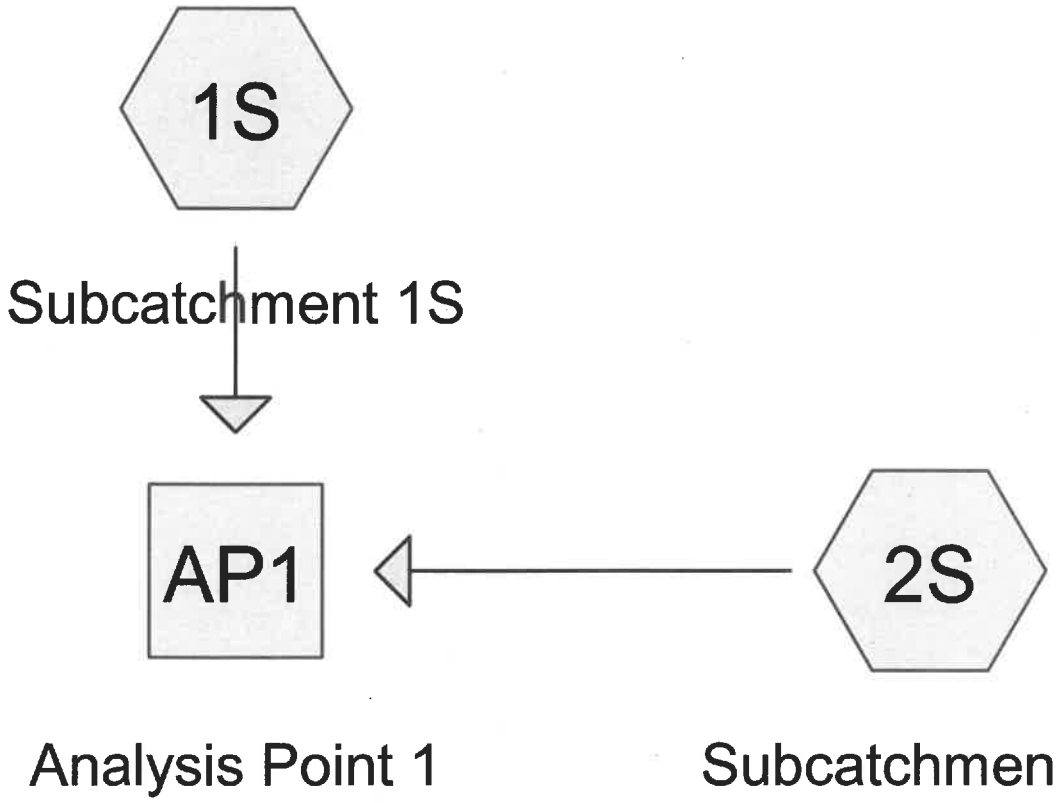
Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

Michael Kerivan, P.E.
Project 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 20686-EXISTING_3-22-2022_work
Prepared by Jones and Beach Engineers, Inc., Printed 3/22/2022
HydroCAD® 10.10-5a s/n 10589 © 2020 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 Yr 24 Hr (+15%)	Type III 24-hr		Default	24.00	1	3.69	2
2	10 Yr 24 Hr(+15%)	Type III 24-hr		Default	24.00	1	5.60	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.679	61	>75% Grass cover, Good, HSG B (1S, 2S)
0.198	96	Gravel surface, HSG B (1S)
0.074	98	Paved parking, HSG B (1S, 2S)
0.116	98	Roofs, HSG B (1S, 2S)
0.864	55	Woods, Good, HSG B (1S, 2S)
1.931	**66**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.931	HSG B	1S, 2S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.931		**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

Subcatchment 1S: Subcatchment 1S Runoff Area=44,468 sf 11.24% Impervious Runoff Depth>1.12"
Flow Length=305' Tc=15.5 min CN=70 Runoff=0.93 cfs 0.096 af

Subcatchment 2S: Subcatchment 2S Runoff Area=39,659 sf 8.35% Impervious Runoff Depth>0.66"
Flow Length=235' Tc=8.6 min CN=61 Runoff=0.48 cfs 0.050 af

Reach AP1: Analysis Point 1 Inflow=1.35 cfs 0.146 af
Outflow=1.35 cfs 0.146 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.146 af Average Runoff Depth = 0.90"
90.12% Pervious = 1.741 ac 9.88% Impervious = 0.191 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

Subcatchment 1S: Subcatchment 1S Runoff Area=44,468 sf 11.24% Impervious Runoff Depth>2.48"
Flow Length=305' Tc=15.5 min CN=70 Runoff=2.19 cfs 0.211 af

Subcatchment 2S: Subcatchment 2S Runoff Area=39,659 sf 8.35% Impervious Runoff Depth>1.74"
Flow Length=235' Tc=8.6 min CN=61 Runoff=1.56 cfs 0.132 af

Reach AP1: Analysis Point 1 Inflow=3.53 cfs 0.343 af
Outflow=3.53 cfs 0.343 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.343 af Average Runoff Depth = 2.13"
90.12% Pervious = 1.741 ac 9.88% Impervious = 0.191 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 2.19 cfs @ 12.22 hrs, Volume= 0.211 af, Depth> 2.48"

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=5.60"

Area (sf)	CN	Description
4,850	98	Roofs, HSG B
147	98	Paved parking, HSG B
8,632	96	Gravel surface, HSG B
14,968	61	>75% Grass cover, Good, HSG B
15,871	55	Woods, Good, HSG B
44,468	70	Weighted Average
39,471		88.76% Pervious Area
4,997		11.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
1.4	60	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	120	0.0750	4.11		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.9	55	0.0010	0.47		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.2	20	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.5	305	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 1.56 cfs @ 12.14 hrs, Volume= 0.132 af, Depth> 1.74"

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=5.60"

Area (sf)	CN	Description
223	98	Roofs, HSG B
3,090	98	Paved parking, HSG B
14,596	61	>75% Grass cover, Good, HSG B
21,750	55	Woods, Good, HSG B
39,659	61	Weighted Average
36,346		91.65% Pervious Area
3,313		8.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0770	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
1.9	185	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.6	235	Total			

Summary for Reach AP1: Analysis Point 1

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

Inflow Area = 1.931 ac, 9.88% Impervious, Inflow Depth > 2.13" for 10 Yr 24 Hr(+15%) event
Inflow = 3.53 cfs @ 12.18 hrs, Volume= 0.343 af
Outflow = 3.53 cfs @ 12.18 hrs, Volume= 0.343 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

Subcatchment 1S: Subcatchment 1S Runoff Area=44,468 sf 11.24% Impervious Runoff Depth>3.69"
Flow Length=305' Tc=15.5 min CN=70 Runoff=3.29 cfs 0.314 af

Subcatchment 2S: Subcatchment 2S Runoff Area=39,659 sf 8.35% Impervious Runoff Depth>2.77"
Flow Length=235' Tc=8.6 min CN=61 Runoff=2.58 cfs 0.210 af

Reach AP1: Analysis Point 1 Inflow=5.56 cfs 0.524 af
Outflow=5.56 cfs 0.524 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.524 af Average Runoff Depth = 3.26"
90.12% Pervious = 1.741 ac 9.88% Impervious = 0.191 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

Subcatchment 1S: Subcatchment 1S Runoff Area=44,468 sf 11.24% Impervious Runoff Depth>4.88"
Flow Length=305' Tc=15.5 min CN=70 Runoff=4.37 cfs 0.415 af

Subcatchment 2S: Subcatchment 2S Runoff Area=39,659 sf 8.35% Impervious Runoff Depth>3.82"
Flow Length=235' Tc=8.6 min CN=61 Runoff=3.62 cfs 0.290 af

Reach AP1: Analysis Point 1 Inflow=7.55 cfs 0.706 af
Outflow=7.55 cfs 0.706 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.706 af Average Runoff Depth = 4.38"
90.12% Pervious = 1.741 ac 9.88% Impervious = 0.191 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 4.37 cfs @ 12.21 hrs, Volume= 0.415 af, Depth> 4.88"

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=8.50"

Area (sf)	CN	Description
4,850	98	Roofs, HSG B
147	98	Paved parking, HSG B
8,632	96	Gravel surface, HSG B
14,968	61	>75% Grass cover, Good, HSG B
15,871	55	Woods, Good, HSG B
44,468	70	Weighted Average
39,471		88.76% Pervious Area
4,997		11.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
1.4	60	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	120	0.0750	4.11		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.9	55	0.0010	0.47		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.2	20	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.5	305	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 3.62 cfs @ 12.13 hrs, Volume= 0.290 af, Depth> 3.82"

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=8.50"

Area (sf)	CN	Description
223	98	Roofs, HSG B
3,090	98	Paved parking, HSG B
14,596	61	>75% Grass cover, Good, HSG B
21,750	55	Woods, Good, HSG B
39,659	61	Weighted Average
36,346		91.65% Pervious Area
3,313		8.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0770	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
1.9	185	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.6	235	Total			

Summary for Reach AP1: Analysis Point 1

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

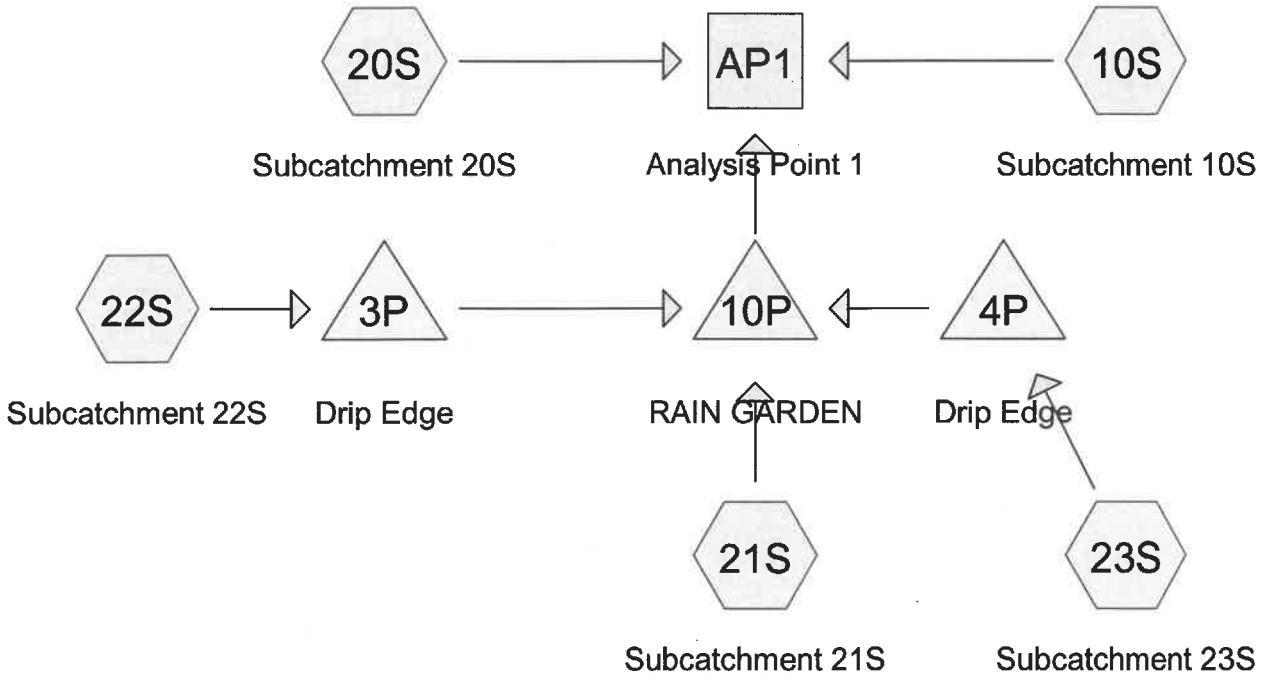
Inflow Area = 1.931 ac, 9.88% Impervious, Inflow Depth > 4.38" for 50 Yr 24 Hr(+15%) event
Inflow = 7.55 cfs @ 12.17 hrs, Volume= 0.706 af
Outflow = 7.55 cfs @ 12.17 hrs, Volume= 0.706 af, Atten= 0%, Lag= 0.0 min

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 20686-PROPOSED_3-22-2022_work
Prepared by Jones and Beach Engineers, Inc., Printed 3/22/2022
HydroCAD® 10.10-5a s/n 10589 © 2020 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 Yr 24 Hr (+15%)	Type III 24-hr		Default	24.00	1	3.69	2
2	10 Yr 24 Hr(+15%)	Type III 24-hr		Default	24.00	1	5.60	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.745	61	>75% Grass cover, Good, HSG B (10S, 20S, 21S)
0.197	96	Gravel surface, HSG B (10S)
0.198	98	Paved parking, HSG B (20S, 21S)
0.274	98	Roofs, HSG B (10S, 22S, 23S)
0.035	98	Water Surface, HSG B (22S, 23S)
0.481	55	Woods, Good, HSG B (10S, 20S, 21S)
1.931	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.931	HSG B	10S, 20S, 21S, 22S, 23S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.931		**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

Subcatchment 10S: Subcatchment 10S Runoff Area=44,468 sf 10.41% Impervious Runoff Depth>1.07"
Flow Length=305' Tc=15.5 min CN=69 Runoff=0.87 cfs 0.091 af

Subcatchment 20S: Subcatchment 20S Runoff Area=14,138 sf 24.01% Impervious Runoff Depth>1.01"
Flow Length=330' Tc=15.6 min CN=68 Runoff=0.26 cfs 0.027 af

Subcatchment 21S: Subcatchment 21S Runoff Area=16,665 sf 31.51% Impervious Runoff Depth>1.25"
Flow Length=196' Tc=6.0 min CN=72 Runoff=0.53 cfs 0.040 af

Subcatchment 22S: Subcatchment 22S Runoff Area=4,415 sf 100.00% Impervious Runoff Depth>3.45"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.029 af

Subcatchment 23S: Subcatchment 23S Runoff Area=4,434 sf 100.00% Impervious Runoff Depth>3.45"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.029 af

Reach AP1: Analysis Point 1 Inflow=1.35 cfs 0.184 af
Outflow=1.35 cfs 0.184 af

Pond 3P: Drip Edge Peak Elev=26.00' Storage=1,216 cf Inflow=0.36 cfs 0.029 af
Outflow=0.00 cfs 0.001 af

Pond 4P: Drip Edge Peak Elev=22.00' Storage=1,247 cf Inflow=0.36 cfs 0.029 af
Outflow=0.00 cfs 0.001 af

Pond 10P: RAIN GARDEN Peak Elev=14.50' Storage=1,200 cf Inflow=0.53 cfs 0.042 af
Outflow=0.44 cfs 0.066 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.216 af Average Runoff Depth = 1.34"
73.70% Pervious = 1.423 ac 26.30% Impervious = 0.508 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

Subcatchment 10S: Subcatchment 10S Runoff Area=44,468 sf 10.41% Impervious Runoff Depth>2.40"
Flow Length=305' Tc=15.5 min CN=69 Runoff=2.11 cfs 0.204 af

Subcatchment 20S: Subcatchment 20S Runoff Area=14,138 sf 24.01% Impervious Runoff Depth>2.31"
Flow Length=330' Tc=15.6 min CN=68 Runoff=0.64 cfs 0.062 af

Subcatchment 21S: Subcatchment 21S Runoff Area=16,665 sf 31.51% Impervious Runoff Depth>2.67"
Flow Length=196' Tc=6.0 min CN=72 Runoff=1.17 cfs 0.085 af

Subcatchment 22S: Subcatchment 22S Runoff Area=4,415 sf 100.00% Impervious Runoff Depth>5.36"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.045 af

Subcatchment 23S: Subcatchment 23S Runoff Area=4,434 sf 100.00% Impervious Runoff Depth>5.36"
Tc=6.0 min CN=98 Runoff=0.55 cfs 0.045 af

Reach AP1: Analysis Point 1 Inflow=3.13 cfs 0.409 af
Outflow=3.13 cfs 0.409 af

Pond 3P: Drip Edge Peak Elev=26.01' Storage=1,226 cf Inflow=0.54 cfs 0.045 af
Outflow=0.23 cfs 0.017 af

Pond 4P: Drip Edge Peak Elev=22.01' Storage=1,257 cf Inflow=0.55 cfs 0.045 af
Outflow=0.24 cfs 0.017 af

Pond 10P: RAIN GARDEN Peak Elev=14.53' Storage=1,217 cf Inflow=1.17 cfs 0.119 af
Outflow=0.44 cfs 0.143 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.442 af Average Runoff Depth = 2.75"
73.70% Pervious = 1.423 ac 26.30% Impervious = 0.508 ac

Summary for Subcatchment 10S: Subcatchment 10S

Runoff = 2.11 cfs @ 12.22 hrs, Volume= 0.204 af, Depth> 2.40"

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=5.60"

Area (sf)	CN	Description
4,628	98	Roofs, HSG B
8,595	96	Gravel surface, HSG B
15,374	61	>75% Grass cover, Good, HSG B
15,871	55	Woods, Good, HSG B
44,468	69	Weighted Average
39,840		89.59% Pervious Area
4,628		10.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
1.4	60	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	120	0.0750	4.11		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.9	55	0.0010	0.47		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.2	20	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.5	305	Total			

Summary for Subcatchment 20S: Subcatchment 20S

Runoff = 0.64 cfs @ 12.22 hrs, Volume= 0.062 af, Depth> 2.31"

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=5.60"

Area (sf)	CN	Description
3,395	98	Paved parking, HSG B
7,455	61	>75% Grass cover, Good, HSG B
3,288	55	Woods, Good, HSG B
14,138	68	Weighted Average
10,743		75.99% Pervious Area
3,395		24.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	20	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
4.6	30	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
1.6	173	0.0630	1.76		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	28	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	79	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.6	330	Total			

Summary for Subcatchment 21S: Subcatchment 21S

Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.085 af, Depth> 2.67"

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=5.60"

Area (sf)	CN	Description
5,251	98	Paved parking, HSG B
9,631	61	>75% Grass cover, Good, HSG B
1,783	55	Woods, Good, HSG B
16,665	72	Weighted Average
11,414		68.49% Pervious Area
5,251		31.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	26	0.0850	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.1	25	0.2200	3.28		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	145	0.0800	5.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.3	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Subcatchment 22S

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 5.36"

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=5.60"

Area (sf)	CN	Description
3,660	98	Roofs, HSG B
755	98	Water Surface, HSG B
4,415	98	Weighted Average
4,415		100.00% Impervious Area

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

Summary for Subcatchment 23S: Subcatchment 23S

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 5.36"

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=5.60"

Area (sf)	CN	Description
3,660	98	Roofs, HSG B
774	98	Water Surface, HSG B
4,434	98	Weighted Average
4,434		100.00% Impervious Area

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

Summary for Reach AP1: Analysis Point 1

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

Inflow Area = 1.931 ac, 26.30% Impervious, Inflow Depth > 2.54" for 10 Yr 24 Hr(+15%) event
Inflow = 3.13 cfs @ 12.22 hrs, Volume= 0.409 af
Outflow = 3.13 cfs @ 12.22 hrs, Volume= 0.409 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 3P: Drip Edge

Inflow Area = 0.101 ac,100.00% Impervious, Inflow Depth > 5.36" for 10 Yr 24 Hr(+15%) event
Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.045 af
Outflow = 0.23 cfs @ 12.36 hrs, Volume= 0.017 af, Atten= 58%, Lag= 16.7 min
Primary = 0.23 cfs @ 12.36 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 26.01' @ 12.35 hrs Surf.Area= 755 sf Storage= 1,226 cf

Plug-Flow detention time= 337.0 min calculated for 0.017 af (38% of inflow)
Center-of-Mass det. time= 175.3 min (921.1 - 745.8)

Volume	Invert	Avail.Storage	Storage Description
#1	21.99'	1,593 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.99	755	0.0	0	0
22.00	755	40.0	3	3
25.99	755	40.0	1,205	1,208
26.00	755	100.0	8	1,216
26.50	755	100.0	378	1,593

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**50.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.20 cfs @ 12.36 hrs HW=26.01' TW=14.28' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.20 cfs @ 0.31 fps)

Summary for Pond 4P: Drip Edge

Inflow Area = 0.102 ac,100.00% Impervious, Inflow Depth > 5.36" for 10 Yr 24 Hr(+15%) event
Inflow = 0.55 cfs @ 12.09 hrs, Volume= 0.045 af
Outflow = 0.24 cfs @ 12.41 hrs, Volume= 0.017 af, Atten= 56%, Lag= 19.2 min
Primary = 0.24 cfs @ 12.41 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 22.01' @ 12.40 hrs Surf.Area= 774 sf Storage= 1,257 cf

Plug-Flow detention time= 348.8 min calculated for 0.017 af (37% of inflow)
Center-of-Mass det. time= 181.6 min (927.4 - 745.8)

Volume	Invert	Avail.Storage	Storage Description
#1	17.99'	1,633 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.99	774	0.0	0	0
18.00	774	40.0	3	3
21.99	774	40.0	1,235	1,238
22.00	774	100.0	8	1,246
22.50	774	100.0	387	1,633

Device	Routing	Invert	Outlet Devices
#1	Primary	22.00'	**50.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.22 cfs @ 12.41 hrs HW=22.01' TW=14.38' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.22 cfs @ 0.33 fps)

Summary for Pond 10P: RAIN GARDEN

Inflow Area = 0.586 ac, 55.26% Impervious, Inflow Depth > 2.44" for 10 Yr 24 Hr(+15%) event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.119 af
Outflow = 0.44 cfs @ 12.55 hrs, Volume= 0.143 af, Atten= 62%, Lag= 27.2 min
Primary = 0.44 cfs @ 12.55 hrs, Volume= 0.143 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Starting Elev= 14.50' Surf.Area= 1,327 sf Storage= 1,200 cf
Peak Elev= 14.53' @ 12.55 hrs Surf.Area= 1,327 sf Storage= 1,217 cf (18 cf above start)

Plug-Flow detention time= 45.7 min calculated for 0.115 af (97% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	12.24'	4,595 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)
12.24	1,327	212.9	0.0	0	0	1,327
12.25	1,327	212.9	40.0	5	5	1,329
15.24	1,327	212.9	40.0	1,587	1,592	1,966
15.25	1,327	212.9	5.0	1	1,593	1,968
15.49	1,327	212.9	5.0	16	1,609	2,019
15.50	1,327	212.9	15.0	2	1,611	2,021
16.99	1,327	212.9	15.0	297	1,908	2,338
17.00	88	55.7	100.0	6	1,913	5,698
18.00	716	193.8	100.0	352	2,265	8,443
19.00	1,325	212.9	100.0	1,005	3,270	9,094
20.00	1,325	0.0	100.0	1,325	4,595	12,702

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**95.0' 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
#2	Primary	12.50'	**12.0" Round Culvert** L= 25.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.50' / 12.00' S= 0.0200 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#3	Device 2	12.50'	**3.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	18.75'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.44 cfs @ 12.55 hrs HW=14.53' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└—**2=Culvert** (Passes 0.44 cfs of 3.70 cfs potential flow)
  ↑—**3=Orifice/Grate** (Orifice Controls 0.44 cfs @ 6.61 fps)
  └—**4=Orifice/Grate** (Controls 0.00 cfs)

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

Subcatchment 10S: Subcatchment 10S Runoff Area=44,468 sf 10.41% Impervious Runoff Depth>3.59"
Flow Length=305' Tc=15.5 min CN=69 Runoff=3.20 cfs 0.305 af

Subcatchment 20S: Subcatchment 20S Runoff Area=14,138 sf 24.01% Impervious Runoff Depth>3.48"
Flow Length=330' Tc=15.6 min CN=68 Runoff=0.98 cfs 0.094 af

Subcatchment 21S: Subcatchment 21S Runoff Area=16,665 sf 31.51% Impervious Runoff Depth>3.91"
Flow Length=196' Tc=6.0 min CN=72 Runoff=1.72 cfs 0.125 af

Subcatchment 22S: Subcatchment 22S Runoff Area=4,415 sf 100.00% Impervious Runoff Depth>6.86"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.058 af

Subcatchment 23S: Subcatchment 23S Runoff Area=4,434 sf 100.00% Impervious Runoff Depth>6.86"
Tc=6.0 min CN=98 Runoff=0.69 cfs 0.058 af

Reach AP1: Analysis Point 1 Inflow=4.81 cfs 0.607 af
Outflow=4.81 cfs 0.607 af

Pond 3P: Drip Edge Peak Elev=26.03' Storage=1,241 cf Inflow=0.69 cfs 0.058 af
Outflow=0.85 cfs 0.030 af

Pond 4P: Drip Edge Peak Elev=22.04' Storage=1,273 cf Inflow=0.69 cfs 0.058 af
Outflow=0.93 cfs 0.030 af

Pond 10P: RAIN GARDEN Peak Elev=18.04' Storage=2,296 cf Inflow=3.18 cfs 0.184 af
Outflow=0.75 cfs 0.208 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.640 af Average Runoff Depth = 3.98"
73.70% Pervious = 1.423 ac 26.30% Impervious = 0.508 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

Subcatchment 10S: Subcatchment 10S Runoff Area=44,468 sf 10.41% Impervious Runoff Depth>4.76"
Flow Length=305' Tc=15.5 min CN=69 Runoff=4.26 cfs 0.405 af

Subcatchment 20S: Subcatchment 20S Runoff Area=14,138 sf 24.01% Impervious Runoff Depth>4.64"
Flow Length=330' Tc=15.6 min CN=68 Runoff=1.32 cfs 0.126 af

Subcatchment 21S: Subcatchment 21S Runoff Area=16,665 sf 31.51% Impervious Runoff Depth>5.13"
Flow Length=196' Tc=6.0 min CN=72 Runoff=2.25 cfs 0.164 af

Subcatchment 22S: Subcatchment 22S Runoff Area=4,415 sf 100.00% Impervious Runoff Depth>8.25"
Tc=6.0 min CN=98 Runoff=0.83 cfs 0.070 af

Subcatchment 23S: Subcatchment 23S Runoff Area=4,434 sf 100.00% Impervious Runoff Depth>8.25"
Tc=6.0 min CN=98 Runoff=0.83 cfs 0.070 af

Reach AP1: Analysis Point 1 Inflow=6.78 cfs 0.801 af
Outflow=6.78 cfs 0.801 af

Pond 3P: Drip Edge Peak Elev=26.04' Storage=1,242 cf Inflow=0.83 cfs 0.070 af
Outflow=0.95 cfs 0.042 af

Pond 4P: Drip Edge Peak Elev=22.04' Storage=1,275 cf Inflow=0.83 cfs 0.070 af
Outflow=1.04 cfs 0.041 af

Pond 10P: RAIN GARDEN Peak Elev=18.84' Storage=3,066 cf Inflow=4.14 cfs 0.247 af
Outflow=1.88 cfs 0.270 af

Total Runoff Area = 1.931 ac Runoff Volume = 0.834 af Average Runoff Depth = 5.18"
73.70% Pervious = 1.423 ac 26.30% Impervious = 0.508 ac

Summary for Subcatchment 10S: Subcatchment 10S

Runoff = 4.26 cfs @ 12.22 hrs, Volume= 0.405 af, Depth> 4.76"

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=8.50"

Area (sf)	CN	Description
4,628	98	Roofs, HSG B
8,595	96	Gravel surface, HSG B
15,374	61	>75% Grass cover, Good, HSG B
15,871	55	Woods, Good, HSG B
44,468	69	Weighted Average
39,840		89.59% Pervious Area
4,628		10.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
1.4	60	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	120	0.0750	4.11		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.9	55	0.0010	0.47		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.2	20	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.5	305	Total			

Summary for Subcatchment 20S: Subcatchment 20S

Runoff = 1.32 cfs @ 12.22 hrs, Volume= 0.126 af, Depth> 4.64"

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=8.50"

Area (sf)	CN	Description
3,395	98	Paved parking, HSG B
7,455	61	>75% Grass cover, Good, HSG B
3,288	55	Woods, Good, HSG B
14,138	68	Weighted Average
10,743		75.99% Pervious Area
3,395		24.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	20	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
4.6	30	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
1.6	173	0.0630	1.76		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	28	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	79	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.6	330	Total			

Summary for Subcatchment 21S: Subcatchment 21S

Runoff = 2.25 cfs @ 12.09 hrs, Volume= 0.164 af, Depth> 5.13"

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=8.50"

Area (sf)	CN	Description
5,251	98	Paved parking, HSG B
9,631	61	>75% Grass cover, Good, HSG B
1,783	55	Woods, Good, HSG B
16,665	72	Weighted Average
11,414		68.49% Pervious Area
5,251		31.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	26	0.0850	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.1	25	0.2200	3.28		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	145	0.0800	5.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.3	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Subcatchment 22S

Runoff = 0.83 cfs @ 12.09 hrs, Volume= 0.070 af, Depth> 8.25"

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=8.50"

Area (sf)	CN	Description
3,660	98	Roofs, HSG B
755	98	Water Surface, HSG B
4,415	98	Weighted Average
4,415		100.00% Impervious Area

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

Summary for Subcatchment 23S: Subcatchment 23S

Runoff = 0.83 cfs @ 12.09 hrs, Volume= 0.070 af, Depth> 8.25"

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=8.50"

Area (sf)	CN	Description
3,660	98	Roofs, HSG B
774	98	Water Surface, HSG B
4,434	98	Weighted Average
4,434		100.00% Impervious Area

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

Summary for Reach AP1: Analysis Point 1

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

Inflow Area = 1.931 ac, 26.30% Impervious, Inflow Depth > 4.98" for 50 Yr 24 Hr(+15%) event
Inflow = 6.78 cfs @ 12.29 hrs, Volume= 0.801 af
Outflow = 6.78 cfs @ 12.29 hrs, Volume= 0.801 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 3P: Drip Edge

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.101 ac,100.00% Impervious, Inflow Depth > 8.25" for 50 Yr 24 Hr(+15%) event
Inflow = 0.83 cfs @ 12.09 hrs, Volume= 0.070 af
Outflow = 0.95 cfs @ 12.06 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
Primary = 0.95 cfs @ 12.06 hrs, Volume= 0.042 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 26.04' @ 12.05 hrs Surf.Area= 755 sf Storage= 1,242 cf

Plug-Flow detention time= 221.4 min calculated for 0.042 af (60% of inflow)

Center-of-Mass det. time= 109.7 min (849.7 - 740.1)

Volume	Invert	Avail.Storage	Storage Description
#1	21.99'	1,593 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.99	755	0.0	0	0
22.00	755	40.0	3	3
25.99	755	40.0	1,205	1,208
26.00	755	100.0	8	1,216
26.50	755	100.0	378	1,593

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**50.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.86 cfs @ 12.06 hrs HW=26.03' TW=15.36' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.86 cfs @ 0.51 fps)

Summary for Pond 4P: Drip Edge

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.102 ac,100.00% Impervious, Inflow Depth > 8.25" for 50 Yr 24 Hr(+15%) event
Inflow = 0.83 cfs @ 12.09 hrs, Volume= 0.070 af
Outflow = 1.04 cfs @ 12.06 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Primary = 1.04 cfs @ 12.06 hrs, Volume= 0.041 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 22.04' @ 12.05 hrs Surf.Area= 774 sf Storage= 1,275 cf

Plug-Flow detention time= 225.8 min calculated for 0.041 af (59% of inflow)
Center-of-Mass det. time= 111.5 min (851.6 - 740.1)

Volume	Invert	Avail.Storage	Storage Description
#1	17.99'	1,633 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.99	774	0.0	0	0
18.00	774	40.0	3	3
21.99	774	40.0	1,235	1,238
22.00	774	100.0	8	1,246
22.50	774	100.0	387	1,633

Device	Routing	Invert	Outlet Devices
#1	Primary	22.00'	**50.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.91 cfs @ 12.06 hrs HW=22.03' TW=15.30' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.91 cfs @ 0.52 fps)

Summary for Pond 10P: RAIN GARDEN

Inflow Area = 0.586 ac, 55.26% Impervious, Inflow Depth > 5.06" for 50 Yr 24 Hr(+15%) event
Inflow = 4.14 cfs @ 12.07 hrs, Volume= 0.247 af
Outflow = 1.88 cfs @ 12.31 hrs, Volume= 0.270 af, Atten= 55%, Lag= 14.6 min
Primary = 1.88 cfs @ 12.31 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Starting Elev= 14.50' Surf.Area= 1,327 sf Storage= 1,200 cf
Peak Elev= 18.84' @ 12.31 hrs Surf.Area= 1,215 sf Storage= 3,066 cf (1,866 cf above start)

Plug-Flow detention time= 45.8 min calculated for 0.243 af (98% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	12.24'	4,595 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)
12.24	1,327	212.9	0.0	0	0	1,327
12.25	1,327	212.9	40.0	5	5	1,329
15.24	1,327	212.9	40.0	1,587	1,592	1,966
15.25	1,327	212.9	5.0	1	1,593	1,968
15.49	1,327	212.9	5.0	16	1,609	2,019
15.50	1,327	212.9	15.0	2	1,611	2,021
16.99	1,327	212.9	15.0	297	1,908	2,338
17.00	88	55.7	100.0	6	1,913	5,698
18.00	716	193.8	100.0	352	2,265	8,443
19.00	1,325	212.9	100.0	1,005	3,270	9,094
20.00	1,325	0.0	100.0	1,325	4,595	12,702

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**95.0' 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
#2	Primary	12.50'	**12.0" Round Culvert** L= 25.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 12.50' / 12.00' S= 0.0200 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#3	Device 2	12.50'	**3.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	18.75'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.76 cfs @ 12.31 hrs HW=18.83' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
- **2=Culvert** (Passes 1.76 cfs of 7.21 cfs potential flow)
  - **3=Orifice/Grate** (Orifice Controls 0.80 cfs @ 11.98 fps)
  - **4=Orifice/Grate** (Weir Controls 0.96 cfs @ 0.94 fps)

APPENDIX III

Test Pit Logs

CSA
ENVIRONMENTAL CONSULTANTS, LLC
CLEAN WATER FOR THE PRESENT AND FUTURE
36 Stage Rd, Nottingham NH 03290
603.679.1866 C: 603.706.2521
calbert.env@gmail.com

TEST PITS
668 MIDDLE ROAD
PORTSMOUTH, NEW HAMPSHIRE
JANUARY 14, 2021

Performed by: Christopher Albert, SSD #1085

TEST PIT #1 – GRASS MAT

0" - 9"	10YR 3/4	dark yellowish brown fine sandy loam common roots
9" - 20"	10YR 5/6	yellowish brown fine sandy loam common roots
20" - 38"	2.5Y 6/4	Light yellowish brown fine sandy loam Few stones



No H2O observed
SHWT: 28"
Roots: 28"
Refusal: 38"
Perc Rate = 8 min/inch

TEST PIT #2 – GRASS MAT

0" - 7"	10YR 3/4	dark yellowish brown fine sandy loam to loamy sand many roots
7" - 20"	10YR 5/6	yellowish brown fine sandy loam few roots
20" - 46"	2.5Y 5/3	Light yellowish brown fine sandy loam, few stones

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No H2O observed
SHWT: 32"
Roots: 32"
Refusal: 46"
Perc Rate = 8 min/inch

TEST PIT #3 – GRASS MAT

Refusal: 12"

TEST PIT #4 – GRASS MAT

0" - 9"	10YR 3/4	dark yellowish brown fine sandy loam to loamy sand many roots
9" - 28"	10YR 5/6	yellowish brown fine sandy loam few roots
28" - 48"	2.5Y 5/3	Light yellowish brown fine sandy loam, few stones

No H2O observed
SHWT: 28"
Roots: 28"
Refusal: 48"
Perc Rate = 8 min/inch

TEST PIT #5 – GRASS MAT

Refusal: 18"

NEW HAMPSHIRE
Designer
of
Subsurface Disposal
Systems
Christopher S Albert
No. 1085
Department of Environmental Services

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TEST PIT #6 – FOREST MAT

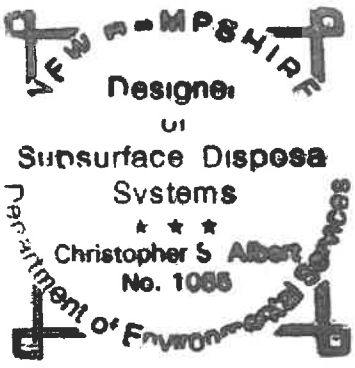
0" – 12"	10YR 3/3	dark brown fine sandy loam few roots
12" - 36"	10YR 4/6	yellowish brown fine sandy loam common roots
36" - 50"	2.5Y 6/4	Light yellowish brown fine sandy loam Few stones

No H2O observed
SHWT: 40"
Roots: 36"
Refusal: 50"
Perc Rate = 8 min/inch

Test Pit #7 – GRASS MAT

0" – 12"	10YR 3/3	dark brown fine sandy loam few roots
12" - 36"	10YR 4/6	yellowish brown fine sandy loam common roots
36" - 72"	2.5Y 5/4	Light Olive brown fine sandy loam Firm, Few stones

No H2O observed
SHWT: 36"
Roots: 36"
Refusal: 72"
Perc Rate = 8 min/inch



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TEST PIT #8 – GRASS MAT

Refusal: 12"

TEST PIT #9 – GRASS MAT

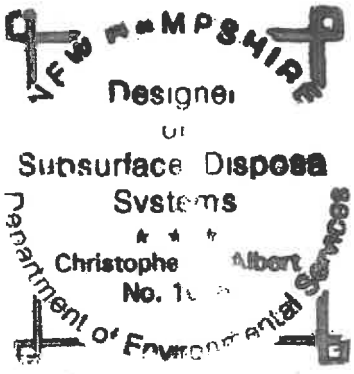
Refusal: 24"

TEST PIT #10 – GRASS MAT

0" - 10"		Crushed Gravel (fill material)
Stabilization Fabric		
10" - 24"	2.5Y 5/3	Light olive brown Silty clay loam Subangular blocky

Encountered 2" electrical conduit

No H2O observed
SHWT: 10"
Roots: none
Refusal: none
Perc Rate = 20 min/inch

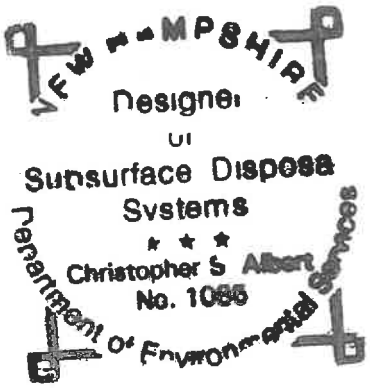


TEST PIT #11 – EDGE TREE LINE

0" – 20"	10YR 2/2	Very dark brown, FSL Few roots
20" - 84"	2.5Y 3/4	Light olive brown Silty clay loam Subangular blocky

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No H2O observed
SHWT: 20"
Roots: 20"
Refusal: none
Perc Rate = 20 min/inch



APPENDIX IV

NRCS Soil Map

Soil Map---Rockingham County, New Hampshire



Map Scale: 1:1,100 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 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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
799	Urban land-Canton complex, 3 to 15 percent slopes	2.9	100.0%
Totals for Area of Interest		**2.9**	**100.0%**

APPENDIX V

Extreme Precipitation Estimates

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	70.767 degrees West
Latitude	43.068 degrees North
Elevation	0 feet
Date/Time	Mon, 13 Dec 2021 08:39:25 -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	2.66	2.92	**1yr**	2.35	2.81	3.22	3.94	4.55	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.21	3.57	**2yr**	2.84	3.43	3.94	4.68	5.33	**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	4.07	4.58	**5yr**	3.60	4.40	5.04	5.94	6.70	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.72	2.23	2.89	3.75	4.87	5.53	**10yr**	4.31	5.32	6.08	7.11	7.98	**10yr**
25yr	0.48	0.76	0.97	1.33	1.77	2.33	**25yr**	1.53	2.14	2.77	3.63	4.74	6.17	7.10	**25yr**	5.46	6.83	7.80	9.02	10.05	**25yr**
50yr	0.53	0.86	1.10	1.53	2.07	2.75	**50yr**	1.78	2.52	3.28	4.32	5.66	7.39	8.58	**50yr**	6.54	8.25	9.42	10.81	11.98	**50yr**
100yr	0.59	0.96	1.24	1.77	2.41	3.25	**100yr**	2.08	2.97	3.90	5.15	6.77	8.85	10.38	**100yr**	7.84	9.98	11.38	12.96	14.28	**100yr**
200yr	0.67	1.10	1.42	2.04	2.82	3.83	**200yr**	2.43	3.51	4.61	6.12	8.08	10.61	12.55	**200yr**	9.39	12.07	13.75	15.55	17.03	**200yr**
500yr	0.80	1.31	1.71	2.48	3.47	4.75	**500yr**	2.99	4.37	5.75	7.69	10.21	13.49	16.15	**500yr**	11.93	15.53	17.67	19.78	21.50	**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	0.92	1.33	1.68	2.23	2.50	1yr	1.98	2.40	2.86	3.17	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	3.06	3.45	2yr	2.71	3.32	3.82	4.55	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	3.79	4.19	5yr	3.35	4.03	4.72	5.54	6.24	5yr
10yr	0.39	0.59	0.73	1.03	1.32	1.60	10yr	1.14	1.56	1.81	2.39	3.06	4.37	4.87	10yr	3.87	4.68	5.45	6.42	7.20	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.90	25yr	1.35	1.86	2.10	2.76	3.54	4.71	5.90	25yr	4.17	5.68	6.66	7.80	8.69	25yr
50yr	0.48	0.73	0.91	1.31	1.77	2.17	50yr	1.52	2.12	2.35	3.08	3.94	5.32	6.82	50yr	4.71	6.56	7.74	9.06	10.03	50yr
100yr	0.54	0.81	1.01	1.47	2.01	2.47	100yr	1.74	2.41	2.63	3.42	4.36	5.98	7.87	100yr	5.29	7.57	9.00	10.53	11.58	100yr
200yr	0.59	0.89	1.13	1.63	2.28	2.82	200yr	1.97	2.75	2.93	3.79	4.80	6.70	9.09	200yr	5.93	8.74	10.46	12.25	13.39	200yr
500yr	0.69	1.02	1.31	1.91	2.71	3.37	500yr	2.34	3.29	3.41	4.33	5.47	7.79	10.98	500yr	6.89	10.56	12.75	14.99	16.21	500yr

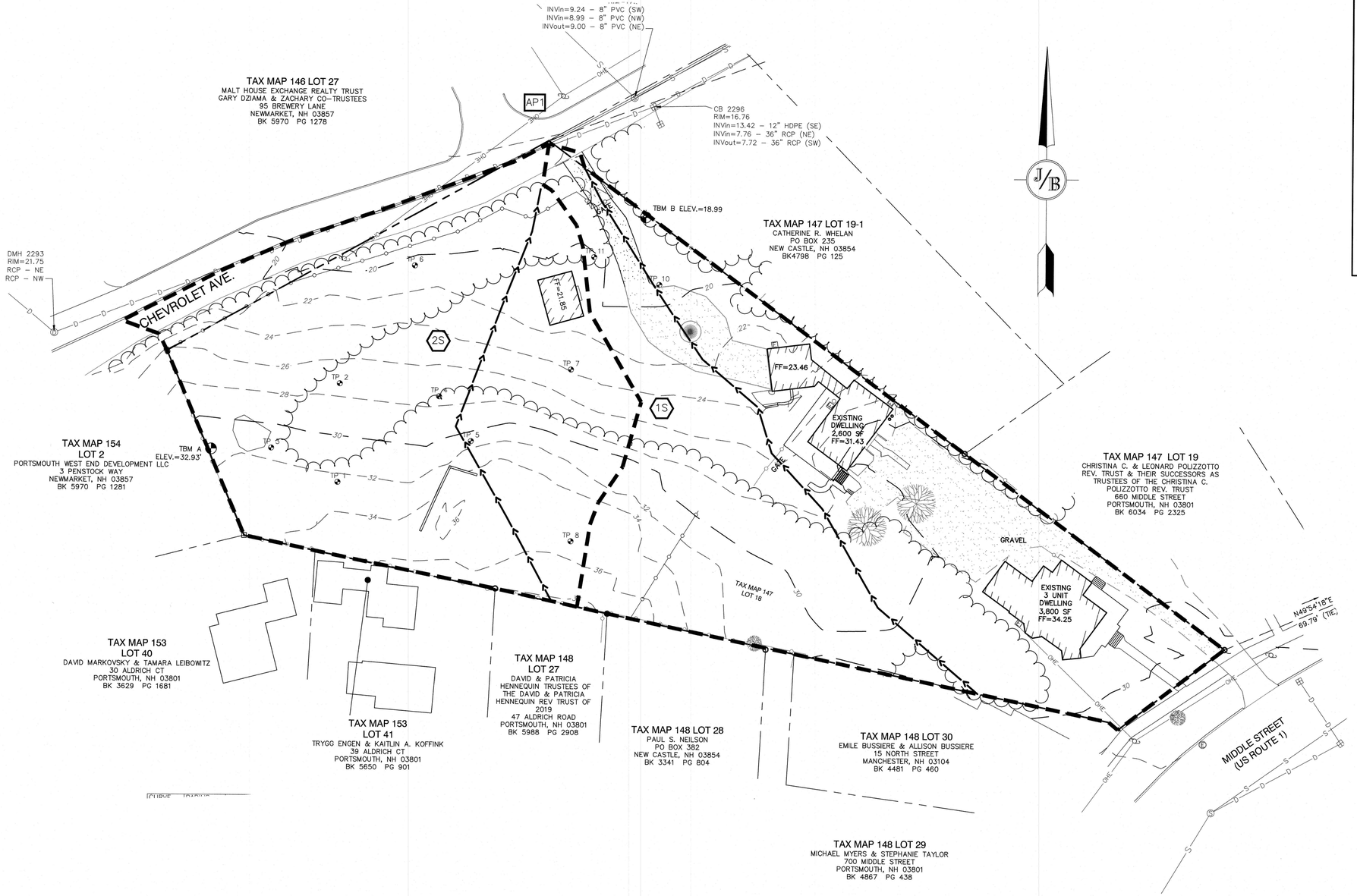
Upper Confidence Limits

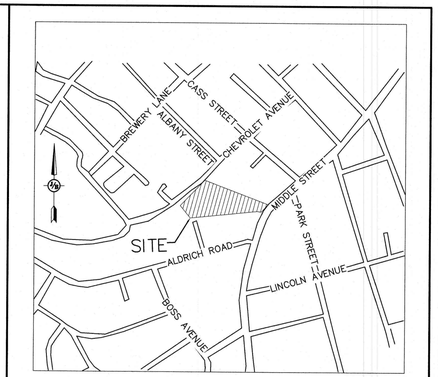
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	1yr	0.77	1.06	1.26	1.74	2.21	2.99	3.16	1yr	2.64	3.04	3.58	4.38	5.05	1yr
2yr	0.34	0.52	0.64	0.86	1.07	1.27	2yr	0.92	1.24	1.48	1.96	2.51	3.43	3.70	2yr	3.03	3.56	4.09	4.84	5.63	2yr
5yr	0.40	0.62	0.76	1.05	1.34	1.62	5yr	1.15	1.58	1.88	2.53	3.25	4.34	4.96	5yr	3.84	4.77	5.38	6.37	7.15	5yr
10yr	0.47	0.72	0.89	1.24	1.61	1.97	10yr	1.39	1.93	2.28	3.10	3.95	5.34	6.19	10yr	4.72	5.96	6.81	7.83	8.74	10yr
25yr	0.57	0.87	1.09	1.55	2.04	2.56	25yr	1.76	2.51	2.95	4.07	5.14	7.79	8.33	25yr	6.90	8.01	9.13	10.33	11.40	25yr
50yr	0.67	1.02	1.27	1.82	2.45	3.12	50yr	2.12	3.05	3.59	4.99	6.30	9.76	10.44	50yr	8.64	10.03	11.41	12.71	13.95	50yr
100yr	0.79	1.19	1.49	2.15	2.95	3.80	100yr	2.55	3.72	4.37	6.15	7.74	12.22	13.07	100yr	10.81	12.57	14.25	15.67	17.07	100yr
200yr	0.92	1.39	1.76	2.54	3.55	4.64	200yr	3.06	4.54	5.33	7.57	9.50	15.33	16.40	200yr	13.57	15.77	17.84	19.31	20.90	200yr
500yr	1.14	1.70	2.19	3.18	4.52	6.02	500yr	3.90	5.88	6.91	10.00	12.50	20.72	22.13	500yr	18.34	21.28	24.00	25.46	27.31	500yr

Powered by ACIS
Northeast Regional Climate Center

APPENDIX VI

Pre- and Post-Construction Watershed Plans





LOCUS SCALE: 1"=500'

LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT (X)
- REACH [X]
- POND
- TC PATH
- WETLANDS
- HISS SOILS
- FLOW ARROW

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: AJB	Date: 11/11/20
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-PLAN.dwg		

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STATE OF NEW HAMPSHIRE – MICHAEL J. KEHVAN No. 9646 – LICENSED PROFESSIONAL ENGINEER

REV.	DATE	REVISION	BY
6	3/10/22	REVISED PER TAC COMMENTS	AJB
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB
2	8/23/21	REVISED FOR PRELIMINARY SUBDIVSION	AJB

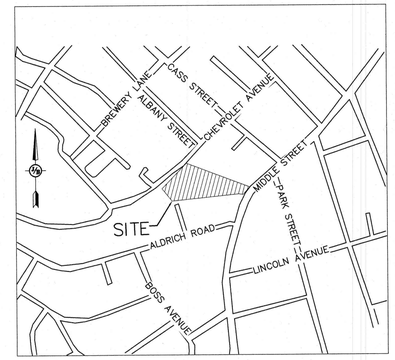
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING WATERSHED PLAN
Project: 668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record: PUBLIC LAND HOLDINGS LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
W1
SHEET 1 OF 2
JBE PROJECT NO. 20686

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT





LOCUS SCALE: 1"=500'

LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT (X)
- REACH (X)
- POND (X)
- TC PATH
- WETLANDS
- HISS SOILS
- FLOW ARROW

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: AJB	Date: 11/11/20
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-PLAN.dwg		

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STATE OF NEW HAMPSHIRE – MICHAEL J. KERRIGAN No. 9646 LICENSED PROFESSIONAL ENGINEER

REV.	DATE	REVISION	BY
6	3/10/22	REVISED PER TAC COMMENTS	AJB
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB
2	8/23/21	REVISED FOR PRELIMINARY SUBDIVSION	AJB

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: PROPOSED WATERSHED PLAN
Project: 668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record: PUBLIC LAND HOLDINGS LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
W2
SHEET 2 OF 2
JBE PROJECT NO. 20686

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)



Artform Home Plans

Prelim / Work in Progress 603-431-9559

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Dear Builders and Home Buyers,

In addition to our Terms and Conditions (the "Terms"), please be aware of the following:

This design may not yet have Construction Drawings (as defined in the Terms), and is, therefore, only available as a Design Drawing (as defined in the Terms and together with Construction Drawings, "Drawings'). It is possible that during the conversion of a Design Drawing to a final Construction Drawing, changes may be necessary including, but not limited to, dimensional changes. Please see Plan Data Explained on www.ArtformHomePlans.com to understand room sizes, dimensions and other data provided. We are not responsible for typographical errors.

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Facade Changes:

• To maintain design integrity, we pay particular attention to features on the front facade, including but not limited to door surrounds, window casings, finished porch column sizes, and roof friezes. While we may allow builders to add their own flare to aesthetic elements, we don't allow our designs to be stripped of critical details. Any such alterations require the express written consent of Artform.

• Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

Floor plan layout and/or Structural Changes:

• Structural changes always require the express written consent of Artform

• If you wish to move or remove walls or structural elements (such as removal of posts, increases in house size, ceiling height changes, addition of dormers, etc), please do not assume it can be done without other additional changes (even if the builder or lumber yard says you can).

Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)

Artform Home Plans

Prelim / Work in Progress 603-431-9559

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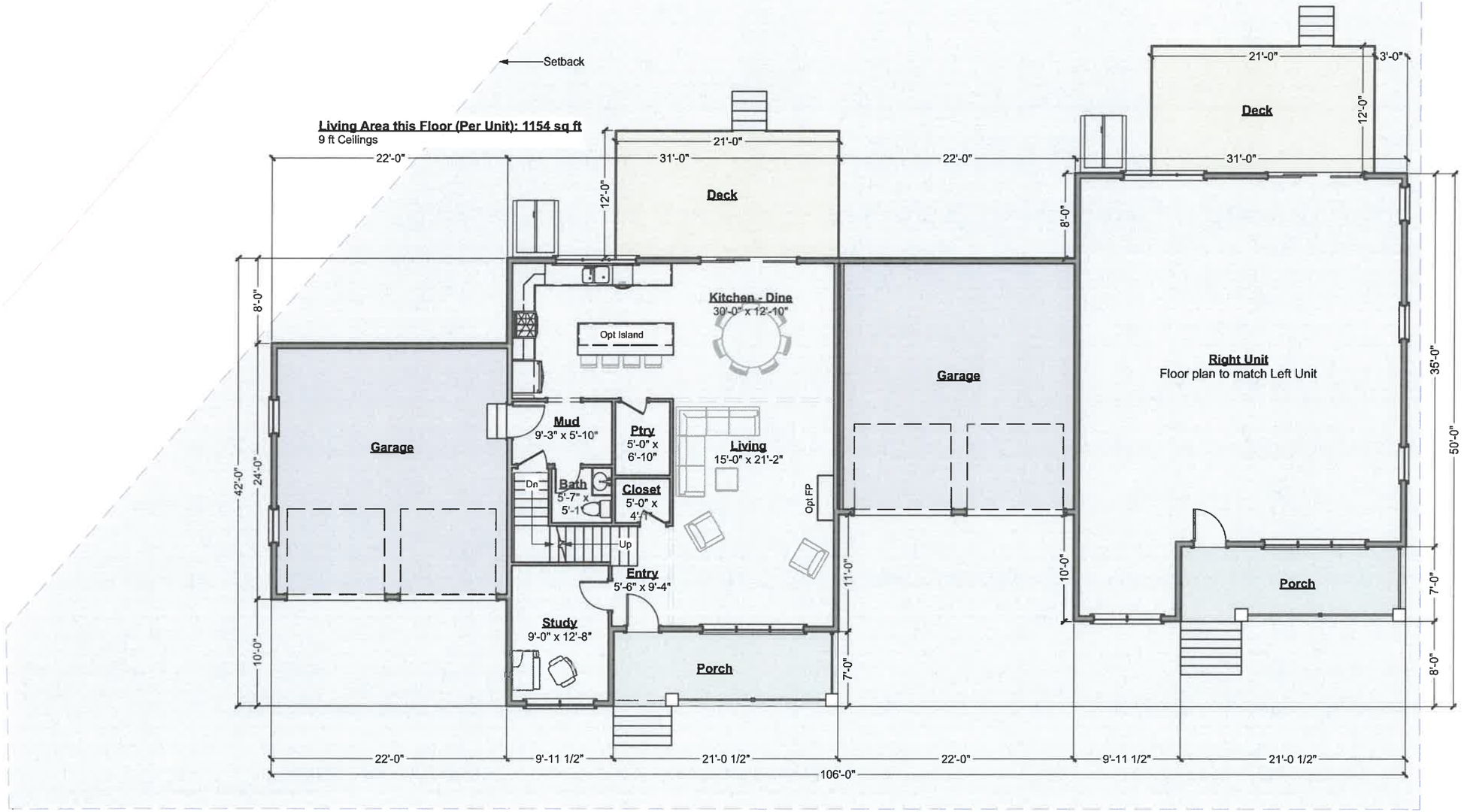
Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)

Artform Home Plans
Prelim / Work in Progress 603-431-9559

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First Floor Plan

Scale: 3/32" = 1'-0"

Plan Name TBD

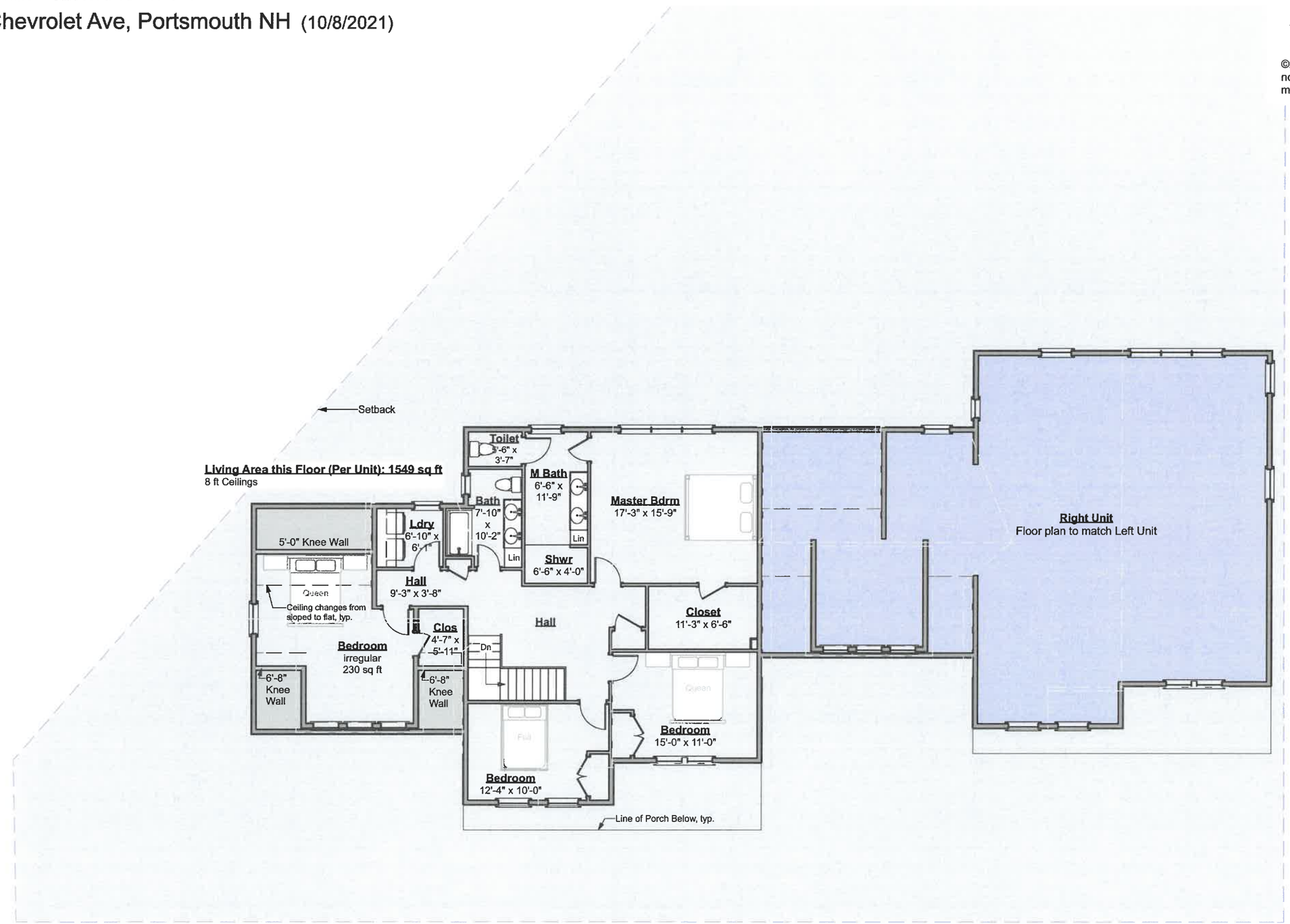
Chevrolet Ave, Portsmouth NH (10/8/2021)

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Second Floor Plan

Scale: 3/32" = 1'-0"

Plan Name TBD

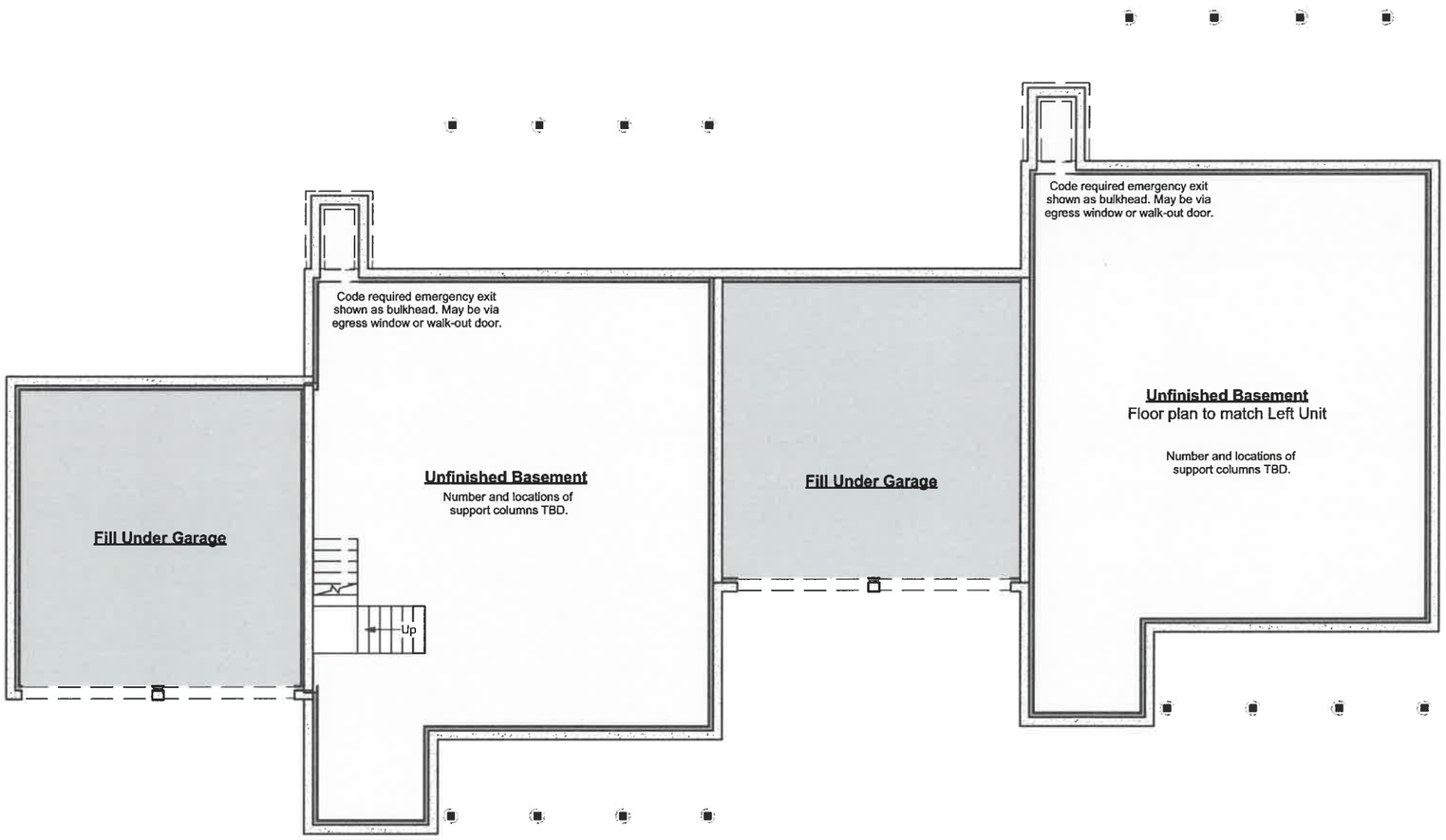
Chevrolet Ave, Portsmouth NH (10/8/2021)

Artform Home Plans

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Foundation Plan

Scale: 3/32" = 1'-0"

Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)

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Front Elevation

Scale: 1/8" = 1'-0"

Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)

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Right Elevation

Scale: 1/8" = 1'-0"

Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)

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Rear Elevation

Scale: 1/8" = 1'-0"

Plan Name TBD

Chevrolet Ave, Portsmouth NH (10/8/2021)

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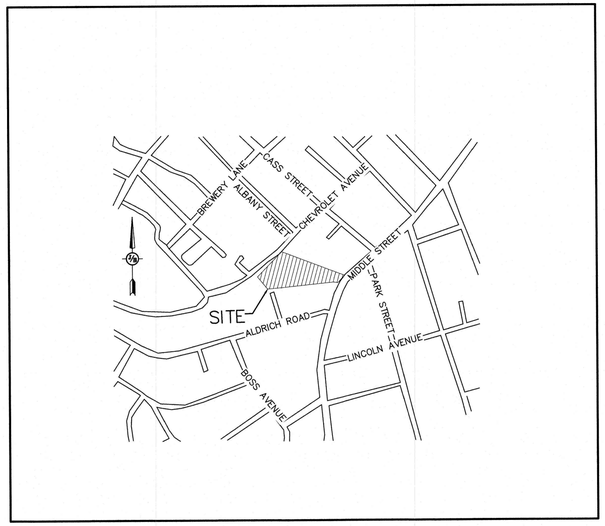
Left Elevation

Scale: 1/8" = 1'-0"

SITE & SUBDIVISION PLAN
"CHEVROLET AVENUE DUPLEXES"
TAX MAP 147 LOT 18
668 MIDDLE STREET, PORTSMOUTH NEW HAMPSHIRE

GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		CENTERLINE
		FRESHWATER WETLANDS LINE
		TIDAL WETLANDS LINE
		STREAM CHANNEL
		TREE LINE
		STONEWALL
		BARBED WIRE
		FENCE
		STOCKADE FENCE
		SOIL BOUNDARY
		AQUIFER PROTECTION LINE
		FLOOD PLAIN LINE
		ZONELINE
		EASEMENT
100	100	MAJOR CONTOUR
98	98	MINOR CONTOUR
VGC	VGC	EDGE OF PAVEMENT
SGC	SGC	VERTICAL GRANITE CURB
CCB	CCB	SLOPE GRANITE CURB
PCC	PCC	CAPE COD BERM
X	X	POURED CONCRETE CURB
D		SILT FENCE
S	S	DRAINAGE LINE
FM	FM	SEWER LINE
G	G	SEWER FORCE MAIN
W	W	GAS LINE
WS	WS	WATER LINE
OHE	OHE	WATER SERVICE
UGE	UGE	OVERHEAD ELECTRIC
		UNDERGROUND ELECTRIC
		GUARDRAIL
UD	UD	UNDERDRAIN
F	F	FIRE PROTECTION LINE
	W	THRUST BLOCK
		IRON PIPE/IRON ROD
		DRILL HOLE
		IRON ROD/DRILL HOLE
		STONE/GRANITE BOUND
100x0		SPOT GRADE
100.00		PAVEMENT SPOT GRADE
100.00		CURB SPOT GRADE
99.50		
		BENCHMARK (TBM)
		DOUBLE POST SIGN
		SINGLE POST SIGN
		TEST PIT
		TREES AND BUSHES
		UTILITY POLE
		LIGHT POLES
		DRAIN MANHOLE
		SEWER MANHOLE
		HYDRANT
		WATER GATE
		WATER SHUT OFF
		REDUCER
		SINGLE GRATE CATCH BASIN
		DOUBLE GRATE CATCH BASIN
		TRANSFORMER
		CULVERT W/STRAIGHT HEADWALL
		STONE CHECK DAM
		DRAINAGE FLOW DIRECTION
		RIPRAP
		STABILIZED CONSTRUCTION ENTRANCE
		CONCRETE
		GRAVEL
		SNOW STORAGE
		RETAINING WALL



LOCUS MAP
SCALE 1" = 500'

SHEET INDEX

CS	COVER SHEET
C1	EXISTING CONDITIONS PLAN
A1	SUBDIVISION PLAN
A2	EASEMENT PLAN
C2	SITE PLAN
C3	GRADING AND DRAINAGE PLAN
C4	UTILITY PLAN
P1	SEWER PLAN AND PROFILE
L1	LIGHTING PLAN
L2	LANDSCAPING PLAN
D1-D3	DETAIL SHEETS
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

LIGHTING CONSULTANT
CHARRON, INC.
P.O BOX 4550
MANCHESTER, NH 03108
(603) 945-3500
CONTACT: KEN SWEENEY
EMAIL: KSWEENEY@CHARRONINC.COM

LANDSCAPE DESIGNER
LM LAND DESIGN, LLC
11 SOUTH ROAD
BRENTWOOD, NH 03833
(603) 770-7728
CONTACT: LISE MCNAUGHTON

SOILS CONSULTANT
GOVE ENVIRONMENTAL SERVICES, INC.
8 CONTINENTAL DRIVE, UNIT H
PO BOX 219
EXETER, NH 03833
(603) 778-0644
CONTACT: JIM GOVE, CWS, CSS
JGOVE@GESINC.BIZ

ARCHITECT
ART FORM ARCHITECURE INC.
44 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862
CONTACT: WENDY WELTON
(603) 431-9559

WATER
CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
WATER DIVISION
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
CONTACT: RAYMOND PEZZULLO
(603) 427-1530

SEWER
CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
SEWER DIVISION
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
CONTACT: TERRY DESMARAIS, P.E.
(603) 766-1421

NATURAL GAS
UNITIL SERVICE CORP.
114 DRINKWATER ROAD
KENSINGTON, NH 03833-5602
(603) 777-5512

ELECTRIC
EVERSOURCE
74 OLD DOVER ROAD
ROCHESTER, NH 03867
(800) 555-5334

TELEPHONE
FAIRPOINT COMMUNICATIONS
1575 GREENLAND ROAD
GREENLAND, NH 03840
(603) 427-5525
CONTACT: JOE CONSIDINE

CABLE TV
COMCAST COMMUNICATION
CORPORATION
334-B CALEF HIGHWAY
EPPING, NH 03042-2325
(603) 679-5695

APPROVED – PORTSMOUTH, NH
PLANNING BOARD

DATE:

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Drawing Name: 20686-PLAN.dwg	

Date: 03/22/22
Project No.: 20686

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STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9648 – LICENSED PROFESSIONAL ENGINEER

4/26/22

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

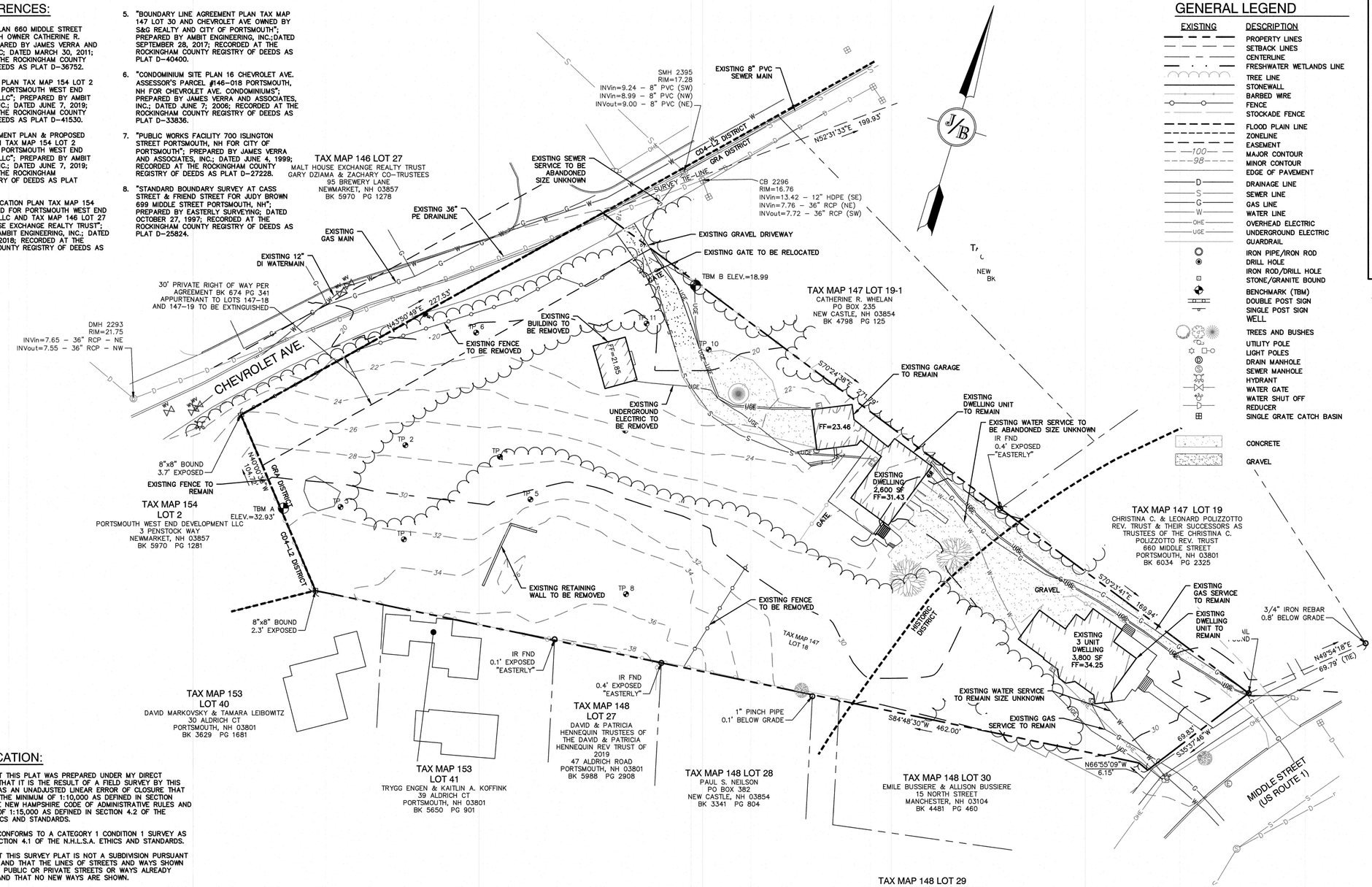
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	COVER SHEET
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
CS
SHEET 1 OF 14
JBE PROJECT NO. 20686

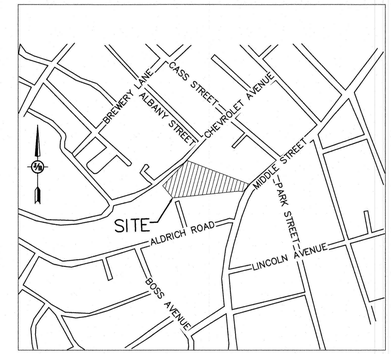
PLAN REFERENCES:

1. "SUBDIVISION PLAN 660 MIDDLE STREET PORTSMOUTH NH OWNER CATHERINE R. WHELAN"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC; DATED MARCH 30, 2011; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-36752.
2. "AMENDED SITE PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC"; PREPARED BY AMBIT ENGINEERING, INC.; DATED JUNE 7, 2019; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41530.
3. "EXISTING EASEMENT PLAN & PROPOSED EASEMENT PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC"; PREPARED BY AMBIT ENGINEERING, INC.; DATED JUNE 7, 2019; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41529.
4. "LOT LINE RELOCATION PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC AND TAX MAP 146 LOT 27 FOR MALT HOUSE EXCHANGE REALTY TRUST"; PREPARED BY AMBIT ENGINEERING, INC.; DATED DECEMBER 21, 2018; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41238.
5. "BOUNDARY LINE AGREEMENT PLAN TAX MAP 147 LOT 30 AND CHEVROLET AVE OWNED BY S&G REALTY AND CITY OF PORTSMOUTH"; PREPARED BY AMBIT ENGINEERING, INC.;DATED SEPTEMBER 28, 2017; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-40400.
6. "CONDOMINIUM SITE PLAN 16 CHEVROLET AVE. ASSESSOR'S PARCEL #146-018 PORTSMOUTH, NH FOR CHEVROLET AVE. CONDOMINIUMS"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC.; DATED JUNE 7, 2006; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-33836.
7. "PUBLIC WORKS FACILITY 700 ISLINGTON STREET PORTSMOUTH, NH FOR CITY OF PORTSMOUTH"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC.; DATED JUNE 4, 1999; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-27228.
8. "STANDARD BOUNDARY SURVEY AT CASS STREET & FRIEND STREET FOR JUDY BROWN 699 MIDDLE STREET PORTSMOUTH, NH"; PREPARED BY EASTERLY SURVEYING; DATED OCTOBER 27, 1997; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-25824.



GENERAL LEGEND

EXISTING	DESCRIPTION
	PROPERTY LINES
	SETBACK LINES
	CENTERLINE
	FRESHWATER WETLANDS LINE
	TREE LINE
	STONEWALL
	BARBED WIRE
	FENCE
	STOCKADE FENCE
	FLOOD PLAIN LINE
	ZONELINE
	EASEMENT
100	MAJOR CONTOUR
98	MINOR CONTOUR
	EDGE OF PAVEMENT
D	DRAINAGE LINE
S	SEWER LINE
G	GAS LINE
W	WATER LINE
OHE	OVERHEAD ELECTRIC
UGE	UNDERGROUND ELECTRIC
	GUARDRAIL
	IRON PIPE/IRON ROD
	DRILL HOLE
	IRON ROD/DRILL HOLE
	STONE/GRANITE BOUND
	BENCHMARK (TBM)
	DOUBLE POST SIGN
	SINGLE POST SIGN
	WELL
	TREES AND BUSHES
	UTILITY POLE
	LIGHT POLES
	DRAIN MANHOLE
	SEWER MANHOLE
	HYDRANT
	WATER GATE
	WATER SHUT OFF
	REDUCER
	SINGLE GRATE CATCH BASIN
	CONCRETE
	GRAVEL



LOCUS SCALE: 1"=500'

NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF LOT 18 DEPICTED HEREON TAX MAP 147.
2. THE UTILITY LOCATIONS SHOWN HEREON WERE DETERMINED BY OBSERVED ABOVE GROUND EVIDENCE AND SHOULD BE CONSIDERED APPROXIMATE IN LOCATION ONLY. LOCATION, DEPTH, SIZE, TYPE, EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES AND/OR UNDERGROUND STORAGE TANKS WAS NOT VERIFIED BY THIS SURVEY. ALL CONTRACTORS SHOULD NOTIFY IN WRITING ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES PRIOR TO ANY EXCAVATION WORK OR CALL DIG-SAFE AT 1-888-DIG-SAFE.
3. THE SUBJECT PARCEL IS LOCATED WITHIN AN AREA HAVING A ZONE X DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33015C0259F, DATED JANUARY 29, 2021, FOR COMMUNITY PANEL NO. 259 OF 681, IN ROCKINGHAM COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
4. BASIS OF BEARING: HORIZONTAL: STATE PLANE NAD83 VERTICAL: NAVD88
5. CERTAIN DATA HEREON MAY VARY FROM RECORDED DATA DUE TO DIFFERENCES IN DECLINATION, ORIENTATION, AND METHODS OF MEASUREMENT.
6. ALL BOOK AND PAGE NUMBERS REFER TO THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
7. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE CITY OF PORTSMOUTH TAX RECORDS AND ARE SUBJECT TO CHANGE.
8. RESEARCH WAS PERFORMED AT THE CITY OF PORTSMOUTH ASSESSOR'S OFFICE AND THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
9. 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.
10. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL, TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.
11. NO WETLANDS WERE OBSERVED ON THE SUBJECT PREMISES.
12. THIS PLAN IS THE RESULT OF A CLOSED TRAVERSE WITH A RAW, UNADJUSTED LINEAR ERROR OF CLOSURE GREATER THAN 1 IN 150,000.
13. 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.
14. HOUSE LOCATIONS OF ABUTTING PROPERTIES ARE FROM AERIAL PHOTOGRAPHY AND DIGITIZED ON PLAT. BUILDINGS WERE LOCATED ON SUBJECT PARCEL BY CONVENTIONAL SURVEYING METHODS.
15. RIGHT OF WAY WENT FROM A 50' IN WIDTH (SEE DEED BK. 512 PG. 429) TO 30' RIGHT OF WAY (SEE DEED BK. 674, PG. 341).
16. EXISTING 20' WIDE GAS EASEMENT ON SUBJECT PARCEL SEE DEED BK 4470 PG 2003. LOCATION OF EASEMENT UNDETERMINDED AT THIS TIME. EASEMENT SHALL FOLLOW THE ROUTE OF PIPELINES 10 FEET ON EACH SIDE EXTENDED TO PROPERTY LINE.

CERTIFICATION:

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.

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. 892 — DAVID M. COLLIER — LICENSED LAND SURVEYOR — SIGNATURE

4/26/2022

DAVID M. COLLIER, LLS 892 DATE:

ON BEHALF OF JONES & BEACH ENGINEERS, INC.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE	Date: 03/22/22
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-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.

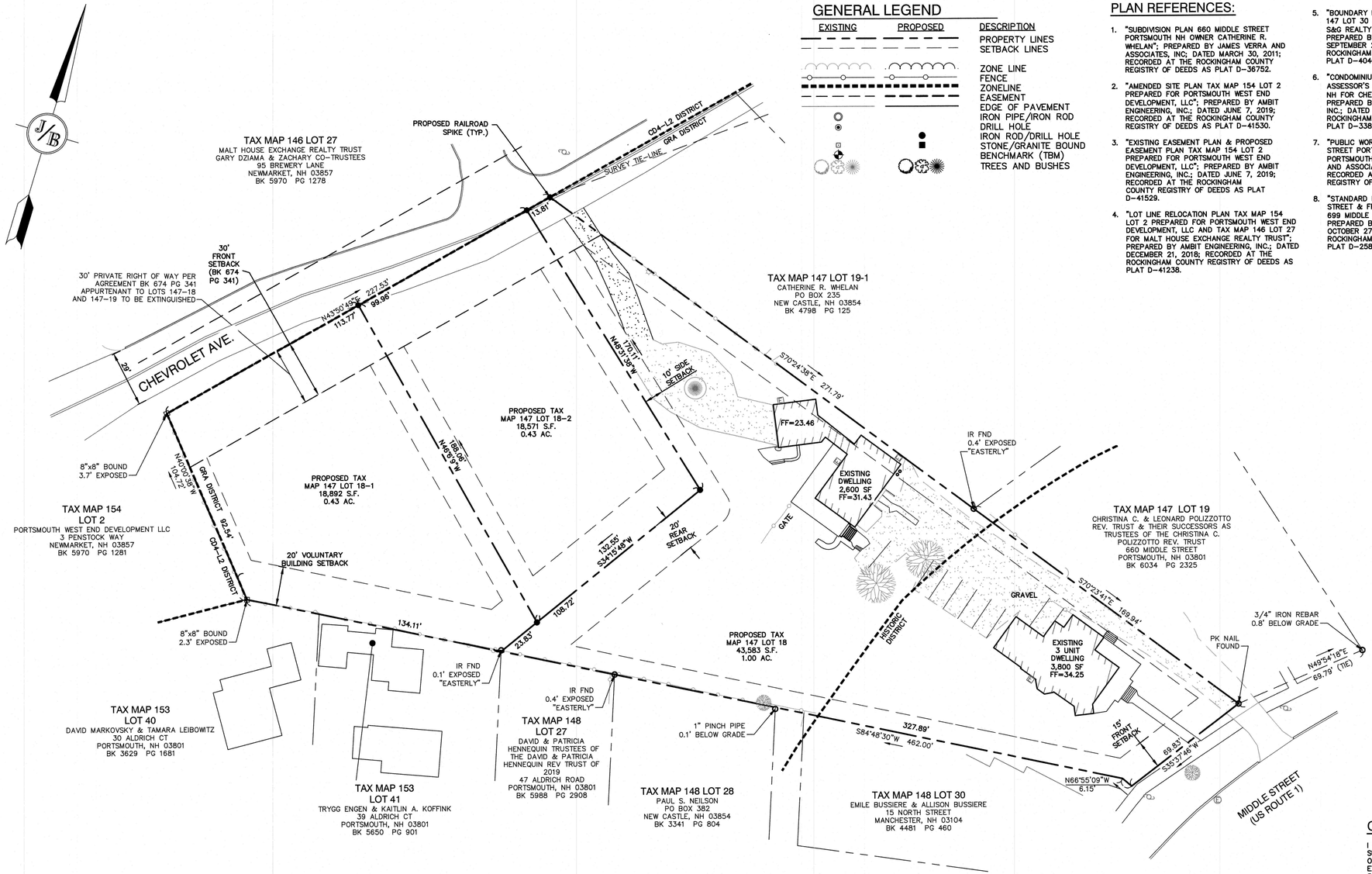
STATE OF NEW HAMPSHIRE — MICHAEL J. KERVIAN No. 9646 — LICENSED LAND SURVEYOR — 4/26/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

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:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
C1
SHEET 2 OF 14
JBE PROJECT NO. 20686

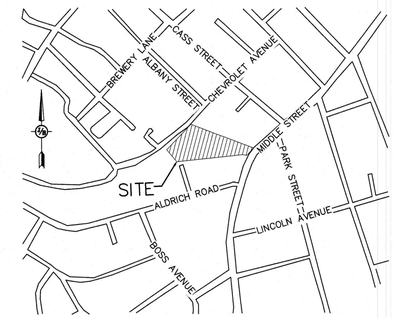


GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		ZONE LINE
		FENCE
		ZONELINE
		EASEMENT
		EDGE OF PAVEMENT
		IRON PIPE/IRON ROD
		DRILL HOLE
		IRON ROD/DRILL HOLE
		STONE/GRANITE BOUND
		BENCHMARK (TBM)
		TREES AND BUSHES

PLAN REFERENCES:

1. "SUBDIVISION PLAN 660 MIDDLE STREET PORTSMOUTH NH OWNER CATHERINE R. WHELAN"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC; DATED MARCH 30, 2011; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-36752.
2. "AMENDED SITE PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC"; PREPARED BY AMBIT ENGINEERING, INC.; DATED JUNE 7, 2019; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41530.
3. "EXISTING EASEMENT PLAN & PROPOSED EASEMENT PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC"; PREPARED BY AMBIT ENGINEERING, INC.; DATED JUNE 7, 2019; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41529.
4. "LOT LINE RELOCATION PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC AND TAX MAP 146 LOT 27 FOR MALT HOUSE EXCHANGE REALTY TRUST"; PREPARED BY AMBIT ENGINEERING, INC.; DATED DECEMBER 21, 2018; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41238.
5. "BOUNDARY LINE AGREEMENT PLAN TAX MAP 147 LOT 30 AND CHEVROLET AVE OWNED BY S&G REALTY AND CITY OF PORTSMOUTH"; PREPARED BY AMBIT ENGINEERING, INC.;DATED SEPTEMBER 28, 2017; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-40400.
6. "CONDOMINIUM SITE PLAN 16 CHEVROLET AVE. ASSESSOR'S PARCEL #146-018 PORTSMOUTH, NH FOR CHEVROLET AVE. CONDOMINIUMS"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC.; DATED JUNE 7; 2006; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-33836.
7. "PUBLIC WORKS FACILITY 700 ISLINGTON STREET PORTSMOUTH, NH FOR CITY OF PORTSMOUTH"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC.; DATED JUNE 4, 1999; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-27228.
8. "STANDARD BOUNDARY SURVEY AT CASS STREET & FRIEND STREET FOR JUDY BROWN 699 MIDDLE STREET PORTSMOUTH, NH"; PREPARED BY EASTERLY SURVEYING; DATED OCTOBER 27, 1997; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-25824.



LOCUS SCALE: 1"=500'

SUBDIVISION NOTES:

1. THE INTENT OF THIS PLAN IS TO SUBDIVIDE MAP 147, LOT 18 INTO 3 RESIDENTIAL LOTS AND CONVERT THE EXISTING BUILDINGS INTO CONDOMINIUMS WITH CITY WATER AND SEWER.
2. ZONING DISTRICT: GENERAL RESIDENCE A (GRA)
   LOT AREA MINIMUM = 7,500 S.F.
   MAX DENSITY = 1 DWELLING UNIT PER 7,500 S.F. LOT AREA
   LOT FRONTAGE MINIMUM = 100'
   LOT DEPTH MINIMUM = 70'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 15'
   SIDE SETBACK = 10'
   REAR SETBACK = 20'
   MAX. BUILDING HEIGHT = 35' WITH SLOPED ROOF, 30' WITH FLAT ROOF
   MAX. BUILDING COVERAGE = 25%
   MIN. OPEN SPACE = 30%
2. GRANTED VARIANCES:
   SECTION 10.521 – FRONTAGE
   SECTION 10.512 – ACCESS VIA PRIVATE R.O.W.
3. 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.
4. THE SUBJECT PARCEL IS LOCATED WITHIN AN AREA HAVING A ZONE X DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33015C0259F, WITH EFFECTIVE DATE OF JANUARY 29, 2021, FOR COMMUNITY PANEL NO. 259 OF 681, IN ROCKINGHAM COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
5. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
6. IRON RODS WITH SURVEY CAPS OR RAIL ROAD SPIKES TO BE SET AT ALL PROPERTY CORNERS AND ANGLE POINTS, UNLESS OTHERWISE INDICATED. ALL MONUMENTS SET ARE 5/8" IRON RODS WITH ALUMINUM CAPS MARKED "JONES & BEACH ENGINEERS BOUNDARY, DO NOT DISTURB, STRATHAM, N.H." AS SHOWN.
7. ALL BOOK AND PAGE NUMBERS REFER TO THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
8. THE TAX MAP AND LOT NUMBERS AND ABUTTING OWNERS ARE BASED ON THE TOWN OF PORTSMOUTH TAX RECORDS AND ARE SUBJECT TO CHANGE.
9. RESEARCH WAS PERFORMED AT THE CITY OF PORTSMOUTH ASSESSORS OFFICE AND THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
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. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.
12. PROPOSED LOTS NEED TO OBTAIN DRIVEWAY PERMITS FOR CHEVROLET AVE.
13. A BLANKET EASEMENT SHALL BE CONVEYED TO THE CITY OF PORTSMOUTH UPON TAX MAP 147, LOTS 18-1 & 18-2 FOR VALVES, LEAK DETECTION, AND METERING.

CERTIFICATION:

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. 892 DAVID M. COLLIER LICENSED LAND SURVEYOR

SIGNATURE

DAVID M. COLLIER, LLS 892 DATE: 4/26/2022

ON BEHALF OF JONES & BEACH ENGINEERS, INC.

APPROVED – PORTSMOUTH, NH
PLANNING BOARD

DATE:

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Drawing Name: 20686-PLAN.dwg	Date: 03/22/22
	Project No.: 20686

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 MICHAEL J. KERRIGAN No. 9646 LICENSED PROFESSIONAL ENGINEER 4/26/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

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:	SUBDIVISION PLAN
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
A1
SHEET 3 OF 14
JBE PROJECT NO. 20686

CERTIFICATION:

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.

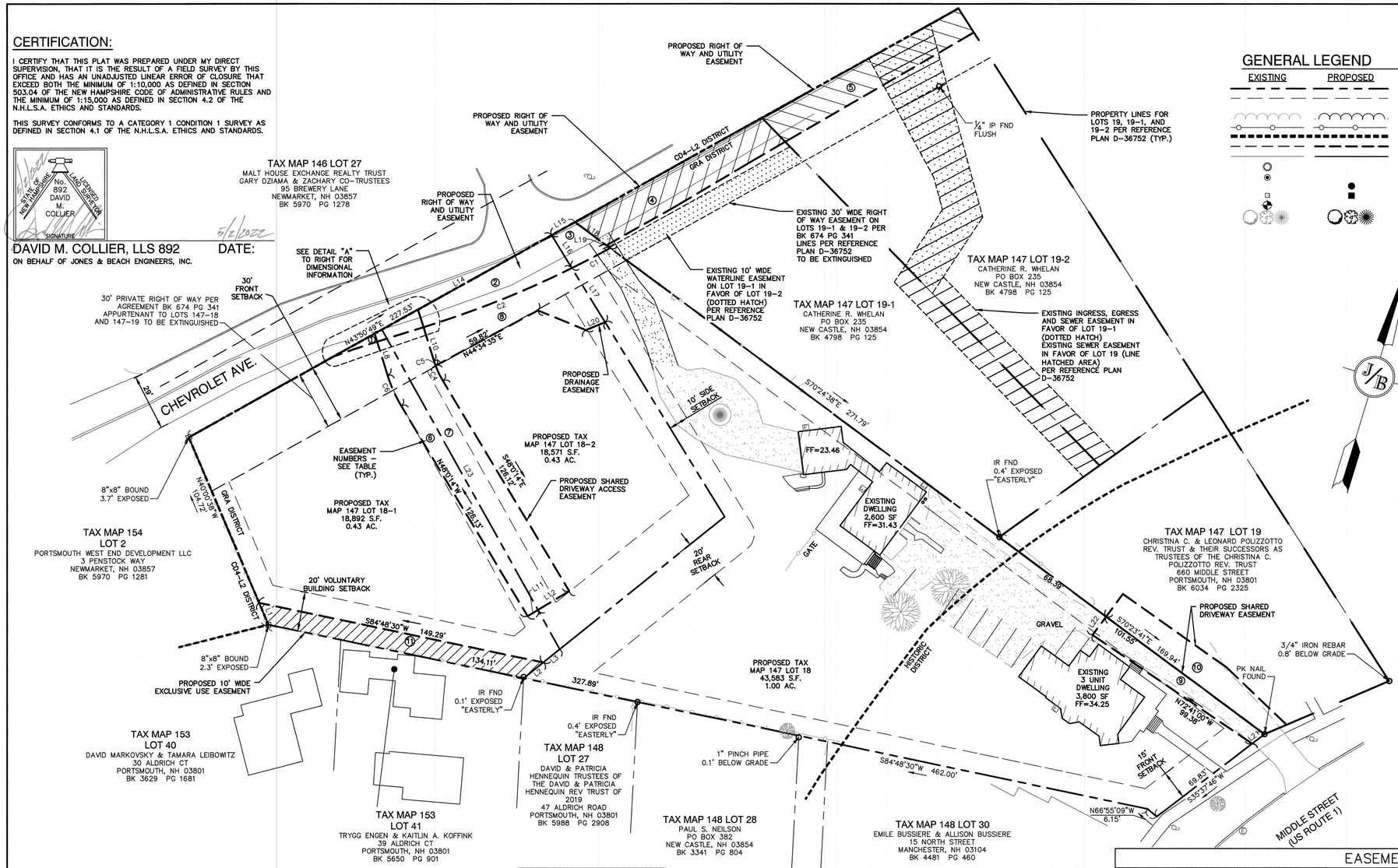
THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

STATE OF NEW HAMPSHIRE — No. 892 — DAVID M. COLLIER — LICENSED LAND SURVEYOR — SIGNATURE

5/2/2022

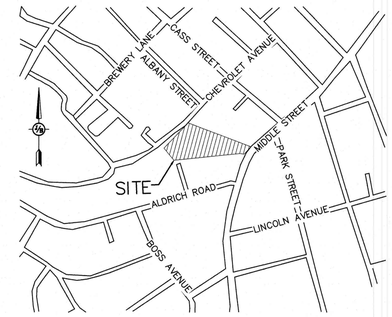
DAVID M. COLLIER, LLS 892 DATE:

ON BEHALF OF JONES & BEACH ENGINEERS, INC.



GENERAL LEGEND

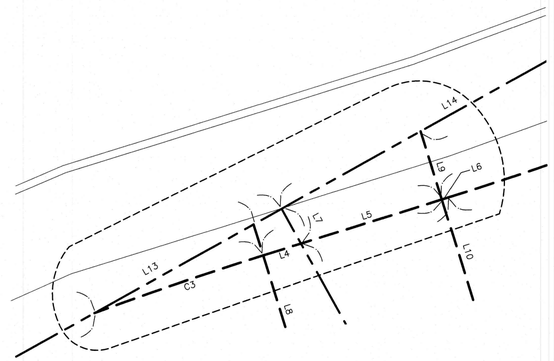
EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		ZONE LINE
		FENCE
		ZONELINE
		EASEMENT
		EDGE OF PAVEMENT
○		IRON PIPE/IRON ROD
●		DRILL HOLE
□		IRON ROD/DRILL HOLE
◉		STONE/GRANITE BOUND
⊕		BENCHMARK (TBM)
		TREES AND BUSHES



LOCUS SCALE: 1"=500'

EASEMENT NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATIONS AND DESCRIPTIONS OF ALL EXISTING AND PROPOSED EASEMENTS UPON CITY OF PORTSMOUTH TAX MAP 17, LOTS 18, 18-1, 18-2, 19-1, AND 19-2.
2. SEE SHEET A1 – SUBDIVISION PLAN FOR DESCRIPTIONS OF PROPOSED LOTS AS WELL AS PLAN REFERENCES.



DETAIL "A"

1 INCH = 10 FEET

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	519.00'	22.21'	22.21'	N 45°24'52" E	2°27'08.60"
C2	519.00'	81.43'	81.34'	S 51°08'07" W	8°59'21.74"
C3	481.00'	23.79'	23.79'	N 54°06'57" E	2°50'01.00"
C4	47.50'	8.67'	8.66'	S 42°46'21" E	10°27'44.86"
C5	47.50'	2.66'	2.66'	N 35°50'55" W	3°12'36.95"
C6	72.50'	17.31'	17.27'	S 41°09'55" E	13°40'37.55"

LINE	BEARING	DISTANCE
L1	N40°00'38"W	12.18'
L2	N34°15'48"E	12.95'
L3	S34°15'48"W	10.87'
L4	S55°37'42"W	5.30'
L5	N 55°40'24" E	19.70'
L6	N 54°36'40" E	0.87'
L7	S 48°08'09" E	5.32'
L8	S 34°19'36" E	22.36'
L9	N 34°19'36" W	9.55'
L10	N 34°19'36" W	18.05'
L11	N 41°58'09" E	6.17'
L12	S 41°58'09" W	18.83'
L13	N 43°50'49" E	28.60'
L14	S 43°50'49" W	100.00'
L15	N 43°50'49" E	13.81'
L16	S 48°31'38" E	19.86'
L17	S 48°31'38" E	32.73'
L18	S 70°24'38" E	20.09'
L19	S 70°33'59" E	2.35'
L20	S 50°23'39" W	10.69'
L21	S 35°37'46" W	8.11'
L22	N 19°35'22" E	11.76'
L23	N 46°06'09" W	159.63'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

APPROVED – PORTSMOUTH, NH PLANNING BOARD

DATE:

EASEMENT TABLE

EASEMENT #	DESCRIPTION	TO BENEFIT	SIZE (S.F.)
1	PROPOSED RIGHT OF WAY AND UTILITY EASEMENT ON LOT 18-1	CITY OF PORTSMOUTH, LOT 18-1, AND LOT 18-2	72
2	PROPOSED RIGHT OF WAY AND UTILITY EASEMENT ON LOT 18-2	SAME AS EASEMENT #1	1,412
3	PROPOSED RIGHT OF WAY AND UTILITY EASEMENT ON LOT 18	SAME AS EASEMENT #1	363
4	PROPOSED RIGHT OF WAY AND UTILITY EASEMENT ON LOT 19-1	CITY OF PORTSMOUTH	
5	PROPOSED RIGHT OF WAY AND UTILITY EASEMENT ON LOT 19-2	CITY OF PORTSMOUTH	
6	PROPOSED SHARED DRIVEWAY EASEMENT ON LOT 18-1	LOTS 18-1 AND 18-2	1,356
7	PROPOSED SHARED DRIVEWAY EASEMENT ON LOT 18-2	LOTS 18-1 AND 18-2	2,780
8	PROPOSED DRAINAGE EASEMENT ON LOT 18-2	LOTS 18-1 AND 18-2	1,617
9	PROPOSED SHARED DRIVEWAY EASEMENT ON LOT 18	LOT 19	980
10	PROPOSED SHARED DRIVEWAY EASEMENT ON LOT 19	LOT 18	
11	PROPOSED 10' WIDE EXCLUSIVE USE EASEMENT ON LOT 18-1	LOTS 40 & 41	1,417

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE	Date: 03/22/22	
Checked: JAC	Scale: AS NOTED	Project No.: 20686	
Drawing Name: 20686-PLAN.dwg			

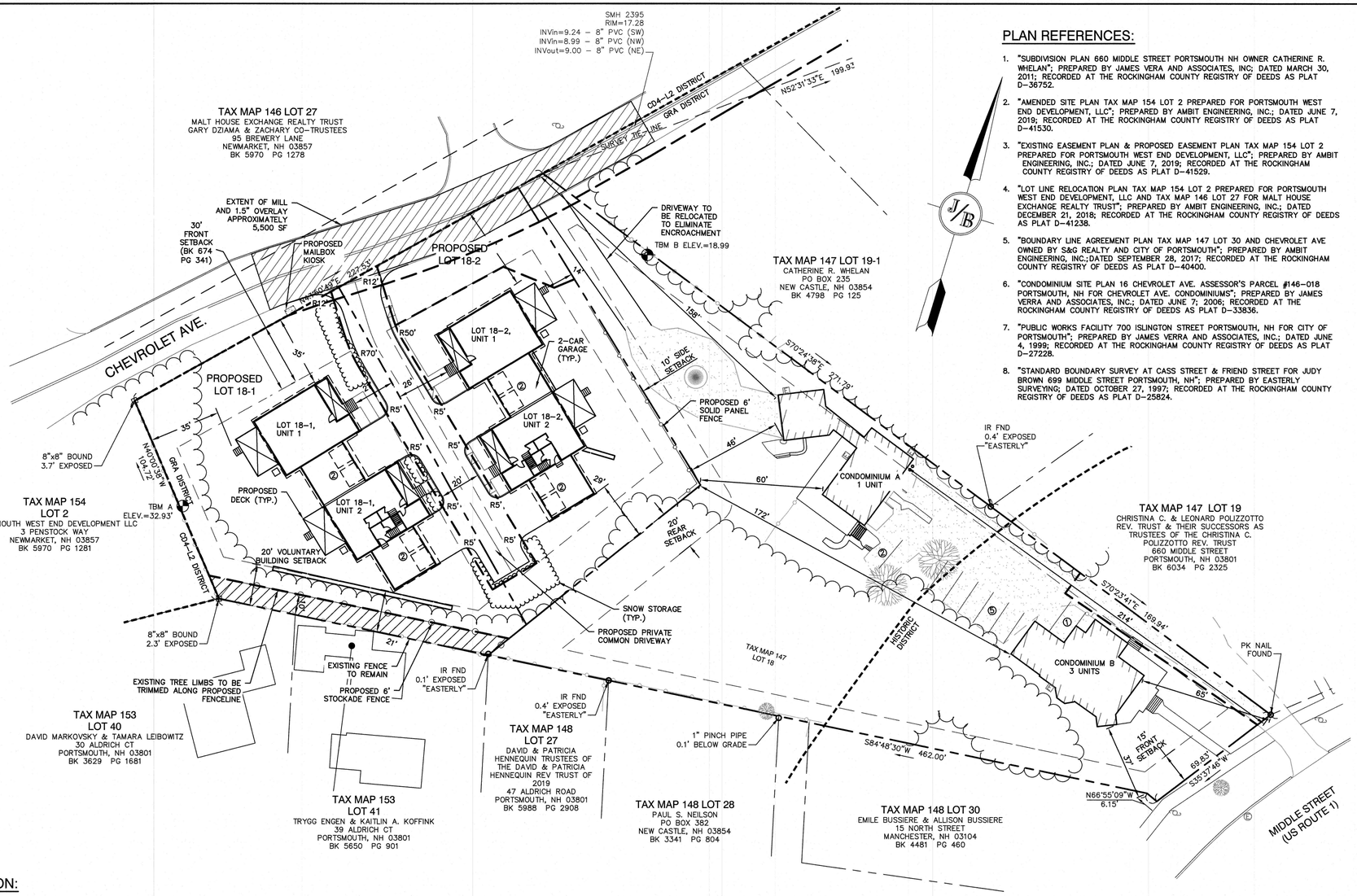
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REV.	DATE	REVISION	BY
8	5/2/22	REVISED EASEMENT PLAN	DJM
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB

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

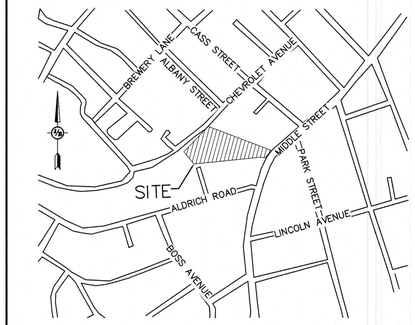
Plan Name:	EASEMENT PLAN
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
A2
SHEET 4 OF 14
JBE PROJECT NO. 20686



PLAN REFERENCES:

1. "SUBDIVISION PLAN 660 MIDDLE STREET PORTSMOUTH NH OWNER CATHERINE R. WHELAN"; PREPARED BY JAMES VERA AND ASSOCIATES, INC; DATED MARCH 30, 2011; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-36752.
2. "AMENDED SITE PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC"; PREPARED BY AMBIT ENGINEERING, INC.; DATED JUNE 7, 2019; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41530.
3. "EXISTING EASEMENT PLAN & PROPOSED EASEMENT PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC"; PREPARED BY AMBIT ENGINEERING, INC.; DATED JUNE 7, 2019; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41529.
4. "LOT LINE RELOCATION PLAN TAX MAP 154 LOT 2 PREPARED FOR PORTSMOUTH WEST END DEVELOPMENT, LLC AND TAX MAP 146 LOT 27 FOR MALT HOUSE EXCHANGE REALTY TRUST"; PREPARED BY AMBIT ENGINEERING, INC.; DATED DECEMBER 21, 2018; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-41238.
5. "BOUNDARY LINE AGREEMENT PLAN TAX MAP 147 LOT 30 AND CHEVROLET AVE OWNED BY S&G REALTY AND CITY OF PORTSMOUTH"; PREPARED BY AMBIT ENGINEERING, INC.;DATED SEPTEMBER 28, 2017; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-40400.
6. "CONDOMINIUM SITE PLAN 16 CHEVROLET AVE. ASSESSOR'S PARCEL #146-018 PORTSMOUTH, NH FOR CHEVROLET AVE. CONDOMINIUMS"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC.; DATED JUNE 7; 2006; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-33836.
7. "PUBLIC WORKS FACILITY 700 ISLINGTON STREET PORTSMOUTH, NH FOR CITY OF PORTSMOUTH"; PREPARED BY JAMES VERRA AND ASSOCIATES, INC.; DATED JUNE 4, 1999; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-27228.
8. "STANDARD BOUNDARY SURVEY AT CASS STREET & FRIEND STREET FOR JUDY BROWN 699 MIDDLE STREET PORTSMOUTH, NH"; PREPARED BY EASTERLY SURVEYING; DATED OCTOBER 27, 1997; RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAT D-25824.



LOCUS SCALE: 1"=500'

NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED 2 LOT RESIDENTIAL SUBDIVISION WITH FRONTAGE ALONG CHEVROLET AVENUE AND THE PROPOSED DUPLEXES ON THOSE LOTS WITH ASSOCIATED UTILITIES.
2. ZONING DISTRICT: GENERAL RESIDENCE A (GRA)
   LOT AREA MINIMUM = 7,500 S.F.
   MAX DENSITY = 1 DWELLING UNIT PER 7,500 S.F. LOT AREA
   DUPLEX LOTS REQUIRE 15,000 SF,
   LOT FRONTAGE MINIMUM = 100'
   LOT DEPTH MINIMUM = 70'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 15'
   SIDE SETBACK = 10'
   REAR SETBACK = 20'
   MAX. BUILDING HEIGHT = 35' WITH SLOPED ROOF, 30' WITH FLAT ROOF
   MAX. BUILDING COVERAGE = 25%
   PROPOSED LOT 18-1 = 23.9%
   PROPOSED LOT 18-2 = 24.4%
   PROPOSED MAP 147 LOT 18 = 10.6%
   MIN. OPEN SPACE = 30%
   PROPOSED LOT 18-1 = 50%
   PROPOSED LOT 18-2 = 45%
   PROPOSED MAP 147 LOT 18 = 35%
   SEALED SURFACE: LOT 18-1=7,250 SF
   LOT 18-2=7,250 SF
   DISTRUBANCE: LOT 18-1=15,000 SF
   LOT 18-2=17,750 SF
   REQUIRED PARKING=1.3 SPACES PER UNIT OVER 750 SF
   REQUIRED LOT 18-1 = 3 SPACES, 4 PROVIDED
   REQUIRED LOT 18-2 = 3 SPACES, 4 PROVIDED
   REQUIRED CONDO A = 2 SPACES, 2 PROVIDED
   REQUIRED CONDO B = 4 SPACES, 6 PROVIDED
3. THE SUBJECT PARCEL IS LOCATED WITHIN AN AREA HAVING A ZONE X DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33015C0259F, WITH EFFECTIVE DATE OF JANUARY 29, 2021, FOR COMMUNITY PANEL NO. 259 OF 681, IN ROCKINGHAM COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
4. BASIS OF BEARING: HORIZONTAL: STATE PLANE NAD83 VERTICAL: NAVD88.
5. EACH UNIT SHALL OBTAIN A SEPARATE OCCUPANCY PERMIT FROM THE BUILDING INSPECTOR PRIOR TO BEING SOLD.
6. ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
7. LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
8. 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.
9. 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.
10. ALL ARCHITECTURAL BLOCK RETAINING WALLS ARE TO BE DESIGNED AND STAMPED BY THE MANUFACTURER'S STRUCTURAL ENGINEER. CONTRACTOR TO COORDINATE WITH APPROVED MANUFACTURER PRIOR TO INSTALLATION.
11. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
12. DISTURBANCE OF EXISTING ROADWAY SHALL REQURE MILLING AND OVERLAY OF THE FULL ROAD WIDTH TO PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS. DISTURBED SIDEWALK SHALL BE REPAIRED OR REPLACED AS DETERMINED BY PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.
13. SUBJECT TO PORTSMOUTH DEPARTMENT OF PUBLIC WORKS REVIEW AND APPROVAL, TEMPORARY PAVEMENT SHALL BE REQUIRED AT THE TIME OF CONSTRUCTION. SUCH PAVING SHALL BE TO THE EXISTING PAVEMENT DEPTH AND, AFTER A WINTER SEASON THE STREET SHALL RECIEVE A FULL MILL AND OVERLAY.
14. PROPOSED LOTS NEED TO OBTAIN DRIVEWAY PERMITS FOR CHEVROLET AVE.
15. $5,000 PER NEW DWELLING SHALL BE PAID TO THE CITY OF PORTSMOUTH FOR DEVELOPMENT OF SIDEWALKS ON ALBANY STREET/MALT HOUSE DRIVE
16. TRASH SHALL BE KEPT INSIDE OF EACH UNIT'S GARAGE.
17. FOUNDATION TO BE FULLY WATERPROOFED TO BOTTOM OF FOOTING (APPLY WATERPROOFING COATING ON EXTERIOR)
18. FOUNDATION FOOTING CAN'T BE INSTALLED ON CRUSHED STONE TO ISOLATE EXTERIOR WATER & INTERIOR WATER.
19. FOOTINGS TO BE BUILT ON VIRGIN GROUND & NO CRUSHED STONE ALLOWED BENEATH FOOTINGS.
20. NO EXTERIOR FOUNDATION DRAINS ON FOUNDATIONS BELOW SEASONAL WATER TABLE
21. INTERIOR ONLY DRAINS TO SUMP BASIN ON FOUNDATIONS BELOW SEASONAL WATER TABLE

CERTIFICATION:

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. 892 DAVID M. COLLIER LICENSED LAND SURVEYOR SIGNATURE

DAVID M. COLLIER, LLS 892 DATE: 4/26/2022
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		PRIVACY FENCE
		PICKET FENCE
		EASEMENT
100	100	MAJOR CONTOUR
98	98	MINOR CONTOUR
		EDGE OF PAVEMENT
D		DRAINAGE LINE
S	S	SEWER LINE
G	G	GAS LINE
W	W	WATER LINE
WS	WS	WATER SERVICE
OHE	OHE	OVERHEAD ELECTRIC
UGE	UGE	UNDERGROUND ELECTRIC

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

APPROVED – PORTSMOUTH, NH PLANNING BOARD

DATE:

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Drawing Name: 20686-PLAN.dwg	Date: 03/22/22
	Project No.: 20686

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STATE OF NEW HAMPSHIRE MICHAEL J. KERIVAN No. 9846 LICENSED LAND SURVEYOR 4/26/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

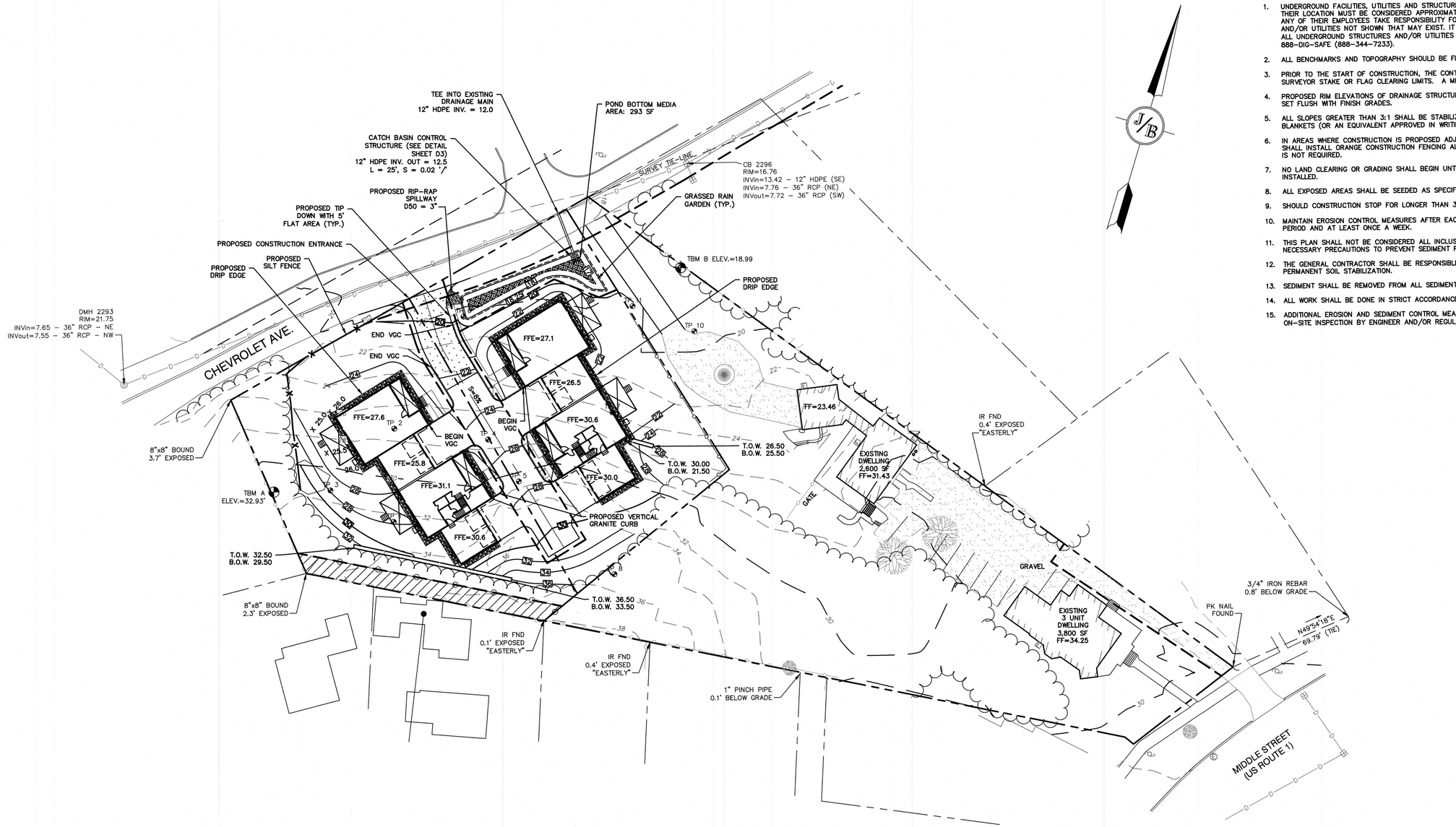
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
C2
SHEET 5 OF 14
JBE PROJECT NO. 20686

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. ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
3. 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.
4. PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
5. ALL SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHERWISE SPECIFIED.
6. 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.
7. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
8. ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
9. SHOULD CONSTRUCTION STOP FOR LONGER THAN 3 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED.
10. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.25" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
11. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
12. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
13. SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
14. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
15. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE	Date: 03/22/22
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-PLAN.dwg		

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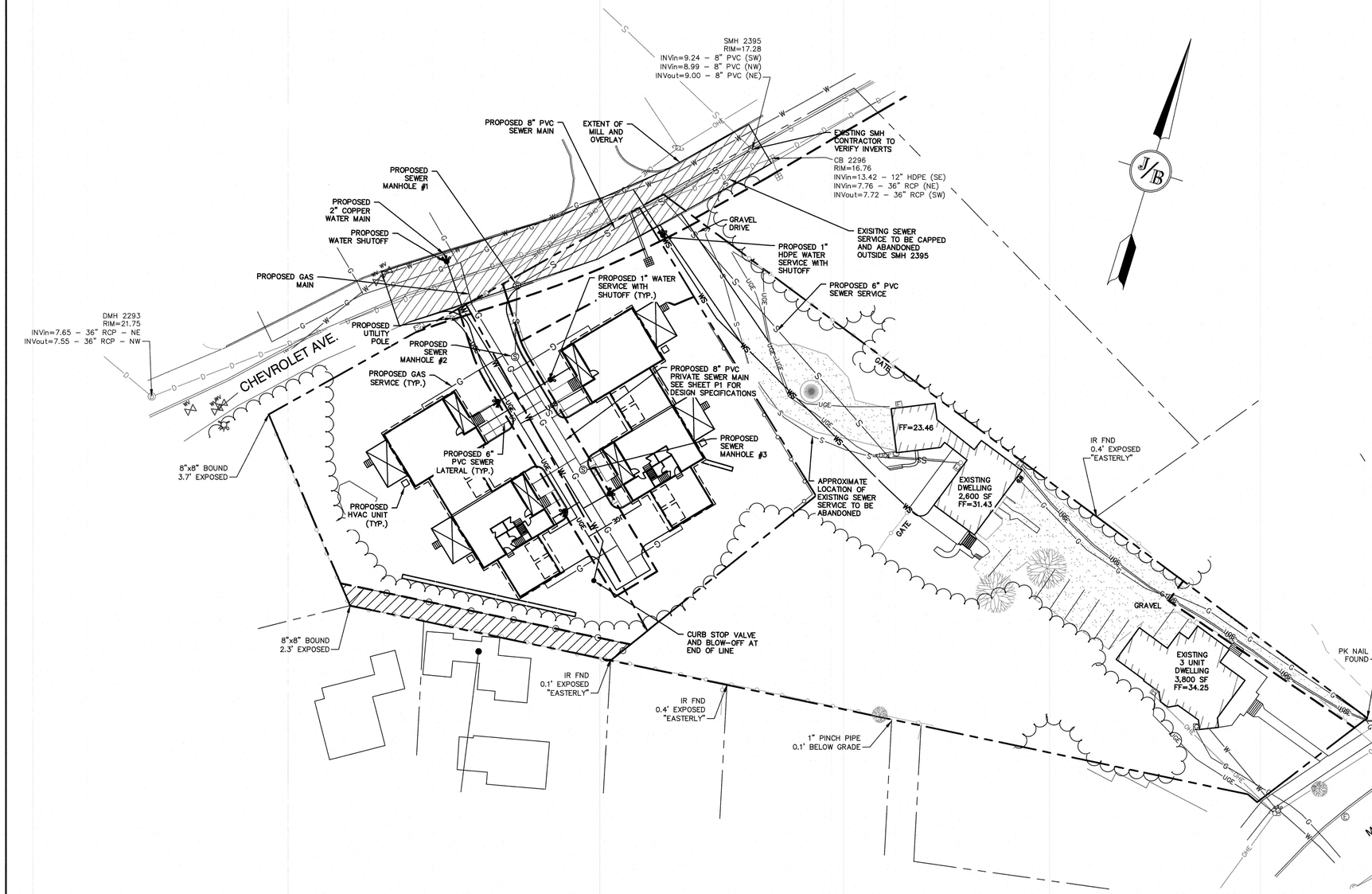
STATE OF NEW HAMPSHIRE MICHAEL J. KERVIAN No. 9646 LICENSED LAND SURVEYOR 4/22/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
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E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	GRADING AND DRAINAGE PLAN
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
C3
SHEET 6 OF 14
JBE PROJECT NO. 20686



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, FIRE ALARM, GAS, 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 TOWN 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. BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
9. AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
10. 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.
11. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA, CLEAR OPENING. THE WORD "SEWER" OR DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
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 @ 150 GPD/BEDROOM
    TOTAL FLOW = 2,400 GPD
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, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
16. ALL WATER 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. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION.
20. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
21. ALL WATER LINES SHOULD HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
22. 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.
23. 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.
24. 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.
25. 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.
26. 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.
27. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END AT RIGHT OF WAY AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
28. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRIC CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
29. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
30. REWORK OF THE EXISTING INVERT INSIDE SMH 2395 WILL BE REQUIRED TO ALLOW THE NEW PIPE TO ENTER AT THE PROPOSED ELEVATION REQUIRED TO CROSS THE EXISTING DRAIN. INSTALLER TO WORK WITH PORTSMOUTH DPW TO MAKE CONNECTIONS TO THEIR SATISFACTION.
31. AN AGREEMENT WITH PORTSMOUTH WATER WILLL BE REQUIRED FOR WATER SYSTEM FLUSHING.
32. TO PROTECT THE CITY OF PORTSMOUTH, NEW SEWER TREATMENT PLANT, NO DRAINAGE IS TO BE TIED INTO SEWER LINES

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
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1.86 ACRES

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Drawing Name: 20686-PLAN.dwg	

Date: 03/22/22
Project No.: 20686

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.

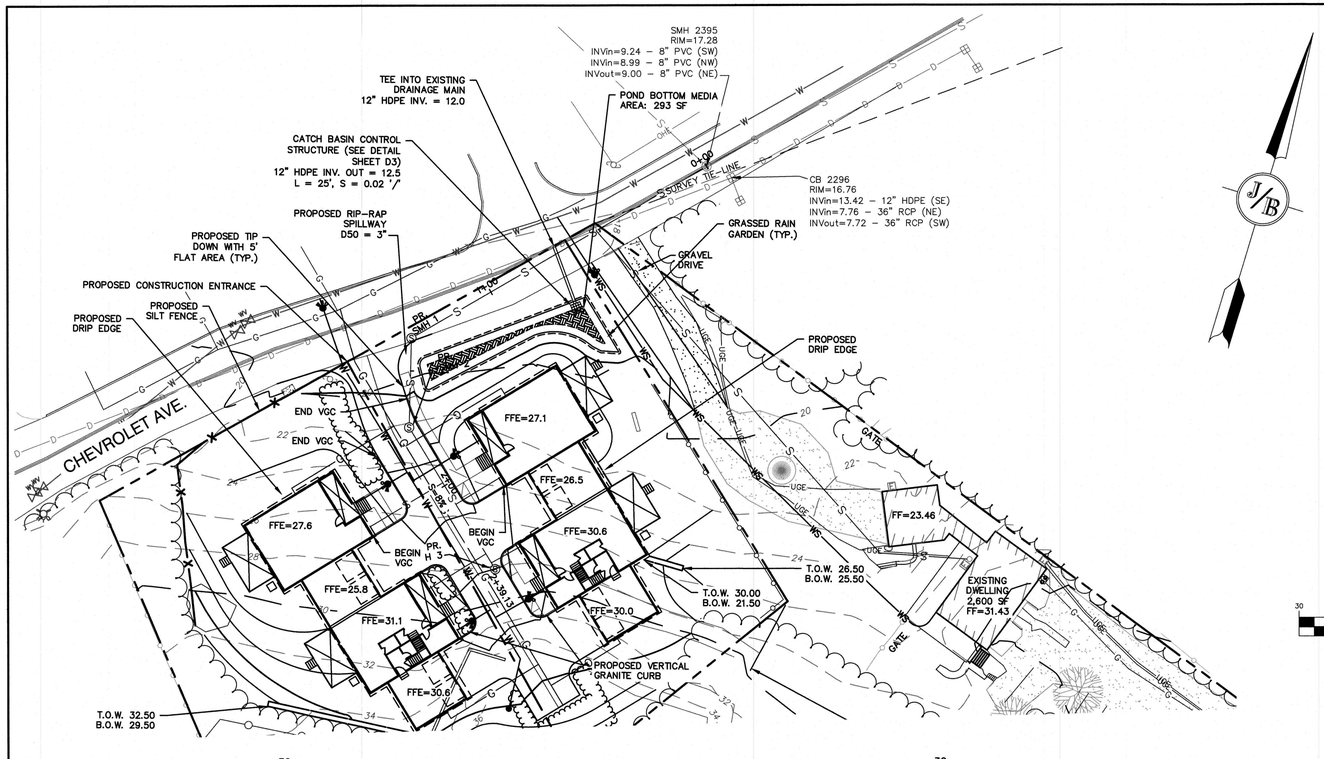
STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9946 – LICENSED PROFESSIONAL ENGINEER – 4/22/22

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

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

Plan Name:	UTILITY PLAN
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
C4
SHEET 7 OF 14
JBE PROJECT NO. 20686



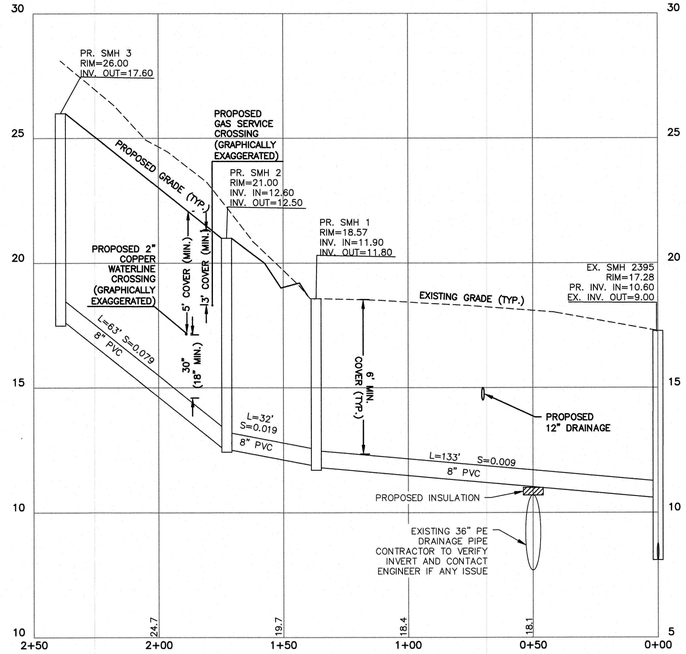
GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NOTES:

1. ALL ROAD AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE TOWN, AND NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
2. AS-BUILT PLANS TO BE SUBMITTED TO THE TOWN PRIOR TO ACCEPTANCE OF THE ROADWAY.
3. DEVELOPER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
4. 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.
5. 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.
6. ALL DISTURBED AREAS NOT STABILIZED BY NOVEMBER 1st SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. PRODUCT TO BE SPECIFIED BY THE ENGINEER.
7. FINAL DRAINAGE, GRADING AND EROSION PROTECTION MEASURES SHALL CONFORM TO REGULATIONS OF THE PUBLIC WORKS DEPARTMENT.
8. CONTRACTOR TO VERIFY EXISTING UTILITIES AND TO NOTIFY ENGINEER OF ANY DISCREPANCY IMMEDIATELY.
9. SIDEWALK TO BE INSTALLED AT TIME OF TOP COURSE PAVING ALONG WITH DRIVEWAY APRONS.
10. CONTRACTOR MUST HAVE A VALID PIPE INSTALLER'S LICENSE FROM THE PUBLIC WORKS DEPARTMENT BEFORE WORKING ON ANY DRAINAGE AND/OR UTILITY CONSTRUCTION.



GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft Horiz.
1 inch = 3 ft Vert.

6 3 0
0 30 60

Design: JAC	Draft: ERE	Date: 03/22/22
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-PLAN.dwg		

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STATE OF NEW HAMPSHIRE – MICHAEL J. KERVAN No. 9846 – LICENSED LAND SURVEYOR

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

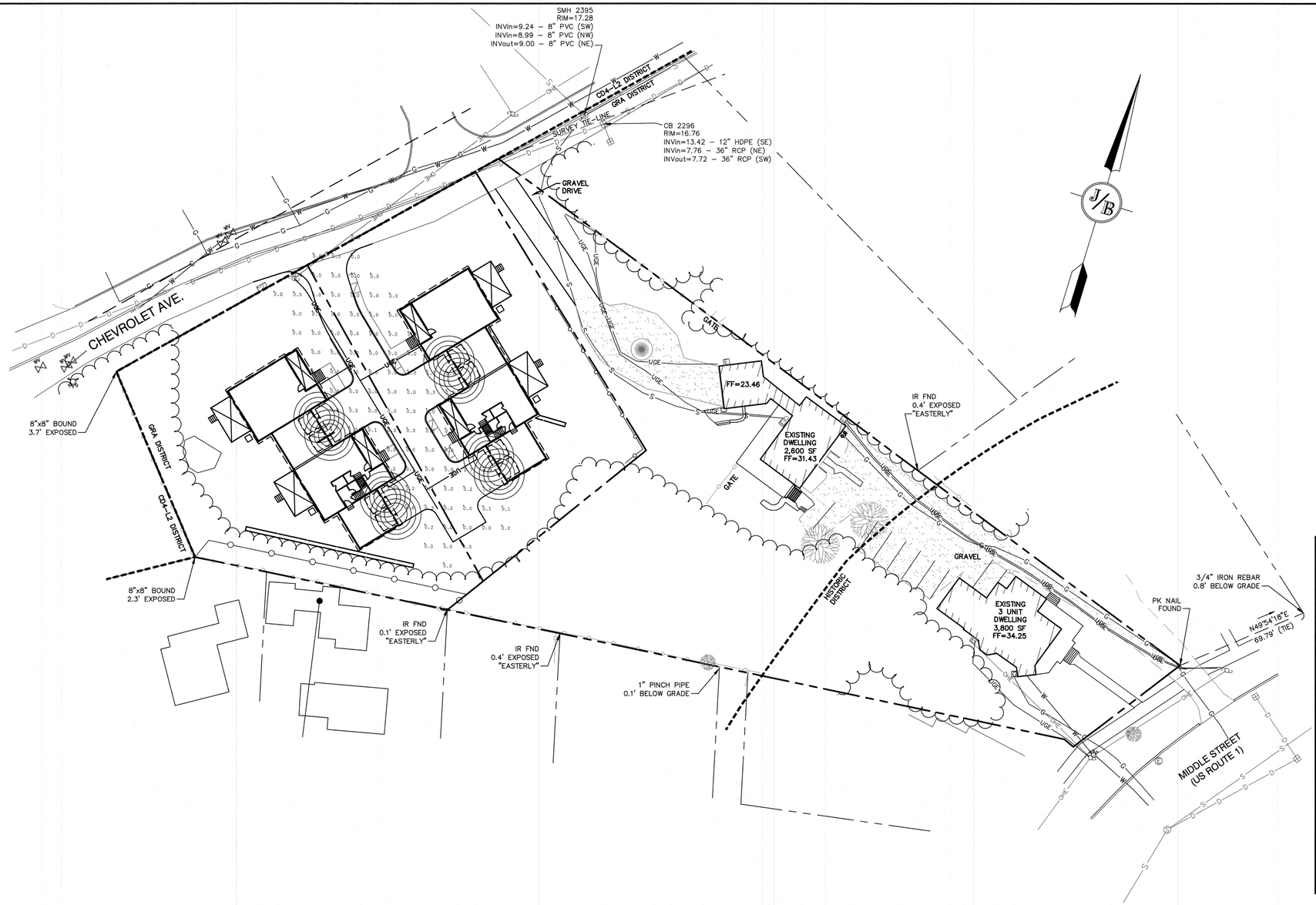
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SEWER PLAN AND PROFILE
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.

P1

SHEET 8 OF 14
JBE PROJECT NO. 20686



LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
3. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT–CANDLES.
4. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
5. ALL LIGHTING FIXTURES SHALL BE FULL CUT–OFF DARK–SKY COMPLIANT, UNLESS OTHERWISE NOTED.
6. NL INDICATES THAT THIS LUMINAIRE SHALL BE ON A NIGHT LIGHT CIRCUIT. FL INDICATES THAT THIS LUMINAIRE SHALL BE A FLOOD LIGHT FIXTURE. MOUNTING BRACKET FOR THIS FL FIXTURE SHALL BE MOUNTED 25' ABOVE BOTTOM OF POLE BASE FOR ALL LIGHT POLES CLOSEST TO STOREFRONT. THESE DESIGNATIONS INDICATE WHAT PHASE LIGHTS ARE WIRED TO (TYP).
7. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03108. ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.

Calvin Wall

TMSLIGHTING
ESTABLISHED 1923



Features

- Provides excellent coverage and uniformity with cut-off
- Practical and aesthetic options for application and design flexibility
- Weatherproof construction to withstand the elements
- Quality components combined with the most current technology for high efficiency and reduced lighting costs

Applications
The Calvin wall-mount luminaire is ideal for illuminating areas where localized distribution is necessary, such as doorways and entrances, laneways, patios and could provide adequate night time security lighting. It lends itself to commercial, and industrial applications that could benefit from materials and maintenance cost reductions. Calvin could either augment the existing lighting, or illuminate a small to medium-sized area.
Calvin is also available as a pendant-style model.

Construction
High grade spun aluminum, brushed solid copper, or brushed 316L stainless steel reflector, with stainless steel mounting hardware, for indoor and outdoor applications.

Lamp
Operates with Cree™ LED (19W max.), compact fluorescent (42W max.), metal halide (100W max.), or incandescent (150W max.). Specify 3000K, 3500K or 4000K CCT for LED systems. A dimmable, screw-type, 17W LED lamp is also available (PAR 38, E26 base, 120V, 4000K CCT).
Note: LED systems are available with 120-277V supply voltage only.
LED modules do not require a socket, and are wired directly to the integral driver.
Incandescent and metal halide systems, and those using the 17W LED PAR 38 lamp, use a medium base socket (E26).

Diffuser
Globe: clear and prismatic, elongated, glass globes are available.
Lens: the clear, flat lens provides slight diffusion, and protects any components located in the reflector.
Note: G3 is used with 100IN, 32CF, and 15LED max.
Only prismatic globes are compatible with LED systems.
Globes are not available with the 17W LED PAR 38 lamps.

Option
Wire Guard: a steel, chrome-plated wire guard is available for lamp protection against light projectiles, wildlife, and serves as a vandal deterrent.

Ballast/LED Driver
Ballasts are efficient with a high power factor greater than 90%, and quiet with an "A" sound rating.
The LED source is controlled by an advanced electronic driver that delivers consistent power.
Ballast and LED drivers are electronic, and available for integral and remote mounting, indoor or outdoor.

cULus cULus CE IP23

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
⊖	8	W	Single	2W-O-15LED-30K-120-WM-XX

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Date: 03/22/22	Project No.: 20686
Drawing Name: 20686-PLAN.dwg	

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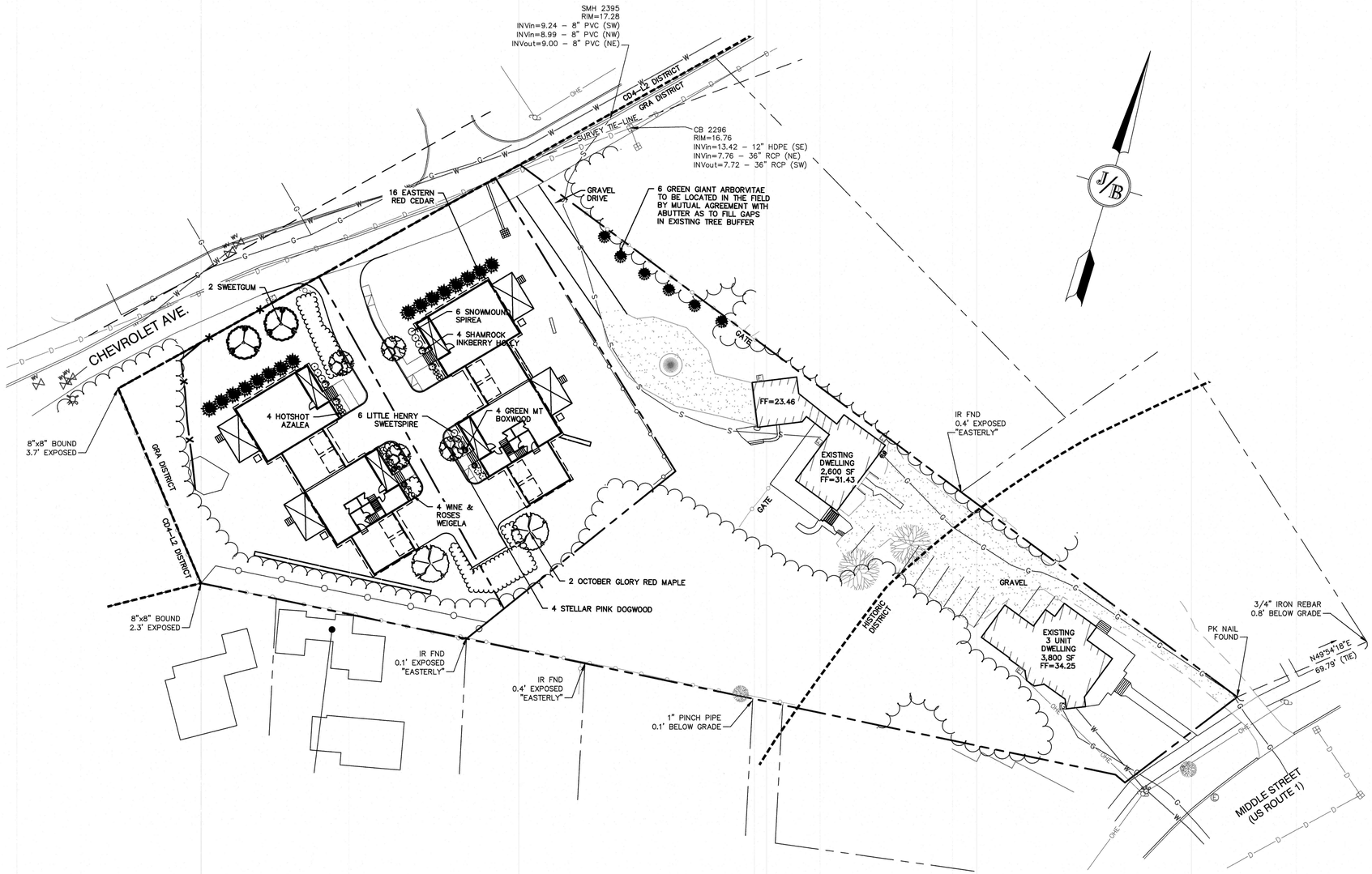
STATE OF NEW HAMPSHIRE — MICHAEL J. KERIVAN No. 9646 LICENSED — PROFESSIONAL ENGINEER — 4/26/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
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Designed and Produced in NH
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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:	LIGHTING PLAN
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
L1
SHEET 9 OF 14
JBE PROJECT NO. 20686



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 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.
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 FOR 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 WORK AND PLANTS SHALL BE DONE, INSTALLED AND DETAILED IN STRICT ACCORDANCE WITH 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.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. BY THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAS DIED, LOST NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT IS, 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 SPECIFIED.
15. ALL TREES AND SHRUBS SHALL BE PLANTED IN MULCH BEDS WITH EDGE STRIPS TO SEPARATE TURF GRASS AREAS.
16. 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.
17. ALL LANDSCAPING SHALL MEET THE TOWN STANDARDS AND REGULATIONS.
18. 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.
19. 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.
20. 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.
21. THIS PLAN IS INTENDED FOR LANDSCAPING PURPOSES ONLY. REFER TO CIVIL/SITE DRAWINGS FOR OTHER SITE CONSTRUCTION INFORMATION.

Plants

Quantity	Botanical Name	Common Name	Size
2	Acer rubrum 'October Glory'	OCTOBER GLORY RED MAPLE	3" Caliper
4	Azalea 'Girards Hotshot'	HOTSHOT AZALEA	3 Gallon
4	Buxus 'Green Mountain'	GREEN MT BOXWOOD	5 Gallon
4	Cornus kousa X C. florida 'Stellar Pink'	STELLAR PINK DOGWOOD	2.5" Caliper
4	Ilex glabra 'Shamrock'	SHAMROCK INKBERRY HOLLY	5 Gallon
6	Itea virginica 'Sprich Little Henry'	LITTLE HENRY SWEETSPIRE	3 Gallon
16	Juniperus virginiana	EASTER RED CEDAR	6-7 Ft. Ht.
6	Thuja plicata 'Green Gaint'	GREEN GIANT ARBORVITAE	10-12 Ft. Ht.
6	Spiraea nipponica 'Snowmound'	SNOWMOUND SPIREA	3 Gallon
2	Liquidambar styraciflua	SWEETGUM	3" Caliper
4	Weigela florida 'Alexandra'	WINE & ROSES WEIGELA	3 Gallon

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 147, LOT 18

APPLICANT
TUCK REALTY CORPORATION
PO BOX 190
EXETER, NH 03833

TOTAL LOT AREA
81,046 SQ. FT.
1.86 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: ERE	Date: 03/22/22
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-PLAN.dwg		

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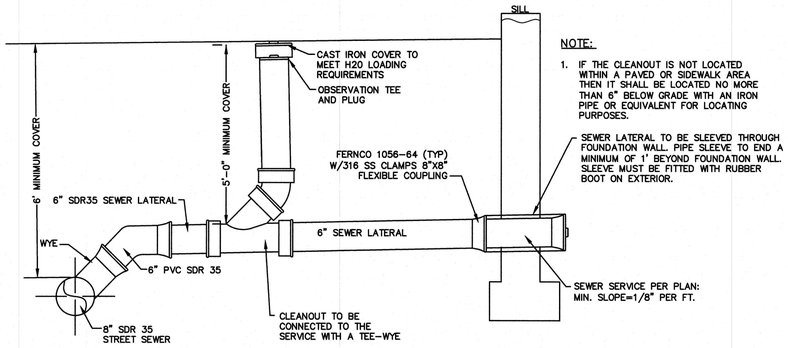
STATE OF NEW HAMPSHIRE – MICHAEL J. KERVIAN No. 9646 – LICENSED PROFESSIONAL ENGINEER – 3/12/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
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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: LANDSCAPE PLAN
Project: 668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record: PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No. L2
SHEET 10 OF 14
JBE PROJECT NO. 20686

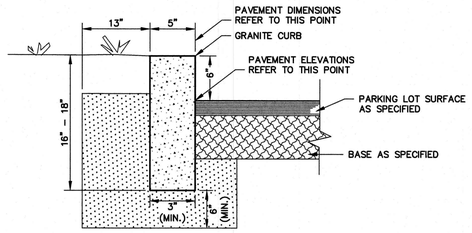


NOTE:

1. IF THE CLEANOUT IS NOT LOCATED WITHIN A PAVED OR SIDEWALK AREA THEN IT SHALL BE LOCATED NO MORE THAN 6" BELOW GRADE WITH AN IRON PIPE OR EQUIVALENT FOR LOCATING PURPOSES.
2. SEWER LATERAL TO BE SLEEVED THROUGH FOUNDATION WALL. PIPE SLEEVE TO END A MINIMUM OF 1' BEYOND FOUNDATION WALL. SLEEVE MUST BE FITTED WITH RUBBER BOOT ON EXTERIOR.

HOUSE SEWER SERVICE

NOT TO SCALE

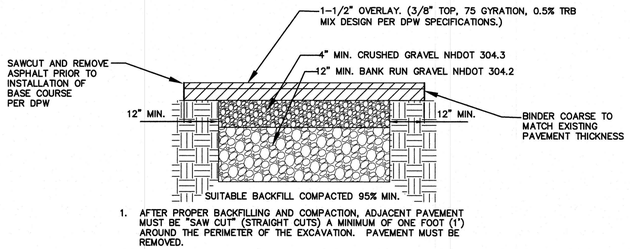


NOTES:

1. EDGING TO BE PLACED PRIOR TO PLACING TOP SURFACE COURSE.
2. JOINTS BETWEEN STONES SHALL BE MORTARED.

VERTICAL GRANITE CURB

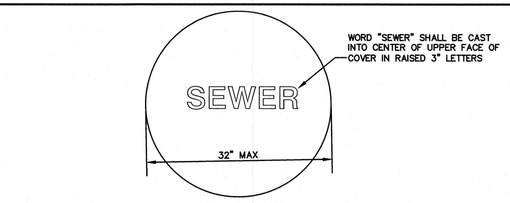
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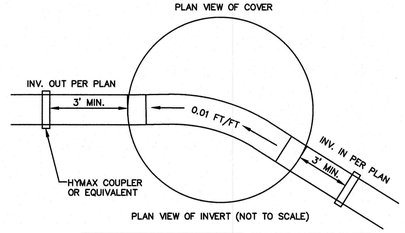
1. AFTER PROPER BACKFILLING AND COMPACTION, ADJACENT PAVEMENT MUST BE "SAW CUT" (STRAIGHT CUTS) A MINIMUM OF ONE FOOT (1') AROUND THE PERIMETER OF THE EXCAVATION. PAVEMENT MUST BE REMOVED.
2. INSTALL BASE COURSE LEAVING A REVEAL FOR SURFACE COURSE.
3. INSTALL SURFACE COURSE OF ASPHALT PAVING.
4. APPLY 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

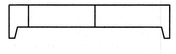
NOT TO SCALE



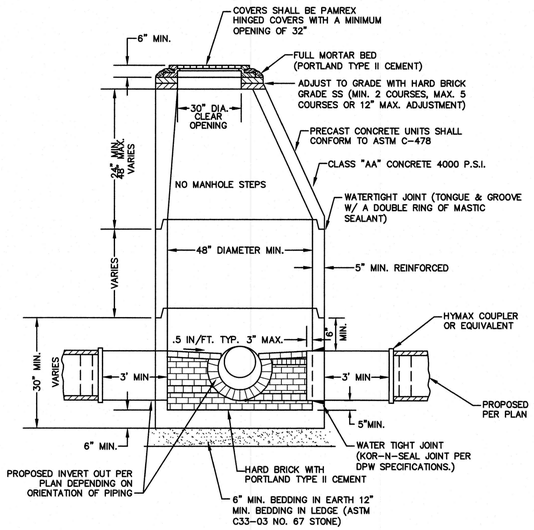
PLAN VIEW OF COVER



PLAN VIEW OF INVERT (NOT TO SCALE)



ALTERNATE TOP SLAB FOR MANHOLES LESS THAN SIX FEET DEEP. REINFORCED TO MEET OR EXCEED THE REQUIRMENTS OF AASHTO HS20-44 LOADING

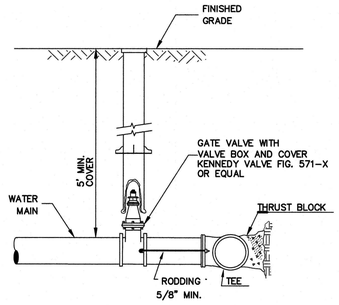


NOTES:

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



BURIED GATE VALVE DETAIL

NOT TO SCALE

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Drawing Name: 20686-PLAN.dwg	

Date: 03/22/22
Project No.: 20686

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STATE OF NEW HAMPSHIRE — MICHAEL J. KERIVAN No. 9646 — LICENSED PROFESSIONAL ENGINEER — 4/22/22

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

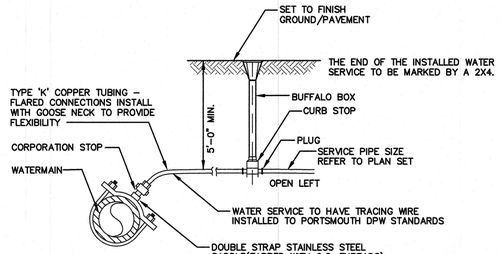
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.

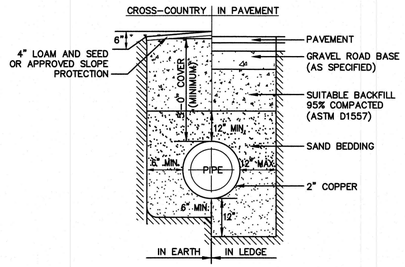
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SHEET 11 OF14
JBE PROJECT NO. 20686



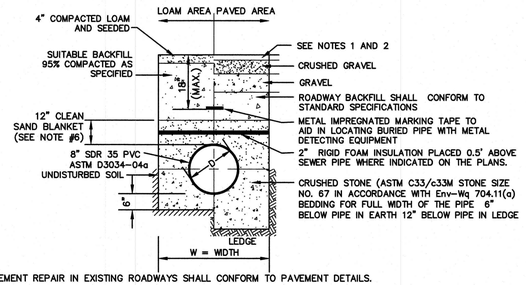
WATER SERVICE CONNECTION-COPPER PIPE

NOT TO SCALE



WATER SYSTEM TRENCH

NOT TO SCALE

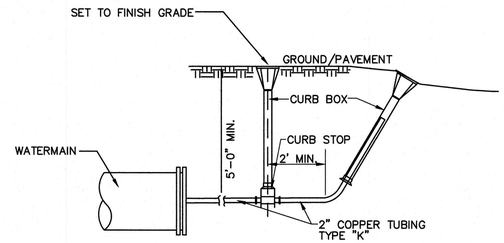


NOTES:

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 (a).

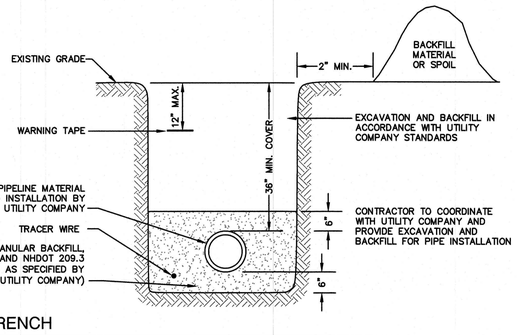
SEWER TRENCH

NOT TO SCALE



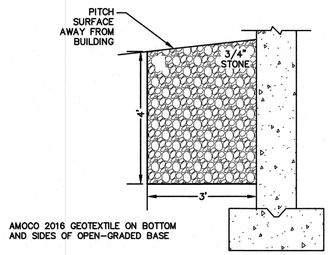
TYPICAL WATER MAIN BLOW OFF DETAIL

NOT TO SCALE



GAS TRENCH

NOT TO SCALE



DRIP EDGE DETAIL

NOT TO SCALE

Design: JAC	Draft: ERE
Checked: JAC	Scale: AS NOTED
Drawing Name: 20686-PLAN.dwg	

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Date: 03/22/22
Project No.: 20686

STATE OF NEW HAMPSHIRE
MICHAEL J. KERIVAN No. 9846 LICENSED PROFESSIONAL ENGINEER
4/26/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
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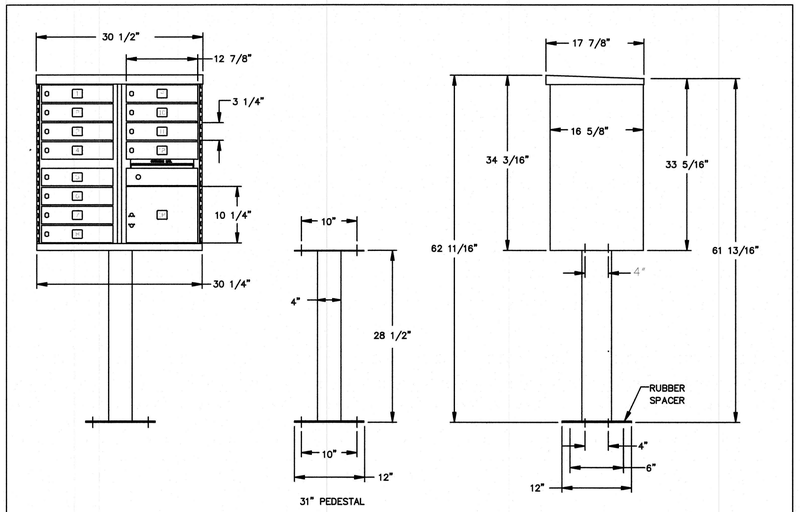
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. Civil Engineering Services 603-772-4746
PO Box 219 FAX: 603-772-0227
Stratham, NH 03885 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

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D2

SHEET 12 OF14
JBE PROJECT NO. 20686

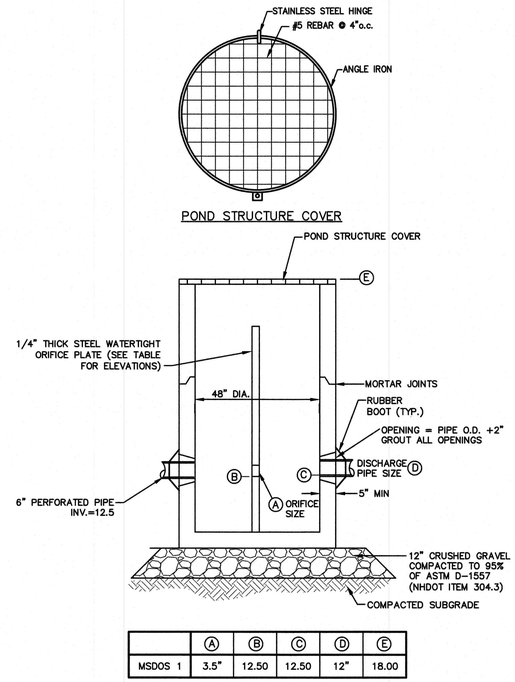


31" PEDESTAL

POSTAL PRODUCTS UNLIMITED, INC.™ A Division of American Postal Manufacturing, Inc. Phone. 1-800-229-4500 800 W. Oklahoma Ave. Milwaukee, WI 53207-2649	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

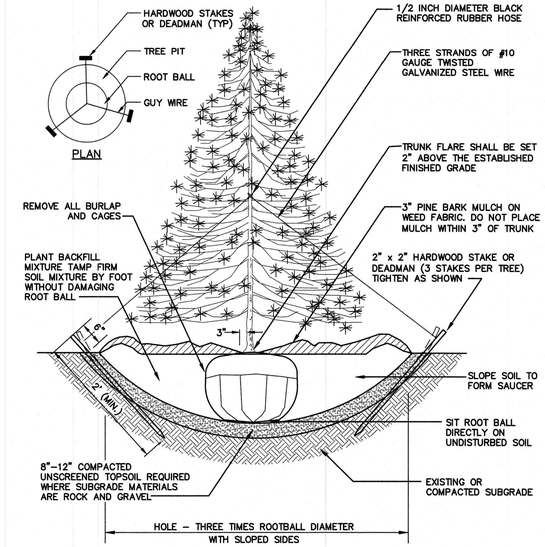
NOT TO SCALE



	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
MSDOS 1	3.5"	12.50	12.50	12"	18.00

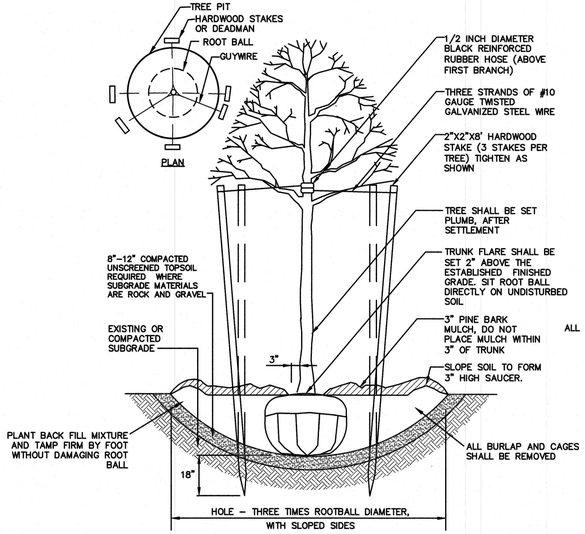
CATCH BASIN CONTROL STRUCTURE (CBCS)

NOT TO SCALE



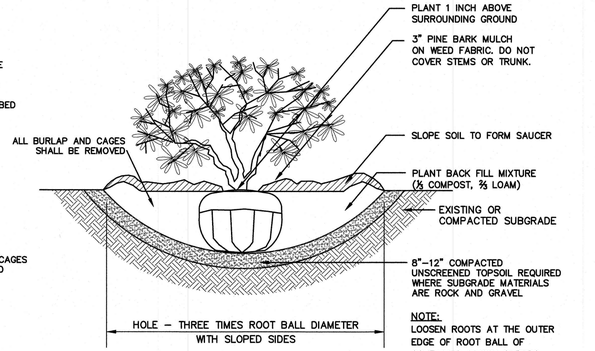
EVERGREEN PLANTING

NOT TO SCALE



TREE PLANTING (FOR TREES UNDER 4" CALIPER)

NOT TO SCALE



SHRUB PLANTING

NOT TO SCALE

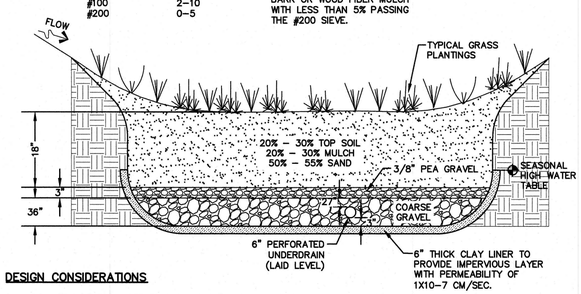
SAND SPECIFICATION	
SIEVE SIZE	% BY WEIGHT
3"	100
#4	95–100
#8	80–100
#16	50–85
#30	25–60
#60	10–30
#100	2–10
#200	0–5

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.



DESIGN CONSIDERATIONS

1. DO NOT DIRECT RUNOFF TO THE BIORETENTION SYSTEMS UNTIL IT HAS BEEN PLANTED 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.

MAINTENANCE REQUIREMENTS:

1. SYSTEMS SHOULD 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.
3. TRASH AND DEBRIS SHOULD BE REMOVED AT EACH INSPECTION.
4. AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72 HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
5. VEGETATION SHOULD 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.

RAIN GARDEN (GRASSED W/ UNDER DRAIN)

NOT TO SCALE

Design: JAC	Draft: ERE	Date: 03/22/22
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-PLAN.dwg		

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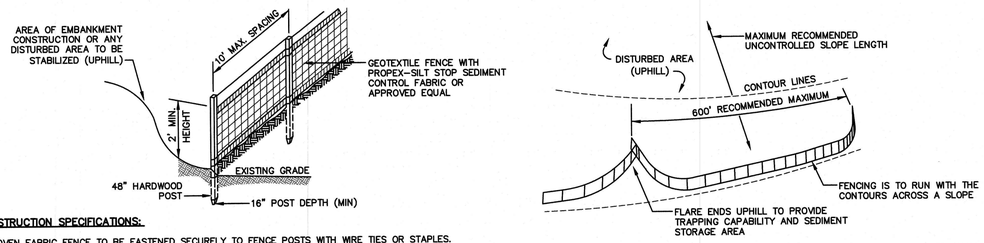
DRAWING No.

D3

SHEET 13 OF 14
JBE PROJECT NO. 20686

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.
12. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE BELOW).
13. PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL BE LOCATED AND IDENTIFIED ON THIS PLAN.



CONSTRUCTION SPECIFICATIONS:

1. WOVEN FABRIC FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP, MID AND BOTTOM AND EMBEDDED IN THE GROUND A MINIMUM OF 8" AND THEN COVERED WITH SOIL.
2. THE FENCE POSTS SHALL BE A MINIMUM OF 48" LONG, SPACED A MAXIMUM 10' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED 6", FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED AND PROPERLY DISPOSED OF WHEN IT IS 6" DEEP OR VISIBLE 'BULGES' DEVELOP IN THE SILT FENCE.
5. PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE.
6. SILT FENCE SHALL REMAIN IN PLACE FOR 24 MONTHS.
7. SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER. THE AREA DISTURBED BY THE REMOVAL SHALL BE SMOOTHED AND REVEGETATED.

MAINTENANCE:

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE DONE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
4. SEDIMENT DEPOSITS THAT ARE REMOVED, OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED, SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

SILT FENCE

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.

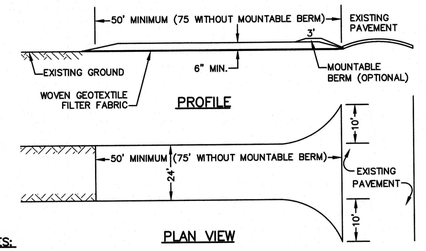
NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

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



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

CONSTRUCTION SEQUENCE

1. CUT AND REMOVE TREES IN CONSTRUCTION AREA AS REQUIRED OR DIRECTED.
2. INSTALL SILT FENCING, 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.
3. CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. THIS INCLUDES ANY REQUIRED DEMOLITION OF EXISTING STRUCTURES, UTILITIES, ETC.
4. 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.
5. STRIP LOAM AND PAVEMENT, OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK PER THE RECOMMENDATIONS OF THE PROJECT ENGINEER AND STOCKPILE EXCESS MATERIAL. STABILIZE STOCKPILE AS NECESSARY.
6. PERFORM PRELIMINARY SITE GRADING IN ACCORDANCE WITH THE PLANS, INCLUDING THE CONSTRUCTION OF ANY RETAINING WALLS AND SOUND WALLS.
7. PREPARE BUILDING PAD(S) TO ENABLE BUILDING CONSTRUCTION TO BEGIN.
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 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 ALL DRIVEWAY WAYS WITH 'FINISH' COURSE.
17. ALL 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. 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.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: ERE	Date: 03/22/22
Checked: JAC	Scale: AS NOTED	Project No.: 20686
Drawing Name: 20686-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 — MICHAEL J. KERVAN No. 9646 — LICENSED PROFESSIONAL ENGINEER — 4/22/2022

REV.	DATE	REVISION	BY
7	4/22/22	REVISED PER TAC COMMENTS	DJM
6	3/22/22	REVISED PER TAC COMMENTS	ERE
5	2/15/22	REVISED FOR PLANNING BOARD SUBMISSION	AJB
4	12/20/21	REVISED FOR PLANNING BOARD SUBMISSION	AJB
3	9/30/21	REVISED PER TAC COMMENTS	AJB

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:	EROSION AND SEDIMENT CONTROL DETAILS
Project:	668 MIDDLE STREET PORTSMOUTH, NH
Owner of Record:	PUBLIC LAND HOLDINGS, LLC PO BOX 190 EXETER, NH 03833 BK 6367 PG 1660

DRAWING No.
E1
SHEET 14 OF 14
JBE PROJECT NO. 20686

May 6, 2022

Mr. Peter Stith, AICP
Principal Planner
Planning Department
City of Portsmouth
One Junkins Avenue
Portsmouth, NH 03801

SUBJECT: TAC Meeting Response Comments
4-Amigos, LLC
951 Peverly Hill Road & 1400 Lafayette Road
Map 252 Lots 4, 5 & 7

Dear Peter:

Please find enclosed a revised set of plans and supporting documentation regarding the above referenced project. The plans have been revised to address the comments from the TAC Meeting email correspondence, dated May 2, 2022. Based on those comments we offer the following:

1400 Lafayette Road Subdivision

1. Based on discussions at the May 3, 2022 TAC meeting and the submittal of a construction timeline letter to TAC, the offsite sewer work/repairs required by DPW will be completed within 60 days from TAC approval.

2. The Map/Lot information has been updated on the Subdivision and Site Amendment Plans based on correspondence received from the Assessor Office.

1400 Lafayette Road Site Plan

1. The pedestrian crossing information and plans at West Road have been added to the Amended Site Plan set.

2. Test pits were conducted for the infiltration systems and locations and test pit logs are included in the Site Plan set and Drainage Report.

3. The water lines within the development were updated to include hydrants at the end of each run.

4. The domestic and fire services were separated as requested.

5. Note 17 has been added to the Site Plan Sheet indicating individual water services, shutoffs and dedicated meter rooms as agree to at the TAC meeting. Final building plans will provide more detailed information.

6. Note 18 has been added to the plans regarding water line leak detection and easements. The easement was previously submitted to the City as part of the 2020 approvals.

7. SMH-3 was revised to eliminate the need for a drop manhole and 5' diameter structure.

8. A waiver is included as part of the updated submittal package regarding the setback of the dumpster to the property lines.

9. Seven bike racks have been added within the residential development area, located in the vicinity of the proposed outside patio areas adjacent to Building Complex "A" and "C". As discussed at the TAC meeting, the three parking spaces near the dumpster enclosure are desired for use by visitors and remain as part of the development plans.

10. The textured pavement between Building Complex "E" & "D" has been eliminated.

Additional Response to Comments as received at the May 3, 2022 TAC Meeting:

1. An Easement Plan identifying all existing and proposed easements has been added to the Amended Site Plan set as requested.

2. Based on discussions with the applicant's local council, Tim Keiter, on May 5, 2022, the previously submitted Sewer Maintenance Agreement dated 9/20/21 still provides adequate language for access, maintenance, and repair across the entire property. Please refer to the attached letter, REA and Sewer Agreement.

Please review the attached information and should you have any questions, please feel free to contact our office at your convenience.

Sincerely,

Chris Tymula, P.E.
Senior Project Manager

enclosure(s)

cc: Rick Green, 4-Amigos, LLC
F:\Projects\Eng\458219\4582-TAC Response Comments 5-5-22.docx

LAW OFFICE OF
KEITER & ASSOCIATES, P.A.
ONE WILLIAM STREET
PORTLAND, MAINE 04103
(207)774-5100 FAX (207)774-5199
sender's email: tkeiter@keiterassociates.com

May 5, 2022

Mr. Dave Desfosses
City of Portsmouth
680 Peverly Hill Rd
Portsmouth, NH 03801

Re: 4 Amigos, LLC/951 Peverly Hill Road Development – Utility Easements

Dear Mr. Desfosses:

My client, 4 Amigos, LLC, has informed me that the City has requested confirmation that upon subdivision of the above referenced property from the commercial lot located at 1400 Lafayette Road, the rear development parcel will continue to have access for sanitary sewer and other utilities, across the front parcel. I am happy to confirm for you that in fact the rear parcel does, and will continue to, have legal access for such utilities.

Section 2.1 of the Declaration of Easements, Covenants, Conditions and Restrictions dated December 20, 2012, and recorded in the Rockingham County Registry of Deeds in Book 5391, Page 691 (copy attached), relating to the overall property, establishes cross-easements for all parts of the property, for the benefit of the owners and occupants of any portion of the overall property (See section 2.1 of the REA) – this would include the rear parcel. This includes easements for the use of driveways and walkways (see Section 2.1(a)), and for utilities, including water, sanitary sewer, storm water drainage, gas, electrical, and data transmission lines, and any other utilities (See Section 2.1(b)). Section 2.1 also provides that these easements "shall run with the land and be binding upon the successors and assigns of such Owner as their interests may from time to time appear," so they would be available for any future owner of the back land. Section 10.3 provides further confirmation that the easements run with the land and bind, and benefit, every person having any interest in the property.

In addition, the Sewer Maintenance Agreement dated September 20, 2021, relating to maintenance of sewer facilities at this property (copy attached) contains a section (Section 9) that provides that its provisions will run with the land and be binding upon the successors and assigns of the parties, including any grantee of a portion of a Lot (such as the back parcel).

I hope that this letter provides the information that you need, to satisfy the above request. Please do not hesitate to contact me if I can provide you with any further information, or if you should have any questions about this letter.

Very truly yours,

Timothy S. Keiter

TSK:
cc: Rick Green, 4 Amigos, LLC (via email)

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

Timothy S. Keiter
Keiter & Associates, P.A.
1 William Street
Portland, Maine 04103

(Space above this line for Recorder's use only)

SEWER MAINTENANCE AGREEMENT

THIS SEWER MAINTENANCE AGREEMENT (this "Agreement") is made and entered into as of the 20th day of September, 2021, by and between **MACLEOD ENTERPRISES LLC**, a New Hampshire limited liability company, successor by conversion to MacLeod Enterprises, Inc. ("MacLeod") having an address of P.O. Box 328, Portsmouth, New Hampshire 03801, and **4 AMIGOS, LLC**, a New Hampshire limited liability company ("4 Amigos") having an address of 321D Lafayette Road, Hampton, New Hampshire 03842. MacLeod and 4 Amigos are collectively referred to herein as the "Parties," and each is referred to individually as a "Party."

WHEREAS MacLeod is the owner and operator of certain real estate located at 1190 Lafayette Road in the City of Portsmouth, New Hampshire (the "MacLeod Property"), more particularly described as City of Portsmouth Tax Map 252, Block 8, conveyed to MacLeod by deed from Darly Realty, Inc., dated April 19, 1984, and recorded in the Rockingham County Registry of Deeds in Book 2487, Page 509, and by deed from 4 Amigos dated December 20, 2012, recorded in said Registry of Deeds in Book 5391, Page 643; and

WHEREAS 4 Amigos is the owner and operator of certain real estate located at 1390-1400 Lafayette Road and at 721 Peverly Hill Road, in the City of Portsmouth, New Hampshire (collectively the "4 Amigos Property"), more particularly described as City of Portsmouth Tax Map 252, Blocks 4, 5 and 7, conveyed to 4 Amigos by deed from Todd N. Sheldon, as Trustee of the Michael's Realty Trust dated December 6, 2012, recorded in the Rockingham County Registry of Deeds in Book 5391, Page 625, and by deed from Julieann Thurlow, as Trustee of the ESUM Realty Trust dated December 20, 2012, and recorded in said Registry of Deeds in Book 5391, Page 638, and by deed from MacLeod dated December 10, 2012 and recorded in said Registry of Deeds in Book 5391, Page 646; and

WHEREAS the MacLeod Property and the 4 Amigos Property (collectively, the "Properties," and each a "Property") are each benefitted by, and entitled to the use of, certain easements for the installation, maintenance, operation, use, repair and replacement of sanitary sewer pipes and

related installations, as described in instruments recorded in said Registry of Deeds in Book 2751, Page 2944, in Book 2774, Page 2949, and in Book 4403, Page 2337 (as amended by instruments recorded in said Registry in Book 5229, Page 2441, Book 5391, Page 649, and Book 5391, Page 671), some of which sewer pipes and related installations are located on or under each of the MacLeod property and the 4 Amigos Property, as well as on or under real estate owned by third parties (all of said sanitary sewer pipes and related installations, including all of those located on either Property, or on property of third parties, from the point where they exit each building on either of the Properties (and not including any pipes or associated installations located within any such building), to the point where such pipes connect to the public sewer line, are referred to herein collectively as the "Sewer Facilities"); and

WHEREAS the Parties wish to provide as between themselves and their successors in title to the MacLeod Property and the 4 Amigos Property, respectively, for the responsibility for operation and maintenance of the Sewer Facilities, and for the sharing of costs related thereto;

NOW THEREFORE, in consideration of the foregoing recitals, the mutual covenants and agreements set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Incorporation of Recitals. The Parties hereby stipulate and agree that the foregoing recitals are true and correct, and hereby incorporate all of said recitals into this Agreement as though set forth in full herein. Said recitals constitute a substantive part of this Agreement.

2. Responsibility for Management of Sewer Facilities. 4 Amigos hereby agrees, for itself and its successors and assigns in ownership of the 4 Amigos Property, to be responsible for periodic inspection and maintenance of the Sewer Facilities, in accordance with the procedures set forth on Exhibit A attached hereto and incorporated herein by this reference, and for any repairs and replacements of the Sewer Facilities that may be necessary or reasonably desirable from time to time (as reasonably determined by 4 Amigos) to ensure the proper continued functioning thereof, including but not limited to any such repairs and replacements as may be required by applicable law or ordinance (collectively, the "Sewer Management Activities"). 4 Amigos, its successors and assigns, shall be solely responsible for the hiring of professionals and contractors to perform all work required by the terms of this paragraph. 4 Amigos shall not have any liability for any errors, negligence, malfeasance, or improper work performed (or which should have been performed but was not performed) by any such professional or contractor, or for any injury, death, loss or damage arising out of or in any connection with any work performed under the provisions of this Agreement, and MacLeod shall share equally in, and be equally liable for, any such liability imposed upon 4 Amigos in any connection with any of the foregoing.

3. Cost Sharing. Each of 4 Amigos and MacLeod agrees to pay one-half of all costs and expenses incurred by 4 Amigos' in connection with 4 Amigos' obligations under Section 2 above, whether such costs are incurred in connection with inspections, repairs, replacements or are otherwise incurred by 4 Amigos to ensure the proper functioning of the Sewer Facilities (collectively, the "Maintenance Costs") provided such Maintenance Costs are incurred in

connection with Sewer Facilities located either on the MacLeod Property or on the property of third parties located between the MacLeod Property and the Sewer Facilities' connection to the public sewer line. Maintenance Costs of those portions of the Sewer Facilities located entirely on the 4 Amigos Property shall be the sole responsibility of 4 Amigos, its successors or assigns. Any work to the Sewer Facilities (by way of improvements, extensions, alterations, repairs or maintenance other than normal ongoing maintenance) necessitated by or performed in connection with the installation of any new improvements on either Property shall be the sole responsibility of, and performed at the sole cost of, the Party installing or constructing such new improvements. Upon the incurring of any Maintenance Costs, 4 Amigos may send an invoice to MacLeod for one-half of the amount so incurred, together with reasonable backup (such as copies of invoices from contractors and others) supporting the amount of such invoice, and MacLeod agrees to pay each such invoice to 4 Amigos within thirty (30) days after receipt of such invoice. In the event that 4 Amigos receives full or partial reimbursement of any Maintenance Costs from any third party (including insurance proceeds, or payments from tenants or other responsible parties other than MacLeod), such reimbursement shall be credited one-half against the payment obligations of each Party hereto, and any resulting overpayment by MacLeod shall be promptly refunded by 4 Amigos to MacLeod. MacLeod's obligation to pay Maintenance Costs shall not, however, be conditioned upon or subject to any effort to obtain, or any actual obtaining, of any such contribution or reimbursement from any potentially liable third party. In the event of the future subdivision of either of the Properties, the owner of the Property so subdivided immediately prior to such subdivision, shall designate in a recorded writing how the maintenance and payment obligations appurtenant to that Property under this Agreement shall be apportioned between the owners of portions of that Property, which designation shall be made in such owner's sole discretion and shall be binding on the owners of each of such portions as well as with respect to the other Property owner under this Agreement.

4. Self Help. In the event that 4 Amigos (or successor owner of the 4 Amigos Property) fails to carry out any Sewer Management Activities that are reasonably necessary for any other party connected thereto, to continue to use and enjoy the Sewer Facilities, such that the other party is in imminent danger of losing the use of the Sewer Facilities or has lost use of the Sewer Facilities, and if 4 Amigos has not commenced taking reasonable steps to cure such failure within 15 days after written notice thereof to 4 Amigos, or thereafter fails to prosecute such cure to completion with reasonable diligence and continuity, or otherwise fails to take reasonable steps to restore sewer service as quickly as reasonably possible in the circumstances, then MacLeod shall have the right to perform the Sewer Management Activities necessary to restore, or prevent the loss of use of, the Sewer Facilities, and 4 Amigos shall reimburse MacLeod for one-half (1/2) of all costs and expenses incurred by MacLeod in performing such Sewer Management Activities, within 30 days after receiving an invoice therefor from MacLeod, accompanied by reasonable backup supporting the amount of such invoice as contemplated in Section 3 above. Provided further, that if MacLeod is in imminent danger of losing the use of the Sewer Facilities or has lost the use of the Sewer Facilities and as a result thereof is in imminent danger of having to close its business or has closed its business, then MacLeod may upon written notice to 4 Amigos, immediately carry out such Sewer Management Activities as may be reasonably necessary to prevent such closure or restore the operation of its business (hereinafter "Immediate Self Help"). In the event MacLeod exercises Immediate Self Help as provided for herein, 4 Amigos shall reimburse MacLeod for one-half (1/2) of all costs and

expenses incurred by MacLeod in performing such Sewer Management Activities, within 30 days after receiving an invoice therefor from MacLeod, accompanied by reasonable backup supporting the amount of such invoice as contemplated in Section 3 above.

5. Access. 4 Amigos (and any successor owner of the 4 Amigos Property with the responsibility to perform the Sewer Management Activities) shall have, and MacLeod hereby grants to 4 Amigos, the right and easement to access to all portions of the MacLeod Property under which any Sewer Facilities are located, and such additional area as may reasonably be necessary to inspect and work upon the Sewer Facilities, for the purpose of conducting any and all Sewer Management Activities, provided that in the absence of exigent circumstances, 4 Amigos shall give reasonable written notice (which may be by email) to MacLeod prior to such entry on the MacLeod Property, and will reasonably coordinate with MacLeod to minimize interference with the operation of MacLeod's business in performing the Sewer Management Activities. The Parties acknowledge that the Sewer Management Activities may on some occasions require making the Sewer Facilities unavailable for some period of time, which 4 Amigos agrees will be as short a time as is reasonably possible in the circumstances.

6. Recording. This Agreement shall be recorded in the official records of Rockingham County, New Hampshire, by either Party hereto, and the costs of such recording shall be shared equally by 4 Amigos and MacLeod.

7. Notices. Any notice, request or demand required or permitted by this Agreement shall be made in writing and shall be deemed properly given when delivered in person, or two (2) days after the same shall have been sent by certified or registered first class mail, or one (1) business day after being deposited with a recognized overnight carrier such as FedEx or Express Mail for overnight delivery, in each case with delivery prepaid, and addressed as follows, or to such other address as the Party intended to receive any such notice may from time to time designate as its address for the receipt of notices hereunder, by written notice given to the other Party:

If to MacLeod:
MacLeod Enterprises LLC
P.O. Box 328
Portsmouth, New Hampshire 03801
Attn: M. Kevin MacLeod
Email: kmacleod14@comcast.net

with a copy to:
Alec L. McEachern, Esq.
Shaines & McEachern, P.A.
282 Corporate Drive, Suite 2
Portsmouth, NH 03801
Email: alecm@shaines.com

If to 4 Amigos:
4 Amigos, LLC
321D Lafayette Road
Hampton, New Hampshire 03842
Attn: Scott Mitchell

Email: scott@tropicstardevelopment.com

with a copy to: Timothy S. Keiter, Esq.
Keiter & Associates, P.A.
One William Street
Portland, Maine 04103
Email: tkeiter@keiterassociates.com

For all purposes of this Agreement, a "business day" shall be deemed to be any day that is not a Saturday, Sunday or a day on which banks in New York, New York are permitted or required to be closed for business. If a notice would be deemed given on a day that is a Sunday or bank holiday in New York, New York under the terms stated above, it shall be deemed given, instead, on the next day that is not a Sunday or bank holiday.

8. Counterparts. This Agreement may be executed in two or more counterparts, or with counterpart signature pages, each of which shall be an original, and all of which shall constitute but one Agreement. Signatures appearing hereon that have been reproduced, applied, provided, delivered or transmitted by facsimile, email, DocuSign or other electronic means shall be equally binding and effective as original signatures hereon, and shall be deemed duly and effectively delivered if so transmitted or provided.

9. Agreement to Run with the Land; Successors. It is intended that this Agreement and each of the easements, covenants, conditions, restrictions, rights, benefits and obligations set forth herein shall be appurtenant to the MacLeod Property and the 4 Amigos Property, and shall run with the land and create equitable servitudes in favor of the real properties benefited thereby, shall bind every person having any fee, leasehold or other interest therein and shall inure to the benefit of the respective Parties and their successors, assigns, heirs, and personal representatives. Any subsequent owner of either the MacLeod Property or the 4 Amigos Property shall have the benefit of, and shall be bound by, all of the terms and provisions hereof, to the extent of such ownership. The 4 Amigos Property and the MacLeod Property are intended to consist of all contiguous land owned by 4 Amigos and MacLeod, respectively, at or connected to the locations specified in the recitals appearing at the head of this Agreement, whether or not such land corresponds exactly to that conveyed in the deeds referenced in said recitals. The grantee of any portion of either Property, by acceptance of a deed or other instrument conveying title thereto, whether from an original Party or from a subsequent owner of such Property or portion thereof, shall accept such deed or other instrument upon and subject to each and all of the easements, covenants, conditions, restrictions and obligations contained herein. By such acceptance, any such grantee shall for itself and its successors, assigns, heirs, and personal representatives, be conclusively deemed to covenant, consent, and agree to and with the other Party, to keep, observe, comply with, and perform the obligations and agreements set forth herein with respect to the property so acquired or leased by such grantee. Any person or party that is an owner of either of the Properties (or of any portion thereof) shall be bound hereby only for the period of such ownership, and upon any transfer of such ownership the successor owner shall be bound and the departing owner shall have no further liability or responsibility hereunder for any periods occurring after such transfer, but shall remain liable and obligated with respect to all events and obligations occurring during the period of such ownership.

10. Severability. Each provision of this Agreement and the application thereof to the Properties are hereby declared to be independent of and severable from the remainder of this Agreement. If any provision contained herein shall be held to be invalid or to be unenforceable or not to run with the land, such holding shall not affect the validity or enforceability of the remainder of this Agreement. In the event the validity or enforceability of any provision of this Agreement is held to be dependent upon the existence of a specific legal description that is not provided with this original Agreement, the Parties agree to promptly cause such legal description to be prepared and recorded as a part hereof. This Agreement is made and entered into for the sole protection and benefit of the Parties hereto and their successors and assigns in fee ownership of the Properties, and no other person or entity shall be a direct or indirect beneficiary of or have any direct or indirect cause of action or claim in connection with this Agreement. There are no intended third party beneficiaries of this Agreement.

11. Entire Agreement. This Agreement contains the complete understanding and agreement of the Parties hereto with respect to all matters referred to herein, and all prior representations, negotiations, and understandings relating thereto are superseded hereby. The foregoing notwithstanding, nothing contained in this Agreement shall restrict or impair the right of the Owners to grant other easements upon either of the Properties from time to time. Nothing contained in this Agreement shall affect any allocation of responsibilities as between any Party hereto and any tenant or other permittee of any portion of either Property under a written lease or other agreement.

12. Miscellaneous. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective heirs, successors and assigns. Each of the individuals who has executed this Agreement represents and warrants that he or she is duly authorized to execute this Agreement on behalf of MacLeod or 4 Amigos, as the case may be, that all corporate, partnership, limited liability company or other action necessary for such Party to execute and perform the terms of this Agreement has been duly taken by such Party, and that no other signature and/or authorization is necessary for such Party to enter into and perform the terms of this Agreement. This Agreement shall not be amended or modified by any act or conduct of the Parties or by oral agreement, unless reduced to a writing and signed by both Parties. The words "hereof," "herein," "hereunder" and words of similar import refer to this Agreement as a whole. This Agreement shall be governed by and construed in accordance with the laws of the State of New Hampshire. The captions and headings in this Agreement are for convenience of reference only, and shall not be deemed to define or limit the scope or intent of any of the terms, covenants, conditions or agreements contained herein.

[*Signatures appear on the following pages*]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

WITNESS:

("MacLeod")

MACLEOD ENTERPRISES LLC,
a New Hampshire limited liability company

By: _____
M. Kevin MacLeod
Its Manager

STATE OF NEW HAMPSHIRE
County of Rockingham, ss

September 22, 2021

Then personally appeared before me, the undersigned, a Notary Public in and for said State, M. Kevin MacLeod, to me known to be the Manager of MacLeod Enterprises LLC, the limited liability company that executed the foregoing instrument, and acknowledged to me that the said instrument is the free and voluntary act and deed of said limited liability company, for the uses and purposes therein mentioned, and on oath stated that he is authorized to execute the said instrument on behalf of said limited liability company.

WITNESS MY HAND and official seal hereto affixed the day, month and year first above written.

ALEC L. McEACHERN
MY COMMISSION EXPIRES JUNE 16, 2026
NOTARY PUBLIC
NEW HAMPSHIRE

Notary Public in and for the
State of New Hampshire

My commission expires:
06-16-2026

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

WITNESS:

4 AMIGOS, LLC, a New Hampshire limited liability company ("4 Amigos")

By: _____

Its Member

STATE OF NEW HAMPSHIRE
County of Rockingham, ss

September 17, 2021

Then personally appeared before me, the undersigned, a Notary Public in and for said State, Kenneth Linseman to me known to be a member of 4 Amigos, LLC, the limited liability company that executed the foregoing instrument, and acknowledged to me that the said instrument is the free and voluntary act and deed of said limited liability company, for the uses and purposes therein mentioned, and on oath stated that he is authorized to execute the said instrument on behalf of said limited liability company.

NICHOLAS R. PEVERADA
MY COMMISSION EXPIRES MARCH 22, 2022
NOTARY PUBLIC NEW HAMPSHIRE

Notary Public in and for the
State of New Hampshire

My commission expires:
March 22, 2022

EXHIBIT A
(To Sewer Maintenance Agreement)

A. Initially, the Sewer Management Activities shall consist of the following:

1. Bring SMH-2 and SMH-3 up to grade and provide proper accessibility to them.
2. Provide post-cleaning video of pipe segment between SMH-3 and SMH-4 to Portsmouth DPW.
3. Repair sag in sewer line approaching SMH-5.
4. Remove debris from manhole shelf at SMH-5.
5. Repair boot on outlet pipe at SMH-6, which has dropped 1-2".
6. Clean the Sewer Facilities.

B. Thereafter:

1. Video the sewer line approximately 12 months after completion of initial work. If no problems exist, then re-inspect and video after 3 additional years. If there are issues, address them and re-inspect every 3 years until there are no issues revealed by inspection that must be addressed.
2. Once no problems appear upon a 3-year inspection, then change schedule to perform inspections every 5 years, and address any problems requiring work that are revealed in each inspection.

DECLARATION OF EASEMENTS, COVENANTS, CONDITIONS AND RESTRICTIONS

THIS DECLARATION OF EASEMENTS, COVENANTS, CONDITIONS AND RESTRICTIONS (the "Declaration") is made and entered into this 20th day of December, 2012, by **4 AMIGOS, LLC**, a New Hampshire limited liability company with an address of 1070 Ocean Boulevard, Hampton, New Hampshire 03842 ("Declarant").

066049
2012 DEC 20 PM 4:07
ROCKINGHAM COUNTY
REGISTRY OF DEEDS

RECITALS

A. Declarant is the owner of that certain real property situated in the City of Portsmouth, Rockingham County, New Hampshire, more particularly described on **Exhibit A-1** attached hereto and incorporated herein by this reference (the "Property"), comprised by the approximately 1.57 acre parcel described on **Exhibit A-2** (the "Rite Aid Lot") and the approximately 3.56 acre parcel described on **Exhibit A-3** (the "Future Development Lot"). The Rite Aid Lot and the Future Development Lot are depicted on the REA Site Plan, as defined below, and are sometimes collectively referred to herein as the "Lots," and each is sometimes referred to individually as a "Lot."

B. Declarant intends to develop the Rite Aid Lot for use by Maxi Drug North, Inc. simultaneously with or prior to Declarant's development and construction of the Future Development Lot.

C. Declarant desires to impose certain easements upon and to establish certain covenants, conditions and restrictions with respect to the development and operation of the Property.

D. Declarant acknowledges that the Property is subject to, and is described as "Parcel B" in, a Reciprocal Easement Agreement dated November 30, 2004, and recorded in the Rockingham County Registry of Deeds in Book 4403, Page 2337, as amended by a First Amendment to Reciprocal Easement Agreement dated June 22, 2011, and recorded in said Registry of Deeds in Book 5229, Page 2441, and as further amended by a Second Amendment to Reciprocal Easement Agreement dated June 13, 2012, recorded in said Registry of Deeds in Book 5391, Page 0649 and as further amended by a Third Amendment to Reciprocal Easement Agreement dated November 16, 2012, recorded in said Registry of Deeds in Book 5391, Page 0671 (as so amended, and as it may hereafter be further amended, called the "Hotel REA"). "Parcel A" as defined in said Hotel REA is referred to in this Declaration as the "Hotel Parcel."

In consideration of the foregoing premises, the agreements, undertakings, covenants and conditions herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Declarant

hereby subjects the Property to the terms of this Declaration, and declares that the Property and all present and future owners and occupants of all or any portion of the Property, or any interest therein, are and shall remain subject to the terms, covenants, easements, restrictions and conditions set forth in this Declaration, so that all of said Property shall be maintained, kept, sold and used in full compliance with and subject to this Declaration. The terms, condition, covenants, easements and restrictions to which the Property is hereby made subject are as follows:

AGREEMENTS

1. Definitions. For purposes hereof:

(a) Access Improvements. The term "Access Improvements" shall mean and refer to all vehicular and pedestrian access improvements located from time to time on the Property, including all driveways, roads, walkways, and all lighting installations, curbs, landscaped areas, and other improvements associated therewith,

(b) Access Opening. The term "Access Opening" shall have the meaning ascribed in Section 2.3 of this Declaration.

(c) City. The term "City" shall mean the City of Portsmouth, New Hampshire, a New Hampshire municipal corporation (or any of its agencies, departments, successors or assigns).

(d) Common Area. The term "Common Area" shall mean those portions of the Property that are outside the exterior walls of buildings or other structures from time to time located on the Property, and which are either unimproved or improved as (without limitation) parking areas, landscaped areas, driveways, roadways, walkways, light standards, curbing, paving, entrances, exits and other exterior site improvements. The Common Area shall change from time to time in accordance with changes made to the Property. Notwithstanding the foregoing, the parking areas of the Rite Aid Lot shall be reserved for the sole and exclusive use and benefit of the Owners and Permittees of the Rite Aid Lot. The Owner of the Rite Aid Lot and, during the continuance of the Rite Aid Lease, Rite Aid shall endeavor to cause the Permittees of the Rite Aid Lot to park only in the parking areas located on Rite Aid Lot.

(e) Common Utility Facilities. The term "Common Utility Facilities" shall mean the facilities and systems for the transmission of any and all utility services, including without limitation, on-site water lines, sanitary sewer lines, storm water and drainage lines and pipes, gas lines, electrical lines and data and communication lines, and other installations associated with any of the foregoing, which are installed for the benefit of more than one of the Lots.

(f) Leases. The term "Leases" shall mean the "Rite Aid Lease" (defined below) and any other lease or leases now or hereafter entered into for or with respect to all or any portion of the Property; and "Lease" shall mean any one of them.

(g) Owners. The term "Owner" or "Owners" shall mean Declarant and any and all of its successors or assigns as the owner or owners of fee simple title to all or any portion of the Property, whether by sale, assignment, inheritance, operation of law, trustee's sale, foreclosure, or otherwise, but not including the holder of any mortgage, lien or encumbrance on such real property.

(h) Permittees. The term "Permittees" shall mean the tenant(s) or occupant(s) of a Lot (including all Tenants), and the respective employees, agents, contractors, customers, invitees and licensees of the Owner and/or of said tenant(s) or occupant(s) of such Lot.

(i) Rear Parcel. The term "Rear Parcel" shall mean the portion of the Property that is not included in the Retail Development Area.

(j) Retail Development Area. The term "Retail Development Area" shall mean that portion of the Property that is bounded on the east by U.S. Route One, and on the west by the westerly side line of the proposed right-in, right-out access driveway to Peverly Hill Road (The "Peverly East Driveway") , and is bounded on the north and south by the northerly and southerly boundaries of the Property, plus so much of the Rite Aid Lot as extends beyond the westerly sideline of said right-in, right-out access driveway to Peverly Hill Road, as said area may be amended or changed by the Declarant from time to time (provided that if any leased area, the greater part of which is located easterly of the westerly side line of said Peverly East Driveway, also extends beyond the westerly side line of said Peverly East Driveway, the Retail Development Area shall also include the land westerly of the Peverly East Driveway included in such leased area).

(k) Rite Aid. The term "Rite Aid" shall mean Maxi Drug North, Inc., a New Hampshire corporation with a principal place of business at 30 Hunter Lane, Attn: Legal Department, Camp Hill, Pennsylvania 17011 (or any of its affiliates, subsidiaries, successors or assigns as holders of the tenant's interest under the Rite Aid Lease).

(l) Rite Aid Lease. The term "Rite Aid Lease" shall mean that certain Lease of the Rite Aid Lot from Declarant, as landlord, to Rite Aid as tenant, dated December ____, 2012, and any amendments, extensions or replacements thereof.

(m) REA Site Plan. The term "REA Site Plan" shall mean that site plan of the Lots entitled "REA Site Plan, Tax Map 252, Lot 9, 1390 Lafayette Road, Route 1, Rockingham County, Portsmouth, New Hampshire, prepared for4 Amigos, LLC", dated February 9, 2012, as revised through September 17, 2012, prepared by MHF Design

Consultants, Inc., and recorded in the Rockingham County Registry of Deeds as Plan #_____..

(n) Tenants. The term "Tenants" shall mean Rite Aid (its successors and assigns) and any other tenants of any part of the Property, and "Tenant" shall mean any one of them.

2. Development and Other Easements.

2.1 Grant of Reciprocal Easements. Subject to any express conditions, limitations or reservations contained herein, Declarant hereby declares that the Property, and all Owners and Permittees of all or any portion of the Property, shall be benefited and burdened by the following nonexclusive, perpetual and reciprocal easements which are hereby imposed upon the Property and all present and future Owners and Permittees of the Lots, for the benefit of each and all of the Lots. Each of the following easements and agreements shall bind an Owner only so long as said Owner retains any interest in the affected portion of the Property, and shall run with the land and be binding upon the successors and assigns of such Owner as their interests may from time to time appear:

(a) General Access Easement. An easement for reasonable access, ingress and egress over all paved driveways, roadways and walkways as presently or hereafter constructed and existing and intended for such purposes from time to time on the Property, so as to provide for the passage of motor vehicles and pedestrians between all portions of the Common Area and the Lots, and to and from all abutting streets or rights of way furnishing access to the Lots.

(b) Common Utility Easements. An easement (the "Common Utility Easement") for the placement, installation, construction, use, operation, repair, replacement, and maintenance of the Common Utility Facilities serving any Lot or Lots, over and across the Common Area(s) for use in common by the Owners and the Permittees of each Lot.

(c) Sign Easement. An easement on and across the area on the Rite Aid Lot identified on the REA Site Plan as the "Sign Easement" which is intended for the placement, installation, construction, operation, maintenance, repair and replacement on said Lot of a single, freestanding pylon sign and all utilities relating thereto to serve and for the benefit of the Future Development Lot and the Rite Aid Lot, to be used as set forth in Section 3.6 below, together with an area of fifteen feet (15') on each side of said Sign Easement to be used for temporary access, lay down and construction, as well as for the maintenance, repair and replacement thereof; provided, however, in no event shall the temporary construction easement extend further than (i) the exterior face of any building wall, or (ii) into any entrance driveway improvements.

(d) Drainage Maintenance Agreement. Each Owner shall, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the surface water drainage system on its Lot, including but not limited to any detention basin or basins and the outlet or outlets therefrom, for the benefit of all persons in lawful possession of any portion of the Property and abutters thereto. The drainage maintenance agreement contained herein shall not confer any right of public use, and no Owner shall bear financial responsibility by virtue of the drainage maintenance agreement contained herein for enlarging the capacity of said surface water drainage systems for any reason whatsoever.

(e) Easement for Utility Facilities. An easement for the placement, installation, construction, operation, use, repair, replacement, and maintenance of utility facilities of any description or nature (including specifically but not limited to water lines, sanitary sewer lines, storm water and drainage lines and pipes, gas lines, electrical lines and data and communication lines, and other installations associated with any of the foregoing) serving either Lot, over and across the Common Area(s) located on the other Lot, provided that the Owner of the other Lot may reasonably designate the location of any such installations, and may relocate the same after they have been installed, at the relocating Owner's expense, in order to accommodate further development or re-development of the affected Lot.

2.2 Indemnification. Any Owner or Permittee of a Lot having or claiming rights with respect to an easement granted hereunder (each called an "Easement Holder") shall indemnify and hold the Owner and any Permittees of the Lots subject to such easement harmless from and against all claims, liabilities and expenses (including reasonable attorneys' fees) relating to accidents, injuries (including death), loss, or damage of or to any person or property arising from the negligent, intentional or willful acts or omissions of such Easement Holder or of such Easement Holder's contractors, employees, agents, or others acting on behalf of such Easement Holder, as such acts or omissions relate to the use of any such easement, provided that no Owner shall be liable under this Section 2.2 for the actions of its Permittee or such Permittee's contractors, agents, employees or others acting on its behalf, and no Permittee shall be liable under this Section 2.2 for the actions of the Owner of such Permittee's Lot, or such Owner's contractors, agents, employees or others acting on its behalf.

2.3 Access Openings. The opening(s) and access point(s) contemplated between the Lots for access and egress to public roads and for circulation within the Development are shown on the REA Site Plan (such opening(s) and access point(s) as shown on the REA Site Plan are hereinafter called the "Access Openings"). Notwithstanding any provision contained herein to the contrary, the Access Openings, once constructed, shall in no event be blocked, closed, altered, changed or removed, and shall at all times remain in place as shown on the REA Site Plan, subject, however to any closure or taking by applicable governmental authorities, in which event any closed

Access Openings may be suitably relocated. The preceding sentence shall not prohibit or impede the Declarant from making changes to any planned or approved Access Openings on the Future Development Lot prior to construction of Access Openings thereon. There shall be maintained between the Lots a smooth grade transition (consistent with the REA Site Plan) at the Access Openings to allow the use of the all Access Openings for pedestrian and vehicular ingress and egress as set forth in Section 2.1A(a) of this Declaration. The foregoing notwithstanding, subject to any additional consents that may be required by the terms of the Hotel REA, the Access Openings may be altered or moved with the consent of the Declarant and, during the continuation of the Rite Aid Lease, the consent of Rite Aid.

2.4 Reasonable Use of Easements.

(a) The easements herein above granted shall be used and enjoyed by each Owner and its Permittees in such a manner as not to unreasonably interfere with, obstruct or delay the conduct and operations of the business of any other occupant or Permittee of any Lot, including, without limitation, public access to and from said business, including without limitation any drive-through window or aisle situated on such Lot, and the receipt or delivery of merchandise in connection with the conduct of such business. For purposes hereof, it shall be deemed reasonable to obstruct, interfere with or delay the operations on any Lot or access thereto or to the business(es) located thereon, only if such obstruction, interference or delay is not reasonably avoidable without undue expense, and only for such time and to such extent as is not reasonably avoidable.

(b) Once commenced, any construction undertaken in reliance upon an easement granted herein shall be diligently prosecuted to completion without unnecessary delay, so as to minimize any interference with the business of any other Owners or Permittees. Except in cases of emergency, the right of any Easement Holder to enter upon the Lot of another Owner for the exercise of any right pursuant to the easements herein set forth, or to prosecute work on such Easement Holder's own Lot if the same interferes with utility or drainage easements or easements of ingress, egress or access to or in favor of the business or operations of any other Owner or Permittee, or interferes with any other easement created or described in this Declaration, or otherwise does or may interfere with the business or operations of any other Owner or Permittee, shall be exercised only in such a manner so as to minimize any interference with the business of the other Owners and Permittees. The Easement Holder undertaking such work shall with due diligence promptly upon completion of such work repair at its sole cost and expense any and all damage caused by such work and shall restore the affected portion of the Lot upon which such work is performed to a condition which is equal to or better than the condition which existed prior to the commencement of such work, and no affirmative monetary obligation shall be imposed upon the Owner of the Lot where such work is being performed, or upon any such Owner's Permittees, except for the Owner or Permittee performing such work. In addition, the Easement Holder undertaking such

work shall pay all costs and expenses associated therewith, and shall indemnify and hold harmless the other Owners and Permittees from all damages, losses, liens or claims attributable to the performance of such work, or arising in any connection therewith. After the completion of the initial construction of all developable areas of the Retail Development Area (as defined in Section 3.5(b) below), and except to the extent an emergency repair is required (i) to prevent imminent harm to persons or damage to property, or to permit the continuation of, or (ii) to restore, full vehicular and pedestrian access to and from all portions of the Property and the Hotel Parcel, no construction, repair or replacement work shall be performed on the Rite Aid Lot or on or affecting any of the driveways or roadways of the Property that are used for access to the Rite Aid Lot, in a manner that would materially interfere with or impede parking on the Rite Aid Lot or access to the Rite Aid Lot, during November or December of any year during the continuance of the Rite Aid Lease without the prior consent of Rite Aid, which consent shall not be unreasonably withheld, conditioned or delayed.

3. Construction and Maintenance.

3.1 General. Until such time as material improvements are constructed on a Lot or any portion thereof, the Owner thereof shall (or cause its Permittee to) maintain the same in a clean and neat condition and shall take such measures as are necessary to control grass, weeds, blowing dust, dirt, litter or debris.

3.2 Buildings and Appurtenances Thereto. Each Owner and each Permittee shall keep and maintain, without cost or expense to the other Owners or Permittees, the building(s) located from time to time on such Owner's Lot or on such Permittee's leased or occupied premises in good order, condition and repair. Responsibility for such maintenance and repair may be allocated between any Owner and Permittee by lease or other agreement. Once constructed, in the event of any damage to or destruction of a building on any Lot, the Owner of such Lot shall, or shall cause its Permittee(s) to, without cost or expense to other Owners or Permittees, but with due diligence, either (a) repair, restore and rebuild such building to its condition prior to such damage or destruction (or with such changes as shall not conflict with this Declaration), or (b) demolish and remove all portions of such damaged or destroyed building then remaining, including all debris resulting therefrom, and otherwise clean and restore the affected area to a level, graded, clean and neat condition. Nothing contained in this Section 3.2 or in this Declaration shall be deemed to allow an Owner or Permittee, as applicable, to avoid a more stringent obligation for repair, restoration or rebuilding, or any other obligation, contained in a lease or other written agreement between an Owner and a Permittee. Any allocation of responsibilities for compliance with the terms of this Declaration or for any other matters as between an Owner and a Permittee, that may be contained in any such lease or other agreement, shall prevail over any conflicting provision of this Agreement.

3.3 Common Area. (a) Maintenance. Except as otherwise provided herein, each Owner of a Lot covenants at all times during the term hereof to operate and maintain or cause to be operated and maintained without cost or expense to the Owners or Permittees of the other Lots, in their capacities as such (except as may be contemplated in any Lease or other tenancy arrangement with respect to common area charges, shared operating and maintenance expenses, or the like), all Common Area located on its Lot in good order, condition and repair. Following the construction of improvements on any Lot, maintenance of Common Area shall include, without limitation, maintaining and repairing all sidewalks and the surface of the parking and roadway areas, removing all papers, debris and other refuse from and periodically sweeping all parking and road areas of the portion(s) of such Lot so improved, to the extent necessary to maintain the same in a clean, safe and orderly condition, maintaining appropriate lighting fixtures for the parking areas and roadways, maintaining markings, directional signs, lines and striping as needed, maintaining landscaping, maintaining signage in good condition and repair, and performing any and all such other duties as are necessary to maintain such Common Area in a clean, safe and orderly condition. The term "repair" as used in this subsection 3.1(a) shall be deemed to refer only to repair of ordinary wear and tear or deterioration over time, and not to repair of damage caused by accident or casualty.

(b) Repairs. Except as otherwise expressly provided in this Declaration, once constructed, in the event of any damage to or destruction of any improvements on the Common Area on any Lot, including specifically all damage that is not included in ordinary wear and tear or deterioration over time, the Owner of such Lot shall (or shall cause its Permittees or others to), without cost or expense to the Owners or Permittees of the other Lots, in their capacities as such (except as may be contemplated in any Lease or other tenancy arrangement with respect to common area charges, shared operating and maintenance expenses, or the like), with due diligence repair, restore and rebuild such Common Area to its condition prior to such damage or destruction (or with such changes as shall not conflict with this Declaration), or remove such debris and restore the Lot and remaining Common Area improvements to a clean, neat and orderly condition. The foregoing notwithstanding, if any such repair is made necessary by the neglect, negligence, or misconduct of any Owner or Permittee, or of any of their employees, contractors, or agents the cost of such repair may be recovered by the Owner or other party making such repair from the Owner or Permittee who caused, or whose employees, contractors, or agents caused, the damage necessitating such repair.

(c) Reconfigurations. Each Owner shall have and retain the right to alter, modify, reconfigure, relocate and/or remove the Common Area and/or building areas on its Lot, subject to the following conditions: (i) the express written consent of all Owners (and, during the continuance of the Rite Aid Lease, of Rite Aid), is required with respect to changes to the Access Openings or driveways providing access to and egress from the public streets, once they have been constructed; (ii) the reciprocal easements between the Lots pursuant to Section 2.1 of this Declaration shall not be permanently closed, or

materially impaired beyond temporary impairments reasonably necessary for the completion of construction or repairs; and (iii) ingress and egress between the Lots and ingress and egress to and from the Lots and adjacent streets and roads, shall not be altered, modified, relocated, blocked and/or removed without the express written consent of all Owners and, during the continuance of the Rite Aid Lease, of Rite Aid, to such an extent that such alterations, modifications, relocations and/or changes would materially and adversely impact either Lot, or would require Rite Aid's consent pursuant to the Rite Aid Lease or any of the easements granted in this Declaration, on other than a temporary basis. In addition to the foregoing, the consent of Rite Aid shall be required for any changes to the Access Openings, driveways, or to the Common Area that would require the consent of Rite Aid under the Rite Aid Lease, and the consent of Newburyport Five Cents Savings Bank shall be required for any changes to the Access Openings, driveways, or to the Common Area that would require the consent of Newburyport Five Cents Savings Bank under its lease of a portion of the Property.

3.4 Utilities. Each Owner shall (or shall cause its Permittees to), at all times during the term hereof construct, operate, maintain, repair and replace as necessary or cause to be constructed, operated maintained, repaired, and replaced as necessary, in good order, condition and repair, at its sole expense, but subject to the provisions of Section 2.4 above, any utility or other installations serving the Lot of such party and from time to time existing on the other Lot pursuant to an easement described herein or otherwise. To the extent that any utility or other installation serves more than one Lot, or more than one leased area or building, the cost of maintenance, repair, operation and/or replacement thereof shall be borne by all of the Owners of the Lots, leased areas or buildings so served in proportion to the respective square footage areas of the respective Lots so served, or in such other fashion as may be established in any lease or leases of any Lot or portion thereof, which leases shall control over any contrary allocation contained in this Declaration, with respect to the areas subject thereto.

3.5 Driveways. (a) Declarant shall be responsible for the initial construction of the Access Improvements on the Property as the same are shown on the REA Site Plan. The Owner of each Lot shall, or shall cause its Permittee to, maintain in all respects all Access Improvements on such Owner's Lot in good order, condition and repair without cost or expense to the Owners or Permittees of any other Lot in their capacities as such (except as may be contemplated in any Lease or other tenancy arrangement with respect to common area charges, shared operating and maintenance expenses, or the like), but subject to reimbursement of the cost thereof nevertheless by the owner of the Hotel Parcel to the extent provided for in the Hotel REA. Maintenance of the Access Improvements shall include all resurfacing, repaving, reconstruction, sealing, restriping, repair or replacement thereof, and shall further include winter plowing and sanding and patching of potholes.

3.6 Common Signage. Subject to all federal, state and local laws, rules and regulations, the Owners of the Rite Aid Lot and the Future Development Lot shall jointly have the right to obtain approvals for, construct, erect and maintain signage for themselves or their respective Permittees on the single pylon sign located in the Sign Easement area shown on the REA Site Plan, as described in this Section. All costs and expenses of construction, maintenance, repair and replacement of said common pylon sign structure shall be borne one-half (1/2) by the Owner of the Rite Aid Lot and one-half (1/2) by the Owner of the Future Development Lot, or by their respective Permittees, to the extent so agreed between any Owner and its Permittee(s) in a Lease or other agreement. Notwithstanding the foregoing, (a) not less than one-third of the tenant identification portion of any such sign, including the top portion thereof, as well as any electronic reader board approved by the City of Portsmouth for said pylon sign, shall be held and maintained for the exclusive use of the Owner or Tenant(s) of the Rite Aid Lot, and (b) the lower two thirds of the tenant identification portion of any such sign (exclusive of any such electronic reader board) shall be held and maintained for the exclusive use of the Owner(s) or Tenant(s) of the Future Development Lot. Any Tenant or other Permittee shall be solely responsible for all costs relating to that Tenant's or Permittee's actual signage fascia or panels to be placed or located on said pylon sign. Plans and specifications for the common parts of said pylon sign structure shall be subject to the approval of the Owners of the Rite Aid Lot and the Future Development Lot and, so long as the Rite Aid Lease remains in effect, of Rite Aid, its successors and assigns with such approvals not to be unreasonably withheld, delayed or conditioned.

4. Construction of Improvements. The Owner of every building (including its appurtenant Common Area improvements) now or in the future constructed on the Property, shall ensure that such building and improvements are constructed, and are at all times operated and maintained, so that the same are in compliance with all applicable governmental requirements, provided that neither this provision nor any other provision of this Declaration shall require compliance with any requirements from which any such property is otherwise exempt or grandfathered as to compliance, or has obtained appropriate relief from such compliance, such as a waiver, variance or special exception.

5. Restrictions.

5.1 General. Each Lot shall be used for lawful retail or other purposes in conformance with all restrictions imposed by all applicable governmental laws, ordinances, codes, and regulations, and no use or operation shall be made, conducted or permitted on or with respect to all or any portion of a Lot which is illegal. In addition to the foregoing, throughout the term of this Declaration, it is expressly agreed that no portion of the Property shall be used, directly or indirectly, for purposes of: (i) a bar, tavern or cocktail lounge, unless at least 50% of the revenue from such establishment is from the sale of food; (ii) an adult book store, adult video store or any establishment engaged in the primary business of selling, exhibiting or delivering pornographic or

obscene materials; (iii) a warehouse; (iv) a mortuary; (v) industrial purposes; (vi) the sale of second-hand goods, except that an upscale resale or antique or vintage store shall be permitted; (vii) an auction business, or a business selling distressed, fire sale, bankruptcy or going out of business merchandise; or (viii) the maintenance, repair, renting, leasing or sale of any trailer or boat (but this restriction shall not apply to activities involving or related to the maintenance, repair, renting, leasing or sale of motor vehicles, which activities shall be permitted on the Property).

5.2 Additional Future Development Lot Restrictions. During the continuance of the Rite Aid Lease, it is expressly agreed that no portion of the Future Development Lot shall be used, directly or indirectly, for the purpose of operating any store, business, trade or profession which (i) requires or has a license or permit to conduct a pharmacy or which employs or is required to employ a registered or licensed pharmacist, or (ii) for the conduct of any store, business, trade or profession which is called, labeled, named or commonly known or referred to as a drug store, pharmacy or apothecary (collectively, "Drug Store Restriction") or (iii) for the sale of health aids (including without limitation over the counter medications, vitamin supplements, mineral supplements and medical equipment) (the "Health Aid Restriction"), (iv) or for the sale of beauty aids (including, without limitation, hair care products and cosmetics) (the "Beauty Aid Restriction"). The Health Aid Restriction and the Beauty Aid Restriction shall not be deemed to prohibit the incidental sale of such restricted items by another Permittee on the Future Development Lot, provided that the total area devoted to the sale of such items does not exceed the lesser of 5% of the rentable square foot area leased by such Permittee or 500 square feet in the aggregate.

6. Taxes and Assessments. (a) Subject to the other provisions of this Declaration and subject to the provisions of any other agreement between any Owner and Permittee allocating responsibility for the payment of real estate taxes, each Owner shall (or shall cause its Permittee to) pay all taxes, assessments, or charges of any type levied or made by any governmental body or agency with respect to such Owner's Lot.

(b) For all purposes of this Declaration, if at any time any portion of the Retail Development Area is assessed for tax purposes together with any portion of the Rear Parcel (all such property assessed together is hereinafter called the "Combined Tax Parcel"), the portion of the land taxes (exclusive of taxes on buildings and improvements) (the "Land Taxes") assessed and levied against any portion of the Combined Tax Parcel shall be conclusively determined as follows:

The square footage of the portion of the Retail Development Area that is included in the Combined Tax Parcel shall be multiplied by two and one quarter (2.25), and then added to the square footage of the land comprising the portion of the Rear Parcel that is included in the Combined Tax Parcel (the resulting figure is called the "Weighted Square Footage"). The Land Taxes on the Combined Tax Parcel shall be divided by the

Weighted Square Footage, and the result shall be the Land Taxes per square foot on the land comprising the portion of the Rear Parcel that is included in the Combined Tax Parcel ("Rear Parcel per Square Foot Land Taxes"). The Land Taxes per square foot of the land comprising that portion of the Retail Development Area that is included within the Combined Tax Parcel shall be two and one-quarter times the Rear Parcel per Square Foot Land Taxes (the "Retail Development Area per Square Foot Land Taxes"). The total Land Taxes on the portion of the Rear Parcel that is included in the Combined Tax Parcel shall be the square foot land area of said portion of the Rear Parcel, times the Rear Parcel per Square Foot Land Taxes. The total Land Taxes on the portion of the Retail Development Area that is included in the Combined Tax Parcel shall be the square foot land area of said portion of the Retail Development Area, times the Retail Development Area per Square Foot Land Taxes.

(c) Allocation of Land Taxes between different portions of the Retail Development Area that are assessed together, shall be made in proportion to the percentage that the square foot land area of each such portion bears to the total square foot land area of such land assessed together forming a part of the Retail Development Area, subject to the allocation set forth in the preceding subsection (b), if any portion of the Rear Parcel is also included in the relevant tax parcel.

7. No Rights in Public; No Implied Easements. Nothing contained herein shall be construed as creating any rights in the general public or as dedicating for public use any portion of the Property. No easements, except (i) those expressly set forth in this Declaration, and/or (ii) those shown on the REA Site Plan, shall be implied by this Declaration; in that regard, and without limiting the foregoing, no easements for parking, signage, drainage or utilities are granted or implied, except as explicitly provided in this Declaration.

8. Remedies and Enforcement.

8.1 All Legal and Equitable Remedies Available. In the event of a breach or threatened breach by any Owner or Permittee of any of the terms, covenants, restrictions or conditions hereof, the other Owners and Permittees shall be entitled forthwith to full and adequate relief by injunction and/or all such other available legal and equitable remedies from the consequences of such breach, including payment of any amounts due and/or specific performance. During the continuance of the Rite Aid Lease, Rite Aid shall have the right, but not the obligation, in common with the Owner of the Rite Aid Lot to enforce this Declaration on behalf of the Owner of the Rite Aid Lot, and/or to cure a breach or default hereunder by the Owner of the Rite Aid Lot, which enforcement or cure shall be accepted by the other Owner(s). Notwithstanding the foregoing, no Owner or Tenant or Permittee shall be liable under this Declaration for special, consequential, punitive or similar damages.

8.2 Irreparable Harm. In the event of a violation or threat thereof of any of the provisions of Sections 2 and/or 5 of this Declaration, the parties agree that such violation or threat thereof shall cause the nondefaulting Owners and Permittees to suffer irreparable harm and that such nondefaulting parties and their Permittees shall have no adequate remedy at law. As a result, in the event of a violation of any of the provisions of Sections 2 and/or 5 of this Declaration, or threat thereof, the nondefaulting Owners and Permittees, as applicable, in addition to all remedies available at law or otherwise under this Declaration, shall be entitled to injunctive or other equitable relief to enjoin a violation of Sections 2 and/or 5 of this Declaration or threat thereof.

8.3 Failure to Maintain. If any person or entity shall fail to operate, maintain and repair any portion of the Property in accordance with such party's or beneficiary's obligations hereunder, then if such failure has not been fully remedied after thirty (30) days prior written notice to the defaulting party, any Easement Holder or other party with an interest in the performance of such duties (including but not limited to any other Owner or Permittee) may perform such operation, maintenance or repair, in such manner as said party or beneficiary reasonably deems necessary, for and on account of the non-performing party. In the event of any emergency or other circumstances requiring earlier action (including specifically, but without limitation, a failure to perform snow and/or ice removal in a timely fashion), no prior notice shall be required hereunder. In the event that any party undertakes any such action, the non-performing party shall be required to reimburse the performing party for the actual and reasonable costs incurred in such performance, to the extent that the performing party was not financially responsible for such performance through an obligation to reimburse the cost thereof. In the event any non-performing party or beneficiary fails to make timely payment to the performing party hereunder, the performing party shall have all remedies set forth herein and under otherwise applicable law.

8.4 Payment and Reimbursement. Payment and reimbursement of any amounts for which any Owner or other person may be responsible under this Declaration shall be due within thirty (30) days after receipt of any bill or invoice therefor, together with interest from said due date at a rate equal to the greater of (i) ten percent (10%) per annum, or (ii) the "Prime Rate" plus two percent (P+2%) per annum. As used herein, the term "Prime Rate" shall mean the highest prime rate listed in the *Wall Street Journal* or its successor publication as the base rate on corporate loans posted by at least 75% of the nation's 30 largest banks (or a generally accepted substitute index), as of the date of any such payment or advance is first due, and adjusting thereafter as of the date of each change in said rate.

9. Term. The easements, covenants, conditions and restrictions contained in this Declaration shall be effective commencing on the date of recordation of this Declaration in the land records of Rockingham County, New Hampshire (the "Registry of Deeds"), and shall remain in full force and effect thereafter in perpetuity.

10. Miscellaneous.

10.1 Attorneys' Fees. In the event any legal action or proceeding is instituted for the enforcement of any right or obligation herein contained, the prevailing party after a final adjudication shall be entitled to recover its costs and reasonable attorneys' fees incurred in the preparation and prosecution of such action or proceeding.

10.2 Amendment.

(a) The provisions of this Declaration may be modified or amended, in whole or in part, or terminated, only by the written consent of all record Owners of the Lots, evidenced by a document that has been fully executed and acknowledged by all such parties and recorded in the Registry of Deeds. Declarant may make changes to the Property subject to this Declaration, including without limitation further development of the Future Development Lot, adding or subtracting land to or from the Property, constructing, demolishing or changing any improvements on the Property, and may from time to time grant access rights to others in and across any portions or all of the Property and across the access improvements thereon from time to time, such as walkways, driveways and entrances, all without the consent of any other party, provided that the same does not materially and adversely affect the layout of the Rite Aid Lot, and/or materially change the location or existence of any of the access driveways shown on the REA Site Plan after the same have been initially constructed or otherwise require Rite Aid's consent pursuant to the Rite Aid Lease. In the event of the conveyance of any portion of the Future Development Lot to any abutter of the Property (specifically including, but not limited to, the conveyance of the "Parking/Green Space Parcel" to the owner of the Hotel Parcel, as contemplated in the Hotel REA, the portion so conveyed shall automatically be released from, and shall no longer be subject to, the terms of this Declaration, except that the easements provided for herein for utilities, access and egress on the property so conveyed shall remain in full force and effect after such conveyance.

(b) During the continuance of the Rite Aid Lease, no termination of this Declaration, and no modification or amendment of this Declaration that would (i) materially and adversely affect the layout of the Rite Aid Lot, (ii) materially change the location or existence of any of the access driveways shown on the REA Site Plan, after the same have been initially constructed, or (iii) otherwise require consent of Rite Aid pursuant to the Rite Aid Lease, shall be made nor shall the same be effective unless the same has been expressly consented to in writing by Rite Aid, with such consent not to be unreasonably withheld.

10.3 Covenants to Run with Land. It is intended that each of the easements, covenants, conditions, restrictions, rights and obligations set forth herein shall run with the land and create equitable servitudes in favor of the real property benefited thereby,

shall bind every person having any fee, leasehold or other interest therein and shall inure to the benefit of the respective parties and their successors, assigns, heirs, and personal representatives.

10.4 Grantee's Acceptance. The grantee or lessee of any portion of the Property, by acceptance of a deed conveying title thereto or the execution of a contract for the purchase or lease thereof, whether from an original party or from a subsequent owner of such Lot, shall accept such deed, lease or contract upon and subject to each and all of the easements, covenants, conditions, restrictions and obligations contained herein. By such acceptance, any such grantee or lessee shall for himself and his successors, assigns, heirs, and personal representatives, covenant, consent, and agree to and with the other party, to keep, observe, comply with, and perform the obligations and agreements set forth herein with respect to the property so acquired or leased by such grantee.

10.5 Severability. Each provision of this Declaration and the application thereof to the Property are hereby declared to be independent of and severable from the remainder of this Declaration. If any provision contained herein shall be held to be invalid or to be unenforceable or not to run with the land, such holding shall not affect the validity or enforceability of the remainder of this Declaration. In the event the validity or enforceability of any provision of this Declaration is held to be dependent upon the existence of a specific legal description that is not provided with this original Declaration, the parties agree to promptly cause such legal description to be prepared. Ownership of the entire Property (or any portions thereof) by the same person or entity shall not terminate this Declaration nor in any manner affect or impair the validity or enforceability of this Declaration or of any part or provision hereof.

10.6 Entire Agreement. This Declaration contains the complete understanding and agreement of the parties hereto with respect to all matters referred to herein, and all prior representations, negotiations, and understandings are superseded hereby. The foregoing notwithstanding, nothing contained in this Declaration shall restrict or impair the right of the Owners to grant other easements upon any of the Lots from time to time. Nothing contained in this Declaration shall affect any allocation of responsibilities as between any Owner and Tenant (or other Permittee) under a written lease or other agreement.

10.7 Consents. No Owner or Permittee shall unreasonably delay, withhold or condition its consent to any action proposed to be taken by any other Owner or Permittee, requiring such Owner's or Permittee's consent; provided that it shall be deemed reasonable for Rite Aid to object to any termination of this Declaration, or to any proposed modification or amendment to this Declaration to the extent that it would, if adopted, (a) adversely affect the layout of the Rite Aid Lot, and/or (b) require Rite Aid's consent pursuant to the Rite Aid Lease.

10.8 Notices. Notices or other communication hereunder shall be in writing and shall be sent by postage prepaid, certified or registered mail, return receipt requested, or by national overnight courier company, such as FedEx or Express Mail, or by personal delivery. Notice shall be deemed given when personally delivered, three (3) business days after deposited with the United States Postal Service or one (1) business day after deposited with an overnight courier. Each party may change from time to time their respective address for notice hereunder by like notice to the other party.

If intended for Declarant: 4 AMIGOS, LLC
1070 Ocean Boulevard
Hampton, New Hampshire 03842
Attention: Ken Linseman, Member

With a copy to: Timothy S. Keiter, Esquire
Keiter & Associates, P.A.
One William Street
Portland, Maine 04103

If intended for Rite Aid: Maxi Drug North, Inc.
P.O. Box 3165
Harrisburg, Pennsylvania 17105
Attn: Secretary

With a copy to: Maxi Drug North, Inc.
30 Hunter Lane
Camp Hill, Pennsylvania 17011
Attn: Joseph J. Notarianni, Jr.

With a copy to: Alan P. Garubba, Esquire
2090 Linglestown Road, Suite 107
Harrisburg, PA 17110

10.9 Governing Law. The laws of the State of New Hampshire shall govern the interpretation, validity, performance, and enforcement of this Declaration.

IN WITNESS WHEREOF, the Declarant has executed this Declaration as of the date first written above.

[signature appears on next page]

DECLARANT:
4 AMIGOS, LLC

By: _____
Kenneth S. Linseman, Member

Exhibit A-1 - Legal Description of the Property.
Exhibit A-2 - Legal Description of the Rite Aid Lot.
Exhibit A-3 - Legal Description of the Future Development Lot.

STATE OF ~~NEW HAMPSHIRE~~ MASSACHUSETTS :
COUNTY OF ESSEX :

On this 20 day of DECEMBER, 2012, before me, the undersigned Kenneth S. Linseman, personally appeared, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he is the duly authorized Member of 4 AMIGOS, LLC, and, as such, he is authorized to act on behalf of 4 AMIGOS, LLC, and that he has executed the same for the purposes set forth therein.

Notary Public/Justice of the Peace
My Commission Expires: _____



Exhibit A-1

Legal Description of the Property

Combined Metes & Bounds Description
Map 252 Lot 7 & 9 and a portion of Lot 8
Lafayette Road & Peverly Hill Road
Portsmouth, NH
June 4, 2012
Page 1 of 2

A certain tract or parcel of land situate in the City of Portsmouth, County of Rockingham and State of New Hampshire, and located on the westerly side of Lafayette Road (a.k.a. Route 1) and on the easterly side of Peverly Hill Road, and shown as 'Map 252 Lot 9' on a plan entitled 'Lot Line Adjustment Plan, Tax Map 252 Lot 7, 8 & 9, 1190, 1390 & 1400 Lafayette Road, Portsmouth, New Hampshire prepared for 4 Amigos, LLC'; Scale: 1"=40'; Date: March 19, 2012 (revised through 7/16/2012) by MHF Design Consultants, Inc. and recorded in the Rockingham County Registry of Deeds as Plan #D-37532, being more particularly bounded and described as follows:

Beginning at a point along the westerly sideline of said Lafayette Road at the southerly corner of land now or formerly of MacLeod Enterprises. Inc., being also known as Tax Map 252, Lot 8, thence;

Along said westerly sideline of Lafayette Road the following four (4) courses and distances:

1. S34°20'32"W three hundred seventy-nine and ninety-one hundredths (379.91) feet to a point, thence;

2. N72°04'40"E nineteen and sixty hundredths (19.60) feet to a railroad spike, thence;

3. S34°20'32"W one hundred fifty-seven and sixty hundredths (157.60) feet to a railroad spike, thence;

4. S82°53'53"W nineteen and fifteen hundredths (19.15) feet to a railroad spike at the easterly sideline of said Peverly Hill Road, thence;

Along the easterly sideline of said Peverly Hill Road the following four (4) courses and distances:

1. N38°54'40"W eighty-five and sixty hundredths (85.60) feet to an iron pipe, thence;

2. N36°31'53"W fifty-three and seventy-three hundredths (53.73) feet to a MAG NAIL, thence;

3. N36°27'59"W nine and fifty-seven hundredths (9.57) feet to a point, thence;

4. N30°06'48"W four hundred sixty-four and thirty-two hundredths (464.32) feet to an iron rod at land now or formerly of Michael's Realty Trust being known as Map 252 Lot 4, thence;

By said Map 252 Lot 4 N51°34'02"E one hundred and seven hundredths (100.07) feet to an iron rod, thence;

By Map 252 Lot 5 the following two (2) courses and distances:

1. N56°54'52"E one hundred forty-five and eighty-three hundredths (145.83) feet to an iron rod, thence;

2. N26°48'22"W twenty-six and ninety-seven hundredths (26.97) feet to an iron pin to be set, thence;

By said land of MacLeod Enterprises, Inc. the following four (4) courses and distances:

1. N73°06'47"E fifty-two and no hundredths (52.00) feet to an iron pin to be set, thence;

2. S55°19'23"E two hundred eighty-three and forty-eight hundredths (283.48) feet to a point, thence;

3. N34°40'37"E eight and no hundredths (8.00) feet to a point, thence;

4. S55°19'23"E one hundred eighty-four and ninety-nine hundredths (184.99) feet to a point on the westerly sideline of Lafayette Road, said point being also the point of beginning.

Said tract or parcel of land contains 223,416 square feet or 5.129 acres more or less.

Exhibit A-2

Legal Description of the Rite Aid Lot

A certain tract or parcel of land situate in the City of Portsmouth, County of Rockingham and State of New Hampshire, located on the westerly side of Lafayette Road (Route 1) and shown as 'LIMIT OF RITE AID LEASE AREA = 70,928 SF+/-' on a plan entitled 'Lease Site Plan (Exhibit A to Lease), Tax Map 252 Lot 9, 1390 Lafayette Road, Portsmouth, New Hampshire, prepared for 4 Amigos, LLC'; Scale: 1"=20'; Date: September 12, 2012, as revised through October 31, 2012, prepared by MHF Design Consultants, Inc. and being more particularly bounded and described as follows:

Beginning at a point on the westerly sideline of said Lafayette Road at the dividing line between City of Portsmouth Tax Map 252, Lot 8 and Map 252, Lot 9, as shown on a plan entitled 'Lot Line Adjustment Plan, Tax Map 252 Lot 7, 8 & 9, 1190, 1390 & 1400 Lafayette Road, Portsmouth, New Hampshire prepared for 4 Amigos, LLC'; Scale: 1"=40'; Date: March 19, 2012 (revised through 7/16/2012) by MHF Design Consultants, Inc. to be recorded in the Rockingham County Registry of Deeds, said point being the northeast corner of the within described premises, thence;

Along the westerly sideline of said Lafayette Road S34°20'32"W two hundred eighty-nine and seventeen hundredths (289.17) feet to a point, thence;

Along a curve to the left having a radius of fifty-four and fifty-two hundredths (54.52) feet and an arc length of forty-three and forty-five hundredths (43.45) feet to a point, thence;

N38°02'58"W forty-two and nine hundredths (42.09) feet to a point, thence;

Along a curve to the left having a radius of three and no hundredths (3.00) feet and an arc length of six and seventy-three hundredths (6.73) feet to a point, thence;

S34°20'32"W fifteen and ninety-three hundredths (15.93) feet to a point, thence;

N55°39'28"W eighty-one and no hundredths (81.00) feet to a point, thence;

N34°20'32"E nineteen and no hundredths (19.00) feet to a point, thence;

N55°39'28"W one hundred sixteen and seventy-four hundredths (116.74) feet to a point, thence;

N34°20'32"E one hundred eighty-six and sixty-four hundredths (186.64) feet to a point, thence;

N55°40'56"W forty-six and ninety-six hundredths (46.96) feet to a point, thence;

N34°20'32"E fifty-one and ninety-five hundredths (51.95) feet to a point at said dividing line between said Lot 8 and Lot 9, thence

Along said dividing line between said Lot 8 and Lot 9, S55°23'31"E fifty-six and ninety-five hundredths (56.95) feet to a point, thence;

Continuing along said dividing line between said Lot 8 and Lot 9, S55°19'23"E seventy-six and forty-five hundredths (76.45) feet to a point, thence;

Continuing along said dividing line between said Lot 8 and Lot 9, N34°40'37"E eight and no hundredths (8.00) feet to a point, thence;

Continuing along said dividing line between said Lot 8 and Lot 9, S55°19'23"E one hundred eighty-four and ninety-nine hundredths (184.99) feet to the point of beginning.

Exhibit A-2

Legal Description of the Future Development Lot

Combined Metes & Bounds Description
Map 252 Lot 7 & 9 and a portion of Lot 8
Lafayette Road & Peverly Hill Road
Portsmouth, NH
June 4, 2012
Page 1 of 2

A certain tract or parcel of land situate in the City of Portsmouth, County of Rockingham and State of New Hampshire, and located on the westerly side of Lafayette Road (a.k.a. Route 1) and on the easterly side of Peverly Hill Road, and shown as 'Map 252 Lot 9' on a plan entitled 'Lot Line Adjustment Plan, Tax Map 252 Lot 7, 8 & 9, 1190, 1390 & 1400 Lafayette Road, Portsmouth, New Hampshire prepared for 4 Amigos, LLC'; Scale: 1"=40'; Date: March 19, 2012 (revised through 7/16/2012) by MHF Design Consultants, Inc. and recorded in the Rockingham County Registry of Deeds as Plan #D-37532, excluding therefrom, however, the portion thereof leased to Maxi Drug North, Inc., under the Lease to which this Exhibit L is attached, said parcel of land being more particularly bounded and described as follows:

Beginning at a point along the westerly sideline of said Lafayette Road, said point being located S34°20'32"W along the westerly sideline of said Lafayette Road a distance of two hundred eighty-nine and seventeen hundredths (289.17) feet from the southerly corner of land now or formerly of MacLeod Enterprises. Inc., being also known as Tax Map 252, Lot 8, thence;

Along said westerly sideline of Lafayette Road the following four (4) courses and distances:

1. S34°20'32"W ninety and seventy-four hundredths (90.74) feet to a point, thence;
2. N72°04'40"E nineteen and sixty hundredths (19.60) feet to a railroad spike, thence;
3. S34°20'32"W one hundred fifty-seven and sixty hundredths (157.60) feet to a railroad spike, thence;
4. S82°53'53"W nineteen and fifteen hundredths (19.15) feet to a railroad spike at the easterly sideline of said Peverly Hill Road, thence;

Along the easterly sideline of said Peverly Hill Road the following four (4) courses and distances:

1. N38°54'40"W eighty-five and sixty hundredths (85.60) feet to an iron pipe, thence;

2. N36°31'53"W fifty-three and seventy-three hundredths (53.73) feet to a MAG NAIL, thence;

3. N36°27'59"W nine and fifty-seven hundredths (9.57) feet to a point, thence;

4. N30°06'48"W four hundred sixty-four and thirty-two hundredths (464.32) feet to an iron rod at land now or formerly of Michael's Realty Trust being known as Map 252 Lot 4, thence;

By said Map 252 Lot 4 N51°34'02"E one hundred and seven hundredths (100.07) feet to an iron rod, thence;

By Map 252 Lot 5 the following two (2) courses and distances:

1. N56°54'52"E one hundred forty-five and eighty-three hundredths (145.83) feet to an iron rod, thence;

2. N26°48'22"W twenty-six and ninety-seven hundredths (26.97) feet to an iron pin to be set, thence;

By said land of MacLeod Enterprises, Inc. the following two (2) courses and distances:

1. N73°06'47"E fifty-two and no hundredths (52.00) feet to an iron pin to be set, thence;

2. S55°19'23"E one hundred fifty and eight hundredths (150.08) feet to a point, thence;

Through land now or formerly of 4 Amigos, LLC, being also known as Tax Map 252, Lot 9, the following ten (10) courses and distances:

1. S34°20'32"W fifty-one and ninety-five hundredths (51.95) feet to a point at said dividing line between said Lot 8 and Lot 9, thence

2. S55°40'56"E forty-six and ninety-six hundredths (46.96) feet to a point, thence;

3. S34°20'32"W one hundred eighty-six and sixty-four hundredths (186.64) feet to a point, thence;

4. S55°39'28"E one hundred sixteen and seventy-four hundredths (116.74) feet to a point, thence;

5. S34°20'32"W nineteen and no hundredths (19.00) feet to a point, thence;

6. S55°39'28"E eighty-one and no hundredths (81.00) feet to a point, thence;

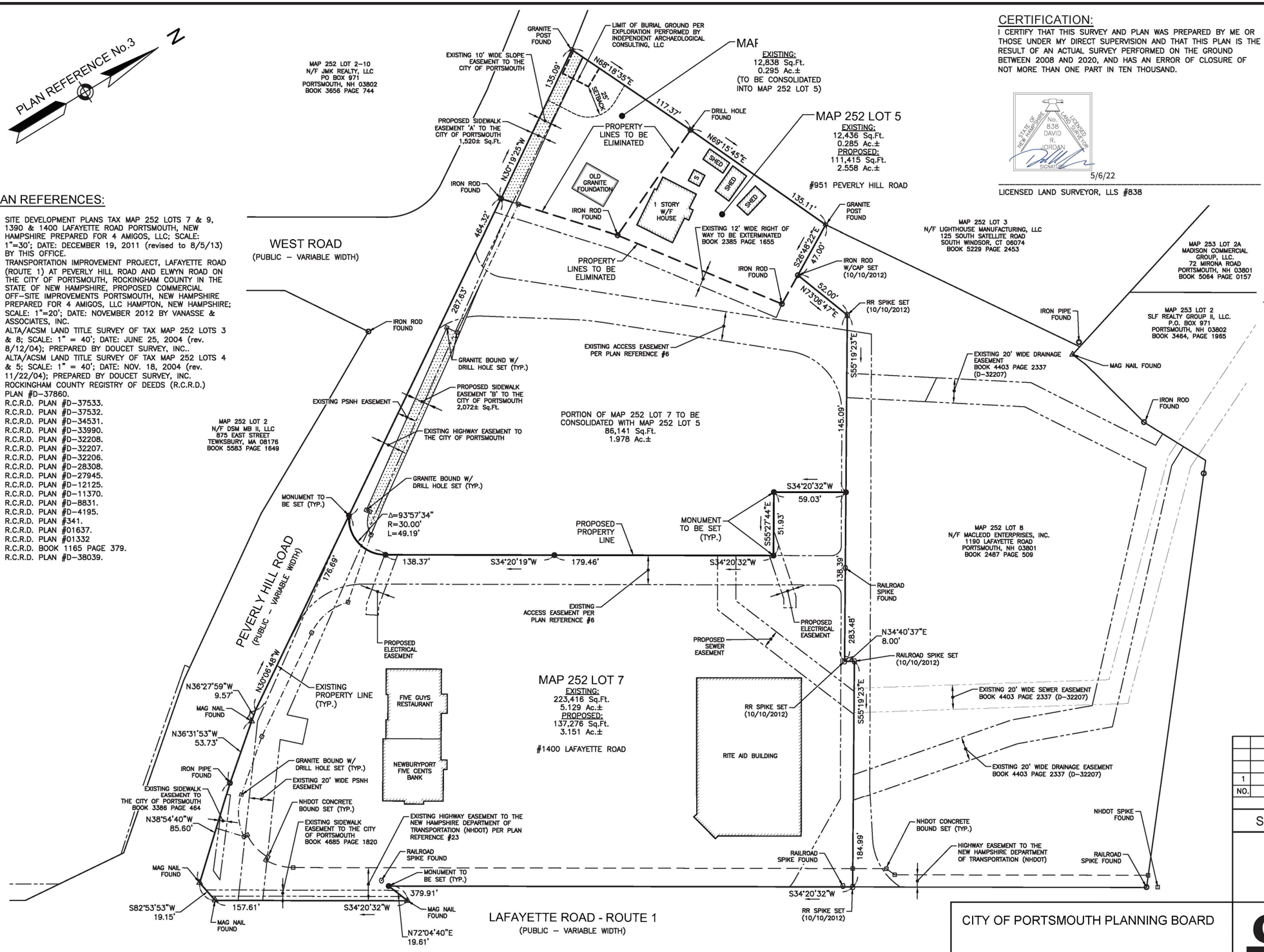
7. N34°20'32"E fifteen and ninety-three hundredths (15.93) feet to a point, thence;

8. Along a curve to the right having a radius of three and no hundredths (3.00) feet and an arc length of six and seventy-three hundredths (6.73) feet to a point, thence;

9. S38°02'58"E forty-two and nine hundredths (42.09) feet to a point, thence;

10. Along a curve to the right having a radius of fifty-four and fifty-two hundredths (54.52) feet and an arc length of forty-three and forty-five hundredths (43.45) feet to a point on the westerly sideline of Lafayette Road, said point being also the point of beginning.

Said tract or parcel of land contains 152,488 square feet or 3.50 acres more or less.



PLAN REFERENCES:

1) SITE DEVELOPMENT PLANS TAX MAP 252 LOTS 7 & 9, 1390 & 1400 LAFAYETTE ROAD PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC; SCALE: 1"=30'; DATE: DECEMBER 19, 2011 (revised to 8/5/13) BY THIS OFFICE.
2) TRANSPORTATION IMPROVEMENT PROJECT, LAFAYETTE ROAD (ROUTE 1) AT PEVERLY HILL ROAD AND ELWYN ROAD ON THE CITY OF PORTSMOUTH, ROCKINGHAM COUNTY IN THE STATE OF NEW HAMPSHIRE, PROPOSED COMMERCIAL OFF-SITE IMPROVEMENTS PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC HAMPTON, NEW HAMPSHIRE; SCALE: 1"=20'; DATE: NOVEMBER 2012 BY VANASSE & ASSOCIATES, INC.
3) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 3 & 8; SCALE: 1" = 40'; DATE: JUNE 25, 2004 (rev. 8/12/04); PREPARED BY DOUCET SURVEY, INC..
4) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 4 & 5; SCALE: 1" = 40'; DATE: NOV. 18, 2004 (rev. 11/22/04); PREPARED BY DOUCET SURVEY, INC.
5) ROCKINGHAM COUNTY REGISTRY OF DEEDS (R.C.R.D.) PLAN #D-37860.
6) R.C.R.D. PLAN #D-37533.
7) R.C.R.D. PLAN #D-37532.
8) R.C.R.D. PLAN #D-34531.
9) R.C.R.D. PLAN #D-33990.
10) R.C.R.D. PLAN #D-32208.
11) R.C.R.D. PLAN #D-32207.
12) R.C.R.D. PLAN #D-32206.
13) R.C.R.D. PLAN #D-28308.
14) R.C.R.D. PLAN #D-27945.
15) R.C.R.D. PLAN #D-12125.
16) R.C.R.D. PLAN #D-11370.
17) R.C.R.D. PLAN #D-8831.
18) R.C.R.D. PLAN #D-4195.
19) R.C.R.D. PLAN #341.
20) R.C.R.D. PLAN #01637.
21) R.C.R.D. PLAN #01332
22) R.C.R.D. BOOK 1165 PAGE 379.
23) R.C.R.D. PLAN #D-38039.

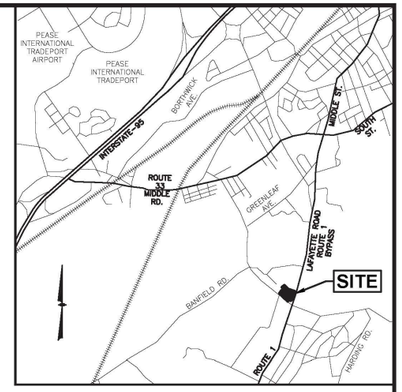
CERTIFICATION:

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND BETWEEN 2008 AND 2020, AND HAS AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

STATE OF NEW HAMPSHIRE — No. 838 — DAVID R. JORDAN — LICENSED LAND SURVEYOR — SIGNATURE

5/6/22

LICENSED LAND SURVEYOR, LLS #838



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) THE PURPOSE OF THIS PLAN IS TO CONSOLIDATE MAP 252 LOT 4, MAP 252 LOT 5 AND A PORTION OF MAP 252 LOT 7 INTO MAP 252 LOT 5.
2) TOTAL PARCEL AREA:
   EXISTING:
   MAP 252 LOT 4 = 12,838 Sq.Ft OR 0.295 Ac.±.
   MAP 252 LOT 5 = 12,436 Sq.Ft. OR 0.285 Ac.±.
   MAP 252 LOT 7 = 223,417 Sq.Ft. OR 5.129 Ac.±.
   TOTAL = 248,691 Sq.Ft. OR 5.709 Ac.±

   PROPOSED:
   MAP 252 LOT 7 = 137,276 Sq.Ft OR 3.151 Ac.±.
   MAP 252 LOT 5 = 111,415 Sq.Ft OR 2.558 Ac.±.
   TOTAL = 248,691 Sq.Ft. OR 5.709 Ac.±
3) ZONE: GATEWAY NEIGHBORHOOD MIXED USE CENTER (G2)
   MIN. LOT SIZE: 10,000 Sq.Ft.
   MIN. LOT FRONTAGE: 50 Ft.
   SETBACKS:
   FRONT: 80 Ft. FROM CL LAFAYETTE ROAD; 30 Ft. FROM PEVERLY HILL R.O.W.
   SIDE: 30 Ft.
   REAR: 50 Ft.
   REFER TO THE CITY OF PORTSMOUTH ZONING ORDINANCE FOR VERIFICATION, ADDITIONAL RESTRICTIONS AND PERMITTED USES.
4) THIS PLAN IS THE RESULT OF ON-THE-GROUND FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN 2008 AND 2020.
5) BEARINGS SHOWN HEREON ARE BASED ON PLAN REFERENCE #3.
6) LOCATION OF UNDERGROUND UTILITIES ARE NOT SHOWN.
7) THE SURVEY TRACT IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33015C0270E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
8) SEE SITE REDEVELOPMENT PLANS FOR EXISTING AND PROPOSED UTILITIES, BUILDINGS, CURB LINES, SIDEWALKS AND OTHER PHYSICAL SITE FEATURES.

OWNER OF RECORD:

MAP 252 LOTS 4, 5, & 7
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842
BOOK 5391 PAGES 625 & 638

NO.	DESCRIPTION	BY	DATE
1	MISCELLANEOUS REVISIONS	AKC	5/4/22

REVISIONS

SUBDIVISION & LOT CONSOLIDATION PLAN

ASSESSORS MAP 252 LOTS 4, 5, & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842

CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON _____ DATE _____

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=40'	DATE: APRIL 15, 2022		DRAWING NO. 4582 SUBD LLA.dwg
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
DPD	AKC/DRJ	MAX-458219.00	1 OF 1

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with required number of copies of the Preliminary or final plat and supporting documents and studies. Please consult with Planning staff for submittal requirements.

Owner: 4 Amigos, LLC Date Submitted: 4/19/22

Applicant: Rick Green c/o 4 Amigos, LLC

Phone Number: 603-475-6510 E-mail: grousewing1@gmail.com

Site Address 1: 951 Peverly Hill Road & 1400 Lafayette Road Map: 252 Lot: 4,5,9

Site Address 2: _____ Map: _____ Lot:

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
✓	Completed Application form. **(III.C.2-3)**		N/A
✓	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(III.C.4)**		N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**	Page 1	☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**	Page 1	☑ Preliminary Plat ☑ Final Plat	N/A
✓	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**	Page 1	☑ Preliminary Plat ☑ Final Plat	N/A
✓	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**	Page 1	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**	Page 1	☑ Preliminary Plat ☑ Final Plat	
✓	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**	Page 1	☑ Preliminary Plat ☑ Final Plat	N/A
✓	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**	Page 1	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✓	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**	Page 1	☑ Preliminary Plat ☑ Final Plat	
☐	**Preliminary Plat** Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**		☑ Preliminary Plat ☑ Final Plat	N/A
☐	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**		☑ Preliminary Plat ☑ Final Plat	N/A
✓	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	Page 1, Note 7	☑ Preliminary Plat ☑ Final Plat	
☐	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**		☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
☐	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**		☐ Preliminary Plat ☑ Final Plat	N/A
☐	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**		☐ Preliminary Plat ☑ Final Plat	N/A
☑	Location of all permanent monuments. **(Section V.12)**	Page 1	☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	**1. Basic Requirements: (VI.1)**	Page 1	
☑	a. Conformity to Official Plan or Map		
☑	b. Hazards		
☐	c. Relation to Topography		
☐	d. Planned Unit Development		
☑	**2. Lots: (VI.2)**	Page 1	
☑	a. Lot Arrangement		
☑	b. Lot sizes		
☑	c. Commercial and Industrial Lots		
☑	**3. Streets: (VI.3)**	Refer to Site Re-Development Plans	N/A
☑	a. Relation to adjoining Street System		
☑	b. Street Rights-of-Way		
☑	c. Access		
☐	d. Parallel Service Roads		
☑	e. Street Intersection Angles		
☐	f. Merging Streets		
☐	g. Street Deflections and Vertical Alignment		
☐	h. Marginal Access Streets		
☐	i. Cul-de-Sacs		
☑	j. Rounding Street Corners		
☐	k. Street Name Signs		
☑	l. Street Names		
☐	m. Block Lengths		
☐	n. Block Widths		
☐	o. Grade of Streets		
☐	p. Grass Strips		
☐	**4. Curbing: (VI.4)**	Refer to Site Re-Development Plans	N/A
☐	**5. Driveways: (VI.5)**	Refer to Site Re-Development Plans	N/A
☐	**6. Drainage Improvements: (VI.6)**	Refer to Site Re-Development Plans	N/A
☐	**7. Municipal Water Service: (VI.7)**	Refer to Site Re-Development Plans	N/A
☐	**8. Municipal Sewer Service: (VI.8)**	Refer to Site Re-Development Plans	N/A
☐	**9. Installation of Utilities: (VI.9)**	Refer to Site Re-Development Plans	N/A
☐	a. All Districts		
☐	b. Indicator Tape		
☐	**10. On-Site Water Supply: (VI.10)**	Refer to Site Re-Development Plans	N/A
☐	**11. On-Site Sewage Disposal Systems: (VI.11)**	Refer to Site Re-Development Plans	N/A
☐	**12. Open Space: (VI.12)**	Refer to Site Re-Development Plans	N/A
☐	a. Natural Features		
☐	b. Buffer Strips		
☐	c. Parks		
☐	d. Tree Planting		
☐	**13. Flood Hazard Areas: (VI.13)**		N/A
☐	a. Permits		
☐	b. Minimization of Flood Damage		
☐	c. Elevation and Flood-Proofing Records		
☐	d. Alteration of Watercourses		
☐	**14. Erosion and Sedimentation Control (VI.14)**	Refer to Site Re-Development Plans	N/A

☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
☐ ☑ ☑	**15. Easements (VI.15)** a. Utilities b. Drainage	Refer to Site Re-Development Plans	
☑	**16. Monuments: (VI.16)**	Page 1	
☐	**17. Benchmarks: (VI.17)**		N/A
☐	**18. House Numbers (VI.18)**		N/A

Design Standards			
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
☐	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods	Refer to Site Re-Development Plans	N/A
☐	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction	Refer to Site Re-Development Plans	N/A
☐	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards	Refer to Site Re-Development Plans	N/A
☐	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction	Refer to Site Re-Development Plans	N/A

Applicant's/Representative's Signature: _____ **Date:** 4/19/22

Chris Tymula, PE, Owner/Applicant
authorized representative

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

April 19, 2022

Mr. Peter Stith, AICP
Principal Planner
Planning Department
City of Portsmouth
One Junkins Avenue
Portsmouth, NH 03801

RE: Conditional Use Permit approval and Site Plan Review approval for property located at 1400 Lafayette Road, and 951 Peverly Hill Road (PU# LU-20-12)

Subject: Approval Expiration and Extension Request #2

Dear Mr. Stith:

The above referenced project was originally approved by the Planning Board on April 30, 2020 and a 1-year extension was granted by the Planning Board on April 15, 2021. On behalf of the applicant, 4 Amigos, LLC, we hereby request an additional one (1) year extension of said approval in accordance with Section 2.14 of the Site Review Regulations. In accordance with the City requirements as part of the 2nd extension request, we are submitting to TAC and the Planning Board for the upcoming May meetings.

The applicant completed the Conditions (precedent) of Approval in November 2021 and has since recorded the approved Site Plan mylar at the registry of deeds on March 17, 2022. Due to the economic impact associated with the COVID-19 pandemic, as well as the rising construction costs, the applicant has decided to reduce the scale of the proposed development.

The minor changes proposed to the Site Plan consist of removing the two 4-story garden style apartment buildings and replacing those with 3-story townhouse units, resulting in a reduction of total residential units from 53 to 32. Additionally, the proposed parking will be reduced from 106 to 95 spaces resulting in a 2400-sf increase in open space with additional community space. There are no other changes associated with the remaining portions of the site plan and conditions associated with the original site plan approval.

It is our opinion that there is no material change that has taken place at the project site since the original approval which would affect this extension request. Please contact our office if you have any questions or need any additional information in order for the Planning Board to act on this request.

Thank you for your consideration.

Very Truly Yours,
GREENMAN-PEDERSEN, INC.

Chris Tymula, PE
Senior Project Manager

cc: Mr. Rick Green - 4 Amigos, LLC
CR MAX-0458219.00

May 6, 2022

Mr. Peter Stith, AICP
Principal Planner
Planning Department
City of Portsmouth
One Junkins Avenue
Portsmouth, NH 03801

SUBJECT: TAC Meeting Response Comments
4-Amigos, LLC
951 Peverly Hill Road & 1400 Lafayette Road
Map 252 Lots 4, 5 & 7

Dear Peter:

Please find enclosed a revised set of plans and supporting documentation regarding the above referenced project. The plans have been revised to address the comments from the TAC Meeting email correspondence, dated May 2, 2022. Based on those comments we offer the following:

1400 Lafayette Road Subdivision

1. Based on discussions at the May 3, 2022 TAC meeting and the submittal of a construction timeline letter to TAC, the offsite sewer work/repairs required by DPW will be completed within 60 days from TAC approval.

2. The Map/Lot information has been updated on the Subdivision and Site Amendment Plans based on correspondence received from the Assessor Office.

1400 Lafayette Road Site Plan

1. The pedestrian crossing information and plans at West Road have been added to the Amended Site Plan set.

2. Test pits were conducted for the infiltration systems and locations and test pit logs are included in the Site Plan set and Drainage Report.

3. The water lines within the development were updated to include hydrants at the end of each run.

4. The domestic and fire services were separated as requested.

5. Note 17 has been added to the Site Plan Sheet indicating individual water services, shutoffs and dedicated meter rooms as agree to at the TAC meeting. Final building plans will provide more detailed information.

6. Note 18 has been added to the plans regarding water line leak detection and easements. The easement was previously submitted to the City as part of the 2020 approvals.

7. SMH-3 was revised to eliminate the need for a drop manhole and 5' diameter structure.

8. A waiver is included as part of the updated submittal package regarding the setback of the dumpster to the property lines.

9. Seven bike racks have been added within the residential development area, located in the vicinity of the proposed outside patio areas adjacent to Building Complex "A" and "C". As discussed at the TAC meeting, the three parking spaces near the dumpster enclosure are desired for use by visitors and remain as part of the development plans.

10. The textured pavement between Building Complex "E" & "D" has been eliminated.

Additional Response to Comments as received at the May 3, 2022 TAC Meeting:

1. An Easement Plan identifying all existing and proposed easements has been added to the Amended Site Plan set as requested.

2. Based on discussions with the applicant's local council, Tim Keiter, on May 5, 2022, the previously submitted Sewer Maintenance Agreement dated 9/20/21 still provides adequate language for access, maintenance, and repair across the entire property. Please refer to the attached letter, REA and Sewer Agreement.

Please review the attached information and should you have any questions, please feel free to contact our office at your convenience.

Sincerely,

Chris Tymula, P.E.
Senior Project Manager

enclosure(s)

cc: Rick Green, 4-Amigos, LLC
F:\Projects\Eng\458219\4582-TAC Response Comments 5-5-22.docx

May 6, 2022

Mr. Peter Stith, AICP
Principal Planner
Planning Department
City of Portsmouth
One Junkins Avenue
Portsmouth, NH 03801

SUBJECT: Waiver Request
4-Amigos, LLC
951 Peverly Hill Road & 1400 Lafayette Road
Map 252 Lots 4, 5 & 7

Dear Peter:

On behalf of our client 4-Amigos, LLC, **Greenman-Pedersen, Inc (GPI)** hereby requests the following waiver in accordance with Section 2.10 of the City of Portsmouth Site Plan Requirements. The below waiver is being requested to accompany the Proposed Subdivision and Amended Site Development Plan package for the above referenced project.

Section 9.3_5. Requires that a dumpster or other waste container pad shall be a minimum of 20 feet from any property line or yard.

The location of the existing dumpster enclosure on Lot 7, designed as part of the 2013 Rite Aid commercial development, is currently located 14' from the northern property line adjacent to Lot 8 and 10' to the northwestern property line of the newly proposed Lot 5. The dumpster location meets the required minimum 10' setback as outlined in the City Zoning Ordinance and is located greater than 26' from the proposed Complex-E Townhouse. The overall property is part of a mixed-use development consisting of the existing Rite Aid, Five Guys, Newburyport Bank and the proposed residential development and the dumpster is generally located within the middle of the site. It is visually screened by a fenced enclosure and landscaping and meets the spirit and intent of the City regulations as an appropriate location with no negative impact to surrounding properties.

Please review the above information and should you have any questions, please feel free to contact our office at your convenience.

Sincerely,

Chris Tymula, P.E.
Senior Project Manager

cc: Rick Green, 4-Amigos, LLC
F:\Projects\Eng\458219\4582-Waiver Request 5-6-22.docx

PROPOSED SUBDIVISION AND AMENDED SITE DEVELOPMENT PLANS

for

TAX MAP 252 LOTS 4, 5 & 7

951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE 03801

Prepared for:

4 AMIGOS, LLC

321D LAFAYETTE ROAD
HAMPTON, NEW HAMPSHIRE 03842

ENGINEER:

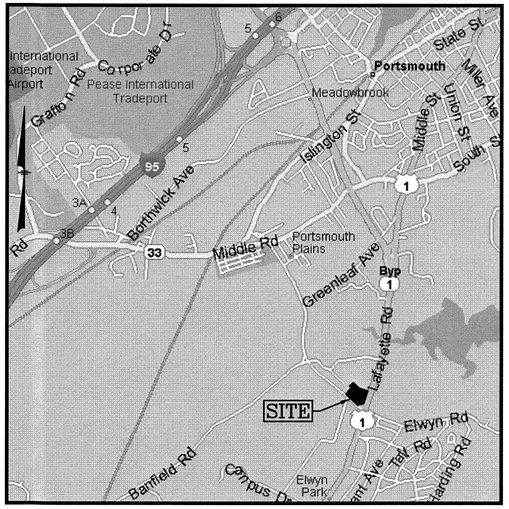
GREENMAN-PEDERSEN, INC. (GPI)
CHRIS TYMULA, PE
44 STILES ROAD, SUITE ONE
SALEM, NH 03079
(603) 893-0720

SURVEYOR:

GREENMAN-PEDERSEN, INC. (GPI)
DAVID R. JORDAN, PE, LLS
44 STILES ROAD, SUITE ONE
SALEM, NH 03079
(603) 893-0720

ARCHITECT:

MICHAEL J KEANE ARCHITECTS PLLC
MICAHEL KEANE
101 KENT PLACE
NEWMARKET, NH 03857
(603) 292-1400



LOCATION MAP
NOT TO SCALE

INDEX TO DRAWINGS

1. TITLE SHEET
2. EXISTING CONDITIONS PLAN
3. DEMOLITION PLAN
4. SITE OVERVIEW PLAN
5. SITE PLAN
6. GRADING & DRAINAGE PLAN
7. UTILITY PLAN
8. EROSION & SEDIMENT CONTROL PLAN
9. LANDSCAPE PLAN
10. LANDSCAPE DETAILS
11. DETAIL SHEET
12. DETAIL SHEET
13. DETAIL SHEET
14. DETAIL SHEET
14A. DETAIL SHEET
15. DETAIL SHEET
1 OF 1. SEWER PLAN & PROFILE (P&P)
1 OF 2. OFF-SITE IMPROVEMENTS
2 OF 2. OFF-SITE IMPROVEMENTS
1 OF 1. COMMUNITY SPACE OVERVIEW PLAN
1 OF 1. SUBDIVISION & LOT CONSOLIDATION PLAN
1 OF 1. EASEMENT PLAN
1 OF 1. LIGHTING PLAN (RL-8016-S1)
1 OF 1. BUILDING B TYPICAL UNIT
1 OF 4. TOWNHOUSE COMPLEX TYPICAL UNIT
2 OF 4. TOWNHOUSE COMPLEX TYPICAL UNIT
3 OF 4. TOWNHOUSE COMPLEX TYPICAL UNIT
4 OF 4. TOWNHOUSE COMPLEX TYPICAL UNIT

NO.	DESCRIPTION	BY	DATE
6	REVISE ALL SHEETS	CMT	5/4/22
5	REVISE ALL SHEETS	CMT	4/15/22
4	REV SHEETS 1, 3-9, P&P, ADD RECORD. SP	CMT	10/18/21
3	REV SHEETS 2-10, 14-15, P&P, ADD SHEET 14A	CMT	8/6/20
2	REV SHEETS 3-11, P&P - A-2.C	CMT	3/9/20
1	REV SHEETS 3-9, P&P, A-1.C	CMT	2/20/20

REVISIONS

TITLE SHEET

ASSESSORS MAP 252 – LOTS 4, 5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

CITY OF PORTSMOUTH PLANNING BOARD

_____ CHAIRPERSON

_____ DATE

STATE OF NEW HAMPSHIRE – CHRISTOPHER M. TYMULA No.17078 – LICENSED PROFESSIONAL ENGINEER
5/4/22

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: NONE	SEPTEMBER 20, 2021		DRAWING NO. 4582CVR.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	1 OF 15

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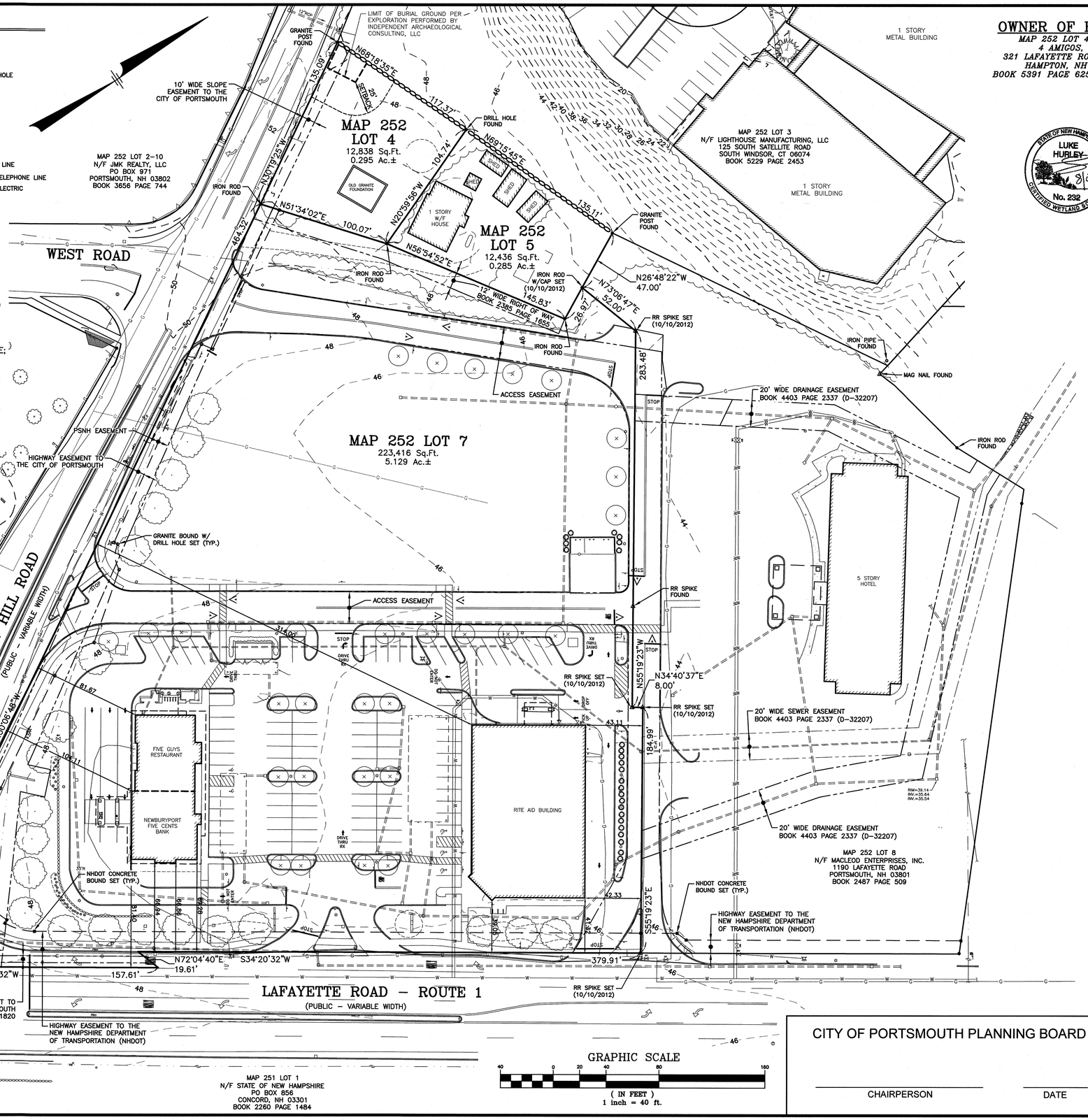
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LEGEND

o	IRON PIPE OR ROD		UTILITY POLE
□	CONCRETE OR GRANITE BOUND	Ⓓ	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	Ⓢ	SEWER MANHOLE
⊙	DRILL HOLE FOUND	Ⓣ	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	□	CATCH BASIN
VGC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING		WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB		FIRE HYDRANT
OHW	OVERHEAD SERVICE WIRES		GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	G	ABANDONED GAS LINE
BWL	BROKEN WHITE LINE	T	UNDERGROUND TELEPHONE LINE
	SIGN	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
			TREELINE

PLAN REFERENCES:

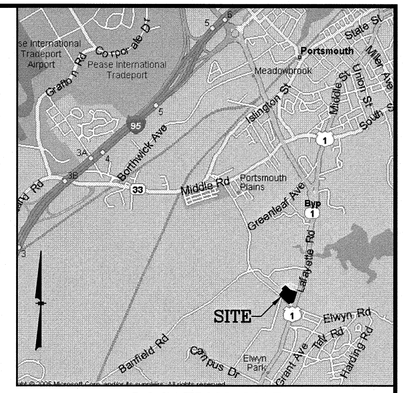
1) SITE DEVELOPMENT PLANS TAX MAP 252 LOTS 7 & 9, 1390 & 1400 LAFAYETTE ROAD PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC; SCALE: 1"=30'; DATE: DECEMBER 19, 2011 (revised to 8/5/13) BY THIS OFFICE.
2) TRANSPORTATION IMPROVEMENT PROJECT, LAFAYETTE ROAD (ROUTE 1) AT PEVERLY HILL ROAD AND ELWYN ROAD ON THE CITY OF PORTSMOUTH, ROCKINGHAM COUNTY IN THE STATE OF NEW HAMPSHIRE, PROPOSED COMMERCIAL OFF-SITE IMPROVEMENTS PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC HAMPTON, NEW HAMPSHIRE; SCALE: 1"=20'; DATE: NOVEMBER 2012 BY VANASSE & ASSOCIATES, INC.
3) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 3 & 8; SCALE: 1" = 40'; DATE: JUNE 25, 2004 (rev. 8/12/04); PREPARED BY DOUCET SURVEY, INC..
4) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 4 & 5; SCALE: 1" = 40'; DATE: NOV. 18, 2004 (rev. 11/22/04); PREPARED BY DOUCET SURVEY, INC.
5) ROCKINGHAM COUNTY REGISTRY OF DEEDS (R.C.R.D.) PLAN #D-37860.
6) R.C.R.D. PLAN #D-37533.
7) R.C.R.D. PLAN #D-37532.
8) R.C.R.D. PLAN #D-34531.
9) R.C.R.D. PLAN #D-33990.
10) R.C.R.D. PLAN #D-32208.
11) R.C.R.D. PLAN #D-32207.
12) R.C.R.D. PLAN #D-32206.
13) R.C.R.D. PLAN #D-28308.
14) R.C.R.D. PLAN #D-27945.
15) R.C.R.D. PLAN #D-12125.
16) R.C.R.D. PLAN #D-11370.
17) R.C.R.D. PLAN #D-8831.
18) R.C.R.D. PLAN #D-4195.
19) R.C.R.D. PLAN #341.
20) R.C.R.D. PLAN #01637.
21) R.C.R.D. PLAN #01332
22) R.C.R.D. BOOK 1165 PAGE 379.



OWNER OF RECORD:

MAP 252 LOT 4, 5 & 7
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842
BOOK 5391 PAGE 625 & PAGE 638

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/5/22 — No. 232 — CERTIFIED WETLAND SCIENTIST



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) ZONE: GATEWAY NEIGHBORHOOD MIXED USE CENTER (G2)
   MIN. LOT SIZE: 10,000 Sq.Ft.
   MIN. LOT FRONTAGE: 50 Ft.
   SETBACKS:
   FRONT: 80 Ft. FROM CL LAFAYETTE ROAD; 30 Ft. FROM PEVERLY HILL R.O.W.
   SIDE: 30 Ft.
   REAR: 50 Ft.
   REFER TO THE CITY OF PORTSMOUTH ZONING ORDINANCE FOR VERIFICATION, ADDITIONAL RESTRICTIONS AND PERMITTED USES.
2) THIS PLAN IS THE RESULT OF ON-THE-GROUND FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN 2008 AND 2019.
3) BEARINGS SHOWN HEREON ARE BASED ON PLAN REFERENCE #3.
4) ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88. CURB ELEVATIONS SHOWN ARE AT THE "TOE" OF CURB. CURBS ARE 0.50'± HIGH.
5) LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE ONLY. ADDITIONAL UNDERGROUND UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED.
6) THE SURVEY TRACT IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33015C0270E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
7) NO WETLANDS WERE FOUND ONSITE.

CERTIFICATION:

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND AND HAS AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

STATE OF NEW HAMPSHIRE — No. 838 — DAVID R. JORDAN — LICENSED LAND SURVEYOR

5/5/22

DAVID R. JORDAN, LLS 838 — DATE

NO.	DESCRIPTION	BY	DATE
4	UPDATE LOT INFO	CMT	5/4/22
3	UPDATE ADDRESS	CMT	4/15/22
2	ADDED WETLAND STAMP PER AoT COMMENTS	NID	8/6/20
1	ADDED NOTE 7	NID	4/1/20

REVISIONS

EXISTING CONDITIONS PLAN

ASSESSORS MAP 252 - LOTS 4, 5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON — DATE

GPI — Engineering, Design, Planning, Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=40'	DATE: JANUARY 20, 2020		DRAWING NO. 4582TWS.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
JJW/JAC	JAC	458219	2 OF 15

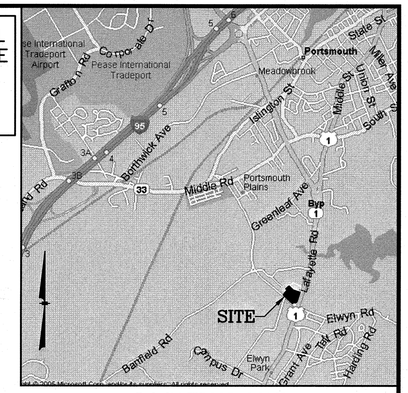
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LEGEND

○	IRON PIN FOUND	UP	UTILITY POLE
⊡	CONCRETE BOUND FOUND	(D)	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	(S)	SEWER MANHOLE
⊙	DRILL HOLE FOUND	(T)	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	□	CATCH BASIN
VGC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING		WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB		FIRE HYDRANT
	OVERHEAD SERVICE WIRES	GV	GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	T	UNDERGROUND TELEPHONE LINE
BWL	BROKEN WHITE LINE	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
	SIGN		WETLAND LINE
TBR	TO BE REMOVED		TREELINE
xxxxxx	TO BE REMOVED		

SEE EROSION & SEDIMENT CONTROL PLAN FOR CONSTRUCTION SEQUENCE AND TEMPORARY EROSION CONTROL MEASURES PRIOR TO BEGINNING DEMOLITION ACTIVITIES.



LOCATION MAP

(NOT TO SCALE)

PROP. PEVERLY HILL ROAD RECONSTRUCTION PROJECT BY THE CITY OF PORTSMOUTH

MAP 252 LOT 2-10
N/F JMK REALTY, LLC
PO BOX 971
PORTSMOUTH, NH 03802
BOOK 3656 PAGE 744

MAP 252 LOT 4
12,838 Sq. Ft.
0.295 Ac.±

MAP 252 LOT 7
12,437 Sq. Ft.
0.285 Ac.±

MAP 252 LOT 3
N/F LIGHTHOUSE MANUFACTURING, LLC
125 SOUTH SATELLITE ROAD
SOUTH WINDSOR, CT 06074
BOOK 5229 PAGE 2453

MAP 252 LOT 2
N/F DSM MB II, LLC
1275 EAST STREET
TEWKSBURY, MA 08176
BOOK 5583 PAGE 1649

MAP 252 LOT 8
MACLEOD ENTERPRISES, INC.
1190 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
BOOK 2487 PAGE 509

EXISTING MAP 252 LOT 7
223,416 Sq. Ft.
5.129 Ac.±

WEST ROAD

PEVERLY HILL ROAD
(PUBLIC - VARIABLE WIDTH)

LIMIT OF BURIAL EXCAVATION BY INDEPENDENT CONSULTING, I

25' SETBACK

PROP. TREELINE

LOT LINE TO BE REMOVED (TYP.)

EXIST. FENCE TO BE REMOVED

PORTION OF EXISTING CURB TO BE REMOVED

REMOVE PORTION OF EXISTING CURBING. SEE SITE PLAN

EXIST. YOKEN'S COMMON SIGN TO BE RELOCATED (TO BE ADJUSTED AS NEEDED)

EXIST. TREES TO BE REMOVED

EXIST. SIDEWALK TO BE REMOVED, CURBING TO REMAIN

EXISTING "ABANDONED/DEAD" GAS LINE TO BE REMOVED FROM PEVERLY HILL ROAD GATE VALVE

UTILITY POLE TO REMAIN (TYP.)

HYDRANT TO REMAIN

PAVEMENT SAWCUT LINE (TYP.)

REMOVE EXIST. RAMP AND REBUILD SIDEWALK TO MATCH TOP GRADE OF SPEED TABLE

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NOTES:

1) ALL EXISTING UTILITY DISCONNECTIONS MUST BE COORDINATED WITH RESPECTIVE UTILITY COMPANIES PRIOR TO BEGINNING DEMOLITION ACTIVITIES.
2) ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN STRICT ADHERENCE TO ALL FEDERAL, STATE AND LOCAL REGULATIONS. CONTRACTOR TO INSTALL EROSION CONTROL DEVICES PRIOR TO BEGINNING DEMOLITION ACTIVITIES.
3) CONDUCT ALL DEMOLITION OPERATIONS IN A MANNER THAT WILL PREVENT INJURY, DAMAGE TO STRUCTURES, ADJACENT BUILDINGS AND ALL PERSONS.
4) REFRAIN FROM USING EXPLOSIVES WITHOUT PRIOR WRITTEN CONSENT OF THE DEVELOPER AND APPLICABLE GOVERNMENTAL AUTHORITIES.
5) CONDUCT DEMOLITION SERVICES IN SUCH A MANNER TO INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS AND OTHER ADJACENT FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED FACILITIES WITHOUT PRIOR WRITTEN PERMISSION OF THE DEVELOPER AND APPLICABLE GOVERNMENTAL AUTHORITIES. PROVIDE ALTERNATIVE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY APPLICABLE GOVERNMENTAL REGULATIONS.
6) USE WATERING, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS, AS NECESSARY TO LIMIT THE AMOUNT OF DUST AND DIRT RISING AND SCATTERING IN THE AIR. CLEAN ADJACENT STRUCTURE AND IMPROVEMENTS OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. RETURN ALL ADJACENT AREAS TO THE CONDITIONS EXISTING PRIOR TO THE START OF WORK.
7) ACCOMPLISH AND PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
8) COMPLETELY FILL BELOW GRADE AREAS AND VOIDS RESULTING FROM THE DEMOLITION OF STRUCTURES AND FOUNDATIONS WITH SOIL MATERIALS CONSISTING OF STONE, GRAVEL AND SAND, FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS AND OTHER ORGANIC MATTER. STONES USED WILL NOT BE LARGER THAT 6 INCHES IN DIMENSION. MATERIAL FROM DEMOLITION MAY NOT BE USED AS FILL. PRIOR TO PLACEMENT OF FILL MATERIALS, UNDERTAKE ALL NECESSARY ACTION IN ORDER TO INSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROZEN MATERIAL, TRASH, DEBRIS. PLACE FILL MATERIALS LAYERS NOT EXCEEDING 6 INCHES IN LOOSE DEPTH AND COMPACT EACH LAYER AT PLACEMENT TO 95% OPTIMUM DENSITY, GRADE SURFACE TO MEET ADJACENT CONTOURS AND TO PROVIDE SURFACE DRAINAGE.
9) REMOVE FROM THE DESIGNATED SITE, AT THE EARLIEST POSSIBLE TIME, ALL DEBRIS RUBBISH, SALVAGEABLE ITEMS, HAZARDOUS AND COMBUSTIBLE SERVICES. REMOVED MATERIALS MAY NOT BE STORED, SOLD OR BURNED ON SITE. REMOVAL OF HAZARDOUS AND COMBUSTIBLE MATERIALS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE PROCEDURES AS AUTHORIZED BY THE FIRE DEPARTMENT OR OTHER APPROPRIATE REGULATORY AGENCIES AND DEPARTMENTS.
10) PROTECT EXISTING DRAINAGE SYSTEM(S) AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING DURING CONSTRUCTION. SEE EROSION & SEDIMENT CONTROL PLAN.
11) ALL WORK WITHIN ROADWAY RIGHT-OF-WAYS TO CONFORM TO CITY AND NHDOT STANDARDS.
12) THE LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION OR SITE CLEARING.
13) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY "DIG SAFE" (1-888-344-7233) 72 HOURS PRIOR TO ANY EXCAVATION ON THIS SITE. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER DEPARTMENT TO MARK OUT THEIR UTILITIES.
14) NOTES ON THIS PLAN THAT READ "TBR" REPRESENT FEATURES TO BE REMOVED. ANY FEATURES NOT LABELED "TBR" OR "TO BE REMOVED" SHALL BE CONSIDERED EXISTING TO REMAIN.
15) SEE LANDSCAPE PLAN FOR LIMITS OF CLEARING AND GRUBBING. AFTER CLEARING, STRIP AND STOCKPILE TOP SOIL PER LANDSCAPE PLAN, IF APPLICABLE.
16) THE SITE CONTRACTOR SHALL TAKE NOTICE THAT THIS SITE MIGHT CONTAIN AN UNMARKED BURIAL GROUND WHICH IS REGISTERED WITH THE STATE AS AN ARCHAEOLOGICAL SITE KNOWN AS THE "WILLEY/LIGHTFORD" BURIAL GROUND. ACCORDING TO RECORDS FROM THE 1800'S, THIS BURIAL PLOT WAS 10'x10' LOCATED IN THE SOUTHWEST CORNER OF THE LOT NEAR PEVERLY HILL ROAD. IF THE CONTRACTOR ENCOUNTERS ANY REMAINS, HE SHALL CEASE OPERATIONS AND NOTIFY THE CITY AND THE NH DIVISION OF HISTORICAL RESOURCES (603-271-2813).
17) THE SITE CONTRACTOR SHALL COORDINATE DEMOLITION ACTIVITIES WITH THE COMFORT INN TO MINIMIZE DISTURBANCE TO THEIR OPERATION.

NO.	DESCRIPTION	BY	DATE
7	MISC. REVISIONS	CMT	5/4/22
6	MISC. REVISIONS	CMT	4/15/22
5	MISC. REVISIONS	CMT	4/5/21
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

DEMOLITION PLAN

ASSESSORS MAP 252 - LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

STATE OF NEW HAMPSHIRE — CHRISTOPHER M. TYMULA No.17078 LICENSED PROFESSIONAL ENGINEER — 5/4/22

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=30'	DATE: JANUARY 20, 2020		DRAWING NO. 4582 SP.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	3 OF 15

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LEGEND

O	IRON PIN FOUND	UP	UTILITY POLE
□	CONCRETE BOUND FOUND	D	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	S	SEWER MANHOLE
⊙	DRILL HOLE FOUND	T	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	CB	CATCH BASIN
VGC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING	WV	WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB	FH	FIRE HYDRANT
OHW	OVERHEAD SERVICE WIRES	GV	GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	T	UNDERGROUND TELEPHONE LINE
BWL	BROKEN WHITE LINE	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
SIGN		WETLAND LINE	
		TREELINE	

EXISTING SIDEWALK EASEMENT

EXISTING MAP 252 LOT 4
12,838 Sq. Ft.
0.295 Ac.±
(TO BE COMBINED WITH LOT 5)

MAP 252 LOT 5
EXISTING:
12,437 Sq. Ft.
0.285 Ac.±

MAP 252 LOT 5
PROPOSED:
111,415 Sq.Ft.
2.558 Ac.±

5 MIN. TO 15' MAX. FRONT BUILDING SETBACK

10' SIDE BUILDING SETBACK

PROPOSED 12,800 SF (GFA) 3-STORY 2-UNIT CONDO COMPLEX-"A" (TOWNHOUSE STYLE)

PROPOSED 15,100 SF (GFA) 3-STORY 6-UNIT CONDO COMPLEX-"B" (TOWNHOUSE STYLE)

PROPOSED 20,100 SF (GFA) 3-STORY 8-UNIT CONDO COMPLEX-"D" (TOWNHOUSE STYLE)

PROPOSED 17,600 SF (GFA) 3-STORY 7-UNIT CONDO COMPLEX-"C" (TOWNHOUSE STYLE)

PROPOSED 15,100 SF (GFA) 3-STORY 6-UNIT CONDO COMPLEX-"E" (TOWNHOUSE STYLE)

WEST ROAD

PROP. PEVERLY HILL ROAD RECONSTRUCTION PROJECT BY THE CITY OF PORTSMOUTH

SEE OFFSITE IMPROVEMENT PLANS FOR SIDEWALK CONNECTION & DETAILS

EXISTING PSNH EASEMENT

EXISTING HIGHWAY EASEMENT TO THE CITY OF PORTSMOUTH

PEVERLY HILL ROAD (PUBLIC – VARIABLE WIDTH)

15' REAR BUILDING SETBACK

EXISTING MAP 252 LOT 7
223,416 Sq.Ft.
5.129 Ac.±
(PORTION TO BE COMBINED WITH LOT 5)

PROPOSED LOT LINE

30' FRONT BUILDING SETBACK

30' SIDE BUILDING SETBACK

MAP 252 LOT 7
EXISTING:
223,416 Sq.Ft.
5.129 Ac.±

MAP 252 LOT 7
PROPOSED:
137,276 Sq.Ft.
3.151 Ac.±

EXISTING FIVE GUYS

EXISTING NEWBURYPORT FIVE CENTS BANK

EXISTING RITE AID

ORIGINAL 2013 APPROVALS

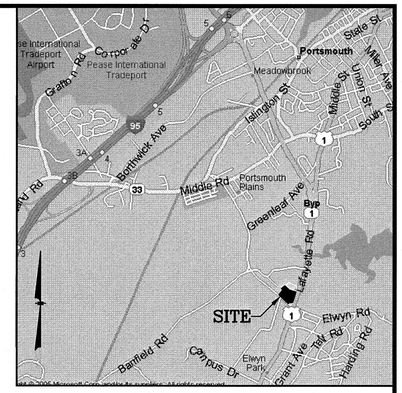
80' FRONT BUILDING SETBACK

EXISTING HIGHWAY EASEMENT TO NHDOT

LAFAYETTE ROAD– ROUTE 1
(PUBLIC – VARIABLE WIDTH)

ELWIN ROAD

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) CURRENT ZONE IS GATEWAY NEIGHBORHOOD MIXED USE CENTER (G2). REFER TO CITY OF PORTSMOUTH ZONING DISTRICTS AND USE REGULATIONS FOR ADDITIONAL INFORMATION.

2) THE PURPOSE OF THIS PLAN IS TO SHOW THE SUBDIVISION OF TWO PARCELS NOTED AS PROPOSED LOTS 7 AND 5. LOT 7 WILL CONSIST OF THE EXISTING RETAIL DEVELOPMENT. LOT 5 WILL INCLUDE A PROPOSED 32–UNIT TOWNHOUSE STYLE RESIDENTIAL DEVELOPMENT.

3) PROPOSED RESIDENTIAL PARKING BREAKDOWN: (32 UNITS)
+ 64 GARAGE SPACES (TOWNHOUSE STYLE)
(INCLUDES 2 GARAGE SPACES/UNIT)
+ 29 EXTERIOR SPACES
= 93 SPACES PROPOSED

TABLE OF ZONING REGULATIONS – PORTSMOUTH, NH

ZONE: GATEWAY NEIGHBORHOOD MIXED USE CENTER (G2)

DESCRIPTION	REQUIRED	PROPOSED LOT 7 RETAIL DEVELOPMENT (PROVIDED)	PROPOSED LOT 5 GATEWAY TOWNHOUSE (REQUIRED)	PROPOSED LOT 5 GATEWAY TOWNHOUSE (PROVIDED)
MINIMUM LOT AREA Sq. Ft.	10,000 SF	137,276 SF	10,000 SF	111,415 SF
MINIMUM LOT FRONTAGE	50'	>200'	20'	>200'
MINIMUM FRONT YARD SETBACK	LAFAYETTE ROAD – 80 FEET FROM CENTERLINE PEVERLY HILL ROAD – 30 FEET	84.1' LAFAYETTE ROAD 81.7' PEVERLY ROAD	5' MIN. TO 15' MAX.	10' FROM PROPOSED SIDEWALK
MINIMUM REAR YARD SETBACK	50'	N/A	15'	16'
MINIMUM SIDE YARD SETBACK	30'	37.7'	10'	23.5'
MINIMUM FRONT YARD PAVEMENT SETBACK	30' FROM LOT LINE	> 30'		> 30'
PARKING SPACE DIMENSIONS	8.5' x 19'	9' x 19'		8.5' x 19'
MINIMUM NUMBER PARKING SPACES (RESIDENTIAL DEVELOPMENT)	DWELLING UNITS > 750 SF=1.3 SPACES/UNIT VISITOR PARKING=1 SPACE/5 DWELLING UNITS REQ. PARKING =32 UNITS * 1.3 SP/UNITS +32 UNITS * 1 SP/5 UNITS = 48 SPACES REQUIRED	NO CHANGE TO PREVIOUSLY APPROVED PARKING – 92 SPACES ONSITE	48 SPACES (SEE PARKING BREAKDOWN IN TABLE)	93 SPACES (SEE PARKING BREAKDOWN IN NOTE #3 ABOVE)
MINIMUM OPEN SPACE	20%	31,598/137,276=23.0%	20%	26,112/111,415=23.4%
MAXIMUM BUILDING HEIGHT	40', 25'–49' FROM ROW – 45 FEET	< 40'	2.5 STORIES OR 35'	< 35'
MAXIMUM BUILDING COVERAGE	50%	16,389/137,276 = 11.9%	50%	23,900/111,415=21.4%
MAXIMUM FREESTANDING SIGN AREA, HEIGHT & SETBACK	100 SF PER SIDE FOR PRIMARY SIGN 75 SF PER SIDE FOR SECONDARY SIGN (N/A) 20' HEIGHT, 10' SETBACK	EXISTING SIGNAGE TO REMAIN	N/A	N/A
WALL SIGN AREA	UP TO 200 SF, CANNOT EXCEED AGGREGATE	EXISTING SIGNAGE TO REMAIN	N/A	N/A

NO.	DESCRIPTION	BY	DATE
7	MISC. REVISIONS	CMT	5/4/22
6	MISC. REVISIONS	CMT	4/15/22
5	MISC. REVISIONS	CMT	4/5/21
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

SITE OVERVIEW PLAN

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

STATE OF NEW HAMPSHIRE – CHRISTOPHER M. TYMULA No.17078 LICENSED PROFESSIONAL ENGINEER – 5/4/22

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=40'	DATE: JANUARY 20, 2020		DRAWING NO. 4582 SP.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	4 OF 15

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LEGEND

○	IRON PIN FOUND	UP	UTILITY POLE
⊡	CONCRETE BOUND FOUND	D	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	S	SEWER MANHOLE
⊙	DRILL HOLE FOUND	T	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	C	CATCH BASIN
VCC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING	WV	WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB	FH	FIRE HYDRANT
	OVERHEAD SERVICE WIRES	GV	GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	T	UNDERGROUND TELEPHONE LINE
BWL	BROKEN WHITE LINE	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
	SIGN		WETLAND LINE
(1)	NUMBER OF PARKING SPACES		TREELINE

EXISTING SIDEWALK EASEMENT

PROP. PEVERLY HILL ROAD RECONSTRUCTION PROJECT BY THE CITY OF PORTSMOUTH

SEE OFFSITE IMPROVEMENT PLANS FOR SIDEWALK CONNECTION & DETAILS

EXISTING PSNH EASEMENT

EXISTING HIGHWAY EASEMENT TO THE CITY OF PORTSMOUTH

PROPOSED LOT LINE

EXISTING MAP 252 LOT 4
12,838 Sq. Ft.
0.295 Ac.±
(TO BE COMBINED WITH LOT 5)

EXISTING MAP 252 LOT 7
223,416 Sq.Ft.
5.129 Ac.±
(PORTION TO BE COMBINED WITH LOT 5)

MAP 252 LOT 5
EXISTING:
12,437 Sq. Ft.
0.285 Ac.±

MAP 252 LOT 5
PROPOSED:
111,415 Sq.Ft.
2.558 Ac.±

MAP 252 LOT 7
EXISTING:
223,416 Sq.Ft.
5.129 Ac.±

MAP 252 LOT 7
PROPOSED:
137,276 Sq.Ft.
3.151 Ac.±

MAP 252 LOT 2-10
N/F JMK REALTY, LLC
PO BOX 971
PORTSMOUTH, NH 03802
BOOK 3656 PAGE 744

MAP 252 LOT 2-DSM
N/F DSM MB II, LLC
875 EAST STREET
TEWKSBURY, MA 08176
BOOK 5583 PAGE 1649

MAP 252 LOT 3
N/F LIGHTHOUSE MANUFACTU
125 SOUTH SATELLITE R
SOUTH WINDSOR, CT 06
BOOK 5229 PAGE 245

MAP 252 LOT 8
MACLEOD ENTERPRISES, INC
1190 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
BOOK 2487 PAGE 509

PROPOSED 12,800 SF (GFA) 5-UNIT CONDO COMPLEX-"A" (TOWNHOUSE STYLE)

PROPOSED 15,100 SF (GFA) 3-STORY 6-UNIT CONDO COMPLEX-"B" (TOWNHOUSE STYLE)

PROPOSED 20,100 SF (GFA) 3-STORY 8-UNIT CONDO COMPLEX-"D" (TOWNHOUSE STYLE)

PROPOSED 17,600 SF (GFA) 3-STORY 7-UNIT CONDO COMPLEX-"C" (TOWNHOUSE STYLE)

PROPOSED 15,100 SF (GFA) 3-STORY 6-UNIT CONDO COMPLEX-"E" (TOWNHOUSE STYLE)

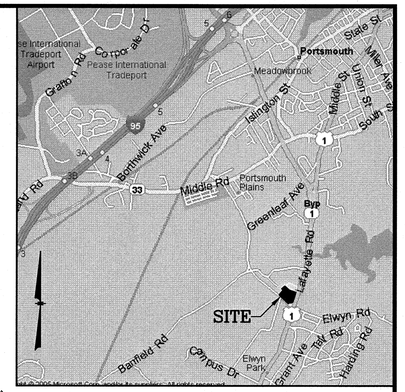
EXISTING FIVE GUYS

EXISTING RITE AID

PEVERLY HILL ROAD (PUBLIC - VARIABLE WIDTH)

WEST ROAD

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) TAX MAP 252 LOTS 4, 5 & 7

2) ZONING DISTRICT: GATEWAY NEIGHBORHOOD MIXED USE CENTER (G2)

3) LOT 7 AREA= 223,416 Sq.Ft. (EXISTING)
= 5.129 Ac.±

LOT 4 AREA = 12,838 Sq.Ft. (EXISTING)
= 0.295 Ac.±

LOT 5 AREA = 12,437 Sq.Ft. (EXISTING)
= 0.285 Ac.±

PROP. LOT 7 AREA = 137,276 Sq.Ft.
= 3.151 Ac.±

PROP. LOT 5 AREA = 111,415 Sq.Ft.
= 2.558 Ac.±

4) EXISTING USE: RESIDENTIAL DWELLING ON LOTS 4 & 5. VACANT REAR PARCEL ON PORTION OF LOT 7 (FORMER YOKEN'S RESTAURANT AND FUNCTION FACILITY)
PROPOSED USE: MULTI-UNIT RESIDENTIAL DEVELOPMENT & SUBDIVISION/ LOT CONSOLIDATION OF LOTS 4, 5 & 7

5) ALL BUILDINGS AND SITE CONSTRUCTION SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AS PUBLISHED IN THE FEDERAL REGISTER, REVISED IN 2010.

6) THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THIS PLAN WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.

7) WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR.

8) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE 1-888-344-7233 (72 HOURS PRIOR TO ANY EXCAVATION).

9) ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF PORTSMOUTH AND THE STATE OF NEW HAMPSHIRE.

10) THE SITE IS NOT WITHIN THE 100 YEAR FLOOD BOUNDARY AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE PANEL 270 OF 681, MAP NUMBER 33015C0270E, EFFECTIVE DATE: MAY 17, 2005.

11) ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND THE STANDARD CONSTRUCTION DRAWINGS AS SUPPLIED BY RITE AID CORPORATION.

12) A SIGN PERMIT SHALL BE OBTAINED PRIOR TO INSTALLATION.

13) PROPOSED SNOW STORAGE AREAS AS SHOWN. ANY EXCESS SNOW TO BE TRUCKED OFF-SITE.

14) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY GREENMAN-PEDERSEN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR AND/OR ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE AND/OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

15) ALL PROPOSED UTILITIES SHALL BE UNDERGROUND.

16) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING ON-SITE PAVEMENT, CONCRETE PADS, BRICKS, FILL PILES, AND ALL OTHER EXISTING SURFACE AND UNDERGROUND STRUCTURES WHICH ARE NOT RE-USED AS PART OF THE CONSTRUCTION. SEE DEMOLITION PLAN.

17) ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION SIGNAGE ARRANGEMENTS ACCEPTABLE TO THE NHDOT AND CITY DEPARTMENT OF PUBLIC WORKS SHALL BE EMPLOYED DURING OPERATIONS WITHIN THE PUBLIC RIGHT-OF-WAY.

18) ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

19) THE SITE CONTRACTOR SHALL TAKE NOTICE THAT THIS SITE IS REGISTERED WITH THE STATE AS AN ARCHAEOLOGICAL SITE KNOWN AS THE "WILLEY/LIGHTFORD" BURIAL GROUND. THE APPLICANT HAS CONSULTED WITH INDEPENDENT ARCHAEOLOGICAL CONSULTING, LLC (IAC) OF PORTSMOUTH, NH TO FURTHER RESEARCH THE ALLEGED UNMARKED BURIAL GROUND. A SUMMARY REPORT WAS PREPARED BY IAC, DATED 4/27/20, WHICH OUTLINES THE GROUND PENETRATING RADAR TECHNOLOGIES THAT WERE USED TO IDENTIFY THE BURIAL GROUND LOCATED IN THE NORTHWEST CORNER OF MAP 252 LOT 4.

20) THE SITE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE COMFORT INN TO MAINTAIN ACCESS AND MINIMIZE DISRUPTION TO THEIR BUSINESS OPERATION.

21) ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PERSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

22) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

23) 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.

24) EXISTING IMPERVIOUS AREA = 77,229 SF± (69.3%)
PROPOSED IMPERVIOUS AREA = 85,303 SF± (76.6%)

25) REQUIRED STATE/FEDERAL PERMITS:
NHDES ALTERATION OF TERRAIN (AoT): AoT-1856 (8-26-20)
EPA CONSTRUCTION GENERAL PERMIT (SWPPP): PENDING
NHDOT DRIVEWAY PERMIT: 06-379-237 AMENDMENT

NO.	DESCRIPTION	BY	DATE
7	MISC. REVISIONS	CMT	5/4/22
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REVISIONS

SITE PLAN

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
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STATE OF NEW HAMPSHIRE
CHRISTOPHER M. TYMULA
No. 17078
LICENSED PROFESSIONAL ENGINEER
5/4/22

GPI
Engineering
Design
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DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	5 OF 15

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LEGEND

○	IRON PIN FOUND	UP	UTILITY POLE
⊡	CONCRETE BOUND FOUND	D	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	S	SEWER MANHOLE
⊙	DRILL HOLE FOUND	T	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	C	CATCH BASIN
VGC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING		WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB		FIRE HYDRANT
	OVERHEAD SERVICE WIRES	G	GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	T	UNDERGROUND TELEPHONE LINE
BWL	BROKEN WHITE LINE	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
	SIGN		WETLAND LINE
C.O.	PROP. CLEANOUT		TREELINE
CB-1	PROP. CATCH BASIN	MEG	MEET EXISTING GRADE
DMH-1	PROP. DRAIN MANHOLE	47.50	PROP. SPOT ELEVATION
SMH-1	PROP. SEWER MANHOLE		PROP. CONTOUR ELEVATION
	G.B.		GRADE BREAK

DRAINAGE STRUCTURES

CB-1
RIM=46.30
INV.OUT=43.30

CB-2
RIM=47.20
INV.OUT=43.70

CB-3
RIM=46.15
INV.IN=43.25(CB-4)
INV.OUT=43.15

CB-4
RIM=46.60
INV.OUT=43.60

CB-5(FD)
RIM=45.90
INV.OUT=42.20

CB-6(FD)
RIM=45.60
INV.OUT=42.20

CB-7(FD)
RIM=45.05
INV.OUT=41.05

CB-8(FD)
RIM=47.30
INV.IN=42.70(CB-3)
INV.OUT=42.60

DMH-1
RIM=45.20
INV.IN=39.70(DMH-2)
INV.IN=40.70(CB-7(FD))
INV.OUT=39.60

DMH-2
RIM=46.00
INV.IN=39.95(OCS-3)
INV.IN=39.95(EX CB-6)
INV.OUT=39.85

DMH-3
RIM=46.55
INV.IN=39.50(DMH-3A)
INV.IN=39.80(EX CB-9)
INV.OUT=39.40

DMH-3A
RIM=48.65
INV.IN=40.40(OCS-2)
INV.OUT=40.30

DMH-4
RIM=47.40
INV.IN=41.50(OCS-1)
INV.IN=41.32(EX CB-8)
INV.OUT=41.32

DMH-5(FD)
RIM=47.15
INV.IN=43.00(CB-1)
INV.IN=43.20(CB-2)
INV.OUT=42.90

EX.DMH
RIM=44.80
INV.IN=39.20(DMH-3)
INV.IN=39.20(DMH-1)
INV.OUT=39.08

OUTLET CONTROL STRUCTURE #1 (OCS-1)
RIM=47.75
INV.IN=41.00(INF-1 OUTLET)
INV.OUT=42.00
(SEE DETAIL)

OUTLET CONTROL STRUCTURE #2 (OCS-2)
RIM=48.70
INV.IN=40.50(INF-2 OUTLET)
INV.OUT=40.60
(SEE DETAIL)

OUTLET CONTROL STRUCTURE #3 (OCS-3)
RIM=45.90
INV.IN=41.00(INF-3 OUTLET)
INV.OUT=41.00
(SEE DETAIL)

PROPOSED UNDERGROUND INFILTRATION SYSTEM #1 (INF-1)
(5) 36"ø PERF. HDPE PIPE
57LF, S=0.000 FT/FT
INV.PIPE=41.00
INV.IN=42.00(DMH-1)
INV.OUT=41.00(24")
(SEE DETAIL SHEET)

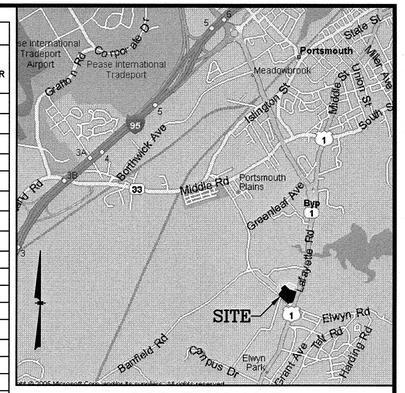
PROPOSED UNDERGROUND INFILTRATION SYSTEM #2 (INF-2)
(4) 36"ø PERF. HDPE PIPE
92LF, S=0.000 FT/FT
INV.PIPES=40.50
INV.IN'S=42.50(CB-3/CB-4)
INV.IN=42.25(INF-4)
INV.OUT=40.50(24")
(SEE DETAIL SHEET)

PROPOSED UNDERGROUND INFILTRATION SYSTEM #3 (INF-3)
(5) 36"ø PERF. HDPE PIPE
57LF, S=0.000 FT/FT
INV.PIPES=41.00
INV.IN'S=42.00(CB-5/CB-6)
INV.OUT=41.00(24")
(SEE DETAIL SHEET)

(FD) DENOTES FIRST DEFENSE UNIT OR APPROVED EQUAL (SEE DETAIL)

DRAINAGE PIPE SCHEDULE

FROM: STRUCTURE NUMBER	PIPE SIZE (INCHES)	TYPE OF PIPE	APPROX. PIPE LENGTH (FEET)	SLOPE OF PIPE (FT./FT.)	TO: STRUCTURE NUMBER
CB-1	12	HDPE	59	0.005	DMH-5(FD)
CB-2	12	HDPE	31	0.016	DMH-5(FD)
CB-3	12	HDPE	54	0.008	CB-8(FD)
CB-4	12	HDPE	36	0.010	CB-3
CB-5(FD)	12	HDPE	12	0.017	INF-3 INLET-1
CB-6(FD)	12	HDPE	9	0.022	INF-3 INLET-2
CB-7(FD)	12	HDPE	34	0.010	DMH-1
CB-8(FD)	12	HDPE	7	0.014	INF-2 INLET-1
DMH-1	18	HDPE	43	0.009	EX.DMH
DMH-2	12	HDPE	30	0.005	DMH-1
DMH-3	18	HDPE	38	0.005	EX.DMH
DMH-3A	15	HDPE	168	0.005	DMH-3
DMH-5(FD)	12	HDPE	15	0.059	INF-1 INLET
INF-1 OUTLET	24	HDPE	7	0.000	OCS-1
INF-2 OUTLET	24	HDPE	5	0.000	OCS-2
INF-3 OUTLET	24	HDPE	9	0.000	OCS-3
OCS-1	12	HDPE	50	0.010	DMH-4
OCS-2	15	HDPE	41	0.005	DMH-3A
OCS-3	12	HDPE	33	0.032	DMH-2



LOCATION MAP

(NOT TO SCALE)

NOTES:

1) ALL SITE DRAINAGE PIPE SHALL BE CORRUGATED HIGH-DENSITY POLYETHYLENE PIPE WITH STANDARD JOINTS, DUAL-WALL, SMOOTH INTERIOR AS MANUFACTURED BY ADS, INC., OR APPROVED EQUAL, UNLESS OTHERWISE NOTED ON PLAN.
2) ALL ROOF DRAIN PIPE SHALL BE MINIMUM 6" PVC(SDR-35).
3) ELEVATIONS ARE BASED ON NAVD 1988 DATUM.
4) ALL PROPOSED ELEVATIONS AS SHOWN ARE BOTTOM OF CURB ELEVATIONS, UNLESS OTHERWISE NOTED.
5) ANY UTILITY FIELD ADJUSTMENTS SHALL BE APPROVED BY THE LOCAL AUTHORITIES AND THE DEVELOPER PRIOR TO INSTALLATION.
6) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES.
7) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIG-SAFE (1-888-344-7233) 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION.
8) THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE. (ACTUAL DISTURBANCE AREA = 115,000 SF) THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
9) SEE UTILITIES PLAN FOR SERVICE CONNECTIONS.
10) CONTRACTOR TO USE EXTREME CAUTION TO INSURE THAT NO PONDING OCCURS AT PROPOSED DRIVEWAYS.
11) ALL CONSTRUCTION SHALL CONFORM TO MUNICIPAL DPW AND ALL APPLICABLE STATE AND FEDERAL STANDARDS. ALL CASTINGS ARE PER DPW REQUIREMENTS.
12) ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION SIGNAGE ARRANGEMENTS, ACCEPTABLE TO THE PORTSMOUTH DEPARTMENT OF PUBLIC WORKS AND NHDOT, SHALL BE EMPLOYED DURING OPERATIONS WITHIN THE PUBLIC RIGHT-OF-WAY.
13) ALL ADA ACCESSIBLE WALKWAYS CANNOT EXCEED 5% RUNNING SLOPE AND 2% CROSS SLOPE, RAMPS CANNOT EXCEED 8.33% RUNNING SLOPE AND 2% CROSS SLOPE, AND HC PARKING STALLS AND ACCESS AISLES CANNOT EXCEED 2% SLOPE IN ANY DIRECTION. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL NOTIFY THIS OFFICE OF ANY DISCREPANCIES.
14) SEE EROSION & SEDIMENT CONTROL PLAN FOR CONSTRUCTION SEQUENCE AND EROSION CONTROL MEASURES.
15) THE SITE WILL REQUIRE A NHDES ALTERATION OF TERRAIN (AOT) PERMIT SINCE THE PROJECT WILL DISTURB MORE THAN 100,000 SF OF TERRAIN. CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS IN THAT PERMIT.
16) THE GENERAL CONTRACTOR IS TO PROVIDE 2" RIGID POLYSTYRENE THERMAL INSULATION WITH A MINIMUM "R" VALUE OF 10 AT LOCATIONS WHERE THERE IS LESS THAN 3' OF COVER OVER STORM DRAINS. SEE DETAIL SHEET FOR TRENCH SECTION.
17) ALL CATCH BASINS SHALL BE FITTED WITH A OIL-WATER-DEBRIS HOODS ON THE OUTLET PIPE.
18) FOR DRAINAGE STRUCTURE DETAILS SEE DETAIL SHEETS.
19) ALL PIPE DATA IS CALCULATED TO CENTER OF STRUCTURE, TYP.
20) CONTRACTOR TO REFER TO THE OPERATION & MAINTENANCE (O&M) MANUAL FOR STORMWATER MANAGEMENT SYSTEMS FOR SITE MAINTENANCE DURING AND AFTER CONSTRUCTION.
21) ALL UNDERGROUND INFILTRATION SYSTEMS TO BE CONSTRUCTED WITH RISERS AND CLEANOUTS. SEE DETAIL SHEETS 14 & 14A FOR MORE INFORMATION.

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7	MISC. REVISIONS	CMT	5/4/22
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REVISIONS

GRADING & DRAINAGE PLAN

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

OWNER OF RECORD:
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STATE OF NEW HAMPSHIRE – CHRISTOPHER M. TWOMEY No.17078 – LICENSED PROFESSIONAL ENGINEER – 5/6/22

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
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DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	6 OF 15

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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LEGEND

○	IRON PIN FOUND	UP	UTILITY POLE
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OHW	OVERHEAD SERVICE WIRES	GV	GAS VALVE
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CB-1	PROP. CATCH BASIN		
DMH-1	PROP. DRAIN MANHOLE		
SMH-1	PROP. SEWER MANHOLE		
	PROP. GATE VALVE		

PROP. PEVERLY HILL ROAD RECONSTRUCTION PROJECT BY THE CITY OF PORTSMOUTH

SEE OFFSITE IMPROVEMENT PLANS FOR SIDEWALK CONNECTION & DETAILS

WEST ROAD

PEVERLY HILL ROAD (PUBLIC - VARIABLE WIDTH)

MAP 252 LOT 2-10
N/F JMK REALTY, LLC
PO BOX 971
PORTSMOUTH, NH 03802
BOOK 3656 PAGE 744

MAP 252 LOT 3
N/F DSM MB II, LLC
875 EAST STREET
TEWKSBURY, MA 08176
BOOK 5583 PAGE 1649

EXISTING MAP 252 LOT 4
12,838 Sq. Ft.
0.295 Ac.±
(TO BE COMBINED WITH LOT 5)

PROPOSED 12,600 SF (GFA) 3-STORY 5-UNIT CONDO COMPLEX-"A" (TOWNHOUSE STYLE) GF=48.50

PROPOSED 15,100 SF (GFA) 3-STORY 6-UNIT CONDO COMPLEX-"B" (TOWNHOUSE STYLE) GF=47.50

PROPOSED 20,100 SF (GFA) 3-STORY 8-UNIT CONDO COMPLEX-"D" (TOWNHOUSE STYLE) GF=46.50

PROPOSED 17,600 SF (GFA) 3-STORY 7-UNIT CONDO COMPLEX-"C" (TOWNHOUSE STYLE) GF=50.50

PROPOSED 15,100 SF (GFA) 3-STORY 6-UNIT CONDO COMPLEX-"E" (TOWNHOUSE STYLE) GF=46.50

MAP 252 LOT 5
EXISTING:
12,437 Sq. Ft.
0.285 Ac.±
MAP 252 LOT 5
PROPOSED:
111,415 Sq.Ft.
2.558 Ac.±

EXISTING MAP 252 LOT 7
223,416 Sq.Ft.
5.129 Ac.±
(PORTION TO BE COMBINED WITH LOT 5)

MAP 252 LOT 7
EXISTING:
223,416 Sq.Ft.
5.129 Ac.±
MAP 252 LOT 7
PROPOSED:
137,276 Sq.Ft.
3.151 Ac.±

PROPOSED LOT LINE

EXISTING FIVE GUYS

EXISTING RITE AID

20' WIDE DRAINAGE EASEMENT BOOK 4403 PAGE 2337 (D-32207)

20' WIDE SEWER EASEMENT BOOK 4403 PAGE 2337

ACCESS EASEMENT

PSNH EASEMENT

HIGHWAY EASEMENT TO THE CITY OF PORTSMOUTH

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SEWER STRUCTURES

EX.SMH
RIM=45.74
INV.IN=38.54(PROP.)
INV.=38.54(EXIST.)

SMH-1
RIM=46.20
INV.IN=38.92
INV.OUT=38.82

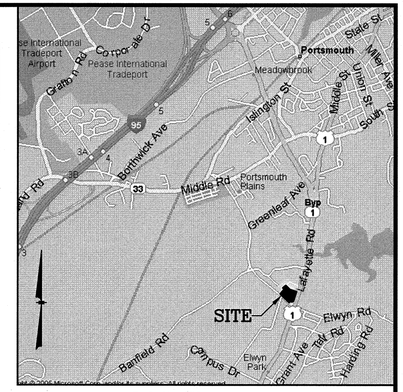
SMH-2
RIM=47.85
INV.IN=39.63
INV.OUT=39.53

SMH-3
RIM=48.10
INV.IN=42.50
INV.OUT=42.40

SMH-4
RIM=47.95
INV.OUT=42.85

SEWER PIPE SCHEDULE

FROM: STRUCTURE NUMBER	PIPE SIZE (INCHES)	TYPE OF PIPE	APPROX. PIPE LENGTH (FEET)	SLOPE OF PIPE (FT./FT.)	TO: STRUCTURE NUMBER
SMH-1	8	PVC	55	0.005	EX.SMH
SMH-2	8	PVC	122	0.005	SMH-1
SMH-3	8	PVC	152	0.018	SMH-2
SMH-4	8	PVC	71	0.005	SMH-3



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) ALL SANITARY SEWER PIPE SHALL BE PVC (SDR-35), UNLESS OTHERWISE NOTED.
2) ALL WATER PIPE SHALL BE COPPER OR CLDIP, AS NOTED ON PLAN.
3) ANY UTILITY FIELD ADJUSTMENTS SHALL BE APPROVED BY THE LOCAL AUTHORITIES AND THE DEVELOPER PRIOR TO INSTALLATION.
4) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES.
5) ALL CONSTRUCTION SHALL CONFORM TO MUNICIPAL DPW AND ALL APPLICABLE STATE AND FEDERAL STANDARDS.
6) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIG-SAFE (1-888-344-7233) PRIOR TO COMMENCING ANY EXCAVATION.
7) ALL ELECTRIC, TELEPHONE AND CABLE TV LINES ARE TO BE UNDERGROUND AND INSTALLED IN CONFORMANCE WITH APPLICABLE UTILITY CO. SPECIFICATIONS. ALL BUILDINGS SHALL BE CONNECTED TO THE CITY FIRE ALARM SYSTEM.
8) THE CONTRACTOR IS TO COORDINATE WITH THE MUNICIPAL DPW REGARDING WATER PRESSURE AT SERVICE. THE CONTRACTOR IS TO VERIFY IF PRESSURE REDUCING VALVE IS REQUIRED.
9) ANY UTILITIES TO BE TAKEN OUT OF SERVICE SHALL BE DISCONNECTED AS DIRECTED BY UTILITY COMPANY AND LOCAL DPW.
10) SEE GRADING & DRAINAGE PLAN FOR DRAINAGE INSTALLATION DETAILS.
11) A MINIMUM OF 18" OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN BOTTOM OF WATER MAIN AND TOP OF SEWER, AND AT ALL DRAINAGE PIPE CROSSINGS. A MINIMUM OF 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ALL WATER AND SEWER MAINS (INCLUDING SERVICE CONNECTIONS), AND ALL DRAIN PIPE AND SEWER MAINS.
12) THIS SITE WILL REQUIRE A NHDES WASTEWATER CONNECTION PERMIT. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS IN THAT PERMIT. THE CONTRACTOR SHALL ALSO COMPLY WITH THE TECHNICAL SPECIFICATIONS AS PREPARED BY THIS OFFICE, WHICH ARE PART OF THIS PERMIT.
13) ALL WATER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS.
14) ALL SEWER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTSMOUTH AND NHDES STANDARDS AND SPECIFICATIONS.
15) ALL UTILITY CONSTRUCTION SHALL BE WITNESSED BY A THIRD PARTY INSPECTOR TO BE DETERMINED BY THE CITY OF PORTSMOUTH PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
16) MAINTENANCE, REPAIRS & INSPECTIONS OF EXISTING SEWER MAIN TO BE COMPLETED IN ACCORDANCE WITH CITY SEWER AGREEMENT & DPW CORRESPONDENCE DATED MAY 2021.
17) EACH COMPLEX TO BE EQUIPPED WITH A SEPARATE WATER SERVICE, SHUT OFF VALVE & DEDICATED METER ROOM.
18) REFER TO THE ACCESS EASEMENT FOR WATER SERVICES FOR LEAK DETECTION & ACCESS TO ONSITE WATER SERVICES & METERS.

PUBLIC UTILITIES

UTILITIES	AVAILABLE
(SEWER) CITY OF PORTSMOUTH PUBLIC WORKS DEPT., PETER RICE 603-427-1530	YES
(WATER) CITY OF PORTSMOUTH PUBLIC WORKS DEPT., PETER RICE 603-427-1530	YES
(GAS) NORTHERN UTILITIES, DAVID BEAULIEU 603-294-5144	YES
(ELECTRIC) PUBLIC SERVICE OF NEW HAMPSHIRE (PSNH), MARK COLLINS 603-332-4227 x5325	YES
(TELEPHONE) FAIRPOINT COMMUNICATIONS, DAVID KESTNER 603-743-1114	YES

NO.	DESCRIPTION	BY	DATE
7	MISC. REVISIONS	CMT	5/4/22
6	MISC. REVISIONS	CMT	4/15/22
5	REVISE TRANSFORMER/ELECTRICAL LAYOUT PER EVERSOURCE	CMT	4/5/21
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

UTILITY PLAN

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

STATE OF NEW HAMPSHIRE
CHRISTOPHER M. TYMULA
No. 17078
LICENSED PROFESSIONAL ENGINEER
5/6/22

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM

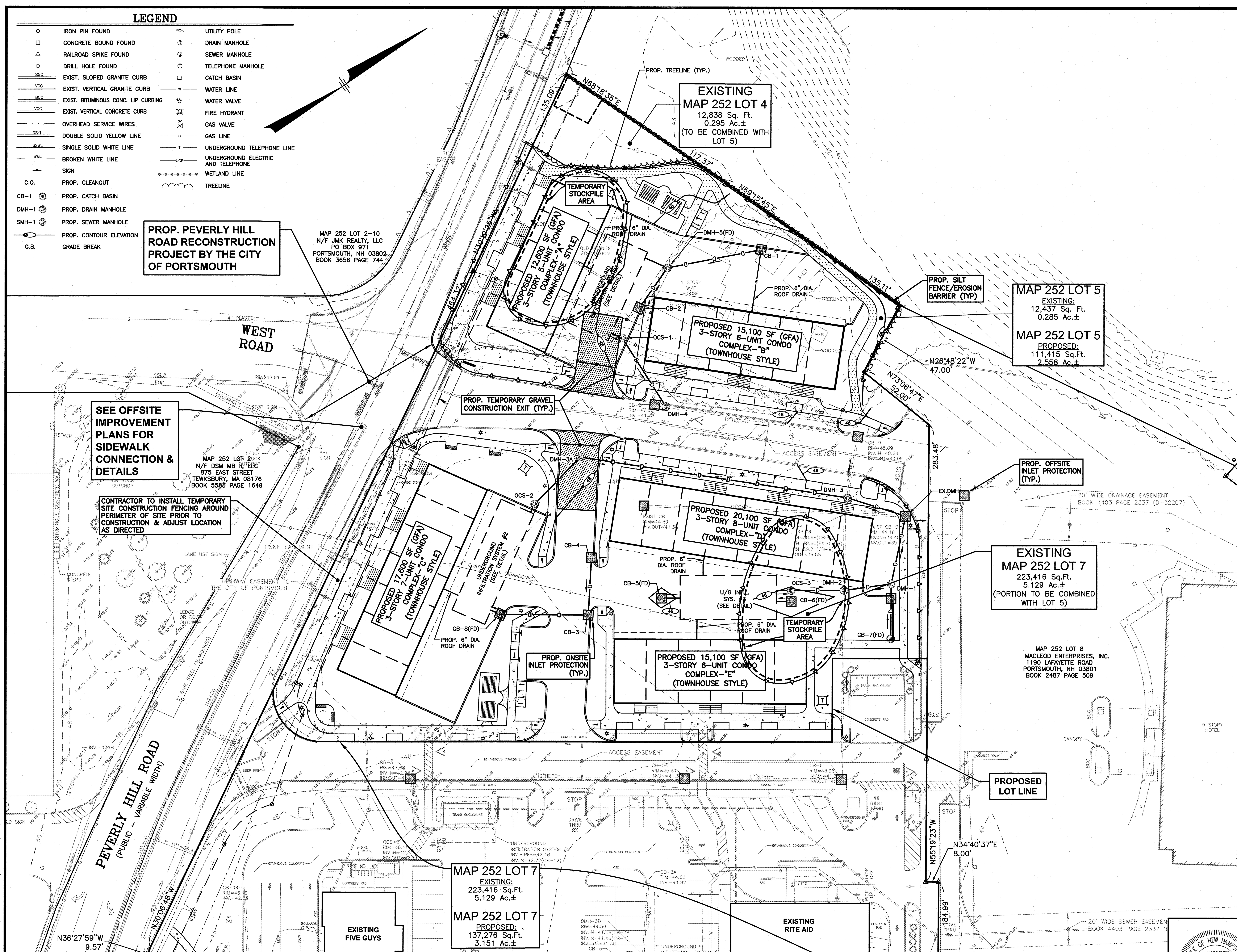
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

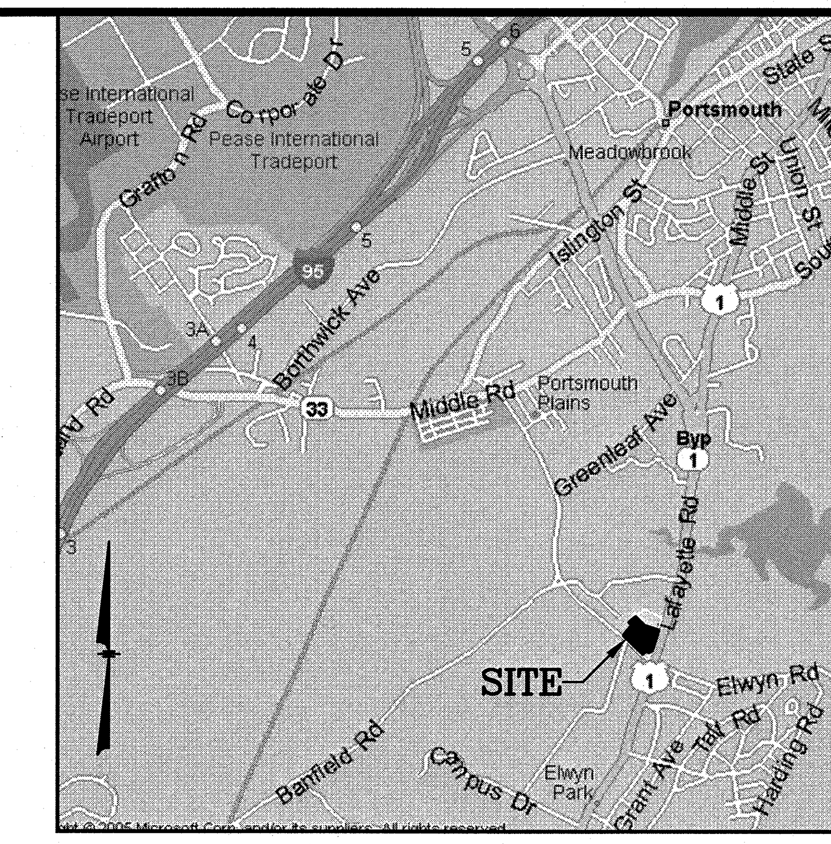
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DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	7 OF 15

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LEGEND

- IRON PIN FOUND
- CONCRETE BOUND FOUND
- RAILROAD SPIKE FOUND
- DRILL HOLE FOUND
- SGC — EXIST. SLOPED GRANITE CURB
- VGC — EXIST. VERTICAL GRANITE CURB
- BCC — EXIST. BITUMINOUS CONC. LIP CURBING
- VCC — EXIST. VERTICAL CONCRETE CURB
- OVERHEAD SERVICE WIRES
- DSYL — DOUBLE SOLID YELLOW LINE
- SSWL — SINGLE SOLID WHITE LINE
- BWL — BROKEN WHITE LINE
- SIGN
- C.O. — PROP. CLEANOUT
- CB-1 — PROP. CATCH BASIN
- DMH-1 — PROP. DRAIN MANHOLE
- SMH-1 — PROP. SEWER MANHOLE
- PROP. CONTOUR ELEVATION
- G.B. — GRADE BREAK
- UTILITY POLE
- DRAIN MANHOLE
- SEWER MANHOLE
- TELEPHONE MANHOLE
- CATCH BASIN
- W — WATER LINE
- WATER VALVE
- FIRE HYDRANT
- GAS VALVE
- G — GAS LINE
- T — UNDERGROUND TELEPHONE LINE
- UGE — UNDERGROUND ELECTRIC AND TELEPHONE
- WETLAND LINE
- TREELINE





LOCATION MAP
(NOT TO SCALE)

NOTES:

1) SEE DETAIL SHEETS FOR EROSION CONTROL NOTES, CONSTRUCTION SEQUENCE, AND DETAILS.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NO.	DESCRIPTION	BY	DATE
7	MISC. REVISIONS	CMT	5/4/22
6	MISC. REVISIONS	CMT	4/15/22
5	MISC. REVISIONS	CMT	4/5/21
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

EROSION & SEDIMENT CONTROL PLAN

ASSESSORS MAP 252 - LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

STATE OF NEW HAMPSHIRE CHRISTOPHER M. TYMULA No.17078 LICENSED PROFESSIONAL ENGINEER 5/4/22

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=30'	DATE: JANUARY 20, 2020		DRAWING NO. 4582 SP.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	8 OF 15

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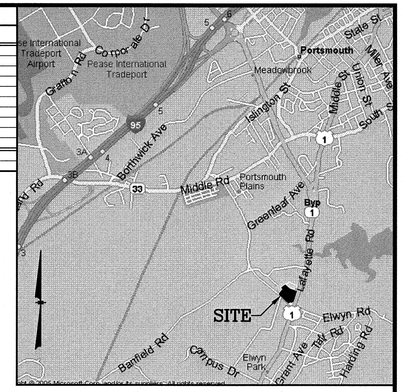
LEGEND

○	IRON PIN FOUND	UP	UTILITY POLE
□	CONCRETE BOUND FOUND	D	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	S	SEWER MANHOLE
⊙	DRILL HOLE FOUND	T	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	C	CATCH BASIN
VGC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING		WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB		FIRE HYDRANT
OHW	OVERHEAD SERVICE WIRES	GV	GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	T	UNDERGROUND TELEPHONE LINE
BWL	BROKEN WHITE LINE	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
	SIGN		WETLAND LINE
			TREELINE

TREE PLANTING SCHEDULE

PLANT	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES					
ABS	4	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	2"– 2 1/2" CAL.	
AG	7	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6' – 7' HT.	MULTI–STEM
AF	11	ACER FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	3" CAL.	
GT	8	GLEDITSIA TRIACANTHOS 'HALKA'	HALKA HONEYLOCUST	2"– 2 1/2" CAL.	
GE	13	GYMNOCLADUS DIOICUS 'ESPRESSO'	ESPRESSO KENTUCKY COFFEETREE	2"– 2 1/2" CAL.	
NS	11	NYSSA SYLVATICA	BLACK GUM TREE	2 1/2"– 3" CAL.	
AR	5	ACER RUBRUM	RED MAPLE	3" CAL.	
QR	5	QUERCUS RUBRA	RED OAK	2"– 2 1/2" CAL.	
AC	3	AMELANCHIER CANADENSIS	SERVICEBERRY	6' – 7' HT.	MULTI–STEM
SHRUBS					
IG	20	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	#7 CONTAINER	MIN. SIZE 30" HT.

1 XX — PLANT DESIGNATION / PLANT QUANTITY



LOCATION MAP

(NOT TO SCALE)

PROP. PEVERLY HILL ROAD RECONSTRUCTION PROJECT BY THE CITY OF PORTSMOUTH

SITE PLAN PLANTING REQUIREMENTS:

THE PURPOSE OF PLANTING REQUIREMENTS IS TO ENHANCE THE LONG–TERM SURVIVAL PROSPECTS OF THE PLANT MATERIALS USED IN SITE LANDSCAPING. THESE STANDARDS ARE ALSO MEANT TO ENSURE THAT THE BENEFITS OF SITE LANDSCAPING (BUFFERING, AESTHETIC ENHANCEMENT, EROSION CONTROL, ETC.) ARE REALIZED AS EARLY AFTER PLANTING AS POSSIBLE. THE FOLLOWING STANDARDS FOR PLANTING REQUIREMENTS SHALL APPLY.

(A) PLANTING HOLES FOR TREES SHALL BE AT LEAST TWO TO THREE TIMES THE WIDTH OF THE ROOT BALL AND SHALL BE NO DEEPER THAN THE ROOT BALL.

(B) SHRUBS SHALL HAVE A PLANTING HOLE THREE TO FIVE TIMES THE WIDTH OF THE ROOT BALL AND SHALL NOT BE DEEPER THAN THE ROOT BALL ITSELF.

(C) EVERGREEN TREES SHALL BE FULLY BRANCHED WITH A MINIMUM 5–FOOT HEIGHT AT THE TIME OF PLANTING.

(D) DECIDUOUS TREES SHALL BE FULLY BRANCHED AND A MINIMUM SIZE OF 2 INCHES IN CALIPER AT THE TIME OF PLANTING.

(E) SHRUBS SHALL BE FULLY BRANCHED WITH A MINIMUM OF 2½ FEET HEIGHT AT PLANTING.

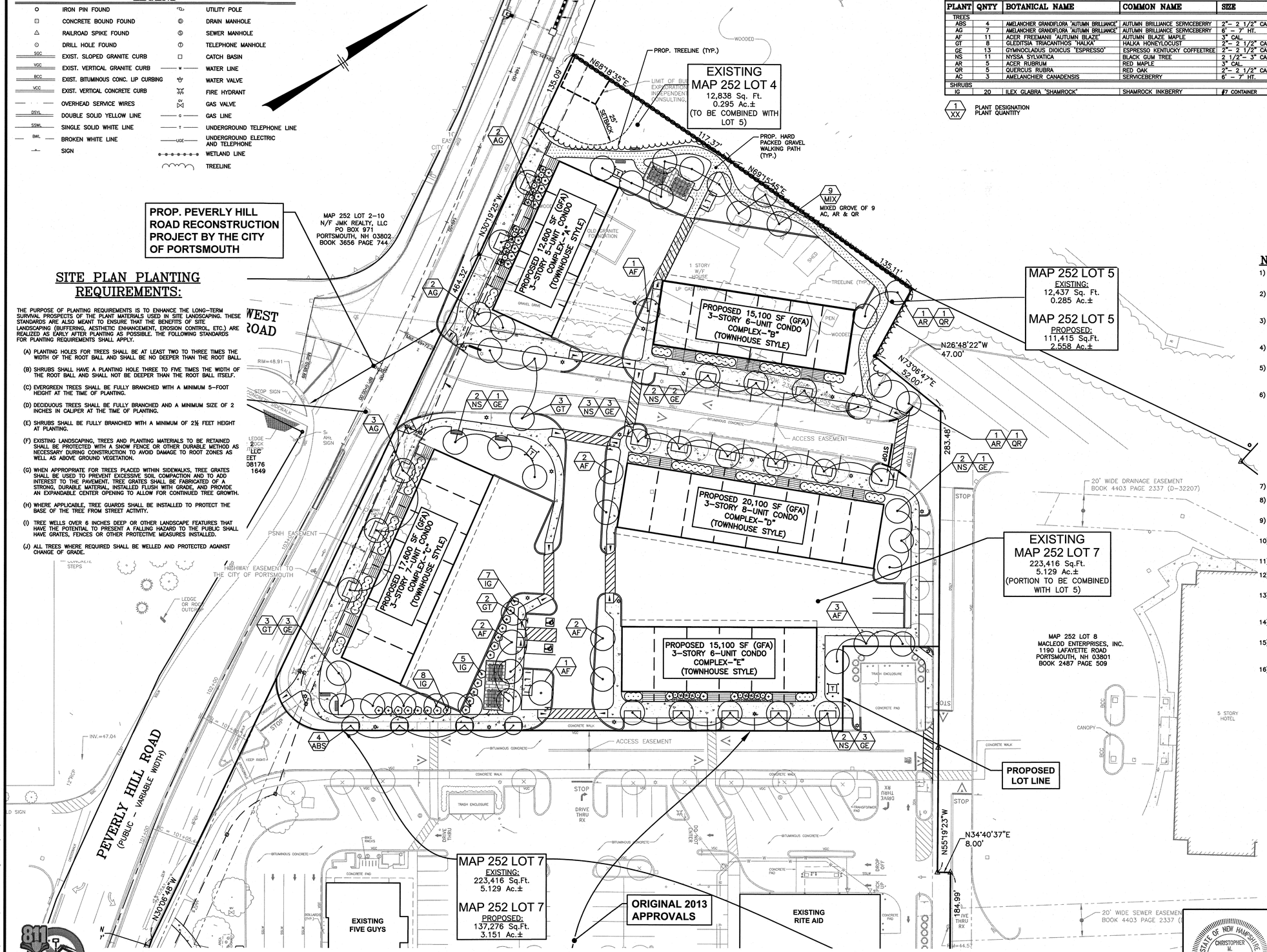
(F) EXISTING LANDSCAPING, TREES AND PLANTING MATERIALS TO BE RETAINED SHALL BE PROTECTED WITH A SNOW FENCE OR OTHER DURABLE METHOD AS NECESSARY DURING CONSTRUCTION TO AVOID DAMAGE TO ROOT ZONES AS WELL AS ABOVE GROUND VEGETATION.

(G) WHEN APPROPRIATE FOR TREES PLACED WITHIN SIDEWALKS, TREE GRATES SHALL BE USED TO PREVENT EXCESSIVE SOIL COMPACTION AND TO ADD INTEREST TO THE PAVEMENT. TREE GRATES SHALL BE FABRICATED OF A STRONG, DURABLE MATERIAL, INSTALLED FLUSH WITH GRADE, AND PROVIDE AN EXPANDABLE CENTER OPENING TO ALLOW FOR CONTINUED TREE GROWTH.

(H) WHERE APPLICABLE, TREE GUARDS SHALL BE INSTALLED TO PROTECT THE BASE OF THE TREE FROM STREET ACTIVITY.

(I) TREE WELLS OVER 6 INCHES DEEP OR OTHER LANDSCAPE FEATURES THAT HAVE THE POTENTIAL TO PRESENT A FALLING HAZARD TO THE PUBLIC SHALL HAVE GRATES, FENCES OR OTHER PROTECTIVE MEASURES INSTALLED.

(J) ALL TREES WHERE REQUIRED SHALL BE WELLED AND PROTECTED AGAINST CHANGE OF GRADE.



NOTES:

1) ALL PLANT STOCK SHALL CONFORM TO ANSI Z260.1 – NURSERY STOCK, LATEST EDITION (AMERICAN ASSOCIATION OF NURSERYMEN, INC.).

2) 4" AGED PINEBARK MULCH AND A WEED BARRIER (TY–PAR FABRIC OR APPROVED EQUAL) SHALL BE APPLIED TO ALL SHRUB AND GROUNDCOVER BEDS. INSTALL WEED BARRIER AS PER MANUFACTURERS RECOMMENDATIONS.

3) PLANT PIT BACKFILL SHALL BE MIXED AT A RATE OF 7 PARTS OF TOPSOIL TO 2 PART OF DEHYDRATED COW MANURE. SLOW RELEASE FERTILIZER SHALL BE APPLIED AS PER MANUFACTURERS RECOMMENDATIONS. USE EXISTING ON–SITE TOPSOIL AS PART OF BACKFILL WHEN AVAILABLE.

4) ALL LANDSCAPED AREAS NOT PLANTED WITH TREES, SHRUBS OR GROUNDCOVER SHALL BE RESTORED WITH SEED OR SOD AS INDICATED ON PLANS.

5) ALL SOD, SEED, SHRUB AND TREE AREAS SHALL RECEIVE 6" PH CORRECTED TOPSOIL. AFTER TOPSOIL IS SPREAD EVENLY OVER ENTIRE AREA, ALL CLODS, LUMPS, STONES AND OTHER DELETERIOUS MATERIAL SHALL BE RAKED UP AND REMOVED.

6) APPLICATION OF GRASS SEED, FERTILIZERS AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED BELOW:

LIMESTONE: 100 LBS./1,000 SQUARE FEET.
FERTILIZER: 500 LBS/ACRE OF 10–20–20 OR 1000 LBS/ACRE OF 5–10–10.
MULCH: HAY MULCH APPROXIMATELY 3 TONS/ACRE

SEED MIX (SLOPES LESS THAN 4:1)	LBS/ACRE
CREEPING RED FESCUE	20
TALL FESCUE	15
PERENNIAL RYEGRASS	5
REDTOP	2
	42

7) FOR TEMPORARY EROSION CONTROL NOTES, SEE EROSION & SEDIMENT CONTROL PLAN.

8) NEWLY GRADED AREAS REQUIRING SLOPE PROTECTION OUTSIDE OF NORMAL SEEDING SEASON SHALL RECEIVE STRAW MULCH AT THE APPROXIMATE RATE OF NO MORE THAN 3 TONS PER ACRE.

9) ANY CHANGES IN PLANT LOCATIONS OR TYPES SHALL BE APPROVED BY THE DEVELOPER AND CITY PRIOR TO INSTALLATION.

10) PLANTINGS SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER WRITTEN ACCEPTANCE BY THE DEVELOPER.

11) EXPOSED SOILS SHALL BE SEEDED OR HAY MULCHED WITHIN 72 HOURS OF FINAL GRADING.

12) ALL WORK SHALL BE COORDINATED WITH APPLICABLE EPA NPDES/SWPPP PERMIT WORK AS REQUIRED.

13) THE CONTRACTOR SHALL INSTALL AN IRRIGATION SYSTEM TO PROVIDE COMPLETE COVERAGE OF ALL SEED, SOD AREAS AND SHRUB BEDS. THE SYSTEM SHALL INCLUDE A TIMER WITH RAIN SENSOR AND SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES.

14) THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.

15) ALL REQUIRED PLANT MATERIALS SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.

16) THE PROPERTY OWNER SHALL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

NO.	DESCRIPTION	BY	DATE
7	MISC. REVISIONS	CMT	5/4/22
6	MISC. REVISIONS	CMT	4/15/22
5	MISC. REVISIONS	CMT	4/5/21
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

LANDSCAPE PLAN

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

STATE OF NEW HAMPSHIRE — CHRISTOPHER M. TYRRELL No.17078 — LICENSED PROFESSIONAL ENGINEER — 5/4/22

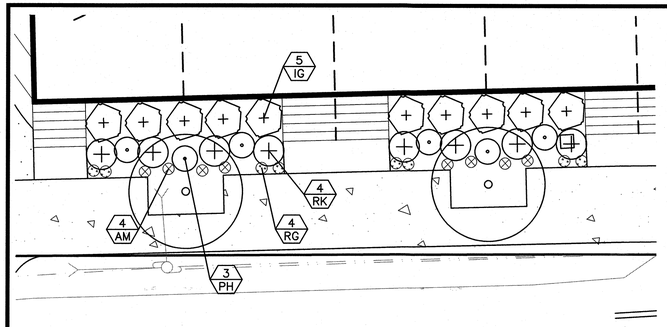
GPI — Engineering, Design, Planning, Construction Management
603.893.0720 GPINET.COM

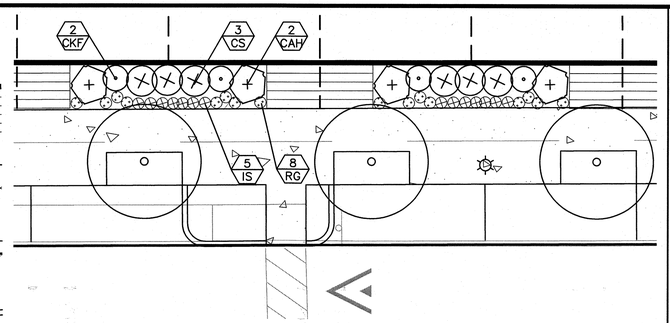
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=30'	DATE: JANUARY 20, 2020		DRAWING NO. 4582 SP.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	9 OF 15

811 DigSafe MA-ME-NH-RI-VT

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COMPLEX 'A & C' TYPICAL PLANTING SCHEDULE

PLANT	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SHRUBS					
IG	5	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	#7 CONTAINER	MIN. SIZE 30" HT.
RK	4	ROSA 'KNOCK OUT'	KNOCK OUT ROSE	#7 CONTAINER	MIN. SIZE 30" HT.
PERENNIALS & GRASSES					
AM	4	ALCHEMILLA MOLLIS	LADY'S MANTLE	#1 CONTAINER	
RG	4	RUDBECKIA 'GOLDSTURM'	GOLDSTURM BLACK-EYED SUSAN	#1 CONTAINER	
PH	3	PENNISETUM ALOPERCUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	#1 CONTAINER	

1 / XX — PLANT QUANTITY / PLANT DESIGNATION

COMPLEX 'A & C' TYPICAL PLANTING

SCALE: 1"=10'

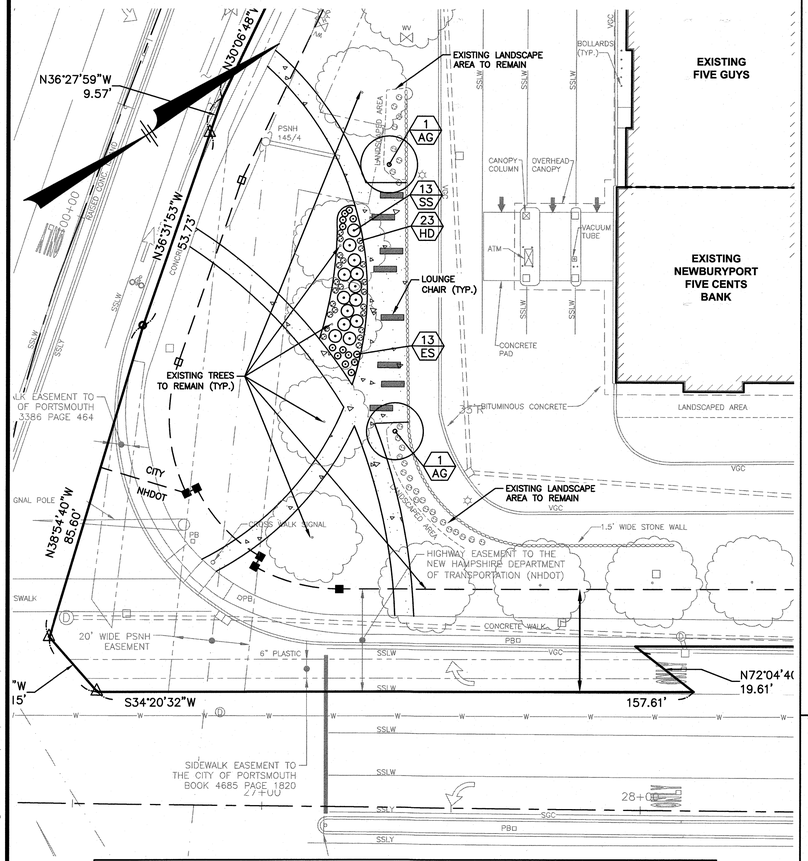
COMPLEX 'B, D & E' TYPICAL PLANTING SCHEDULE

PLANT	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SHRUBS					
CS	3	CORNUS SERICEA 'ALLEMAN'S COMPACTA'	COMPACT REDTWIG DOGWOOD	#3 CONTAINER	MIN. SIZE 30" HT.
CAH	2	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	#3 CONTAINER	MIN. SIZE 30" HT.
PERENNIALS & GRASSES					
CKF	2	CALAMAGROSTIS A. 'KARL FOERSTER'	K. F. FEATHER REED GRASS	#1 CONTAINER	
RG	8	RUDBECKIA 'GOLDSTURM'	GOLDSTURM BLACK-EYED SUSAN	#1 CONTAINER	
IS	7	IRIS SIBERICA 'CAESAR'S BROTHER'	CAESAR'S BROTHER SIBERIAN IRIS	#1 CONTAINER	

1 / XX — PLANT QUANTITY / PLANT DESIGNATION

COMPLEX 'B, D & E' TYPICAL PLANTING

SCALE: 1"=10'



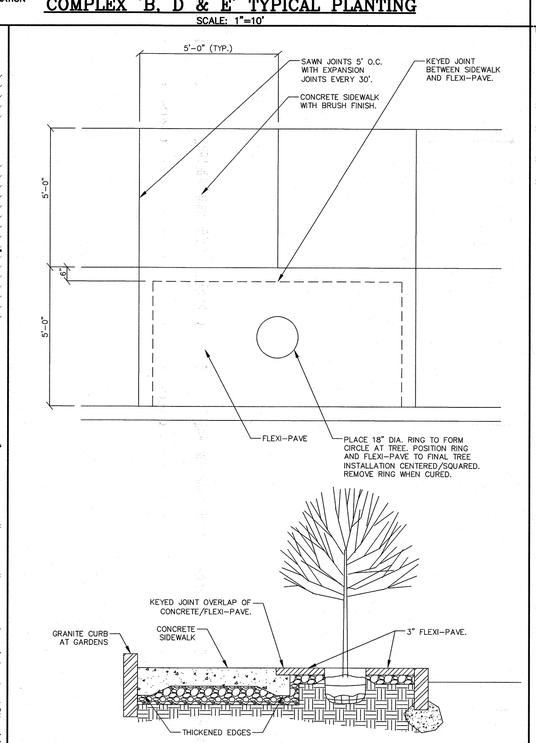
PLANTING SCHEDULE

PLANT	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES					
AG	2	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6' – 7' HT.	MULTI-STEM
PERENNIALS & GRASSES					
HD	23	HEMEROCALLIS 'STELLA DE ORO'	DWARF YELLOW DAYLILY	#1 CONTAINER	
ES	13	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	#1 CONTAINER	
SS	13	SCHIZACHYRIUM S. 'PRAIRIE BLUES'	LITTLE BLUESTEM PRAIRIE BLUES	#1 CONTAINER	

1 / XX — PLANT QUANTITY / PLANT DESIGNATION

PEVERLY HILL RD & LAFAYETTE RD LANDSCAPE DETAIL

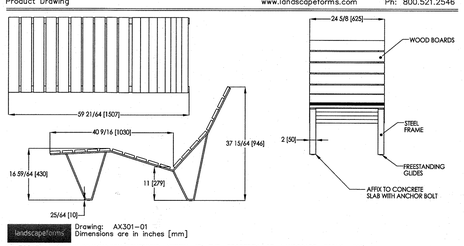
1"=20'



FLEXI-PAVE DETAIL

NOT TO SCALE

Harpo chaise lounge, freestanding/surface mount — Date: 6/6/2018
Product Drawing — www.landscapeforms.com — Ph: 800.521.2546

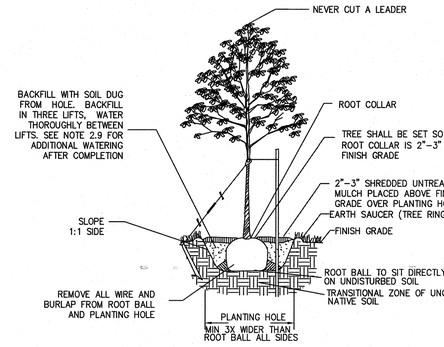


landscapeforms — Drawing: AX301-01 — Dimensions are in inches [mm]

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LOUNGE DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

N.T.S.

PART 1 – GENERAL:

1.1 THE BASE OF THE CITY OF PORTSMOUTH TREE PLANTING REQUIREMENTS IS THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPLANTING, ANSI A300 PART 6 LAYOUT TERMS AND BASIC STANDARDS AS SET FORTH BY INDUSTRY BUT IT IS NOT THE "END ALL" FOR THE CITY OF PORTSMOUTH. THE FOLLOWING ARE THE CITY OF PORTSMOUTH, NH TREE PLANTING REQUIREMENTS THAT ARE IN ADDITION TO OR THAT GO BEYOND THE ANSI A300 PART 6.

PART 2 – EXECUTION:

2.1 ALL PLANTING HOLES SHALL BE DUG BY HAND – NO MACHINES. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE NEW PLANTING PITS, PLANTING BEDS WITH GRANITE CURBING, AND PLANTING SITES WITH SILVA CELLS ARE BEING CREATED. IF A MACHINE IS USED TO DIG IN ANY OF THESE SITUATIONS AND PLANTING DEPTH NEEDS TO BE RAISED THE MATERIAL IN THE BOTTOM OF THE PLANTING HOLE MUST BE FIRMED WITH MACHINE TO PREVENT SINKING OF THE ROOT BALL.

2.2 ALL WIRE AND BURLAP SHALL BE REMOVED FROM THE ROOT BALL AND PLANTING HOLE.

2.3 THE ROOT BALL OF THE TREE SHALL BE WORKED SO THAT THE ROOT COLLAR OF THE TREE IS VISIBLE AND NO GIRDLING ROOTS ARE PRESENT.

2.4 THE ROOT COLLAR OF THE TREE SHALL BE 2"–3" ABOVE GRADE OF PLANTING HOLE FOR FINISHING DEPTH.

2.5 ALL PLANTINGS SHALL BE BACKFILLED WITH SOIL FROM THE SITE AND AMENDED NO MORE THAN 20% WITH ORGANIC COMPOST. THE ONLY EXCEPTIONS ARE NEW CONSTRUCTION WHERE ENGINEERED SOIL IS BEING USED IN CONJUNCTION WITH SILVA CELLS AND WHERE NEW PLANTING BEDS ARE BEING CREATED.

2.6 ALL PLANTINGS SHALL BE BACKFILLED IN THREE LIFTS AND ALL LIFTS SHALL BE WATERED SO THE PLANTING WILL BE SET AND FREE OF AIR POCKETS – NO EXCEPTIONS.

2.7 AN EARTH BERM SHALL BE PLACED AROUND THE PERIMETER OF THE PLANTING HOLE EXCEPT WHERE CURBED PLANTING BEDS OR PITS ARE BEING USED.

2.8 2"–3" OF MULCH SHALL BE PLACED OVER THE PLANTING AREA.

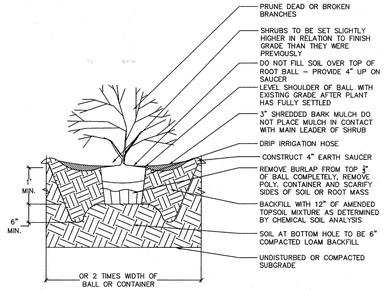
2.9 AT THE TIME OF PLANTING IS COMPLETE THE PLANTING SHALL RECEIVE ADDITIONAL WATER TO ENSURE COMPLETE HYDRATION OF THE ROOTS, BACKFILL MATERIAL AND MULCH LAYER.

2.10 STAKES AND GUYS SHALL BE USED WHERE APPROPRIATE AND/OR NECESSARY. GUY MATERIAL SHALL BE NON-DAMAGING TO THE TREE.

2.11 ALL PLANTING STOCK SHALL BE SPECIMEN QUALITY, FREE OF DEFECTS, AND DISEASE OR INJURY. THE CITY OF PORTSMOUTH, NH RESERVES THE RIGHT TO REFUSE/REJECT ANY PLANT MATERIAL OR PLANTING ACTION THAT FAILS TO MEET THE STANDARDS SET FORTH IN THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPORTATION AND/OR THE CITY OF PORTSMOUTH, NH PLANTING REQUIREMENTS.

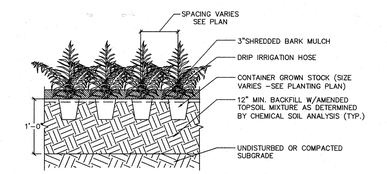
STANDARD DETAIL OF TREE PLANTING

NOT TO SCALE



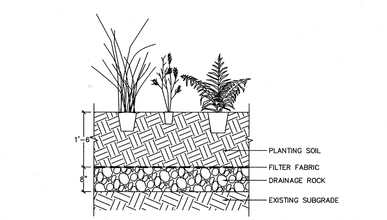
TYPICAL SHRUB PLANTING

NOT TO SCALE



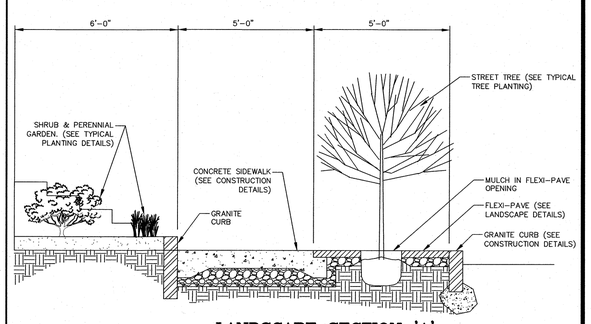
TYPICAL SHRUB PLANTING

NOT TO SCALE



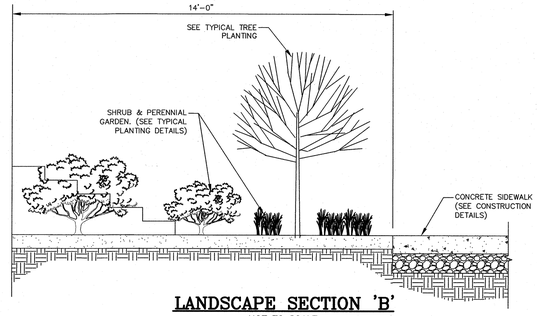
TYPICAL RAIN GARDEN PLANTING

NOT TO SCALE



LANDSCAPE SECTION 'A'

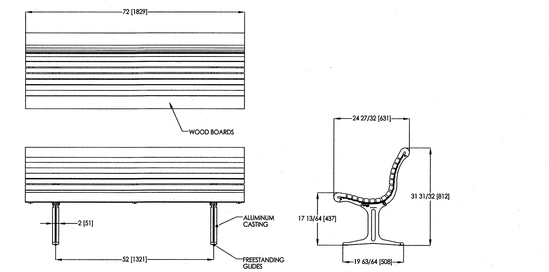
NOT TO SCALE



LANDSCAPE SECTION 'B'

NOT TO SCALE

Gretchen™ Backed Bench 72in, Freestanding / Surface Mount, Wood — Date: 6/29/2011
Product Drawing — www.landscapeforms.com — Ph: 800.521.2546



landscapeforms — Drawing: GR133–01 — Dimensions are in inches [mm]

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TYPICAL BENCH DETAIL

NOT TO SCALE

NO.	DESCRIPTION	BY	DATE
6	MISC. REVISIONS	CMT	5/4/22
5	MISC. REVISIONS	CMT	4/15/22
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

LANDSCAPE DETAILS

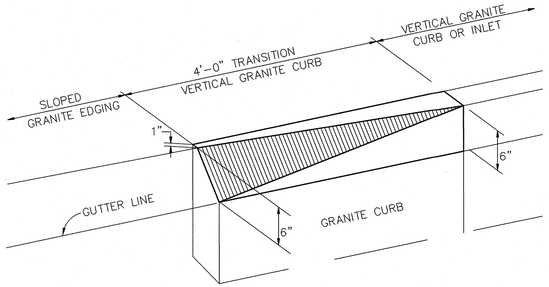
ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GPI — Engineering, Design, Planning, Construction Management
603.893.0720 — GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

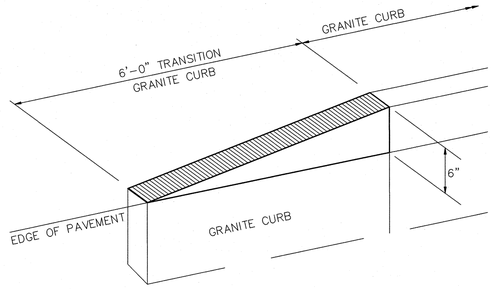
STATE OF NEW HAMPSHIRE — CHRISTOPHER M. TYNULA No.17078 LICENSED PROFESSIONAL ENGINEER — 5/6/22

SCALE: AS SHOWN	DATE: JANUARY 20, 2020		DRAWING NO. 4582 SP.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	10 OF 15

F:\Projects\CAD\458219\4582 SP.dwg LA DET 5/06/22 1:56pm sbonfanti

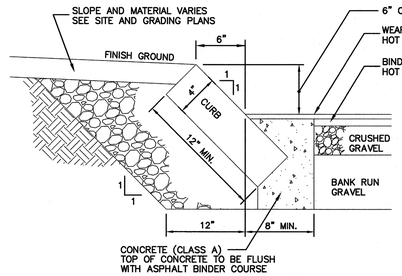


CURB TRANSITION DETAIL
NOT TO SCALE



CURB TRANSITION DETAIL
NOT TO SCALE

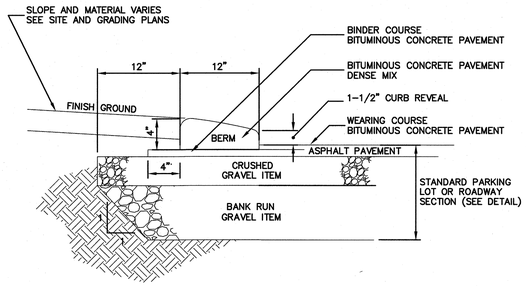
TO BE USED FOR TRANSITION FROM GRANITE CURB TO EDGE OF PAVEMENT



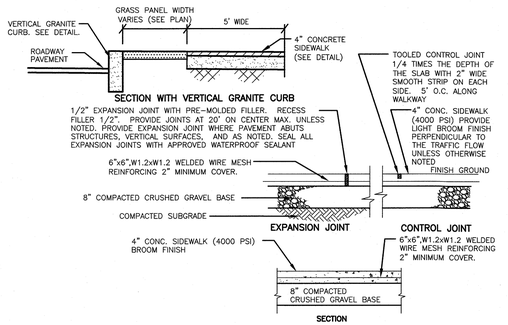
RADIUS FOR STONES WITH SQUARE JOINTS	RADIUS FOR STONES WITH RADIAL JOINTS	MAXIMUM LENGTH
16'-28'	SEE CURB SECTIONS ON RADII DETAIL	1'-6"
29'-41'		2'
42'-55'		3'
56'-68'		4'
69'-82'		5'
83'-96'		6'
97'-110'		7'
OVER 110'		8'

1. MAXIMUM LENGTH OF STRAIGHT CURB STONES – 18"
2. MINIMUM LENGTH OF STRAIGHT CURB STONES – 8'
3. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES SEE CHART
4. ADJOINING STONES OF STRAIGHT CURB LAID ON CURVES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
5. SEE PAVEMENT DETAIL FOR SPECIFICATIONS ON PAVEMENT AND GRAVEL.

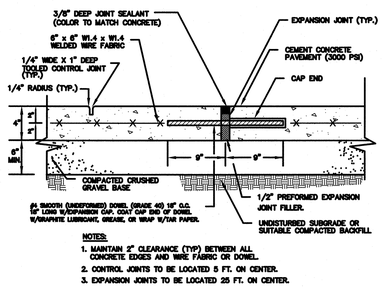
SLOPED GRANITE CURB ON-SITE
NOT TO SCALE



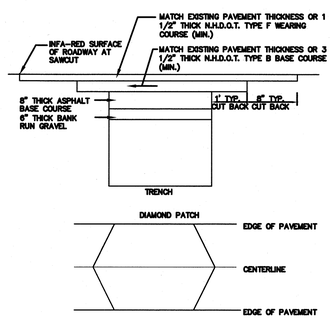
BITUMINOUS CONCRETE BERM DETAIL
NOT TO SCALE



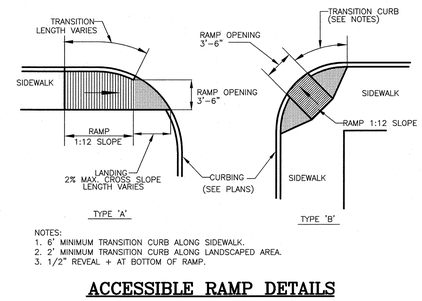
CEMENT CONCRETE SIDEWALK DETAIL IN ROW
NOT TO SCALE



CEMENT CONCRETE SIDEWALK
NOT TO SCALE

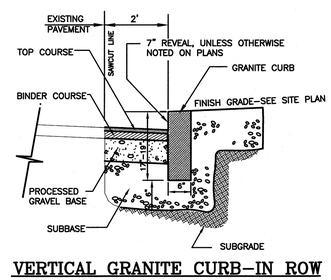


TYPICAL PAVEMENT REPAIR DETAIL IN ROW
NOT TO SCALE

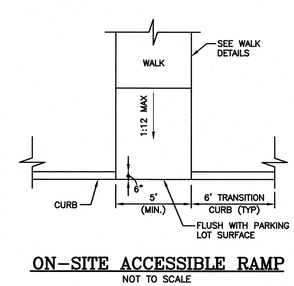


NOTES:
1. 6' MINIMUM TRANSITION CURB ALONG SIDEWALK.
2. 2' MINIMUM TRANSITION CURB ALONG LANDSCAPED AREA.
3. 1/2" REVEAL + AT BOTTOM OF RAMP.

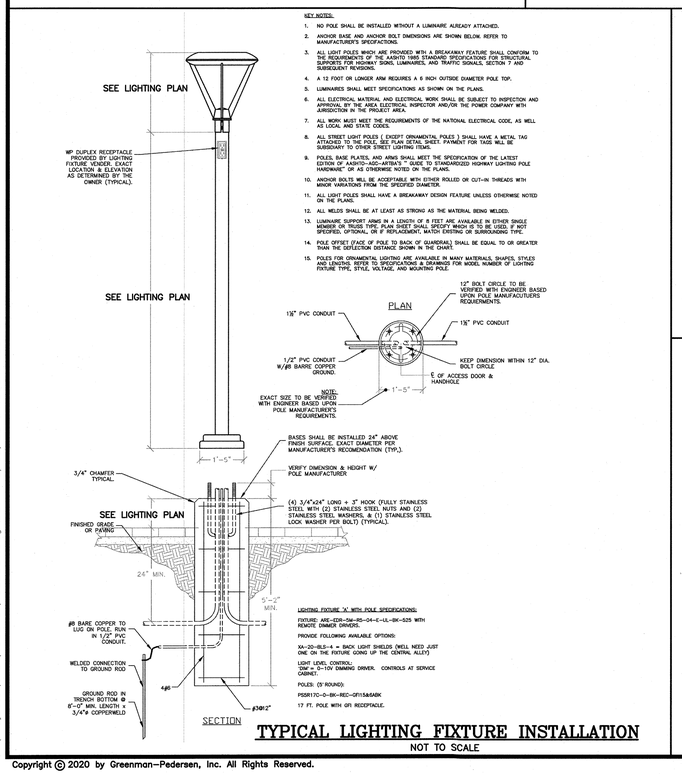
ACCESSIBLE RAMP DETAILS AT SIDEWALK IN R.O.W.
NOT TO SCALE



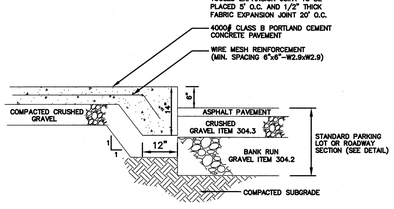
VERTICAL GRANITE CURB-IN ROW
NOT TO SCALE



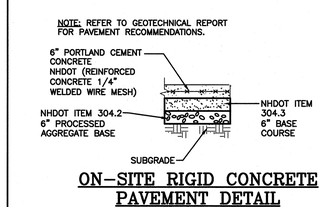
ON-SITE ACCESSIBLE RAMP
NOT TO SCALE



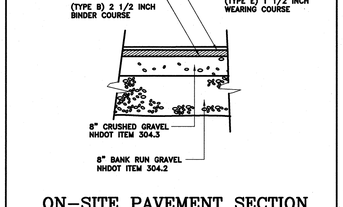
TYPICAL LIGHTING FIXTURE INSTALLATION
NOT TO SCALE



MONOLITHIC CURB/SIDEWALK
NOT TO SCALE



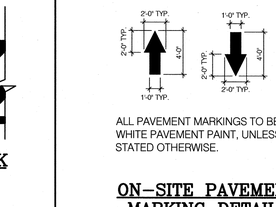
ON-SITE RIGID CONCRETE PAVEMENT DETAIL
NOT TO SCALE



ON-SITE PAVEMENT SECTION FOR PARKING AREAS
NOT TO SCALE

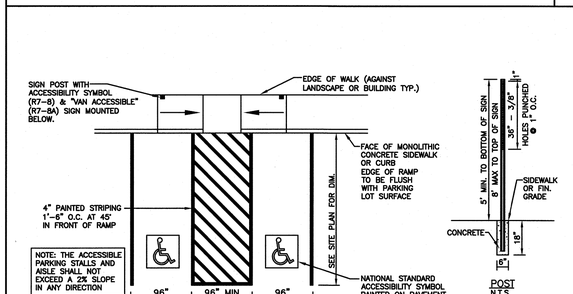


ON-SITE CROSSWALK STRIPING DETAIL
NOT TO SCALE



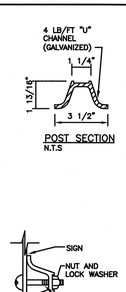
ALL PAVEMENT MARKINGS TO BE WHITE PAVEMENT PAINT, UNLESS STATED OTHERWISE.

ON-SITE PAVEMENT MARKING DETAILS
NOT TO SCALE



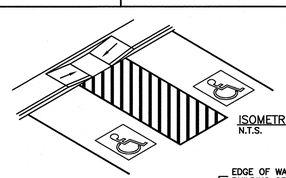
ACCESSIBLE PARKING STALLS
NOT TO SCALE

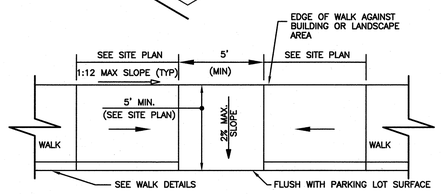
POST
N.T.S.



POST SECTION
N.T.S

MOUNTING
N.T.S.





ACCESSIBLE PARKING RAMP
NOT TO SCALE

NO.	DESCRIPTION	BY	DATE
3	UPDATE LOT INFO	CMT	5/4/22
2	UPDATE ADDRESS	CMT	4/15/22
1	REMOVE SPEED TABLE DETAIL, ADD ADA SPACE DET.	CMT	3/9/20

REVISIONS

DETAIL SHEET

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

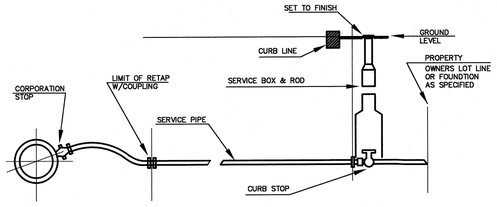
CHRISTOPHER M. TYMULA No.17078 STATE OF NEW HAMPSHIRE PROFESSIONAL ENGINEER LICENSED
5/4/22

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

NOT TO SCALE	DATE: JANUARY 20, 2020		DRAWING NO. 4582DET.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	11 OF 15

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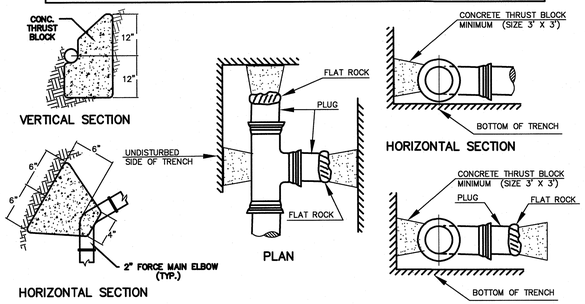
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TYPICAL WATER SERVICE CONNECTION

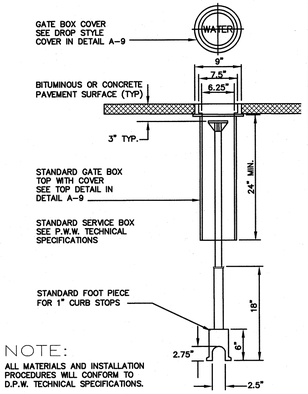
NOT TO SCALE

NOTE: ALL WATER SUPPLY MATERIALS TO MEET OR EXCEED LOCAL WATER WORKS SPECIFICATIONS.



THRUST BLOCK DETAILS

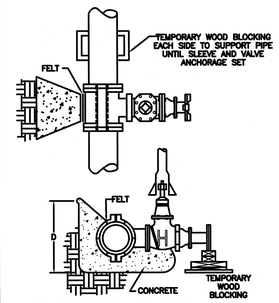
NOT TO SCALE



NOTE:
ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.

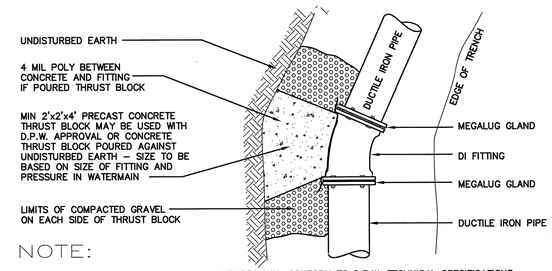
SERVICE BOX INSTALLATION IN PAVEMENT

NOT TO SCALE



TAPPING VALVE AND SLEEVE DETAIL

NOT TO SCALE



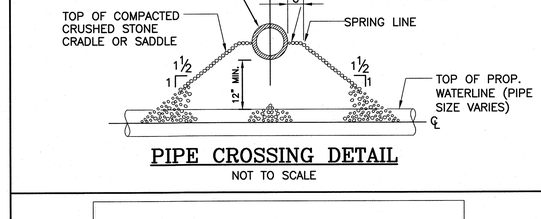
NOTE:

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.

TABLE OF DIMENSIONS										
PIPE SIZE	90° BEND		45° BEND		22½° BEND		11¼° BEND		TEE&PLUG	
	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.
6"	33"	21"	18"	21"	12"	18"	9"	12"	21"	24"
8"	45"	27"	24"	27"	18"	21"	12"	15"	27"	33"
10"	60"	36"	36"	36"	24"	30"	18"	21"	36"	42"
12"	66"	39"	36"	42"	24"	30"	18"	21"	39"	45"
14"	72"	45"	42"	48"	27"	36"	18"	27"	45"	54"

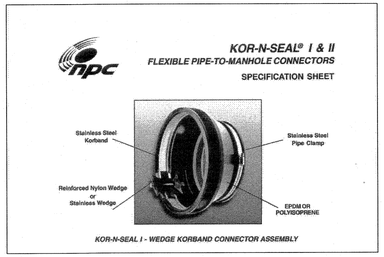
THRUST BLOCKING BEHIND FITTINGS INSTALLATION

NOT TO SCALE



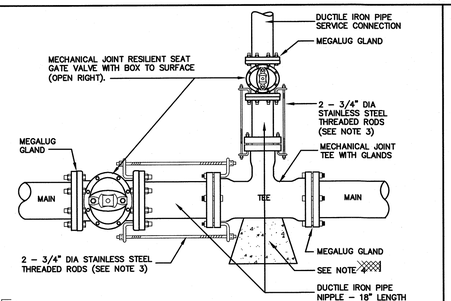
PIPE CROSSING DETAIL

NOT TO SCALE



KOR-N-SEAL DETAIL

NOT TO SCALE

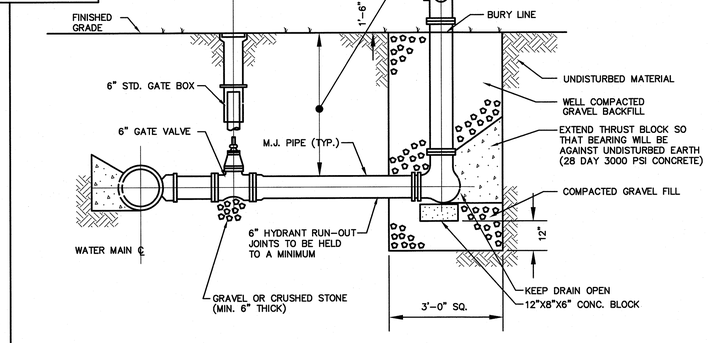


NOTE:

1) ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2) ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3) ALL THREADED RODS AND NUTS MUST BE STAINLESS STEEL.
4) MIN 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH D.P.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.

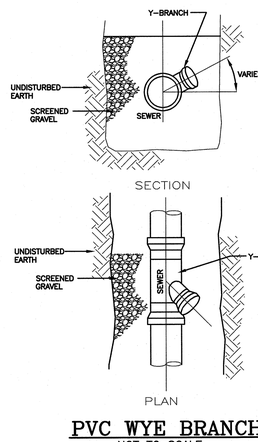
TEE INSTALLATION

NOT TO SCALE



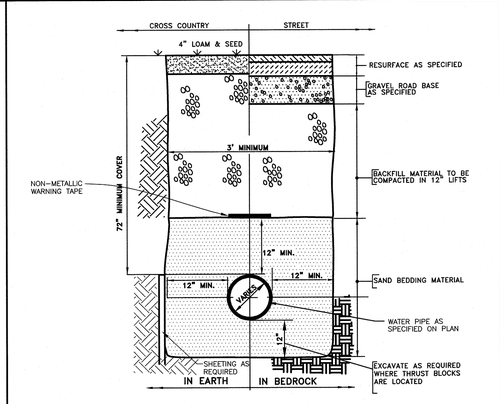
HYDRANT WITH GATE BOX DETAIL

NOT TO SCALE



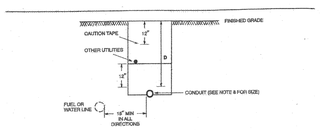
PVC WYE BRANCH

NOT TO SCALE



TYPICAL TRENCH SECTION FOR WATER SERVICE

NOT TO SCALE



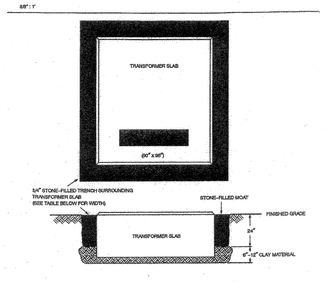
D = 36 inches for primary voltage cable
36 inches for secondary cables

Notes

1. All non-metallic conduit and fittings shall be electrical grade, Schedule 40 PVC, and shall conform to the applicable sections of NEMA TC2-1990 and be UL Listed. *Only gray-colored conduit will be accepted.* Any PVC conduit not having the proper NEMA and UL markings will not be accepted. All steel conduits shall conform to ASTM A120 and be rigid galvanized steel. All PVC conduit joints must be cemented. Steel fittings shall be sealed with compound.
2. All 90 degree sweeps will be made using rigid galvanized steel with a minimum radius of 36 inches for primary cables and 24 inches for secondary cables. All steel sweeps within 18 inches of surface shall be properly grounded.
3. A 18-foot horizontal section of rigid galvanized steel conduit will be required at each sweep, unless in the opinion of the PSNH designer, this sweep–PVC joint is not subject to failure during cable pulling.
4. The conduit should cross paved areas at approximately 90 degrees.
5. Backfill may be made with excavated material or compressible, unless material is deemed unsuitable by PSNH. Backfill shall be free of frozen lumps, rocks, debris, and rubbish. Organic material shall not be used as backfill. Backfill shall be thoroughly compacted in 6–inch layers.
6. A suitable pulling string, capable of 200 pounds of pull, must be installed in the conduit before PSNH is notified to install cable. The string should be blown into the conduit after the run is assembled to avoid bonding the string to the conduit.
7. Routing of the conduit and inspection prior to backfill will be provided by PSNH. Installation of the conduit will be done by the contractor. The PSNH representative must be notified two business days prior to backfilling the trench. In the event that a cable cannot be pulled through the completed conduit system due to a construction error, it will be the contractor's responsibility to locate and repair the involved conduit. The contractor will be responsible for all resulting expenses.
8. Primary 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.
9. All conduit installations must conform to the current edition of the National Electric Safety Code, state and local codes and ordinances, and where applicable, the National Electric Code.

ORIGINAL ISSUE	PRIMARY CABLE INSTALLATION		
APPROVED	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 50.102

8



Notes
To calculate dimension of the stone–filled moat:
1. Convert gallons of oil in the transformer to cubic feet: Divide gallons by 7.48 to get cubic feet of oil.
2. Divide this number by 0.35 to determine the volume of stone–filled moat required.
3. From the table below select the width necessary to contain the oil.

Volume in Cubic Feet of 24" Deep Stone–Filled Moat

Width of Moat (Feet)	Slab Dimensions in Inches		
	68 x 50	80 x 60	90 x 96
1	47	65	70
2	109	147	156
3	188	244	288

ORIGINAL ISSUE	OIL DETENTION FOR PAD–MOUNTED TRANSFORMERS		
APPROVED	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 58.311

11

R3 191

REQUIREMENTS FOR PADMOUNTED TRANSFORMER SLAB DETAILS

Preparation of Slab

1. Remove all organic topsoil under foundation and compact native material. Backfill, if necessary, with clean well compacted gravel.
2. Concrete shall have a minimum compressive strength of 3,500 PSI at 28 days.
3. All reinforcing bars shall meet A.S.T.M. #615 grade 60 specifications.
4. All reinforcing shall be tied as one unit.
5. Minimum concrete cover over reinforcing steel shall be 3 inches.
6. Top of slab shall be no more than 6 inches above ground level.
7. Chamfer all exposed concrete edges 1 inch.
8. Top of slab shall have a wood float finish.

Notes

1. Elbows should be cut 4 inches above bottom of concrete pad, surrounded with sand, and have a protective cap bushing on them.
2. A 1 inch PVC conduit sleeve shall be incorporated into concrete slab to allow ground grid leads to enter pit openings as shown on details.
3. Installation of Padmount Equipment Grounding Grid is outlined in Construction Standard DTR 66.223 (page 16 of this publication)

Public Service of New Hampshire | CONSTRUCTION REQUIREMENT | ISSUE | DATE: Original 2/1/83; Rev. Under

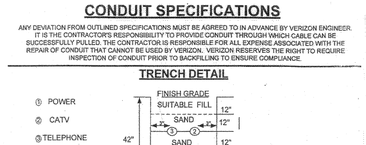
13

ENGINEER: Michael Mullen
TELEPHONE: 603-645-2716

CONDUIT SPECIFICATIONS

ANY DEVIATION FROM OUTLINED SPECIFICATIONS MUST BE AGREED TO IN ADVANCE BY VERIZON ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE CONDUIT THROUGH WHICH CABLE CAN BE SUCCESSFULLY PULLED. THE CONTRACTOR IS RESPONSIBLE FOR ALL EXPENSE ASSOCIATED WITH THE REPAIR OF CONDUIT THAT CANNOT BE USED BY VERIZON. VERIZON RESERVES THE RIGHT TO REQUIRE INSPECTION OF CONDUIT PRIOR TO BACKFILLING TO ENSURE COMPLIANCE.

TRENCH DETAIL



A – SAND BACK FILL SHALL CONSIST OF FINE GRANULAR MATERIAL 100% SHALL PASS THROUGH A 1/4" SIEVE
B – EXCEPTION: NATURALLY OCCURRING SMOOTH ROUND PEBBLES NO GREATER THAN 3/8" IN DIAMETER ARE PERMITTED AS LONG AS THEIR TOTAL VOLUME PER CUBIC FOOT OF SAND DOES NOT EXCEED 1%
C – THE SAND SHALL BE COMPLETELY FREE OF FROZEN LUMPS, ROCKS, STONES, DEBRIS OR RUBBISH

ALL CONDUIT SHALL BE GRAY NESC SCHEDULE 40 PVC OR EQUIVALENT (REQUIRES TEL ENGINEER APPROVAL)
4" MINIMUM FOR TELEPHONE CABLE
7" MINIMUM FOR SERVICE WIRES
UNDER NO CIRCUMSTANCES WILL VERIZON SHARE A CONDUIT WITH ANOTHER UTILITY
RUN TEL. CONDUIT TO POLE, DO NOT ATTACH TO POWER STANDOFF BRACKETS

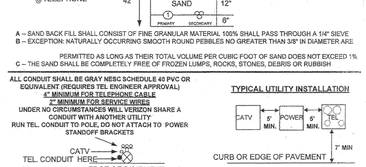
CATV
TEL. CONDUIT HERE
24"
EDGE OF PAVEMENT
TRAFFIC FLOW

TYPICAL UTILITY INSTALLATION

ALL CONDUITS ARE TO BE SWEPT UP HARD TOGETHER A MINIMUM OF 9' ABOVE FINISH GRADE AT ALL PEDESTAL LOCATIONS & MUST FIT INTO 1'1" X 2'1" SQUARE AREA TO ALLOW CLOSURE TO FIT OVER ENDS.

ALL CONDUITS MUST BE LABELED "TEL" WITH DIRECTION OF RUN INDICATED SO AS TO POSITIVELY IDENTIFY THEM FOR OUR PERSONNEL AND FURNISHED WITH A PULL STRING CAPABLE OF A 200 TO 300 POUND PULL.

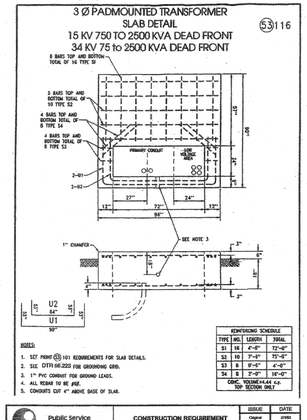
A #6 AWG COPPER GROUND WIRE SHALL BE CONNECTED TO THE POWER CO. TRANSFORMER / SECTOR CABINET GRID AT EACH TRANSFORMER / SECTOR CABINET LOCATION AND RUN FROM THERE TO THE TEL CONDUIT LEAVING A 3 FOOT COIL SECURED TO THE CONDUIT TO PREVENT ITS LOSS



ALL BENDS ARE TO BE 36" RADIUS SWEEPS (NO PLUMBERS BENDS)
'ELL' SWEEPS REQUIRED ON ALL RUNS IN EXCESS OF 225'

Public Service of New Hampshire | CONSTRUCTION REQUIREMENT | ISSUE | DATE: Original 2/1/83; Rev. Under

19



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19

NO.	DESCRIPTION	BY	DATE
2	UPDATE LOT INFO	CMT	5/4/22
1	UPDATE ADDRESS	CMT	4/15/22

REVISIONS

DETAIL SHEET

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

STATE OF NEW HAMPSHIRE — CHRISTOPHER M. TYMULA No.17078 — LICENSED PROFESSIONAL ENGINEER — 5/6/22

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

NOT TO SCALE	DATE: JANUARY 20, 2020		DRAWING NO. 4582DET.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	12 OF 15

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NOTES

1. MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 4 INCHES.
2. PIPE AND JOINT MATERIALS

A. VITRIFIED CLAY PIPE
 1. PIPE AND FITTINGS SHALL BE EXTRA STRENGTH CLAY PIPE CONFORMING TO THE REQUIREMENTS OF ASTM C-700.
 2. JOINTS SHALL BE MADE WITH OIL RESISTANT GASKETS IN ACCORDANCE WITH ASTM C-425 TYPE III MANUFACTURERS INSTRUCTIONS FOR INSTALLATION SHALL BE FOLLOWED.

B. ASBESTOS-CEMENT-NON-PRESSURE SEWER PIPE
 1. PIPE AND FITTINGS SHALL CONFORM TO ASTM TENTATIVE SPECIFICATIONS C644 TYPE II.
 2. JOINTS SHALL BE OF THE SLEEVE-COUPLING TYPE CONFORMING TO ASTM SPECIFICATIONS C644 TYPE II. COMPRESSION RINGS SHALL BE OF OIL RESISTANT RUBBER TYPE OR ELASTOMERIC MATERIAL AND SHALL CONFORM TO ASTM SPECIFICATION D1869. MANUFACTURERS INSTRUCTIONS SHALL BE FOLLOWED FOR INSTALLATIONS.

C. CAST IRON PIPE FITTINGS AND JOINTS
 1. CAST IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE:
  A21.1 THICKNESS DESIGN OF CAST IRON PIPE
  A21.4 CEMENT MORTAR LINING FOR CAST IRON PIPE AND FITTINGS
  A21.6 CAST IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS FOR WATER OR OTHER LIQUIDS.
  A21.8 CAST IRON PIPE CENTRIFUGALLY CAST IN SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.
  A21.10 CAST IRON FITTINGS, 2 INCHES THROUGH 48 INCHES FOR WATER AND OTHER LIQUIDS.
 2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH ON TYPE JOINTS AND GASKETS SHALL CONFORM TO:
  A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE AND FITTINGS.

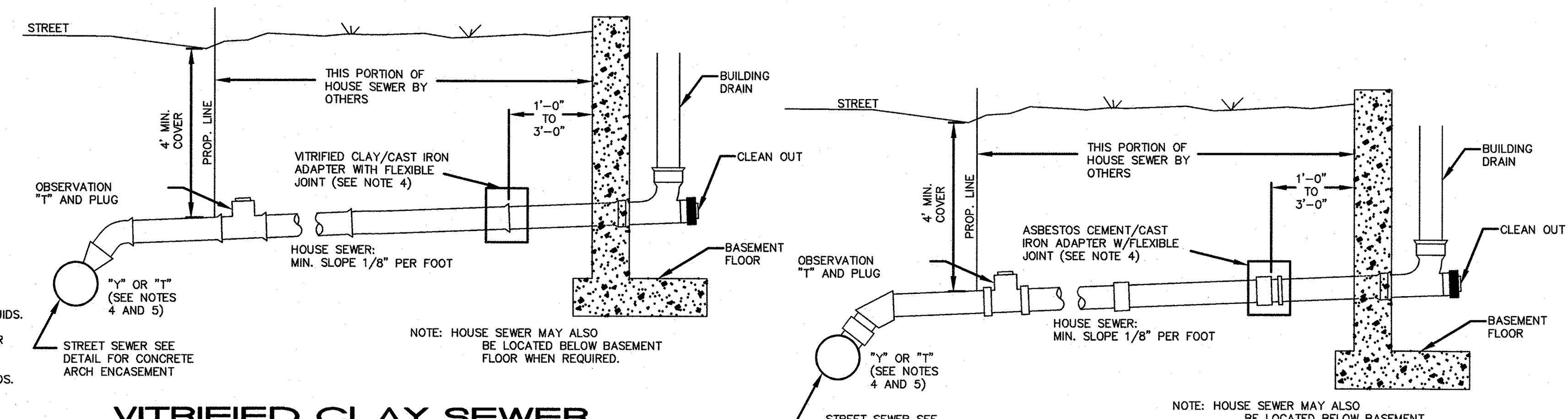
D. DUCTILE IRON PIPE, FITTINGS AND JOINTS
 1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
  A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 DUCTILE IRON CASTINGS
  A21.51 DUCTILE IRON PIPE CENTRIFUGALLY CAST IN METAL MOLDS OR SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.
 2. JOINTS SHALL BE AS SPECIFIED IN C2 ABOVE, CAST IRON PIPE JOINTS.

3. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
4. JOINTS SHALL BE BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATERTIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER "Y" OR AT THE FOUNDATION WALL, APPROPRIATE ADAPTERS SHALL BE USED.
5. "T" AND "Y" WHERE A "T" OR "Y" IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE IN THE SEWER, FOLLOWING MANUFACTURERS INSTRUCTIONS (USING A BOLTED, CLAMPED OR EPOXY CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH (OR OTHER SUCH MATERIAL) AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED, AS* SHOWN IN THE DETAIL, UP TO AND INCLUDING 15" DIAMETER.
6. PIPE 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 RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

 THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 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 THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS (PRIOR TO BACKFILLING):
 A. AN OBSERVATION "T" SHALL BE INSTALLED AS SHOWN. WHEN READY TESTING , AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE "T". AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
 B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS. IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

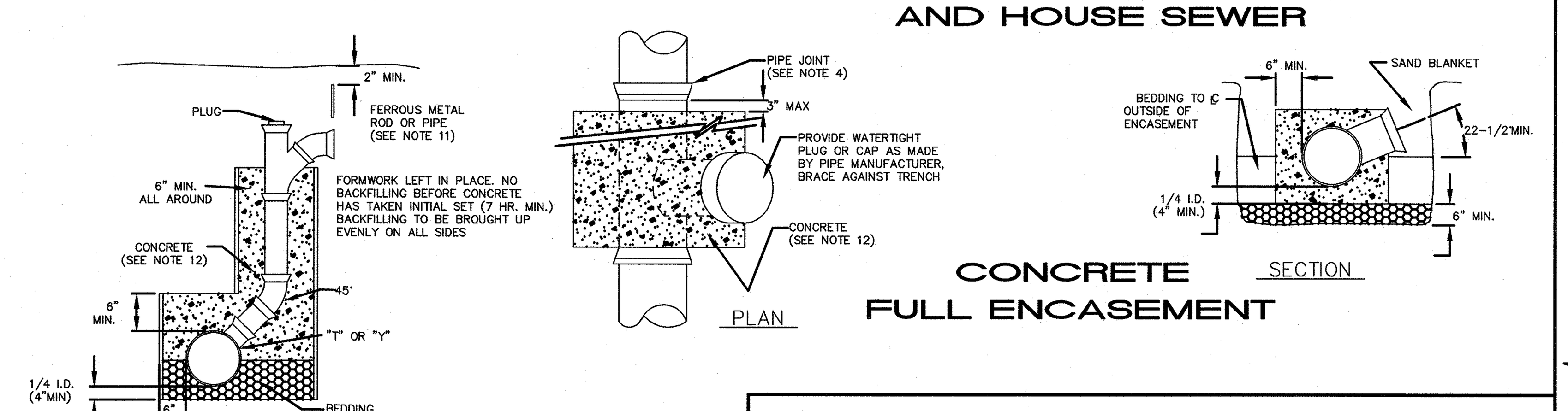
 * DOES NOT APPLY TO INSTALLATIONS WHERE "T's" AND "Y's" ARE USED

 C. FLUORESCENT DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER. IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST MANHOLE DOWNSTREAM. LEAKAGE OBSERVED IN ANY OF THE ABOVE, ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP, IF NECESSARY, AND RELAID SO AS TO ASSURE WATERTIGHTNESS.
8. ILLEGAL CONNECTION NOTHING BUT SANITARY WASTE FLOW FROM THE HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.
9. HOUSE WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS THE SEWER SERVICE, BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE HOUSE SEWER AS SHOWN.
10. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.
 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 TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE (1-1/2 TO 1/2 INCH) SHALL BE USED.
11. LOCATION THE LOCATION OF THE "T" OR "Y" SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE "T" OR "Y", AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.
12. CONCRETE CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE N.H. DEPT. OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
 CEMENT: 6.0 BAGS/C.Y. WATER: 5.75 GALS./BAG CEMENT
 AGGREGATE: 1-1/2 INCH MAX.
13. CHIMNEYS IF VERTICAL DROP INTO THE SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION.



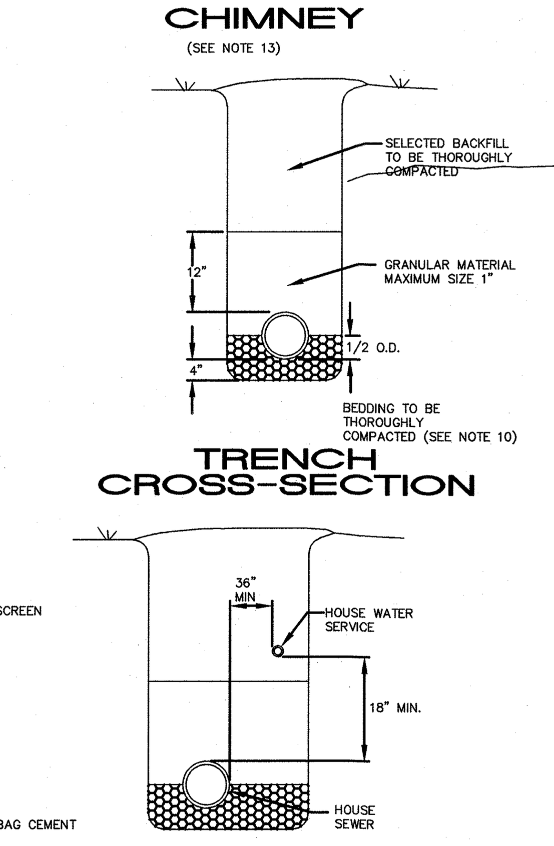
VITRIFIED CLAY SEWER AND HOUSE SEWER

ASBESTOS CEMENT SEWER AND HOUSE SEWER



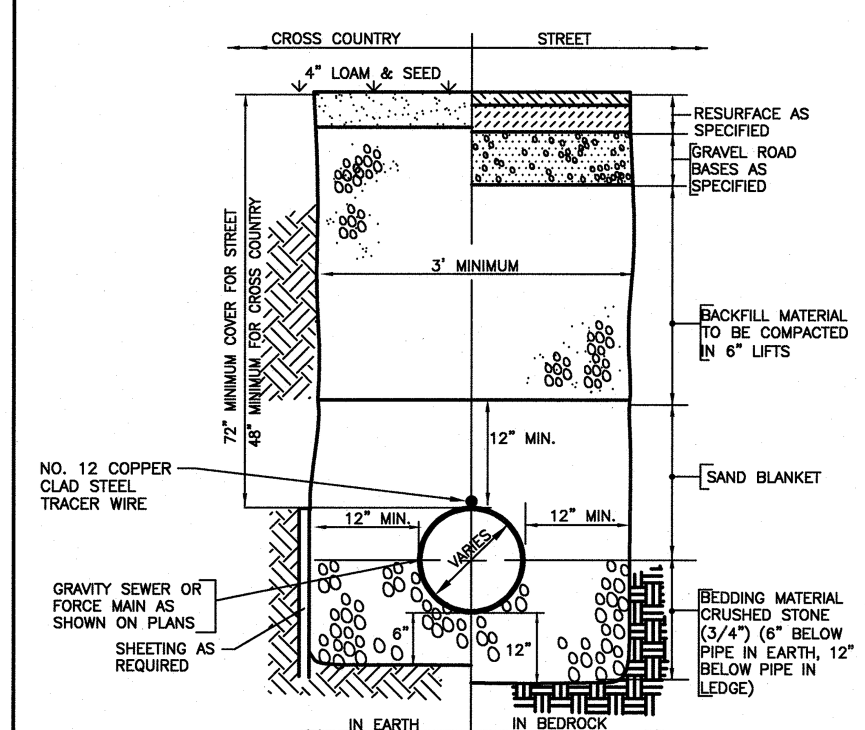
CHIMNEY
(SEE NOTE 13)

CONCRETE FULL ENCASEMENT



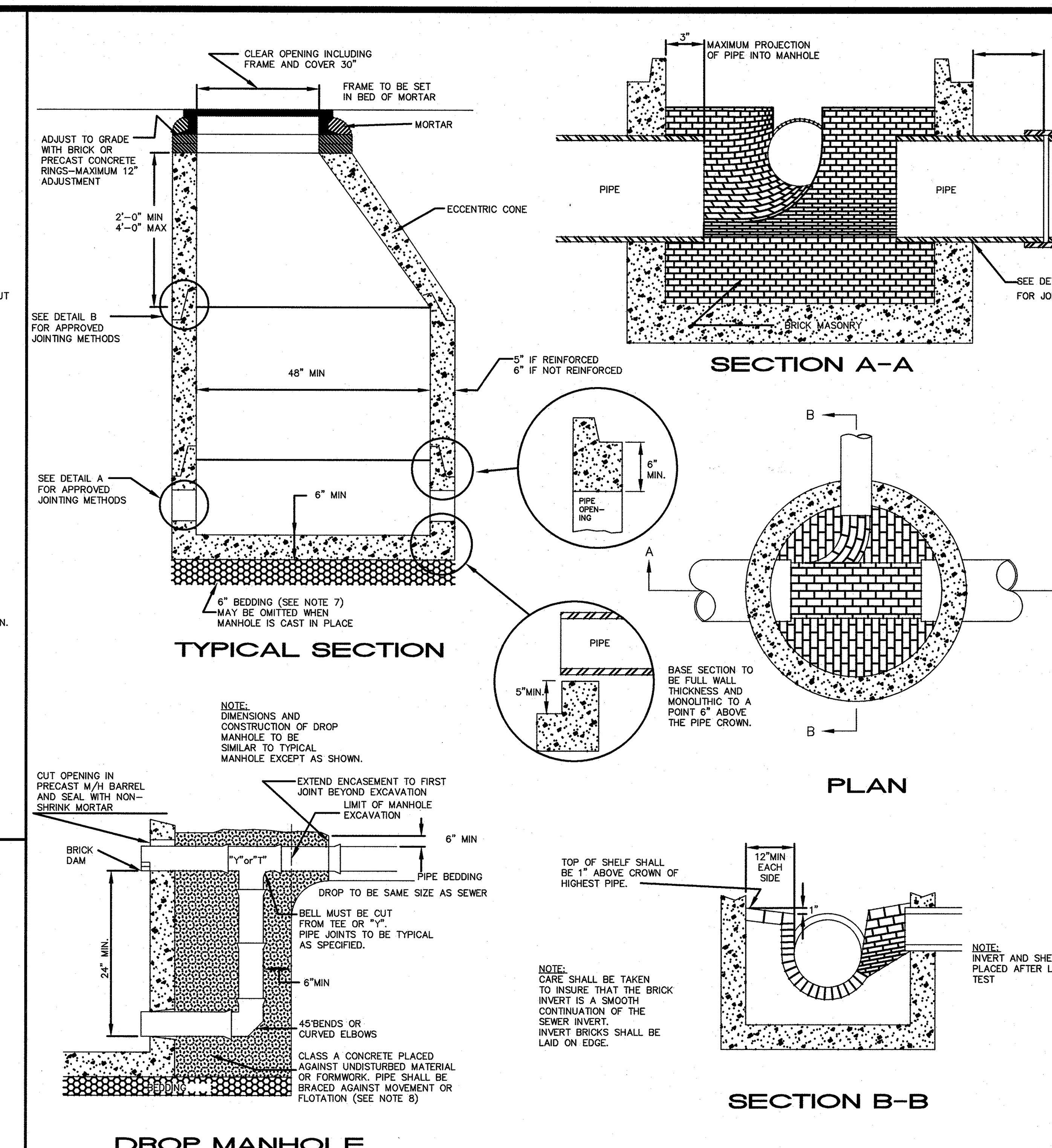
TRENCH CROSS-SECTION

WATER AND SEWER IN SAME TRENCH
(SEE NOTE 9)



TYPICAL TRENCH SECTION FOR SANITARY SEWER SERVICE
NOT TO SCALE

HOUSE SEWER DETAILS



TYPICAL SECTION

SECTION A-A

PLAN

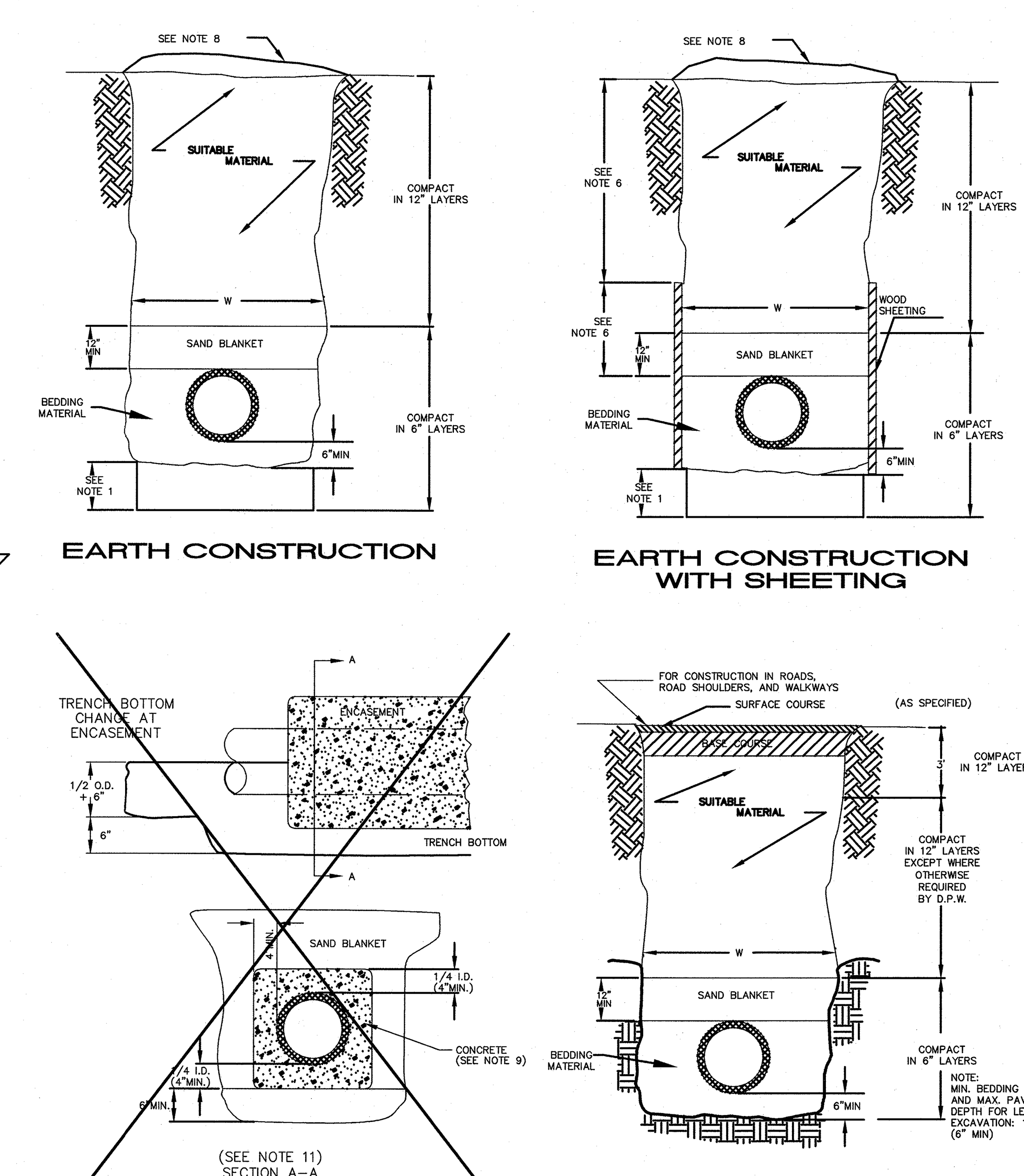
DROP MANHOLE

SECTION B-B

NOTES

1. IT IS THE INTENTION OF THE ENGINEER THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE ENGINEER FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT 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 OR NON-REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED OR NON-REINFORCED CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
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 DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE. CROWN AND SLOPE TO DRAIN TOWARD THE FLOW 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 3 INCH (MINIMUM HEIGHT) LETTER "S" FOR SEWER OR "D" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
7. BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33
 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 TO STABILIZE THE BASE. SCREENED GRAVEL OR CRUSHED STONE 1-1/2 TO 1/2 INCH SHALL BE USED.
8. CONCRETE FOR DROP SUPPORT SHALL CONFORM TO THE REQUIREMENT FOR CLASS A (3,000 LB.) CONCRETE OF N.H. DEPT. OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
 CEMENT: 6.0 BAGS PER CUBIC YARD
 WATER: 5.75 GALLONS PER BAG OF CEMENT
 MAX. SIZE OF AGGREGATE: 1 INCH
9. FLEXIBLE JOINT A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
 RCP & CI PIPE (ALL SIZES): 48"
 AC & VC PIPE (UP THROUGH 12" DIA.): 18"
 AC & VC PIPE (LARGER THAN 12" DIA.): 36"
10. SHALLOW MANHOLE IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED. IT MUST HAVE AN ECCENTRIC ENTRANCE OPENING AND BE CAPABLE OF SUPPORTING H-20 LOADS.

STANDARD MANHOLE - PART A



EARTH CONSTRUCTION

EARTH CONSTRUCTION WITH SHEETING

CONCRETE FULL ENCASEMENT

LEDGE CONSTRUCTION

STANDARD TRENCH SECTION

NOTES:

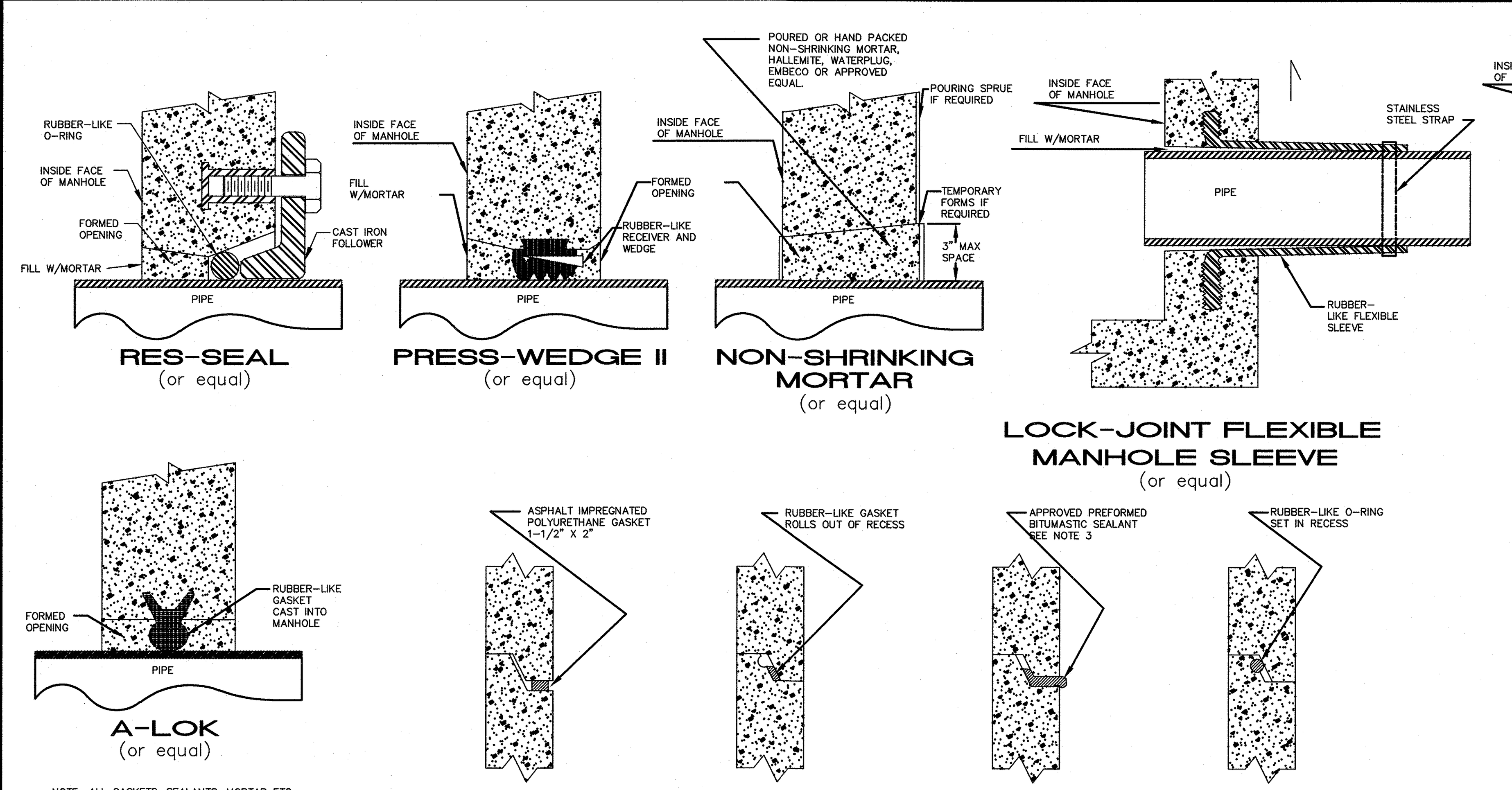
1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE, REFILL WITH BEDDING MATERIAL. (SEE ALSO NOTE 7)
2. BEDDING CRUSHED STONE (FINE) FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE #67
 100% PASSING 1 INCH SCREEN
 90-100% PASSING 3/4 INCH SCREEN
 20-50% PASSING 3/8 INCH SCREEN
 0-10% PASSING #4 SIEVE
 0-5% PASSING #8 SIEVE
 WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE. GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 TO 1-1/2 INCH SHALL BE USED.
3. 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 CAST IRON, DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
4. SUITABLE MATERIAL IN ROADS, ROAD SHOULDERS, WALK WAYS AND TRAVELLED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES, OR ANY MATERIAL WHICH AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

 IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOPSOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE (AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY) WILL BE PRESERVED.
5. BASE COURSE, 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 N.H. DEPT. OF PUBLIC WORKS AND HIGHWAYS.
6. WOOD SHEETING, IF REQUIRED, IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER. IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE THE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISH GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

 W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES, FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D.. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6
7. INCHES ABOVE THE ORIGINAL GROUND SURFACE.
9. CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000#) CONCRETE OF THE N.H. DEPT. OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
 CEMENT: 6.0 BAGS PER CUBIC YARD
 WATER: 5.75 GALLONS PER BAG OF CEMENT
 MAXIMUM AGGREGATE SIZE: 1 INCH
10. THERE SHALL BE TEN FEET HORIZONTAL SEPARATION BETWEEN SEWER LINE AND WATER MAIN AND 18 INCHES VERTICAL SEPARATION AT CROSSINGS.
 (see also NOTE 12 below)

 WHERE THE ABOVE SEPARATION CANNOT BE MADE, A WAIVER OF THE STANDARD OF DESIGN MUST BE REQUESTED FROM THE STANDARD OF DESIGN MUST SEWER COMMISSION.
11. 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.
12. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:

 SEWER PIPE SHALL BE CLASS 52 DUCTILE IRON FOR A MINIMUM DISTANCE OF 9 FEET EACH SIDE OF CROSSING.



RES-SEAL
(or equal)

PRESS-WEDGE II
(or equal)

NON-SHRINKING MORTAR
(or equal)

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE
(or equal)

KOR-N-SEAL JOINT SLEEVE
(or equal)

A-LOK
(or equal)

NOTE: ALL GASKETS, SEALANTS, MORTAR ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

DETAIL A

POLYTITE
(or equal)

ROLL-N-LOK
(or equal)

BITUMASTIC

O-RING

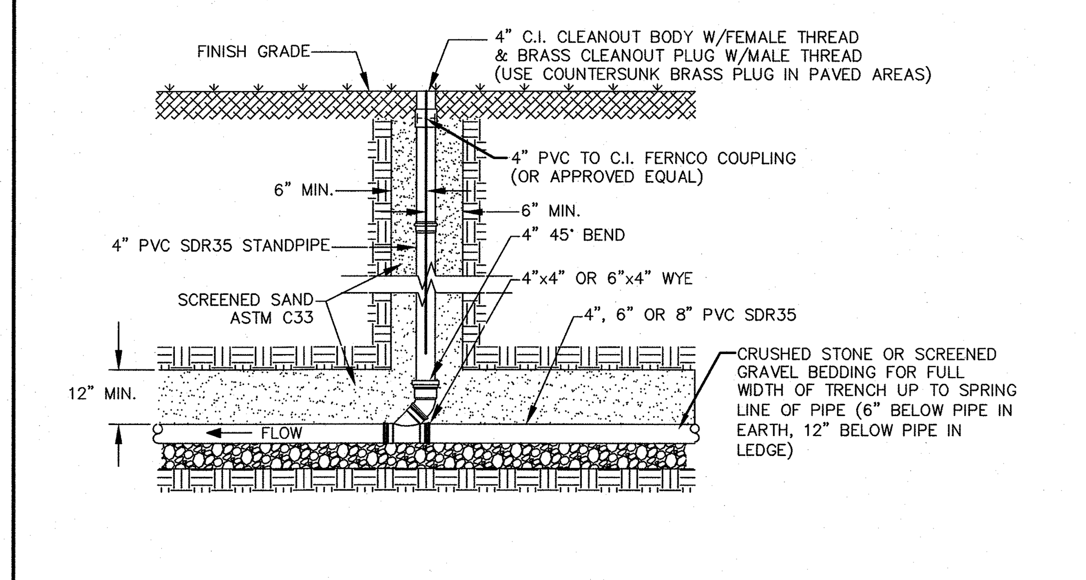
NOTE: ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

DETAIL B

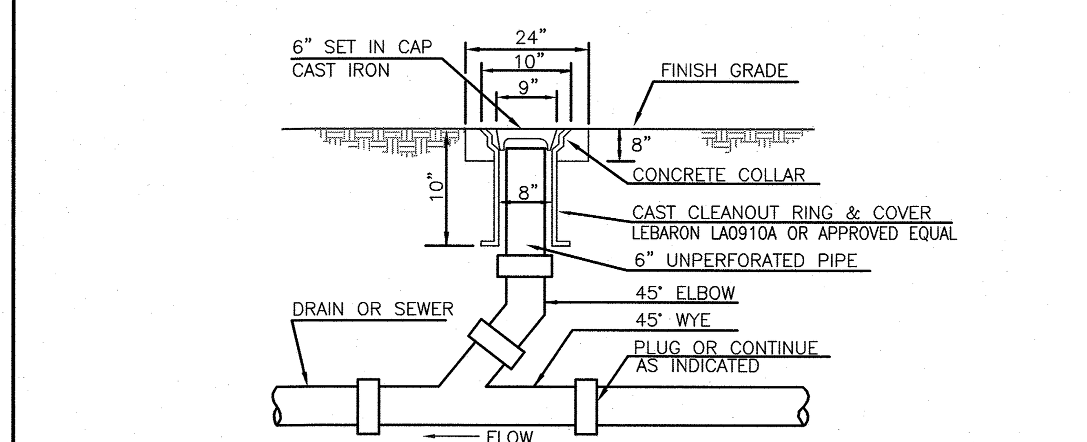
NOTES

1. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER. WHICH TYPE SHALL BE, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.
2. 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 ELASTOMERICSEALANT.
3. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS
 RAM-NEK
 KENT SEAL No. 2

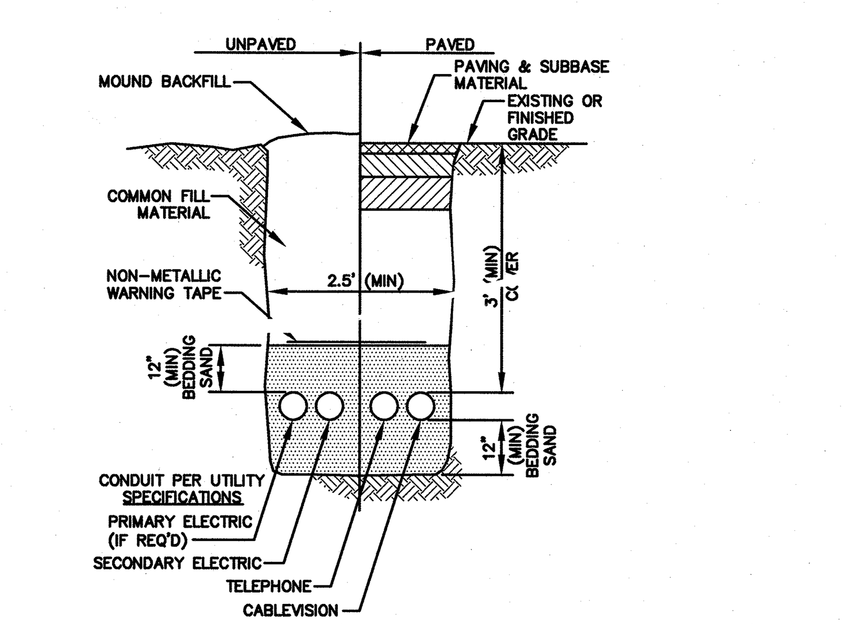
STANDARD MANHOLE - PART B



TYPICAL SEWER SERVICE CLEANOUT
NOT TO SCALE



TYPICAL CLEANOUT
NOT TO SCALE



UTILITY TRENCH
NOT TO SCALE

NO.	DESCRIPTION	BY	DATE
2	UPDATE LOT INFO	CMT	5/4/22
1	UPDATE ADDRESS	CMT	4/15/22

REVISIONS

DETAIL SHEET

ASSESSORS MAP 252 - LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

STATE OF NEW HAMPSHIRE - CHRISTOPHER M. TYMULA No.17078 LICENSED PROFESSIONAL ENGINEER 5/6/22

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

NOT TO SCALE	DATE: JANUARY 20, 2020		DRAWING NO. 4582DET.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	13 OF 15

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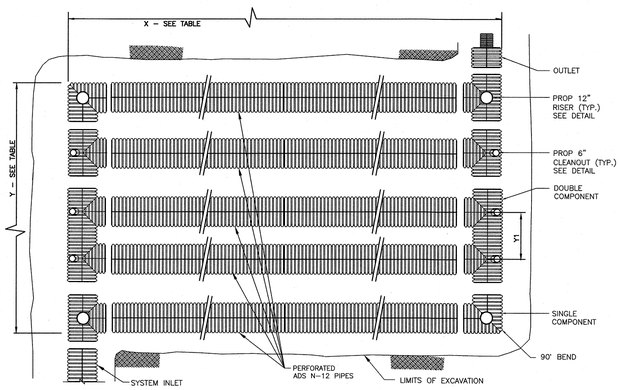
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UNDERGROUND SYSTEM NOTES:

1) ALL SITE DRAINAGE PIPE SHALL BE CORRUGATED HIGH-DENSITY POLYETHYLENE PIPE, DUAL WALL, SMOOTH INTERIOR AS MANUFACTURED BY ADS, INC., OR APPROVED EQUAL, UNLESS OTHERWISE NOTED ON PLAN.

2) CONTRACTOR SHOULD CONFIRM SYSTEM PARTS AND PROVIDE SHOP DRAWINGS FROM MANUFACTURER. SUBSTITUTIONS AND SHOP DRAWINGS SHOULD BE APPROVED BY THE ENGINEER.

3) PARTS SPECIFICATIONS SHOWN ARE AS PROVIDED BY ADS, INC., OR APPROVED EQUAL. ANY CHANGES TO THESE SPECIFICATIONS SHOULD BE APPROVED BY DESIGN ENGINEER FOR PERFORMANCE.



NOTE: FOR ADDITIONAL DETAILS, SEE ADS STD–702 & STD–703.

UNDERGROUND STORMWATER INFILTRATION SYSTEM TABLE

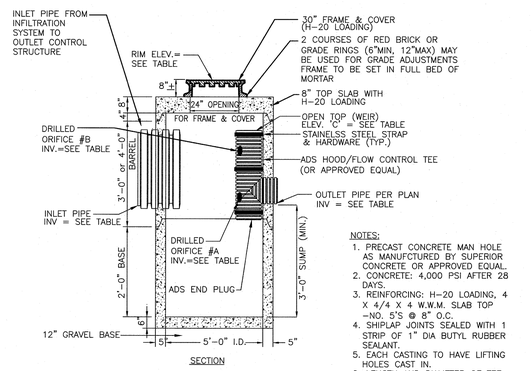
UG INFILTRATION SYSTEM	LENGTH (X)	WIDTH (Y)	SPACING (Y1) (O.C. TYP.) *	PIPE SIZE (INCHES) PERF	INV. PIPE ELEV. (A)	# PIPE ROWS	STONE BED
INFILTRATION SYS#1	57'	24.5'	63"	36"	42.00	5	27.5'x60'
INFILTRATION SYS#2	72'	19.25'	63"	36"	40.50	4	22.25'x75'
INFILTRATION SYS#3	57'	24.5'	63"	36"	41.00	5	27.5'x60'

*SEE TYPICAL CROSS SECTION BELOW.

Table 5-2
Classes of Embedment and Backfill Materials

ASTM D2321[1] Class	Description	Notation	ASTM D2487 Description	AASHTO M43 Notation	Min. Compaction Required (Std. Proctor Density %)[2]	ASTM D2321[3] Percentage Passing Sieve Sizes 1 ½ in. (40mm)	No. 4 (4.75mm)	No. 200 (0.075mm)	Atterberg Limits LL	PI	Coefficients Uniformity Cu	Curvature Cc
IA[4]	Open-graded, clean manufactured aggregates	N/A	Angular crushed stone or rock, crushed gravel, crushed slag; large voids with little or no fines	5 56	Dumped to Slight	100%	≤10%	<0%		Non Plastic		N/A
IB	Dense-graded, clean manufactured, processed aggregates	N/A	Angular crushed stone or other Class IA material and stone/sand mixtures with gradations selected to minimize migration of adjacent soils; little or no fines			100%	≤50%	<5%		Non Plastic		
II	Clean, coarse-grained soils	GW	Well-graded gravel, gravel-sand mixtures; little or no fines	57 6 57	Moderate (85%)	100%	<50% of "Coarse Fraction"	<5%		Non Plastic	>4	1 to 3
		GP	Poorly-graded gravel, gravel-sand mixtures; little or no fines								<4	<1 or >3
		SW	Well-graded sands, gravelly sands; little or no fines				>50% of "Coarse Fraction"				>6	1 to 3
		SP	Poorly-graded sands, gravelly sands; little or no fines								<6	<1 or >3
	Coarse-Grained Soils, borderline clean to w/fines	GW-GC, SP-SM	Sands and gravels which are borderline between clean and with fines	N/A		100%	Varies	5% to 12%	Non Plastic		Same as for GW, GP, SW and SP	
III	Coarse-grained soils with fines	GM	Silty gravels, gravel-sand-silt mixtures	Gravel & sand mix >10% fine	Moderate to High (90%)	100%	<50% of "Coarse Fraction"	12% to 50%	N/A	<4 or <"A" Line	N/A	N/A
		GC	Clayey gravels, gravel-sand-clay mixtures							>7 & >"A" Line		
		SM	Silty sands, sand-silt mixtures				>50% of "Coarse Fraction"			<4 or <"A" Line		
		SC	Clayey sands, sand-clay mixtures							>7 & >"A" Line		
IVA[5]	Inorganic fine-grained soils	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity	N/A	N/R	100%	100%	>50%	<50	<4 or <"A" Line	N/A	N/A
		CL	Inorganic clays of low to medium plasticity, gravelly, sandy, or silty clays; lean clays	N/A						>7 & >"A" Line		
IVB	Inorganic fine-grained soils	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	N/A	N/R	100%	100%	>50%	>50	<"A" Line	N/A	N/A
		CH	Inorganic clays of high plasticity, fat clays	N/A						>"A" Line		
V	Organic soils or Highly organic soils	OL	Organic silts and organic silty clays of low plasticity	N/A	N/R	100%	100%	>50%	<50	<4 or <"A" Line	N/A	N/A
		OH	Organic clays of medium to high plasticity, organic silts	N/A					>50	<"A" Line		
		PT	Peat and other high organic soils	N/A								

Notes:
1) Refer to ASTM D2321 for more complete soil descriptions.
2) Class IVA material has limited applications and can be difficult to place and compact; use ONLY with the approval of a soil expert. Contact ADS for additional information regarding suitability of this backfill material.
3) N/R indicates that use of this material and/or compaction level is not recommended by ASTM D2321 for the backfill envelope.
4) When using open-graded material, additional precaution must be taken to reduce or eliminate the risk of migration of fines from adjacent material. Refer to ASTM D2321 for more complete information.

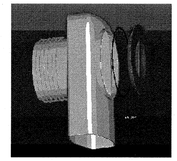


NOTES:
1. PRECAST CONCRETE MAN HOLE AS MANUFCTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. REINFORCING: H–20 LOADING, 4 X 4/4 X 4 W.W.M. SLAB TOP –NO. 5'S @ 8" O.C.
4. SHIPLAP JOINTS SEALED WITH 1 STRIP OF 1" DIA BUTYL RUBBER SEALANT.
5. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
6. LENGTH AND DIAMETER OF TEE VARIES WITH PIPE.

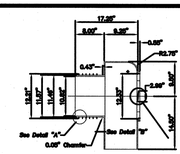
OUTLET CONTROL STRUCTURE TABLE

OCS	RIM	ORIFICE	SIZE (IN.)	ELEV.	INV.IN (SIZE)	INV.IN (ELEV)	INV.OUT (SIZE)	INV.OUT (ELEV)
#1	47.75	A	9" DIA.	43.25	24"	41.00	12"	42.00
		–	–	–				
		C	12" DIA.	45.65				
#2	48.65	A	7" DIA.	41.80	24"	40.50	15"	40.60
		–	–	–				
		C	15" DIA.	44.15				
#3	45.90	A	6" DIA.	42.30	24"	41.00	12"	41.00
		–	–	–				
		C	12" DIA.	44.65				

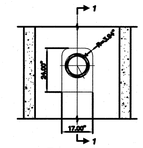
PRECAST CONCRETE OUTLET CONTROL STRUCTURE (OCS) FOR UNDERGROUND INFILTRATION SYSTEM
NOT TO SCALE



Enlarged Section 2–2

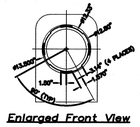


Enlarged Section 1–1

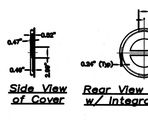


Front View

THE ELIMINATOR CATCH BASIN OIL & DEBRIS TRAP



Enlarged Front View

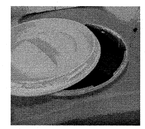


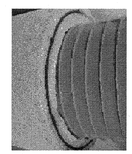
Side View of Cover

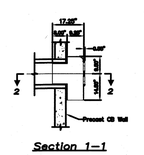
Rear View of Cover w/ Integral Handle



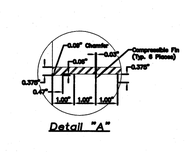
Front View of Cover w/ Integral Handle



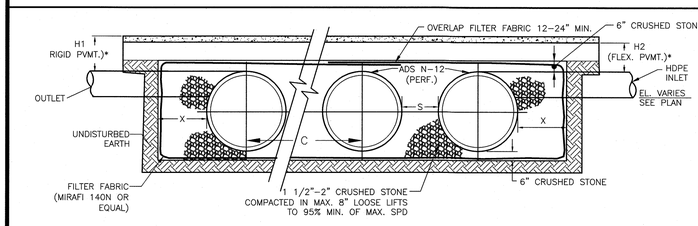




Section 1–1



Detail "A"



* H1, H2 = 12" FOR UP TO AND INCLUDING 48" N–12
* H1, H2 = 24" FOR 60" N–12
* FOR TRAFFIC LOAD INSTALLATIONS PROVIDE 24" COVER FOR 42"–60" N–12

NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "S"	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"
12"	14.5"	11"	25.4"	8"
15"	18"	12"	28.9"	8"
18"	21"	13"	33.9"	9"
24"	28"	13"	40.7"	10"
30"	36"	18"	53.1"	18"
36"	42"	21"	63"	18"
42"	48"	24"	71.9"	18"

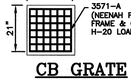
U.G. INF

NOTES
1. ALL UNDERGROUND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. SEE GRADING & DRAINAGE PLAN FOR INVERT DATA.
4. EXISTING TOPSOIL, BRUSH, TREES, BOULDERS, FILL AND DEBRIS TO BE REMOVED FOR 5' ALL AROUND UNDERGROUND SYSTEMS DOWN TO NATIVE MATERIAL. BACKFILL WITH STONE BEDDING MATERIAL (CLASS 1A OR 1B).

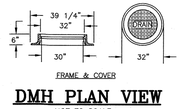
GENERAL NOTES:

1. ALL REFERENCES TO SAND, STONE, OR GRAVEL MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
3. MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
4. NO STORMWATER FLOWS ARE TO BE DIRECTED TO THE INFILTRATION SYSTEMS UNTIL ALL CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. FILTER FABRIC: GEOTEXTILE FABRIC SHALL BE MIRAFI 140N (OR APPROVED EQ.) TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
6. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE OR UNSUITABLE FOR INFILTRATION, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE GEOTECHNICAL ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE GEOTECHNICAL ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL. ALL DELETERIOUS OR UNSUITABLE FILL MATERIAL SHALL BE REMOVED BELOW THE TRENCH BOTTOM UNTIL NATIVE MATERIAL IS ENCOUNTERED.
7. BEDDING: SUITABLE MATERIAL SHALL BE CLEAN COMPACT SAND. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER.
8. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE PLACED IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
9. MINIMUM COVER: MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON–TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42" – 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

TYPICAL UNDERGROUND INFILTRATION SYSTEM CROSS SECTION
NOT TO SCALE



CB GRATE PLAN VIEW
NOT TO SCALE



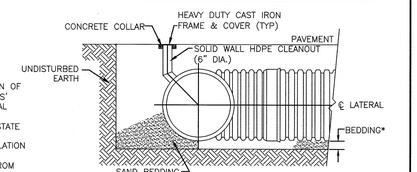
FRAME & COVER

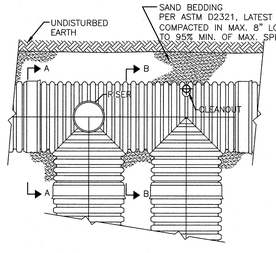
DMH PLAN VIEW
NOT TO SCALE

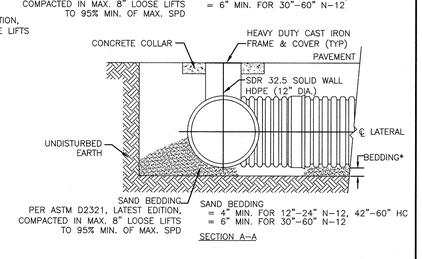
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ADS STANDARD DETAILS DISCLAIMER

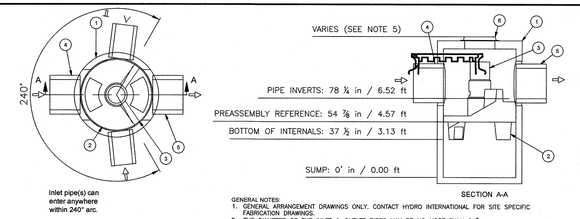
ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS STANDARD DETAIL TO DEMONSTRATE ADS' RECOMMENDED INSTALLATION OF ITS PRODUCTS FOR THE DEPICTED APPLICATION. IN ADDITION TO ADS' RECOMMENDATIONS, THERE MAY BE OTHER NATIONAL, STATE OR LOCAL SPECIFICATIONS THAT ARE PERTINENT TO THIS APPLICATION. ADS' STANDARD DETAIL IS NOT INTENDED TO SUPERSEDE ANY NATIONAL, STATE OR LOCAL SPECIFICATIONS, AND ADS RECOMMENDS THAT THOSE REQUIREMENTS BE REVIEWED AND CONSULTED PRIOR TO THE INSTALLATION OF ADS' PRODUCTS. ADS HAS NOT AUTHORIZED, AND IT BEARS NO RESPONSIBILITY FOR, ANY REVISIONS, ALTERATIONS OR DEVIATIONS FROM THIS STANDARD DETAIL."







TYPICAL RISER AND CLEANOUT DETAILS
NOT TO SCALE



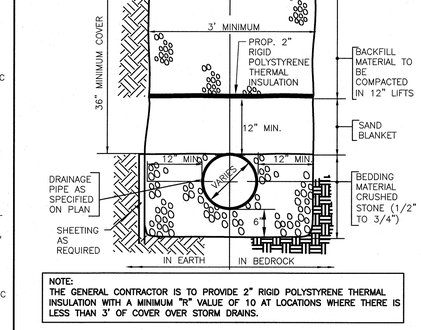
GENERAL NOTES:
1. GENERAL ARRANGEMENT DRAWINGS ONLY. CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC FABRICATION DRAWINGS.
2. THE DIAMETER OF THE INLET & OUTLET PIPES MAY BE NO MORE THAN 24".
3. MULTIPLE INLET PIPES POSSIBLE (REFER TO PROJECT PLANS).
4. INLET/OUTLET PIPE ANGLE CAN VARY TO ALIGN WITH DRAINAGE NETWORK (REFER TO PROJECT PLANS).
5. MIN. FLOW RATE AND MINIMUM HEIGHT LIMITED BY AVAILABLE COVER AND PIPE DIAMETER.
6. LARGER SEDIMENT STORAGE CAPACITY MAY BE PROVIDED WITH A DEEPER SUMP DEPTH.

PRODUCT SPECIFICATIONS:
A. THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
B. THE TREATMENT SYSTEM SHALL FIT WITHIN THE LIMITS OF EXCAVATION (AREA AND DEPTH) AS SHOWN IN THE PROJECT PLANS AND WILL NOT EXCEED THE DIMENSIONS FOR THE DESIGN FLOW RATES SPECIFIED HEREIN.
C. THE TREATMENT SYSTEM SHALL REMOVE GREATER THAN OR EQUAL TO 80% OF TSS BASED ON THE TARGET PARTICLE SIZE (TPS) OF 106 MICRONS AND/OR 80% OF TSS BASED ON THE TPS OF 230 MICRONS AT 0.7 TIMES THE TREATMENT FLOW RATE.
D. THE TREATMENT SYSTEM SHALL CONVEY THE PEAK ON–LINE FLOW RATES OF UP TO 18 CFS WITHOUT CAUSING UPSTREAM SURCHARGE CONDITIONS. FULL–SCALE INDEPENDENT LABORATORY SCOUR TESTING SHALL DEMONSTRATE EFFLUENT CONTROL OF LESS THAN OR EQUAL TO 5 MG/L FOR ALL FLOWS UP TO 200% OF MTFR–106.
E. THE TREATMENT SYSTEM SHALL BE CAPABLE OF CAPTURING AND RETAINING FINE SILT AND SAND SIZE PARTICLES. ANALYSIS OF CAPTURED SEDIMENT FROM FULL–SCALE FIELD INSTALLATIONS SHALL DEMONSTRATE PARTICLE SIZES PREDOMINATELY IN THE 20–MICRON RANGE.

Parts List		
ITEM	SIZE (in)	DESCRIPTION
1	72	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	30	INLET PIPE (BY OTHERS)
5	30	OUTLET PIPE (BY OTHERS)
6	30	FRAME AND COVER (OR GRATE) (ROUND)

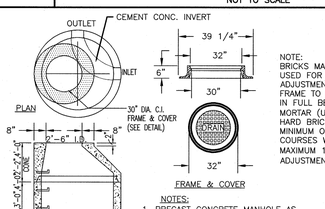
"FIRST DEFENSE" UNIT DETAIL – FD–6HC
(OR APPROVED EQUAL)
NOT TO SCALE

NOTE: CONTRACTOR SHOULD CONFIRM SYSTEM PARTS AND OBTAIN SHOP DRAWINGS FROM MANUFACTURER PRIOR TO CONSTRUCTION.



NOTE:
THE GENERAL CONTRACTOR IS TO PROVIDE 2" RIGID POLYSTYRENE THERMAL INSULATION WITH A MINIMUM "R" VALUE OF 10 AT LOCATIONS WHERE THERE IS LESS THAN 3' OF COVER OVER STORM DRAINS.

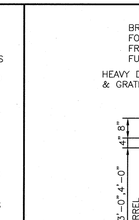
TYPICAL TRENCH SECTION FOR STORM DRAIN
NOT TO SCALE



NOTE:
BRICKS MAY BE USED FOR GRADE ADJUSTMENTS FRAME TO BE SET IN FULL BED OF MORTAR (USE SS HARD BRICK ONLY, MINIMUM OF 2 COURSES WITH MAXIMUM 12" ADJUSTMENT)

NOTES:
1. PRECAST CONCRETE MANHOLE AS MANUFACTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. REINFORCING: H–20 LOADING 4 X 4/4 X 4 W.W.M.
4. SHIPLAP JOINTS SEALED WITH 1 STRIP OF 1" DIA. BUTYL RUBBER SEALANT.
5. EACH CASTING TO HAVE LIFTING HOLESCAST IN.
6. EACH SECTION TO BE LABELED AS NOTED.
7. MANHOLE STEPS @ 12" O.C. (PS2–PF–5L).
8. PIPE OPENINGS CAST IN AS REQUIRED.
9. 8" SLAB TOP AVAILABLE.

PRECAST CONCRETE DRAIN MANHOLE
NOT TO SCALE



NOTES:
1. PRECAST CONCRETE CATCH BASIN AS MANUFCTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. REINFORCING: H–20 LOADING, 4 X 4/4 X 4 W.W.M. SLAB TOP –NO. 5'S @ 8" O.C.
4. SHIPLAP JOINTS SEALED WITH 1 STRIP OF1" DIA BUTYL RUBBER SEALANT.
5. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
6. EACH SECTION TO BE LABELED AS NOTED.

SECTION

PRECAST CONCRETE CATCH BASIN WITH HOOD
NOT TO SCALE

NO.	DESCRIPTION	BY	DATE
	REVISIONS		
3	UPDATE LOT INFO	CMT	5/4/22
2	MISC. REVISIONS	CMT	4/15/22
1	ADDED NOTES PER AoT COMMENTS	NID	8/6/20

DETAIL SHEET

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

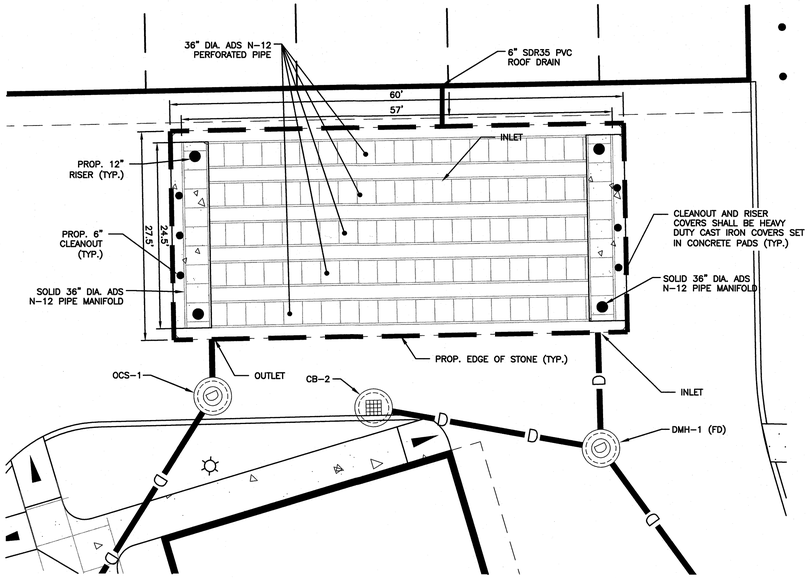
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

STATE OF NEW HAMPSHIRE – CHRISTOPHER M. TYMULA No.17078 – LICENSED PROFESSIONAL ENGINEER

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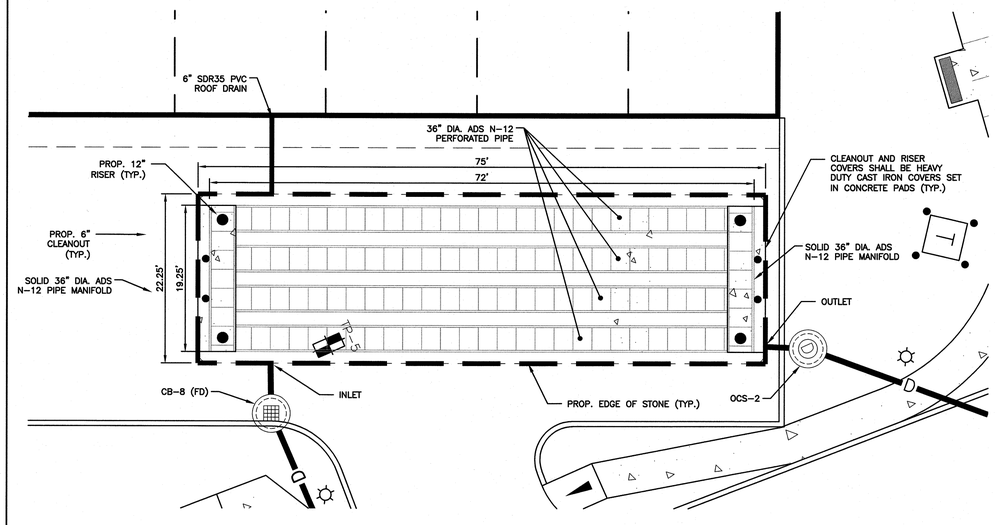
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DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	14 OF 15

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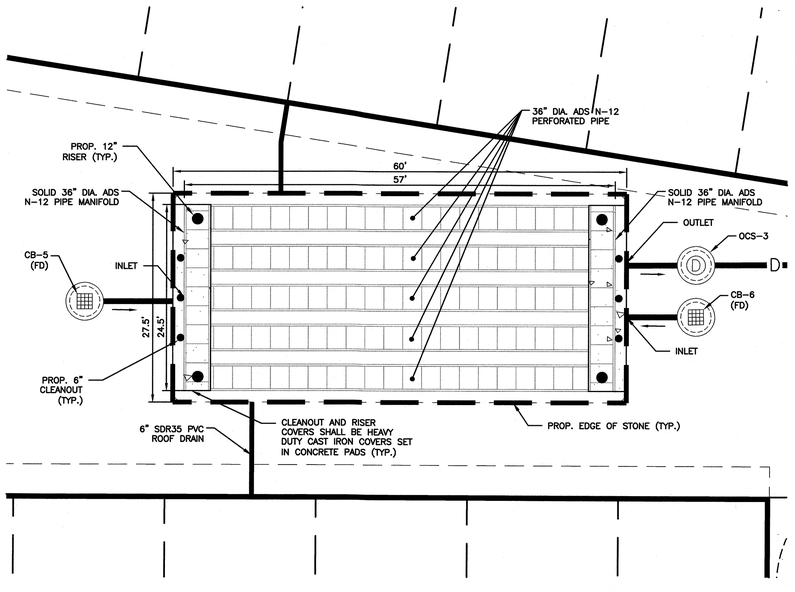
UNDERGROUND INFILTRATION SYSTEM #1 – SCHEMATIC LAYOUT

SCALE: 1"=10'



UNDERGROUND INFILTRATION SYSTEM #2 – SCHEMATIC LAYOUT

SCALE: 1"=10'



UNDERGROUND INFILTRATION SYSTEM #3 – SCHEMATIC LAYOUT

SCALE: 1"=10'

NOTES:

1) SEE SHEET 6 FOR ADDITIONAL INFORMATION ON SITE GRADING AND DRAINAGE.

2) SEE SHEET 14 FOR DETAILED INFORMATION ON THE UNDERGROUND SYSTEMS AND ASSOCIATED DRAINAGE.

NO.	DESCRIPTION	BY	DATE
2	UPDATE LOT INFO	CMT	5/4/22
1	REVISE UNDERGROUND INFILTRATION SYSTEMS	CMT	4/15/22

REVISIONS

DETAIL SHEET

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

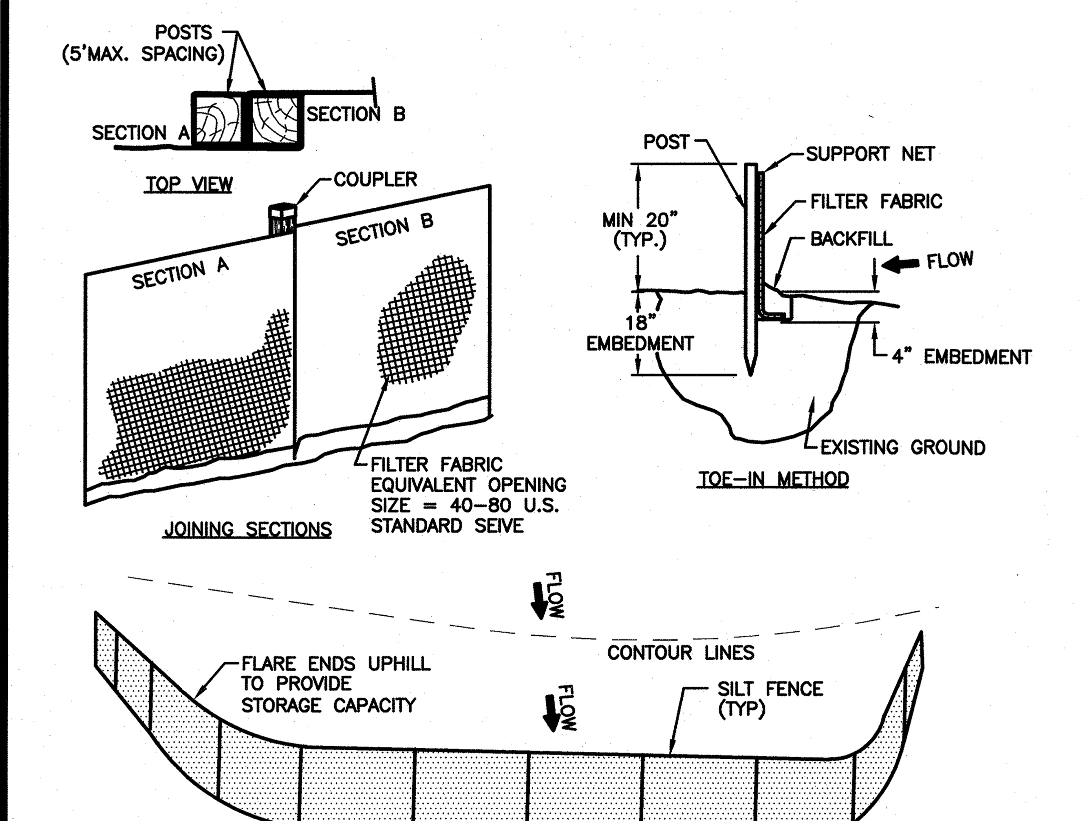
STATE OF NEW HAMPSHIRE – CHRISTOPHER M. TYMULA No.17078 – LICENSED PROFESSIONAL ENGINEER – 5/4/22

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SCALE: 1"=10'	DATE: AUGUST 6, 2020		DRAWING NO. 4582DET.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	14A OF 15

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CRITERIA FOR SILT FENCES:

1) SILT FENCE FILTER CLOTH: THE FABRIC FOR THE SILT FENCE SHALL MEET THE FOLLOWIING SPECIFICATIONS:

FABRIC PROPERTIES:	MINIMUM ACCEPTABLE VALUES	TEST METHOD
GRAB TENSILE STRENGTH (lbs)	90	ASTM D1682
ELONGATION AT FAILURE (%)	50	ASTM D1682
MULLEN BURST STRENGTH (PSI)	190	ASTM D3786
PUNCTURE STRENGTH (lbs)	40	ASTM D751
EQUIVELANT OPENING SIZE	40-80	US STD SIEVE

2) FENCE POSTS (FOR FABRICATED UNITS) – THE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS WILL BE OF SOUND QUALITY HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES. STEEL POSTS WILL BE STANDARD T OR U SECTIONS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT. MAXIMUM SPACING SHALL BE 6 LINEAR FEET.

3) WIRE FENCE (FOR FABRICATED UNITS) – WIRE FENCING SHALL BE A MINIMUM 14.5 GUAGE WITH A MAXIMUM 6 INCH MESH OPENING.

4) PREFABRICATED UNITS – PREFABRICATED UNITS MAY BE USED IN LIEU OF THE ABOVE METHOD PROVIDING: (1) THE FILTER CLOTH AND FENCE POSTS MEET THE ABOVE CRITERIA; AND (2) THE UNIT IS INTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MAINTENANCE:

1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.

2) IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.

3) SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMTELY ONE-HALF THE HEIGHT OF THE BARRIER.

4) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

CONSTRUCTION SPECIFICATIONS:

1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.

2) THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND (4" DEEP & 4" WIDE) AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.

3) WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.

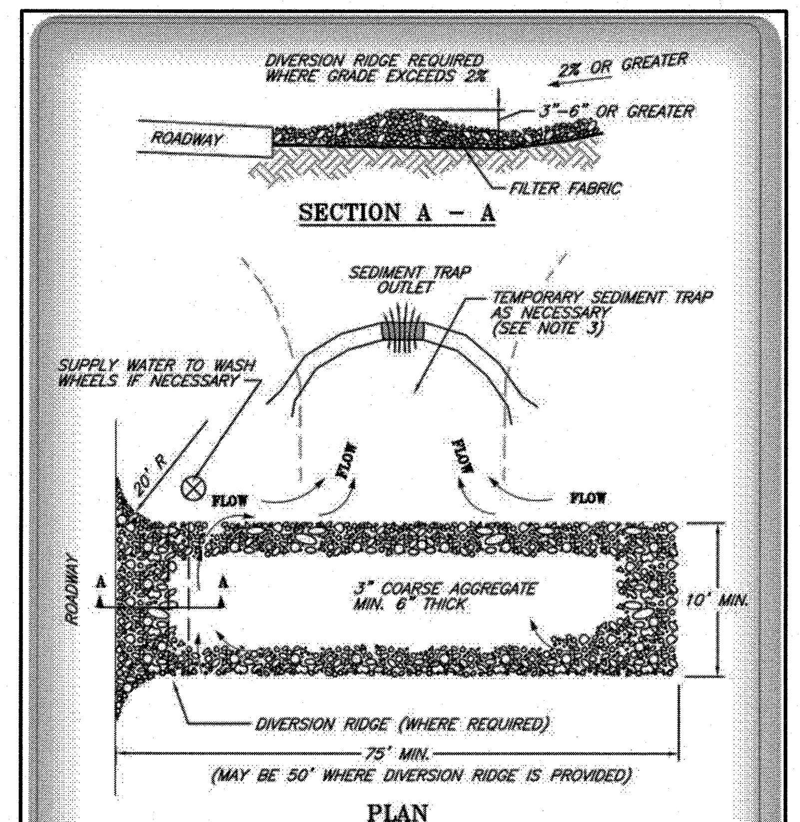
4) FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.

5) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EAC OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES (24" IS PREFERRED), FOLDED, AND STAPLED.

6) POSTS TO BE SPACED AT A MAXIMUM OF 6' ON CENTER.

SEDIMENT CONTROL FENCE

NOT TO SCALE



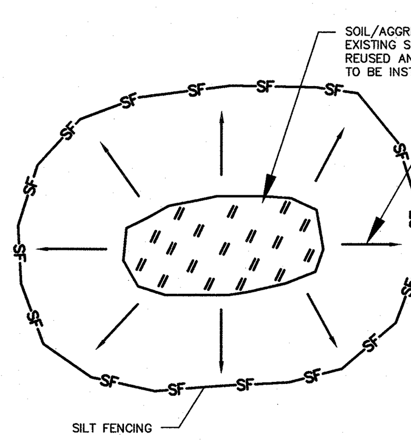
NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION EXIT

ADAPTED FROM J. McCULLAH 1994

GRAVEL CONSTRUCTION EXIT

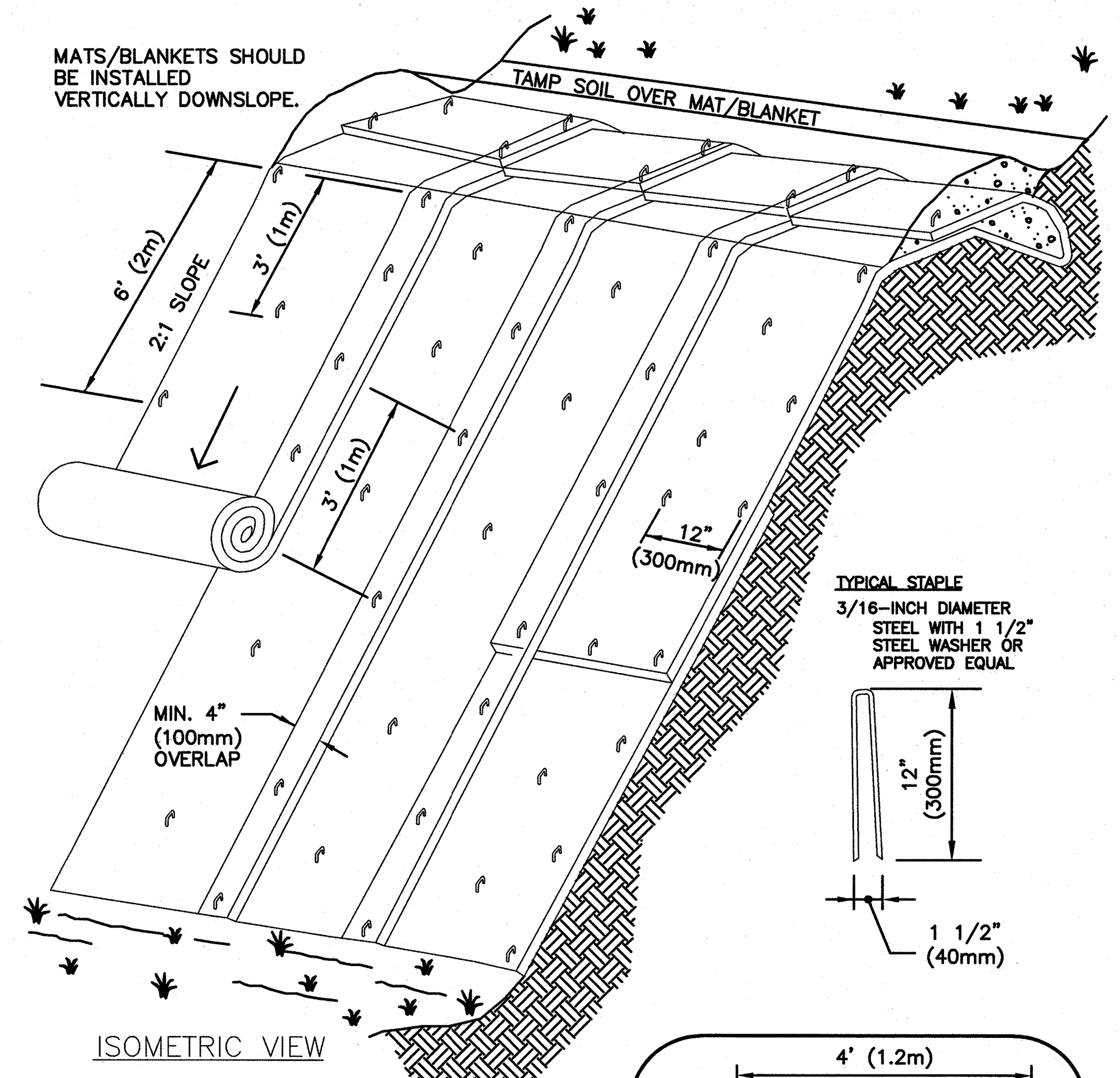
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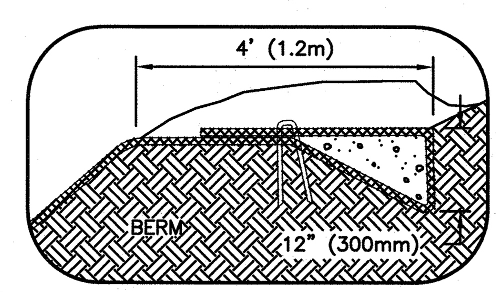
NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

MATERIALS STOCKPILE DETAIL

NOT TO SCALE



TYPICAL SLOPE SOIL STABILIZATION



TYPICAL INSTALLATION OF EROSION CONTROL BLANKETS FOR SLOPES

NOT TO SCALE

NOTES:
1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW. LAY BLANKETS LOOSELY & MAINTAIN DIRECT CONTACT WITH SOIL – DO NOT STRETCH.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
5. BLANKETS SHALL BE STAPLED ENOUGH TO ANCHOR BLANKET WHILE MAINTAINING CONTACT WITH SOIL. STAPLES SHALL BE PLACED DOWN THE CENTER & STAGGERED WITH THE STAPLES PLACED ALONG EDGES. PATTERN & AMOUNT OF STAPLES VARIES BY MANUFACTURER, SO FOLLOW MANUFACTURERS RECOMMENDATIONS.
6. BLANKET SHALL BE NORTH AMERICAN GREEN SC-150 OR APPROVED EQUAL.

MAINTENANCE & MATS
1. BLANKETS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION & AFTER A RAINFALL IN EXCESS OF 1/2" IN A 24-HOUR PERIOD.
2. FAILURES SHALL BE REPAIRED IMMEDIATELY. IF ANY OF THE FOLLOWING OCCUR; SLOPE WASHOUT, MAT DISPLACEMENT, DAMAGE TO MAT, THE AFFECTED AREA SHALL BE REPAIRED & RESEEDED & MAT SHALL BE REPLACED OR RE-INSTALLED.

BLANKET SLOPE PROTECTION FOR EROSION CONTROL

NOT TO SCALE

WINTER STABILIZATION NOTES:

MAINTENANCE REQUIREMENTS:
MAINTENANCE MEASURES SHOULD CONTINUE AS NEEDED THROUGHOUT CONSTRUCTION, INCLUDING THE OVER-WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHOULD CONDUCT AN INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUING FUNCTION.
FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHOULD CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF VEGETATION COVER, AND REPAIR ANY DAMAGE AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH).
SPECIFICATIONS:
TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING STABILIZATION TECHNIQUES SHOULD BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15TH THROUGH MAY 15TH.

1. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHOULD BE LIMITED TO ONE ACRE AND SHOULD BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. SUBJECT TO APPLICABLE REGULATIONS, THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF ACTIVITIES ARE CONDUCTED ACCORDING TO A WINTER CONSTRUCTION PLAN, DEVELOPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW HAMPSHIRE OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CSPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC.
2. STABILIZATION AS FOLLOWS SHOULD BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS:
   A. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (SEE DESCRIPTION OF EROSION CONTROL MIX BERMS FOR MATERIAL SPECIFICATION).
   B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE SEEDED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS SHOULD NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.
3. ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
4. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHOULD NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH.
5. ALL MULCH APPLIED DURING WINTER SHOULD BE ANCHORED (E.G., BY NETTING, TRACKING, WOOD CELLULOSE FIBER).
6. STOCKPILES OF SOIL MATERIALS SHOULD BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. MULCHING SHOULD BE DONE WITHIN 24 HOURS OF STOCKING, AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. NO SOIL STOCKPILE SHOULD BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100 FEET FROM ANY WETLAND OR OTHER WATER RESOURCE AREA.
7. FROZEN MATERIALS, (E.G., FROST LAYER THAT IS REMOVED DURING WINTER CONSTRUCTION), SHOULD BE STOCKPILED SEPARATELY AND IN A LOCATION THAT IS AWAY FROM ANY AREA NEEDING TO BE PROTECTED. STOCKPILES OF FROZEN MATERIAL CAN MELT IN THE SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO THE HIGH MOISTURE CONTENT IN THE SOIL.
8. INSTALLATION OF EROSION CONTROL BLANKETS SHOULD NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
9. ALL GRASS-LINED DITCHES AND CHANNELS SHOULD BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY A QUALIFIED PROFESSIONAL ENGINEER OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CSPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC. IF A STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION AFTER ALLOWING FOR PLACEMENT OF THE STONE.
10. ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
11. AFTER NOVEMBER 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.
12. SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHOULD CONSIST OF EROSION CONTROL MIX BERMS, OR CONTINUOUS CONTAINED BERMS. SILT FENCES AND HAY BALES SHOULD NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBEDMENT OF THESE BARRIERS.

CONSTRUCTION SEQUENCE NOTES:

1. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY ON-SITE CONSTRUCTION AS SHOWN. ADDITIONAL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICAL.
2. CONSTRUCT TEMPORARY STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON THIS SHEET.
3. CUT AND STUMP AREAS OF PROPOSED CONSTRUCTION.
4. REMOVE AND STOCKPILE TOPSOIL. STOCKPILE SHALL BE SEEDED TO PREVENT EROSION.
5. CONSTRUCT PONDS, SWALES & LEVEL SPREADERS & STABILIZE PRIOR TO DIRECTING ANY RUNOFF TO THEM.
6. CONSTRUCT ROADWAYS AND PERFORM SITE GRADING, PLACING HAY BALES AND SILTATION FENCES AS REQUIRED TO CONTROL SOIL EROSION. STABILIZE ROADS, PARKING LOTS AND CUT/FILL SLOPES WITHIN 72-HOURS OF ACHIEVING FINISH GRADES.
7. CONSTRUCT RELOCATED DRAINAGE LINE PRIOR TO REMOVING THE EXISTING DRAINAGE LINE AS SHOWN ON DEMOLITION PLAN AND CONNECT RELOCATED DRAINAGE LINE.
8. INSTALL UNDERGROUND UTILITIES AND DRAINAGE SYSTEM.
9. BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED WITHIN 72-HOURS OF ACHIEVING FINISHED GRADES.
10. DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING. AT A MINIMUM, INSPECT EROSION CONTROLS WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
11. BEGIN EXCAVATION FOR CONSTRUCTION OF BUILDINGS.
12. FINISH PAVING ALL ROADWAYS AND DRIVEWAYS.
13. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
14. AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. APPLICATION OF GRASS SEED, FERTILIZERS AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED BELOW:

    Limestone: 138 lbs./1,000 square feet.
    Fertilizer: 13.8 lbs./1,000 SF
    Mulch: straw mulch approximately 3 tons/acre unless erosion control matting is used.

Permanent Seed Mix	lbs./acre
Creeping Red Fescue	20
Tall Fescue	20
Redtop	2
TOTAL	42

Temporary Seed Mix:	lbs./acre
Winter Rye (Aug. 15–Sept. 15)	112
Oats (No later than May 15)	80

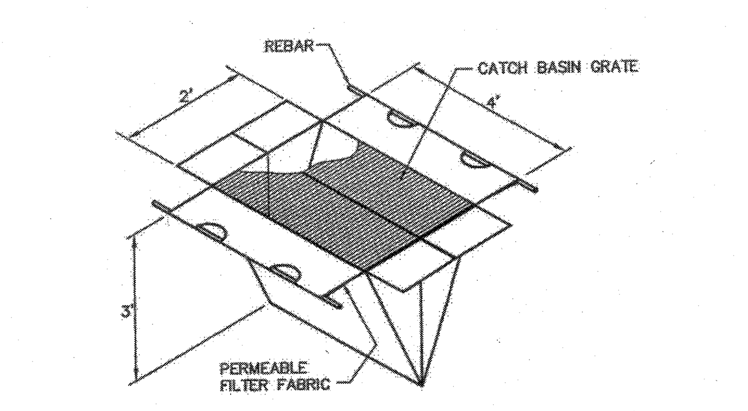
16. NEWLY GRADED AREAS REQUIRING SLOPE PROTECTION OUTSIDE OF NORMAL SEEDING SEASON SHALL RECEIVE HAY MULCH AT THE APPROXIMATE RATE OF NO MORE THAN 2 TONS PER ACRE.
17. THE CONTRACTOR AND DEVELOPER MUST MANAGE THE PROJECT TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
18. FUGITIVE DUST MUST BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

EROSION CONTROL NOTES:

1. THE EROSION CONTROL PROCEDURES SHALL CONFORM TO THE NH STORMWATER MANUAL, VOLUME 3, EROSION & SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008.
2. 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. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME AS APPROVED BY THE ENGINEER. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS.
3. LIMIT OF MAXIMUM AREA OF EXPOSED SOIL AT ANY ONE TIME TO LESS THAN 5 ACRES. THE EXPOSED AREA THAT IS BEING ACTIVELY WORKED DURING WINTER IS TO BE LESS THAN 1 ACRES DURING THE WINTER SEASON.
4. ALL PERMANENT STORM WATER STRUCTURES SHALL BE STABILIZED PRIOR TO DIRECTING FLOW INTO THEM. 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 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
   C) A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED.
   D) OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
5. SILT FENCE SHALL BE INSTALLED AND MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE, NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE EXCESS SURFACE WATER. SILT FENCE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
6. ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISHED GRADED, WITH NO FURTHER CONSTRUCTION TO TAKE PLACE, SHALL BE LOAMED AND SEEDED WITHIN 72 HOURS AFTER FINAL GRADING. A MINIMUM OF 4" OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA. THE SEED MIX SHALL BE AS DESIGNATED BELOW.
7. 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 MAXIMUM LENGTH OF TIME FOR THE EXPOSURE OF DISTURBED SOILS SHALL BE 45 DAYS. HAY OR STRAW MULCH SHALL BE APPLIED TO ALL FRESHLY SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE. BALES SHALL BE UNSPOILED, AIR DRIED, AND FREE FROM WEED, SEEDS AND ANY COARSE MATERIAL.
8. DURING GRADING OPERATIONS INSTALL HAY BALE BARRIERS ALONG TOE OF SLOPE OF FILL AREAS WHERE SHOWN. BARRIERS ARE TO BE MAINTAINED UNTIL DISTURBED AREAS ARE PAVED OR GRASSED.
9. THE FILL MATERIAL SHALL BE OF APPROVED SOIL TYPE FREE FROM STUMPS, ROOTS, WOOD, ETC. TO BE PLACED IN 12" LIFTS OR AS SPECIFIED. BULLDOZERS, TRUCKS, TRACTORS, OR ROLLERS MAY BE USED FOR COMPACTION BY ROUTING THE EQUIPMENT TO ALL AREAS OR EACH LAYER.
10. AVOID THE USE OF FUTURE OPEN SPACES (LOAM & SEED) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ROADS.

TEMPORARY EROSION CONTROL MEASURES:

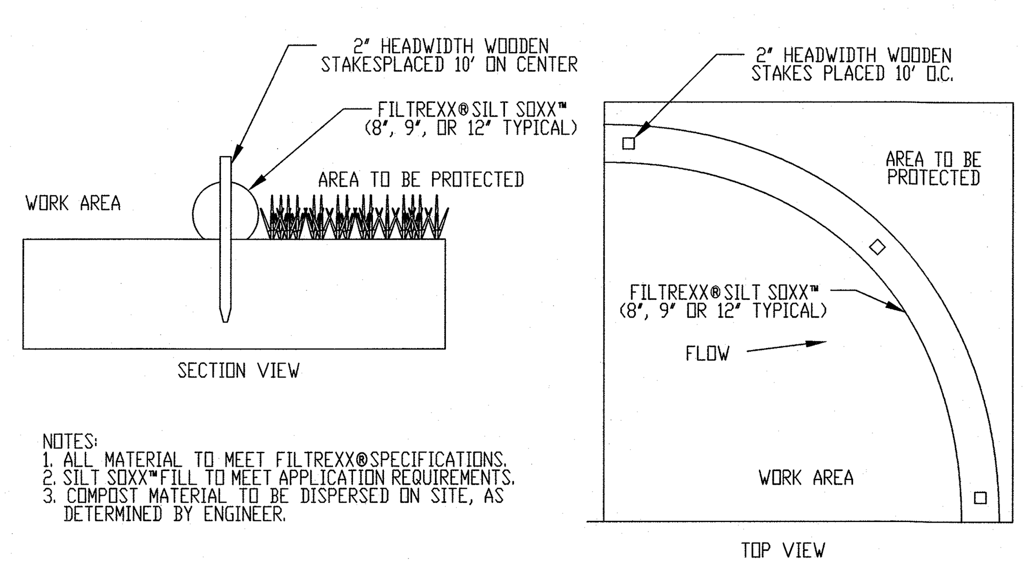
1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
2. HAY BALE BARRIERS AND SEDIMENT TRAPS SHALL BE INSTALLED AS REQUIRED. BARRIERS AND TRAPS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
3. BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
4. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5. STOCKPILED MATERIALS SHALL BE PLACED ONLY IN AREAS SHOWN ON THE PLANS. STOCKPILES SHALL BE PROTECTED BY SILTATION FENCE AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.
6. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED AND SEEDING AS SPECIFIED.
7. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.
8. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
9. ALL CATCH BASIN INLETS WILL BE PROTECTED WITH LOW POINT SEDIMENTATION BARRIER.
10. ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
11. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
12. JUTE MATTING OR APPROVED EQUIVALENT SHALL BE PROVIDED ON ALL SLOPES GREATER THAN 3:1.
13. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED.



SILTATION BAG
NOT TO SCALE
USE "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. OR EQUIVALENT

INLET PROTECTION DETAIL

NOT TO SCALE



NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. SILT SOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

INSPECTION AND MAINTENANCE

Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Sediment control should be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If ponding becomes excessive, additional Sediment control may be required to reduce effective slope length or sediment removal may be necessary. Sediment control shall be inspected until area above has been permanently stabilized and construction activity has ceased

1. The Contractor shall maintain the Sediment control in a functional condition at all times and it shall be routinely inspected.
2. If the Sediment control has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment at the base of the upslope side of the Sediment control when accumulation has reached 1/2 of the effective height of the Sediment control, or as directed by the Engineer. Alternatively, a new Sediment control can be placed on top of and slightly behind the original one creating more sediment storage capacity without soil disturbance.
4. Sediment control shall be maintained until disturbed area above the device has been permanently stabilized and construction activity has ceased.
5. The FilterMedia™ will be dispersed on site once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.
6. For long-term sediment and pollution control applications, Sediment control can be seeded at the time of installation to create a vegetative filtering system for prolonged and increased filtration of sediment and soluble pollutants (contained vegetative filter strip). The appropriate seed mix shall be determined by the Engineer.

FILTREXX® SILT SOXX™

GPI Formerly: MHF Design Consultants, Inc. — Engineering | Design | Planning | Construction Management

TEST PIT DATA

Client: 4 Amigos LLC
Project Address: 1400 Lafayette Road
Town, State: Portsmouth, NH
Job Number: 458219
Date: December 16, 2019
Performed by: Diane Pantermoller

Test Pit No. 12-1 — SCS Soil: Chatfield-Hollis-Canton
ESHWT: >54" — Standing Water: None
Refusal: 54" — Roots: None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-48"	A	Loamy Sand	10yr 3/2	FR	
48-54"	B	Loamy Sand	10yr 5/6	FR	None visible

Test Pit No. 12-2 — SCS Soil: Chatfield-Hollis-Canton
ESHWT: >120" — Standing Water: None
Refusal: >120" — Roots: 54"

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-9"	A	Loamy Sand	10yr 3/2	FR	
9-18"	B	Loamy Sand	10yr 5/6	FR	
18-120"	C	Loamy Sand	7.5yr 4/3	FR	20% Gravel

Test Pit No. 12-3 — SCS Soil: Chatfield-Hollis-Canton
ESHWT: >122" — Standing Water: None
Refusal: >122" — Roots: None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-30"	Fill	Mixed Soils/pavement			Mixed Soils/Urban Fill/Pavement Gravel
30-122"	C	Loamy Sand	7.5yr 4/3	FR	20% Gravel

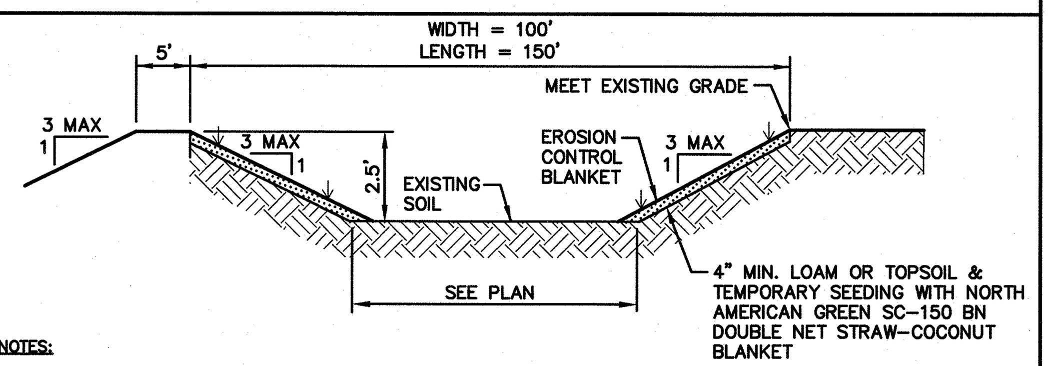
Test Pit No. 12-4 — SCS Soil: Chatfield-Hollis-Canton
ESHWT: >120" — Standing Water: None
Refusal: >120" — Roots: None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-120"	Fill	Mixed Soils			Bricks, Urban Fill

Test Pit No. 12-5 — SCS Soil: Chatfield-Hollis-Canton
ESHWT: >120" — Standing Water: None
Refusal: >120" — Roots: None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-36"	Fill	Mixed Soils			Bricks, Urban Fill
36-120"	C	Loamy Sand	7.5yr 4/3	FR	20% Gravel

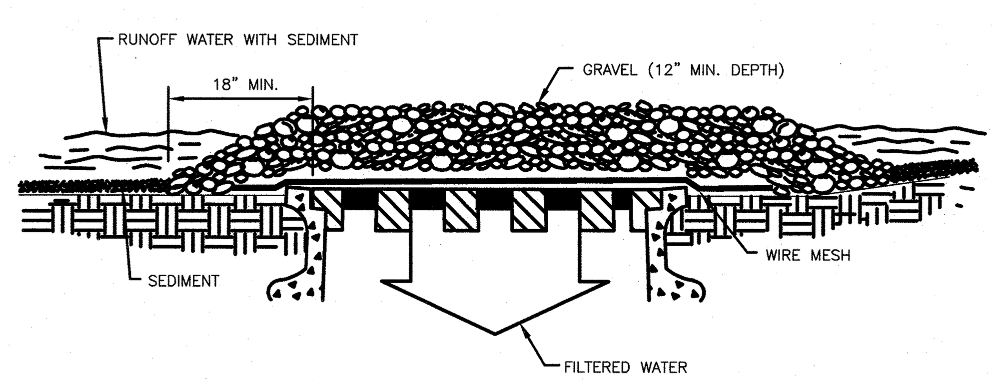
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An Equal Opportunity Employer



NOTES:
1. SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION.
2. THE SPILLWAY ON THE TRAP SHOULD BE A MINIMUM OF 1 FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
3. THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

TEMPORARY SEDIMENT TRAP TYPICAL CROSS SECTION

NOT TO SCALE



CONSTRUCTION SEQUENCE:

1) A WIRE MESH SHOULD BE PLACED OVER THE DROP INLET OR CURB OPENING SO THAT THE ENTIRE OPENING AND A MINIMUM OF 12 INCHES AROUND THE OPENING ARE COVERED BY THE MESH. THE MESH MAY BE ORDINARY HARDWARE CLOTH OR WIRE MESH WITH OPENINGS UP TO 1/2 INCH.

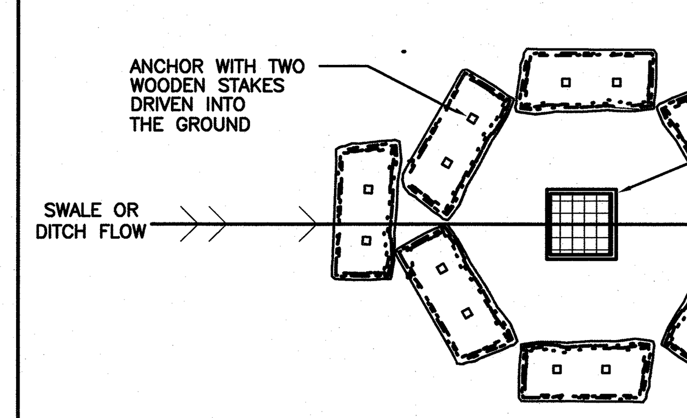
2) THE WIRE MESH SHOULD BE COVERED WITH CLEAN COARSE AGGREGATE SUCH AS SEWER STONE FOR A MINIMUM DEPTH OF 12 INCHES.

3) THE COARSE AGGREGATE SHOULD EXTEND AT LEAST 18 INCHES ON ALL SIDES OF THE DRAIN OPENING.

MAINTENANCE: ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM THE TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL 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.

ON-SITE INLET PROTECTION DETAIL

NOT TO SCALE



LOW POINT SEDIMENTATION CONTROL BARRIER

NOT TO SCALE

3	UPDATE LOT INFO	CMT	5/4/22
2	UPDATE ADDRESS	CMT	4/15/22
1	ADDED NOTES, SEDIMENT TRAP DETAIL PER AoT COMMENTS	NID	8/6/20
NO.	DESCRIPTION	BY	DATE

REVISIONS

DETAIL SHEET

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

STATE OF NEW HAMPSHIRE — CHRISTOPHER M. TYMULA No.17078 — LICENSED PROFESSIONAL ENGINEER — 5/6/22

GPI — Engineering, Design, Planning, Construction Management — 603.893.0720 — GPINET.COM
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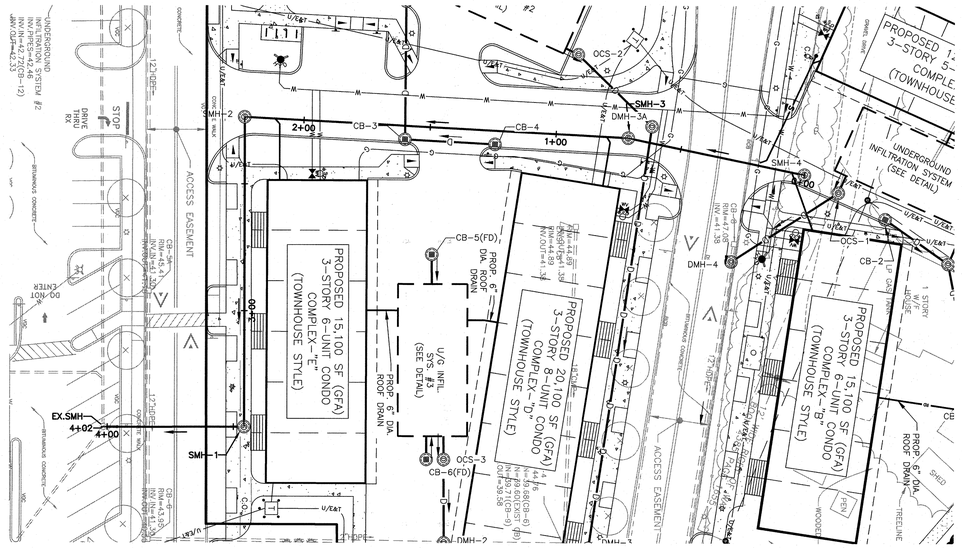
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DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CPS	CMT	458219	15 OF 15

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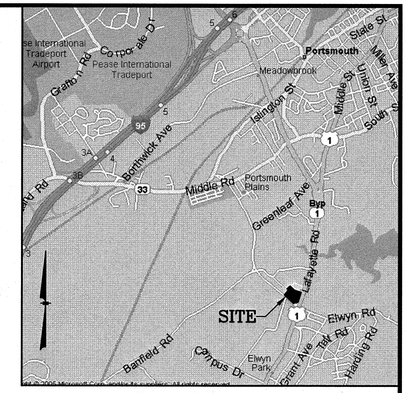
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LEGEND

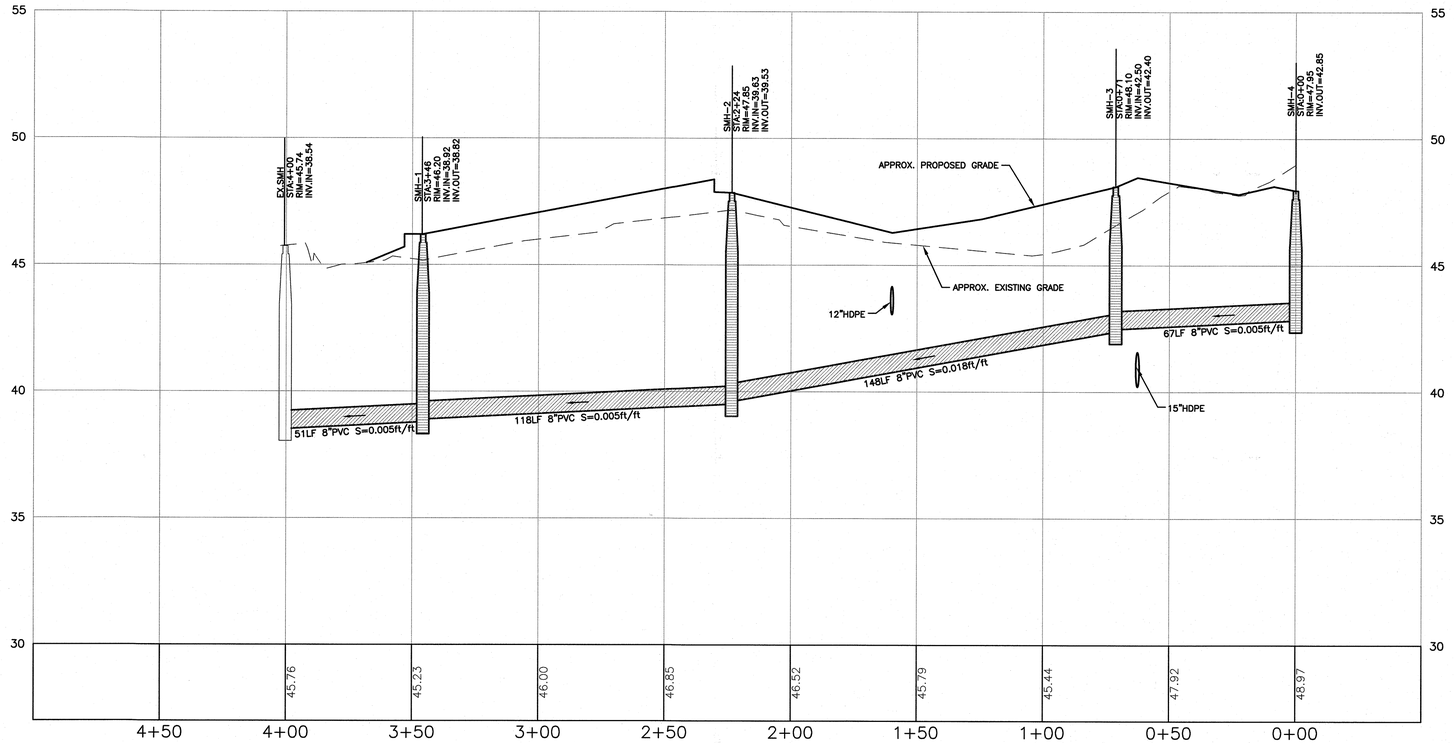
○	IRON PIN FOUND	UP	UTILITY POLE
□	CONCRETE BOUND FOUND	DMH	DRAIN MANHOLE
△	RAILROAD SPIKE FOUND	SMH	SEWER MANHOLE
⊙	DRILL Hole FOUND	TMH	TELEPHONE MANHOLE
SGC	EXIST. SLOPED GRANITE CURB	CB	CATCH BASIN
VGC	EXIST. VERTICAL GRANITE CURB	W	WATER LINE
BCC	EXIST. BITUMINOUS CONC. LIP CURBING	WV	WATER VALVE
VCC	EXIST. VERTICAL CONCRETE CURB	FH	FIRE HYDRANT
	OVERHEAD SERVICE WIRES	GV	GAS VALVE
DSYL	DOUBLE SOLID YELLOW LINE	G	GAS LINE
SSWL	SINGLE SOLID WHITE LINE	T	UNDERGROUND TELEPHONE LINE
BWL	BROKEN WHITE LINE	UGE	UNDERGROUND ELECTRIC AND TELEPHONE
	SIGN	WL	WETLAND LINE
C.O.	PROP. CLEANOUT		TREELINE
CB-1	PROP. CATCH BASIN		
DMH-1	PROP. DRAIN MANHOLE		
SMH-1	PROP. SEWER MANHOLE		
	PROP. GATE VALVE		



PLAN
SCALE: 1"=30'



LOCATION MAP
(NOT TO SCALE)



PROFILE
SCALE: 1"=30'H/3'V

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

NO.	DESCRIPTION	BY	DATE
6	MISC. REVISIONS	CMT	5/4/22
5	MISC. REVISIONS	CMT	4/15/22
4	REVISE BUILDING NUMBERS, ADD STREET ADDRESS	CMT	8/19/20
3	MISC. REVISIONS	CMT	8/6/20
2	MISC. REVISIONS PER TAC	CMT	3/9/20
1	MISC. REVISIONS PER TAC	CMT	2/20/20

REVISIONS

SEWER PLAN/PROFILE

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

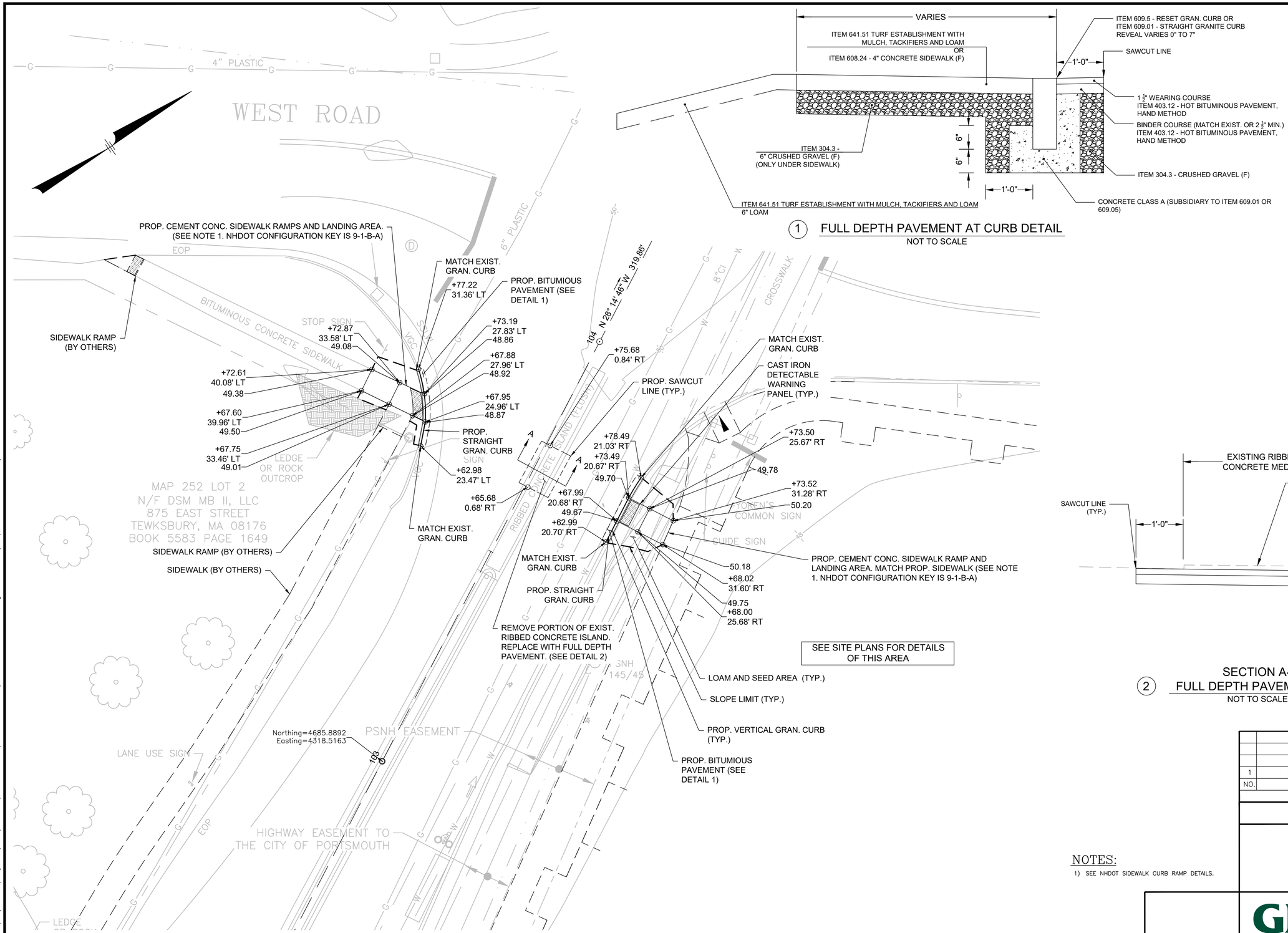
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

STATE OF NEW HAMPSHIRE — CHRISTOPHER M. TYMULA No.17078 — LICENSED LAND SURVEYOR — PROFESSIONAL — 5/6/22

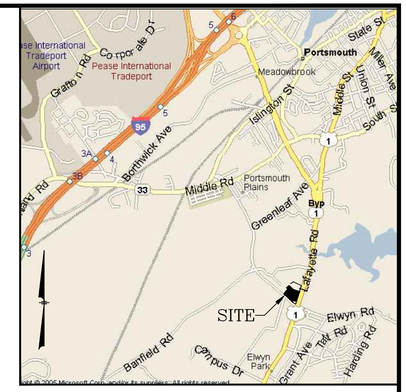
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SCALE: 1"=30'	DATE: JANUARY 20, 2020		DRAWING NO. 4582 SP.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	1 OF 1

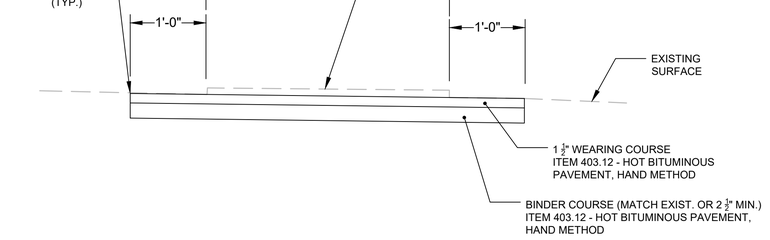
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1 FULL DEPTH PAVEMENT AT CURB DETAIL
NOT TO SCALE



LOCATION MAP
(NOT TO SCALE)



SECTION A-A
2 FULL DEPTH PAVEMENT DETAIL
NOT TO SCALE

NOTES:

1) SEE NHDOT SIDEWALK CURB RAMP DETAILS.

OWNER OF RECORD:
MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

NO.	DESCRIPTION	BY	DATE
1	UPDATED SITE PLANS AND LOT NUMBERS	TJW	5/4/22

REVISIONS

OFF-SITE IMPROVEMENTS

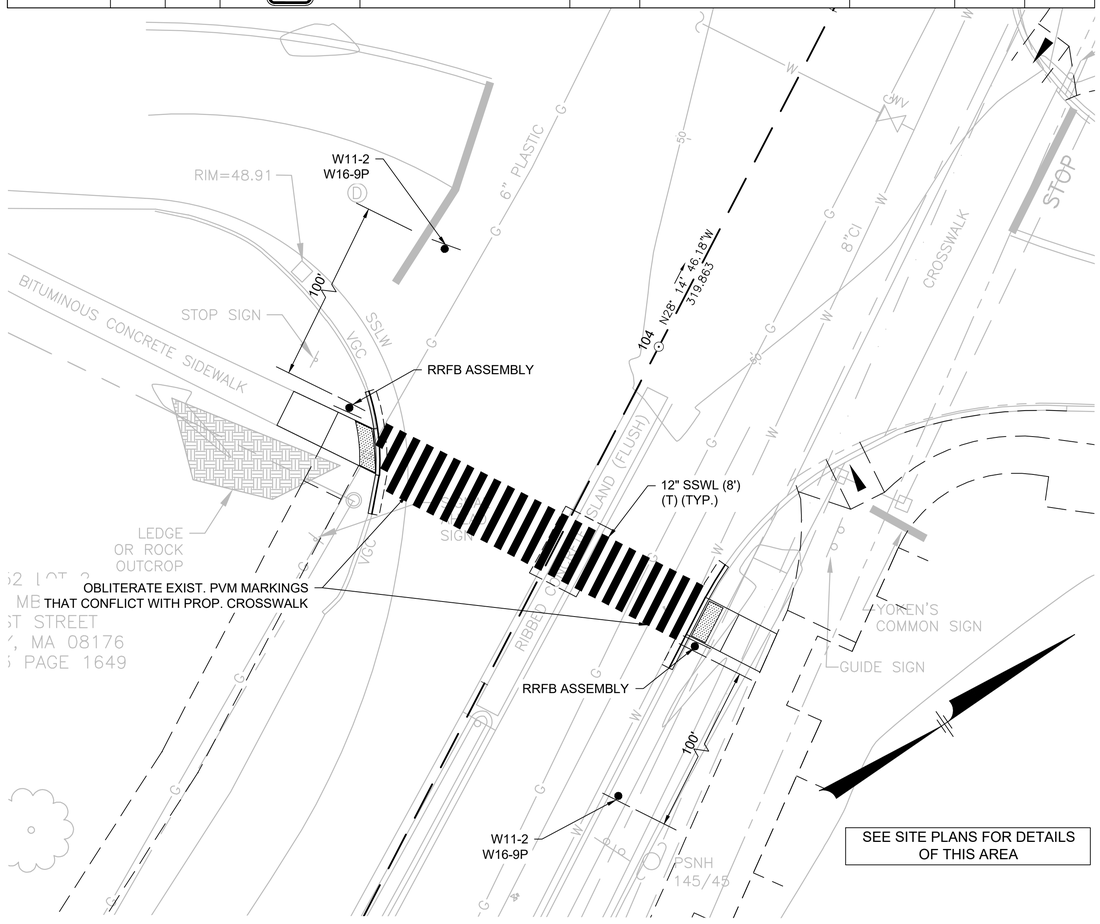
ASSESSORS MAP 252 – LOTS 4,5 & 7
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
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44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=10'	DATE: AUGUST 2020		DRAWING NO. 4582_CO_4_AMIGOS.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
TJW	MJD	458219	1 OF 2

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IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
W11-2	30"	30"		MUTCD STANDARD		4 / 2	MUTCD STANDARD FLUORESCENT YELLOW-GREEN BACKGROUND			RRFB ASSEMBLY / U-CHANNEL	6.25	25 / 12.5
W16-7pL / W16-7pR	24"	12"		MUTCD STANDARD		2 / 2	MUTCD STANDARD FLUORESCENT YELLOW-GREEN BACKGROUND			RRFB ASSEMBLY	2	4 / 4
W16-9p	24"	12"		MUTCD STANDARD		2	MUTCD STANDARD FLUORESCENT YELLOW-GREEN BACKGROUND			MOUNT W/ W11-2	2	4
R10-25	9"	12"		MUTCD STANDARD		2	MUTCD STANDARD			RRFB ASSEMBLY	0.75	1.5



NOTES:

1. ALL SYMBOLS, WORDS, TRANSVERSE MARKINGS (STOP BARS), LANE LINES AND ALL OTHER MARKINGS NOTED WITH (T) SHALL BE THERMOPLASTIC.
2. THE CONTRACTOR SHALL CONTACT PORTSMOUTH DEPARTMENT OF PUBLIC WORKS AT (603) -427-1530 ONE WEEK PRIOR TO INSTALLATION OF PAVEMENT MARKINGS.
3. REPLACE ANY WORDS/SYMBOLS PER LATEST NHDOT STANDARD PLAN SHEETS.
4. REMOVE CONFLICTING PAVEMENT MARKINGS BY ACCEPTABLE METHODS
5. SPACING OF CROSS WALK LINES SHOULD AVOID THE WHEEL PATHS IF POSSIBLE.
6. CROSSWALK LINES SHALL BE 12" WIDTH AND SPACED 2' ON-CENTER.

SIGNING NOTES:

1. REFER TO THE 2016 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION PUBLISHED BY THE NHDOT.
2. NOTE NEW REFLECTIVITY REQUIREMENTS IN THE 2016 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 718 PUBLISHED BY THE NHDOT.
3. REFER TO THE LATEST EDITION OF THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT-FHWA FOR EXACT DETAILS OF BORDERS, ETC.
4. THE ALUMINUM OR U-CHANNEL POST SHALL BE FLUSH WITH THE TOP OF THE SIGN ON ALL SINGLE POST ASSEMBLIES.
5. DIGITALLY PRINTED SIGNS ARE NOT PERMITTED.

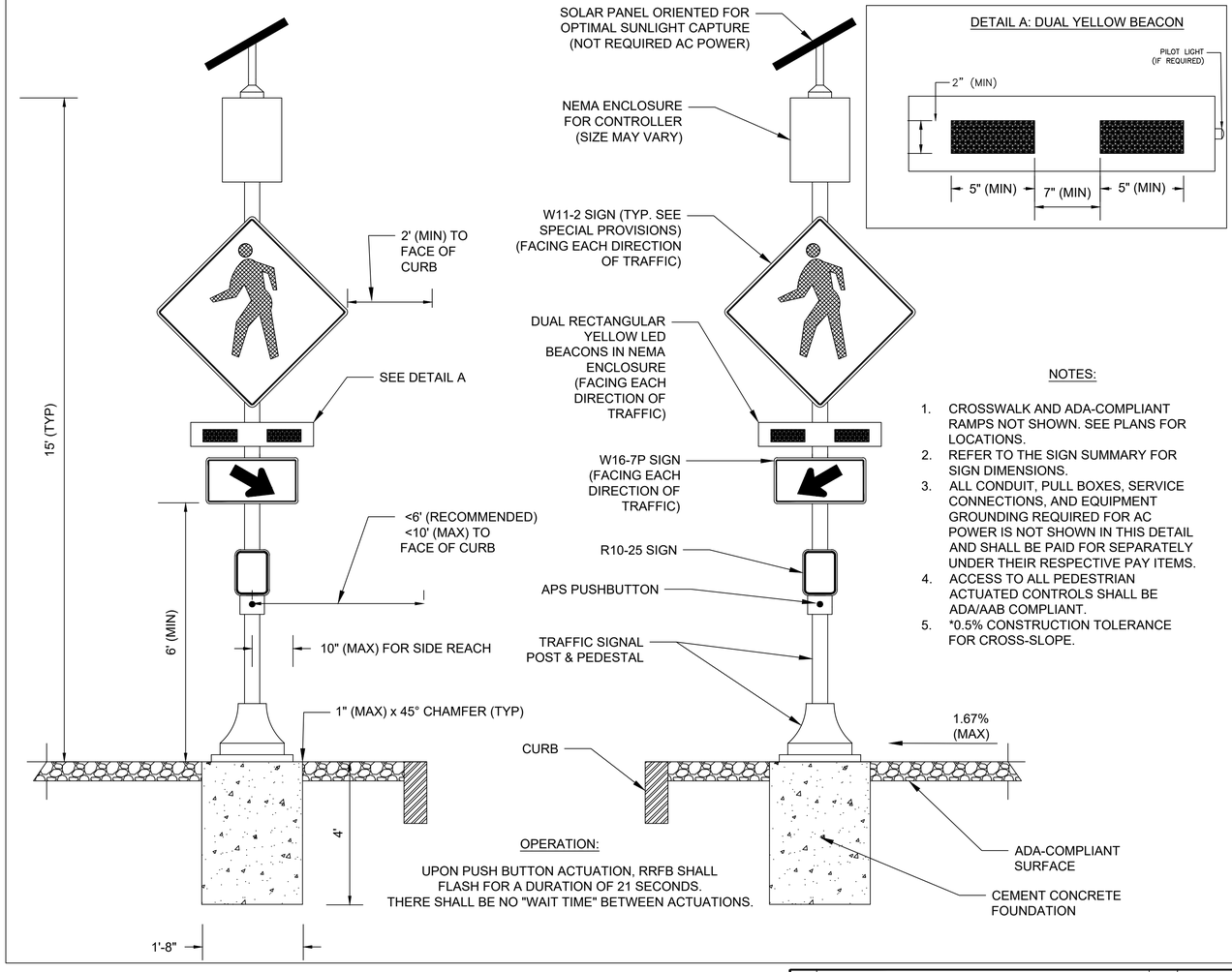
GRAPHIC SCALE

20 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

RECTANGULAR RAPID FLASHING BEACON (SOLAR)
RRFB ASSEMBLY DETAIL
ITEM 616.21 - PEDESTRIAN ACTUATED CROSSING ASSEMBLY



OPERATION:

UPON PUSH BUTTON ACTUATION, RRFB SHALL FLASH FOR A DURATION OF 21 SECONDS. THERE SHALL BE NO "WAIT TIME" BETWEEN ACTUATIONS.

NOTES:

1. CROSSWALK AND ADA-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
2. REFER TO THE SIGN SUMMARY FOR SIGN DIMENSIONS.
3. ALL CONDUIT, PULL BOXES, SERVICE CONNECTIONS, AND EQUIPMENT GROUNDING REQUIRED FOR AC POWER IS NOT SHOWN IN THIS DETAIL AND SHALL BE PAID FOR SEPARATELY UNDER THEIR RESPECTIVE PAY ITEMS.
4. ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT.
5. *0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE.

OWNER OF RECORD:

MAP 252 LOTS 4, 5 & 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

NO.	DESCRIPTION	BY	DATE
1	UPDATED SITE PLANS AND LOT NUMBERS	TJW	5/4/22

REVISIONS

OFF-SITE IMPROVEMENTS

ASSESSORS MAP 252 – LOTS 4,5 & 7
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=10'	DATE: AUGUST 2020		DRAWING NO. 4582_TPSM_4_AMIGOS.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
SJB	MJD	458219	2 OF 2

\\MA1-FS3\Company_Data\Projects\CAD\458219\Bedford_files\Site Plansheets\4582_TPSM_4_AMIGOS.dwg TPSM_PLAN 5/04/22 8:31pm twhitney

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A Portsmouth street scene that is comparable to the **Wide Sidewalk** community space - 10' wide sidewalk with street trees, the front gardens are set back 6' more.



Cross - block walkways offer pedestrian connectivity and can have attractive gardens.



Portsmouth **Pocket Park**



Outdoor cafe space in Portsmouth.



A **community space** available for informal activities in close proximity to neighborhood residences. A **pocket park** is spatially defined by buildings. Its landscape shall consist of **paths**, lawns and trees, formally disposed. The minimum size shall be 500 sq. ft.

Permitted Districts: All Districts



A wide pedestrian **sidewalk** (a minimum of 10' in width unless otherwise defined by the Ordinance) located between the building façade and the public right of way. Wide pedestrian **sidewalks** provide space between the **façade** and the curbline for comfortable pedestrian movement, **street** trees and **street** furniture.

Permitted Districts: All Districts



An outdoor dining cafe community space is permitted as an ancillary activity of a food and drink establishment where the principal use is otherwise allowed in the district. The area must provide deeded public access to qualify as Community Space in the Character Districts.

Permitted districts: G1, G2, CD4-L2, CD4, CD4-W, CD-5



Defining Community Space:

The gateway zoning district requires a clear definition of community space area as well as the typology of community space, based upon defined types in the Gateway Zoning District in the project's design. There is an overall requirement of 20% open space - which the project complies with a calculation at 23.4% of the total site is proposed as non-paved and non-building space, but there is not an actual numerical value required for community space. At the same time, the community space requirements mandates an acceptable percentage of open space must have a viable function for the aesthetic and social life of the project. The Planning process will make a determination on the appropriateness of the community space, but the objective of the projects design is to maximize that opportunity in balance with the projects density and development pattern.

The approach for community space in the project design is first to make all public street frontages community space in the form of Widened Sidewalks with street trees and sidewalk amenities and street furniture. Additional landscaped areas can have added Community Space values in smaller discrete locales.

1. Frontage on Peverly Hill Road:
We initially considered that we could use this frontage as a Greenway designation, but we perceived that the Greenway typology in the community space assumed something greater in width. Therefore we have used the **Wide Pedestrian Sidewalk**. The current plan shows 25 feet from the right of way to the face of the building, so the 10 foot sidewalk and landscaping along the building more than adequately fits. Entrances to the building doorways are shown on each of the corners. Wide Pedestrian Sidewalks can have parallel garden spaces as linear rain gardens to capture, detain, and treat roof runoff from the buildings and the sidewalks. Street tree plantings in the 10 foot sidewalk can use Flexi pave, a pervious surfacing material that also functions to protect the tree roots.

The city has planned a sidewalk and striped bicycle lanes along this whole frontage. It's assumed that the city will basically require the project to build this sidewalk and it is proposed to be done at 10'. There are questions if the widened sidewalk should be within or outside of the city right of way.

2. Frontage on Lafayette Road to Rite Aid / Five Guys and Newburyport Bank property:
We are not anxious to make major changes to the parking areas because of lease requirements for Rite Aid. The percentage of building and parking is at somewhat a disadvantage except for the frontage along Lafayette Road because of the high percentage of building and parking coverage and the layout. Nevertheless, the project must integrate the entire property area for open space and community space.

The landscape frontage on Lafayette Road around the corner onto Peverly Hill Road has opportunities for landscaping to activate the space for social uses. The plan shows the corner area incorporating the attractive stone wall with a patio and walkway for seating areas. Designated as a **Pocket Park** the prominent street frontage location is a landmark public space location.

3. Frontage Road facing Rite Aid and Five Guys:
This is the project's principal view from Lafayette Road and represents the transition from the commercial frontage to the residential neighborhood development as proposed. The previous project layout had 10 feet from the curb to the face of the buildings. In recognition that the entrance stairs for each of the townhouse unit pairs are not public space - the plan has been revised to set the bottom stair at the 10' edge, and to position the frontage gardens as 6' of additional streetscape space. Parallel on - street parking has also been located along this frontage for visitor parking.

The most appropriate community space for this street frontage is the **Wide Pedestrian Sidewalk**. That requires a minimum 10 foot space for widened paved sidewalk with street trees and street furniture. It's kind of a downtown street like experience and there are plenty of examples of this scale and character throughout the city in attractive neighborhoods. Wide Pedestrian Sidewalks can have parallel garden spaces as linear rain gardens to capture, detain, and treat roof runoff from the buildings and the sidewalks. Street tree plantings in the 10 foot sidewalk can use Flexi pave, a pervious surfacing material that also functions to protect the tree roots.

4. Side connecting streets:
The street frontage connecting Peverly Hill Road and the frontage to the hotel have a similar condition of being a pre-existing condition to which we must adapt the neighborhood design. On the frontage between Complexes "B" & "D", the use of the **Wide Pedestrian Sidewalk** is the best and most efficient community space because it is the front door to all the new housing and a public streetscape. The hotel facing directional only has room for a 5' widewalk but it is a lesser perspective.

5. Within the project itself there are also some additional community spaces:

A. Outdoor dining patio for Five Guys fits into a community space category of Outdoor Dining Cafe.

B. The north and south ends of Complex 'C' contain green space, trees and benches and are classified as Pocket Parks.

C. The northern portion of the site behind Complexes 'A' and 'B' is a natural woodland area of native trees and ground covers is also best designated as a Pocket Park.

NO.	DESCRIPTION	BY	DATE
3	MISC. REVISIONS	CMT	5/4/22
2	MISC. REVISIONS	CMT	4/15/22
1	MISC. REVISIONS	CMT	3/9/20

REVISIONS

COMMUNITY SPACE OVERVIEW PLAN

ASSESSORS MAP 252 – LOTS 4,5 & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

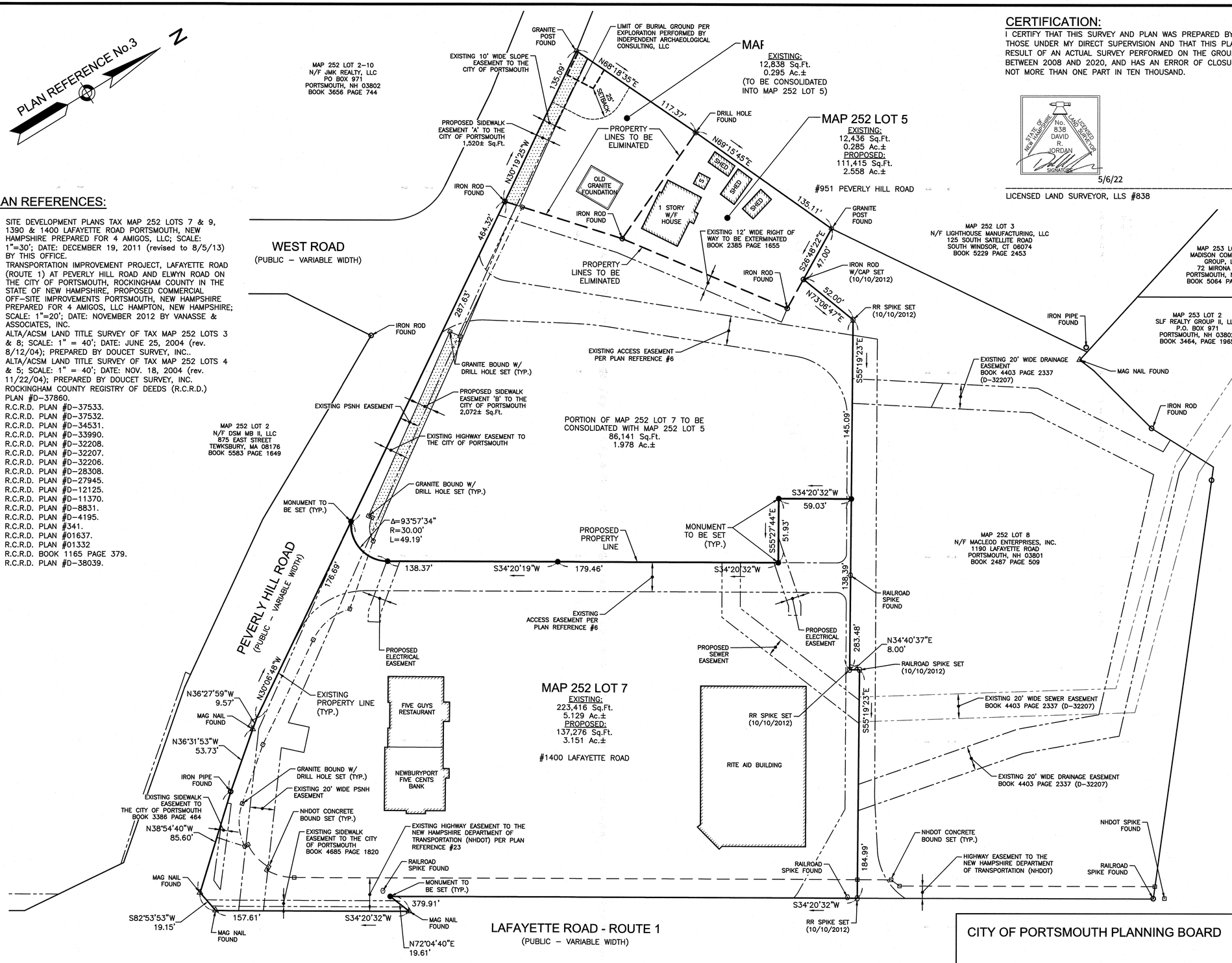
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Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: NTS	DATE: JANUARY 20, 2020		DRAWING NO. 4582COM-SPACE.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
CCC	CMT	458219	1 OF 1

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PLAN REFERENCES:

1) SITE DEVELOPMENT PLANS TAX MAP 252 LOTS 7 & 9, 1390 & 1400 LAFAYETTE ROAD PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC; SCALE: 1"=30'; DATE: DECEMBER 19, 2011 (revised to 8/5/13) BY THIS OFFICE.
2) TRANSPORTATION IMPROVEMENT PROJECT, LAFAYETTE ROAD (ROUTE 1) AT PEVERLY HILL ROAD AND ELWYN ROAD ON THE CITY OF PORTSMOUTH, ROCKINGHAM COUNTY IN THE STATE OF NEW HAMPSHIRE, PROPOSED COMMERCIAL OFF-SITE IMPROVEMENTS PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC HAMPTON, NEW HAMPSHIRE; SCALE: 1"=20'; DATE: NOVEMBER 2012 BY VANASSE & ASSOCIATES, INC.
3) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 3 & 8; SCALE: 1" = 40'; DATE: JUNE 25, 2004 (rev. 8/12/04); PREPARED BY DOUCET SURVEY, INC..
4) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 4 & 5; SCALE: 1" = 40'; DATE: NOV. 18, 2004 (rev. 11/22/04); PREPARED BY DOUCET SURVEY, INC.
5) ROCKINGHAM COUNTY REGISTRY OF DEEDS (R.C.R.D.) PLAN #D-37860.
6) R.C.R.D. PLAN #D-37533.
7) R.C.R.D. PLAN #D-37532.
8) R.C.R.D. PLAN #D-34531.
9) R.C.R.D. PLAN #D-33990.
10) R.C.R.D. PLAN #D-32208.
11) R.C.R.D. PLAN #D-32207.
12) R.C.R.D. PLAN #D-32206.
13) R.C.R.D. PLAN #D-28308.
14) R.C.R.D. PLAN #D-27945.
15) R.C.R.D. PLAN #D-12125.
16) R.C.R.D. PLAN #D-11370.
17) R.C.R.D. PLAN #D-8831.
18) R.C.R.D. PLAN #D-4195.
19) R.C.R.D. PLAN #341.
20) R.C.R.D. PLAN #01637.
21) R.C.R.D. PLAN #01332
22) R.C.R.D. BOOK 1165 PAGE 379.
23) R.C.R.D. PLAN #D-38039.

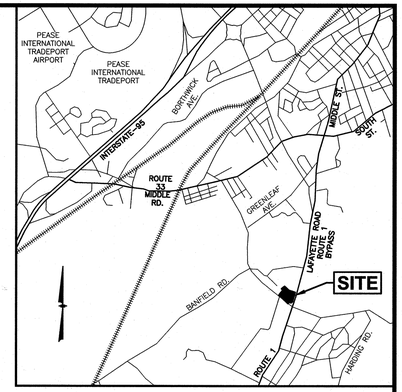
CERTIFICATION:

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND BETWEEN 2008 AND 2020, AND HAS AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

STATE OF NEW HAMPSHIRE — No. 838 — DAVID R. JORDAN — LICENSED LAND SURVEYOR — SIGNATURE

5/6/22

LICENSED LAND SURVEYOR, LLS #838



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) THE PURPOSE OF THIS PLAN IS TO CONSOLIDATE MAP 252 LOT 4, MAP 252 LOT 5 AND A PORTION OF MAP 252 LOT 7 INTO MAP 252 LOT 5.
2) TOTAL PARCEL AREA:
   EXISTING:
   MAP 252 LOT 4 = 12,838 Sq.Ft OR 0.295 Ac.±.
   MAP 252 LOT 5 = 12,436 Sq.Ft. OR 0.285 Ac.±.
   MAP 252 LOT 7 = 223,417 Sq.Ft. OR 5.129 Ac.±.
   TOTAL = 248,691 Sq.Ft. OR 5.709 Ac.±
   PROPOSED:
   MAP 252 LOT 7 = 137,276 Sq.Ft OR 3.151 Ac.±.
   MAP 252 LOT 5 = 111,415 Sq.Ft. OR 2.558 Ac.±.
   TOTAL = 248,691 Sq.Ft. OR 5.709 Ac.±
3) ZONE: GATEWAY NEIGHBORHOOD MIXED USE CENTER (G2)
   MIN. LOT SIZE: 10,000 Sq.Ft.
   MIN. LOT FRONTAGE: 50 Ft.
   SETBACKS:
   FRONT: 80 Ft. FROM CL LAFAYETTE ROAD; 30 Ft. FROM PEVERLY HILL R.O.W.
   SIDE: 30 Ft.
   REAR: 50 Ft.
   REFER TO THE CITY OF PORTSMOUTH ZONING ORDINANCE FOR VERIFICATION, ADDITIONAL RESTRICTIONS AND PERMITTED USES.
4) THIS PLAN IS THE RESULT OF ON-THE-GROUND FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN 2008 AND 2020.
5) BEARINGS SHOWN HEREON ARE BASED ON PLAN REFERENCE #3.
6) LOCATION OF UNDERGROUND UTILITIES ARE NOT SHOWN.
7) THE SURVEY TRACT IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33015C0270E, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
8) SEE SITE REDEVELOPMENT PLANS FOR EXISTING AND PROPOSED UTILITIES, BUILDINGS, CURB LINES, SIDEWALKS AND OTHER PHYSICAL SITE FEATURES.

OWNER OF RECORD:

MAP 252 LOTS 4, 5, & 7
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842
BOOK 5391 PAGES 625 & 638

NO.	DESCRIPTION	BY	DATE
1	MISCELLANEOUS REVISIONS	AKC	5/4/22

REVISIONS

SUBDIVISION & LOT CONSOLIDATION PLAN

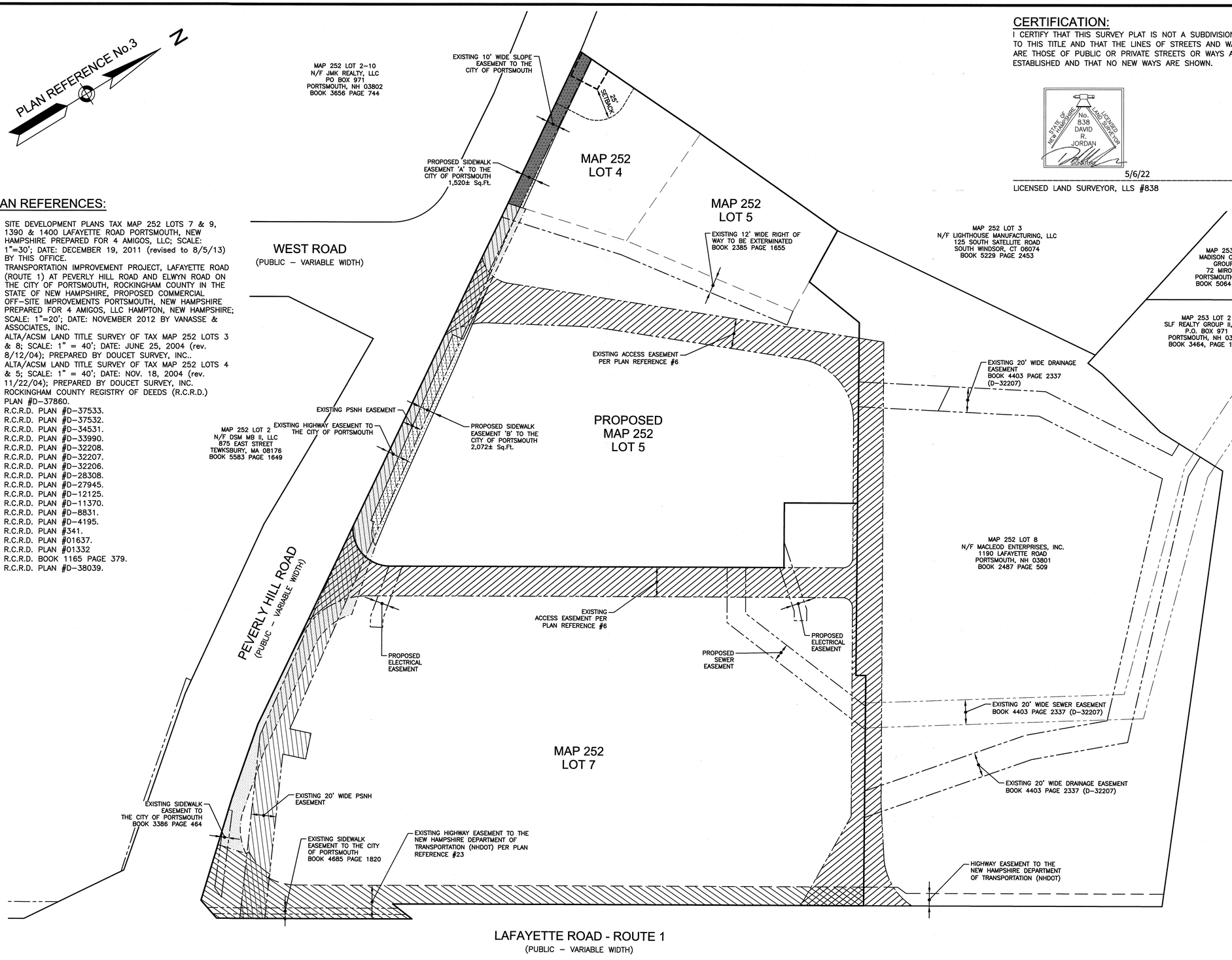
ASSESSORS MAP 252 LOTS 4, 5, & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842

CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON _____ DATE _____

GPI — Engineering, Design, Planning, Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=40'	DATE: APRIL 15, 2022		DRAWING NO. 4582 SUBD LLA.dwg
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
DPD	AKC/DRJ	MAX-458219.00	1 OF 1



PLAN REFERENCES:

1) SITE DEVELOPMENT PLANS TAX MAP 252 LOTS 7 & 9, 1390 & 1400 LAFAYETTE ROAD PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC; SCALE: 1"=30'; DATE: DECEMBER 19, 2011 (revised to 8/5/13) BY THIS OFFICE.
2) TRANSPORTATION IMPROVEMENT PROJECT, LAFAYETTE ROAD (ROUTE 1) AT PEVERLY HILL ROAD AND ELWYN ROAD ON THE CITY OF PORTSMOUTH, ROCKINGHAM COUNTY IN THE STATE OF NEW HAMPSHIRE, PROPOSED COMMERCIAL OFF-SITE IMPROVEMENTS PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR 4 AMIGOS, LLC HAMPTON, NEW HAMPSHIRE; SCALE: 1"=20'; DATE: NOVEMBER 2012 BY VANASSE & ASSOCIATES, INC.
3) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 3 & 8; SCALE: 1" = 40'; DATE: JUNE 25, 2004 (rev. 8/12/04); PREPARED BY DOUCET SURVEY, INC..
4) ALTA/ACSM LAND TITLE SURVEY OF TAX MAP 252 LOTS 4 & 5; SCALE: 1" = 40'; DATE: NOV. 18, 2004 (rev. 11/22/04); PREPARED BY DOUCET SURVEY, INC.
5) ROCKINGHAM COUNTY REGISTRY OF DEEDS (R.C.R.D.) PLAN #D-37860.
6) R.C.R.D. PLAN #D-37533.
7) R.C.R.D. PLAN #D-37532.
8) R.C.R.D. PLAN #D-34531.
9) R.C.R.D. PLAN #D-33990.
10) R.C.R.D. PLAN #D-32208.
11) R.C.R.D. PLAN #D-32207.
12) R.C.R.D. PLAN #D-32206.
13) R.C.R.D. PLAN #D-28308.
14) R.C.R.D. PLAN #D-27945.
15) R.C.R.D. PLAN #D-12125.
16) R.C.R.D. PLAN #D-11370.
17) R.C.R.D. PLAN #D-8831.
18) R.C.R.D. PLAN #D-4195.
19) R.C.R.D. PLAN #341.
20) R.C.R.D. PLAN #01637.
21) R.C.R.D. PLAN #01332
22) R.C.R.D. BOOK 1165 PAGE 379.
23) R.C.R.D. PLAN #D-38039.

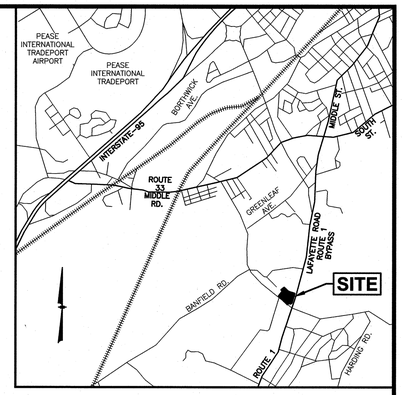
CERTIFICATION:

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 – LICENSED LAND SURVEYOR
No. 838
DAVID R. JORDAN
SIGNATURE

5/6/22

LICENSED LAND SURVEYOR, LLS #838



LOCATION MAP

(NOT TO SCALE)

NOTES:

1) THE PURPOSE OF THIS PLAN IS TO SHOW THE LOCATION OF EASEMENTS BENEFITING OR BURDENING MAP 252 LOTS 4, 5 & 7.
2) THIS PLAN IS THE RESULT OF ON-THE-GROUND FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN 2008 AND 2020.
3) LOCATION OF UNDERGROUND UTILITIES ARE NOT SHOWN.

OWNER OF RECORD:

MAP 252 LOTS 4, 5, & 7
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842
BOOK 5391 PAGES 625 & 638

NO.	DESCRIPTION	BY	DATE

REVISIONS

EASEMENT PLAN

ASSESSORS MAP 252 LOTS 4, 5, & 7
951 PEVERLY HILL ROAD & 1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=40'	DATE: MAY 6, 2022		DRAWING NO. 4582 ESMT 2022.dwg
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
AKC	DRJ	MAX-458219.00	1 OF 1



	QTY	LABEL	DESCRIPTION
AREA	19	A	ARE-EDR-3M-R3-04-E-UL-XX-525-40K



THE EDGE® Series

LED Area Luminaire – Round

Rev. Date: V9 09/07/2021

Product Description

THE EDGE® Series has a slim, low profile design. Its rugged cast aluminum housing minimizes wind load requirements and features an integral, weathertight LED driver compartment, spun vented cover, high performance aluminum heat sinks and leaf/debris guard.
Applications: Auto Dealerships, parking lots, campuses, facade lighting and general site lighting applications

Performance Summary

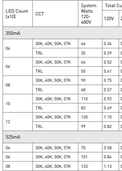
Patented NanoOptic® Product Technology
Assembled in the U.S.A. of US and imported parts
CBU: Minimum 70 CRI (4000K & 5700K), 80 CRI (3000K), 90 CRI (5000K)
CCT: Turtle Friendly Amber, 3000K (+/-300K), 4000K (+/-300K), 5000K (+/- 500K), 5700K (+/- 500K) standard
Limited Warranty[1]: 10 years on luminaire/10 years on Colortast DeltaGuard® finish /1 year on accessories

[1] See http://creatingthing.com/warranty for warranty terms

Accessories

Field-Installed	
Bird Spikes XA-BIRDSPK	**Backlight Control Shields** XA-2060LS-4 - 4 Sided - Unpainted stainless steel - For use with SM and SS optics - Consult factory for shielding for use with 2M, 3M, and 4M optics

R3 Mount



LED Count (x10)	Weight
04	33.8 lbs. (15.3kg)
06	35.2 lbs. (15.9kg)
08	37.0 lbs. (16.8kg)
10	40.7 lbs. (18.5kg)
12	42.4 lbs. (19.3kg)

R4/R5 Mount – see page 14 for weight & dimensions

Ordering Information

Example: ARE-EDR-2M-R3-10-E-UL-SV-350

ARE-EDR								
Product	**Optic**	**Mounting[4]**	**LED Count (x10)**	**Series**	**Voltage**	**Color Options**	**Drive Current**	**Options**
ARE-EDR	**2M** Type II Medium **2MB** Type II Medium w/Back Light Control Shield **2MF** Type II Medium w/BLS **2MW** Type II Medium w/Wattstopper BLS **3M** Type III Medium **3MF** Type III Medium w/BLS **4M** Type IV Medium **5M** Type V Medium **5S** Type V Short	**R3** Spider, Center Direct, 3" - 7-7/8" x 7-7/8" OD **R4** Spider, Center Direct, 4" Square **R5** Spider, Center Direct, 5" Round	**04**[2][3] **06**[2][3] **08**[2][3] **10** **12**	**E**	**UL** Universal 120-277V **UH** Universal 347-480V	**BK** Black **BZ** Bronze **GY** Grey **WH** White	**350** 350mA **525** 525mA **700** 700mA - Available with 60-LED+	**DIM 0-10V Dimming** - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current **P** - Compatible only with 120V, 277V or 347V (phase to neutral) - Consult factory if tuning is required for 208V, 240V or 480V (phase to phase) - When code dictates fusing, use time delay fuse **HL** Motion Sensor Integral - Refer to HL spec sheet for details - Sensor not included **F** Fusing - Available with UL voltage only **30K 3000K Color Temperature** - Minimum 80 CRI - Color temperature per luminaire **40K 4000K Color Temperature** - Minimum 70 CRI - Color temperature per luminaire **50K 5000K Color Temperature** - Minimum 70 CRI - Color temperature per luminaire **TRL Amber Turtle Friendly LEDs** - Available only with 350mA - Color temperature per luminaire - Additional shielding (by others) may be required for Florida Fish and Wildlife Conservation Commission compliance

[2] Reference EPA and pole configurative suitability data on page 14.
[3] Consists of multiple 20 LED light bars, 40, 60, and 80 LED units use blanks as needed in place of populated light bars

THE EDGE® LED Area Luminaire – Round

Product Specifications

CONSTRUCTION & MATERIALS
- Slim, low profile, minimizing wind load requirements
- Luminaire sides are rugged die cast aluminum with integral, weathertight LED driver compartment, spun vented cover, and high performance aluminum heat sinks
- R3 spider mount hub slip-fits over a 2.375" (60mm) to 3" (76mm) O.D. aluminum 4" (102mm) H steel or aluminum tenon or pole and secures with 3 set screws
- R4 spider mount fits directly inside 4" (102mm) square pole and secures to pole with four set screws
- R5 spider mount fits directly inside of a 5" (127mm) round pole to provide a clean hardware-less outer appearance
- Includes leaf/debris guard
- Exclusive Colortast DeltaGuard® finish features an E-Coat epoxy primer and a super durable TGIC polyester topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver, and white are available
- **Weight:** See Dimensions and Weight charts on pages 1 and 14

ELECTRICAL SYSTEM
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** ≥ 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- **10V Source Current:** 40-80 LEDs: 0.15mA, 100-120 LEDs: 0.30mA
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current

REGULATORY & VOLUNTARY QUALIFICATIONS
- cULus Listed
- Suitable for wet locations
- Meets FCC Part 15, Subpart B, Class A Limits for conducted and radiated emissions
- Enclosure meets IP66 requirements per IEC 60529 when ordered without P option
- Certified to ANSI C136.31-2001, 1.5G normal vibration standards when ordered with R3, R4 and R5 mounts
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- DLC qualified with select SKUs. Refer to https://www.designlights.org/search/ for most current information
- Meets Buy American requirements within ARRA

⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm - www.p65warnings.ca.gov

Electrical Data*							
LED Count (x10)	CCT	System Watts 120-480V	Total Current (A)				
			120V	208V	240V	277V	347V 480V
350mA							
04	30K, 40K, 50K, 57K	66	0.56	0.33	0.31	0.28	0.15 0.12
	TRL	35	0.29	0.17	0.15	0.13	0.10 0.07
06	30K, 40K, 50K, 57K	66	0.52	0.31	0.28	0.24	0.20 0.15
	TRL	50	0.41	0.24	0.21	0.18	0.14 0.10
08	30K, 40K, 50K, 57K	90	0.75	0.44	0.38	0.34	0.26 0.20
	TRL	68	0.57	0.33	0.28	0.25	0.20 0.14
10	30K, 40K, 50K, 57K	110	0.92	0.53	0.47	0.41	0.32 0.24
	TRL	83	0.69	0.40	0.35	0.30	0.24 0.17
12	30K, 40K, 50K, 57K	130	1.10	0.63	0.55	0.48	0.38 0.28
	TRL	99	0.82	0.48	0.41	0.36	0.28 0.21
525mA							
04	30K, 40K, 50K, 57K	70	0.58	0.34	0.31	0.28	0.21 0.14
06	30K, 40K, 50K, 57K	101	0.86	0.49	0.43	0.38	0.30 0.22
08	30K, 40K, 50K, 57K	133	1.13	0.66	0.58	0.51	0.39 0.28
10	30K, 40K, 50K, 57K	171	1.43	0.83	0.76	0.66	0.50 0.38
12	30K, 40K, 50K, 57K	202	1.69	0.98	0.86	0.77	0.59 0.46
700mA							
04	30K, 40K, 50K, 57K	93	0.78	0.46	0.40	0.36	0.27 0.20
06	30K, 40K, 50K, 57K	136	1.14	0.65	0.57	0.50	0.39 0.29

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%.

THE EDGE® Series Ambient Adjusted Lumen Maintenance[1]					
Ambient	CCT	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Reported / Estimated[3] LMF	100K hr Estimated[3] LMF
0°C (41°F)	30K/40K/50K/57K	1.04	1.03	1.03	1.03*	1.03
	TRL	1.06	1.06	1.06	1.06*	1.06
10°C (50°F)	30K/40K/50K/57K	1.03	1.02	1.02	1.02*	1.02
	TRL	1.06	1.04	1.04	1.04*	1.04
15°C (59°F)	30K/40K/50K/57K	1.02	1.01	1.01	1.01*	1.01
	TRL	1.04	1.03	1.03	1.03*	1.03
20°C (68°F)	30K/40K/50K/57K	1.01	0.99	0.99	0.99*	0.99
	TRL	1.01	1.01	1.01	1.01*	1.01
25°C (77°F)	30K/40K/50K/57K	1.00	0.98	0.98	0.98*	0.98
	TRL	1.00	1.00	1.00	1.00*	1.00

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LMF) have been applied to all lumen maintenance values. Contact factory for Thermal Map Reference Document for more luminaire wattage vs ambient conditions.
[2] Reported in accordance with IES TM-21. Reported projected lumen maintenance values based on time durations that are up to the tested duration in the IES LM-80 report for the LED.
[3] Estimated values are calculated and represent time durations that exceed the six tested duration of the LED.

LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
1	A	15
2	A	15
3	A	15
4	A	15
5	A	15
6	A	15
7	A	15
8	A	15
9	A	15
10	A	15
11	A	15
12	A	15
13	A	15
14	A	15
15	A	15
16	A	15
17	A	15
18	A	15
19	A	15

NOTE:
- ALL AREA LIGHTS ON NEW 12 FT. POLE MOUNTED ON 1 FT. CONCRETE BASE + 1.8' SPIDER MOUNTING = 15' NOMINAL OVERALL MOUNTING HEIGHT

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
OUTSIDE PROPERTY LINES	0.29	3.3	0.0	N.A.	N.A.
WITHIN PROPERTY LINES	1.10	4.1	0.0	N.A.	N.A.
BUILDING A WALKWAY	1.15	3.4	0.0	N.A.	N.A.
BUILDING B WALKWAY	2.11	4.0	0.6	3.52	6.67
BUILDING C WALKWAY	0.99	2.8	0.0	N.A.	N.A.
BUILDING D&E WALKWAY	1.74	4.0	0.4	4.35	10.00

LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	CATALOG LOGIC
	19	A	Single	6731	1.040	B2-U0-G2	70	1330	Cree Lighting	ARE-EDR-3M-R3-04-E-UL-XX-525-40K

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com

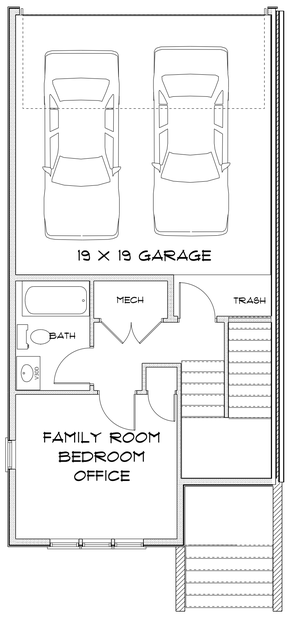
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SCALE: 1" = 30'
LAYOUT BY: JSG
DWG SIZE: D
DATE: 4/6/22

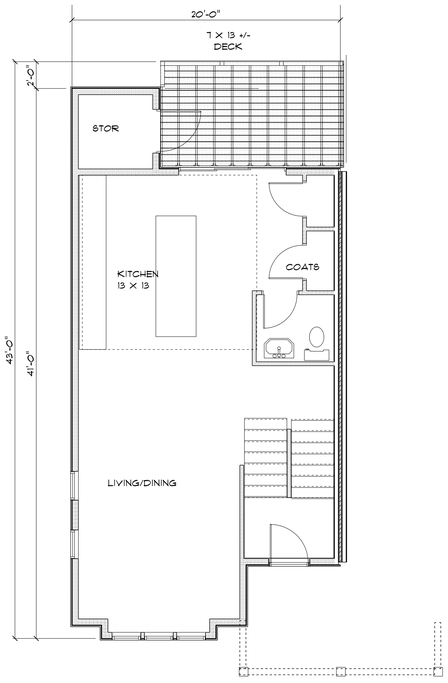
PROJECT NAME:
4 AMIGOS
PORTSMOUTH, NH
DRAWING NUMBER:
RL-8016-S1



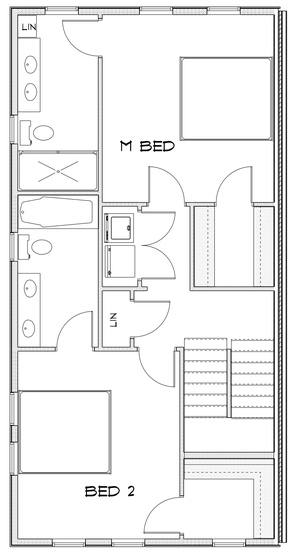




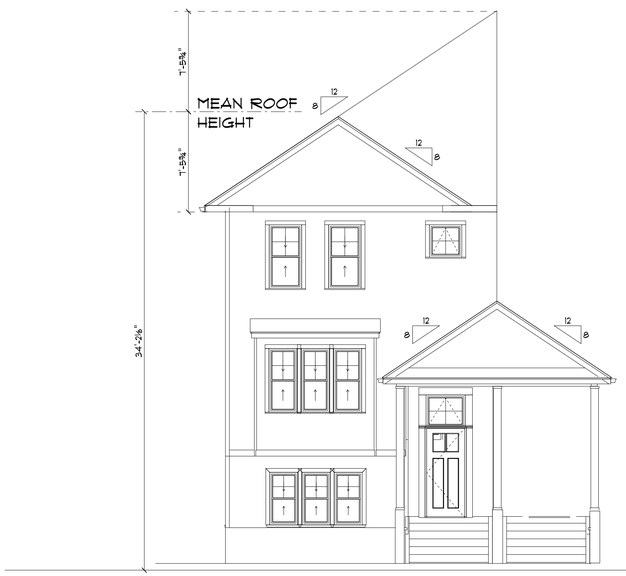
TYPICAL GARAGE LEVEL PLAN
SCALE: 3/16" = 1'-0"



TYPICAL SECOND FLOOR PLAN
SCALE: 3/16" = 1'-0"



TYPICAL THIRD FLOOR PLAN
SCALE: 3/16" = 1'-0"



ASSUMED AVERAGE GRADE TO BE VERIFIED
FACADE MODULATION WHERE REQUIRED IS PROPOSED TO BE ACHIEVED BY MATERIAL CHANGES ROOF, DORMERS AND FENESTRATION VARIATIONS

FRONT ELEVATION DIMENSION
SCALE: 3/16" = 1'-0"

mjk
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CONSULTANTS

REVISIONS

APPROVALS

CONCEPT NOT FOR CONSTRUCTION
1/19/2020

Accept only origianl stamp and signature copies may contain unauthorized modifications

PROJECT

MAP 252- LOTS 4,5 & 7
1400 LAFAYETTE ROAD
PORTSMOUTH NH

FOR

4 AMIGOS, LLC
321 LAFAYETTE ROAD
HAMPTON NH 03842,

TITLE

BUILDING B TYPICAL UNIT

DRAWN BY:

CHECKED BY:

DATE:

SCALE: AS NOTED

DRAWING NO.

1 OF 1

DO NOT SCALE PRINTS









STORMWATER MANAGEMENT REPORT

SITE DEVELOPMENT PLANS
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

GPI

GPI

44 Stiles Road, Suite One
Salem, NH 03079
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Prepared For:

4 Amigos, LLC
321D Lafayette Road
Hampton, NH 03842

January 21, 2020

Revised: April 15, 2022

STATE OF NEW HAMPSHIRE
CHRISTOPHER M. TYMULA
No. 17078
LICENSED PROFESSIONAL ENGINEER
4/19/22

4 Amigos, LLC
Site Development Plans
Stormwater Management Report

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Drainage Areas Plans ..... **Inside Back Cover**

Inspection & Maintenance Manual (I&M) ..... **Inside Back Cover**

Stormwater Management Report
Proposed Site Development Plans
1400 Lafayette Road, Portsmouth, NH 03801
Revised: April 15, 2022

SECTION 1 EXECUTIVE SUMMARY

This report contains the stormwater management analysis for the proposed site development at 1400 Lafayette Road in Portsmouth, New Hampshire. The analysis includes both pre- and post-drain calculations of stormwater runoff rates from the project site. This analysis has been prepared in accordance with both the City of Portsmouth requirements and the New Hampshire Department of Environmental Services (NHDES) Stormwater Manual, Volume 2.

The project site consists of three parcels of land identified as Tax Map 252 Lots 4, 5 & 9 with a combined size of 5.71 acres located north of the intersection of Lafayette Road & Peverly Hill Road.

This vacant pad site is part of the former Yoken's Restaurant and Function Facility which was partially redeveloped in 2013 to include the adjacent pharmacy, bank & restaurant development. Lots 4 & 5 are residential lots which are now proposed to be combined with the new residential development.

The applicant is proposing a multi-unit residential condo development which includes five 3-story Townhouse Style buildings. Access is provided from both Lafayette Road & Peverly Hill Road. Onsite parking includes a combination of street parking and individual townhouse garages.

A new stormwater management system has been designed as part of the proposed development to collect and treat the runoff from the new impervious surface areas. Several stormwater best management practices will be implemented as part of this project. These include deep-sump, hooded catch basins, First Defense hydrodynamic separators, and three underground infiltration systems. The proposed closed drainage system within the site will discharge treated water to the existing closed drainage system that discharges to the north which ultimately flows to Sagamore Creek.

The study watershed area is approximately 6.0-acres that primarily drains northerly across the site towards an existing onsite drainage system. For analysis purposes, the site was modeled with multiple design points as described in the Drainage Summary (Table 1) of this report.

As outlined by NHDES AoT there is a 10-year window for phased developments. Since this current phase of the overall development is within the 10-year window the stormwater analysis, post-development conditions described herein are compared with pre-development conditions prior to the 2013 redevelopment phase, with some adjustments made to current storm/rainfall intensities. Refer to Table 1 and associated notes.

TABLE 1: PEAK RATE ANALYSIS SUMMARY

Design Storm	Pre circa 2013[1] (cfs)	Adjusted pre circa 2013[2] (cfs)	Post circa 2013[1] (cfs)	Adjusted Post circa 2013[2] (cfs)	Proposed[3] (cfs)	Change[5] (cfs)
DESIGN POINT #1 (Existing Catch Basin 3A)[4]						
2-year	-	-	1.1	1.4	1.4	0.0
10-year	-	-	1.7	2.2	2.2	0.0
25-year	-	-	2.0	2.8	2.8	0.0
50-year	-	-	2.2	3.4	3.3	-0.1
DESIGN POINT #3 (Existing Catch Basin)						
2-year	7.0	8.8	2.7	3.9	5.1	-3.7
10-year	10.3	13.7	5.0	9.8	10.4	-3.3
25-year	12.6	17.6	7.2	13.1	15.4	-2.2
50-year	13.9	21.1	8.7	16.3	17.5	-3.6
DESIGN POINT #4 (Hotel Property)						
2-year	2.4	2.9	1.3	1.6	1.7	-1.2
10-year	3.4	4.5	1.8	2.4	2.8	-1.7
25-year	4.2	5.8	2.2	3.1	3.6	-2.2
50-year	4.6	6.9	2.5	3.7	4.3	-2.6

(All values shown are peak rates in CFS)

Lots 4 & 5 which drain towards Design Point #2 were not part of the original study area; therefore, the pre-development for this design point is based on current site conditions.

Design Storm	Pre-development (cfs)	Post-development (cfs)	Change (cfs)
DESIGN POINT #2 (Lot 3)			
2-year	0.8	0.3	-0.5
10-year	2.1	0.7	-1.4
25-year	3.3	1.1	-2.2
50-year	4.5	1.5	-3.0

(All values shown are peak rates in CFS)

[1] Previous analysis used the SCS Soil Distribution Map rainfall data in accordance with 2013 regulations.

[2] Previous analysis adjusted to use current "Extreme Precipitation" data plus 15% coastal increase per current NHDES requirements.

[3] Uses current "Extreme Precipitation" plus 15% coastal increase per current NHDES requirements.

[4] Existing catch basin 3A was a proposed catch basin in the 2013 post-development and was therefore not present for the 2013 pre-development.

[5] Change values for Design Point #1 reported as difference between Adjusted Post circa 2013 and Proposed columns. Change values for Design Points #3 and #4 reported as difference between Adjusted Pre circa 2013 and Proposed Columns.

In conclusion, by incorporating a new on-site drainage system that includes provisions for stormwater treatment and infiltration, there will be a decrease in the peak rate of runoff as a result of this project.

SECTION 2 EXISTING CONDITIONS

As previously stated, the existing conditions used for this stormwater analysis date back to the condition prior to the 2013 redevelopment project. Accordingly, the below description is consistent with the description provided in the previous stormwater report submitted at that time with the exception of Lots 4 & 5 which were not part of the original analysis. These two residential lots contain a small house, some grass areas, a few sheds and about 50 wooded coverage, all of which drains overland towards the rear of the property onto adjacent Lot 3.

Portsmouth Tax Map 252 Lot 9 is a 5.1-acre parcel of land located in the Gateway District (GW) in Portsmouth, NH. The parcel of land is the location of the former Yoken's Restaurant and Function Facility. The site is bounded by Lafayette Road to the east, Peverly Road to the south, residential property to the west and the Comfort Inn to the north. Onsite topography ranges from 1-5% and slopes towards the Comfort Inn along the north.

The Yoken's building has been razed, but for analysis purposes the former building and impervious area has been modeled in the existing conditions as if it were still existing. The remainder of the site is mostly paved, occupying approximately 93% of the site, with limited green space.

The existing drainage system consists of a series of catch basins and manholes which ultimately discharge north of the site boundary towards a drainage swale north of the Comfort Inn. This ultimately flows to Sagamore Creek. For analysis purposes, the existing catch basin, labeled CB D and the Hotel Property have been labeled as the design points. These areas represent the runoff discharging from the site as either shallow concentrated flows or flows into the existing drainage system via pipe flow.

The existing onsite catch basins consist of shallow structures with varying pipe sizes and material type. Based on the shallow flat pipes, along the front of the site near Lafayette Road, the existing conditions HydroCAD model indicated several existing catch basins overtopping for even the more frequent less intense design storms. In order to check the runoff results for accuracy due to any modeling limitations in the software, we modeled this portion of the existing site as one subcatchment to compare the results with the individually modeled areas. This "check" is shown in the HydroCAD model as subcatchment "Check". The results of this analysis indicate a level of precision of approximately 10% which indicates predevelopment runoff rates appear to be reasonable for comparison to the post development design points. Ultimately any runoff will drain northerly across the site as overland flow and eventually towards the drainage swale located north of the existing Comfort Inn property.

The existing soils are also classified by the Soil Survey of Rockingham County (NRCS Manual) as 140C "Chatfield-Hollis-Canton Complex", 299 "Udorthents" and 699 "Urban Land" (see soil map), and described by NRCS as follows:

> 140C - Chatfield-Hollis-Canton complex (SCS Classification "B") consists of 8 to 15 percent slopes and are very stony. These gently sloping soils occur as areas so intermingled that mapping them separately was not practical. They are on low, knobby hills and ridges that in most places have a northeast orientation. Areas are irregularly shaped and are 4 to 400 acres in size. They are about 35 percent Chatfield soil, 20 percent Hollis soil, 20 percent Canton soil, and 25 percent other soils. Stones cover 0.01 to 3 percent of the surface.
>
> 299 - Udorthents (SCS Classification "Unknown") consists of areas of soils formed by cutting or filling for construction projects. Udorthents are near or adjacent to most of the soils of the survey area. Because of the extreme variability of Udorthents, a reference pedon is not given.
>
> 699 - Urban Land (SCS Classification "Unknown") consists of land that is covered by streets, parking lots and buildings. Areas are rectangular or irregularly shaped and are 4 to 250 acres in size. Inclusions make up 15 percent or less of the map unit. They consist of scattered areas of soil throughout the map unit.

Based on the majority of the site consisting of Udorthents and Urban land having no known hydrologic soil classification, the analysis used the hydrologic soil group classification B consistent with Chatfield-Hollis-Canton complex present onsite. Additionally test pits were performed onsite indicating loamy sand and sands consistent with a "B" soil.

SECTION 3 PROPOSED CONDITIONS

The applicant is proposing a multi-unit residential condo development which includes five 3-story Townhouse Style buildings. Access is provided from both Lafayette Road & Peverly Hill Road. Onsite parking includes a combination of street parking and individual townhouse garages.

A new stormwater management system has been designed as part of the proposed development to collect and treat the runoff from the new impervious surface areas. Several stormwater best management practices will be implemented as part of this project. These include deep-sump, hooded catch basins, First Defense hydrodynamic separators, and three underground infiltration systems. The proposed closed drainage system within the site will discharge treated water to the existing closed drainage system that discharges to the north which ultimately flows to Sagamore Creek.

In order to safeguard against oil or gas introduction into the drainage system, stormwater runoff from parking areas and driveways will be collected in hooded catch basins with deep sumps and routed to a First Defense hydrodynamic separator. Such pretreatment of stormwater reduces both suspended solids and oils in the drainage system and is recommended by NHDES.

Another safeguard against future intrusion of contaminants into the groundwater is the implementation of an Inspection & Maintenance Manual (I&M), which will assure proper function of drainage components and reduce sediment entering the system. To prevent erosion and sedimentation during construction, Best Management Practices including stabilized construction exits, silt fence, catch basin inserts, and temporary and permanent seeding have been incorporated into the construction sequence.

The total area of disturbance related to the proposed construction on this property is approximately 115,000 square feet; therefore the project is subject to US EPA Construction General Permit requirements.

Due to disturbing more than 15,000 sf of area, the City of Portsmouth requires Enhanced Stormwater Treatment Standards to be followed. Per the NHDES “BMP Pollutant Removal Efficiency” table contained within the New Hampshire Stormwater Manual, the underground infiltration systems have a Total Suspended Soils (TSS) Removal Rate of 90% and a Total Nitrogen (TN) Removal Rate of 60%. This satisfies the requirements of §7.6.2-1(a) of the Site Plan Review Regulations (See Appendix F). In addition to these enhanced requirements, following approval from the City, relevant information will need to be submitted to the Pollutant Tracking and Accounting Program (PTAP) online data portal managed by the UNH Stormwater Center. The Planning Department will be notified of the PTAP data submittal.

SECTION 4 STORMWATER MODELING METHODOLOGY

The drainage system for this project was modeled using HydroCAD, a stormwater modeling computer program that analyzes the hydrology, and hydraulics of stormwater runoff. HydroCAD is based largely on the hydrology techniques developed by the Soil Conservation Service (SCS/NRCS), combined with other hydrology and hydraulics calculations. For a given rainfall event, these techniques are used to generate hydrographs throughout a watershed. This provides verification that a given drainage system is adequate for the area under consideration, or to predict where flooding or erosion is likely to occur.

In HydroCAD, each watershed is modeled as a Subcatchment, streams and culverts as a Reach (or Pond, depending on available storage capacity), and large wetlands and other natural or artificial storage areas as a Pond. SCS hydrograph generation and routing procedures were used to model both Pre-development and Post-development runoff conditions.

The Pre-development and Post-development watershed limits and the subcatchment characteristics were determined using both USGS and on-the-ground topographic survey information and through visual, on-site inspection. Conservative estimates were used at all times in estimating the hydrologic characteristics of each watershed or subcatchment.

STORMWATER MANAGEMENT REPORT

SITE DEVELOPMENT PLANS
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

GPI

GPI

44 Stiles Road, Suite One
Salem, NH 03079
(603) 893-0720

Prepared For:

4 Amigos, LLC
321D Lafayette Road
Hampton, NH 03842

January 21, 2020

Revised: April 15, 2022

STATE OF NEW HAMPSHIRE
CHRISTOPHER M. TYMULA
No. 17078
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Drainage Areas Plans ..... **Inside Back Cover**

Inspection & Maintenance Manual (I&M) ..... **Inside Back Cover**

Stormwater Management Report
Proposed Site Development Plans
1400 Lafayette Road, Portsmouth, NH 03801
Revised: April 15, 2022

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This report contains the stormwater management analysis for the proposed site development at 1400 Lafayette Road in Portsmouth, New Hampshire. The analysis includes both pre- and post-drain calculations of stormwater runoff rates from the project site. This analysis has been prepared in accordance with both the City of Portsmouth requirements and the New Hampshire Department of Environmental Services (NHDES) Stormwater Manual, Volume 2.

The project site consists of three parcels of land identified as Tax Map 252 Lots 4, 5 & 9 with a combined size of 5.71 acres located north of the intersection of Lafayette Road & Peverly Hill Road.

This vacant pad site is part of the former Yoken's Restaurant and Function Facility which was partially redeveloped in 2013 to include the adjacent pharmacy, bank & restaurant development. Lots 4 & 5 are residential lots which are now proposed to be combined with the new residential development.

The applicant is proposing a multi-unit residential condo development which includes five 3-story Townhouse Style buildings. Access is provided from both Lafayette Road & Peverly Hill Road. Onsite parking includes a combination of street parking and individual townhouse garages.

A new stormwater management system has been designed as part of the proposed development to collect and treat the runoff from the new impervious surface areas. Several stormwater best management practices will be implemented as part of this project. These include deep-sump, hooded catch basins, First Defense hydrodynamic separators, and three underground infiltration systems. The proposed closed drainage system within the site will discharge treated water to the existing closed drainage system that discharges to the north which ultimately flows to Sagamore Creek.

The study watershed area is approximately 6.0-acres that primarily drains northerly across the site towards an existing onsite drainage system. For analysis purposes, the site was modeled with multiple design points as described in the Drainage Summary (Table 1) of this report.

As outlined by NHDES AoT there is a 10-year window for phased developments. Since this current phase of the overall development is within the 10-year window the stormwater analysis, post-development conditions described herein are compared with pre-development conditions prior to the 2013 redevelopment phase, with some adjustments made to current storm/rainfall intensities. Refer to Table 1 and associated notes.

TABLE 1: PEAK RATE ANALYSIS SUMMARY

Design Storm	Pre circa 2013[1] (cfs)	Adjusted pre circa 2013[2] (cfs)	Post circa 2013[1] (cfs)	Adjusted Post circa 2013[2] (cfs)	Proposed[3] (cfs)	Change[5] (cfs)
DESIGN POINT #1 (Existing Catch Basin 3A)[4]						
2-year	-	-	1.1	1.4	1.4	0.0
10-year	-	-	1.7	2.2	2.2	0.0
25-year	-	-	2.0	2.8	2.8	0.0
50-year	-	-	2.2	3.4	3.3	-0.1
DESIGN POINT #3 (Existing Catch Basin)						
2-year	7.0	8.8	2.7	3.9	5.1	-3.7
10-year	10.3	13.7	5.0	9.8	10.4	-3.3
25-year	12.6	17.6	7.2	13.1	15.4	-2.2
50-year	13.9	21.1	8.7	16.3	17.5	-3.6
DESIGN POINT #4 (Hotel Property)						
2-year	2.4	2.9	1.3	1.6	1.7	-1.2
10-year	3.4	4.5	1.8	2.4	2.8	-1.7
25-year	4.2	5.8	2.2	3.1	3.6	-2.2
50-year	4.6	6.9	2.5	3.7	4.3	-2.6

(All values shown are peak rates in CFS)

Lots 4 & 5 which drain towards Design Point #2 were not part of the original study area; therefore, the pre-development for this design point is based on current site conditions.

Design Storm	Pre-development (cfs)	Post-development (cfs)	Change (cfs)
DESIGN POINT #2 (Lot 3)			
2-year	0.8	0.3	-0.5
10-year	2.1	0.7	-1.4
25-year	3.3	1.1	-2.2
50-year	4.5	1.5	-3.0

(All values shown are peak rates in CFS)

[1] Previous analysis used the SCS Soil Distribution Map rainfall data in accordance with 2013 regulations.

[2] Previous analysis adjusted to use current "Extreme Precipitation" data plus 15% coastal increase per current NHDES requirements.

[3] Uses current "Extreme Precipitation" plus 15% coastal increase per current NHDES requirements.

[4] Existing catch basin 3A was a proposed catch basin in the 2013 post-development and was therefore not present for the 2013 pre-development.

[5] Change values for Design Point #1 reported as difference between Adjusted Post circa 2013 and Proposed columns. Change values for Design Points #3 and #4 reported as difference between Adjusted Pre circa 2013 and Proposed Columns.

In conclusion, by incorporating a new on-site drainage system that includes provisions for stormwater treatment and infiltration, there will be a decrease in the peak rate of runoff as a result of this project.

SECTION 2 EXISTING CONDITIONS

As previously stated, the existing conditions used for this stormwater analysis date back to the condition prior to the 2013 redevelopment project. Accordingly, the below description is consistent with the description provided in the previous stormwater report submitted at that time with the exception of Lots 4 & 5 which were not part of the original analysis. These two residential lots contain a small house, some grass areas, a few sheds and about 50 wooded coverage, all of which drains overland towards the rear of the property onto adjacent Lot 3.

Portsmouth Tax Map 252 Lot 9 is a 5.1-acre parcel of land located in the Gateway District (GW) in Portsmouth, NH. The parcel of land is the location of the former Yoken's Restaurant and Function Facility. The site is bounded by Lafayette Road to the east, Peverly Road to the south, residential property to the west and the Comfort Inn to the north. Onsite topography ranges from 1-5% and slopes towards the Comfort Inn along the north.

The Yoken's building has been razed, but for analysis purposes the former building and impervious area has been modeled in the existing conditions as if it were still existing. The remainder of the site is mostly paved, occupying approximately 93% of the site, with limited green space.

The existing drainage system consists of a series of catch basins and manholes which ultimately discharge north of the site boundary towards a drainage swale north of the Comfort Inn. This ultimately flows to Sagamore Creek. For analysis purposes, the existing catch basin, labeled CB D and the Hotel Property have been labeled as the design points. These areas represent the runoff discharging from the site as either shallow concentrated flows or flows into the existing drainage system via pipe flow.

The existing onsite catch basins consist of shallow structures with varying pipe sizes and material type. Based on the shallow flat pipes, along the front of the site near Lafayette Road, the existing conditions HydroCAD model indicated several existing catch basins overtopping for even the more frequent less intense design storms. In order to check the runoff results for accuracy due to any modeling limitations in the software, we modeled this portion of the existing site as one subcatchment to compare the results with the individually modeled areas. This "check" is shown in the HydroCAD model as subcatchment "Check". The results of this analysis indicate a level of precision of approximately 10% which indicates predevelopment runoff rates appear to be reasonable for comparison to the post development design points. Ultimately any runoff will drain northerly across the site as overland flow and eventually towards the drainage swale located north of the existing Comfort Inn property.

The existing soils are also classified by the Soil Survey of Rockingham County (NRCS Manual) as 140C "Chatfield-Hollis-Canton Complex", 299 "Udorthents" and 699 "Urban Land" (see soil map), and described by NRCS as follows:

> 140C - Chatfield-Hollis-Canton complex (SCS Classification "B") consists of 8 to 15 percent slopes and are very stony. These gently sloping soils occur as areas so intermingled that mapping them separately was not practical. They are on low, knobby hills and ridges that in most places have a northeast orientation. Areas are irregularly shaped and are 4 to 400 acres in size. They are about 35 percent Chatfield soil, 20 percent Hollis soil, 20 percent Canton soil, and 25 percent other soils. Stones cover 0.01 to 3 percent of the surface.
>
> 299 - Udorthents (SCS Classification "Unknown") consists of areas of soils formed by cutting or filling for construction projects. Udorthents are near or adjacent to most of the soils of the survey area. Because of the extreme variability of Udorthents, a reference pedon is not given.
>
> 699 - Urban Land (SCS Classification "Unknown") consists of land that is covered by streets, parking lots and buildings. Areas are rectangular or irregularly shaped and are 4 to 250 acres in size. Inclusions make up 15 percent or less of the map unit. They consist of scattered areas of soil throughout the map unit.

Based on the majority of the site consisting of Udorthents and Urban land having no known hydrologic soil classification, the analysis used the hydrologic soil group classification B consistent with Chatfield-Hollis-Canton complex present onsite. Additionally test pits were performed onsite indicating loamy sand and sands consistent with a "B" soil.

SECTION 3 PROPOSED CONDITIONS

The applicant is proposing a multi-unit residential condo development which includes five 3-story Townhouse Style buildings. Access is provided from both Lafayette Road & Peverly Hill Road. Onsite parking includes a combination of street parking and individual townhouse garages.

A new stormwater management system has been designed as part of the proposed development to collect and treat the runoff from the new impervious surface areas. Several stormwater best management practices will be implemented as part of this project. These include deep-sump, hooded catch basins, First Defense hydrodynamic separators, and three underground infiltration systems. The proposed closed drainage system within the site will discharge treated water to the existing closed drainage system that discharges to the north which ultimately flows to Sagamore Creek.

In order to safeguard against oil or gas introduction into the drainage system, stormwater runoff from parking areas and driveways will be collected in hooded catch basins with deep sumps and routed to a First Defense hydrodynamic separator. Such pretreatment of stormwater reduces both suspended solids and oils in the drainage system and is recommended by NHDES.

Another safeguard against future intrusion of contaminants into the groundwater is the implementation of an Inspection & Maintenance Manual (I&M), which will assure proper function of drainage components and reduce sediment entering the system. To prevent erosion and sedimentation during construction, Best Management Practices including stabilized construction exits, silt fence, catch basin inserts, and temporary and permanent seeding have been incorporated into the construction sequence.

The total area of disturbance related to the proposed construction on this property is approximately 115,000 square feet; therefore the project is subject to US EPA Construction General Permit requirements.

Due to disturbing more than 15,000 sf of area, the City of Portsmouth requires Enhanced Stormwater Treatment Standards to be followed. Per the NHDES “BMP Pollutant Removal Efficiency” table contained within the New Hampshire Stormwater Manual, the underground infiltration systems have a Total Suspended Soils (TSS) Removal Rate of 90% and a Total Nitrogen (TN) Removal Rate of 60%. This satisfies the requirements of §7.6.2-1(a) of the Site Plan Review Regulations (See Appendix F). In addition to these enhanced requirements, following approval from the City, relevant information will need to be submitted to the Pollutant Tracking and Accounting Program (PTAP) online data portal managed by the UNH Stormwater Center. The Planning Department will be notified of the PTAP data submittal.

SECTION 4 STORMWATER MODELING METHODOLOGY

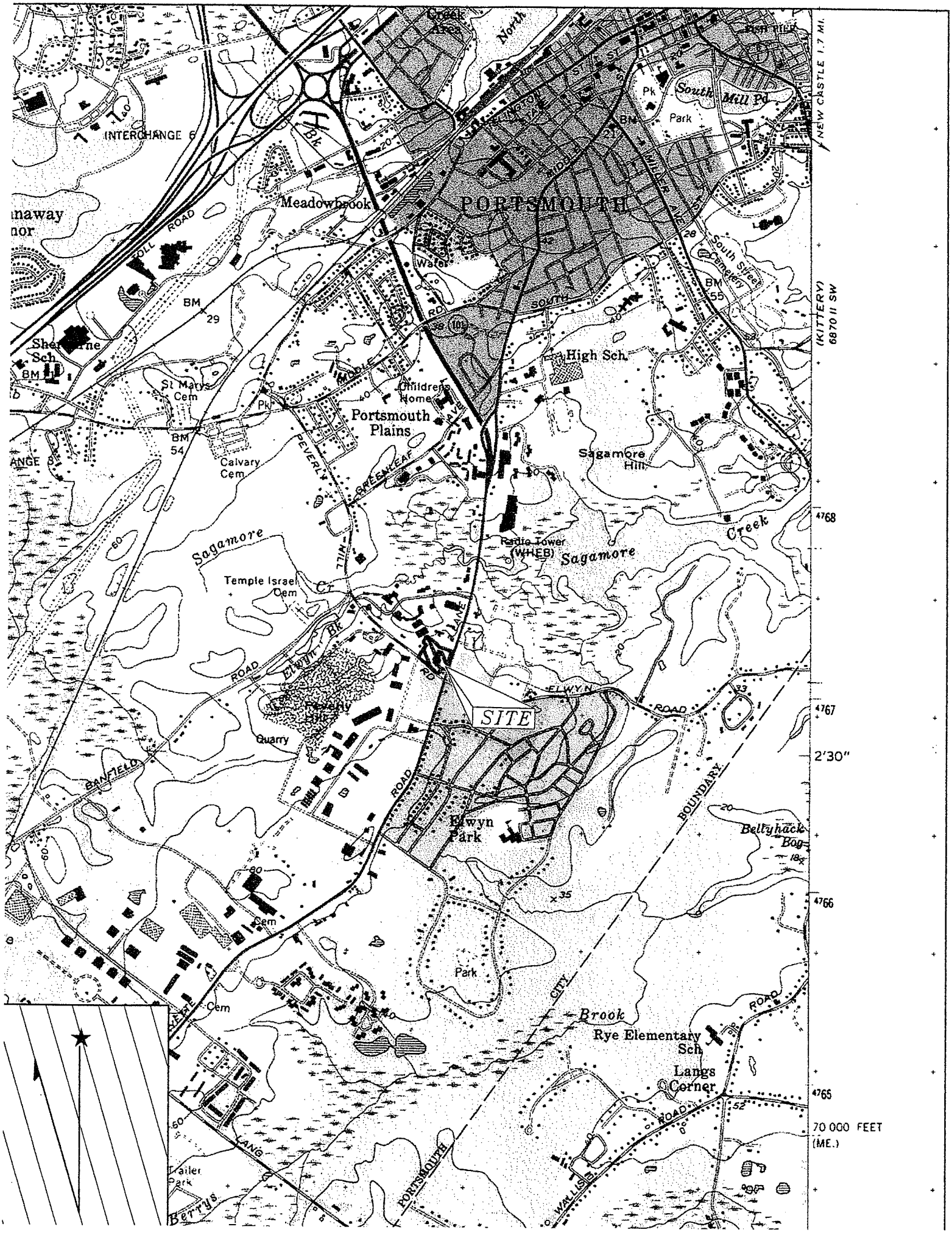
The drainage system for this project was modeled using HydroCAD, a stormwater modeling computer program that analyzes the hydrology, and hydraulics of stormwater runoff. HydroCAD is based largely on the hydrology techniques developed by the Soil Conservation Service (SCS/NRCS), combined with other hydrology and hydraulics calculations. For a given rainfall event, these techniques are used to generate hydrographs throughout a watershed. This provides verification that a given drainage system is adequate for the area under consideration, or to predict where flooding or erosion is likely to occur.

In HydroCAD, each watershed is modeled as a Subcatchment, streams and culverts as a Reach (or Pond, depending on available storage capacity), and large wetlands and other natural or artificial storage areas as a Pond. SCS hydrograph generation and routing procedures were used to model both Pre-development and Post-development runoff conditions.

The Pre-development and Post-development watershed limits and the subcatchment characteristics were determined using both USGS and on-the-ground topographic survey information and through visual, on-site inspection. Conservative estimates were used at all times in estimating the hydrologic characteristics of each watershed or subcatchment.

APPENDIX A

USGS Map


INTERCHANGE 6
Meadowbrook
PORTSMOUTH
North Mill Pond
South Mill Pd
Park
Water
High Sch.
Children's Home
Portsmouth Plains
St Marys Cem
Calvary Cem
Sagamore Hill
Radio Tower (WHEB)
Sagamore Creek
Temple Israel Cem
Elwyn Park
Quarry
SITE
Elwyn Park
Bellyhack Bog
Rye Elementary Sch
Langs Corner
Brook
Trailer Park
Berrys
BM 29
BM 54
BM 55
NEW CASTLE 1.7 MI.
(KITTERY) 6870 II SW
4768
4767
4766
4765
2'30"
70 000 FEET (ME.)

APPENDIX B

NRCS Soil Information

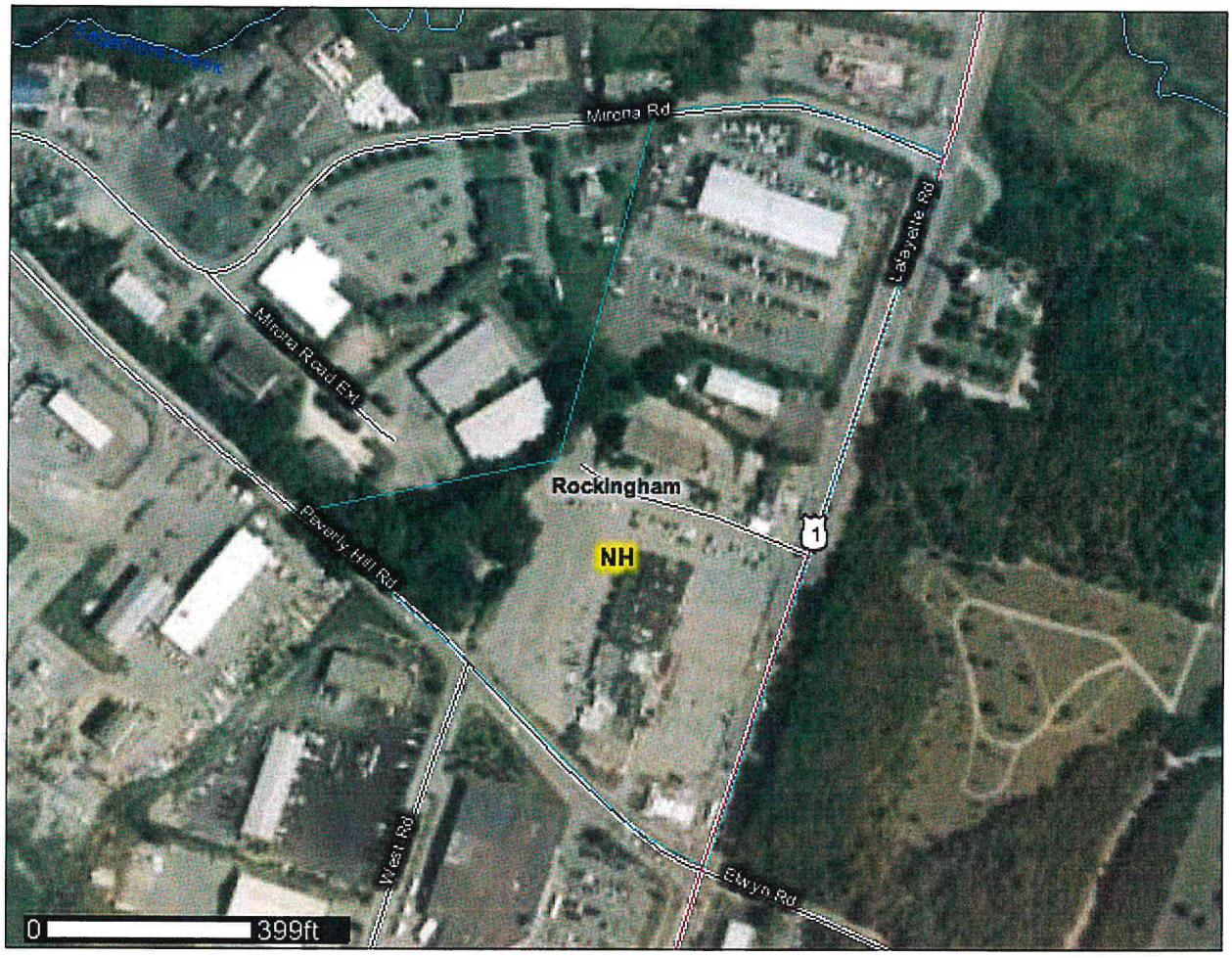
United States Department of Agriculture

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



September 30, 2011

Preface

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

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

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

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

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

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

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

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

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

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

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

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

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

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

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

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

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
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:2,940 if printed on A size (8.5" × 11") sheet.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

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 11, Oct 27, 2009

Date(s) aerial images were photographed: 8/23/2003

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

Rockingham County, New Hampshire (NH015)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, very stony	3.8	20.2%
299	Udorthents, smoothed	4.1	22.1%
699	Urban land	10.7	57.7%
Totals for Area of Interest		**18.6**	**100.0%**

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Rockingham County, New Hampshire

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

Map Unit Setting

Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 46 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 60 to 195 days

Map Unit Composition

Chatfield and similar soils: 35 percent
Canton and similar soils: 20 percent
Hollis and similar soils: 20 percent
Minor components: 25 percent

Description of Chatfield

Setting

Parent material: Till

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

Interpretive groups

Land capability (nonirrigated): 6s

Typical profile

0 to 20 inches: Fine sandy loam
20 to 31 inches: Cobbly fine sandy loam
31 to 35 inches: Unweathered bedrock

Description of Hollis

Setting

Parent material: Till

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water capacity: Very low (about 1.6 inches)

Interpretive groups
Land capability (nonirrigated): 6s

Typical profile
0 to 2 inches: Fine sandy loam
2 to 13 inches: Cobbly fine sandy loam
13 to 17 inches: Unweathered bedrock

Description of Canton

Setting
Parent material: Till

Properties and qualities
Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.3 inches)

Interpretive groups
Land capability (nonirrigated): 6s

Typical profile
0 to 5 inches: Gravelly fine sandy loam
5 to 21 inches: Gravelly fine sandy loam
21 to 60 inches: Loamy sand

Minor Components

Not named
Percent of map unit: 7 percent

Newfields
Percent of map unit: 5 percent

Ossipee and greenwood
Percent of map unit: 5 percent
Landform: Bogs

Scarboro
Percent of map unit: 3 percent
Landform: Depressions

Walpole
Percent of map unit: 3 percent
Landform: Depressions

Rock outcrop
Percent of map unit: 2 percent

299—Udorthents, smoothed

Map Unit Composition

Udorthents and similar soils: 100 percent

Description of Udorthents

Properties and qualities

Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

699—Urban land

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent

Minor Components

Not named

Percent of map unit: 15 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

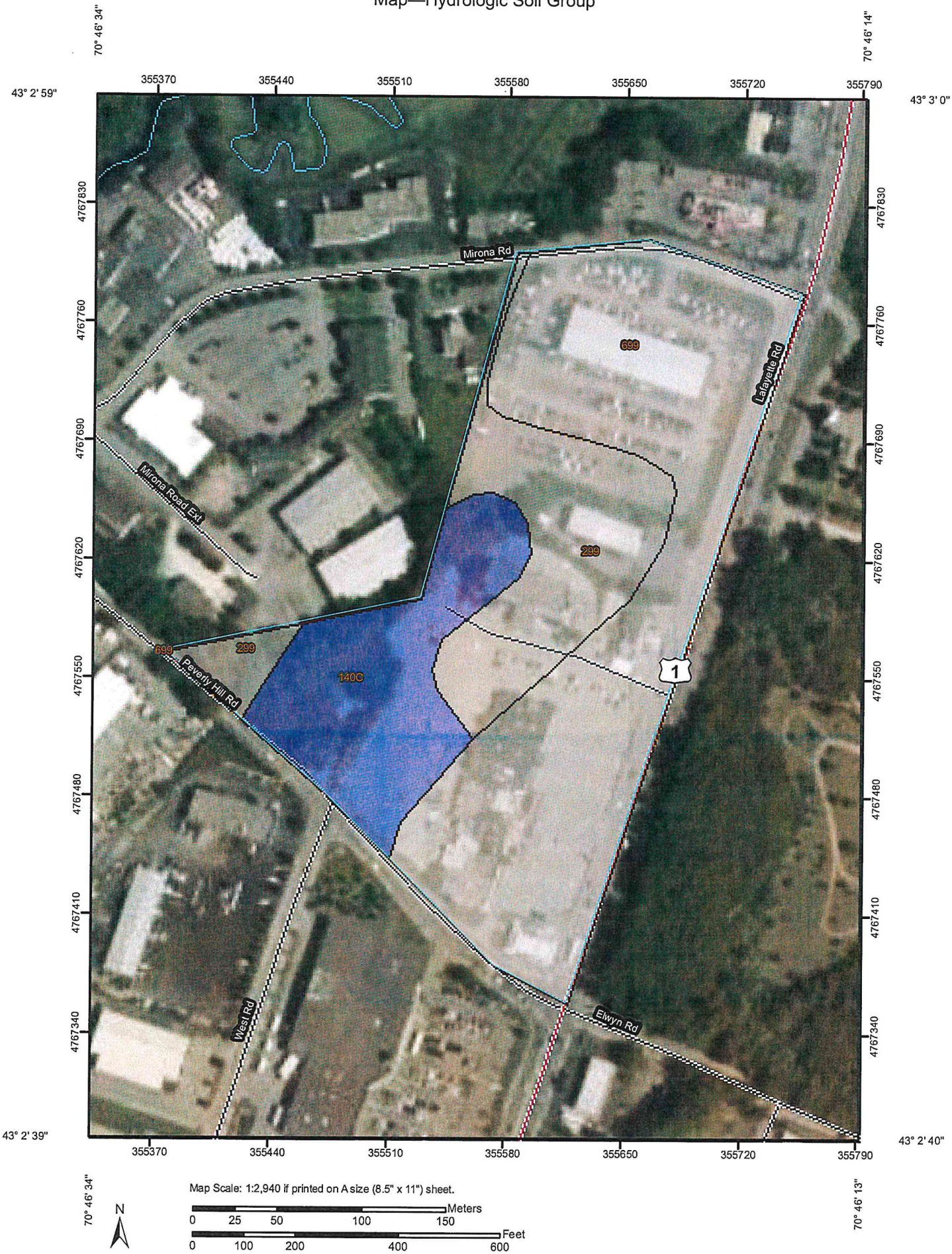
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:2,940 if printed on A size (8.5" × 11") sheet.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

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 11, Oct 27, 2009

Date(s) aerial images were photographed: 8/23/2003

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.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Rockingham County, New Hampshire (NH015)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, very stony	B	3.8	20.2%
299	Udorthents, smoothed		4.1	22.1%
699	Urban land		10.7	57.7%
Totals for Area of Interest			**18.6**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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APPENDIX C

Test Pit Logs

TEST PIT DATA

Client: 4 Amigos LLC
Project Address: 1400 Lafayette Road
Town, State: Portsmouth, NH
Job Number: 458219
Date: December 16, 2019
Performed by: Diane Pantermoller

Test Pit No.	**12-1**	SCS Soil:		Chatfield-Hollis-Canton
ESHWT:	>54"	Standing Water:		None
Refusal:	54"	Roots:		None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-48"	A	Loamy Sand	10yr 3/2	FR	
48-54"	B	Loamy Sand	10yr 5/6	FR	None visible

Test Pit No.	**12-2**	SCS Soil:		Chatfield-Hollis-Canton
ESHWT:	>120"	Standing Water:		None
Refusal:	>120"	Roots:		54"

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-9"	A	Loamy Sand	10yr 3/2	FR	
9-18"	B	Loamy Sand	10yr 5/6	FR	
18-120"	C	Loamy Sand	7.5yr 4/3	FR	20% Gravel

Test Pit No.	**12-3**	SCS Soil:		Chatfield-Hollis-Canton
ESHWT:	>122"	Standing Water:		None
Refusal:	>122"	Roots:		None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-30"	Fill	Mixed Soils/pavement			Mixed Soils/Urban Fill/Pavement Gravel
30-122"	C	Loamy Sand	7.5yr 4/3	FR	20% Gravel

Test Pit No.	**12-4**	SCS Soil:		Chatfield-Hollis-Canton
ESHWT:	>120"	Standing Water:		None
Refusal:	>120"	Roots:		None

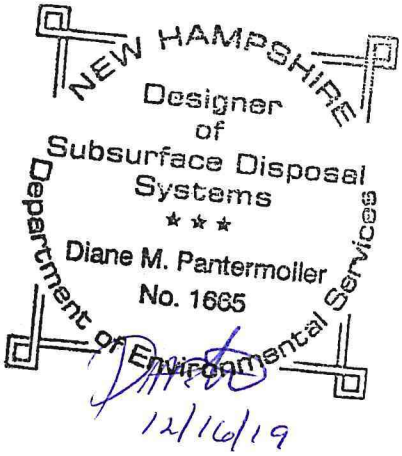
Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-120"	Fill	Mixed Soils			Bricks, Urban Fill

Test Pit No.	**12-5**	SCS Soil:		Chatfield-Hollis-Canton
ESHWT:	>120"	Standing Water:		None
Refusal:	>120"	Roots:		None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-36"	Fill	Mixed Soils			Bricks, Urban Fill
36-120"	C	Loamy Sand	7.5yr 4/3	FR	20% Gravel

Test Pit No.	**12-6**	SCS Soil:	Chatfield-Hollis-Canton
ESHWT:	>120"	Standing Water:	None
Refusal:	>120"	Roots:	None

Depth	Horizon	Soil Texture	Color	Consistence	Mottles; Quantity/Contrast
0-12"	A	Loamy Sand	10yr 3/2	FR	
12-34"	B	Loamy Sand	10yr 5/6	FR	
34-120"	C	Medium Sand	2.5y 7/4	FR	



APPENDIX D

Pre-Development HydroCAD Printouts

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: RUNOFF TO EXIST CB Runoff Area=51,345 sf 0.00% Impervious Runoff Depth=0.67"
Flow Length=415' Tc=6.7 min CN=61 Runoff=0.68 cfs 2,846 cf

Subcatchment 2S: RUNOFF TO EXIST CB Runoff Area=12,454 sf 0.00% Impervious Runoff Depth=0.67"
Flow Length=180' Tc=5.4 min CN=61 Runoff=0.17 cfs 690 cf

Subcatchment 100S: RUNOFF TO CB3 Runoff Area=15,623 sf 92.95% Impervious Runoff Depth=3.14"
Flow Length=100' Tc=2.2 min CN=95 Runoff=1.42 cfs 4,082 cf

Subcatchment 200S: RUNOFF TO LOT 3 Runoff Area=34,976 sf 20.22% Impervious Runoff Depth=0.86"
Flow Length=183' Tc=3.2 min CN=65 Runoff=0.77 cfs 2,504 cf

Subcatchment 300S: RUNOFF TO CB8 Runoff Area=10,218 sf 64.84% Impervious Runoff Depth=2.19"
Flow Length=160' Tc=3.2 min CN=85 Runoff=0.67 cfs 1,866 cf

Subcatchment 301S: RUNOFF TO CB9 Runoff Area=3,956 sf 67.62% Impervious Runoff Depth=2.19"
Flow Length=126' Tc=1.8 min CN=85 Runoff=0.27 cfs 722 cf

Subcatchment 302S: RUNOFF TO CB6 Runoff Area=11,791 sf 86.68% Impervious Runoff Depth=2.93"
Flow Length=122' Slope=0.0100 '/' Tc=2.6 min CN=93 Runoff=1.01 cfs 2,877 cf

Subcatchment 303S: RUNOFF TO CB 5A Runoff Area=3,507 sf 92.02% Impervious Runoff Depth=3.14"
Flow Length=105' Tc=0.8 min CN=95 Runoff=0.33 cfs 916 cf

Subcatchment 304S: RUNOFF TO CB5 Runoff Area=12,564 sf 93.01% Impervious Runoff Depth=3.14"
Flow Length=336' Tc=3.2 min CN=95 Runoff=1.10 cfs 3,283 cf

Subcatchment 305S: RUNOFF TO CB12 Runoff Area=8,890 sf 80.99% Impervious Runoff Depth=2.73"
Flow Length=109' Tc=1.0 min CN=91 Runoff=0.76 cfs 2,023 cf

Subcatchment 400S: RUNOFF TO HOTEL Runoff Area=17,525 sf 96.44% Impervious Runoff Depth=3.35"
Flow Length=168' Tc=3.4 min CN=97 Runoff=1.57 cfs 4,897 cf

Pond 12: EXIST. CB12 (STORMCEPTOR) Peak Elev=44.14' Inflow=0.76 cfs 2,023 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=0.76 cfs 2,023 cf

Pond DP3: EXIST CB-D (DESIGN POINT #3) Inflow=3.86 cfs 13,456 cf
Primary=3.86 cfs 13,456 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=42.56' Inflow=1.42 cfs 4,082 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=1.42 cfs 4,082 cf

Pond EX. CB5: EX. CB-5 Peak Elev=42.71' Inflow=1.10 cfs 3,538 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=1.10 cfs 3,538 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=42.20' Inflow=1.38 cfs 4,454 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=1.38 cfs 4,454 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=41.64' Inflow=2.39 cfs 7,331 cf
12.0" Round Culvert n=0.013 L=165.0' S=0.0053 '/' Outflow=2.39 cfs 7,331 cf

Pond EX. CB8: EX. CB-8 Peak Elev=41.84' Inflow=0.67 cfs 1,866 cf
12.0" Round Culvert n=0.013 L=128.0' S=0.0058 '/' Outflow=0.67 cfs 1,866 cf

Pond EX. CB9: EX. CB-9 Peak Elev=40.80' Inflow=0.93 cfs 2,589 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0230 '/' Outflow=0.93 cfs 2,589 cf

Pond EX. DMH4: EXIST. DMH4 Peak Elev=40.63' Inflow=3.43 cfs 10,610 cf
18.0" Round Culvert n=0.013 L=36.0' S=0.0050 '/' Outflow=3.43 cfs 10,610 cf

Pond EX.CB: EXISTING CB Peak Elev=41.64' Inflow=0.17 cfs 690 cf
18.0" Round Culvert n=0.025 L=132.0' S=0.0135 '/' Outflow=0.17 cfs 690 cf

Pond EX.INF2: EXIST. INFILTRATION SYSTEM Peak Elev=44.13' Storage=684 cf Inflow=0.76 cfs 2,023 cf
Discarded=0.04 cfs 1,769 cf Primary=0.15 cfs 255 cf Outflow=0.19 cfs 2,024 cf

Total Runoff Area = 182,849 sf Runoff Volume = 26,708 cf Average Runoff Depth = 1.75"
56.18% Pervious = 102,721 sf 43.82% Impervious = 80,128 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: RUNOFF TO EXIST CB Runoff Area=51,345 sf 0.00% Impervious Runoff Depth=1.75"
Flow Length=415' Tc=6.7 min CN=61 Runoff=2.22 cfs 7,485 cf

Subcatchment 2S: RUNOFF TO EXIST CB Runoff Area=12,454 sf 0.00% Impervious Runoff Depth=1.75"
Flow Length=180' Tc=5.4 min CN=61 Runoff=0.56 cfs 1,815 cf

Subcatchment 100S: RUNOFF TO CB3 Runoff Area=15,623 sf 92.95% Impervious Runoff Depth=5.02"
Flow Length=100' Tc=2.2 min CN=95 Runoff=2.21 cfs 6,541 cf

Subcatchment 200S: RUNOFF TO LOT 3 Runoff Area=34,976 sf 20.22% Impervious Runoff Depth=2.07"
Flow Length=183' Tc=3.2 min CN=65 Runoff=2.10 cfs 6,039 cf

Subcatchment 300S: RUNOFF TO CB8 Runoff Area=10,218 sf 64.84% Impervious Runoff Depth=3.94"
Flow Length=160' Tc=3.2 min CN=85 Runoff=1.18 cfs 3,351 cf

Subcatchment 301S: RUNOFF TO CB9 Runoff Area=3,956 sf 67.62% Impervious Runoff Depth=3.94"
Flow Length=126' Tc=1.8 min CN=85 Runoff=0.48 cfs 1,298 cf

Subcatchment 302S: RUNOFF TO CB6 Runoff Area=11,791 sf 86.68% Impervious Runoff Depth=4.80"
Flow Length=122' Slope=0.0100 '/' Tc=2.6 min CN=93 Runoff=1.60 cfs 4,714 cf

Subcatchment 303S: RUNOFF TO CB 5A Runoff Area=3,507 sf 92.02% Impervious Runoff Depth=5.02"
Flow Length=105' Tc=0.8 min CN=95 Runoff=0.52 cfs 1,468 cf

Subcatchment 304S: RUNOFF TO CB5 Runoff Area=12,564 sf 93.01% Impervious Runoff Depth=5.02"
Flow Length=336' Tc=3.2 min CN=95 Runoff=1.71 cfs 5,260 cf

Subcatchment 305S: RUNOFF TO CB12 Runoff Area=8,890 sf 80.99% Impervious Runoff Depth=4.58"
Flow Length=109' Tc=1.0 min CN=91 Runoff=1.24 cfs 3,390 cf

Subcatchment 400S: RUNOFF TO HOTEL Runoff Area=17,525 sf 96.44% Impervious Runoff Depth=5.26"
Flow Length=168' Tc=3.4 min CN=97 Runoff=2.41 cfs 7,675 cf

Pond 12: EXIST. CB12 (STORMCEPTOR) Peak Elev=45.06' Inflow=1.24 cfs 3,390 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.24 cfs 3,390 cf

Pond DP3: EXIST CB-D (DESIGN POINT #3) Inflow=9.80 cfs 26,537 cf
Primary=9.80 cfs 26,537 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=42.81' Inflow=2.21 cfs 6,541 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=2.21 cfs 6,541 cf

Pond EX. CB5: EX. CB-5 Peak Elev=47.39' Inflow=4.34 cfs 6,406 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=4.34 cfs 6,406 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=47.03' Inflow=4.56 cfs 7,874 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=4.56 cfs 7,874 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=46.56' Inflow=5.74 cfs 12,588 cf
12.0" Round Culvert n=0.013 L=165.0' S=0.0053 '/' Outflow=5.74 cfs 12,588 cf

Pond EX. CB8: EX. CB-8 Peak Elev=42.08' Inflow=1.18 cfs 3,351 cf
12.0" Round Culvert n=0.013 L=128.0' S=0.0058 '/' Outflow=1.18 cfs 3,351 cf

Pond EX. CB9: EX. CB-9 Peak Elev=41.60' Inflow=1.64 cfs 4,649 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0230 '/' Outflow=1.64 cfs 4,649 cf

Pond EX. DMH4: EXIST. DMH4 Peak Elev=41.46' Inflow=7.80 cfs 19,053 cf
18.0" Round Culvert n=0.013 L=36.0' S=0.0050 '/' Outflow=7.80 cfs 19,053 cf

Pond EX.CB: EXISTING CB Peak Elev=41.95' Inflow=0.56 cfs 1,815 cf
18.0" Round Culvert n=0.025 L=132.0' S=0.0135 '/' Outflow=0.56 cfs 1,815 cf

Pond EX.INF2: EXIST. INFILTRATION SYSTEM Peak Elev=45.04' Storage=931 cf Inflow=1.24 cfs 3,390 cf
Discarded=0.04 cfs 2,245 cf Primary=3.13 cfs 1,145 cf Outflow=3.18 cfs 3,390 cf

Total Runoff Area = 182,849 sf Runoff Volume = 49,037 cf Average Runoff Depth = 3.22"
56.18% Pervious = 102,721 sf 43.82% Impervious = 80,128 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: RUNOFF TO EXIST CB Runoff Area=51,345 sf 0.00% Impervious Runoff Depth=2.79"
Flow Length=415' Tc=6.7 min CN=61 Runoff=3.68 cfs 11,933 cf

Subcatchment 2S: RUNOFF TO EXIST CB Runoff Area=12,454 sf 0.00% Impervious Runoff Depth=2.79"
Flow Length=180' Tc=5.4 min CN=61 Runoff=0.93 cfs 2,894 cf

Subcatchment 100S: RUNOFF TO CB3 Runoff Area=15,623 sf 92.95% Impervious Runoff Depth=6.53"
Flow Length=100' Tc=2.2 min CN=95 Runoff=2.83 cfs 8,495 cf

Subcatchment 200S: RUNOFF TO LOT 3 Runoff Area=34,976 sf 20.22% Impervious Runoff Depth=3.20"
Flow Length=183' Tc=3.2 min CN=65 Runoff=3.30 cfs 9,314 cf

Subcatchment 300S: RUNOFF TO CB8 Runoff Area=10,218 sf 64.84% Impervious Runoff Depth=5.37"
Flow Length=160' Tc=3.2 min CN=85 Runoff=1.59 cfs 4,570 cf

Subcatchment 301S: RUNOFF TO CB9 Runoff Area=3,956 sf 67.62% Impervious Runoff Depth=5.37"
Flow Length=126' Tc=1.8 min CN=85 Runoff=0.65 cfs 1,769 cf

Subcatchment 302S: RUNOFF TO CB6 Runoff Area=11,791 sf 86.68% Impervious Runoff Depth=6.29"
Flow Length=122' Slope=0.0100 '/' Tc=2.6 min CN=93 Runoff=2.07 cfs 6,181 cf

Subcatchment 303S: RUNOFF TO CB 5A Runoff Area=3,507 sf 92.02% Impervious Runoff Depth=6.53"
Flow Length=105' Tc=0.8 min CN=95 Runoff=0.67 cfs 1,907 cf

Subcatchment 304S: RUNOFF TO CB5 Runoff Area=12,564 sf 93.01% Impervious Runoff Depth=6.53"
Flow Length=336' Tc=3.2 min CN=95 Runoff=2.19 cfs 6,832 cf

Subcatchment 305S: RUNOFF TO CB12 Runoff Area=8,890 sf 80.99% Impervious Runoff Depth=6.06"
Flow Length=109' Tc=1.0 min CN=91 Runoff=1.62 cfs 4,487 cf

Subcatchment 400S: RUNOFF TO HOTEL Runoff Area=17,525 sf 96.44% Impervious Runoff Depth=6.76"
Flow Length=168' Tc=3.4 min CN=97 Runoff=3.07 cfs 9,875 cf

Pond 12: EXIST. CB12 (STORMCEPTOR) Peak Elev=54.99' Inflow=1.62 cfs 4,487 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.62 cfs 4,487 cf

Pond DP3: EXIST CB-D (DESIGN POINT #3) Inflow=13.05 cfs 38,038 cf
Primary=13.05 cfs 38,038 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=43.07' Inflow=2.83 cfs 8,495 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=2.83 cfs 8,495 cf

Pond EX. CB5: EX. CB-5 Peak Elev=54.90' Inflow=4.81 cfs 8,784 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=4.81 cfs 8,784 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=51.46' Inflow=5.24 cfs 10,691 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=5.24 cfs 10,691 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=50.32' Inflow=7.30 cfs 16,871 cf
12.0" Round Culvert n=0.013 L=165.0' S=0.0053 '/' Outflow=7.30 cfs 16,871 cf

Pond EX. CB8: EX. CB-8 Peak Elev=42.67' Inflow=1.59 cfs 4,570 cf
12.0" Round Culvert n=0.013 L=128.0' S=0.0058 '/' Outflow=1.59 cfs 4,570 cf

Pond EX. CB9: EX. CB-9 Peak Elev=42.36' Inflow=2.20 cfs 6,340 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0230 '/' Outflow=2.20 cfs 6,340 cf

Pond EX. DMH4: EXIST. DMH4 Peak Elev=42.01' Inflow=10.18 cfs 26,105 cf
18.0" Round Culvert n=0.013 L=36.0' S=0.0050 '/' Outflow=10.18 cfs 26,105 cf

Pond EX.CB: EXISTING CB Peak Elev=42.25' Inflow=0.93 cfs 2,894 cf
18.0" Round Culvert n=0.025 L=132.0' S=0.0135 '/' Outflow=0.93 cfs 2,894 cf

Pond EX.INF2: EXIST. INFILTRATION Peak Elev=54.90' Storage=1,000 cf Inflow=1.62 cfs 4,487 cf
Discarded=0.05 cfs 2,535 cf Primary=3.73 cfs 1,952 cf Outflow=3.78 cfs 4,487 cf

Total Runoff Area = 182,849 sf Runoff Volume = 68,258 cf Average Runoff Depth = 4.48"
56.18% Pervious = 102,721 sf 43.82% Impervious = 80,128 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: RUNOFF TO EXIST CB Runoff Area=51,345 sf 0.00% Impervious Runoff Depth=3.85"
Flow Length=415' Tc=6.7 min CN=61 Runoff=5.15 cfs 16,455 cf

Subcatchment 2S: RUNOFF TO EXIST CB Runoff Area=12,454 sf 0.00% Impervious Runoff Depth=3.85"
Flow Length=180' Tc=5.4 min CN=61 Runoff=1.31 cfs 3,991 cf

Subcatchment 100S: RUNOFF TO CB3 Runoff Area=15,623 sf 92.95% Impervious Runoff Depth=7.92"
Flow Length=100' Tc=2.2 min CN=95 Runoff=3.40 cfs 10,310 cf

Subcatchment 200S: RUNOFF TO LOT 3 Runoff Area=34,976 sf 20.22% Impervious Runoff Depth=4.32"
Flow Length=183' Tc=3.2 min CN=65 Runoff=4.50 cfs 12,588 cf

Subcatchment 300S: RUNOFF TO CB8 Runoff Area=10,218 sf 64.84% Impervious Runoff Depth=6.72"
Flow Length=160' Tc=3.2 min CN=85 Runoff=1.96 cfs 5,719 cf

Subcatchment 301S: RUNOFF TO CB9 Runoff Area=3,956 sf 67.62% Impervious Runoff Depth=6.72"
Flow Length=126' Tc=1.8 min CN=85 Runoff=0.80 cfs 2,214 cf

Subcatchment 302S: RUNOFF TO CB6 Runoff Area=11,791 sf 86.68% Impervious Runoff Depth=7.68"
Flow Length=122' Slope=0.0100 '/' Tc=2.6 min CN=93 Runoff=2.50 cfs 7,545 cf

Subcatchment 303S: RUNOFF TO CB 5A Runoff Area=3,507 sf 92.02% Impervious Runoff Depth=7.92"
Flow Length=105' Tc=0.8 min CN=95 Runoff=0.80 cfs 2,314 cf

Subcatchment 304S: RUNOFF TO CB5 Runoff Area=12,564 sf 93.01% Impervious Runoff Depth=7.92"
Flow Length=336' Tc=3.2 min CN=95 Runoff=2.64 cfs 8,292 cf

Subcatchment 305S: RUNOFF TO CB12 Runoff Area=8,890 sf 80.99% Impervious Runoff Depth=7.44"
Flow Length=109' Tc=1.0 min CN=91 Runoff=1.96 cfs 5,510 cf

Subcatchment 400S: RUNOFF TO HOTEL Runoff Area=17,525 sf 96.44% Impervious Runoff Depth=8.16"
Flow Length=168' Tc=3.4 min CN=97 Runoff=3.68 cfs 11,917 cf

Pond 12: EXIST. CB12 (STORMCEPTOR) Peak Elev=60.70' Inflow=1.96 cfs 5,510 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.96 cfs 5,510 cf

Pond DP3: EXIST CB-D (DESIGN POINT #3) Inflow=16.28 cfs 49,277 cf
Primary=16.28 cfs 49,277 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=43.42' Inflow=3.40 cfs 10,310 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=3.40 cfs 10,310 cf

Pond EX. CB5: EX. CB-5 Peak Elev=60.52' Inflow=5.25 cfs 11,038 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=5.25 cfs 11,038 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=55.76' Inflow=6.03 cfs 13,353 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=6.03 cfs 13,353 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=54.03' Inflow=8.44 cfs 20,898 cf
12.0" Round Culvert n=0.013 L=165.0' S=0.0053 '/' Outflow=8.44 cfs 20,898 cf

Pond EX. CB8: EX. CB-8 Peak Elev=43.54' Inflow=1.96 cfs 5,719 cf
12.0" Round Culvert n=0.013 L=128.0' S=0.0058 '/' Outflow=1.96 cfs 5,719 cf

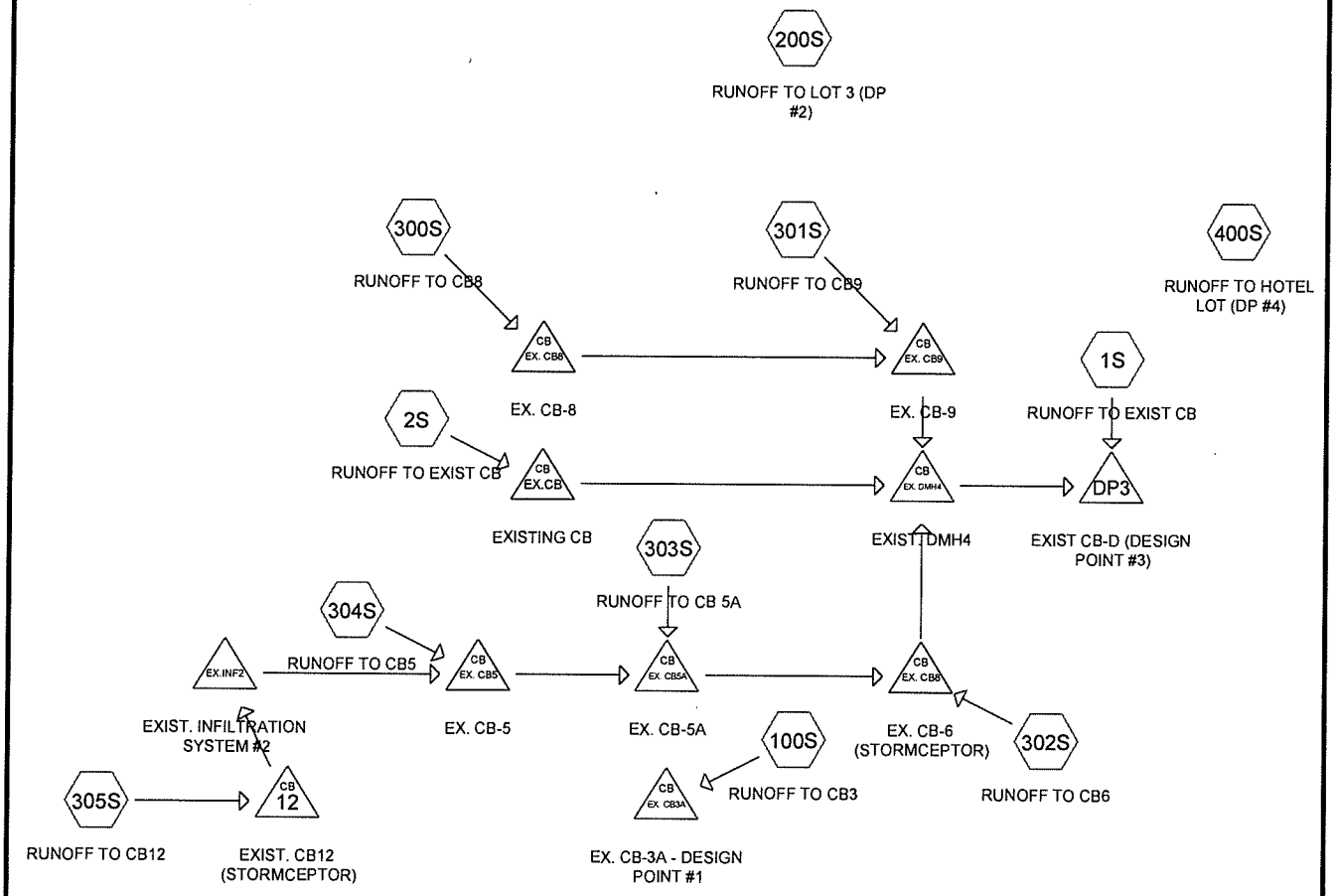
Pond EX. CB9: EX. CB-9 Peak Elev=43.02' Inflow=2.72 cfs 7,933 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0230 '/' Outflow=2.72 cfs 7,933 cf

Pond EX. DMH4: EXIST. DMH4 Peak Elev=42.52' Inflow=12.27 cfs 32,822 cf
18.0" Round Culvert n=0.013 L=36.0' S=0.0050 '/' Outflow=12.27 cfs 32,822 cf

Pond EX.CB: EXISTING CB Peak Elev=42.66' Inflow=1.31 cfs 3,991 cf
18.0" Round Culvert n=0.025 L=132.0' S=0.0135 '/' Outflow=1.31 cfs 3,991 cf

Pond EX.INF2: EXIST. INFILTRATION Peak Elev=60.55' Storage=1,000 cf Inflow=1.96 cfs 5,510 cf
Discarded=0.06 cfs 2,764 cf Primary=3.72 cfs 2,747 cf Outflow=3.76 cfs 5,511 cf

Total Runoff Area = 182,849 sf Runoff Volume = 86,856 cf Average Runoff Depth = 5.70"
56.18% Pervious = 102,721 sf 43.82% Impervious = 80,128 sf



Subcat Reach Pond Link

Routing Diagram for 4582-Predrain

Prepared by Greenman-Pedersen, Inc., Printed 1/21/2020

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
80,830	61	>75% Grass cover, Good, HSG B (1S, 2S, 100S, 200S, 300S, 301S, 302S, 303S, 304S, 305S, 400S)
77,698	98	Paved parking, HSG B (100S, 200S, 300S, 301S, 302S, 303S, 304S, 305S, 400S)
2,430	98	Roofs, HSG B (200S)
21,891	55	Woods, Good, HSG B (200S, 300S, 301S, 400S)
182,849	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
182,849	HSG B	1S, 2S, 100S, 200S, 300S, 301S, 302S, 303S, 304S, 305S, 400S
0	HSG C	
0	HSG D	
0	Other	
182,849		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	80,830	0	0	0	80,830	>75% Grass cover, Good
0	77,698	0	0	0	77,698	Paved parking
0	2,430	0	0	0	2,430	Roofs
0	21,891	0	0	0	21,891	Woods, Good
0	**182,849**	**0**	**0**	**0**	**182,849**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	12	43.09	42.72	16.0	0.0231	0.013	12.0	0.0	0.0
2	EX. CB3A	41.82	41.56	46.0	0.0057	0.013	12.0	0.0	0.0
3	EX. CB5	41.93	41.50	170.0	0.0025	0.013	12.0	0.0	0.0
4	EX. CB5A	41.15	41.30	98.0	-0.0015	0.013	12.0	0.0	0.0
5	EX. CB6	40.55	39.68	165.0	0.0053	0.013	12.0	0.0	0.0
6	EX. CB8	41.38	40.64	128.0	0.0058	0.013	12.0	0.0	0.0
7	EX. CB9	40.09	39.40	30.0	0.0230	0.013	12.0	0.0	0.0
8	EX. DMH4	39.58	39.40	36.0	0.0050	0.013	18.0	0.0	0.0
9	EX.CB	41.38	39.60	132.0	0.0135	0.025	18.0	0.0	0.0
10	EX.INF2	42.50	42.34	32.0	0.0050	0.013	12.0	0.0	0.0

Notes Listing (all nodes)

Line#	Node Number	Notes
1	Project	Rainfall events imported from "4582-Postdrain.hcp"
2	EX.INF2	The soils present in the area of the infiltration system consist of Urban Land (NRCS classification 699). Due to the limited information provided for this soil type, 140C Chatfield-Hollis-Canton Complex was used as the closest soil present within the site.
3		The bottom of the stone in the infiltration system is approximately 6' below existing grade. Per USDA Soil Data Mart, the lowest value for the Saturated Ksat Value for this soil at a depth of 21-60"' +/- is 42.33 micrometers/second.
4		Per NHDES Stormwater Manual: Vol. 2, pages 16-17 using a factor of safety of 2, the infiltration rate for this system is as follows:
5		42.33/2 (FS) = 21.17 micro/sec.
6		Converting to inches/hr with a conversion factor of 0.1417 = (21.17 * 0.1417 = 3.00 in/hr)

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: RUNOFF TO EXIST CB Runoff Area=51,345 sf 0.00% Impervious Runoff Depth=2.79"
Flow Length=415' Tc=6.7 min CN=61 Runoff=3.68 cfs 11,933 cf

Subcatchment 2S: RUNOFF TO EXIST CB Runoff Area=12,454 sf 0.00% Impervious Runoff Depth=2.79"
Flow Length=180' Tc=5.4 min CN=61 Runoff=0.93 cfs 2,894 cf

Subcatchment 100S: RUNOFF TO CB3 Runoff Area=15,623 sf 92.95% Impervious Runoff Depth=6.53"
Flow Length=100' Tc=2.2 min CN=95 Runoff=2.83 cfs 8,495 cf

Subcatchment 200S: RUNOFF TO LOT 3 Runoff Area=34,976 sf 20.22% Impervious Runoff Depth=3.20"
Flow Length=183' Tc=3.2 min CN=65 Runoff=3.30 cfs 9,314 cf

Subcatchment 300S: RUNOFF TO CB8 Runoff Area=10,218 sf 64.84% Impervious Runoff Depth=5.37"
Flow Length=160' Tc=3.2 min CN=85 Runoff=1.59 cfs 4,570 cf

Subcatchment 301S: RUNOFF TO CB9 Runoff Area=3,956 sf 67.62% Impervious Runoff Depth=5.37"
Flow Length=126' Tc=1.8 min CN=85 Runoff=0.65 cfs 1,769 cf

Subcatchment 302S: RUNOFF TO CB6 Runoff Area=11,791 sf 86.68% Impervious Runoff Depth=6.29"
Flow Length=122' Slope=0.0100 '/' Tc=2.6 min CN=93 Runoff=2.07 cfs 6,181 cf

Subcatchment 303S: RUNOFF TO CB 5A Runoff Area=3,507 sf 92.02% Impervious Runoff Depth=6.53"
Flow Length=105' Tc=0.8 min CN=95 Runoff=0.67 cfs 1,907 cf

Subcatchment 304S: RUNOFF TO CB5 Runoff Area=12,564 sf 93.01% Impervious Runoff Depth=6.53"
Flow Length=336' Tc=3.2 min CN=95 Runoff=2.19 cfs 6,832 cf

Subcatchment 305S: RUNOFF TO CB12 Runoff Area=8,890 sf 80.99% Impervious Runoff Depth=6.06"
Flow Length=109' Tc=1.0 min CN=91 Runoff=1.62 cfs 4,487 cf

Subcatchment 400S: RUNOFF TO HOTEL Runoff Area=17,525 sf 96.44% Impervious Runoff Depth=6.76"
Flow Length=168' Tc=3.4 min CN=97 Runoff=3.07 cfs 9,875 cf

Pond 12: EXIST. CB12 (STORMCEPTOR) Peak Elev=54.99' Inflow=1.62 cfs 4,487 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.62 cfs 4,487 cf

Pond DP3: EXIST CB-D (DESIGN POINT #3) Inflow=13.05 cfs 38,038 cf
Primary=13.05 cfs 38,038 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=43.07' Inflow=2.83 cfs 8,495 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=2.83 cfs 8,495 cf

Pond EX. CB5: EX. CB-5 Peak Elev=54.90' Inflow=4.81 cfs 8,784 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=4.81 cfs 8,784 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=51.46' Inflow=5.24 cfs 10,691 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=5.24 cfs 10,691 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=50.32' Inflow=7.30 cfs 16,871 cf
12.0" Round Culvert n=0.013 L=165.0' S=0.0053 '/' Outflow=7.30 cfs 16,871 cf

Pond EX. CB8: EX. CB-8 Peak Elev=42.67' Inflow=1.59 cfs 4,570 cf
12.0" Round Culvert n=0.013 L=128.0' S=0.0058 '/' Outflow=1.59 cfs 4,570 cf

Pond EX. CB9: EX. CB-9 Peak Elev=42.36' Inflow=2.20 cfs 6,340 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0230 '/' Outflow=2.20 cfs 6,340 cf

Pond EX. DMH4: EXIST. DMH4 Peak Elev=42.01' Inflow=10.18 cfs 26,105 cf
18.0" Round Culvert n=0.013 L=36.0' S=0.0050 '/' Outflow=10.18 cfs 26,105 cf

Pond EX.CB: EXISTING CB Peak Elev=42.25' Inflow=0.93 cfs 2,894 cf
18.0" Round Culvert n=0.025 L=132.0' S=0.0135 '/' Outflow=0.93 cfs 2,894 cf

Pond EX.INF2: EXIST. INFILTRATION Peak Elev=54.90' Storage=1,000 cf Inflow=1.62 cfs 4,487 cf
Discarded=0.05 cfs 2,535 cf Primary=3.73 cfs 1,952 cf Outflow=3.78 cfs 4,487 cf

Total Runoff Area = 182,849 sf Runoff Volume = 68,258 cf Average Runoff Depth = 4.48"
56.18% Pervious = 102,721 sf 43.82% Impervious = 80,128 sf

Summary for Subcatchment 1S: RUNOFF TO EXIST CB

Runoff = 3.68 cfs @ 12.10 hrs, Volume= 11,933 cf, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
51,345	61	>75% Grass cover, Good, HSG B
51,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	25	0.0400	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
4.3	390	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.7	415	Total			

Summary for Subcatchment 2S: RUNOFF TO EXIST CB

Runoff = 0.93 cfs @ 12.08 hrs, Volume= 2,894 cf, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
12,454	61	>75% Grass cover, Good, HSG B
12,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	25	0.0100	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
1.1	155	0.0250	2.37		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.4	180	Total			

Summary for Subcatchment 100S: RUNOFF TO CB3

Runoff = 2.83 cfs @ 12.03 hrs, Volume= 8,495 cf, Depth= 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,102	61	>75% Grass cover, Good, HSG B
14,521	98	Paved parking, HSG B
15,623	95	Weighted Average
1,102		7.05% Pervious Area
14,521		92.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	10	0.0200	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.7	90	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	100	Total			

Summary for Subcatchment 200S: RUNOFF TO LOT 3 (DP #2)

Runoff = 3.30 cfs @ 12.05 hrs, Volume= 9,314 cf, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
20,275	55	Woods, Good, HSG B
4,643	98	Paved parking, HSG B
7,628	61	>75% Grass cover, Good, HSG B
2,430	98	Roofs, HSG B
34,976	65	Weighted Average
27,903		79.78% Pervious Area
7,073		20.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	25	0.0500	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.3	30	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	128	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	183	Total			

Summary for Subcatchment 300S: RUNOFF TO CB8

Runoff = 1.59 cfs @ 12.05 hrs, Volume= 4,570 cf, Depth= 5.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
2,960	61	>75% Grass cover, Good, HSG B
633	55	Woods, Good, HSG B
6,625	98	Paved parking, HSG B
10,218	85	Weighted Average
3,593		35.16% Pervious Area
6,625		64.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	35	0.1000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
1.0	125	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	160	Total			

Summary for Subcatchment 301S: RUNOFF TO CB9

Runoff = 0.65 cfs @ 12.03 hrs, Volume= 1,769 cf, Depth= 5.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
492	61	>75% Grass cover, Good, HSG B
789	55	Woods, Good, HSG B
2,675	98	Paved parking, HSG B
3,956	85	Weighted Average
1,281		32.38% Pervious Area
2,675		67.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	10	0.0500	0.17		**Sheet Flow,** Range n= 0.130 P2= 3.22"
0.1	6	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	126	Total			

Summary for Subcatchment 302S: RUNOFF TO CB6

Runoff = 2.07 cfs @ 12.04 hrs, Volume= 6,181 cf, Depth= 6.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,571	61	>75% Grass cover, Good, HSG B
10,220	98	Paved parking, HSG B
11,791	93	Weighted Average
1,571		13.32% Pervious Area
10,220		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	8	0.0100	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.9	114	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.6	122	Total			

Summary for Subcatchment 303S: RUNOFF TO CB 5A

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

Runoff = 0.67 cfs @ 12.01 hrs, Volume= 1,907 cf, Depth= 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
280	61	>75% Grass cover, Good, HSG B
3,227	98	Paved parking, HSG B
3,507	95	Weighted Average
280		7.98% Pervious Area
3,227		92.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.6	95	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	105	Total			

Summary for Subcatchment 304S: RUNOFF TO CB5

Runoff = 2.19 cfs @ 12.05 hrs, Volume= 6,832 cf, Depth= 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
878	61	>75% Grass cover, Good, HSG B
11,686	98	Paved parking, HSG B
12,564	95	Weighted Average
878		6.99% Pervious Area
11,686		93.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0200	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
2.9	320	0.0080	1.82		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	336	Total			

Summary for Subcatchment 305S: RUNOFF TO CB12

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

Runoff = 1.62 cfs @ 12.01 hrs, Volume= 4,487 cf, Depth= 6.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,690	61	>75% Grass cover, Good, HSG B
7,200	98	Paved parking, HSG B
8,890	91	Weighted Average
1,690		19.01% Pervious Area
7,200		80.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.1	11	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.7	88	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.0	109	Total			

Summary for Subcatchment 400S: RUNOFF TO HOTEL LOT (DP #4)

Runoff = 3.07 cfs @ 12.05 hrs, Volume= 9,875 cf, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
194	55	Woods, Good, HSG B
16,901	98	Paved parking, HSG B
430	61	>75% Grass cover, Good, HSG B
17,525	97	Weighted Average
624		3.56% Pervious Area
16,901		96.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	10	0.0500	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.22"
0.3	30	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	128	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.4	168	Total			

Summary for Pond 12: EXIST. CB12 (STORMCEPTOR)

[58] Hint: Peaked 9.05' above defined flood level

Inflow Area = 8,890 sf, 80.99% Impervious, Inflow Depth = 6.06" for 25-Year event
Inflow = 1.62 cfs @ 12.01 hrs, Volume= 4,487 cf
Outflow = 1.62 cfs @ 12.01 hrs, Volume= 4,487 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.62 cfs @ 12.01 hrs, Volume= 4,487 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 54.99' @ 12.07 hrs
Flood Elev= 45.94'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.09'	**12.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.09' / 42.72' S= 0.0231 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.01 hrs HW=45.11' TW=45.16' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DP3: EXIST CB-D (DESIGN POINT #3)

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

Inflow Area = 114,725 sf, 36.29% Impervious, Inflow Depth = 3.98" for 25-Year event
Inflow = 13.05 cfs @ 12.05 hrs, Volume= 38,038 cf
Primary = 13.05 cfs @ 12.05 hrs, Volume= 38,038 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1

Inflow Area = 15,623 sf, 92.95% Impervious, Inflow Depth = 6.53" for 25-Year event
Inflow = 2.83 cfs @ 12.03 hrs, Volume= 8,495 cf
Outflow = 2.83 cfs @ 12.03 hrs, Volume= 8,495 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.83 cfs @ 12.03 hrs, Volume= 8,495 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.07' @ 12.03 hrs
Flood Elev= 44.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.82'	**12.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.82' / 41.56' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.82 cfs @ 12.03 hrs HW=43.06' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 2.82 cfs @ 3.71 fps)

Summary for Pond EX. CB5: EX. CB-5

[58] Hint: Peaked 7.22' above defined flood level
[80] Warning: Exceeded Pond EX.INF2 by 5.37' @ 12.05 hrs (8.77 cfs 3,014 cf)

Inflow Area = 21,454 sf, 88.03% Impervious, Inflow Depth = 4.91" for 25-Year event
Inflow = 4.81 cfs @ 12.15 hrs, Volume= 8,784 cf
Outflow = 4.81 cfs @ 12.15 hrs, Volume= 8,784 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.81 cfs @ 12.15 hrs, Volume= 8,784 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 54.90' @ 12.05 hrs
Flood Elev= 47.68'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.93'	**12.0" Round Culvert** L= 170.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.93' / 41.50' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.23 cfs @ 12.15 hrs HW=48.17' TW=45.09' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.23 cfs @ 5.39 fps)

Summary for Pond EX. CB5A: EX. CB-5A

[58] Hint: Peaked 6.05' above defined flood level
[80] Warning: Exceeded Pond EX. CB5 by 2.27' @ 12.04 hrs (3.63 cfs 469 cf)

Inflow Area = 24,961 sf, 88.59% Impervious, Inflow Depth = 5.14" for 25-Year event
Inflow = 5.24 cfs @ 12.03 hrs, Volume= 10,691 cf
Outflow = 5.24 cfs @ 12.03 hrs, Volume= 10,691 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.24 cfs @ 12.03 hrs, Volume= 10,691 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.46' @ 12.04 hrs
Flood Elev= 45.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.30'	**12.0" Round Culvert** L= 98.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.15' / 41.30' S= -0.0015 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.03 hrs HW=48.19' TW=50.10' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EX. CB6: EX. CB-6 (STORMCEPTOR)

[58] Hint: Peaked 6.42' above defined flood level
[80] Warning: Exceeded Pond EX. CB5A by 2.27' @ 12.03 hrs (4.44 cfs 583 cf)

Inflow Area = 36,752 sf, 87.98% Impervious, Inflow Depth = 5.51" for 25-Year event
Inflow = 7.30 cfs @ 12.03 hrs, Volume= 16,871 cf
Outflow = 7.30 cfs @ 12.03 hrs, Volume= 16,871 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.30 cfs @ 12.03 hrs, Volume= 16,871 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.32' @ 12.03 hrs
Flood Elev= 43.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.55'	**12.0" Round Culvert** L= 165.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.55' / 39.68' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.93 cfs @ 12.03 hrs HW=50.06' TW=41.99' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.93 cfs @ 8.82 fps)

Summary for Pond EX. CB8: EX. CB-8

Inflow Area = 10,218 sf, 64.84% Impervious, Inflow Depth = 5.37" for 25-Year event
Inflow = 1.59 cfs @ 12.05 hrs, Volume= 4,570 cf
Outflow = 1.59 cfs @ 12.05 hrs, Volume= 4,570 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.05 hrs, Volume= 4,570 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 42.67' @ 12.05 hrs
Flood Elev= 47.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.38'	**12.0" Round Culvert** L= 128.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.38' / 40.64' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.85 cfs @ 12.05 hrs HW=42.54' TW=42.08' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.85 cfs @ 2.55 fps)

Summary for Pond EX. CB9: EX. CB-9

[80] Warning: Exceeded Pond EX. CB8 by 0.08' @ 12.04 hrs (0.65 cfs 23 cf)

Inflow Area =	14,174 sf,	65.61% Impervious,	Inflow Depth =	5.37"	for 25-Year event
Inflow =	2.20 cfs @	12.04 hrs, Volume=	6,340 cf		
Outflow =	2.20 cfs @	12.04 hrs, Volume=	6,340 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	2.20 cfs @	12.04 hrs, Volume=	6,340 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 42.36' @ 12.04 hrs
Flood Elev= 45.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.09'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.09' / 39.40' S= 0.0230 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.11 cfs @ 12.04 hrs HW=42.32' TW=41.65' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.11 cfs @ 3.96 fps)

Summary for Pond EX. DMH4: EXIST. DMH4

[80] Warning: Exceeded Pond EX. CB9 by 0.52' @ 12.15 hrs (2.72 cfs 452 cf)
[80] Warning: Exceeded Pond EX.CB by 0.03' @ 12.03 hrs (0.16 cfs 6 cf)

Inflow Area =	63,380 sf,	65.69% Impervious,	Inflow Depth =	4.94"	for 25-Year event
Inflow =	10.18 cfs @	12.03 hrs, Volume=	26,105 cf		
Outflow =	10.18 cfs @	12.03 hrs, Volume=	26,105 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	10.18 cfs @	12.03 hrs, Volume=	26,105 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 42.01' @ 12.03 hrs
Flood Elev= 44.76'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.58'	**18.0" Round Culvert** L= 36.0' RCP, sq.cut end projecting, Ke= 0.500

Inlet / Outlet Invert= 39.58' / 39.40' S= 0.0050 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=10.18 cfs @ 12.03 hrs HW=42.01' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 10.18 cfs @ 5.76 fps)

Summary for Pond EX.CB: EXISTING CB

Inflow Area =	12,454 sf,	0.00% Impervious,	Inflow Depth =	2.79"	for 25-Year event
Inflow =	0.93 cfs @	12.08 hrs, Volume=	2,894 cf		
Outflow =	0.93 cfs @	12.08 hrs, Volume=	2,894 cf,	Atten= 0%,	Lag= 0.0 min
Primary =	0.93 cfs @	12.08 hrs, Volume=	2,894 cf		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 42.25' @ 12.06 hrs
Flood Elev= 44.89'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.38'	**18.0" Round Culvert**
			L= 132.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 41.38' / 39.60' S= 0.0135 '/' Cc= 0.900
			n= 0.025 Corrugated metal, Flow Area= 1.77 sf

Primary OutFlow Max=1.10 cfs @ 12.08 hrs HW=42.12' TW=41.43' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.10 cfs @ 1.83 fps)

Summary for Pond EX.INF2: EXIST. INFILTRATION SYSTEM #2

The soils present in the area of the infiltration system consist of Urban Land (NRCS classification 699). Due to the limited information provided for this soil type, 140C Chatfield-Hollis-Canton Complex was used as the closest soil present within the site.

The bottom of the stone in the infiltration system is approximately 6' below existing grade. Per USDA Soil Data Mart, the lowest value for the Saturated Ksat Value for this soil at a depth of 21-60"' +/- is 42.33 micrometers/second.

Per NHDES Stormwater Manual: Vol. 2, pages 16-17 using a factor of safety of 2, the infiltration rate for this system is as follows:

42.33/2 (FS) = 21.17 micro/sec.
Converting to inches/hr with a conversion factor of 0.1417 = (21.17 * 0.1417 = 3.00 in/hr)

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[93] Warning: Storage range exceeded by 9.57'
[58] Hint: Peaked 9.90' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=8)
[80] Warning: Exceeded Pond 12 by 5.27' @ 12.06 hrs (8.68 cfs 1,614 cf)

Inflow Area = 8,890 sf, 80.99% Impervious, Inflow Depth = 6.06" for 25-Year event
Inflow = 1.62 cfs @ 12.01 hrs, Volume= 4,487 cf
Outflow = 3.78 cfs @ 12.15 hrs, Volume= 4,487 cf, Atten= 0%, Lag= 8.1 min
Discarded = 0.05 cfs @ 12.06 hrs, Volume= 2,535 cf
Primary = 3.73 cfs @ 12.15 hrs, Volume= 1,952 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 54.90' @ 12.06 hrs Surf.Area= 582 sf Storage= 1,000 cf
Flood Elev= 45.00' Surf.Area= 582 sf Storage= 922 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 78.7 min (850.0 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	42.00'	583 cf	**13.23'W x 44.00'L x 3.33'H Field A** 1,941 cf Overall - 484 cf Embedded = 1,457 cf x 40.0% Voids
#2A	42.50'	372 cf	**ADS N-12 24"** x 6 Inside #1 Inside= 23.8"W x 23.8"H => 3.10 sf x 20.00'L = 62.0 cf Outside= 28.0"W x 28.0"H => 3.92 sf x 20.00'L = 78.4 cf 6 Chambers in 3 Rows
#3	42.50'	14 cf	**24.0" Round Pipe Storage** x 4 Inside #1 L= 1.1'
#4	42.50'	31 cf	**24.0" Round Pipe Storage** -Impervious L= 10.0'
		1,000 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 42.34' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	43.90'	**6.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	44.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	42.00'	**3.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.05 cfs @ 12.06 hrs HW=54.63' (Free Discharge)
└**4=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 12.15 hrs HW=45.06' TW=48.21' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

APPENDIX E

Post-Development HydroCAD Printouts

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: DRAINS TO CB-1 Runoff Area=4,516 sf 100.00% Impervious Runoff Depth=3.47"
Flow Length=51' Slope=0.0240 '/' Tc=0.5 min CN=98 Runoff=0.45 cfs 1,304 cf

Subcatchment2S: DRAINS TO CB-2 Runoff Area=5,065 sf 94.14% Impervious Runoff Depth=3.24"
Flow Length=85' Slope=0.0160 '/' Tc=0.8 min CN=96 Runoff=0.49 cfs 1,369 cf

Subcatchment3S: DRAINS TO CB-3 Runoff Area=7,497 sf 72.05% Impervious Runoff Depth=2.45"
Flow Length=98' Tc=3.8 min CN=88 Runoff=0.53 cfs 1,532 cf

Subcatchment4S: DRAINS TO CB-4 Runoff Area=2,857 sf 62.60% Impervious Runoff Depth=2.11"
Flow Length=71' Tc=3.5 min CN=84 Runoff=0.18 cfs 502 cf

Subcatchment5S: DRAINS TO CB-5 Runoff Area=3,924 sf 100.00% Impervious Runoff Depth=3.47"
Flow Length=47' Slope=0.0130 '/' Tc=0.7 min CN=98 Runoff=0.39 cfs 1,133 cf

Subcatchment6S: DRAINS TO CB-6 Runoff Area=3,628 sf 100.00% Impervious Runoff Depth=3.47"
Flow Length=60' Slope=0.0150 '/' Tc=4.0 min CN=98 Runoff=0.32 cfs 1,048 cf

Subcatchment7S: Subcat 7S Runoff Area=1,293 sf 98.96% Impervious Runoff Depth=3.47"
Tc=0.0 min CN=98 Runoff=0.13 cfs 373 cf

Subcatchment8S: DRAINS TO CB-8 Runoff Area=5,929 sf 100.00% Impervious Runoff Depth=3.47"
Flow Length=80' Slope=0.0150 '/' Tc=0.8 min CN=98 Runoff=0.59 cfs 1,712 cf

Subcatchment9S: ROOF D Runoff Area=6,400 sf 100.00% Impervious Runoff Depth=3.47"
Tc=1.0 min CN=98 Runoff=0.63 cfs 1,848 cf

Subcatchment10S: ROOF B Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=3.47"
Tc=1.0 min CN=98 Runoff=0.47 cfs 1,386 cf

Subcatchment11S: ROOF A Runoff Area=5,600 sf 100.00% Impervious Runoff Depth=3.47"
Tc=1.0 min CN=98 Runoff=0.55 cfs 1,617 cf

Subcatchment12S: ROOF E Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=3.47"
Tc=1.0 min CN=98 Runoff=0.39 cfs 1,155 cf

Subcatchment13S: ROOF F Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=3.47"
Tc=1.0 min CN=98 Runoff=0.47 cfs 1,386 cf

Subcatchment100S: RUNOFF TO EX. Runoff Area=16,015 sf 91.98% Impervious Runoff Depth=3.14"
Flow Length=182' Tc=3.5 min CN=95 Runoff=1.38 cfs 4,185 cf

Subcatchment200S: Drains to Northern Runoff Area=11,417 sf 19.04% Impervious Runoff Depth=1.02"
Flow Length=132' Slope=0.0200 '/' Tc=5.2 min CN=68 Runoff=0.29 cfs 970 cf

Subcatchment300S: DRAINS TO EX. CB-8 Runoff Area=16,949 sf 77.39% Impervious Runoff Depth=2.64"
Flow Length=279' Slope=0.0180 '/' Tc=2.0 min CN=90 Runoff=1.36 cfs 3,723 cf

Subcatchment301S: DRAINS TO EX. CB-9 Runoff Area=8,852 sf 82.02% Impervious Runoff Depth=2.73"
Flow Length=127' Slope=0.0230 '/' Tc=3.2 min CN=91 Runoff=0.70 cfs 2,015 cf

Subcatchment302S: RUNOFF TO EX. CB6 Runoff Area=14,456 sf 82.88% Impervious Runoff Depth=2.83"
Flow Length=122' Slope=0.0100 '/' Tc=2.9 min CN=92 Runoff=1.19 cfs 3,407 cf

Subcatchment303S: RUNOFF TO EX. CB 5A Runoff Area=4,916 sf 86.65% Impervious Runoff Depth=2.93"
Flow Length=106' Tc=0.9 min CN=93 Runoff=0.45 cfs 1,200 cf

Subcatchment304S: RUNOFF TO EX. CB5 Runoff Area=19,066 sf 75.73% Impervious Runoff Depth=2.54"
Flow Length=336' Tc=3.3 min CN=89 Runoff=1.42 cfs 4,040 cf

Subcatchment305S: RUNOFF TO CB12 Runoff Area=8,890 sf 82.86% Impervious Runoff Depth=2.83"
Flow Length=109' Tc=1.0 min CN=92 Runoff=0.78 cfs 2,095 cf

Subcatchment400S: Drains to Hotel Lot - Runoff Area=21,981 sf 86.10% Impervious Runoff Depth=2.93"
Flow Length=255' Slope=0.0200 '/' Tc=4.9 min CN=93 Runoff=1.73 cfs 5,364 cf

Pond CB1: PROP. CB-1 Peak Elev=43.88' Inflow=0.92 cfs 2,691 cf
12.0" Round Culvert n=0.013 L=59.0' S=0.0051 '/' Outflow=0.92 cfs 2,691 cf

Pond CB2: PROP. CB-2 Peak Elev=44.05' Inflow=0.49 cfs 1,369 cf
12.0" Round Culvert n=0.013 L=31.0' S=0.0161 '/' Outflow=0.49 cfs 1,369 cf

Pond CB3: PROP. CB-3 Peak Elev=43.65' Inflow=0.71 cfs 2,034 cf
12.0" Round Culvert n=0.013 L=54.0' S=0.0083 '/' Outflow=0.71 cfs 2,034 cf

Pond CB4: PROP. CB-4 Peak Elev=43.86' Inflow=0.18 cfs 502 cf
12.0" Round Culvert n=0.013 L=36.0' S=0.0097 '/' Outflow=0.18 cfs 502 cf

Pond CB5: PROP. CB-5 Peak Elev=42.51' Inflow=0.39 cfs 1,133 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.39 cfs 1,133 cf

Pond CB6: PROP. CB-6 Peak Elev=42.48' Inflow=0.32 cfs 1,048 cf
12.0" Round Culvert n=0.013 L=9.0' S=0.0222 '/' Outflow=0.32 cfs 1,048 cf

Pond CB7: PROP. CB-7 Peak Elev=41.23' Inflow=0.13 cfs 373 cf
12.0" Round Culvert n=0.013 L=34.0' S=0.0103 '/' Outflow=0.13 cfs 373 cf

Pond CB8: PROP. CB-8 Peak Elev=43.25' Inflow=1.20 cfs 3,746 cf
12.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=1.20 cfs 3,746 cf

Pond DMH1: PROP. DMH-1 Peak Elev=40.62' Inflow=3.09 cfs 9,420 cf
18.0" Round Culvert n=0.013 L=43.0' S=0.0093 '/' Outflow=3.09 cfs 9,420 cf

Pond DMH2: PROP. DMH-2 Peak Elev=40.92' Inflow=2.99 cfs 9,046 cf
18.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=2.99 cfs 9,046 cf

Pond DMH3: PROP. DMH-3 Peak Elev=40.39' Inflow=2.05 cfs 5,987 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=2.05 cfs 5,987 cf

Pond DMH3A: PROP. DMH-3A Peak Elev=40.48' Inflow=0.10 cfs 134 cf
15.0" Round Culvert n=0.013 L=168.0' S=0.0048 '/' Outflow=0.10 cfs 134 cf

Pond DMH4: PROP DMH-4 Peak Elev=42.02' Inflow=1.36 cfs 3,839 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0058 '/' Outflow=1.36 cfs 3,839 cf

Pond DMH5: PROP. DMH-1 Peak Elev=43.41' Inflow=1.41 cfs 4,060 cf
12.0" Round Culvert n=0.013 L=11.0' S=0.0227 '/' Outflow=1.41 cfs 4,060 cf

Pond EX CB12: EXIST. CB12 (STORMCEPTOR) Peak Elev=44.15' Inflow=0.78 cfs 2,095 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=0.78 cfs 2,095 cf

Pond EX. CB-D: EX. DMH - DESIGN POINT #3 Peak Elev=40.21' Inflow=5.13 cfs 15,407 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0399 '/' Outflow=5.13 cfs 15,407 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=42.55' Inflow=1.38 cfs 4,185 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=1.38 cfs 4,185 cf

Pond EX. CB5: EX. CB-5 Peak Elev=42.95' Inflow=1.42 cfs 4,330 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=1.42 cfs 4,330 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=42.52' Inflow=1.80 cfs 5,530 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=1.80 cfs 5,530 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=42.12' Inflow=2.99 cfs 8,937 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0051 '/' Outflow=2.99 cfs 8,937 cf

Pond EX. CB8: EX. CB-8 Peak Elev=42.21' Inflow=1.36 cfs 3,723 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0060 '/' Outflow=1.36 cfs 3,723 cf

Pond EX. CB9: EX. CB-9 Peak Elev=40.96' Inflow=2.05 cfs 5,853 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0097 '/' Outflow=2.05 cfs 5,853 cf

Pond EX.INF2: EXIST. INFILTRATIONSYSTEM Peak Elev=44.15' Storage=690 cf Inflow=0.78 cfs 2,095 cf
Discarded=0.04 cfs 1,806 cf Primary=0.17 cfs 290 cf Outflow=0.21 cfs 2,096 cf

Pond INF-1: U/G INF-1 Peak Elev=43.41' Storage=1,615 cf Inflow=1.80 cfs 5,215 cf
Discarded=0.22 cfs 5,099 cf Primary=0.09 cfs 116 cf Outflow=0.31 cfs 5,215 cf

Pond INF-2: U/G INF-2 Peak Elev=41.98' Storage=1,709 cf Inflow=1.73 cfs 5,364 cf
Discarded=0.23 cfs 5,230 cf Primary=0.10 cfs 134 cf Outflow=0.32 cfs 5,365 cf

Pond INF-3: U/G INF-3 Peak Elev=42.47' Storage=1,685 cf Inflow=1.76 cfs 5,416 cf
Discarded=0.22 cfs 5,307 cf Primary=0.08 cfs 109 cf Outflow=0.30 cfs 5,417 cf

Total Runoff Area = 182,849 sf Runoff Volume = 43,366 cf Average Runoff Depth = 2.85"
17.37% Pervious = 31,764 sf 82.63% Impervious = 151,085 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: DRAINS TO CB-1 Runoff Area=4,516 sf 100.00% Impervious Runoff Depth=5.37"
Flow Length=51' Slope=0.0240 '/' Tc=0.5 min CN=98 Runoff=0.69 cfs 2,022 cf

Subcatchment2S: DRAINS TO CB-2 Runoff Area=5,065 sf 94.14% Impervious Runoff Depth=5.14"
Flow Length=85' Slope=0.0160 '/' Tc=0.8 min CN=96 Runoff=0.76 cfs 2,169 cf

Subcatchment3S: DRAINS TO CB-3 Runoff Area=7,497 sf 72.05% Impervious Runoff Depth=4.25"
Flow Length=98' Tc=3.8 min CN=88 Runoff=0.90 cfs 2,656 cf

Subcatchment4S: DRAINS TO CB-4 Runoff Area=2,857 sf 62.60% Impervious Runoff Depth=3.83"
Flow Length=71' Tc=3.5 min CN=84 Runoff=0.32 cfs 913 cf

Subcatchment5S: DRAINS TO CB-5 Runoff Area=3,924 sf 100.00% Impervious Runoff Depth=5.37"
Flow Length=47' Slope=0.0130 '/' Tc=0.7 min CN=98 Runoff=0.60 cfs 1,757 cf

Subcatchment6S: DRAINS TO CB-6 Runoff Area=3,628 sf 100.00% Impervious Runoff Depth=5.37"
Flow Length=60' Slope=0.0150 '/' Tc=4.0 min CN=98 Runoff=0.49 cfs 1,624 cf

Subcatchment7S: Subcat 7S Runoff Area=1,293 sf 98.96% Impervious Runoff Depth=5.37"
Tc=0.0 min CN=98 Runoff=0.20 cfs 579 cf

Subcatchment8S: DRAINS TO CB-8 Runoff Area=5,929 sf 100.00% Impervious Runoff Depth=5.37"
Flow Length=80' Slope=0.0150 '/' Tc=0.8 min CN=98 Runoff=0.90 cfs 2,654 cf

Subcatchment9S: ROOF D Runoff Area=6,400 sf 100.00% Impervious Runoff Depth=5.37"
Tc=1.0 min CN=98 Runoff=0.96 cfs 2,865 cf

Subcatchment10S: ROOF B Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=5.37"
Tc=1.0 min CN=98 Runoff=0.72 cfs 2,149 cf

Subcatchment11S: ROOF A Runoff Area=5,600 sf 100.00% Impervious Runoff Depth=5.37"
Tc=1.0 min CN=98 Runoff=0.84 cfs 2,507 cf

Subcatchment12S: ROOF E Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=5.37"
Tc=1.0 min CN=98 Runoff=0.60 cfs 1,791 cf

Subcatchment13S: ROOF F Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=5.37"
Tc=1.0 min CN=98 Runoff=0.72 cfs 2,149 cf

Subcatchment100S: RUNOFF TO EX. Runoff Area=16,015 sf 91.98% Impervious Runoff Depth=5.02"
Flow Length=182' Tc=3.5 min CN=95 Runoff=2.16 cfs 6,705 cf

Subcatchment200S: Drains to Northern Runoff Area=11,417 sf 19.04% Impervious Runoff Depth=2.33"
Flow Length=132' Slope=0.0200 '/' Tc=5.2 min CN=68 Runoff=0.72 cfs 2,212 cf

Subcatchment300S: DRAINS TO EX. CB-8 Runoff Area=16,949 sf 77.39% Impervious Runoff Depth=4.47"
Flow Length=279' Slope=0.0180 '/' Tc=2.0 min CN=90 Runoff=2.25 cfs 6,309 cf

Subcatchment301S: DRAINS TO EX. CB-9 Runoff Area=8,852 sf 82.02% Impervious Runoff Depth=4.58"
Flow Length=127' Slope=0.0230 '/' Tc=3.2 min CN=91 Runoff=1.14 cfs 3,376 cf

Subcatchment302S: RUNOFF TO EX. CB6 Runoff Area=14,456 sf 82.88% Impervious Runoff Depth=4.69"
Flow Length=122' Slope=0.0100 '/' Tc=2.9 min CN=92 Runoff=1.92 cfs 5,645 cf

Subcatchment303S: RUNOFF TO EX. CB 5A Runoff Area=4,916 sf 86.65% Impervious Runoff Depth=4.80"
Flow Length=106' Tc=0.9 min CN=93 Runoff=0.71 cfs 1,966 cf

Subcatchment304S: RUNOFF TO EX. CB5 Runoff Area=19,066 sf 75.73% Impervious Runoff Depth=4.36"
Flow Length=336' Tc=3.3 min CN=89 Runoff=2.38 cfs 6,925 cf

Subcatchment305S: RUNOFF TO CB12 Runoff Area=8,890 sf 82.86% Impervious Runoff Depth=4.69"
Flow Length=109' Tc=1.0 min CN=92 Runoff=1.26 cfs 3,472 cf

Subcatchment400S: Drains to Hotel Lot - Runoff Area=21,981 sf 86.10% Impervious Runoff Depth=4.80"
Flow Length=255' Slope=0.0200 '/' Tc=4.9 min CN=93 Runoff=2.75 cfs 8,789 cf

Pond CB1: PROP. CB-1 Peak Elev=44.09' Inflow=1.41 cfs 4,171 cf
12.0" Round Culvert n=0.013 L=59.0' S=0.0051 '/' Outflow=1.41 cfs 4,171 cf

Pond CB2: PROP. CB-2 Peak Elev=44.15' Inflow=0.76 cfs 2,169 cf
12.0" Round Culvert n=0.013 L=31.0' S=0.0161 '/' Outflow=0.76 cfs 2,169 cf

Pond CB3: PROP. CB-3 Peak Elev=43.87' Inflow=1.22 cfs 3,568 cf
12.0" Round Culvert n=0.013 L=54.0' S=0.0083 '/' Outflow=1.22 cfs 3,568 cf

Pond CB4: PROP. CB-4 Peak Elev=44.00' Inflow=0.32 cfs 913 cf
12.0" Round Culvert n=0.013 L=36.0' S=0.0097 '/' Outflow=0.32 cfs 913 cf

Pond CB5: PROP. CB-5 Peak Elev=42.99' Inflow=0.60 cfs 1,757 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.60 cfs 1,757 cf

Pond CB6: PROP. CB-6 Peak Elev=42.99' Inflow=0.49 cfs 1,624 cf
12.0" Round Culvert n=0.013 L=9.0' S=0.0222 '/' Outflow=0.49 cfs 1,624 cf

Pond CB7: PROP. CB-7 Peak Elev=41.65' Inflow=0.20 cfs 579 cf
12.0" Round Culvert n=0.013 L=34.0' S=0.0103 '/' Outflow=0.20 cfs 579 cf

Pond CB8: PROP. CB-8 Peak Elev=43.49' Inflow=1.96 cfs 6,223 cf
12.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=1.96 cfs 6,223 cf

Pond DMH1: PROP. DMH-1 Peak Elev=41.65' Inflow=6.24 cfs 17,752 cf
18.0" Round Culvert n=0.013 L=43.0' S=0.0093 '/' Outflow=6.24 cfs 17,752 cf

Pond DMH2: PROP. DMH-2 Peak Elev=42.05' Inflow=6.13 cfs 17,173 cf
18.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=6.13 cfs 17,173 cf

Pond DMH3: PROP. DMH-3 Peak Elev=41.57' Inflow=4.27 cfs 12,896 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=4.27 cfs 12,896 cf

Pond DMH3A: PROP. DMH-3A Peak Elev=41.60' Inflow=0.83 cfs 1,750 cf
15.0" Round Culvert n=0.013 L=168.0' S=0.0048 '/' Outflow=0.83 cfs 1,750 cf

Pond DMH4: PROP DMH-4 Peak Elev=43.19' Inflow=2.68 cfs 7,770 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0058 '/' Outflow=2.68 cfs 7,770 cf

Pond DMH5: PROP. DMH-1 Peak Elev=43.87' Inflow=2.16 cfs 6,340 cf
12.0" Round Culvert n=0.013 L=11.0' S=0.0227 '/' Outflow=2.16 cfs 6,340 cf

Pond EX CB12: EXIST. CB12 (STORMCEPTOR) Peak Elev=47.71' Inflow=1.26 cfs 3,472 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.26 cfs 3,472 cf

Pond EX. CB-D: EX. DMH - DESIGN POINT #3 Peak Elev=41.34' Inflow=10.42 cfs 30,648 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0399 '/' Outflow=10.42 cfs 30,648 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=42.79' Inflow=2.16 cfs 6,705 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=2.16 cfs 6,705 cf

Pond EX. CB5: EX. CB-5 Peak Elev=48.37' Inflow=3.91 cfs 8,114 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=3.91 cfs 8,114 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=46.72' Inflow=4.19 cfs 10,079 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=4.19 cfs 10,079 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=45.98' Inflow=5.65 cfs 15,725 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0051 '/' Outflow=5.65 cfs 15,725 cf

Pond EX. CB8: EX. CB-8 Peak Elev=43.41' Inflow=2.25 cfs 6,309 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0060 '/' Outflow=2.25 cfs 6,309 cf

Pond EX. CB9: EX. CB-9 Peak Elev=42.31' Inflow=3.83 cfs 11,146 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0097 '/' Outflow=3.83 cfs 11,146 cf

Pond EX.INF2: EXIST. INFILTRATION Peak Elev=47.68' Storage=1,000 cf Inflow=1.26 cfs 3,472 cf
Discarded=0.05 cfs 2,282 cf Primary=2.70 cfs 1,189 cf Outflow=2.75 cfs 3,472 cf

Pond INF-1: U/G INF-1 Peak Elev=43.80' Storage=2,077 cf Inflow=2.76 cfs 8,131 cf
Discarded=0.24 cfs 6,670 cf Primary=0.88 cfs 1,461 cf Outflow=1.12 cfs 8,132 cf

Pond INF-2: U/G INF-2 Peak Elev=42.51' Storage=2,335 cf Inflow=2.77 cfs 8,730 cf
Discarded=0.26 cfs 6,980 cf Primary=0.83 cfs 1,750 cf Outflow=1.09 cfs 8,731 cf

Pond INF-3: U/G INF-3 Peak Elev=42.99' Storage=2,294 cf Inflow=2.68 cfs 8,395 cf
Discarded=0.25 cfs 6,948 cf Primary=0.63 cfs 1,448 cf Outflow=0.87 cfs 8,396 cf

Total Runoff Area = 182,849 sf Runoff Volume = 71,232 cf Average Runoff Depth = 4.67"
17.37% Pervious = 31,764 sf 82.63% Impervious = 151,085 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: DRAINS TO CB-1 Runoff Area=4,516 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=51' Slope=0.0240 '/' Tc=0.5 min CN=98 Runoff=0.88 cfs 2,590 cf

Subcatchment2S: DRAINS TO CB-2 Runoff Area=5,065 sf 94.14% Impervious Runoff Depth=6.64"
Flow Length=85' Slope=0.0160 '/' Tc=0.8 min CN=96 Runoff=0.97 cfs 2,804 cf

Subcatchment3S: DRAINS TO CB-3 Runoff Area=7,497 sf 72.05% Impervious Runoff Depth=5.71"
Flow Length=98' Tc=3.8 min CN=88 Runoff=1.19 cfs 3,567 cf

Subcatchment4S: DRAINS TO CB-4 Runoff Area=2,857 sf 62.60% Impervious Runoff Depth=5.25"
Flow Length=71' Tc=3.5 min CN=84 Runoff=0.43 cfs 1,251 cf

Subcatchment5S: DRAINS TO CB-5 Runoff Area=3,924 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=47' Slope=0.0130 '/' Tc=0.7 min CN=98 Runoff=0.76 cfs 2,250 cf

Subcatchment6S: DRAINS TO CB-6 Runoff Area=3,628 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=60' Slope=0.0150 '/' Tc=4.0 min CN=98 Runoff=0.62 cfs 2,081 cf

Subcatchment7S: Subcat 7S Runoff Area=1,293 sf 98.96% Impervious Runoff Depth=6.88"
Tc=0.0 min CN=98 Runoff=0.25 cfs 741 cf

Subcatchment8S: DRAINS TO CB-8 Runoff Area=5,929 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=80' Slope=0.0150 '/' Tc=0.8 min CN=98 Runoff=1.14 cfs 3,400 cf

Subcatchment9S: ROOF D Runoff Area=6,400 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=1.22 cfs 3,670 cf

Subcatchment10S: ROOF B Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=0.92 cfs 2,752 cf

Subcatchment11S: ROOF A Runoff Area=5,600 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=1.07 cfs 3,211 cf

Subcatchment12S: ROOF E Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=0.76 cfs 2,293 cf

Subcatchment13S: ROOF F Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=0.92 cfs 2,752 cf

Subcatchment100S: RUNOFF TO EX. Runoff Area=16,015 sf 91.98% Impervious Runoff Depth=6.53"
Flow Length=182' Tc=3.5 min CN=95 Runoff=2.77 cfs 8,708 cf

Subcatchment200S: Drains to Northern Runoff Area=11,417 sf 19.04% Impervious Runoff Depth=3.51"
Flow Length=132' Slope=0.0200 '/' Tc=5.2 min CN=68 Runoff=1.11 cfs 3,337 cf

Subcatchment300S: DRAINS TO EX. CB-8 Runoff Area=16,949 sf 77.39% Impervious Runoff Depth=5.94"
Flow Length=279' Slope=0.0180 '/' Tc=2.0 min CN=90 Runoff=2.95 cfs 8,391 cf

Subcatchment301S: DRAINS TO EX. CB-9 Runoff Area=8,852 sf 82.02% Impervious Runoff Depth=6.06"
Flow Length=127' Slope=0.0230 '/' Tc=3.2 min CN=91 Runoff=1.49 cfs 4,468 cf

Subcatchment302S: RUNOFF TO EX. CB6 Runoff Area=14,456 sf 82.88% Impervious Runoff Depth=6.17"
Flow Length=122' Slope=0.0100 '/' Tc=2.9 min CN=92 Runoff=2.49 cfs 7,437 cf

Subcatchment303S: RUNOFF TO EX. CB 5A Runoff Area=4,916 sf 86.65% Impervious Runoff Depth=6.29"
Flow Length=106' Tc=0.9 min CN=93 Runoff=0.91 cfs 2,577 cf

Subcatchment304S: RUNOFF TO EX. CB5 Runoff Area=19,066 sf 75.73% Impervious Runoff Depth=5.83"
Flow Length=336' Tc=3.3 min CN=89 Runoff=3.13 cfs 9,255 cf

Subcatchment305S: RUNOFF TO CB12 Runoff Area=8,890 sf 82.86% Impervious Runoff Depth=6.17"
Flow Length=109' Tc=1.0 min CN=92 Runoff=1.63 cfs 4,573 cf

Subcatchment400S: Drains to Hotel Lot - Runoff Area=21,981 sf 86.10% Impervious Runoff Depth=6.29"
Flow Length=255' Slope=0.0200 '/' Tc=4.9 min CN=93 Runoff=3.55 cfs 11,522 cf

Pond CB1: PROP. CB-1 Peak Elev=44.67' Inflow=1.79 cfs 5,342 cf
12.0" Round Culvert n=0.013 L=59.0' S=0.0051 '/' Outflow=1.79 cfs 5,342 cf

Pond CB2: PROP. CB-2 Peak Elev=44.63' Inflow=0.97 cfs 2,804 cf
12.0" Round Culvert n=0.013 L=31.0' S=0.0161 '/' Outflow=0.97 cfs 2,804 cf

Pond CB3: PROP. CB-3 Peak Elev=44.05' Inflow=1.62 cfs 4,818 cf
12.0" Round Culvert n=0.013 L=54.0' S=0.0083 '/' Outflow=1.62 cfs 4,818 cf

Pond CB4: PROP. CB-4 Peak Elev=44.14' Inflow=0.43 cfs 1,251 cf
12.0" Round Culvert n=0.013 L=36.0' S=0.0097 '/' Outflow=0.43 cfs 1,251 cf

Pond CB5: PROP. CB-5 Peak Elev=43.67' Inflow=0.76 cfs 2,250 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.76 cfs 2,250 cf

Pond CB6: PROP. CB-6 Peak Elev=43.67' Inflow=0.62 cfs 2,081 cf
12.0" Round Culvert n=0.013 L=9.0' S=0.0222 '/' Outflow=0.62 cfs 2,081 cf

Pond CB7: PROP. CB-7 Peak Elev=43.80' Inflow=0.25 cfs 741 cf
12.0" Round Culvert n=0.013 L=34.0' S=0.0103 '/' Outflow=0.25 cfs 741 cf

Pond CB8: PROP. CB-8 Peak Elev=43.68' Inflow=2.57 cfs 8,218 cf
12.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=2.57 cfs 8,218 cf

Pond DMH1: PROP. DMH-1 Peak Elev=43.80' Inflow=9.35 cfs 24,654 cf
18.0" Round Culvert n=0.013 L=43.0' S=0.0093 '/' Outflow=9.35 cfs 24,654 cf

Pond DMH2: PROP. DMH-2 Peak Elev=44.84' Inflow=9.13 cfs 23,913 cf
18.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=9.13 cfs 23,913 cf

Pond DMH3: PROP. DMH-3 Peak Elev=43.49' Inflow=6.03 cfs 18,756 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=6.03 cfs 18,756 cf

Pond DMH3A: PROP. DMH-3A Peak Elev=43.64' Inflow=1.32 cfs 3,224 cf
15.0" Round Culvert n=0.013 L=168.0' S=0.0048 '/' Outflow=1.32 cfs 3,224 cf

Pond DMH4: PROP DMH-4 Peak Elev=45.82' Inflow=4.01 cfs 11,064 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0058 '/' Outflow=4.01 cfs 11,064 cf

Pond DMH5: PROP. DMH-1 Peak Elev=44.61' Inflow=2.75 cfs 8,146 cf
12.0" Round Culvert n=0.013 L=11.0' S=0.0227 '/' Outflow=2.75 cfs 8,146 cf

Pond EX CB12: EXIST. CB12 (STORMCEPTOR) Peak Elev=60.24' Inflow=1.63 cfs 4,573 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.63 cfs 4,573 cf

Pond EX. CB-D: EX. DMH - DESIGN POINT #3 Peak Elev=43.10' Inflow=15.37 cfs 43,411 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0399 '/' Outflow=15.37 cfs 43,411 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=43.03' Inflow=2.77 cfs 8,708 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=2.77 cfs 8,708 cf

Pond EX. CB5: EX. CB-5 Peak Elev=60.16' Inflow=5.37 cfs 11,254 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=5.37 cfs 11,254 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=55.64' Inflow=6.18 cfs 13,831 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=6.18 cfs 13,831 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=53.54' Inflow=8.66 cfs 21,267 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0051 '/' Outflow=8.66 cfs 21,267 cf

Pond EX. CB8: EX. CB-8 Peak Elev=46.30' Inflow=2.95 cfs 8,391 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0060 '/' Outflow=2.95 cfs 8,391 cf

Pond EX. CB9: EX. CB-9 Peak Elev=44.82' Inflow=5.26 cfs 15,532 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0097 '/' Outflow=5.26 cfs 15,532 cf

Pond EX.INF2: EXIST. INFILTRATION Peak Elev=60.16' Storage=1,000 cf Inflow=1.63 cfs 4,573 cf
Discarded=0.06 cfs 2,574 cf Primary=3.54 cfs 1,999 cf Outflow=3.59 cfs 4,573 cf

Pond INF-1: U/G INF-1 Peak Elev=44.53' Storage=2,912 cf Inflow=3.52 cfs 10,440 cf
Discarded=0.28 cfs 7,767 cf Primary=2.14 cfs 2,673 cf Outflow=2.42 cfs 10,440 cf

Pond INF-2: U/G INF-2 Peak Elev=43.15' Storage=3,054 cf Inflow=3.60 cfs 11,429 cf
Discarded=0.30 cfs 8,205 cf Primary=1.32 cfs 3,224 cf Outflow=1.62 cfs 11,429 cf

Pond INF-3: U/G INF-3 Peak Elev=43.67' Storage=3,057 cf Inflow=3.41 cfs 10,753 cf
Discarded=0.29 cfs 8,107 cf Primary=1.00 cfs 2,646 cf Outflow=1.29 cfs 10,753 cf

Total Runoff Area = 182,849 sf Runoff Volume = 93,630 cf Average Runoff Depth = 6.14"
17.37% Pervious = 31,764 sf 82.63% Impervious = 151,085 sf

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: DRAINS TO CB-1 Runoff Area=4,516 sf 100.00% Impervious Runoff Depth=8.28"
Flow Length=51' Slope=0.0240 '/' Tc=0.5 min CN=98 Runoff=1.05 cfs 3,116 cf

Subcatchment2S: DRAINS TO CB-2 Runoff Area=5,065 sf 94.14% Impervious Runoff Depth=8.04"
Flow Length=85' Slope=0.0160 '/' Tc=0.8 min CN=96 Runoff=1.16 cfs 3,393 cf

Subcatchment3S: DRAINS TO CB-3 Runoff Area=7,497 sf 72.05% Impervious Runoff Depth=7.08"
Flow Length=98' Tc=3.8 min CN=88 Runoff=1.46 cfs 4,421 cf

Subcatchment4S: DRAINS TO CB-4 Runoff Area=2,857 sf 62.60% Impervious Runoff Depth=6.60"
Flow Length=71' Tc=3.5 min CN=84 Runoff=0.54 cfs 1,570 cf

Subcatchment5S: DRAINS TO CB-5 Runoff Area=3,924 sf 100.00% Impervious Runoff Depth=8.28"
Flow Length=47' Slope=0.0130 '/' Tc=0.7 min CN=98 Runoff=0.91 cfs 2,708 cf

Subcatchment6S: DRAINS TO CB-6 Runoff Area=3,628 sf 100.00% Impervious Runoff Depth=8.28"
Flow Length=60' Slope=0.0150 '/' Tc=4.0 min CN=98 Runoff=0.75 cfs 2,504 cf

Subcatchment7S: Subcat 7S Runoff Area=1,293 sf 98.96% Impervious Runoff Depth=8.28"
Tc=0.0 min CN=98 Runoff=0.30 cfs 892 cf

Subcatchment8S: DRAINS TO CB-8 Runoff Area=5,929 sf 100.00% Impervious Runoff Depth=8.28"
Flow Length=80' Slope=0.0150 '/' Tc=0.8 min CN=98 Runoff=1.37 cfs 4,091 cf

Subcatchment9S: ROOF D Runoff Area=6,400 sf 100.00% Impervious Runoff Depth=8.28"
Tc=1.0 min CN=98 Runoff=1.46 cfs 4,416 cf

Subcatchment10S: ROOF B Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=8.28"
Tc=1.0 min CN=98 Runoff=1.10 cfs 3,312 cf

Subcatchment11S: ROOF A Runoff Area=5,600 sf 100.00% Impervious Runoff Depth=8.28"
Tc=1.0 min CN=98 Runoff=1.28 cfs 3,864 cf

Subcatchment12S: ROOF E Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=8.28"
Tc=1.0 min CN=98 Runoff=0.92 cfs 2,760 cf

Subcatchment13S: ROOF F Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=8.28"
Tc=1.0 min CN=98 Runoff=1.10 cfs 3,312 cf

Subcatchment100S: RUNOFF TO EX. Runoff Area=16,015 sf 91.98% Impervious Runoff Depth=7.92"
Flow Length=182' Tc=3.5 min CN=95 Runoff=3.33 cfs 10,569 cf

Subcatchment200S: Drains to Northern Runoff Area=11,417 sf 19.04% Impervious Runoff Depth=4.68"
Flow Length=132' Slope=0.0200 '/' Tc=5.2 min CN=68 Runoff=1.48 cfs 4,448 cf

Subcatchment300S: DRAINS TO EX. CB-8 Runoff Area=16,949 sf 77.39% Impervious Runoff Depth=7.32"
Flow Length=279' Slope=0.0180 '/' Tc=2.0 min CN=90 Runoff=3.59 cfs 10,336 cf

Subcatchment301S: DRAINS TO EX. CB-9 Runoff Area=8,852 sf 82.02% Impervious Runoff Depth=7.44"
Flow Length=127' Slope=0.0230 '/' Tc=3.2 min CN=91 Runoff=1.81 cfs 5,487 cf

Subcatchment302S: RUNOFF TO EX. CB6 Runoff Area=14,456 sf 82.88% Impervious Runoff Depth=7.56"
Flow Length=122' Slope=0.0100 '/' Tc=2.9 min CN=92 Runoff=3.01 cfs 9,105 cf

Subcatchment303S: RUNOFF TO EX. CB 5A Runoff Area=4,916 sf 86.65% Impervious Runoff Depth=7.68"
Flow Length=106' Tc=0.9 min CN=93 Runoff=1.10 cfs 3,146 cf

Subcatchment304S: RUNOFF TO EX. CB5 Runoff Area=19,066 sf 75.73% Impervious Runoff Depth=7.20"
Flow Length=336' Tc=3.3 min CN=89 Runoff=3.81 cfs 11,435 cf

Subcatchment305S: RUNOFF TO CB12 Runoff Area=8,890 sf 82.86% Impervious Runoff Depth=7.56"
Flow Length=109' Tc=1.0 min CN=92 Runoff=1.98 cfs 5,599 cf

Subcatchment400S: Drains to Hotel Lot - Runoff Area=21,981 sf 86.10% Impervious Runoff Depth=7.68"
Flow Length=255' Slope=0.0200 '/' Tc=4.9 min CN=93 Runoff=4.29 cfs 14,066 cf

Pond CB1: PROP. CB-1 Peak Elev=45.56' Inflow=2.14 cfs 6,428 cf
12.0" Round Culvert n=0.013 L=59.0' S=0.0051 '/' Outflow=2.14 cfs 6,428 cf

Pond CB2: PROP. CB-2 Peak Elev=45.52' Inflow=1.16 cfs 3,393 cf
12.0" Round Culvert n=0.013 L=31.0' S=0.0161 '/' Outflow=1.16 cfs 3,393 cf

Pond CB3: PROP. CB-3 Peak Elev=44.39' Inflow=1.99 cfs 5,992 cf
12.0" Round Culvert n=0.013 L=54.0' S=0.0083 '/' Outflow=1.99 cfs 5,992 cf

Pond CB4: PROP. CB-4 Peak Elev=44.40' Inflow=0.54 cfs 1,570 cf
12.0" Round Culvert n=0.013 L=36.0' S=0.0097 '/' Outflow=0.54 cfs 1,570 cf

Pond CB5: PROP. CB-5 Peak Elev=44.67' Inflow=0.91 cfs 2,708 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.91 cfs 2,708 cf

Pond CB6: PROP. CB-6 Peak Elev=44.67' Inflow=0.75 cfs 2,504 cf
12.0" Round Culvert n=0.013 L=9.0' S=0.0222 '/' Outflow=0.75 cfs 2,504 cf

Pond CB7: PROP. CB-7 Peak Elev=45.01' Inflow=0.30 cfs 892 cf
12.0" Round Culvert n=0.013 L=34.0' S=0.0103 '/' Outflow=0.30 cfs 892 cf

Pond CB8: PROP. CB-8 Peak Elev=44.28' Inflow=3.13 cfs 10,082 cf
12.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=3.13 cfs 10,082 cf

Pond DMH1: PROP. DMH-1 Peak Elev=45.01' Inflow=11.19 cfs 31,190 cf
18.0" Round Culvert n=0.013 L=43.0' S=0.0093 '/' Outflow=11.19 cfs 31,190 cf

Pond DMH2: PROP. DMH-2 Peak Elev=46.60' Inflow=10.94 cfs 30,298 cf
18.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=10.94 cfs 30,298 cf

Pond DMH3: PROP. DMH-3 Peak Elev=44.47' Inflow=6.33 cfs 24,350 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=6.33 cfs 24,350 cf

Pond DMH3A: PROP. DMH-3A Peak Elev=44.51' Inflow=1.85 cfs 4,675 cf
15.0" Round Culvert n=0.013 L=168.0' S=0.0048 '/' Outflow=1.85 cfs 4,675 cf

Pond DMH4: PROP DMH-4 Peak Elev=47.63' Inflow=4.02 cfs 14,188 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0058 '/' Outflow=4.02 cfs 14,188 cf

Pond DMH5: PROP. DMH-1 Peak Elev=45.50' Inflow=3.30 cfs 9,822 cf
12.0" Round Culvert n=0.013 L=11.0' S=0.0227 '/' Outflow=3.30 cfs 9,822 cf

Pond EX CB12: EXIST. CB12 (STORMCEPTOR) Peak Elev=69.07' Inflow=1.98 cfs 5,599 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.98 cfs 5,600 cf

Pond EX. CB-D: EX. DMH - DESIGN POINT #3 Peak Elev=44.08' Inflow=17.52 cfs 55,540 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0399 '/' Outflow=17.52 cfs 55,540 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=43.38' Inflow=3.33 cfs 10,569 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=3.33 cfs 10,569 cf

Pond EX. CB5: EX. CB-5 Peak Elev=71.03' Inflow=6.95 cfs 14,231 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=6.95 cfs 14,231 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=62.95' Inflow=7.98 cfs 17,377 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=7.98 cfs 17,377 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=60.11' Inflow=10.94 cfs 26,483 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0051 '/' Outflow=10.94 cfs 26,483 cf

Pond EX. CB8: EX. CB-8 Peak Elev=48.41' Inflow=3.59 cfs 10,336 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0060 '/' Outflow=3.59 cfs 10,336 cf

Pond EX. CB9: EX. CB-9 Peak Elev=46.33' Inflow=5.42 cfs 19,675 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0097 '/' Outflow=5.42 cfs 19,675 cf

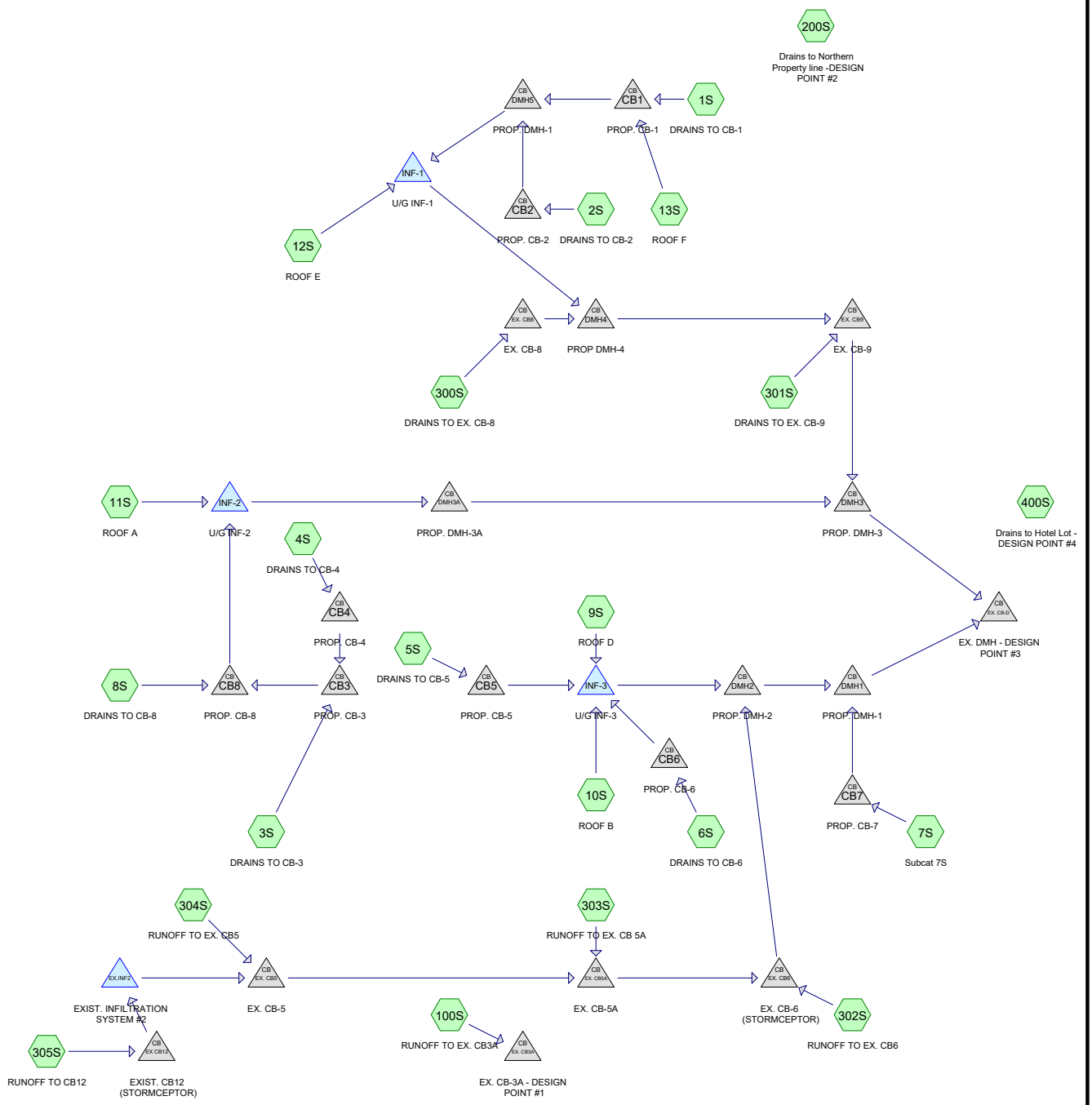
Pond EX.INF2: EXIST. INFILTRATION Peak Elev=68.89' Storage=1,000 cf Inflow=1.98 cfs 5,600 cf
Discarded=0.07 cfs 2,804 cf Primary=3.39 cfs 2,796 cf Outflow=3.45 cfs 5,600 cf

Pond INF-1: U/G INF-1 Peak Elev=45.40' Storage=3,644 cf Inflow=4.21 cfs 12,581 cf
Discarded=0.33 cfs 8,730 cf Primary=2.48 cfs 3,852 cf Outflow=2.79 cfs 12,582 cf

Pond INF-2: U/G INF-2 Peak Elev=44.10' Storage=3,799 cf Inflow=4.36 cfs 13,946 cf
Discarded=0.36 cfs 9,271 cf Primary=1.85 cfs 4,675 cf Outflow=2.20 cfs 13,947 cf

Pond INF-3: U/G INF-3 Peak Elev=44.66' Storage=3,812 cf Inflow=4.08 cfs 12,939 cf
Discarded=0.35 cfs 9,124 cf Primary=1.37 cfs 3,815 cf Outflow=1.72 cfs 12,939 cf

Total Runoff Area = 182,849 sf Runoff Volume = 114,550 cf Average Runoff Depth = 7.52"
17.37% Pervious = 31,764 sf 82.63% Impervious = 151,085 sf



Routing Diagram for 4582-Postdrain--Rev1
Prepared by Greenman-Pedersen, Inc., Printed 4/18/2022
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
31,764	61	>75% Grass cover, Good, HSG B (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 100S, 200S, 300S, 301S, 302S, 303S, 304S, 305S, 400S)
125,486	98	Paved parking, HSG B (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 100S, 200S, 300S, 301S, 302S, 303S, 304S, 305S, 400S)
25,599	98	Roofs, HSG B (9S, 10S, 11S, 12S, 13S)
182,849	**92**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
182,849	HSG B	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S, 13S, 100S, 200S, 300S, 301S, 302S, 303S, 304S, 305S, 400S
0	HSG C	
0	HSG D	
0	Other	
182,849		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	31,764	0	0	0	31,764	>75% Grass cover, Good	
0	125,486	0	0	0	125,486	Paved parking	
0	25,599	0	0	0	25,599	Roofs	
0	**182,849**	**0**	**0**	**0**	**182,849**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	CB1	43.30	43.00	59.0	0.0051	0.013	0.0	12.0	0.0
2	CB2	43.70	43.20	31.0	0.0161	0.013	0.0	12.0	0.0
3	CB3	43.15	42.70	54.0	0.0083	0.013	0.0	12.0	0.0
4	CB4	43.60	43.25	36.0	0.0097	0.013	0.0	12.0	0.0
5	CB5	42.20	42.00	12.0	0.0167	0.013	0.0	12.0	0.0
6	CB6	42.20	42.00	9.0	0.0222	0.013	0.0	12.0	0.0
7	CB7	41.05	40.70	34.0	0.0103	0.013	0.0	12.0	0.0
8	CB8	42.60	42.50	7.0	0.0143	0.013	0.0	12.0	0.0
9	DMH1	39.60	39.20	43.0	0.0093	0.013	0.0	18.0	0.0
10	DMH2	39.85	39.70	30.0	0.0050	0.013	0.0	18.0	0.0
11	DMH3	39.40	39.20	38.0	0.0053	0.013	0.0	18.0	0.0
12	DMH3A	40.30	39.50	168.0	0.0048	0.013	0.0	15.0	0.0
13	DMH4	41.32	40.64	118.0	0.0058	0.013	0.0	12.0	0.0
14	DMH5	42.00	41.75	11.0	0.0227	0.013	0.0	12.0	0.0
15	EX CB12	43.09	42.72	16.0	0.0231	0.013	0.0	12.0	0.0
16	EX. CB-D	39.09	32.55	164.0	0.0399	0.013	0.0	18.0	0.0
17	EX. CB3A	41.82	41.56	46.0	0.0057	0.013	0.0	12.0	0.0
18	EX. CB5	41.93	41.50	170.0	0.0025	0.013	0.0	12.0	0.0
19	EX. CB5A	41.15	41.30	98.0	-0.0015	0.013	0.0	12.0	0.0
20	EX. CB6	40.55	39.95	118.0	0.0051	0.013	0.0	12.0	0.0
21	EX. CB8	41.38	41.32	10.0	0.0060	0.013	0.0	12.0	0.0
22	EX. CB9	40.09	39.80	30.0	0.0097	0.013	0.0	12.0	0.0
23	EX.INF2	42.50	42.34	32.0	0.0050	0.013	0.0	12.0	0.0
24	INF-1	42.00	41.50	50.0	0.0100	0.013	0.0	12.0	0.0
25	INF-2	40.60	40.40	41.0	0.0049	0.013	0.0	15.0	0.0
26	INF-3	41.00	39.95	33.0	0.0318	0.013	0.0	12.0	0.0

Notes Listing (all nodes)

Line#	Node Number	Notes
1	EX.INF2	The soils present in the area of the infiltration system consist of Urban Land (NRCS classification 699). Due to the limited information provided for this soil type, 140C Chatfield-Hollis-Canton Complex was used as the closest soil present within the site.
2		The bottom of the stone in the infiltration system is approximately 6' below existing grade. Per USDA Soil Data Mart, the lowest value for the Saturated Ksat Value for this soil at a depth of 21-60"' +/- is 42.33 micrometers/second.
3		Per NHDES Stormwater Manual: Vol. 2, pages 16-17 using a factor of safety of 2, the infiltration rate for this system is as follows:
4		42.33/2 (FS) = 21.17 micro/sec.
5		Converting to inches/hr with a conversion factor of 0.1417 = (21.17 * 0.1417 = 3.00 in/hr)

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: DRAINS TO CB-1 Runoff Area=4,516 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=51' Slope=0.0240 '/' Tc=0.5 min CN=98 Runoff=0.88 cfs 2,590 cf

Subcatchment2S: DRAINS TO CB-2 Runoff Area=5,065 sf 94.14% Impervious Runoff Depth=6.64"
Flow Length=85' Slope=0.0160 '/' Tc=0.8 min CN=96 Runoff=0.97 cfs 2,804 cf

Subcatchment3S: DRAINS TO CB-3 Runoff Area=7,497 sf 72.05% Impervious Runoff Depth=5.71"
Flow Length=98' Tc=3.8 min CN=88 Runoff=1.19 cfs 3,567 cf

Subcatchment4S: DRAINS TO CB-4 Runoff Area=2,857 sf 62.60% Impervious Runoff Depth=5.25"
Flow Length=71' Tc=3.5 min CN=84 Runoff=0.43 cfs 1,251 cf

Subcatchment5S: DRAINS TO CB-5 Runoff Area=3,924 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=47' Slope=0.0130 '/' Tc=0.7 min CN=98 Runoff=0.76 cfs 2,250 cf

Subcatchment6S: DRAINS TO CB-6 Runoff Area=3,628 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=60' Slope=0.0150 '/' Tc=4.0 min CN=98 Runoff=0.62 cfs 2,081 cf

Subcatchment7S: Subcat 7S Runoff Area=1,293 sf 98.96% Impervious Runoff Depth=6.88"
Tc=0.0 min CN=98 Runoff=0.25 cfs 741 cf

Subcatchment8S: DRAINS TO CB-8 Runoff Area=5,929 sf 100.00% Impervious Runoff Depth=6.88"
Flow Length=80' Slope=0.0150 '/' Tc=0.8 min CN=98 Runoff=1.14 cfs 3,400 cf

Subcatchment9S: ROOF D Runoff Area=6,400 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=1.22 cfs 3,670 cf

Subcatchment10S: ROOF B Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=0.92 cfs 2,752 cf

Subcatchment11S: ROOF A Runoff Area=5,600 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=1.07 cfs 3,211 cf

Subcatchment12S: ROOF E Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=0.76 cfs 2,293 cf

Subcatchment13S: ROOF F Runoff Area=4,800 sf 100.00% Impervious Runoff Depth=6.88"
Tc=1.0 min CN=98 Runoff=0.92 cfs 2,752 cf

Subcatchment100S: RUNOFF TO EX. Runoff Area=16,015 sf 91.98% Impervious Runoff Depth=6.53"
Flow Length=182' Tc=3.5 min CN=95 Runoff=2.77 cfs 8,708 cf

Subcatchment200S: Drains to Northern Runoff Area=11,417 sf 19.04% Impervious Runoff Depth=3.51"
Flow Length=132' Slope=0.0200 '/' Tc=5.2 min CN=68 Runoff=1.11 cfs 3,337 cf

Subcatchment300S: DRAINS TO EX. CB-8 Runoff Area=16,949 sf 77.39% Impervious Runoff Depth=5.94"
Flow Length=279' Slope=0.0180 '/' Tc=2.0 min CN=90 Runoff=2.95 cfs 8,391 cf

Subcatchment301S: DRAINS TO EX. CB-9 Runoff Area=8,852 sf 82.02% Impervious Runoff Depth=6.06"
Flow Length=127' Slope=0.0230 '/' Tc=3.2 min CN=91 Runoff=1.49 cfs 4,468 cf

Subcatchment302S: RUNOFF TO EX. CB6 Runoff Area=14,456 sf 82.88% Impervious Runoff Depth=6.17"
Flow Length=122' Slope=0.0100 '/' Tc=2.9 min CN=92 Runoff=2.49 cfs 7,437 cf

Subcatchment303S: RUNOFF TO EX. CB 5A Runoff Area=4,916 sf 86.65% Impervious Runoff Depth=6.29"
Flow Length=106' Tc=0.9 min CN=93 Runoff=0.91 cfs 2,577 cf

Subcatchment304S: RUNOFF TO EX. CB5 Runoff Area=19,066 sf 75.73% Impervious Runoff Depth=5.83"
Flow Length=336' Tc=3.3 min CN=89 Runoff=3.13 cfs 9,255 cf

Subcatchment305S: RUNOFF TO CB12 Runoff Area=8,890 sf 82.86% Impervious Runoff Depth=6.17"
Flow Length=109' Tc=1.0 min CN=92 Runoff=1.63 cfs 4,573 cf

Subcatchment400S: Drains to Hotel Lot - Runoff Area=21,981 sf 86.10% Impervious Runoff Depth=6.29"
Flow Length=255' Slope=0.0200 '/' Tc=4.9 min CN=93 Runoff=3.55 cfs 11,522 cf

Pond CB1: PROP. CB-1 Peak Elev=44.67' Inflow=1.79 cfs 5,342 cf
12.0" Round Culvert n=0.013 L=59.0' S=0.0051 '/' Outflow=1.79 cfs 5,342 cf

Pond CB2: PROP. CB-2 Peak Elev=44.63' Inflow=0.97 cfs 2,804 cf
12.0" Round Culvert n=0.013 L=31.0' S=0.0161 '/' Outflow=0.97 cfs 2,804 cf

Pond CB3: PROP. CB-3 Peak Elev=44.05' Inflow=1.62 cfs 4,818 cf
12.0" Round Culvert n=0.013 L=54.0' S=0.0083 '/' Outflow=1.62 cfs 4,818 cf

Pond CB4: PROP. CB-4 Peak Elev=44.14' Inflow=0.43 cfs 1,251 cf
12.0" Round Culvert n=0.013 L=36.0' S=0.0097 '/' Outflow=0.43 cfs 1,251 cf

Pond CB5: PROP. CB-5 Peak Elev=43.67' Inflow=0.76 cfs 2,250 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.76 cfs 2,250 cf

Pond CB6: PROP. CB-6 Peak Elev=43.67' Inflow=0.62 cfs 2,081 cf
12.0" Round Culvert n=0.013 L=9.0' S=0.0222 '/' Outflow=0.62 cfs 2,081 cf

Pond CB7: PROP. CB-7 Peak Elev=43.80' Inflow=0.25 cfs 741 cf
12.0" Round Culvert n=0.013 L=34.0' S=0.0103 '/' Outflow=0.25 cfs 741 cf

Pond CB8: PROP. CB-8 Peak Elev=43.68' Inflow=2.57 cfs 8,218 cf
12.0" Round Culvert n=0.013 L=7.0' S=0.0143 '/' Outflow=2.57 cfs 8,218 cf

Pond DMH1: PROP. DMH-1 Peak Elev=43.80' Inflow=9.35 cfs 24,654 cf
18.0" Round Culvert n=0.013 L=43.0' S=0.0093 '/' Outflow=9.35 cfs 24,654 cf

Pond DMH2: PROP. DMH-2 Peak Elev=44.84' Inflow=9.13 cfs 23,913 cf
18.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=9.13 cfs 23,913 cf

Pond DMH3: PROP. DMH-3 Peak Elev=43.49' Inflow=6.03 cfs 18,756 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0053 '/' Outflow=6.03 cfs 18,756 cf

Pond DMH3A: PROP. DMH-3A Peak Elev=43.64' Inflow=1.32 cfs 3,224 cf
15.0" Round Culvert n=0.013 L=168.0' S=0.0048 '/' Outflow=1.32 cfs 3,224 cf

Pond DMH4: PROP DMH-4 Peak Elev=45.82' Inflow=4.01 cfs 11,064 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0058 '/' Outflow=4.01 cfs 11,064 cf

Pond DMH5: PROP. DMH-1 Peak Elev=44.61' Inflow=2.75 cfs 8,146 cf
12.0" Round Culvert n=0.013 L=11.0' S=0.0227 '/' Outflow=2.75 cfs 8,146 cf

Pond EX CB12: EXIST. CB12 (STORMCEPTOR) Peak Elev=60.24' Inflow=1.63 cfs 4,573 cf
12.0" Round Culvert n=0.013 L=16.0' S=0.0231 '/' Outflow=1.63 cfs 4,573 cf

Pond EX. CB-D: EX. DMH - DESIGN POINT #3 Peak Elev=43.10' Inflow=15.37 cfs 43,411 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0399 '/' Outflow=15.37 cfs 43,411 cf

Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1 Peak Elev=43.03' Inflow=2.77 cfs 8,708 cf
12.0" Round Culvert n=0.013 L=46.0' S=0.0057 '/' Outflow=2.77 cfs 8,708 cf

Pond EX. CB5: EX. CB-5 Peak Elev=60.16' Inflow=5.37 cfs 11,254 cf
12.0" Round Culvert n=0.013 L=170.0' S=0.0025 '/' Outflow=5.37 cfs 11,254 cf

Pond EX. CB5A: EX. CB-5A Peak Elev=55.64' Inflow=6.18 cfs 13,831 cf
12.0" Round Culvert n=0.013 L=98.0' S=-0.0015 '/' Outflow=6.18 cfs 13,831 cf

Pond EX. CB6: EX. CB-6 (STORMCEPTOR) Peak Elev=53.54' Inflow=8.66 cfs 21,267 cf
12.0" Round Culvert n=0.013 L=118.0' S=0.0051 '/' Outflow=8.66 cfs 21,267 cf

Pond EX. CB8: EX. CB-8 Peak Elev=46.30' Inflow=2.95 cfs 8,391 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0060 '/' Outflow=2.95 cfs 8,391 cf

Pond EX. CB9: EX. CB-9 Peak Elev=44.82' Inflow=5.26 cfs 15,532 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0097 '/' Outflow=5.26 cfs 15,532 cf

Pond EX.INF2: EXIST. INFILTRATION Peak Elev=60.16' Storage=1,000 cf Inflow=1.63 cfs 4,573 cf
Discarded=0.06 cfs 2,574 cf Primary=3.54 cfs 1,999 cf Outflow=3.59 cfs 4,573 cf

Pond INF-1: U/G INF-1 Peak Elev=44.53' Storage=2,912 cf Inflow=3.52 cfs 10,440 cf
Discarded=0.28 cfs 7,767 cf Primary=2.14 cfs 2,673 cf Outflow=2.42 cfs 10,440 cf

Pond INF-2: U/G INF-2 Peak Elev=43.15' Storage=3,054 cf Inflow=3.60 cfs 11,429 cf
Discarded=0.30 cfs 8,205 cf Primary=1.32 cfs 3,224 cf Outflow=1.62 cfs 11,429 cf

Pond INF-3: U/G INF-3 Peak Elev=43.67' Storage=3,057 cf Inflow=3.41 cfs 10,753 cf
Discarded=0.29 cfs 8,107 cf Primary=1.00 cfs 2,646 cf Outflow=1.29 cfs 10,753 cf

Total Runoff Area = 182,849 sf Runoff Volume = 93,630 cf Average Runoff Depth = 6.14"
17.37% Pervious = 31,764 sf 82.63% Impervious = 151,085 sf

Summary for Subcatchment 1S: DRAINS TO CB-1

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

Runoff = 0.88 cfs @ 12.01 hrs, Volume= 2,590 cf, Depth= 6.88"
Routed to Pond CB1 : PROP. CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
0	61	>75% Grass cover, Good, HSG B
4,516	98	Paved parking, HSG B
4,516	98	Weighted Average
0		0.00% Pervious Area
4,516		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0240	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.1	26	0.0240	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	51	Total			

Summary for Subcatchment 2S: DRAINS TO CB-2

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

Runoff = 0.97 cfs @ 12.01 hrs, Volume= 2,804 cf, Depth= 6.64"
Routed to Pond CB2 : PROP. CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
297	61	>75% Grass cover, Good, HSG B
4,768	98	Paved parking, HSG B
5,065	96	Weighted Average
297		5.86% Pervious Area
4,768		94.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0160	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.4	60	0.0160	2.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	85	Total			

Summary for Subcatchment 3S: DRAINS TO CB-3

Runoff = 1.19 cfs @ 12.05 hrs, Volume= 3,567 cf, Depth= 5.71"
Routed to Pond CB3 : PROP. CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
2,095	61	>75% Grass cover, Good, HSG B
5,402	98	Paved parking, HSG B
7,497	88	Weighted Average
2,095		27.95% Pervious Area
5,402		72.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	25	0.0200	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.2	10	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	63	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8	98	Total			

Summary for Subcatchment 4S: DRAINS TO CB-4

Runoff = 0.43 cfs @ 12.05 hrs, Volume= 1,251 cf, Depth= 5.25"
Routed to Pond CB4 : PROP. CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,069	61	>75% Grass cover, Good, HSG B
1,788	98	Paved parking, HSG B
2,857	84	Weighted Average
1,069		37.40% Pervious Area
1,788		62.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	25	0.0200	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.2	10	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	36	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	71	Total			

Summary for Subcatchment 5S: DRAINS TO CB-5

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

Runoff = 0.76 cfs @ 12.01 hrs, Volume= 2,250 cf, Depth= 6.88"
Routed to Pond CB5 : PROP. CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
0	61	>75% Grass cover, Good, HSG B
3,924	98	Paved parking, HSG B
3,924	98	Weighted Average
0		0.00% Pervious Area
3,924		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0130	0.88		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.2	22	0.0130	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	47	Total			

Summary for Subcatchment 6S: DRAINS TO CB-6

Runoff = 0.62 cfs @ 12.06 hrs, Volume= 2,081 cf, Depth= 6.88"
Routed to Pond CB6 : PROP. CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
0	61	>75% Grass cover, Good, HSG B
3,628	98	Paved parking, HSG B
3,628	98	Weighted Average
0		0.00% Pervious Area
3,628		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	25	0.0150	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.3	15	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.0	60	Total			

Summary for Subcatchment 7S: Subcat 7S

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.25 cfs @ 12.00 hrs, Volume= 741 cf, Depth= 6.88"
Routed to Pond CB7 : PROP. CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
13	61	>75% Grass cover, Good, HSG B
1,279	98	Paved parking, HSG B
1,293	98	Weighted Average
13		1.04% Pervious Area
1,279		98.96% Impervious Area

Summary for Subcatchment 8S: DRAINS TO CB-8

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

Runoff = 1.14 cfs @ 12.01 hrs, Volume= 3,400 cf, Depth= 6.88"
Routed to Pond CB8 : PROP. CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
0	61	>75% Grass cover, Good, HSG B
5,929	98	Paved parking, HSG B
5,929	98	Weighted Average
0		0.00% Pervious Area
5,929		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0150	0.93		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.4	55	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	80	Total			

Summary for Subcatchment 9S: ROOF D

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

Runoff = 1.22 cfs @ 12.01 hrs, Volume= 3,670 cf, Depth= 6.88"
Routed to Pond INF-3 : U/G INF-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
6,400	98	Roofs, HSG B
6,400		100.00% Impervious Area

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

Summary for Subcatchment 10S: ROOF B

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

Runoff = 0.92 cfs @ 12.01 hrs, Volume= 2,752 cf, Depth= 6.88"
Routed to Pond INF-3 : U/G INF-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
4,800	98	Roofs, HSG B
4,800		100.00% Impervious Area

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

Summary for Subcatchment 11S: ROOF A

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

Runoff = 1.07 cfs @ 12.01 hrs, Volume= 3,211 cf, Depth= 6.88"
Routed to Pond INF-2 : U/G INF-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
5,600	98	Roofs, HSG B
5,600		100.00% Impervious Area

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

Summary for Subcatchment 12S: ROOF E

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

Runoff = 0.76 cfs @ 12.01 hrs, Volume= 2,293 cf, Depth= 6.88"
Routed to Pond INF-1 : U/G INF-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
4,000	98	Roofs, HSG B
4,000		100.00% Impervious Area

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

Summary for Subcatchment 13S: ROOF F

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

Runoff = 0.92 cfs @ 12.01 hrs, Volume= 2,752 cf, Depth= 6.88"
Routed to Pond CB1 : PROP. CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
4,800	98	Roofs, HSG B
4,800		100.00% Impervious Area

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

Summary for Subcatchment 100S: RUNOFF TO EX. CB3A

Runoff = 2.77 cfs @ 12.05 hrs, Volume= 8,708 cf, Depth= 6.53"
Routed to Pond EX. CB3A : EX. CB-3A - DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,285	61	>75% Grass cover, Good, HSG B
14,730	98	Paved parking, HSG B
16,015	95	Weighted Average
1,285		8.02% Pervious Area
14,730		91.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	15	0.0200	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.2	10	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
1.2	157	0.0120	2.22		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	182	Total			

Summary for Subcatchment 200S: Drains to Northern Property line -DESIGN POINT #2

Runoff = 1.11 cfs @ 12.08 hrs, Volume= 3,337 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
9,243	61	>75% Grass cover, Good, HSG B
2,174	98	Paved parking, HSG B
11,417	68	Weighted Average
9,243		80.96% Pervious Area
2,174		19.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	20	0.0200	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.9	5	0.0200	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	92	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.2	132	Total			

Summary for Subcatchment 300S: DRAINS TO EX. CB-8

Runoff = 2.95 cfs @ 12.03 hrs, Volume= 8,391 cf, Depth= 5.94"
Routed to Pond EX. CB8 : EX. CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
3,832	61	>75% Grass cover, Good, HSG B
13,117	98	Paved parking, HSG B
16,949	90	Weighted Average
3,832		22.61% Pervious Area
13,117		77.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0180	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
1.6	254	0.0180	2.72		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	279	Total			

Summary for Subcatchment 301S: DRAINS TO EX. CB-9

Runoff = 1.49 cfs @ 12.05 hrs, Volume= 4,468 cf, Depth= 6.06"
Routed to Pond EX. CB9 : EX. CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,592	61	>75% Grass cover, Good, HSG B
7,260	98	Paved parking, HSG B
8,852	91	Weighted Average
1,592		17.98% Pervious Area
7,260		82.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	20	0.0230	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.1	5	0.0230	0.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.6	102	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	127	Total			

Summary for Subcatchment 302S: RUNOFF TO EX. CB6

Runoff = 2.49 cfs @ 12.04 hrs, Volume= 7,437 cf, Depth= 6.17"
Routed to Pond EX. CB6 : EX. CB-6 (STORMCEPTOR)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
2,474	61	>75% Grass cover, Good, HSG B
11,981	98	Paved parking, HSG B
14,456	92	Weighted Average
2,474		17.12% Pervious Area
11,981		82.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	8	0.0100	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.4	17	0.0100	0.73		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.8	97	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.9	122	Total			

Summary for Subcatchment 303S: RUNOFF TO EX. CB 5A

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

Runoff = 0.91 cfs @ 12.01 hrs, Volume= 2,577 cf, Depth= 6.29"
Routed to Pond EX. CB5A : EX. CB-5A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
656	61	>75% Grass cover, Good, HSG B
4,260	98	Paved parking, HSG B
4,916	93	Weighted Average
656		13.35% Pervious Area
4,260		86.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.05		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.5	81	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	106	Total			

Summary for Subcatchment 304S: RUNOFF TO EX. CB5

Runoff = 3.13 cfs @ 12.05 hrs, Volume= 9,255 cf, Depth= 5.83"
Routed to Pond EX. CB5 : EX. CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
4,627	61	>75% Grass cover, Good, HSG B
14,438	98	Paved parking, HSG B
19,066	89	Weighted Average
4,627		24.27% Pervious Area
14,438		75.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.05		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
2.9	311	0.0080	1.82		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.3	336	Total			

Summary for Subcatchment 305S: RUNOFF TO CB12

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

Runoff = 1.63 cfs @ 12.01 hrs, Volume= 4,573 cf, Depth= 6.17"
Routed to Pond EX CB12 : EXIST. CB12 (STORMCEPTOR)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
1,524	61	>75% Grass cover, Good, HSG B
7,365	98	Paved parking, HSG B
8,890	92	Weighted Average
1,524		17.14% Pervious Area
7,365		82.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.22"
0.1	11	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.7	88	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.0	109	Total			

Summary for Subcatchment 400S: Drains to Hotel Lot - DESIGN POINT #4

Runoff = 3.55 cfs @ 12.07 hrs, Volume= 11,522 cf, Depth= 6.29"
Routed to nonexistent node CB-D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=7.12"

Area (sf)	CN	Description
3,056	61	>75% Grass cover, Good, HSG B
18,924	98	Paved parking, HSG B
21,981	93	Weighted Average
3,056		13.90% Pervious Area
18,924		86.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	25	0.0200	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.22"
0.6	35	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	195	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	255	Total			

Summary for Pond CB1: PROP. CB-1

Inflow Area = 9,316 sf,100.00% Impervious, Inflow Depth = 6.88" for 25-Year event
Inflow = 1.79 cfs @ 12.01 hrs, Volume= 5,342 cf
Outflow = 1.79 cfs @ 12.01 hrs, Volume= 5,342 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.79 cfs @ 12.01 hrs, Volume= 5,342 cf
Routed to Pond DMH5 : PROP. DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.67' @ 12.10 hrs
Flood Elev= 46.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.30'	**12.0" Round Culvert** L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.30' / 43.00' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.38 cfs @ 12.01 hrs HW=44.51' TW=44.35' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.38 cfs @ 1.85 fps)

Summary for Pond CB2: PROP. CB-2

Inflow Area = 5,065 sf, 94.14% Impervious, Inflow Depth = 6.64" for 25-Year event
Inflow = 0.97 cfs @ 12.01 hrs, Volume= 2,804 cf
Outflow = 0.97 cfs @ 12.01 hrs, Volume= 2,804 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.01 hrs, Volume= 2,804 cf
Routed to Pond DMH5 : PROP. DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.63' @ 12.10 hrs
Flood Elev= 47.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.70'	**12.0" Round Culvert** L= 31.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.70' / 43.20' S= 0.0161 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.64 cfs @ 12.01 hrs HW=44.43' TW=44.35' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.64 cfs @ 1.45 fps)

Summary for Pond CB3: PROP. CB-3

Inflow Area = 10,354 sf, 69.44% Impervious, Inflow Depth = 5.58" for 25-Year event
Inflow = 1.62 cfs @ 12.05 hrs, Volume= 4,818 cf
Outflow = 1.62 cfs @ 12.05 hrs, Volume= 4,818 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.62 cfs @ 12.05 hrs, Volume= 4,818 cf
Routed to Pond CB8 : PROP. CB-8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.05' @ 12.05 hrs
Flood Elev= 46.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.15'	**12.0" Round Culvert** L= 54.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.15' / 42.70' S= 0.0083 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.65 cfs @ 12.05 hrs HW=44.04' TW=43.66' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.65 cfs @ 2.95 fps)

Summary for Pond CB4: PROP. CB-4

Inflow Area = 2,857 sf, 62.60% Impervious, Inflow Depth = 5.25" for 25-Year event
Inflow = 0.43 cfs @ 12.05 hrs, Volume= 1,251 cf
Outflow = 0.43 cfs @ 12.05 hrs, Volume= 1,251 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.43 cfs @ 12.05 hrs, Volume= 1,251 cf
Routed to Pond CB3 : PROP. CB-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.14' @ 12.06 hrs
Flood Elev= 46.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.60'	**12.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.60' / 43.25' S= 0.0097 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.42 cfs @ 12.05 hrs HW=44.14' TW=44.05' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.42 cfs @ 1.41 fps)

Summary for Pond CB5: PROP. CB-5

Inflow Area = 3,924 sf,100.00% Impervious, Inflow Depth = 6.88" for 25-Year event
Inflow = 0.76 cfs @ 12.01 hrs, Volume= 2,250 cf
Outflow = 0.76 cfs @ 12.01 hrs, Volume= 2,250 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 12.01 hrs, Volume= 2,250 cf
Routed to Pond INF-3 : U/G INF-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.67' @ 12.20 hrs
Flood Elev= 45.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.20'	**12.0" Round Culvert** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.20' / 42.00' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.01 hrs HW=42.93' TW=42.92' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.25 cfs @ 0.57 fps)

Summary for Pond CB6: PROP. CB-6

Inflow Area = 3,628 sf,100.00% Impervious, Inflow Depth = 6.88" for 25-Year event
Inflow = 0.62 cfs @ 12.06 hrs, Volume= 2,081 cf
Outflow = 0.62 cfs @ 12.06 hrs, Volume= 2,081 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.62 cfs @ 12.06 hrs, Volume= 2,081 cf
Routed to Pond INF-3 : U/G INF-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.67' @ 12.20 hrs
Flood Elev= 45.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.20'	**12.0" Round Culvert** L= 9.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.20' / 42.00' S= 0.0222 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.06 hrs HW=43.25' TW=43.31' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB7: PROP. CB-7

Inflow Area = 1,293 sf, 98.96% Impervious, Inflow Depth = 6.88" for 25-Year event
Inflow = 0.25 cfs @ 12.00 hrs, Volume= 741 cf
Outflow = 0.25 cfs @ 12.00 hrs, Volume= 741 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.00 hrs, Volume= 741 cf
Routed to Pond DMH1 : PROP. DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 43.80' @ 12.04 hrs
Flood Elev= 45.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.05'	**12.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.05' / 40.70' S= 0.0103 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.00 hrs HW=41.49' TW=41.79' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB8: PROP. CB-8

Inflow Area = 16,283 sf, 80.57% Impervious, Inflow Depth = 6.06" for 25-Year event
Inflow = 2.57 cfs @ 12.04 hrs, Volume= 8,218 cf
Outflow = 2.57 cfs @ 12.04 hrs, Volume= 8,218 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.04 hrs, Volume= 8,218 cf
Routed to Pond INF-2 : U/G INF-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.68' @ 12.04 hrs
Flood Elev= 47.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.60'	**12.0" Round Culvert** L= 7.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.60' / 42.50' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.56 cfs @ 12.04 hrs HW=43.68' TW=42.63' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.56 cfs @ 3.77 fps)

Summary for Pond DMH1: PROP. DMH-1

[80] Warning: Exceeded Pond CB7 by 0.77' @ 12.03 hrs (3.32 cfs 769 cf)
[80] Warning: Exceeded Pond DMH2 by 0.20' @ 12.19 hrs (3.77 cfs 433 cf)

Inflow Area = 67,372 sf, 86.20% Impervious, Inflow Depth = 4.39" for 25-Year event
Inflow = 9.35 cfs @ 12.02 hrs, Volume= 24,654 cf
Outflow = 9.35 cfs @ 12.02 hrs, Volume= 24,654 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.35 cfs @ 12.02 hrs, Volume= 24,654 cf
Routed to Pond EX. CB-D : EX. DMH - DESIGN POINT #3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.80' @ 12.03 hrs
Flood Elev= 45.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.60'	**18.0" Round Culvert** L= 43.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 39.60' / 39.20' S= 0.0093 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 12.02 hrs HW=43.02' TW=43.09' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH2: PROP. DMH-2

[80] Warning: Exceeded Pond INF-3 by 1.67' @ 12.04 hrs (2.05 cfs 195 cf)

Inflow Area = 66,079 sf, 85.95% Impervious, Inflow Depth = 4.34" for 25-Year event
Inflow = 9.13 cfs @ 12.02 hrs, Volume= 23,913 cf
Outflow = 9.13 cfs @ 12.02 hrs, Volume= 23,913 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.13 cfs @ 12.02 hrs, Volume= 23,913 cf
Routed to Pond DMH1 : PROP. DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.84' @ 12.04 hrs
Flood Elev= 46.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.85'	**18.0" Round Culvert**
			L= 30.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 39.85' / 39.70' S= 0.0050 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.70 cfs @ 12.02 hrs HW=43.47' TW=43.02' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.70 cfs @ 3.23 fps)

Summary for Pond DMH3: PROP. DMH-3

[80] Warning: Exceeded Pond DMH3A by 2.47' @ 12.05 hrs (6.01 cfs 1,426 cf)
[80] Warning: Exceeded Pond EX. CB9 by 0.07' @ 12.23 hrs (0.98 cfs 35 cf)

Inflow Area = 66,065 sf, 86.55% Impervious, Inflow Depth = 3.41" for 25-Year event
Inflow = 6.03 cfs @ 12.02 hrs, Volume= 18,756 cf
Outflow = 6.03 cfs @ 12.02 hrs, Volume= 18,756 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.03 cfs @ 12.02 hrs, Volume= 18,756 cf
Routed to Pond EX. CB-D : EX. DMH - DESIGN POINT #3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.49' @ 12.03 hrs
Flood Elev= 46.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.40'	**18.0" Round Culvert**
			L= 38.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 39.40' / 39.20' S= 0.0053 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 12.02 hrs HW=42.48' TW=42.95' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH3A: PROP. DMH-3A

[80] Warning: Exceeded Pond INF-2 by 0.85' @ 12.04 hrs (1.19 cfs 46 cf)

Inflow Area = 21,883 sf, 85.54% Impervious, Inflow Depth = 1.77" for 25-Year event
Inflow = 1.32 cfs @ 12.16 hrs, Volume= 3,224 cf
Outflow = 1.32 cfs @ 12.16 hrs, Volume= 3,224 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.16 hrs, Volume= 3,224 cf
Routed to Pond DMH3 : PROP. DMH-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.64' @ 12.04 hrs
Flood Elev= 48.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.30'	**15.0" Round Culvert** L= 168.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.30' / 39.50' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.79 cfs @ 12.16 hrs HW=41.67' TW=41.48' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.79 cfs @ 1.65 fps)

Summary for Pond DMH4: PROP DMH-4

[80] Warning: Exceeded Pond EX. CB8 by 1.70' @ 12.09 hrs (4.93 cfs 1,050 cf)
[80] Warning: Exceeded Pond INF-1 by 1.58' @ 12.05 hrs (3.39 cfs 519 cf)

Inflow Area = 35,330 sf, 88.31% Impervious, Inflow Depth = 3.76" for 25-Year event
Inflow = 4.01 cfs @ 12.09 hrs, Volume= 11,064 cf
Outflow = 4.01 cfs @ 12.09 hrs, Volume= 11,064 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.01 cfs @ 12.09 hrs, Volume= 11,064 cf
Routed to Pond EX. CB9 : EX. CB-9

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.82' @ 12.05 hrs
Flood Elev= 47.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.32'	**12.0" Round Culvert** L= 118.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.32' / 40.64' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.85 cfs @ 12.09 hrs HW=45.49' TW=43.55' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.85 cfs @ 4.90 fps)

Summary for Pond DMH5: PROP. DMH-1

Inflow Area = 14,382 sf, 97.94% Impervious, Inflow Depth = 6.80" for 25-Year event
Inflow = 2.75 cfs @ 12.01 hrs, Volume= 8,146 cf
Outflow = 2.75 cfs @ 12.01 hrs, Volume= 8,146 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.75 cfs @ 12.01 hrs, Volume= 8,146 cf
Routed to Pond INF-1 : U/G INF-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.61' @ 12.14 hrs
Flood Elev= 47.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 41.75' S= 0.0227 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.51 cfs @ 12.01 hrs HW=44.35' TW=43.91' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.51 cfs @ 3.20 fps)

Summary for Pond EX CB12: EXIST. CB12 (STORMCEPTOR)

[58] Hint: Peaked 14.30' above defined flood level

Inflow Area = 8,890 sf, 82.86% Impervious, Inflow Depth = 6.17" for 25-Year event
Inflow = 1.63 cfs @ 12.01 hrs, Volume= 4,573 cf
Outflow = 1.63 cfs @ 12.01 hrs, Volume= 4,573 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.63 cfs @ 12.01 hrs, Volume= 4,573 cf
Routed to Pond EX.INF2 : EXIST. INFILTRATION SYSTEM #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 60.24' @ 12.08 hrs
Flood Elev= 45.94'

Device	Routing	Invert	Outlet Devices
#1	Primary	43.09'	**12.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.09' / 42.72' S= 0.0231 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.01 hrs HW=45.71' TW=46.93' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EX. CB-D: EX. DMH - DESIGN POINT #3

[80] Warning: Exceeded Pond DMH1 by 0.19' @ 12.18 hrs (3.69 cfs 409 cf)
[80] Warning: Exceeded Pond DMH3 by 0.78' @ 12.02 hrs (7.53 cfs 1,514 cf)

Inflow Area = 133,437 sf, 86.38% Impervious, Inflow Depth = 3.90" for 25-Year event
Inflow = 15.37 cfs @ 12.02 hrs, Volume= 43,411 cf
Outflow = 15.37 cfs @ 12.02 hrs, Volume= 43,411 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.37 cfs @ 12.02 hrs, Volume= 43,411 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.10' @ 12.02 hrs
Flood Elev= 44.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.09'	**18.0" Round Culvert** L= 164.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.09' / 32.55' S= 0.0399 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=15.27 cfs @ 12.02 hrs HW=43.06' (Free Discharge)
1=Culvert (Inlet Controls 15.27 cfs @ 8.64 fps)

Summary for Pond EX. CB3A: EX. CB-3A - DESIGN POINT #1

Inflow Area = 16,015 sf, 91.98% Impervious, Inflow Depth = 6.53" for 25-Year event
Inflow = 2.77 cfs @ 12.05 hrs, Volume= 8,708 cf
Outflow = 2.77 cfs @ 12.05 hrs, Volume= 8,708 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.77 cfs @ 12.05 hrs, Volume= 8,708 cf
Routed to nonexistent node DMH3B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.03' @ 12.05 hrs
Flood Elev= 44.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.82'	**12.0" Round Culvert** L= 46.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.82' / 41.56' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.77 cfs @ 12.05 hrs HW=43.03' (Free Discharge)
1=Culvert (Barrel Controls 2.77 cfs @ 3.70 fps)

Summary for Pond EX. CB5: EX. CB-5

[58] Hint: Peaked 12.48' above defined flood level
[80] Warning: Exceeded Pond EX.INF2 by 5.18' @ 12.11 hrs (8.61 cfs 3,460 cf)

Inflow Area = 27,955 sf, 77.99% Impervious, Inflow Depth = 4.83" for 25-Year event
Inflow = 5.37 cfs @ 12.04 hrs, Volume= 11,254 cf
Outflow = 5.37 cfs @ 12.04 hrs, Volume= 11,254 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.37 cfs @ 12.04 hrs, Volume= 11,254 cf
Routed to Pond EX. CB5A : EX. CB-5A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 60.16' @ 12.06 hrs
Flood Elev= 47.68'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.93'	**12.0" Round Culvert** L= 170.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.93' / 41.50' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.40 cfs @ 12.04 hrs HW=59.14' TW=54.12' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.40 cfs @ 6.88 fps)

Summary for Pond EX. CB5A: EX. CB-5A

[58] Hint: Peaked 10.23' above defined flood level
[80] Warning: Exceeded Pond EX. CB5 by 0.38' @ 12.19 hrs (1.49 cfs 136 cf)

Inflow Area = 32,871 sf, 79.29% Impervious, Inflow Depth = 5.05" for 25-Year event
Inflow = 6.18 cfs @ 12.02 hrs, Volume= 13,831 cf
Outflow = 6.18 cfs @ 12.02 hrs, Volume= 13,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.18 cfs @ 12.02 hrs, Volume= 13,831 cf
Routed to Pond EX. CB6 : EX. CB-6 (STORMCEPTOR)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 55.64' @ 12.05 hrs
Flood Elev= 45.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.30'	**12.0" Round Culvert** L= 98.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.15' / 41.30' S= -0.0015 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.02 hrs HW=51.64' TW=51.93' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EX. CB6: EX. CB-6 (STORMCEPTOR)

[58] Hint: Peaked 9.59' above defined flood level
[80] Warning: Exceeded Pond EX. CB5A by 0.37' @ 12.18 hrs (1.80 cfs 183 cf)

Inflow Area = 47,327 sf, 80.39% Impervious, Inflow Depth = 5.39" for 25-Year event
Inflow = 8.66 cfs @ 12.04 hrs, Volume= 21,267 cf
Outflow = 8.66 cfs @ 12.04 hrs, Volume= 21,267 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.66 cfs @ 12.04 hrs, Volume= 21,267 cf
Routed to Pond DMH2 : PROP. DMH-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 53.54' @ 12.04 hrs
Flood Elev= 43.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.55'	**12.0" Round Culvert** L= 118.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.55' / 39.95' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=8.11 cfs @ 12.04 hrs HW=53.43' TW=44.81' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 8.11 cfs @ 10.33 fps)

Summary for Pond EX. CB8: EX. CB-8

Inflow Area = 16,949 sf, 77.39% Impervious, Inflow Depth = 5.94" for 25-Year event
Inflow = 2.95 cfs @ 12.03 hrs, Volume= 8,391 cf
Outflow = 2.95 cfs @ 12.03 hrs, Volume= 8,391 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.95 cfs @ 12.03 hrs, Volume= 8,391 cf
Routed to Pond DMH4 : PROP DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.30' @ 12.06 hrs
Flood Elev= 47.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.38'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.38' / 41.32' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.19 cfs @ 12.03 hrs HW=45.26' TW=44.93' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.19 cfs @ 2.79 fps)

Summary for Pond EX. CB9: EX. CB-9

[80] Warning: Exceeded Pond DMH4 by 0.07' @ 12.04 hrs (0.72 cfs 26 cf)

Inflow Area = 44,183 sf, 87.05% Impervious, Inflow Depth = 4.22" for 25-Year event
Inflow = 5.26 cfs @ 12.09 hrs, Volume= 15,532 cf
Outflow = 5.26 cfs @ 12.09 hrs, Volume= 15,532 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.26 cfs @ 12.09 hrs, Volume= 15,532 cf
Routed to Pond DMH3 : PROP. DMH-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.82' @ 12.04 hrs
Flood Elev= 45.09'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.09'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.09' / 39.80' S= 0.0097 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.77 cfs @ 12.09 hrs HW=43.55' TW=42.56' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.77 cfs @ 4.79 fps)

Summary for Pond EX.INF2: EXIST. INFILTRATION SYSTEM #2

The soils present in the area of the infiltration system consist of Urban Land (NRCS classification 699). Due to the limited information provided for this soil type, 140C Chatfield-Hollis-Canton Complex was used as the closest soil present within the site.

The bottom of the stone in the infiltration system is approximately 6' below existing grade. Per USDA Soil Data Mart, the lowest value for the Saturated Ksat Value for this soil at a depth of 21-60"' +/- is 42.33 micrometers/second.

Per NHDES Stormwater Manual: Vol. 2, pages 16-17 using a factor of safety of 2, the infiltration rate for this system is as follows:

42.33/2 (FS) = 21.17 micro/sec.
Converting to inches/hr with a conversion factor of 0.1417 = (21.17 * 0.1417 = 3.00 in/hr)

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[93] Warning: Storage range exceeded by 14.83'
[58] Hint: Peaked 15.16' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=11)
[80] Warning: Exceeded Pond EX CB12 by 5.24' @ 12.12 hrs (8.65 cfs 2,202 cf)

Inflow Area = 8,890 sf, 82.86% Impervious, Inflow Depth = 6.17" for 25-Year event
Inflow = 1.63 cfs @ 12.01 hrs, Volume= 4,573 cf
Outflow = 3.59 cfs @ 12.22 hrs, Volume= 4,573 cf, Atten= 0%, Lag= 12.3 min
Discarded = 0.06 cfs @ 12.07 hrs, Volume= 2,574 cf
Primary = 3.54 cfs @ 12.22 hrs, Volume= 1,999 cf
Routed to Pond EX. CB5 : EX. CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 60.16' @ 12.07 hrs Surf.Area= 582 sf Storage= 1,000 cf
Flood Elev= 45.00' Surf.Area= 582 sf Storage= 922 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 78.1 min (845.7 - 767.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	42.00'	583 cf	**13.23'W x 44.00'L x 3.33'H Field A** 1,941 cf Overall - 484 cf Embedded = 1,457 cf x 40.0% Voids
#2A	42.50'	372 cf	**ADS N-12 24"** x 6 Inside #1 Inside= 23.8"W x 23.8"H => 3.10 sf x 20.00'L = 62.0 cf Outside= 28.0"W x 28.0"H => 3.92 sf x 20.00'L = 78.4 cf 6 Chambers in 3 Rows
#3	42.50'	14 cf	**24.0" Round Pipe Storage** x 4 Inside #1 L= 1.1'
#4	42.50'	31 cf	**24.0" Round Pipe Storage**-Impervious L= 10.0'

1,000 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	**12.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 42.34' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	43.90'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	44.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	42.00'	**3.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.06 cfs @ 12.07 hrs HW=60.14' (Free Discharge)
└**4=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 12.22 hrs HW=45.00' TW=46.81' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  └**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond INF-1: U/G INF-1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=270)

Inflow Area = 18,381 sf, 98.38% Impervious, Inflow Depth = 6.82" for 25-Year event
Inflow = 3.52 cfs @ 12.01 hrs, Volume= 10,440 cf
Outflow = 2.42 cfs @ 12.13 hrs, Volume= 10,440 cf, Atten= 31%, Lag= 7.3 min
Discarded = 0.28 cfs @ 12.13 hrs, Volume= 7,767 cf
Primary = 2.14 cfs @ 12.13 hrs, Volume= 2,673 cf
Routed to Pond DMH4 : PROP DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 44.53' @ 12.13 hrs Surf.Area= 1,650 sf Storage= 2,912 cf
Flood Elev= 45.75' Surf.Area= 1,650 sf Storage= 3,868 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 45.2 min (786.3 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	41.50'	1,910 cf	**27.50'W x 60.00'L x 4.50'H Field A** 7,425 cf Overall - 2,649 cf Embedded = 4,776 cf x 40.0% Voids
#2A	42.00'	2,123 cf	**ADS N-12 36"** x 15 Inside #1 Inside= 36.1"W x 36.1"H => 7.10 sf x 20.00'L = 142.0 cf Outside= 42.0"W x 42.0"H => 8.86 sf x 20.00'L = 177.1 cf Row Length Adjustment= -10.00' x 7.10 sf x 5 rows 24.50' Header x 7.10 sf x 2 = 347.9 cf Inside
		4,033 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	42.00'	**12.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.00' / 41.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	41.50'	**3.000 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 38.50'
#3	Device 1	43.25'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	45.65'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.28 cfs @ 12.13 hrs HW=44.53' (Free Discharge)
└**2=Exfiltration** (Controls 0.28 cfs)

Primary OutFlow Max=1.67 cfs @ 12.13 hrs HW=44.52' TW=43.91' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.67 cfs of 2.83 cfs potential flow)
  ├**3=Orifice/Grate** (Orifice Controls 1.67 cfs @ 3.78 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond INF-2: U/G INF-2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=243)

Inflow Area = 21,883 sf, 85.54% Impervious, Inflow Depth = 6.27" for 25-Year event
Inflow = 3.60 cfs @ 12.02 hrs, Volume= 11,429 cf
Outflow = 1.62 cfs @ 12.16 hrs, Volume= 11,429 cf, Atten= 55%, Lag= 8.5 min
Discarded = 0.30 cfs @ 12.16 hrs, Volume= 8,205 cf
Primary = 1.32 cfs @ 12.16 hrs, Volume= 3,224 cf
Routed to Pond DMH3A : PROP. DMH-3A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.15' @ 12.16 hrs Surf.Area= 1,669 sf Storage= 3,054 cf
Flood Elev= 44.25' Surf.Area= 1,669 sf Storage= 3,898 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 48.2 min (806.7 - 758.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	40.00'	1,946 cf	**22.25'W x 75.00'L x 4.50'H Field A** 7,509 cf Overall - 2,645 cf Embedded = 4,864 cf x 40.0% Voids
#2A	40.50'	2,119 cf	**ADS N-12 36"** x 12 Inside #1 Inside= 36.1"W x 36.1"H => 7.10 sf x 20.00'L = 142.0 cf Outside= 42.0"W x 42.0"H => 8.86 sf x 20.00'L = 177.1 cf Row Length Adjustment= +5.00' x 7.10 sf x 4 rows 19.25' Header x 7.10 sf x 2 = 273.3 cf Inside
		4,065 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	40.60'	**15.0" Round Culvert** L= 41.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.60' / 40.40' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Discarded	40.00'	**3.000 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 37.00'
#3	Device 1	41.80'	**7.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	44.15'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.30 cfs @ 12.16 hrs HW=43.14' (Free Discharge)
└**2=Exfiltration** (Controls 0.30 cfs)

Primary OutFlow Max=1.32 cfs @ 12.16 hrs HW=43.14' TW=41.67' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.32 cfs of 7.16 cfs potential flow)
  ├**3=Orifice/Grate** (Orifice Controls 1.32 cfs @ 4.94 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond INF-3: U/G INF-3

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=258)
[80] Warning: Exceeded Pond CB5 by 0.06' @ 12.05 hrs (0.95 cfs 310 cf)
[80] Warning: Exceeded Pond CB6 by 0.06' @ 12.04 hrs (0.93 cfs 319 cf)

Inflow Area = 18,752 sf,100.00% Impervious, Inflow Depth = 6.88" for 25-Year event
Inflow = 3.41 cfs @ 12.02 hrs, Volume= 10,753 cf
Outflow = 1.29 cfs @ 12.19 hrs, Volume= 10,753 cf, Atten= 62%, Lag= 10.4 min
Discarded = 0.29 cfs @ 12.19 hrs, Volume= 8,107 cf
Primary = 1.00 cfs @ 12.19 hrs, Volume= 2,646 cf
Routed to Pond DMH2 : PROP. DMH-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.67' @ 12.19 hrs Surf.Area= 1,650 sf Storage= 3,057 cf
Flood Elev= 44.75' Surf.Area= 1,650 sf Storage= 3,868 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 49.1 min (787.7 - 738.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	40.50'	1,910 cf	**27.50'W x 60.00'L x 4.50'H Field A** 7,425 cf Overall - 2,649 cf Embedded = 4,776 cf x 40.0% Voids
#2A	41.00'	2,123 cf	**ADS N-12 36"** x 15 Inside #1 Inside= 36.1"W x 36.1"H => 7.10 sf x 20.00'L = 142.0 cf Outside= 42.0"W x 42.0"H => 8.86 sf x 20.00'L = 177.1 cf Row Length Adjustment= -10.00' x 7.10 sf x 5 rows 24.50' Header x 7.10 sf x 2 = 347.9 cf Inside
		4,033 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	41.00'	**12.0" Round Culvert** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 41.00' / 39.95' S= 0.0318 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	40.50'	**3.000 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 37.50'
#3	Device 1	42.30'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	44.65'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.29 cfs @ 12.19 hrs HW=43.67' (Free Discharge)
└─**2=Exfiltration** (Controls 0.29 cfs)

Primary OutFlow Max=1.00 cfs @ 12.19 hrs HW=43.67' TW=41.75' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.00 cfs of 5.24 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 1.00 cfs @ 5.09 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

APPENDIX F

Supplemental Calculations and Backup Data

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.93	**1yr**	2.36	2.82	3.23	3.95	4.56	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.22	3.58	**2yr**	2.85	3.44	3.94	4.69	5.34	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.08	4.59	**5yr**	3.61	4.41	5.05	5.95	6.72	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.90	3.76	4.88	5.54	**10yr**	4.32	5.33	6.10	7.12	8.00	**10yr**
25yr	0.48	0.76	0.97	1.34	1.77	2.34	**25yr**	1.53	2.14	2.78	3.63	4.75	6.19	7.12	**25yr**	5.47	6.84	7.82	9.05	10.08	**25yr**
50yr	0.54	0.86	1.10	1.54	2.07	2.76	**50yr**	1.79	2.53	3.29	4.33	5.67	7.41	8.60	**50yr**	6.56	8.27	9.45	10.84	12.01	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.16	6.78	8.88	10.40	**100yr**	7.85	10.00	11.42	13.00	14.31	**100yr**
200yr	0.67	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.62	6.14	8.10	10.64	12.58	**200yr**	9.41	12.10	13.80	15.59	17.07	**200yr**
500yr	0.80	1.31	1.71	2.49	3.48	4.77	**500yr**	3.00	4.38	5.77	7.72	10.24	13.52	16.18	**500yr**	11.96	15.56	17.73	19.84	21.56	**500yr**

+15% Rainfall

2-yr	3.70
10-yr	5.61
25-yr	7.12
50-yr	8.52

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **U/G INF-1**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	
0.42	ac	A = Area draining to the practice	
0.41	ac	A_I = Impervious area draining to the practice	
0.98	decimal	I = percent impervious area draining to the practice, in decimal form	
0.93	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.39	ac-in	WQV= 1" x Rv x A	
1,416	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
354	cf	25% x WQV (check calc for sediment forebay volume)	
First Defense Unit		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
1,436	cf	V = volume[1] (attach a stage-storage table)	← ≥ WQV
1,650	sf	A_{SA} = surface area of the bottom of the pond	
3.00	iph	$Ksat_{DESIGN}$ = design infiltration rate[2]	
3.4	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
41.50	feet	E_{BTM} = elevation of the bottom of the basin	
38.95	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
2.55	feet	D_{SHWT} = separation from SHWT	← ≥ *[3]
41.5	feet	D_{ROCK} = separation from bedrock	← ≥ *[3]
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	← ≥ 24"
4.50	ft	D_T = depth of trench, if trench proposed	← 4 - 10 ft
Yes	Yes/No	If a trench or underground system is proposed, observation well provided[4]	
Stone		If a trench is proposed, material in trench	
		If a basin is proposed, basin floor material	
	Yes/No	If a basin is proposed, the perimeter should be curvilinear, basin floor shall be flat.	
	:1	If a basin is proposed, pond side slopes	← ≥3:1
43.80	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
45.35	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
45.75	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes: Eshwt was calculated by measuring 10' depth from the existing grade. Nearest test pit was dug to 10' depth without encountering water. Further test pits may be needed to verify groundwater levels.

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **U/G INF-2**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	
0.50	ac	A = Area draining to the practice	
0.43	ac	A_I = Impervious area draining to the practice	
0.86	decimal	I = percent impervious area draining to the practice, in decimal form	
0.82	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.41	ac-in	WQV= 1" x Rv x A	
1,496	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
374	cf	25% x WQV (check calc for sediment forebay volume)	
First Defense Unit		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
1,506	cf	V = volume[1] (attach a stage-storage table)	← ≥ WQV
1,669	sf	A_{SA} = surface area of the bottom of the pond	
3.00	iph	$Ksat_{DESIGN}$ = design infiltration rate[2]	
3.6	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
40.00	feet	E_{BTM} = elevation of the bottom of the basin	
36.00	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
4.00	feet	D_{SHWT} = separation from SHWT	← ≥ *[3]
40.0	feet	D_{ROCK} = separation from bedrock	← ≥ *[3]
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	← ≥ 24"
4.50	ft	D_T = depth of trench, if trench proposed	← 4 - 10 ft
Yes	Yes/No	If a trench or underground system is proposed, observation well provided[4]	
Stone		If a trench is proposed, material in trench	
		If a basin is proposed, basin floor material	
	Yes/No	If a basin is proposed, the perimeter should be curvilinear, basin floor shall be flat.	
	:1	If a basin is proposed, pond side slopes	← ≥3:1
42.51	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
44.07	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
44.25	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **U/G INF-3**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	
0.43	ac	A = Area draining to the practice	
0.43	ac	A_I = Impervious area draining to the practice	
1.00	decimal	I = percent impervious area draining to the practice, in decimal form	
0.95	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.41	ac-in	WQV= 1" x Rv x A	
1,483	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
371	cf	25% x WQV (check calc for sediment forebay volume)	
First Defense Unit		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
1,493	cf	V = volume[1] (attach a stage-storage table)	← ≥ WQV
1,650	sf	A_{SA} = surface area of the bottom of the pond	
3.00	iph	$Ksat_{DESIGN}$ = design infiltration rate[2]	
3.6	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
40.50	feet	E_{BTM} = elevation of the bottom of the basin	
35.30	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
5.20	feet	D_{SHWT} = separation from SHWT	← ≥ *[3]
40.5	feet	D_{ROCK} = separation from bedrock	← ≥ *[3]
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	← ≥ 24"
4.50	ft	D_T = depth of trench, if trench proposed	← 4 - 10 ft
Yes	Yes/No	If a trench or underground system is proposed, observation well provided[4]	
Stone		If a trench is proposed, material in trench	
		If a basin is proposed, basin floor material	
	Yes/No	If a basin is proposed, the perimeter should be curvilinear, basin floor shall be flat.	
	:1	If a basin is proposed, pond side slopes	← ≥3:1
42.99	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
44.66	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
44.75	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond INF-1: U/G INF-1

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
41.50	1,650	0	42.02	1,741	343
41.51	1,652	7	42.03	1,743	349
41.52	1,653	13	42.04	1,744	354
41.53	1,655	20	42.05	1,746	360
41.54	1,657	26	42.06	1,748	366
41.55	1,659	33	42.07	1,750	371
41.56	1,660	40	42.08	1,751	377
41.57	1,662	46	42.09	1,753	382
41.58	1,664	53	42.10	1,755	387
41.59	1,666	59	42.11	1,757	393
41.60	1,667	66	42.12	1,758	398
41.61	1,669	73	42.13	1,760	403
41.62	1,671	79	42.14	1,762	408
41.63	1,673	86	42.15	1,764	413
41.64	1,674	92	42.16	1,765	418
41.65	1,676	99	42.17	1,767	423
41.66	1,678	106	42.18	1,769	428
41.67	1,680	112	42.19	1,771	433
41.68	1,681	119	42.20	1,772	438
41.69	1,683	125	42.21	1,774	443
41.70	1,685	132	42.22	1,776	447
41.71	1,687	139	42.23	1,778	452
41.72	1,688	145	42.24	1,779	457
41.73	1,690	152	42.25	1,781	461
41.74	1,692	158	42.26	1,783	467
41.75	1,694	165	42.27	1,785	472
41.76	1,695	172	42.28	1,786	479
41.77	1,697	178	42.29	1,788	486
41.78	1,699	185	42.30	1,790	492
41.79	1,701	191	42.31	1,792	499
41.80	1,702	198	42.32	1,793	506
41.81	1,704	205	42.33	1,795	514
41.82	1,706	211	42.34	1,797	521
41.83	1,708	218	42.35	1,799	529
41.84	1,709	224	42.36	1,800	536
41.85	1,711	231	42.37	1,802	544
41.86	1,713	238	42.38	1,804	552
41.87	1,715	244	42.39	1,806	560
41.88	1,716	251	42.40	1,807	568
41.89	1,718	257	42.41	1,809	576
41.90	1,720	264	42.42	1,811	584
41.91	1,722	271	42.43	1,813	593
41.92	1,723	277	42.44	1,814	601
41.93	1,725	284	42.45	1,816	609
41.94	1,727	290	42.46	1,818	618
41.95	1,729	297	42.47	1,820	627
41.96	1,730	304	42.48	1,821	635
41.97	1,732	310	42.49	1,823	644
41.98	1,734	317	42.50	1,825	653
41.99	1,736	323	42.51	1,827	662
42.00	1,737	330	42.52	1,828	671
42.01	1,739	336	42.53	1,830	680

Stage-Area-Storage for Pond INF-1: U/G INF-1 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
42.54	1,832	689
42.55	1,834	698
42.56	1,835	708
42.57	1,837	717
42.58	1,839	726
42.59	1,841	736
42.60	1,842	745
42.61	1,844	755
42.62	1,846	764
42.63	1,848	774
42.64	1,849	783
42.65	1,851	793
42.66	1,853	803
42.67	1,855	813
42.68	1,856	822
42.69	1,858	832
42.70	1,860	842
42.71	1,862	852
42.72	1,863	862
42.73	1,865	872
42.74	1,867	882
42.75	1,869	893
42.76	1,870	903
42.77	1,872	913
42.78	1,874	923
42.79	1,876	933
42.80	1,877	944
42.81	1,879	954
42.82	1,881	964
42.83	1,883	975
42.84	1,884	985
42.85	1,886	996
42.86	1,888	1,006
42.87	1,890	1,017
42.88	1,891	1,027
42.89	1,893	1,038
42.90	1,895	1,049
42.91	1,897	1,059
42.92	1,898	1,070
42.93	1,900	1,081
42.94	1,902	1,091
42.95	1,904	1,102
42.96	1,905	1,113
42.97	1,907	1,124
42.98	1,909	1,135
42.99	1,911	1,146
43.00	1,912	1,156
43.01	1,914	1,167
43.02	1,916	1,178
43.03	1,918	1,189
43.04	1,919	1,200
43.05	1,921	1,211
43.06	1,923	1,222
43.07	1,925	1,233
43.08	1,926	1,244
43.09	1,928	1,256
43.10	1,930	1,267
43.11	1,932	1,278
43.12	1,933	1,289
43.13	1,935	1,300
43.14	1,937	1,311
43.15	1,939	1,323
43.16	1,940	1,334
43.17	1,942	1,345
43.18	1,944	1,356
43.19	1,946	1,368
43.20	1,947	1,379
43.21	1,949	1,390
43.22	1,951	1,402
43.23	1,953	1,413
43.24	1,954	1,424
43.25	1,956	1,436
43.26	1,958	1,447
43.27	1,960	1,458
43.28	1,961	1,470
43.29	1,963	1,481
43.30	1,965	1,493
43.31	1,967	1,504
43.32	1,968	1,516
43.33	1,970	1,527
43.34	1,972	1,539
43.35	1,974	1,550
43.36	1,975	1,562
43.37	1,977	1,573
43.38	1,979	1,585
43.39	1,981	1,596
43.40	1,982	1,608
43.41	1,984	1,619
43.42	1,986	1,631
43.43	1,988	1,643
43.44	1,989	1,654
43.45	1,991	1,666
43.46	1,993	1,677
43.47	1,995	1,689
43.48	1,996	1,701
43.49	1,998	1,712
43.50	2,000	1,724
43.51	2,002	1,736
43.52	2,003	1,747
43.53	2,005	1,759
43.54	2,007	1,771
43.55	2,009	1,782
43.56	2,010	1,794
43.57	2,012	1,806

Storage below lowest outlet orifice

Stage-Area-Storage for Pond INF-1: U/G INF-1 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
43.58	2,014	1,817	44.10	2,105	2,425
43.59	2,016	1,829	44.11	2,107	2,437
43.60	2,017	1,841	44.12	2,108	2,448
43.61	2,019	1,852	44.13	2,110	2,460
43.62	2,021	1,864	44.14	2,112	2,471
43.63	2,023	1,876	44.15	2,114	2,483
43.64	2,024	1,888	44.16	2,115	2,495
43.65	2,026	1,899	44.17	2,117	2,506
43.66	2,028	1,911	44.18	2,119	2,517
43.67	2,030	1,923	44.19	2,121	2,529
43.68	2,031	1,934	44.20	2,122	2,540
43.69	2,033	1,946	44.21	2,124	2,552
43.70	2,035	1,958	44.22	2,126	2,563
43.71	2,037	1,970	44.23	2,128	2,575
43.72	2,038	1,981	44.24	2,129	2,586
43.73	2,040	1,993	44.25	2,131	2,598
43.74	2,042	2,005	44.26	2,133	2,609
43.75	2,044	2,017	44.27	2,135	2,620
43.76	2,045	2,028	44.28	2,136	2,632
43.77	2,047	2,040	44.29	2,138	2,643
43.78	2,049	2,052	44.30	2,140	2,654
43.79	2,051	2,063	44.31	2,142	2,666
43.80	2,052	2,075	44.32	2,143	2,677
43.81	2,054	2,087	44.33	2,145	2,688
43.82	2,056	2,099	44.34	2,147	2,699
43.83	2,058	2,110	44.35	2,149	2,711
43.84	2,059	2,122	44.36	2,150	2,722
43.85	2,061	2,134	44.37	2,152	2,733
43.86	2,063	2,146	44.38	2,154	2,744
43.87	2,065	2,157	44.39	2,156	2,755
43.88	2,066	2,169	44.40	2,157	2,766
43.89	2,068	2,181	44.41	2,159	2,778
43.90	2,070	2,192	44.42	2,161	2,789
43.91	2,072	2,204	44.43	2,163	2,800
43.92	2,073	2,216	44.44	2,164	2,811
43.93	2,075	2,228	44.45	2,166	2,822
43.94	2,077	2,239	44.46	2,168	2,833
43.95	2,079	2,251	44.47	2,170	2,844
43.96	2,080	2,263	44.48	2,171	2,855
43.97	2,082	2,274	44.49	2,173	2,866
43.98	2,084	2,286	44.50	2,175	2,877
43.99	2,086	2,298	44.51	2,177	2,888
44.00	2,087	2,309	44.52	2,178	2,898
44.01	2,089	2,321	44.53	2,180	2,909
44.02	2,091	2,332	44.54	2,182	2,920
44.03	2,093	2,344	44.55	2,184	2,931
44.04	2,094	2,356	44.56	2,185	2,942
44.05	2,096	2,367	44.57	2,187	2,952
44.06	2,098	2,379	44.58	2,189	2,963
44.07	2,100	2,391	44.59	2,191	2,974
44.08	2,101	2,402	44.60	2,192	2,984
44.09	2,103	2,414	44.61	2,194	2,995

Stage-Area-Storage for Pond INF-1: U/G INF-1 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
44.62	2,196	3,006	45.14	2,287	3,497
44.63	2,198	3,016	45.15	2,289	3,505
44.64	2,199	3,027	45.16	2,290	3,512
44.65	2,201	3,037	45.17	2,292	3,519
44.66	2,203	3,048	45.18	2,294	3,527
44.67	2,205	3,058	45.19	2,296	3,534
44.68	2,206	3,069	45.20	2,297	3,541
44.69	2,208	3,079	45.21	2,299	3,547
44.70	2,210	3,089	45.22	2,301	3,554
44.71	2,212	3,100	45.23	2,303	3,560
44.72	2,213	3,110	45.24	2,304	3,566
44.73	2,215	3,120	45.25	2,306	3,571
44.74	2,217	3,130	45.26	2,308	3,576
44.75	2,219	3,141	45.27	2,310	3,581
44.76	2,220	3,151	45.28	2,311	3,586
44.77	2,222	3,161	45.29	2,313	3,590
44.78	2,224	3,171	45.30	2,315	3,595
44.79	2,226	3,181	45.31	2,317	3,600
44.80	2,227	3,191	45.32	2,318	3,605
44.81	2,229	3,201	45.33	2,320	3,610
44.82	2,231	3,211	45.34	2,322	3,615
44.83	2,233	3,220	45.35	2,324	3,620
44.84	2,234	3,230	45.36	2,325	3,625
44.85	2,236	3,240	45.37	2,327	3,630
44.86	2,238	3,250	45.38	2,329	3,635
44.87	2,240	3,259	45.39	2,331	3,640
44.88	2,241	3,269	45.40	2,332	3,646
44.89	2,243	3,279	45.41	2,334	3,651
44.90	2,245	3,288	45.42	2,336	3,657
44.91	2,247	3,298	45.43	2,338	3,662
44.92	2,248	3,307	45.44	2,339	3,668
44.93	2,250	3,316	45.45	2,341	3,673
44.94	2,252	3,326	45.46	2,343	3,679
44.95	2,254	3,335	45.47	2,345	3,685
44.96	2,255	3,344	45.48	2,346	3,691
44.97	2,257	3,353	45.49	2,348	3,697
44.98	2,259	3,362	45.50	2,350	3,703
44.99	2,261	3,371	45.51	2,352	3,710
45.00	2,262	3,380	45.52	2,353	3,716
45.01	2,264	3,389	45.53	2,355	3,723
45.02	2,266	3,398	45.54	2,357	3,730
45.03	2,268	3,406	45.55	2,359	3,736
45.04	2,269	3,415	45.56	2,360	3,743
45.05	2,271	3,424	45.57	2,362	3,749
45.06	2,273	3,432	45.58	2,364	3,756
45.07	2,275	3,441	45.59	2,366	3,763
45.08	2,276	3,449	45.60	2,367	3,769
45.09	2,278	3,457	45.61	2,369	3,776
45.10	2,280	3,465	45.62	2,371	3,782
45.11	2,282	3,473	45.63	2,373	3,789
45.12	2,283	3,481	45.64	2,374	3,796
45.13	2,285	3,489	45.65	2,376	3,802

Stage-Area-Storage for Pond INF-1: U/G INF-1 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
45.66	2,378	3,809
45.67	2,380	3,815
45.68	2,381	3,822
45.69	2,383	3,829
45.70	2,385	3,835
45.71	2,387	3,842
45.72	2,388	3,848
45.73	2,390	3,855
45.74	2,392	3,862
45.75	2,394	3,868
45.76	2,395	3,875
45.77	2,397	3,881
45.78	2,399	3,888
45.79	2,401	3,895
45.80	2,402	3,901
45.81	2,404	3,908
45.82	2,406	3,914
45.83	2,408	3,921
45.84	2,409	3,928
45.85	2,411	3,934
45.86	2,413	3,941
45.87	2,415	3,947
45.88	2,416	3,954
45.89	2,418	3,961
45.90	2,420	3,967
45.91	2,422	3,974
45.92	2,423	3,980
45.93	2,425	3,987
45.94	2,427	3,994
45.95	2,429	4,000
45.96	2,430	4,007
45.97	2,432	4,013
45.98	2,434	4,020
45.99	2,436	4,027
46.00	**2,437**	**4,033**

Stage-Area-Storage for Pond INF-2: U/G INF-2

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
40.00	1,669	0	40.52	1,770	347
40.01	1,671	7	40.53	1,772	353
40.02	1,673	13	40.54	1,774	358
40.03	1,675	20	40.55	1,776	364
40.04	1,677	27	40.56	1,778	370
40.05	1,678	33	40.57	1,780	375
40.06	1,680	40	40.58	1,782	381
40.07	1,682	47	40.59	1,784	386
40.08	1,684	53	40.60	1,785	392
40.09	1,686	60	40.61	1,787	397
40.10	1,688	67	40.62	1,789	403
40.11	1,690	73	40.63	1,791	408
40.12	1,692	80	40.64	1,793	413
40.13	1,694	87	40.65	1,795	418
40.14	1,696	93	40.66	1,797	423
40.15	1,698	100	40.67	1,799	428
40.16	1,700	107	40.68	1,801	433
40.17	1,702	113	40.69	1,803	438
40.18	1,704	120	40.70	1,805	443
40.19	1,706	127	40.71	1,807	448
40.20	1,708	133	40.72	1,809	453
40.21	1,710	140	40.73	1,811	458
40.22	1,712	147	40.74	1,813	462
40.23	1,713	154	40.75	1,815	467
40.24	1,715	160	40.76	1,817	472
40.25	1,717	167	40.77	1,819	478
40.26	1,719	174	40.78	1,820	485
40.27	1,721	180	40.79	1,822	492
40.28	1,723	187	40.80	1,824	499
40.29	1,725	194	40.81	1,826	505
40.30	1,727	200	40.82	1,828	513
40.31	1,729	207	40.83	1,830	520
40.32	1,731	214	40.84	1,832	527
40.33	1,733	220	40.85	1,834	535
40.34	1,735	227	40.86	1,836	543
40.35	1,737	234	40.87	1,838	550
40.36	1,739	240	40.88	1,840	558
40.37	1,741	247	40.89	1,842	566
40.38	1,743	254	40.90	1,844	575
40.39	1,745	260	40.91	1,846	583
40.40	1,747	267	40.92	1,848	591
40.41	1,748	274	40.93	1,850	600
40.42	1,750	280	40.94	1,852	608
40.43	1,752	287	40.95	1,854	617
40.44	1,754	294	40.96	1,855	625
40.45	1,756	300	40.97	1,857	634
40.46	1,758	307	40.98	1,859	643
40.47	1,760	314	40.99	1,861	652
40.48	1,762	320	41.00	1,863	661
40.49	1,764	327	41.01	1,865	670
40.50	1,766	334	41.02	1,867	679
40.51	1,768	340	41.03	1,869	688

Stage-Area-Storage for Pond INF-2: U/G INF-2 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
41.04	1,871	697
41.05	1,873	706
41.06	1,875	715
41.07	1,877	725
41.08	1,879	734
41.09	1,881	744
41.10	1,883	753
41.11	1,885	763
41.12	1,887	772
41.13	1,889	782
41.14	1,890	792
41.15	1,892	802
41.16	1,894	811
41.17	1,896	821
41.18	1,898	831
41.19	1,900	841
41.20	1,902	851
41.21	1,904	861
41.22	1,906	871
41.23	1,908	881
41.24	1,910	892
41.25	1,912	902
41.26	1,914	912
41.27	1,916	922
41.28	1,918	933
41.29	1,920	943
41.30	1,922	953
41.31	1,924	964
41.32	1,925	974
41.33	1,927	985
41.34	1,929	995
41.35	1,931	1,006
41.36	1,933	1,016
41.37	1,935	1,027
41.38	1,937	1,038
41.39	1,939	1,048
41.40	1,941	1,059
41.41	1,943	1,070
41.42	1,945	1,080
41.43	1,947	1,091
41.44	1,949	1,102
41.45	1,951	1,113
41.46	1,953	1,124
41.47	1,955	1,135
41.48	1,957	1,146
41.49	1,959	1,156
41.50	1,960	1,167
41.51	1,962	1,178
41.52	1,964	1,189
41.53	1,966	1,200
41.54	1,968	1,212
41.55	1,970	1,223
41.56	1,972	1,234
41.57	1,974	1,245
41.58	1,976	1,256
41.59	1,978	1,267
41.60	1,980	1,278
41.61	1,982	1,290
41.62	1,984	1,301
41.63	1,986	1,312
41.64	1,988	1,323
41.65	1,990	1,335
41.66	1,992	1,346
41.67	1,994	1,357
41.68	1,996	1,368
41.69	1,997	1,380
41.70	1,999	1,391
41.71	2,001	1,403
41.72	2,003	1,414
41.73	2,005	1,425
41.74	2,007	1,437
41.75	2,009	1,448
41.76	2,011	1,460
41.77	2,013	1,471
41.78	2,015	1,483
41.79	2,017	1,494
41.80	2,019	1,506
41.81	2,021	1,517
41.82	2,023	1,529
41.83	2,025	1,540
41.84	2,027	1,552
41.85	2,029	1,563
41.86	2,031	1,575
41.87	2,032	1,587
41.88	2,034	1,598
41.89	2,036	1,610
41.90	2,038	1,621
41.91	2,040	1,633
41.92	2,042	1,645
41.93	2,044	1,656
41.94	2,046	1,668
41.95	2,048	1,680
41.96	2,050	1,691
41.97	2,052	1,703
41.98	2,054	1,715
41.99	2,056	1,727
42.00	2,058	1,738
42.01	2,060	1,750
42.02	2,062	1,762
42.03	2,064	1,773
42.04	2,066	1,785
42.05	2,067	1,797
42.06	2,069	1,809
42.07	2,071	1,820

Storage below lowest outlet orifice

Stage-Area-Storage for Pond INF-2: U/G INF-2 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
42.08	2,073	1,832	42.60	2,174	2,444
42.09	2,075	1,844	42.61	2,176	2,455
42.10	2,077	1,856	42.62	2,178	2,467
42.11	2,079	1,867	42.63	2,180	2,478
42.12	2,081	1,879	42.64	2,182	2,490
42.13	2,083	1,891	42.65	2,184	2,502
42.14	2,085	1,903	42.66	2,186	2,513
42.15	2,087	1,915	42.67	2,188	2,525
42.16	2,089	1,926	42.68	2,190	2,536
42.17	2,091	1,938	42.69	2,192	2,548
42.18	2,093	1,950	42.70	2,194	2,559
42.19	2,095	1,962	42.71	2,196	2,571
42.20	2,097	1,974	42.72	2,198	2,582
42.21	2,099	1,985	42.73	2,200	2,594
42.22	2,101	1,997	42.74	2,202	2,605
42.23	2,102	2,009	42.75	2,204	2,617
42.24	2,104	2,021	42.76	2,206	2,628
42.25	2,106	2,033	42.77	2,208	2,640
42.26	2,108	2,044	42.78	2,209	2,651
42.27	2,110	2,056	42.79	2,211	2,663
42.28	2,112	2,068	42.80	2,213	2,674
42.29	2,114	2,080	42.81	2,215	2,685
42.30	2,116	2,092	42.82	2,217	2,697
42.31	2,118	2,103	42.83	2,219	2,708
42.32	2,120	2,115	42.84	2,221	2,719
42.33	2,122	2,127	42.85	2,223	2,731
42.34	2,124	2,139	42.86	2,225	2,742
42.35	2,126	2,151	42.87	2,227	2,753
42.36	2,128	2,162	42.88	2,229	2,764
42.37	2,130	2,174	42.89	2,231	2,776
42.38	2,132	2,186	42.90	2,233	2,787
42.39	2,134	2,198	42.91	2,235	2,798
42.40	2,136	2,209	42.92	2,237	2,809
42.41	2,137	2,221	42.93	2,239	2,820
42.42	2,139	2,233	42.94	2,241	2,831
42.43	2,141	2,245	42.95	2,243	2,842
42.44	2,143	2,256	42.96	2,244	2,854
42.45	2,145	2,268	42.97	2,246	2,865
42.46	2,147	2,280	42.98	2,248	2,876
42.47	2,149	2,292	42.99	2,250	2,887
42.48	2,151	2,303	43.00	2,252	2,898
42.49	2,153	2,315	43.01	2,254	2,909
42.50	2,155	2,327	43.02	2,256	2,920
42.51	2,157	2,339	43.03	2,258	2,930
42.52	2,159	2,350	43.04	2,260	2,941
42.53	2,161	2,362	43.05	2,262	2,952
42.54	2,163	2,374	43.06	2,264	2,963
42.55	2,165	2,385	43.07	2,266	2,974
42.56	2,167	2,397	43.08	2,268	2,985
42.57	2,169	2,409	43.09	2,270	2,995
42.58	2,171	2,420	43.10	2,272	3,006
42.59	2,173	2,432	43.11	2,274	3,017

Stage-Area-Storage for Pond INF-2: U/G INF-2 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
43.12	2,276	3,027	43.64	2,377	3,522
43.13	2,278	3,038	43.65	2,379	3,530
43.14	2,279	3,049	43.66	2,381	3,538
43.15	2,281	3,059	43.67	2,383	3,545
43.16	2,283	3,070	43.68	2,385	3,552
43.17	2,285	3,080	43.69	2,386	3,560
43.18	2,287	3,091	43.70	2,388	3,566
43.19	2,289	3,101	43.71	2,390	3,573
43.20	2,291	3,112	43.72	2,392	3,580
43.21	2,293	3,122	43.73	2,394	3,586
43.22	2,295	3,132	43.74	2,396	3,592
43.23	2,297	3,143	43.75	2,398	3,597
43.24	2,299	3,153	43.76	2,400	3,603
43.25	2,301	3,163	43.77	2,402	3,607
43.26	2,303	3,173	43.78	2,404	3,612
43.27	2,305	3,184	43.79	2,406	3,617
43.28	2,307	3,194	43.80	2,408	3,622
43.29	2,309	3,204	43.81	2,410	3,627
43.30	2,311	3,214	43.82	2,412	3,632
43.31	2,313	3,224	43.83	2,414	3,637
43.32	2,314	3,234	43.84	2,416	3,642
43.33	2,316	3,244	43.85	2,418	3,647
43.34	2,318	3,254	43.86	2,420	3,652
43.35	2,320	3,263	43.87	2,421	3,657
43.36	2,322	3,273	43.88	2,423	3,663
43.37	2,324	3,283	43.89	2,425	3,668
43.38	2,326	3,293	43.90	2,427	3,673
43.39	2,328	3,302	43.91	2,429	3,679
43.40	2,330	3,312	43.92	2,431	3,684
43.41	2,332	3,321	43.93	2,433	3,690
43.42	2,334	3,331	43.94	2,435	3,695
43.43	2,336	3,340	43.95	2,437	3,701
43.44	2,338	3,350	43.96	2,439	3,707
43.45	2,340	3,359	43.97	2,441	3,713
43.46	2,342	3,368	43.98	2,443	3,719
43.47	2,344	3,377	43.99	2,445	3,725
43.48	2,346	3,387	44.00	2,447	3,731
43.49	2,348	3,396	44.01	2,449	3,738
43.50	2,349	3,405	44.02	2,451	3,745
43.51	2,351	3,414	44.03	2,453	3,751
43.52	2,353	3,422	44.04	2,455	3,758
43.53	2,355	3,431	44.05	2,456	3,765
43.54	2,357	3,440	44.06	2,458	3,771
43.55	2,359	3,449	44.07	2,460	3,778
43.56	2,361	3,457	44.08	2,462	3,785
43.57	2,363	3,466	44.09	2,464	3,791
43.58	2,365	3,474	44.10	2,466	3,798
43.59	2,367	3,482	44.11	2,468	3,805
43.60	2,369	3,490	44.12	2,470	3,811
43.61	2,371	3,499	44.13	2,472	3,818
43.62	2,373	3,507	44.14	2,474	3,825
43.63	2,375	3,515	44.15	2,476	3,831

Stage-Area-Storage for Pond INF-2: U/G INF-2 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
44.16	2,478	3,838
44.17	2,480	3,845
44.18	2,482	3,851
44.19	2,484	3,858
44.20	2,486	3,865
44.21	2,488	3,872
44.22	2,490	3,878
44.23	2,491	3,885
44.24	2,493	3,892
44.25	2,495	3,898
44.26	2,497	3,905
44.27	2,499	3,912
44.28	2,501	3,918
44.29	2,503	3,925
44.30	2,505	3,932
44.31	2,507	3,938
44.32	2,509	3,945
44.33	2,511	3,952
44.34	2,513	3,958
44.35	2,515	3,965
44.36	2,517	3,972
44.37	2,519	3,978
44.38	2,521	3,985
44.39	2,523	3,992
44.40	2,525	3,998
44.41	2,526	4,005
44.42	2,528	4,012
44.43	2,530	4,018
44.44	2,532	4,025
44.45	2,534	4,032
44.46	2,536	4,038
44.47	2,538	4,045
44.48	2,540	4,052
44.49	2,542	4,058
44.50	**2,544**	**4,065**

Stage-Area-Storage for Pond INF-3: U/G INF-3

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
40.50	1,650	0	41.02	1,741	343
40.51	1,652	7	41.03	1,743	349
40.52	1,653	13	41.04	1,744	354
40.53	1,655	20	41.05	1,746	360
40.54	1,657	26	41.06	1,748	366
40.55	1,659	33	41.07	1,750	371
40.56	1,660	40	41.08	1,751	377
40.57	1,662	46	41.09	1,753	382
40.58	1,664	53	41.10	1,755	387
40.59	1,666	59	41.11	1,757	393
40.60	1,667	66	41.12	1,758	398
40.61	1,669	73	41.13	1,760	403
40.62	1,671	79	41.14	1,762	408
40.63	1,673	86	41.15	1,764	413
40.64	1,674	92	41.16	1,765	418
40.65	1,676	99	41.17	1,767	423
40.66	1,678	106	41.18	1,769	428
40.67	1,680	112	41.19	1,771	433
40.68	1,681	119	41.20	1,772	438
40.69	1,683	125	41.21	1,774	443
40.70	1,685	132	41.22	1,776	447
40.71	1,687	139	41.23	1,778	452
40.72	1,688	145	41.24	1,779	457
40.73	1,690	152	41.25	1,781	461
40.74	1,692	158	41.26	1,783	467
40.75	1,694	165	41.27	1,785	472
40.76	1,695	172	41.28	1,786	479
40.77	1,697	178	41.29	1,788	486
40.78	1,699	185	41.30	1,790	492
40.79	1,701	191	41.31	1,792	499
40.80	1,702	198	41.32	1,793	506
40.81	1,704	205	41.33	1,795	514
40.82	1,706	211	41.34	1,797	521
40.83	1,708	218	41.35	1,799	529
40.84	1,709	224	41.36	1,800	536
40.85	1,711	231	41.37	1,802	544
40.86	1,713	238	41.38	1,804	552
40.87	1,715	244	41.39	1,806	560
40.88	1,716	251	41.40	1,807	568
40.89	1,718	257	41.41	1,809	576
40.90	1,720	264	41.42	1,811	584
40.91	1,722	271	41.43	1,813	593
40.92	1,723	277	41.44	1,814	601
40.93	1,725	284	41.45	1,816	609
40.94	1,727	290	41.46	1,818	618
40.95	1,729	297	41.47	1,820	627
40.96	1,730	304	41.48	1,821	635
40.97	1,732	310	41.49	1,823	644
40.98	1,734	317	41.50	1,825	653
40.99	1,736	323	41.51	1,827	662
41.00	1,737	330	41.52	1,828	671
41.01	1,739	336	41.53	1,830	680

Stage-Area-Storage for Pond INF-3: U/G INF-3 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
41.54	1,832	689
41.55	1,834	698
41.56	1,835	708
41.57	1,837	717
41.58	1,839	726
41.59	1,841	736
41.60	1,842	745
41.61	1,844	755
41.62	1,846	764
41.63	1,848	774
41.64	1,849	783
41.65	1,851	793
41.66	1,853	803
41.67	1,855	813
41.68	1,856	822
41.69	1,858	832
41.70	1,860	842
41.71	1,862	852
41.72	1,863	862
41.73	1,865	872
41.74	1,867	882
41.75	1,869	893
41.76	1,870	903
41.77	1,872	913
41.78	1,874	923
41.79	1,876	933
41.80	1,877	944
41.81	1,879	954
41.82	1,881	964
41.83	1,883	975
41.84	1,884	985
41.85	1,886	996
41.86	1,888	1,006
41.87	1,890	1,017
41.88	1,891	1,027
41.89	1,893	1,038
41.90	1,895	1,049
41.91	1,897	1,059
41.92	1,898	1,070
41.93	1,900	1,081
41.94	1,902	1,091
41.95	1,904	1,102
41.96	1,905	1,113
41.97	1,907	1,124
41.98	1,909	1,135
41.99	1,911	1,146
42.00	1,912	1,156
42.01	1,914	1,167
42.02	1,916	1,178
42.03	1,918	1,189
42.04	1,919	1,200
42.05	1,921	1,211
42.06	1,923	1,222
42.07	1,925	1,233
42.08	1,926	1,244
42.09	1,928	1,256
42.10	1,930	1,267
42.11	1,932	1,278
42.12	1,933	1,289
42.13	1,935	1,300
42.14	1,937	1,311
42.15	1,939	1,323
42.16	1,940	1,334
42.17	1,942	1,345
42.18	1,944	1,356
42.19	1,946	1,368
42.20	1,947	1,379
42.21	1,949	1,390
42.22	1,951	1,402
42.23	1,953	1,413
42.24	1,954	1,424
42.25	1,956	1,436
42.26	1,958	1,447
42.27	1,960	1,458
42.28	1,961	1,470
42.29	1,963	1,481
42.30	1,965	1,493
42.31	1,967	1,504
42.32	1,968	1,516
42.33	1,970	1,527
42.34	1,972	1,539
42.35	1,974	1,550
42.36	1,975	1,562
42.37	1,977	1,573
42.38	1,979	1,585
42.39	1,981	1,596
42.40	1,982	1,608
42.41	1,984	1,619
42.42	1,986	1,631
42.43	1,988	1,643
42.44	1,989	1,654
42.45	1,991	1,666
42.46	1,993	1,677
42.47	1,995	1,689
42.48	1,996	1,701
42.49	1,998	1,712
42.50	2,000	1,724
42.51	2,002	1,736
42.52	2,003	1,747
42.53	2,005	1,759
42.54	2,007	1,771
42.55	2,009	1,782
42.56	2,010	1,794
42.57	2,012	1,806

Storage below lowest outlet orifice

Stage-Area-Storage for Pond INF-3: U/G INF-3 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
42.58	2,014	1,817	43.10	2,105	2,425
42.59	2,016	1,829	43.11	2,107	2,437
42.60	2,017	1,841	43.12	2,108	2,448
42.61	2,019	1,852	43.13	2,110	2,460
42.62	2,021	1,864	43.14	2,112	2,471
42.63	2,023	1,876	43.15	2,114	2,483
42.64	2,024	1,888	43.16	2,115	2,495
42.65	2,026	1,899	43.17	2,117	2,506
42.66	2,028	1,911	43.18	2,119	2,517
42.67	2,030	1,923	43.19	2,121	2,529
42.68	2,031	1,934	43.20	2,122	2,540
42.69	2,033	1,946	43.21	2,124	2,552
42.70	2,035	1,958	43.22	2,126	2,563
42.71	2,037	1,970	43.23	2,128	2,575
42.72	2,038	1,981	43.24	2,129	2,586
42.73	2,040	1,993	43.25	2,131	2,598
42.74	2,042	2,005	43.26	2,133	2,609
42.75	2,044	2,017	43.27	2,135	2,620
42.76	2,045	2,028	43.28	2,136	2,632
42.77	2,047	2,040	43.29	2,138	2,643
42.78	2,049	2,052	43.30	2,140	2,654
42.79	2,051	2,063	43.31	2,142	2,666
42.80	2,052	2,075	43.32	2,143	2,677
42.81	2,054	2,087	43.33	2,145	2,688
42.82	2,056	2,099	43.34	2,147	2,699
42.83	2,058	2,110	43.35	2,149	2,711
42.84	2,059	2,122	43.36	2,150	2,722
42.85	2,061	2,134	43.37	2,152	2,733
42.86	2,063	2,146	43.38	2,154	2,744
42.87	2,065	2,157	43.39	2,156	2,755
42.88	2,066	2,169	43.40	2,157	2,766
42.89	2,068	2,181	43.41	2,159	2,778
42.90	2,070	2,192	43.42	2,161	2,789
42.91	2,072	2,204	43.43	2,163	2,800
42.92	2,073	2,216	43.44	2,164	2,811
42.93	2,075	2,228	43.45	2,166	2,822
42.94	2,077	2,239	43.46	2,168	2,833
42.95	2,079	2,251	43.47	2,170	2,844
42.96	2,080	2,263	43.48	2,171	2,855
42.97	2,082	2,274	43.49	2,173	2,866
42.98	2,084	2,286	43.50	2,175	2,877
42.99	2,086	2,298	43.51	2,177	2,888
43.00	2,087	2,309	43.52	2,178	2,898
43.01	2,089	2,321	43.53	2,180	2,909
43.02	2,091	2,332	43.54	2,182	2,920
43.03	2,093	2,344	43.55	2,184	2,931
43.04	2,094	2,356	43.56	2,185	2,942
43.05	2,096	2,367	43.57	2,187	2,952
43.06	2,098	2,379	43.58	2,189	2,963
43.07	2,100	2,391	43.59	2,191	2,974
43.08	2,101	2,402	43.60	2,192	2,984
43.09	2,103	2,414	43.61	2,194	2,995

Stage-Area-Storage for Pond INF-3: U/G INF-3 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
43.62	2,196	3,006	44.14	2,287	3,497
43.63	2,198	3,016	44.15	2,289	3,505
43.64	2,199	3,027	44.16	2,290	3,512
43.65	2,201	3,037	44.17	2,292	3,519
43.66	2,203	3,048	44.18	2,294	3,527
43.67	2,205	3,058	44.19	2,296	3,534
43.68	2,206	3,069	44.20	2,297	3,541
43.69	2,208	3,079	44.21	2,299	3,547
43.70	2,210	3,089	44.22	2,301	3,554
43.71	2,212	3,100	44.23	2,303	3,560
43.72	2,213	3,110	44.24	2,304	3,566
43.73	2,215	3,120	44.25	2,306	3,571
43.74	2,217	3,130	44.26	2,308	3,576
43.75	2,219	3,141	44.27	2,310	3,581
43.76	2,220	3,151	44.28	2,311	3,586
43.77	2,222	3,161	44.29	2,313	3,590
43.78	2,224	3,171	44.30	2,315	3,595
43.79	2,226	3,181	44.31	2,317	3,600
43.80	2,227	3,191	44.32	2,318	3,605
43.81	2,229	3,201	44.33	2,320	3,610
43.82	2,231	3,211	44.34	2,322	3,615
43.83	2,233	3,220	44.35	2,324	3,620
43.84	2,234	3,230	44.36	2,325	3,625
43.85	2,236	3,240	44.37	2,327	3,630
43.86	2,238	3,250	44.38	2,329	3,635
43.87	2,240	3,259	44.39	2,331	3,640
43.88	2,241	3,269	44.40	2,332	3,646
43.89	2,243	3,279	44.41	2,334	3,651
43.90	2,245	3,288	44.42	2,336	3,657
43.91	2,247	3,298	44.43	2,338	3,662
43.92	2,248	3,307	44.44	2,339	3,668
43.93	2,250	3,316	44.45	2,341	3,673
43.94	2,252	3,326	44.46	2,343	3,679
43.95	2,254	3,335	44.47	2,345	3,685
43.96	2,255	3,344	44.48	2,346	3,691
43.97	2,257	3,353	44.49	2,348	3,697
43.98	2,259	3,362	44.50	2,350	3,703
43.99	2,261	3,371	44.51	2,352	3,710
44.00	2,262	3,380	44.52	2,353	3,716
44.01	2,264	3,389	44.53	2,355	3,723
44.02	2,266	3,398	44.54	2,357	3,730
44.03	2,268	3,406	44.55	2,359	3,736
44.04	2,269	3,415	44.56	2,360	3,743
44.05	2,271	3,424	44.57	2,362	3,749
44.06	2,273	3,432	44.58	2,364	3,756
44.07	2,275	3,441	44.59	2,366	3,763
44.08	2,276	3,449	44.60	2,367	3,769
44.09	2,278	3,457	44.61	2,369	3,776
44.10	2,280	3,465	44.62	2,371	3,782
44.11	2,282	3,473	44.63	2,373	3,789
44.12	2,283	3,481	44.64	2,374	3,796
44.13	2,285	3,489	44.65	2,376	3,802

Stage-Area-Storage for Pond INF-3: U/G INF-3 (continued)

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
44.66	2,378	3,809
44.67	2,380	3,815
44.68	2,381	3,822
44.69	2,383	3,829
44.70	2,385	3,835
44.71	2,387	3,842
44.72	2,388	3,848
44.73	2,390	3,855
44.74	2,392	3,862
44.75	2,394	3,868
44.76	2,395	3,875
44.77	2,397	3,881
44.78	2,399	3,888
44.79	2,401	3,895
44.80	2,402	3,901
44.81	2,404	3,908
44.82	2,406	3,914
44.83	2,408	3,921
44.84	2,409	3,928
44.85	2,411	3,934
44.86	2,413	3,941
44.87	2,415	3,947
44.88	2,416	3,954
44.89	2,418	3,961
44.90	2,420	3,967
44.91	2,422	3,974
44.92	2,423	3,980
44.93	2,425	3,987
44.94	2,427	3,994
44.95	2,429	4,000
44.96	2,430	4,007
44.97	2,432	4,013
44.98	2,434	4,020
44.99	2,436	4,027
45.00	**2,437**	**4,033**

GPI Project No.	458219	**Sheet**	1 of 3
Project Description	4 Amigos, LLC		
Task	Drawdown Calculations		
Calculated By	SJB	**Date**	04/15/22
Checked By		**Date**	

Greenman-Pedersen, Inc.

Drawdown within 72 hours Analysis for Static Method

Proposed Underground Infiltration System #1

Infiltration Rate:	3.00	inches/hour (Ksat conversion from NHDES, see Hydrocad node for additional information)
Design Infiltration Rate:	3.00	inches/hour
Total Volume:	1,436	cf
Basin bottom area:	1,650	sf

Time $_{drawdown}$ = (Required Recharge Volume in cubic feet as determined by the Static Method)(1/Design Infiltration Rate in inches per hour)(conversion for inches to feet)(1/bottom area in feet)

Time $_{drawdown}$ = (1,436 cf) (1 / 3.00 in/hr) (1ft/12 in.) (1 / 1,650 sf)

= 3.48 hours

Drawdown within 72 hours Analysis for Static Method

Proposed Underground Infiltration System #2

Infiltration Rate:	3.00	inches/hour (Ksat conversion from NHDES, see Hydrocad node for additional information)
Design Infiltration Rate:	3.00	inches/hour
Total Volume:	1,506	cf
Basin bottom area:	1,669	sf

Time $_{drawdown}$ = (Required Recharge Volume in cubic feet as determined by the Static Method)(1/Design Infiltration Rate in inches per hour)(conversion for inches to feet)(1/bottom area in feet)

Time $_{drawdown}$ = (1,506 cf) (1 / 3.00 in/hr) (1ft/12 in.) (1 / 1,669 sf)

= 3.61 hours

Drawdown within 72 hours Analysis for Static Method

Proposed Underground Infiltration System #3

Infiltration Rate:	3.00	inches/hour (Ksat conversion from NHDES, see Hydrocad node for additional information)
Design Infiltration Rate:	3.00	inches/hour
Total Volume:	1,493	cf
Basin bottom area:	1,650	sf

Time $_{drawdown}$ = (Required Recharge Volume in cubic feet as determined by the Static Method)(1/Design Infiltration Rate in inches per hour)(conversion for inches to feet)(1/bottom area in feet)

Time $_{drawdown}$ = (1,493 cf) (1 / 3.00 in/hr) (1ft/12 in.) (1 / 1,650 sf)

= 3.62 hours

Appendix B.
BMP Pollutant Removal Efficiency

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis

Best Management Practice (BMP) removal efficiencies for pollutant loading analysis for total suspended solids (TSS), total nitrogen (TN), and total phosphorus (TP) are presented in the table below. These removal efficiencies were developed by reviewing various literature sources and using best professional judgment based on literature values and general expectation of how values for different BMPS should relate to one another. The intent is to update this information and add BMPs and removal efficiencies for other parameters as more information/data becomes available in the future.

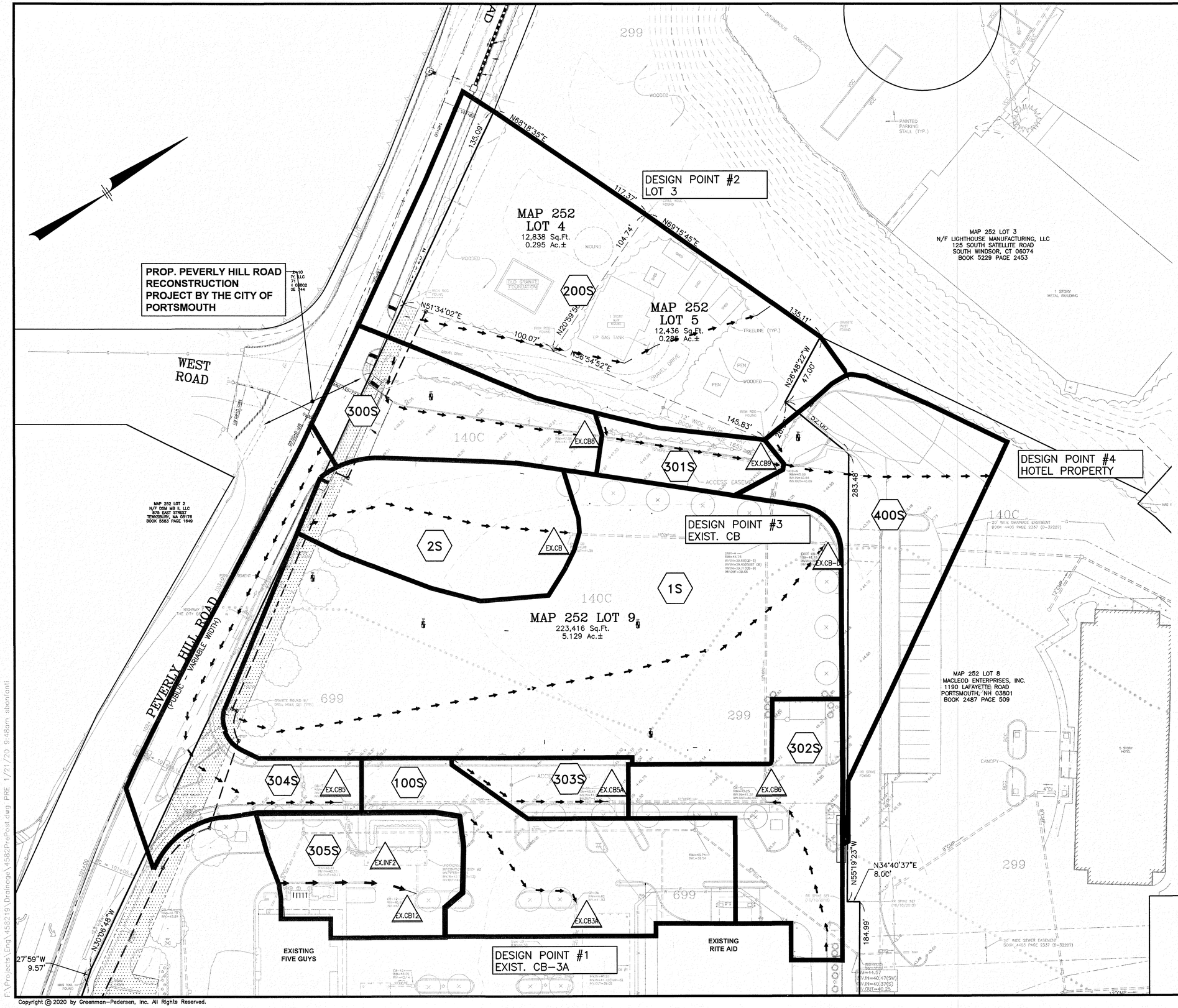
NHDES will consider other BMP removal efficiencies if sufficient documentation is provided.

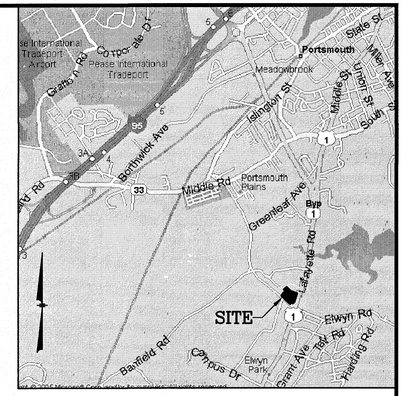
Please note that all BMPs must be designed in accordance with the specifications in the Alteration of Terrain (AoT) Program Administrative Rules (Env-Wq 1500). If BMPs are not designed in accordance with the AoT Rules, NHDES may require lower removal efficiencies to be used in the analysis.

BMP in Series: When BMPs are placed in series, the BMP with the highest removal efficiency shall be the efficiency used in the model for computing annual loadings. Adding efficiencies together is generally not allowed because removals typically decrease rapidly with decreasing influent concentration and, in the case of primary BMPs (i.e., stormwater ponds, infiltration and filtering practices), pre-treatment is usually part of the design and is therefore, most likely already accounted for in the efficiencies cited for these BMPs.

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%





LOCATION MAP
(NOT TO SCALE)

WATERSHED LEGEND:

(1) SUBCATCHMENT: A relatively homogeneous area of land that drains into a single reach or pond. Each subcatchment generates a runoff hydrograph. (A subcatchment may also be used to account for the rain falling directly on the surface of a pond.)

[1] REACH: A uniform stream, channel, or pipe that conveys water from one point to another reach or pond. The outflow of each reach is determined by a hydrograph routing calculation.

(1) POND: A pond, swamp, dam, or other impoundment that fills with water from one or more sources and empties in a manner determined by a weir, culvert, or other device(s) at its outlet. The outflow(s) of each pond is determined by a hydrograph routing calculation. The primary and/or secondary outflow may drain into a reach or into another pond.

Time of Concentration Path (Tc)

SOIL LEGEND

602 SOIL TYPE DESIGNATION

SOIL BOUNDARY

OWNER OF RECORD:

MAP 252 LOT 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NO.	DESCRIPTION	BY	DATE

REVISIONS

PRE-DEVELOPMENT DRAINAGE PLAN

ASSESSORS MAP 252 - LOTS 4,5 & 9
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=30'	DATE: JANUARY 21, 2020		DRAWING NO. 4582PREPOST.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
SJB	CMT	458219	1 OF 1

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EXISTING
MAP 252 LOT 4
12,838 Sq. Ft.
0.295 Ac.±
(TO BE COMBINED WITH
LOT 3)

DESIGN POINT #2

MAP 252
LOT 2
12,838 Sq.Ft.
0.295 Ac.±

MAP 252
LOT 5
12,436 Sq.Ft.
0.285 Ac.±

EXISTING
MAP 252 LOT 5
12,436 Sq. Ft.
0.285 Ac.±
(TO BE COMBINED WITH
LOT 9-2)

DESIGN POINT #4
HOTEL PROPERTY

DESIGN POINT #3
EXIST. CB

DESIGN POINT #1
EXIST. CB-3A

ORIGINAL 2013
APPROVALS

MAP 252 LOT 2-10
N/F JMK REALTY, LLC
PO BOX 971
PORTSMOUTH, NH 03802
BOOK 3656 PAGE 744

MAP 252 LOT 2
N/F DSM MB II, LLC
875 EAST STREET
TEWKSBURY, MA 08176
BOOK 5583 PAGE 1649

MAP 252 LOT 3
N/F LIGHTHOUSE MANUFACTURING, LLC
125 SOUTH SATELLITE ROAD
SOUTH WINDSOR, CT 06074
BOOK 5229 PAGE 2453

MAP 252 LOT 8
MACLEOD ENTERPRISES, INC.
1190 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
BOOK 2487 PAGE 509

CONVERT EXIST. CB FRAME & GRATE TO NEW DMH FRAME & GRATE

WEST ROAD

PEVERLY HILL ROAD
(PUBLIC - VARIABLE WIDTH)

1S 2S 3S 4S 5S 6S 7S 8S 9S 10S 11S 12S 13S
100S 200S 300S 301S 302S 303S 304S 305S 400S

INF-1 INF-2 INF-3 CB-1 CB-2 CB-3 CB-4 CB-5 CB-6 CB-7 CB-8
OCS-1 OCS-2 OCS-3

EX.CB8 EX.CB9 EX.CB-D EX.CB5 EX.CB5A EX.CB6 EX.INF2 EX.CB12 EX.CB3A

2% GARAGE SLOPE (TYP.)

1 STORY METAL BUILDING

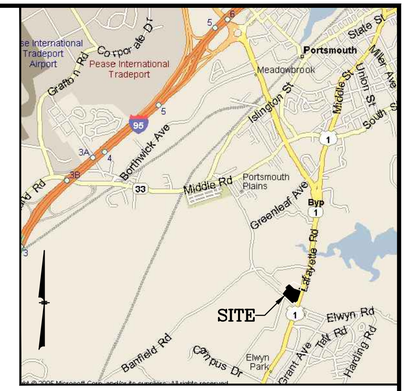
5 STORY HOTEL

FIVE GUYS RESTAURANT

81.67

104.11

43.11



LOCATION MAP
(NOT TO SCALE)

WATERSHED LEGEND:

1 — SUBCATCHMENT: A relatively homogeneous area of land that drains into a single reach or pond. Each subcatchment generates a runoff hydrograph. (A subcatchment may also be used to account for the rain falling directly on the surface of a pond.)

1 — REACH: A uniform stream, channel, or pipe that conveys water from one point to another reach or pond. The outflow of each reach is determined by a hydrograph routing calculation.

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Time of Concentration Path (Tc)

SOIL LEGEND

602 — SOIL TYPE DESIGNATION

SOIL BOUNDARY

OWNER OF RECORD:

MAP 252 LOT 7
4 AMIGOS LLC
321 LAFAYETTE ROAD, UNIT D
HAMPTON, NH 03842

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NO.	DESCRIPTION	BY	DATE
1	MISC. REVISIONS	CMT	4/15/22

REVISIONS

POST-DEVELOPMENT DRAINAGE PLAN

ASSESSORS MAP 252 - LOTS 4,5 & 9
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE
PREPARED FOR:
4 AMIGOS, LLC
321 LAFAYETTE ROAD UNIT D
HAMPTON, NEW HAMPSHIRE 03842

GPI — Engineering, Design, Planning, Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road
Suite One
Salem, NH 03079

SCALE: 1"=30'	DATE: JANUARY 21, 2020		DRAWING NO. 4582POSTDRAIN_REV1.DWG
DRAWN BY:	CHECKED BY:	PROJECT NO.	SHEET NO.
SJB	CMT	458219	1 OF 1

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INSPECTION & MAINTENANCE MANUAL FOR STORMWATER MANAGEMENT SYSTEMS

SITE DEVELOPMENT PLANS
1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

GPI

44 Stiles Road, Suite One
Salem, NH 03079
(603) 893-0720

Responsible Party:

4 Amigos, LLC
321D Lafayette Road
Hampton, NH 03842
Contact: Rick Green
603-765-6510

January 21, 2020
Revised: April 15, 2022

4 Amigos, LLC
Site Development Plans
Inspection & Maintenance Manual

TABLE OF CONTENTS

Inspection & Maintenance Documentation Requirements ..... Section 1

BMP Specific I&M Procedures ..... Section 2

Long Term Maintenance Plan Exhibit ..... Section 3

Control of Invasive Species ..... Section 4

Stormwater Inspection & Maintenance Log Section5

De-Icing Log ..... Section 6

Loose Copy of Log Forms ..... Inside Back Cover

SECTION 1 I & M DOCUMENTATION REQUIREMENTS

4 Amigos, LLC shall be responsible for the continued operation, and maintenance of all stormwater management systems in accordance with this manual and the requirements of NHDES AOT Env-Wq 1507.07. Logs of inspections and maintenance shall be maintained and filed with the City of Portsmouth as needed. Copies will need to be kept for the most recent three years and made available to the Planning Board, Conservation Commission, and NHDES upon request.

Logs shall include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the cleanout of any sediments or debris, the location where the sediment and debris was disposed after removal will be indicated. Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations.

All stormwater facilities associated with this development are identified on Figure 1 contained within Section 3 of this manual and listed individually on the log form included herein, and shall be inspected and maintained in accordance with the procedures outlined in Section 4.

SECTION 2 BMP SPECIFIC I & M PROCEDURES

Driveway/Parking Lot Sweeping

Sweeping shall be done once in the early fall and then immediately following spring snowmelt to remove sand and other debris and when visual buildup of debris is apparent. Pavement surfaces shall be swept at other times such as in the fall after leaves have dropped to remove accumulated debris. Since contaminants typically accumulate within 12 inches of the curbline, street cleaning operations should concentrate in cleaning curb and gutter lines for maximum pollutant removal efficiency. Other areas shall also be swept periodically when visual buildup of debris is apparent. Once removed from paved surfaces, the sweeping must be handled and disposed of properly. Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations.

Deep Sump Hooded Catch Basins

Inspect and clean as required all catch basins at least four times per year including at the end of the foliage and snow removal seasons. Sediment must be removed whenever the depth of deposits is greater than or equal to one half the depth from the bottom of sump to the invert of the lowest pipe in the basin. If the basin outlet is designed with a hood to trap floatable materials check to ensure watertight seal is working. Damaged hoods should be replaced when noted by inspection. At a minimum, remove floating debris and hydrocarbons at the time of the inspection. Sediment and debris can be removed by a clamshell bucket; however, a vacuum truck is preferred. Disposal of the accumulated sediment and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations.

Hydrodynamic Separator (First Defense Unit)

Initial maintenance to be performed twice a year for the first year after the unit is online and operational. A vacuum truck must be used at a minimum of once per year for sediment removal. Refer to the attached First Defense Owner's manual for operation and maintenance procedures and schedules thereafter.

Subsurface Stormwater Infiltration Systems

All subsurface systems should initially be inspected within the first three months after completion of the site's construction. Preventive maintenance should be performed at least every six months and sediment shall be removed from pretreatment BMP's after every major storm event. The Infiltration System shall be inspected on regular bi-annual scheduled dates. During the first year of operation, the system shall be inspected after at least two large storm events (> 1 inch) to ensure that it is fully drained within 72 hours. If standing water is present more than 72 hours after a rainfall event, the infiltration system shall be cleaned.

Ponded water in the system indicates potential infiltration failure in the bottom of the pipe and/or stone. In this case, accumulated sediment shall be removed from the bottom utilizing water jets and/or truck mounted vacuum equipment. Sediment and debris removal should be through the use of truck mounted vacuum equipment. Outlet pipes should be flushed to point of discharge on the same frequency as mentioned above. Disposal of the accumulated sediment

and hydrocarbons must be in accordance with applicable local, state, and federal guidelines and regulations.

The following is the recommended procedure to inspect the underground system in service:

1. Locate the riser or cleanout section of the system. The riser/cleanout will typically be 6 or 12" in diameter or larger.
2. Remove the lid from the riser/cleanout.
3. Measure the sediment buildup at each riser and cleanout location. Only certified confined space entry personnel having appropriate equipment should be permitted to enter the system.
4. Inspect each manifold, all laterals, and outlet pipes for sediment build up, obstructions, or other problems. Obstructions should be removed at this time.
5. If measured sediment build up is between 2" to 8", cleaning should be considered; if sediment build up exceeds 8", cleaning should be performed at the earliest opportunity. A thorough cleaning of the system (manifolds and laterals) shall be performed by water jets and/or truck mounted vacuum equipment.

Pretreatment BMP's shall be inspected and cleaned during the regular bi-annual inspections.

The inlet and outlet of the subsurface systems should be checked periodically to ensure that flow structures are not blocked by debris. All pipes connecting the structures to the system should be checked for debris that may obstruct flow. Inspections should be conducted monthly during wet weather conditions from March to November.

Vegetated Areas

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. During the summer months, all landscape features are to be maintained with the minimum possible amount of fertilizers, pesticides or herbicides.

Winter Maintenance

Proposed snow storage is located along the edge of the roadways. Any excess snow is to be trucked offsite. During the winter months all snow is to be stored such that snowmelt is controlled. Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches. The minimum amount of deicing chemicals needed is to be used. It is recommended that winter maintenance contractors be current UNHT2 Green SnowPro Certified applicators or equivalent. In addition, a NHDES Salt Applicator Certification is recommended, but not required. Information on these certifications can be found in the links provided below:

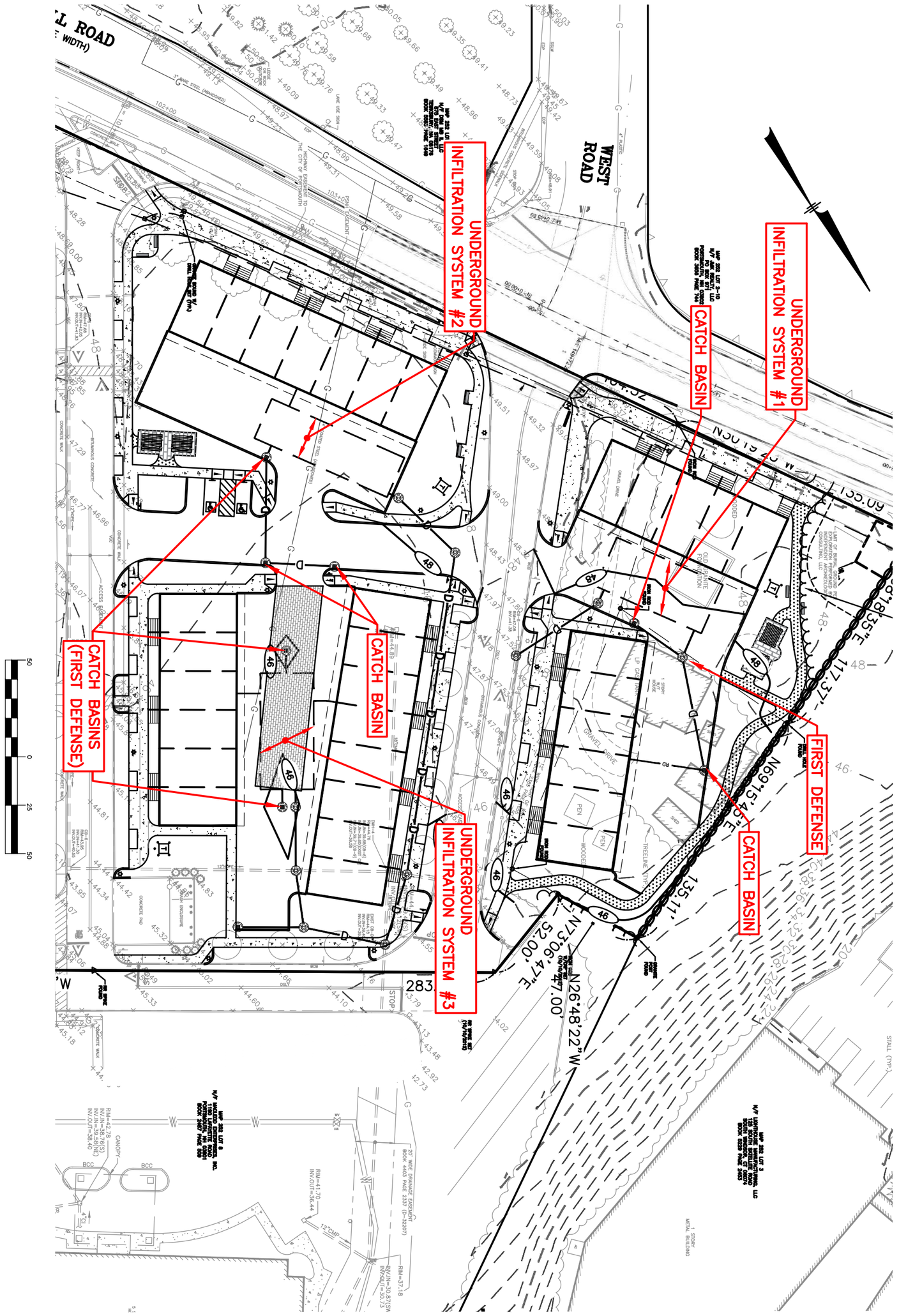
- http://t2.unh.edu/green-snopro-training-and-nhdes-certification
- http://des.nh.gov/organization/divisions/water/wmb/was/salt-reduction-initiative/salt-applicator-certification.htm

Control of Invasive Species

During maintenance activities, check for the presence of invasive species. Invasive species must be managed/removed in accordance with RSA 430:530 and AGR 3800. See Section 4 of this manual for information from the University of New Hampshire Cooperative Extension and the New Hampshire Guide to Upland Invasive Species from the New Hampshire Department of Agriculture Markets and Food, Plant Industry Division or the information provided on their website (http://www.agriculture.nh.gov/divisions/plant-industry/invasive-plants.htm).

SECTION 3 LONG TERM MAINTENANCE PLAN EXHIBIT

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LONG TERM MAINTENANCE PLAN EXHIBIT

1400 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

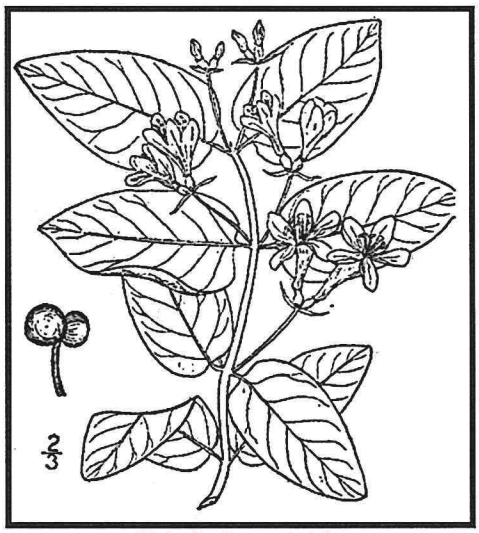
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FIGURE	1

SECTION 4 CONTROL OF INVASIVE SPECIES

UNIVERSITY of NEW HAMPSHIRE
COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions.* Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

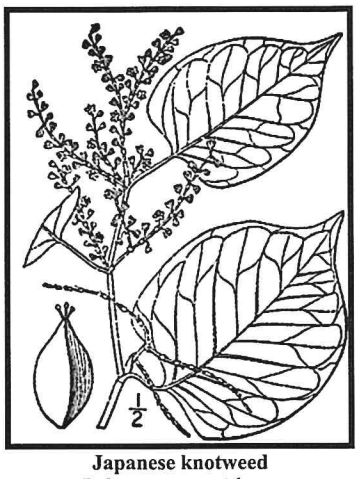
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<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

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CONTACT INFORMATION

TERRESTRIAL PLANTS

Douglas Cygan, Invasive Species Coordinator, NH Department of Agriculture, Markets & Food, Division of Plant Industry, 29 Hazen Drive, Concord, NH 03301
(603) 271-3488, douglas.cygan@agr.nh.gov
Website: www.agriculture.nh.gov

AQUATIC PLANTS

Amy Smagula, Clean Lakes and Exotic Species Coordinator, NH Department of Environmental Services, 29 Hazen Drive, PO Box 95, Concord, NH 03302
(603) 271-2248, asmagula@des.state.nh.us.

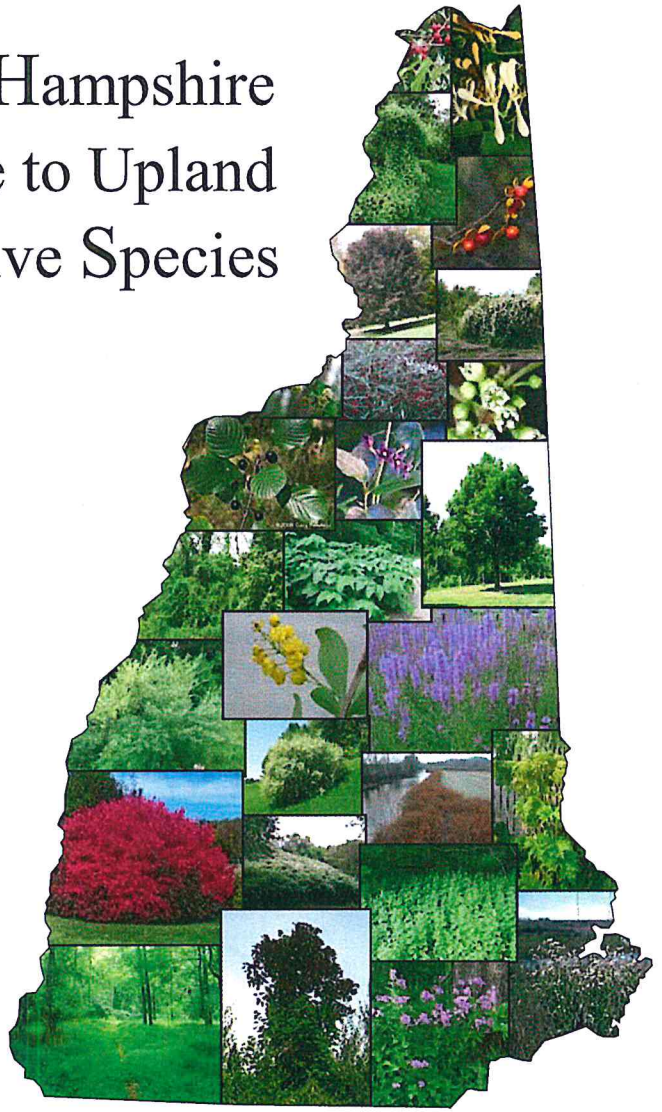
RESOURCES

NH Coastal Watershed Invasive Plant Partnership (CWIPP)
www.des.nh.gov/organization/divisions/water/wmb/coastal/cwipp/index.htm
Invasive Plant Atlas of New England (IPANE)
http://invasives.eeb.uconn.edu/ipane
Natural Resource Conservation Service (NRCS)
http://plants.usda.gov
New England Wildflower Society (NEWS)
www.newfs.org
New Hampshire Department of Agriculture, Markets & Food (DAMF)
www.agriculture.nh.gov
New Hampshire Department of Resources & Economic Development, Natural Heritage Bureau (DRED)
http://www.naturalheritage.org
New Hampshire Department of Resources & Economic Development, Division of Forests and Lands (DRED)
http://www.nhdfl.org/organization/div_nhnhi.htm
New Hampshire Department of Environmental Services (DES)
www.des.state.nh.us/wmb/exoticspecies
New Hampshire Fish & Game Department
www.wildlife.state.nh.us
The Nature Conservancy (TNC)
www.nature.org
U.S. Department of Agriculture's Animal Plant Health Inspection Service (USDA APHIS)
www.aphis.usda.gov
University of New Hampshire Cooperative Extension (UNHCE)
www.ceinfo.unh.edu

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New Hampshire Guide to Upland Invasive Species



New Hampshire
Department of Agriculture
Markets and Food, Plant Industry Division



3rd Edition
2011

Douglas Cygan

Introduction

Throughout the world, non-native invasive species have become an overwhelming problem resulting in impacts to the natural environment and managed landscapes. Invasive species typically possess certain traits that give them an advantage over most native species. The most common traits include the production of many offspring, early and rapid development, and adaptability and high tolerance to many environmental conditions. These traits allow invasive species to be highly competitive and, in many cases, suppress native species. Studies show that invasives can reduce natural diversity, impact endangered or threatened species, reduce wildlife habitat, create water quality impacts, stress and reduce forest and agricultural crop production, damage personal property, and cause health problems.

Invasive species began arriving in North America in the mid-to-late 1700s by various means. Many were brought here for ornamental uses, erosion control, or to provide for wildlife habitat. Others arrived inadvertently through international travel and commerce.

Impacts and Actions

Biologists have found that invasive species cover more than 100 million acres of land in the U.S. and their population numbers continue to spread. The repeated process of spread has become so extreme that invasive species cost the United States billions of dollars per year. This is a result of lost agricultural and forest crops, impacts to natural resources and the environment, and the control efforts required to eradicate them.

On February 3, 1999, President Clinton signed Executive Order 13112, which established the National Invasive Species Council. The Council is responsible for assessing the impacts of invasive species, providing the nation with guidance and leadership on invasive species issues, and seeing that federal programs are coordinated and compatible with state and local initiatives.

Each state is also required to participate by evaluating and responding to their invasive species concerns. In the summer of 2000, the State of New Hampshire passed House Bill 1258-FN, which created the Invasive Species Act (ISA) and the New Hampshire Invasive Species Committee.

GLOSSARY OF PLANT TERMS

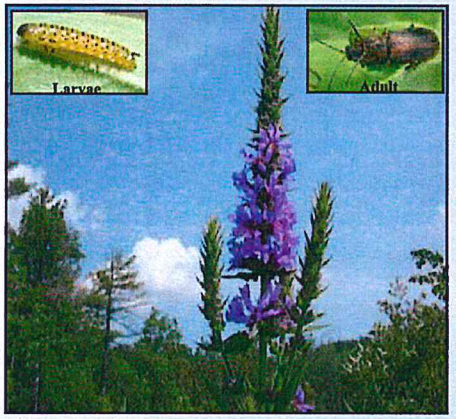
Alternate: Arranged singly at each node, as leaves or buds on different sides of a stem.
Annual: Living or growing for only one year or season.
Aril: A fleshy, usually brightly colored cover of a seed that develops from the ovule stalk and partially or entirely envelops the seed.
Axis: The point at which the leaf is attached to the main stem or branch.
Berry: A small, juicy, fleshy fruit.
Biennial: Having a life cycle that normally takes two growing seasons to complete.
Capsule: A dry dehiscent fruit that develops from two or more united capsules.
Compound: Composed of more than one part.
Deciduous: Shedding or losing foliage at the end of the growing season.
Dehiscent: The spontaneous opening of a fruit at maturity.
Drupe: A fleshy fruit usually having a single hard stone enclosing a seed.
Entire: Referring to a leaf not having an indented margin.
Filiform: Having the form resembling a thread or filament.
Furrowed: A rut groove or narrow depression.
Glabrous: Having no hairs or projections; smooth.
Imbricate: To be arranged with regular overlapping edges.
Inflorescence: A cluster of small flowers arranged on a flower stalk.
Lanceolate: A leaf tapering from a rounded base toward an apex, lance-shaped
Lenticels: The small, corky pores or narrow lines on the surface of the stems of woody plants that allow the interchange of gases between the interior tissue and the surrounding air.
Lustrous: Having a sheen or glow.
Native: A species that originated in a certain place or region; indigenous.
Naturalized: Adapted or acclimated to a new environment without cultivation.
Opposite: Growing in pairs on either side of a stem.
Ovate: Broad or rounded at the base and tapering toward the end.
Panicle: A branched cluster of flowers in which the branches are racemes
Peduncle: The stalk of a solitary flower of an inflorescence.
Peltate: Leaf being round with the stem attached near its center.
Perennial: Living three or more years.
Perfect: Having both stamens and pistals in the same flower.
Pod: A dry, several-sealed, dehiscent fruit.
Pubescent: Covered in fine short hairs.
Raceme: Elongated cluster of flowers along the main stem in which the flowers at the base open first.
Rhizome: A horizontal, usually underground stem that often sends out roots and shoots from its nodes.
Samara: A winged, often one-seed indehiscent fruit as of the ash, elm or maple.
Simple: Having no divisions or branches; not compound.
Umbel: A flat-topped or rounded inflorescence.

Lythrum salicaria - Purple Loosestrife

Family: Lythraceae
Native to: Eurasia

Description: Perennial growing 30-80" tall by $^{2}/_{3}$'s as wide. **Stems:** 4-6 sided, turning woody in summer. **Leaves:** Opposite to whorled, lanceolate, 2-4" long. **Flowers:** Spiked raceme, purple to magenta, June to October. **Fruit:** Capsule. **Habitat:** Mostly found in wetlands and aquatic systems, full to partial sun. **Spread:** Each plant can produce approximately 2.5-4.5 million seeds. Seeds dispersed by water, wildlife and humans. **Comments:** Invades wetlands suppressing native species and destroying wildlife habitat. **Controls:** Hand pull, use a spade to dig larger plants or use biocontrols (*Galerucella Spp.*, top left is a larvae & top right is an adult).









Photos by Douglas Cygan

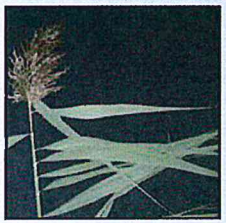
Phragmites australis - Common Reed

Family: Poaceae
Native to: Eurasia

Description: Perennial rhizomatous grass growing 14' tall. **Stems:** Called 'culms' are large, hollow and grow up to 1" dia. **Leaves:** Lanceolate, up to 24" long, bluish-green in color. **Flowers:** Panicles with many spikelets having seven small reddish flowers. **Habitat:** Mostly found in marshlands, but also grows in freshwater wetlands and aquatic systems, full to partial sun. **Spread:** Spreads primarily by rhizomes. **Comments:** Forms dense colonies that suppress native species and alter wildlife habitat. **Controls:** Hand pull small plants. Use a spade to dig larger plants or apply herbicides.









Photos by Douglas Cygan

New Hampshire Invasive Species Committee

The New Hampshire Invasive Species Committee (ISC) is an advisory group for the Commissioner of the NH Department of Agriculture, Markets & Food (DAMF) on matters concerning invasive species in the state. The ISC consists of 11 appointed members representing the following: the NH Department of Agriculture, the NH Department of Environmental Services, the NH Department of Resources & Economic Development, the NH Department of Transportation, the NH Department of Fish & Game, The College of Life Science & Agriculture of the University of NH, the UNH Cooperative Extension, environmental interests, horticultural interests, general public interests, and livestock owners & feed growers interests. The ISC meets regularly to conduct the following efforts:

- Review information;
- Evaluate and discuss potentially invasive plant, insect and fungi species of concern;
- Host guest presentations on related topics;
- Develop outreach and educational materials;
- Formulate management practices as guidance for the control of invasive species; and
- Prepare lists of proposed prohibited and restricted species.

(*Note: This committee is not charged with the evaluation or listing of aquatic plant species, which is conducted by the Department of Environmental Services under RSA-487:16-a. However, a brief description of the program and four of the aquatic species are described on pages 29 & 30 of this book*).

New Hampshire Rules

In accordance with the Invasive Species Act (ISA), HB 1258-FN, the DAMF is the lead state agency for terrestrial invasive plants, insects and fungi species. The DAMF has the responsibility for the evaluation, publication and development of rules on invasive plant species. This is for the purpose of protecting the health of native species, the environment, commercial agriculture, forest crop production, and human health. Therefore, the rule, Agr 3800, states "**No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living or viable portion of any listed prohibited invasive plant species, which includes all of their cultivars and varieties, listed"** (see the New Hampshire Department of Agriculture's website at www.agriculture.nh.gov to review the complete set of rules).

Invasive Upland Plant Species (Agr 3800)

Common Name	Scientific Name	Page
Norway Maple	*Acer platanoides*	6
Tree of Heaven	*Ailanthus altissima*	7
Garlic Mustard	*Alliaria petiolata*	8
Japanese Barberry	*Berberis thunbergii*	9
European Barberry	*Berberis vulgaris*	10
Oriental Bittersweet	*Celastrus orbiculatus*	11
Spotted Knapweed	*Centaurea biebersteinii*	12
Black Swallow-Wort	*Cynanchum nigrum*	13
Pale Swallow-Wort	*Cynanchum rosicum*	13
Autumn Olive	*Elaeagnus umbellata*	14
Burning Bush	*Euonymus alatus*	15
Giant Hogweed	*Heracleum mantegazzianum*	16
Dame's Rocket	*Hesperis matronalis*	17
Perennial Pepperweed	*Lepidium latifolium*	18
Blunt-Leaved Privet	*Ligustrum obtusifolium*	19
Showy Bush Honeysuckle	*Lonicera x bella*	20
Japanese Honeysuckle	*Lonicera japonica*	20
Morrow's Honeysuckle	*Lonicera morrowii*	21
Tatarian Honeysuckle	*Lonicera tatarica*	21
Japanese Stilt-grass	*Microstegium vimineum*	22
Japanese Knotweed	*Polygonum cuspidatum*	23
Mile-a-Minute Vine	*Polygonum perfoliatum*	23
Bohemian Knotweed	*Reynoutria japonica*	23
Common Buckthorn	*Rhamnus cathartica*	24
Glossy Buckthorn	*Rhamnus frangula*	24
Multiflora Rose	*Rosa multiflora*	25

Invasive Insect Species

(To see the complete list of all 16 invasive insects refer to rules Agr 3800)

Hemlock Wooly Adelgid	*Adelges tsugae*	26
Emerald Ash Borer	*Agrilus planipennis*	27
Asian Longhorned Beetle	*Anoplothora glabripennis*	28

Invasive Aquatic Plant Species

To see the complete list of invasive aquatic plants refer to DES's Env-Wq 1300 rules

Variable Milfoil	*Myriophyllum heterophyllum*	29
Purple Loosestrife	*Lythrum salicaria*	30
Common Reed	*Phragmites australis*	30

New Hampshire Department of Environmental Services Aquatic Invasive Plant Species

"Exotic aquatic species" are plants or animals that are not part of New Hampshire's native aquatic flora and fauna. Since the first exotic aquatic plant infestation in New Hampshire was discovered in 1965 in Lake Winnipesaukee, exotic aquatic plant infestations have increased to a total of 83 infestations in 72 waterbodies in 2008. Species present include variable milfoil (63 waterbodies), Eurasian milfoil (3 waterbodies), fanwort (9 waterbodies), water chestnut (1 waterbody) and Brazilian elodea (1 waterbody), Curly Leaf Pondweed (3 waterbodies), and European Naiad (3 waterbodies), and Didymo (1 waterbody). Most of these exotic plants can propagate by fragmentation as well as by seed.

Exotic aquatic plant fragments can easily become attached to aquatic recreational equipment, such as boats, motors, and trailers, and can spread from waterbody to waterbody through transient boating activities. Infestations can have detrimental effects on the ecological, recreational, aesthetic, and economic values of the state's precious surface waters, limiting use of the waterbodies and decreasing shorefront property values by as much as 1020 percent according to a UNH study (Halstead, et al., 2001).

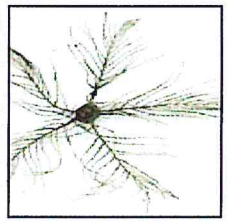
Myriophyllum heterophyllum - Variable Milfoil

Family: Haloragaceae
Native to: Eurasia

Description: Submerged aquatic perennial growing 20' tall. **Stems:** Round, thick and reddish. **Leaves:** Feathery leaflets surrounding the stem. **Flowers:** Stalks that emerge above the water with green leaves, June to August. **Habitat:** Lakes, ponds, calm streams, and other similar aquatic systems with full to partial sun. **Spread:** It reproduces primarily by vegetative propagules when individual plant segments break off, and dispersed by water movement, humans, and boats. **Comments:** Invades water bodies, suppresses native species and destroys fish habitat. **Controls:** Prevention, hand pulling, bottom screening, and aquatic herbicide use.





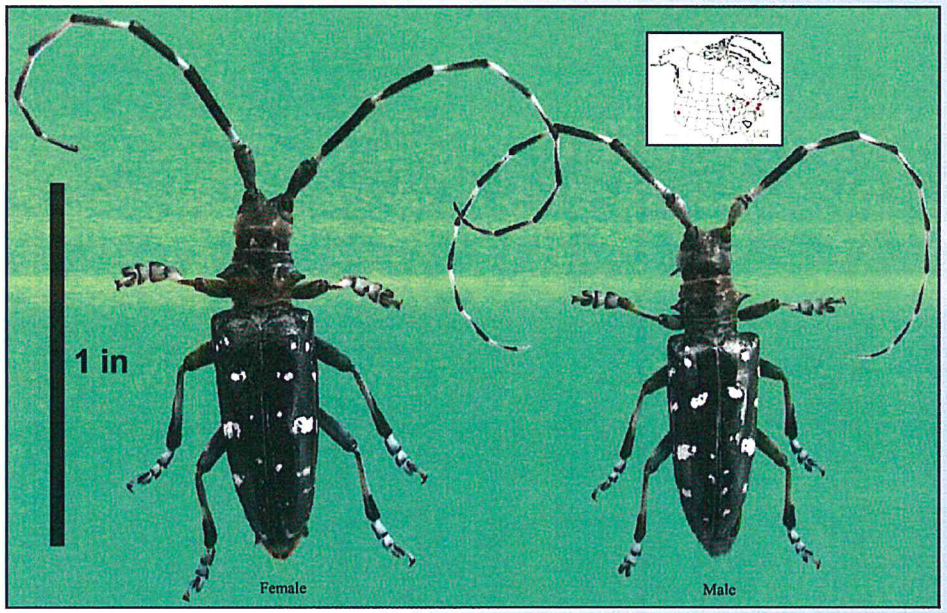




Photos by Amy Smagula

Anoplophora glabripennis - Asian Longhorned Beetle

Family: Cerambycidae
Native to: Europe



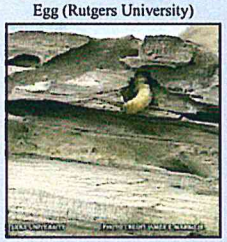
Asian Longhorned Beetle—*Anoplophora glabripennis* (Photo by Chris Rallis)

The Asian longhorned beetle (ALB) is a serious threat to a large variety of deciduous hardwoods in North America. ALB is a large glossy black insect with white spots dotting its elytra. Adults grow to 1-1.5" long and have whitish bandings on their antennae. Females are typically bigger than males. Tree injury occurs when larvae tunnel through the xylem (heartwood) of the host, thus weakening the tree. Hosts trees include, but aren't limited to: Maple, Chestnut, Poplar, Willow, Birch, Elm, and Mountain ash. Adult females chew a crater in the bark and lay 1-egg per site. Upon hatching the larvae feed on the wood and emerge as adults in 1-2 years through perfect $^{3}/_{8}$" diameter exit holes. Other signs include coarse wood shavings called frass, oozing sap, oviposition sites, leaf-feeding damage, and mature beetles. **If found, please call the NH Dept. of Agriculture at (603) 271-2561.**


Oviposition Site


Egg (Rutgers University)


Sap flow from injury


Larval damage (Rutgers Univ.)


Adult feeding damage on leaf


3/8" diameter exit hole

Photos by Douglas Cygan, Chris Rallis & Rutgers University

DO NOT MOVE FIREWOOD

WHAT YOU CAN DO

There are many things that you, as an individual, can do to help control the spread of invasive species and preserve native flora and fauna:

- Minimize impacts to natural vegetation, soils, and drainage.
- Learn how to identify invasive plants and know how to tell them apart from native species.
- Control invasives on your property by following recommended practices.
- When landscaping, ask your local garden center or contact your County Extension Service about alternative plantings.
- Become active in local or regional initiatives to control invasives.
- After working in an area with invasive species remove any soil, or propagules that may have adhered to clothing, shoes, vehicle tires, etc.

CONTROL METHODS

Mechanical: Mechanical control involves hand pulling, digging, cultivation, mowing, cutting or utilizing some type of physical barrier such as a tarpaulin, mulch, wood chips, etc. This method is most effective when populations of unwanted species are low.

Cultural: Cultural control is the manipulation of a plant community to prevent the introduction or spread of an unwanted species. This can be accomplished by modifying the growing environment such as the soil, available light or moisture, or planting trees or shrubs that can outcompete the invasive species.

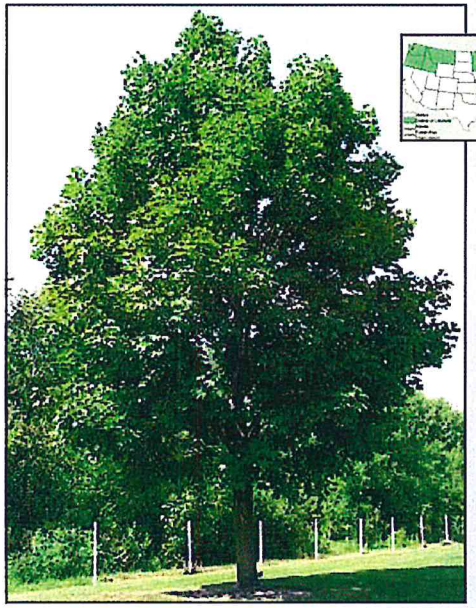
Chemical: Chemical control involves the use of an approved herbicide to manage a targeted species. The application method must be chosen to avoid damage to beneficial or native species. The applicator must adhere to all State and Federal pesticide regulations and in many cases be licensed by the state. For more information, contact the NH Department of Agriculture's Pesticide Control Division at 603-271-3550 or www.agriculture.nh.gov.

Biological: Biological control is the use of native or introduced beneficial organisms to naturally reduce populations of unwanted species. Most biological controls are found to be self-sustaining and host specific.

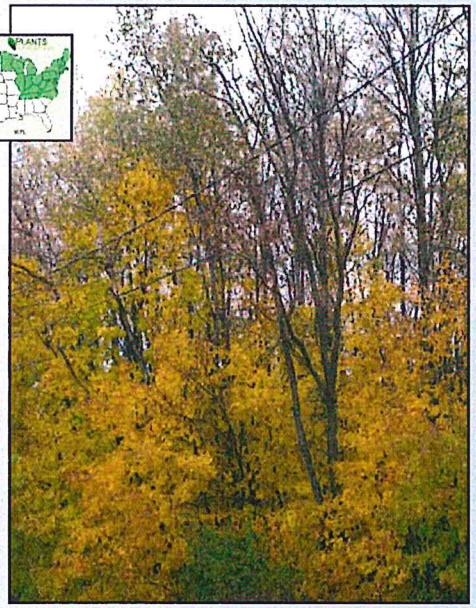

Pulling Digging Cutting-Hand tools Herbiciding Mowing Cutting-Saws Biocontrols

Acer platanoides - Norway Maple

Family: Aceraceae
Native to: Europe

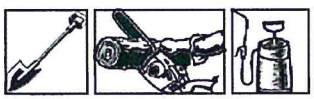


Norway Maple—*Acer platanoides*



Norway Maple (in yellow) Invasion in Franklin, NH

Description: Large deciduous tree 60' high by 40' wide. **Bark:** Grayish and somewhat furrowed. **Twigs:** Smooth, olive-brown. **Buds:** Terminal, imbricate, rounded, smooth, greenish-red. **Leaves:** Opposite, 4-7" wide, 5-lobed, dark green to dark red above, lustrous below. **Flowers:** Greenish-yellow, April. **Fruit:** Horizontal samara. **Zone:** 3-7. **Habitat:** Moist, well drained soils, full sun to partial shade. **Spread:** Seeds spread by wind and water. **Comments:** Leaf stalks exude milky white sap. Fast growing, buds break earlier than most native species. Naturalizes in woodlands where it can outcompete native species. **Controls:** Pull or dig seedlings/saplings. Cut large trees and prune suckers when they sprout. Herbicide: foliar spray, cut-stem, bark banding, or slash bark with ax and apply to wounds.





Milky white sap-leaf petiole



Leaf with winged seed



Terminal buds rounded



Flowers greenish-yellow



Bark is grayish & furrowed

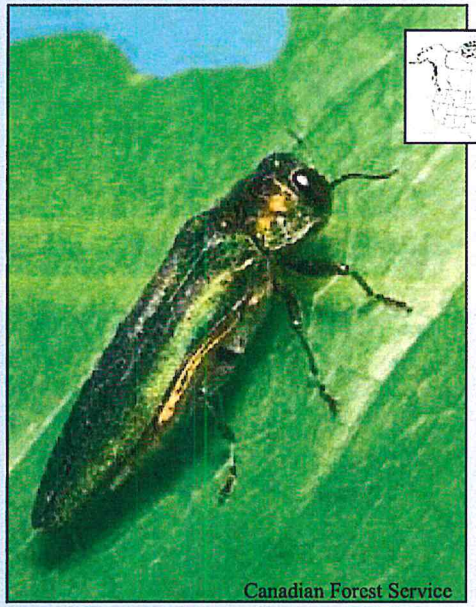


Leaves turn yellow in Fall

Photos by Douglas Cygan

Agrilus planipennis - Emerald Ash Borer

Family: Buprestidae
Native to: Asia



Emerald Ash Borer—*Agrilus planipennis*



Dead standing Ash trees (Canadian Forest Service)

Emerald Ash Borers (EAB) are small invasive wood boring beetles that attack all species of ash trees (*Fraxinus spp.*). Native to East Asia, it is suspected that they were accidentally introduced to North America in infested wood packing material. The adults are 3/8" to ½" in length by 1/16" in width. Their bodies have a dark metallic green appearance. Adults emerge from a D-shaped exit hole from late May to mid-July and live for 3-6 weeks, during which time they feed on ash foliage, and fly 1-mile or so in search of a mate and to lay eggs. Females will lay 60-90 eggs in the crevices of ash tree bark. Larvae emerging from the eggs create distinctive S-shaped feeding galleries within the cambium which is directly beneath the bark. These feeding galleries can girdle the tree and result in tree death. Movement of EAB into new uninfested areas is principally through transportation of firewood.

If found, please contact the NH Dept. of Agriculture at (603) 271-2561.



Egg



Larvae in feeding galleries



Adult with wings spread



Feeding galleries in cambium



D-shaped exit hole



EAB Purple prism trap

Photos by Douglas Cygan & Chris Rallis

DO NOT MOVE FIREWOOD

Adelges tsugae - Hemlock Wooly Adelgid

Family: Adelgidae
Native to: Asia



Hemlock Wooly Adelgid—*Adelges tsugae* Nests



Hemlock trees dead from Adelgid (www.earthportal.org)

Hemlock Wooly Adelgid (*Adelges tsugae*) (HWA) is a serious pest to all North American hemlock trees (*Tsuga spp.*). It is native to Japan & China and was first found in the Pacific Northwest in the 1920's. By the 1950's it had reached the east coast and now infects hemlock trees from Georgia to Maine. It spreads by movement of nursery stock, wind and animals. These insects are extremely small averaging about $^{1}/_{8}$" in length with piercing-sucking mouth parts similar in appearance to aphids. All adults are females with each producing 50-300 eggs. To protect themselves & their eggs they produce a white-waxy covering. Adults insert their piercing mouth parts into the stem at the base of the needles. Trees die from needle loss & lack of nutrition. **If found, please call the NH Dept. of Agriculture at (603) 271-2561.**



Adult female laying eggs



Egg mass in protective nest



Eggs & crawlers (Chris Rallis)



Heavily infested branch



Crawlers (Chris Rallis)



Crawler leaving nest (Chris Rallis)

Photos by Douglas Cygan & Chris Rallis

DO NOT MOVE FIREWOOD

Ailanthus altissima - Tree of Heaven

Family: Simaroubaceae
Native to: China



Tree of Heaven—*Ailanthus altissima*



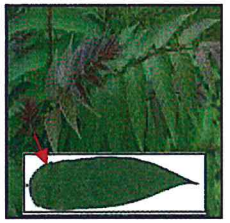
Tree of Heaven invasion

Description: Deciduous tree up to 60' tall by 40' wide. **Bark:** Grayish, slightly furrowed. **Twigs:**Reddish-brown. **Leaves:** Compound, 18-24" long with 13-25 leaflets arranged alternately on stem, lanceolate, 3-5" long with 2-4 teeth near base. **Flowers:** Panicles, 8-16" long, yellowish-green, mid-June. **Fruit:** Samara. **Zone:** 4-8. **Habitat:** Highly adaptable and pollution tolerant, full sun to partial shade. **Spread:** Seeds are wind dispersed. **Comments:** Very fast growing, dense canopy shades out native species. **Controls:** Remove seedlings and saplings by hand. Larger trees can be mechanically removed or cut. To prevent suckering, if trees are cut, apply herbicide to cut portion of stump.

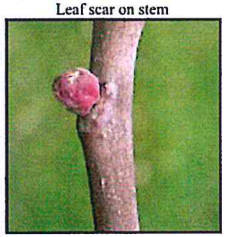




Leaf scar on stem



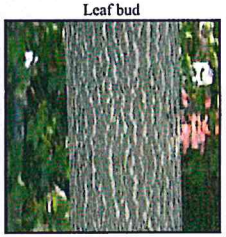
Compound leaves & leaf



Leaf bud



Flowers yellowish-green



Bark grayish & furrowed



Winged seed cluster

Photos by Douglas Cygan

Alliaria petiolata - Garlic Mustard

Family: Cruciferae
Native to: Europe



Garlic Mustard—*Alliaria petiolata*



Woodland invasion (photo by Cornell University)

Description: Cool season biennial, 2nd year plants flower and reach 2-3$^1/_2$' tall. **Leaves:** Triangular, coarsely toothed, heart-shaped. **Flowers:** Umbel, small, 4-petals, white, April-May. **Fruit:** Pods, seeds turn black when mature. **Zone:** 4-8. **Habitat:** Prefers moist shaded floodplains, forests and roadsides, adaptable to most soil and light conditions. **Spread:** Seeds spread by water and wildlife. **Comments:** Plants spread quickly into natural areas leading to competition and displacement of native species. **Controls:** Small populations can be hand pulled while large populations can be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.



Basal rosette



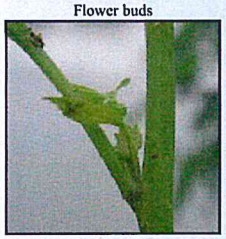
Leaf



Flower buds



Flowers 4-petaled, white



Stems



Seed pods

Photos by Douglas Cygan

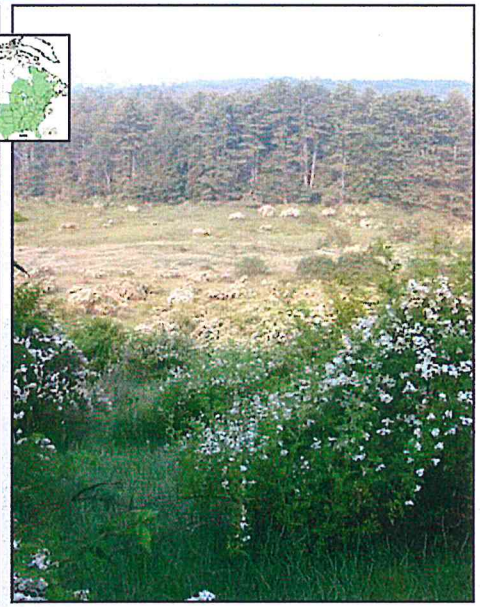


Rosa multiflora - Multiflora Rose

Family: Rosaceae
Native to: Japan & Korea



Multiflora Rose-*Rosa multiflora*



Multiflora Rose invasion, Canterbury, NH

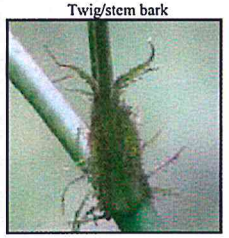
Description: Hardy shrub / climber reaching up to 15' or more in height and 10' in width. **Stems:** Long and arching, forming dense clumps, thorns may or may not be present. **Leaves:** Alternately arranged, compound with 7-9 leaflets and having feather margins at base. **Flowers:** Clusters of white or pink, June to July. **Fruit:** Rose hips turn red in fall. **Zone:** 3-8. **Habitat:** Prefers moist, well drained soils, full sun. **Spread**: Fruits with seeds are dispersed by birds. **Comments:** Very aggressive, leading to competition and displacement of native species. **Controls:** Hand or mechanical removal, cutting, or herbicide application.



Twig/stem bark



Leaves



Feathery margin at base of leaf



Flowers white



Fall color



Fruit is called a hip

Photos by Douglas Cygan



Rhamnus cathartica - Common Buckthorn

Family: Rhamnaceae
Native to: Eurasia

Description: Deciduous shrub or small tree measuring 20' by 15'. **Bark:** Grayish to brown with raised lenticels. **Stems:** Cinnamon colored with terminal spine. **Leaves:** Opposite, simple and broadly ovate with toothed margins. **Flowers:** Inconspicuous, 4-petaled, greenish-yellow, mid-June. **Fruit:** Fleshy, 1/4" diameter turning black in the fall. **Zone:** 3-7. **Habitat:** Adapts to most conditions including pH, heavy shade to full sun. **Spread:** Seeds are bird dispersed. **Comments: Highly:** Aggressive, fast growing, outcompetes native species. **Controls:** Remove seedlings and saplings by hand. Larger trees can be cut or plants can be treated with an herbicide.









Photos courtesy of John M. Randall/The Nature Conservancy

Rhamnus frangula - Glossy Buckthorn

Family: Rhamnaceae
Native to: Japan

Description: Tall deciduous shrub up to 20' in height by 15' wide, **Bark:** Grayish with whitish lenticels. **Twigs:** Reddish-brown. **Leaves:** Ovate, 4-5" long by 3-4" wide, arranged oppositely or whorled on stem. **Flowers:** Small, greenish-white, mid-June. **Fruit:** Fleshy, turning black in the fall. **Zone:** 2-7. **Habitat:** Highly adaptable and pollution tolerant, full sun to partial shade. **Spread:** Seeds are bird dispersed. **Comments:** Very fast growing, dense canopy shades out native species. **Controls:** Remove seedlings and saplings by hand. Larger trees can be cut or herbicide may be used.









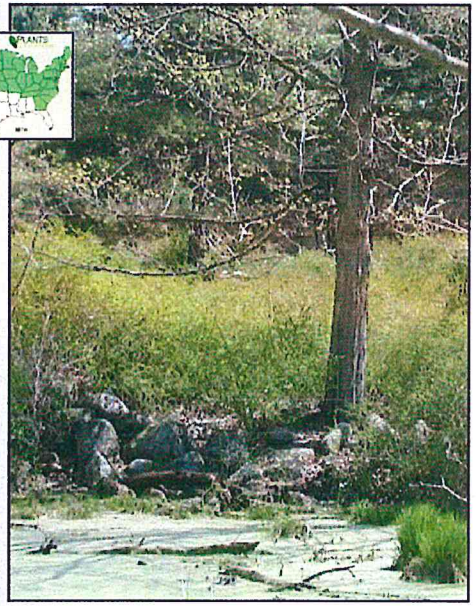
Photos by Douglas Cygan

Berberis thunbergii - Japanese Barberry

Family: Berberidaceae
Native to: Japan



Japanese Barberry-*Berberis thunbergii*



Japanese Barberry invasion, Antrim, NH

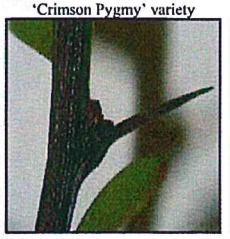
Description: Deciduous shrub, 2-4$^{1}/_{2}$' tall. **Leaves:** Ovate, simple, entire. Color varies depending on variety. **Flowers:** Small yellowish, bloom in May in clusters of 2-4. **Fruit:** Drupe, turning red in summer. **Zone:** 4-8. **Habitat:** Prefers well drained soils in semi shade and often occurring in forests, roadsides, and open fields. **Spread:** Seeds are dispersed by wildlife. **Comments:** Forms dense thickets in natural environments where it becomes established, resulting in impacts to native flora and fauna. **Controls:** Remove small immature plants by hand. Dig larger plants with a garden spade or remove mechanically. Cut stems at base or control with herbicide treatment.



'Crimson Pygmy' variety



Leaves



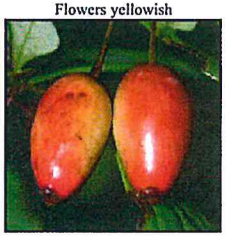
Thorn



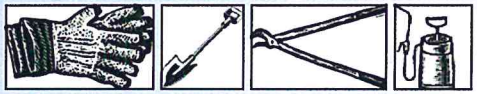
Flowers yellowish



Frost covered Barberry



Fruit is a fleshy drupe



Photos by Douglas Cygan

Berberis vulgaris - European Barberry

Family: Berberidaceae
Native to: China



European Barberry-*Berberis vulgaris*



Woodland invasion, Claremont, NH

Description: Shrub 3-8' in height by 3-6' in width. **Stems:** Tan bark with 3 long spines at each leaf axis. **Leaves:** Alternate, simple, $^1/_2$"-1$^1/_2$" long, bright green above, dull below. **Flowers:** Perfect, yellow, $^1/_2$" long, mid-April to May. **Fruit:** Oblong drupe turning pale red in fall. **Zone:** 4-8. **Habitat:** Prefers full sun to partial shade and open spaces to wooded areas. **Spread:** Seeds are dispersed by birds and wildlife. **Comments:** Highly adaptable to most environments and is pollution tolerant. **Controls:** Hand pull young plants. Cut or mechanically remove older larger plants or apply approved herbicides for large populations.



Thorns



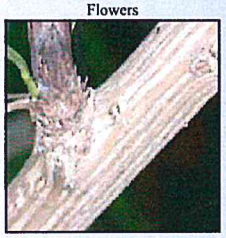
Leaves



Flowers



Flowers whitish-yellow



Stems



Seed pods

Photos by Douglas Cygan



Polygonum cuspidatum - Japanese Knotweed

Family: Polygonaceae
Native to: Japan

Description: Perennial reaching 10' in height and width. Bohemian Knotweed (*Reynoutria x bohemica*) is similar. **Stems:** Greenish, hollow and jointed, similar to bamboo. **Leaves:** Alternate, broadly ovate, 3-7" long. **Flowers:** Small, whitish, forming panicles, August-September. **Seeds:** Calyx, brown, triangular. **Habitat:** Found in woodland sites, open spaces, ditches, roadsides, riverbanks. Prefers moist, well-drained soils. **Spread:** Stem & root fragments, and by seed. **Comments:** Aggressive, spreads quickly along surface waters and in right-of-ways. **Controls: Do <u>not</u> mow**, cut stems at base then smother by covering area with heavy-duty fabric/plastic, herbicides also recommended.









Photos by Douglas Cygan

Polygonum perfoliatum - Mile-a-Minute Vine

Family: Polygonaceae
Native to: Asia

Description: Very fast growing herbaceous perennial vine growing to 25' in height. **Stems:** Greenish with stiff barbs used for support. **Leaves:** Alternate, triangular in shape with clasping bract at the base, 1-3" long. **Flowers:** Racemes, inconspicuous and white forming at the bract, August - October. **Seeds:** An achene within a greenish, berry-like fruit. **Habitat:** Grows in partial shade to full sun, fields, roadsides & forests. Prefers moist, well-drained soils. **Spread:** Seed spread by birds & wildlife. **Comments:** Fast growing, aggressive. **Controls:** Mowing, hand cutting or herbicide use is recommended.









Photos by Leslie J. Mehrhoff

Microstegium vimineum - Japanese Stilt Grass

Family: Poaceae
Native to: Asia



Japanese Stilt Grass—*Microstegium vimineum*



Japanese Stilt Grass woodland invasion

Description: Weak-stemmed annual grass, reaching 2-4' tall. **Leaves:** Lanceolate, tapered at both ends, 2-3" long with silvery stripe of reflective hairs down the midrib. **Flowers:** Racemes occur at the ends of the stalk itself, late August. **Fruit:** Achenes develop in late fall. **Zone:** 5-11. **Habitat:** Occurs along riverbanks, floodplains, forests and roadsides, adaptable to most soil and light conditions. **Spread:** Seeds spread by water, wildlife & humans. **Comments:** Plants spread quickly into natural areas leading to competition and displacement of native species. **Controls:** Small populations can be hand pulled while large populations can be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.

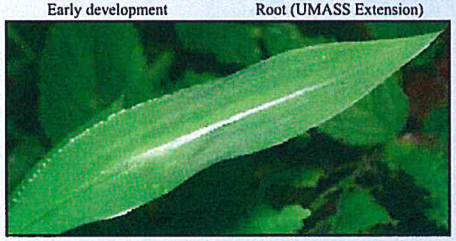




Early development



Root (UMASS Extension)



Leaf with silvery reflective hairs along midrib



Fall-leaves turn purplish

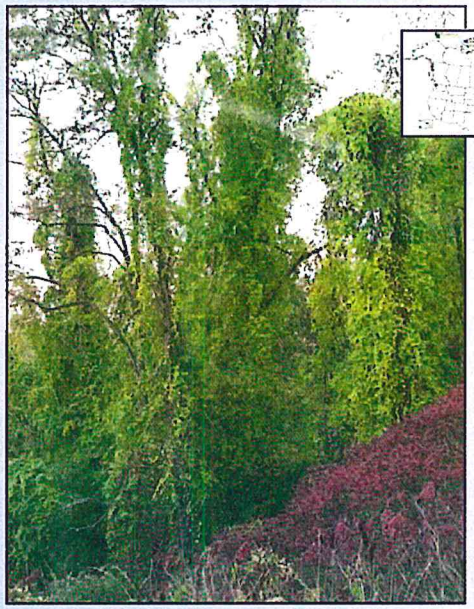


Seed-Achene

Photos courtesy of Leslie J. Mehrhoff/UCONN-IPANE and UMASS Extension

Celastrus orbiculatus - Oriental Bittersweet

Family: Celastraceae
Native to: Japan, China



Oriental Bittersweet-*Celastrus orbiculatus*



Oriental Bittersweet invasion, Concord, NH

Description: Deciduous vine reaching heights of 40-60'. **Bark:** Tannish, furrowed. **Leaves:** Alternate, ovate, bluntly toothed, 3-4" long by 2/3's as wide, tapered at the base. **Flowers:** Small, greenish, blooming in spring. **Fruit:** Yellow dehiscent capsule surrounding an orange-red aril. *Fruits occur in the axils of the stems whereas native bittersweet (Celastrus scandens) fruits at the ends.* **Zone:** 4-8. **Habitat:** Disturbed edges, roadsides, fields, forests and along rivers and streams. **Spread:** Birds and humans. **Comments:** Very aggressive, climbs up and over trees and smothers them. Do not buy wreaths made of these vines. **Controls:** Difficult to manage. Cutting, pulling, or recommended herbicide use applied to foliage, bark, or cut-stump.

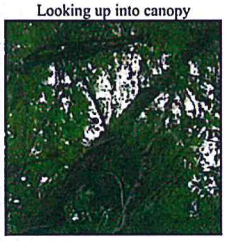




Looking up into canopy



Leaves



Native trees being strangled



Flowers yellowish-white



Mature Orange-yellow fruit



Fruit is a fleshy capsule

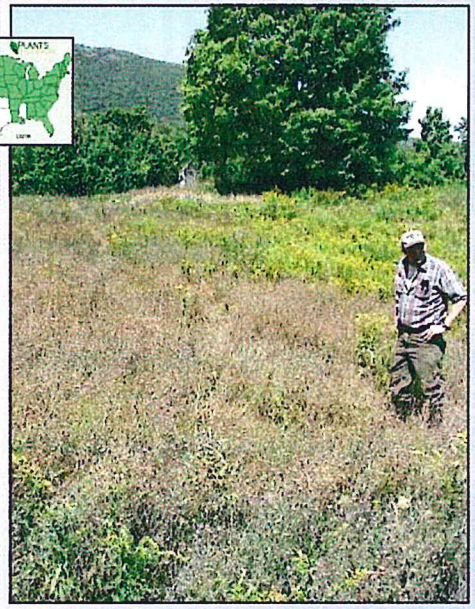
Photos by Douglas Cygan

Centaurea maculosa - Spotted Knapweed

Family: Compositae
Native to: Eurasia



Spotted Knapweed—*Centaurea maculosa*



Invasion (photo by Leslie Mehrhoff)

Description: Tall erect herbaceous perennial living 3-5 years. **Leaves:** Alternate, divided, Pale green, 1-3" long. **Flowers:** Aster-like, terminal, purple, July-August. **Fruit:** Each plant produces thousands of brownish seeds per year. **Zone:** 3-10. **Habitat:** Invades dry sunny roadsides, fields and waste places. Its large taproot allows it to survive harsh winters and draught **Spread:** Seeds spread by wind and wildlife. **Comments:** Plants spread quickly into natural meadows and fields leading to competition and displacement of native species. Roots excrete a toxin killing off other plants. **Controls:** Small populations can be hand pulled while large populations can be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.





Basal rosette



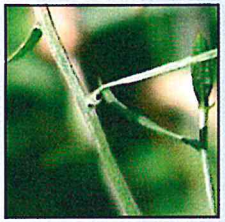
Leaf



Seed head



Flowers—Aster like



Stems



Seeds

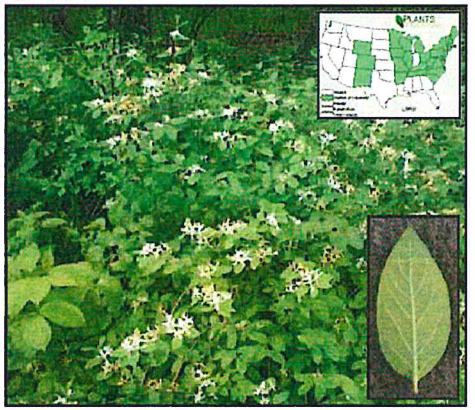
Photos by Leslie Mehrhoff & Douglas Cygan

Lonicera morrowii - Morrow's Honeysuckle

Family: Caprifoliaceae
Native to: Japan

Description: Shrub reaching 6-8' tall. **Stems:** Smooth, glabrous, Tannish, hollow. **Leaves:** Ovate, simple, entire, opposite, pubescent beneath, 1-2$^1/_2$" long. **Flowers:** Tubular, white, turning yellow with age, May to June. **Fruits:** Berry turning red. **Zone:** 3 . **Habitat:** Moist to wet shaded floodplains, forests, roadsides, fields, waste places. **Spread:** Seeds are dispersed by wildlife and humans. **Comments:** Rapidly invades sites, forming a dense vegetative layer that outcompetes native flora and fauna species. **Controls:** Hand control is effective for small plants, while mechanical removal and repetitive cutting also work well. Herbicide treatment is better for areas with greater infestations.









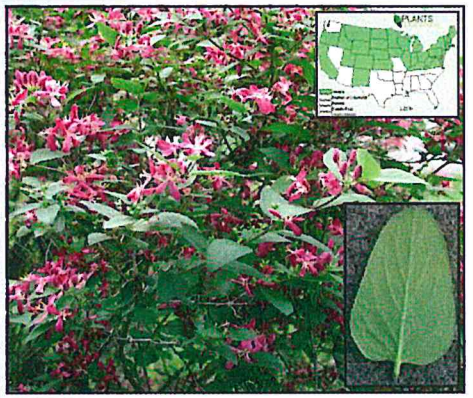
Photos by Douglas Cygan & Leaf Photo by Leslie J. Mehrhoff

Lonicera tatarica - Tatarian Honeysuckle

Family: Caprifoliaceae
Native to: Eurasia

Description: Upright deciduous shrub reaching 6-15' tall. **Stems:** Smooth, glabrous, tan, hollow. **Leaves:** Ovate, smooth, bluish-green, opposite, 1-2$^1/_2$" long. **Flowers:** Tubular, pink or white, April to May. **Fruit:** Berry with two seeds, turning red in fall. **Zone:** 3. **Habitat:** Under story species in woodland sites, also invades open spaces. Thrives in moist soils. **Spread:** Seeds dispersed by wildlife and humans. **Comments:** Rapidly invades forests, fields, roadsides and floodplains. Outcompetes native species. **Controls:** Hand control is effective for small plants while mechanical removal, cutting and chemical applications are better for larger stands.









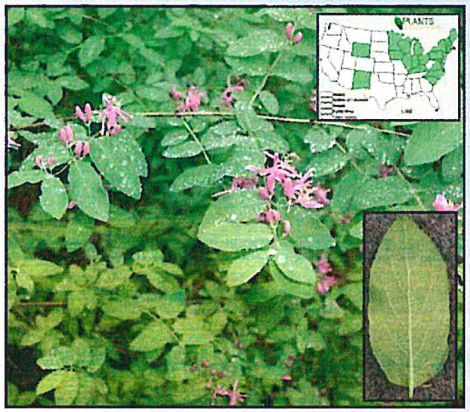
Photos by Leslie J. Mehrhoff & Berry Photo by Douglas Cygan

Lonicera x bella - Showy Bush Honeysuckle

Family: Caprifoliaceae
Native to: Eurasia

Description: Shrub reaching 20' in height and width. **Stems:** Greenish to tan with corky wings. **Leaves:** Oppositely arranged, simple and elliptic, 1-3" long by half as wide, light green. **Flowers:** Yellow, white or pink, May to early June. **Fruit:** Fleshy red, forming in pairs in leaf axis. **Zone:** 4. **Habitat:** Prefers dry upland soils, full sun to heavy shade, pH adaptable. **Spread:** Seeds are dispersed by birds. **Comments:** *L. x bella* is a cross between *L. tatarica* & *L. morrowii*. Spreads into natural areas forming dense stands, which displace native species. **Controls**: Hand or mechanical removal, continuous cutting, girdling, and herbicide treatment.







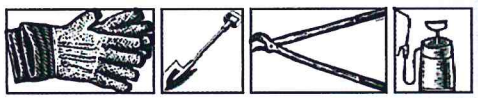


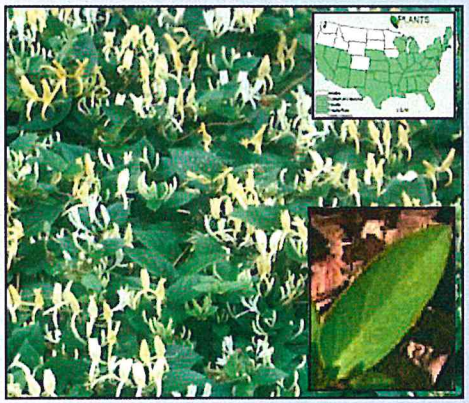
Photos courtesy of Leslie J. Mehrhoff/UCONN-IPANE

Lonicera japonica - Japanese Honeysuckle

Family: Caprifoliaceae
Native to: Eurasia

Description: Climbing vine. **Stems:** Reddish-brown, pubescent. **Leaves:** Opposite and not clasping the stem as opposed to the three native honeysuckle vines that do clasp the stem, oblong, $1^1/_2$-2" long, rounded at base. **Flowers:** Tubular, white or yellow, fragrant, May to mid-July. **Fruit:** Berry, smooth, blackish to slightly purplish. **Zone:** 4-8. **Habitat:** Prefers moist soils and full sun to partial shade. **Spread:** Seeds spread by wildlife. **Comments:** Vines grow quickly, covering native vegetation, resulting in loss of habitat. **Controls:** hand or mechanical removal, cutting, girdling, chemical.









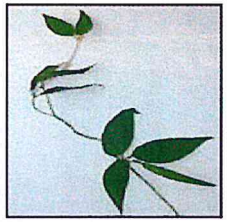
Photos courtesy of John M. Randall/The Nature Conservancy
& Leaf Photo by Leslie J. Mehrhoff

Cynanchum nigrum - Black Swallow-Wort

Family: Asclepiadaceae
Native to: Eurasia

Description: Perennial herbaceous vine that grows to 6'. **Leaves:** Opposite, lanceolate, dark glossy green, simple with a smooth edge, 2-4" long. **Flowers:** Small $^1/_4$", 5-petaled, purplish, from June to September. **Seed:** Seeds are similar to those of milkweed. **Zone:** 4 to 8. **Habitat:** It prefers full to partial sun. **Spread:** Seeds dispersed by wind. **Comments:** Invades roadsides, fields, disturbed sites, meadows, and woodlands, outcompeting native species. **Controls:** Hand pull young plants. Remove and destroy seed pods before they open. Apply herbicides as a foliar spray during the growing season. If plants are to be dug, use a spade and make sure that all root fragments are removed.







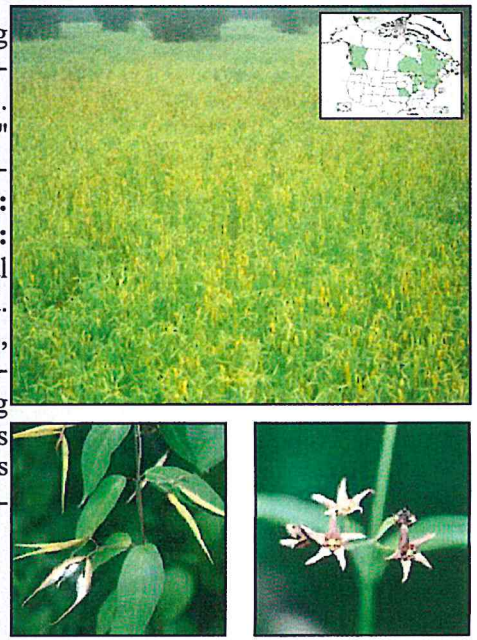
Photos by Douglas Cygan

Cynanchum rossicum - Pale Swallow-Wort

Family: Asclepiadaceae
Native to: China

Description: Perennial vine growing to 3-6'. Very similar to black swallow-wort with the exception of the flowers. **Leaves:** Opposite, lanceolate, 2-4" long. **Flowers:** Magenta, $^3/_8$", flowering from June to September. **Seed:** Seeds are similar to milkweed. **Zone:** 4 to 8. **Habitat:** It prefers full to partial sun. **Spread:** Seeds dispersed by wind. **Comments:** Invades roadsides, fields, disturbed sites, meadows and woodlands. **Controls:** Hand pull young plants. Remove and destroy seed pods before they open. Apply herbicides as a foliar spray. Dig using a spade to ensure all root fragments are removed.

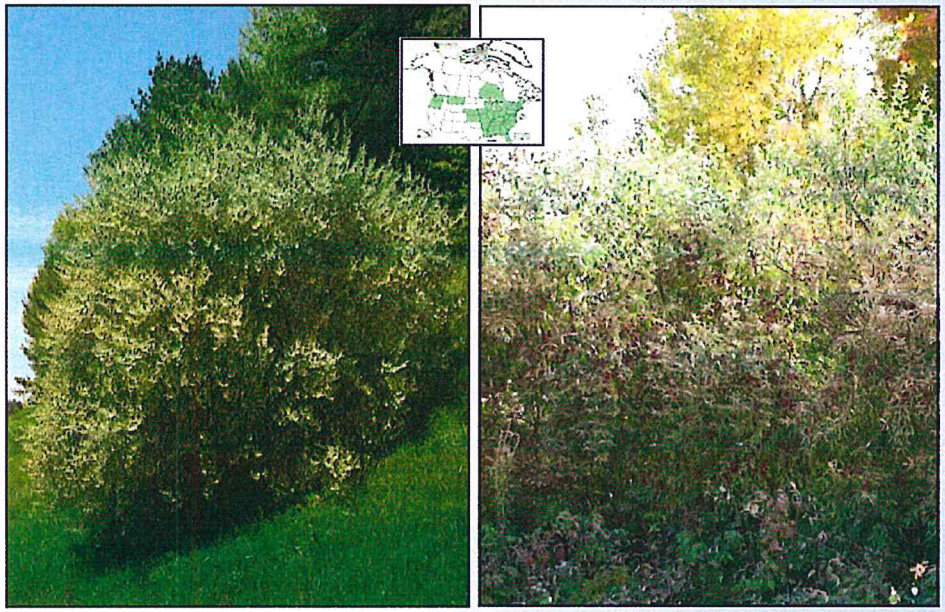




Photos courtesy of John M. Randall/The Nature Conservancy

Elaeagnus umbellata - Autumn Olive

Family: Elaeagnaceae
Native to: Asia



Autumn Olive—Elaeagnus umbellata

Autumn Olive invasion in Concord, NH

Description: Weedy deciduous shrub measuring 20' by 20'. **Bark:** Silvery-gray and smooth with whitish lenticels. **Stems:** Cinnamon-brown. **Leaves:** Elliptical, 2-3" long, glossy, green above and silverish below. **Flowers:** Solitary, whitish, 4-petaled, mid-June. **Fruit:** Drupe. **Zone:** 3-8. **Habitat:** Naturalizes in open spaces exposed to full sun. **Spread:** Seeds dispersed by birds and wildlife. **Comments:** Very aggressive. Outcompetes and displaces native species. **Controls:** Remove seedlings and saplings by hand. Larger shrubs can be mechanically removed, or cut and apply herbicide to stump.



Silvery-gray Bark



Leaves



Terminal bud



Flowers whitish

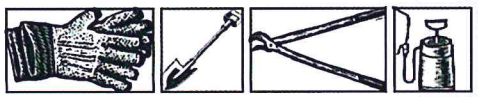


Fall Color



Fruit is a fleshy drupe

Photos by Douglas Cygan



Ligustrum obtusifolium - Blunt-leaved Privet

Family: Oleaceae
Native to: Europe



Blunt-leaved Privet-*Ligustrum obtusifolium*



Blunt-leaved Privet (Photo: Leslie J. Mehrhoff)

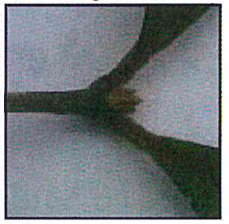
Description: Shrub reaching 12' tall by 10-12' wide. **Stems:** Greenish, smooth. **Leaves:** Opposite, simple and elliptic, 1-3" long by half as wide, blunt tipped, light green. **Flowers:** Small white panicles, May to early June. **Fruit:** Small blackish drupe. **Zone:** 4-7. **Habitat:** Prefers dry upland soils, full sun to heavy shade, pH adaptable. **Spread:** Seeds dispersed by birds. **Comments**: Becomes established in natural areas leading to competition and displacement of native species. **Controls:** Hand or mechanical removal, cutting, herbicide applications such as foliar or cut-stem.



Twig/stem bark



Leaves



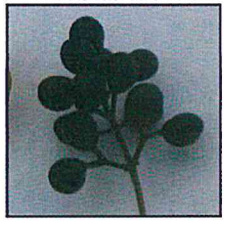
Terminal bud



Flowers white



Fall color



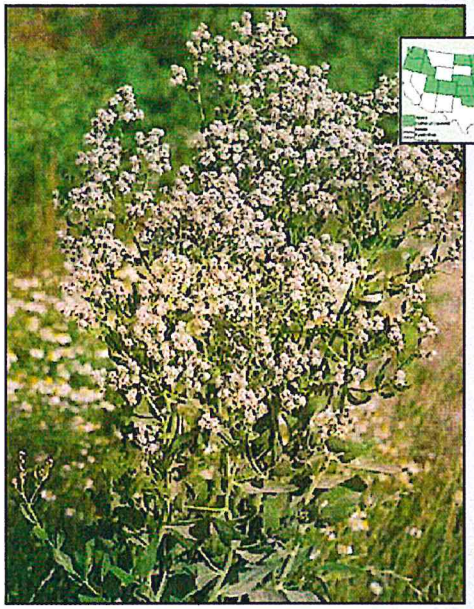
Fruit is a dark drupe

Photos by Douglas Cygan & Leslie Mehrhoff

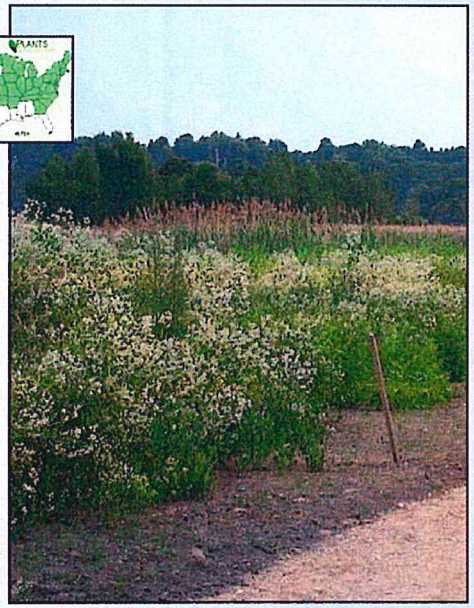


Lepidium latifolium - Perennial Pepperweed

Family: Cruciferae
Native to: Eurasia



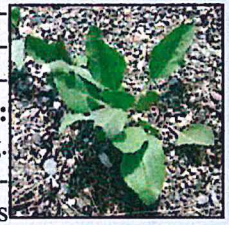
Perennial Pepperweed—*Lepidium latifolium*



Perennial Pepperweed invasion Seacoast area, NH

Description: Long lived perennial growing 2-4' tall. **Leaves:** Alternate, lanceolate with serrated edge. **Flowers:** Terminal, tightly clustered, white, July. **Fruit:** Silicle, rounded, flattish, hairy $^{1}/_{16}$" long. **Zone:** 4-8. **Habitat:** Prefers wet, brackish soils such as coastal tidal marshes and ditches, wetlands, and floodplains. **Spread:** Seeds and creeping rhizome fragments spread by water, wildlife and humans. **Comments:** Plants spread quickly into natural areas leading to competition and displacement of native coastal wetland species. **Controls:** Small populations can be hand pulled while large populations can be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.

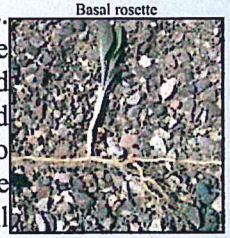




Basal rosette



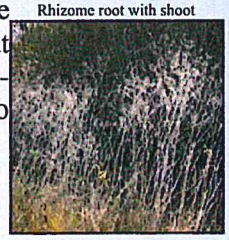
Leaf



Rhizome root with shoot



Flower head



Persistent stems



Seeds (photo—USDA)

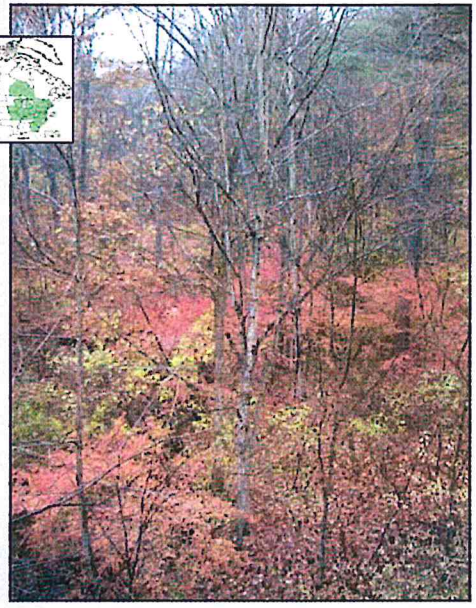
Photos by Kevin Lucey & Jennifer Forman

Euonymus alatus - Burning Bush

Family: Celastraceae
Native to: Asia



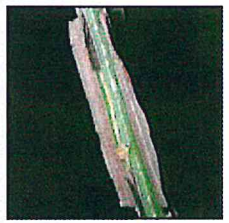
Burning Bush-*Euonymus alatus*



Burning Bush invasion, Boscawen, NH

Description: Deciduous shrub reaching 20' in height and width. **Stems:** Greenish with corky wings. **Leaves:** Oppositely arranged, simple and elliptic, 1-3" long by half as wide, light green. **Flowers:** Inconspicuous greenish-yellow, May to June. **Fruit:** Fleshy green capsule turning red in fall. **Zone:** 3 to 8. **Habitat:** Prefers dry upland soils, full sun to heavy shade, pH adaptable. **Spread**: Seeds are dispersed by birds and wildlife. **Comments:** Outcompetes and displaces native species. **Controls:** Hand remove seedlings and saplings. Use a spade or shovel to dig out larger plants. Large populations may be controlled with herbicide use.





Corky-winged bark



Leaves



Terminal buds



Flowers yellowish-white



Fall color



Fruit is a fleshy capsule

Photos by Douglas Cygan

Heracleum mantegazzianum - Giant Hogweed

Family: Apiaceae
Native to: China



Giant Hogweed-*Heracleum mantegazzianum*



Open field invasion (Photo-Bugwood.org)

Description: Biennial growing to 15' tall. **Stems:** Greenish with purple splotches, 2-4" diameter with coarse hairs, hollow. **Leaves:** Large, compound, deeply incised, 3-5' wide, hairy on underside. **Flowers:** White inflorescence, 1-2' in diameter, May-June. **Seeds:** Flattened, $^{3}/_{8}$" long, ovate with 4 brown resin canals. **Zone:** 3-8. **Habitat:** Found in wet areas, roadsides, gardens, open spaces, full sun to partial shade. **Spread:** Seeds dispersed by water, wildlife and humans. **Comments:** The clear, watery sap is phototoxic to human skin, causing severe blistering and burns. Spreads readily and displaces native species. **Controls:** Remove plants by digging up tap root. Herbicide can also be used as a foliar treatment.





Purple spotted, hairy stem



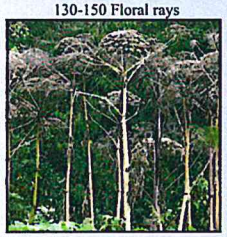
Leaf



130-150 Floral rays



Flowers whitish umbel



Persistent dead stalks



Seeds with resinous veins

Photos by Douglas Cygan

Hesperis matronalis - Dame's Rocket

Family: Brassicaceae
Native to: Eurasia



Dame's Rocket—*Hesperis matronalis*



Dame's Rocket invasion

Description: Cool season biennial, 2nd year plants flower and reach 30" tall. **Leaves:** Alternately arranged and lanceolate in shape with toothed margins. **Flowers:** Terminal racemes, 4-petals, purplish, early to mid spring. **Fruit:** Pods, seeds turn brown when mature. **Zone:** 4-8. **Habitat:** Prefers partial sun, moist to mesic conditions such as floodplains, forests and roadsides, adaptable to full sun with adequate moisture. **Spread:** Seeds spread by water and wildlife. **Comments:** Plants spread quickly into natural areas leading to competition and displacement of native species. **Controls:** Small populations can be hand pulled while large populations can be continuously cut back to prevent flowering and seed production. Herbicide treatments are also effective.





Basal rosette



Leaf



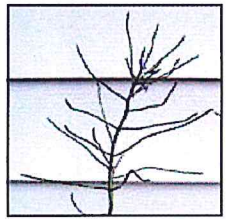
Flower buds



Flowers 4-petaled, white



Stems



Seed pods

Photos by Leslie Mehroff

SECTION 5 STORMWATER INSPECTION & MAINTENANCE LOG

STORMWATER INSPECTION MAINTENANCE LOG

1400 LAFAYETTE ROAD, PORTSMOUTH, NH

General Information			
Project Name	Residential Development Plans	**Location**	Portsmouth, NH
		Start/ End Time	
Date of Inspection			
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			

	Site Specific BMP's	Maintenance Interval
1	Street Sweeping	1 year
2	Deep Sump Catch Basins	6 months
3	Underground Infiltration Systems (#1-3)	6 months
4	Hydrodynamic Separators (First Defense Units)	3 months (See separate maintenance log for First Defense Unit)

STORMWATER INSPECTION MAINTENANCE LOG

1400 LAFAYETTE ROAD, PORTSMOUTH, NH

BMP Description	Corrective Action Required?	Notes
Street Sweeping		
Evidence of debris accumulation	☐ Yes ☐ No	
Evidence of oil grease	☐ Yes ☐ No	
Other (specify)	☐ Yes ☐ No	
Deep Sump Catch Basins		
Grates clear of debris	☐ Yes ☐ No	
Inlet and outlet clear of debris	☐ Yes ☐ No	
Evidence of oil grease	☐ Yes ☐ No	
Observance of accumulated sediment	☐ Yes ☐ No	Sediment Depth =
Evidence of structural deterioration	☐ Yes ☐ No	
Evidence of flow bypassing facility	☐ Yes ☐ No	
Other (specify)	☐ Yes ☐ No	
Underground Infiltration System #1		
Inlet and outlet clear of debris	☐ Yes ☐ No	
Bottom surface clear of debris	☐ Yes ☐ No	
Evidence of rilling or gullying	☐ Yes ☐ No	
Observance of accumulated sediment	☐ Yes ☐ No	
Bottom dewaters within 72 hrs. of a storm event	☐ Yes ☐ No	
Standing water or wet spots	☐ Yes ☐ No	
Other (specify)	☐ Yes ☐ No	
Underground Infiltration System #2		
Inlet and outlet clear of debris	☐ Yes ☐ No	
Bottom surface clear of debris	☐ Yes ☐ No	
Evidence of rilling or gullying	☐ Yes ☐ No	
Observance of accumulated sediment	☐ Yes ☐ No	
Bottom dewaters within 72 hrs. of a storm event	☐ Yes ☐ No	
Standing water or wet spots	☐ Yes ☐ No	
Other (specify)	☐ Yes ☐ No	

STORMWATER INSPECTION MAINTENANCE LOG

1400 LAFAYETTE ROAD, PORTSMOUTH, NH

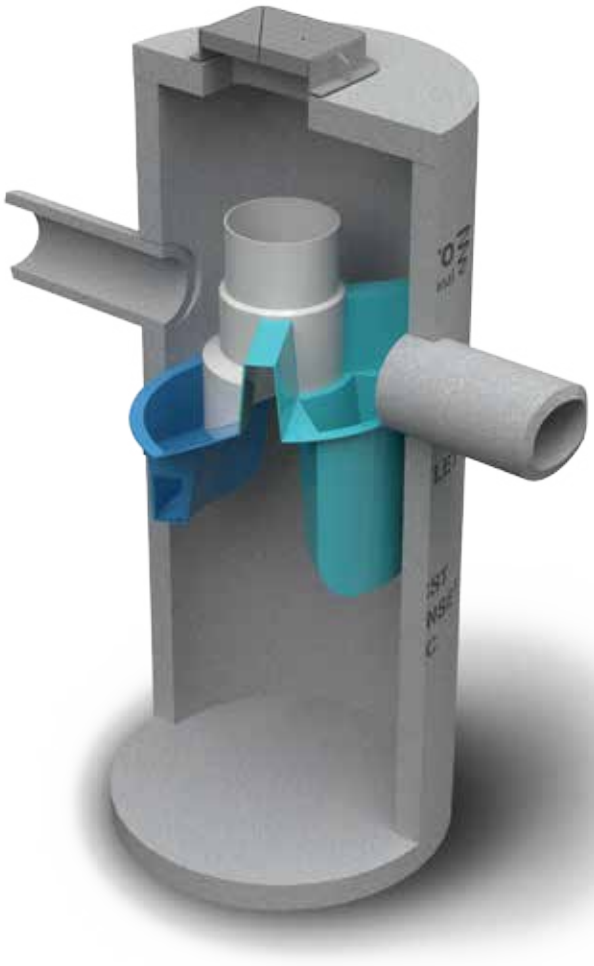
BMP Description	Corrective Action Required?	Notes
Underground Infiltration System #3		
Inlet and outlet clear of debris	☐ Yes ☐ No	
Bottom surface clear of debris	☐ Yes ☐ No	
Evidence of rilling or gullying	☐ Yes ☐ No	
Observance of accumulated sediment	☐ Yes ☐ No	
Bottom dewaters within 72 hrs. of a storm event	☐ Yes ☐ No	
Standing water or wet spots	☐ Yes ☐ No	
Other (specify)	☐ Yes ☐ No	
Hydrodynamic Separators (First Defense Units)		
See separate maintenance log for First Defense Unit		

NOTE: Photos shall be provided with each inspection log and shall be sufficiently labeled to identify photo location.

SECTION 6 DE-ICING LOG

Deicing Log

Date Applied	Type of Deicing Material	Amount Applied



Operation and Maintenance Manual

First Defense® and First Defense®-HC

Vortex Separator for Stormwater Treatment

Stormwater Solutions

Turning Water Around ...®

Table of Contents

3 **First Defense® by Hydro International**
- **Introduction**
- **Operation**
- **Pollutant Capture and Retention**

4 **Model Sizes & Configurations**
- **First Defense® Components**

5 **Maintenance**
- **Overview**
- **Maintenance Equipment Considerations**
- **Determining Your Maintenance Schedule**

6 **Maintenance Procedures**
- **Inspection**
- **Floatables and Sediment Clean Out**

8 **First Defense® Installation Log**

9 **First Defense® Inspection and Maintenance Log**

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DISCLAIMER: Information and data contained in this manual is exclusively for the purpose of assisting in the operation and maintenance of Hydro International plc's First Defense®. No warranty is given nor can liability be accepted for use of this information for any other purpose. Hydro International plc has a policy of continuous product development and reserves the right to amend specifications without notice.

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

I. First Defense® by Hydro International

Introduction

The First Defense® is an enhanced vortex separator that combines an effective and economical stormwater treatment chamber with an integral peak flow bypass. It efficiently removes total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense® is available in several model configurations (refer to *Section II. Model Sizes & Configurations*, page 4) to accommodate a wide range of pipe sizes, peak flows and depth constraints.

Operation

The First Defense® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The First Defense® has been designed to allow for easy and safe access for inspection, monitoring and clean-out procedures. Neither entry into the unit nor removal of the internal components is necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the First Defense® have been designed to optimize pollutant capture. Sediment is captured and retained in the base of the unit, while oil and floatables are stored on the water surface in the inner volume (Fig.1).

The pollutant storage volumes are isolated from the built-in bypass chamber to prevent washout during high-flow storm events. The sump of the First Defense® retains a standing water level between storm events. This ensures a quiescent flow regime at the onset of a storm, preventing resuspension and washout of pollutants captured during previous events.

Accessories such as oil absorbent pads are available for enhanced oil removal and storage. Due to the separation of the oil and floatable storage volume from the outlet, the potential for washout of stored pollutants between clean-outs is minimized.

Applications

- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- Pretreatment for filters, infiltration and storage

Advantages

- Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for “offline” arrangements using separate junction manholes
- Proven to prevent pollutant washout at up to 500% of its treatment flow
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation

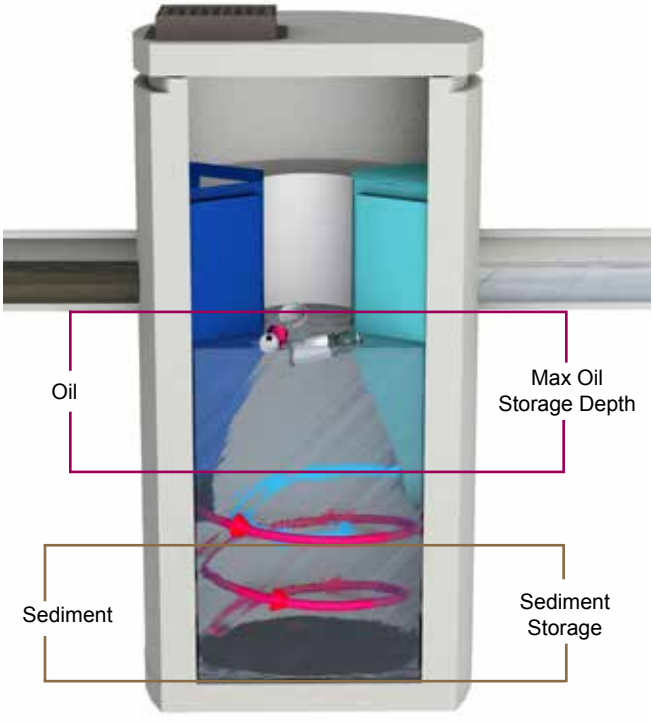


Fig.1 Pollutant storage volumes in the First Defense®.

II. Model Sizes & Configurations

The First Defense® inlet and internal bypass arrangements are available in several model sizes and configurations. The components of the First Defense®-4HC and First Defense®-6HC have modified geometries as to allow greater design flexibility needed to accommodate various site constraints.

All First Defense® models include the internal components that are designed to remove and retain total suspended solids (TSS), gross solids, floatable trash and hydrocarbons (Fig.2a - 2b). First Defense® model parameters and design criteria are shown in Table 1.

First Defense® Components

1. **Built-In Bypass**
2. **Inlet Pipe**
3. **Inlet Chute**
4. **Floatables Draw-off Port**
5. **Outlet Pipe**
6. **Floatables Storage**
7. **Sediment Storage**
8. **Inlet Grate or Cover**

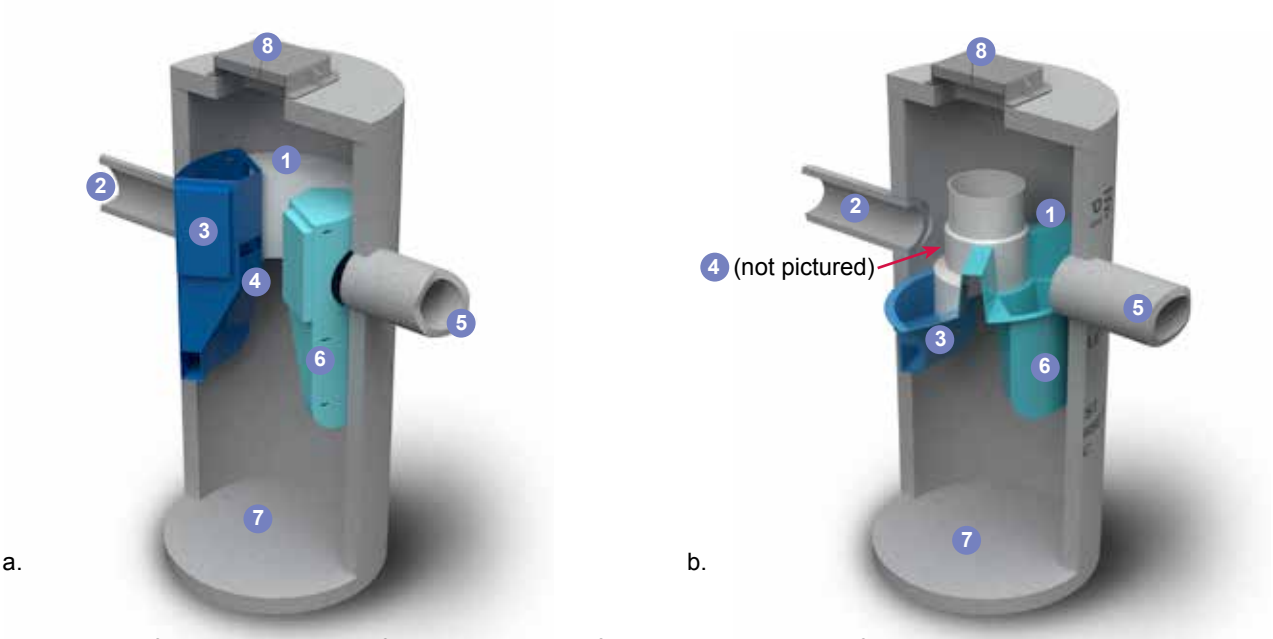


Fig.2a) First Defense®-4 and First Defense®-6; b) First Defense®-4HC and First Defense®-6HC, with higher capacity dual internal bypass and larger maximum pipe diameter.

Table 1. First Defense® Pollutant Storage Capacities and Maximum Clean out Depths

First Defense® Model Number	Diameter	Oil Storage Capacity	Oil Clean Out Depth	Maximum Sediment Storage Capacity[1]		Recommended Sediment Clean-out Capacity	
				Volume	Depth	Volume	Depth
	(ft / m)	(gal / L)	(in / cm)	(yd^3 / m^3)	(in / cm)	(yd^3 / m^3)	(in / cm)
FD-4	4 / 1.2	180 / 681	<23.5 / 60	1.3 / 1.0	33 / 84	0.7 / 0.5	18 / 46
FD-4HC		191 / 723	<24.4 / 62				
FD-6	6 / 1.8	420 / 1,590	<23.5 / 60	3.3 / 2.5	37.5 / 95	1.3 / 1.0	15 / 38
FD-6HC		496 / 1,878	<28.2 / 72				

NOTE

[1] Sediment storage capacity and clean out depth may vary, as larger sediment storage sump volumes are provided when required.

III. Maintenance

Overview

The First Defense® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the First Defense®. The First Defense® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the First Defense® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

The First Defense® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the First Defense®, nor do they require the internal components of the First Defense® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Maintenance Equipment Considerations

The internal components of the First Defense®-HC have a centrally located circular shaft through which the sediment storage sump can be accessed with a sump vac hose. The open diameter of this access shaft is 15 inches in diameter (Fig.3). Therefore, the nozzle fitting of any vactor hose used for maintenance should be less than 15 inches in diameter.

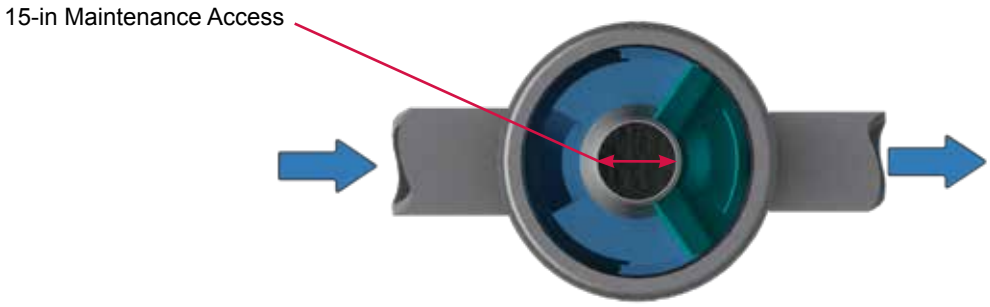


Fig.3 The central opening to the sump of the First Defense®-HC is 15 inches in diameter.

Determining Your Maintenance Schedule

The frequency of clean out is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge-Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil / flotables removal, for a 6-ft First Defense® typically takes less than 30 minutes and removes a combined water/oil volume of about 765 gallons.

Inspection Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the grate or lid to the manhole.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. Fig.4 shows the standing water level that should be observed.

4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the components and water surface.

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel.

6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.

7. Securely replace the grate or lid.

8. Take down safety equipment.

9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Clean Out

Floatables clean out is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.5).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling

- Floatables and sump clean out are typically conducted once a year during any season.

- Floatables and sump clean out should occur as soon as possible following a spill in the contributing drainage area.



Fig.4 Floatables are removed with a vactor hose (First Defense model FD-4, shown).

Recommended Equipment

- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (flexible hose recommended)
- First Defense® Maintenance Log

Floatables and sediment Clean Out Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the grate or lid to the manhole.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.

4. Remove oil and floatables stored on the surface of the water with the vactor hose (Fig.5) or with the skimmer or net (not pictured).

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (page 9).

6. Once all floatables have been removed, drop the vactor hose to the base of the sump. Vactor out the sediment and gross debris off the sump floor (Fig.5).

7. Retract the vactor hose from the vessel.

8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components, blockages, or irregularly high or low water levels.

9. Securely replace the grate or lid.

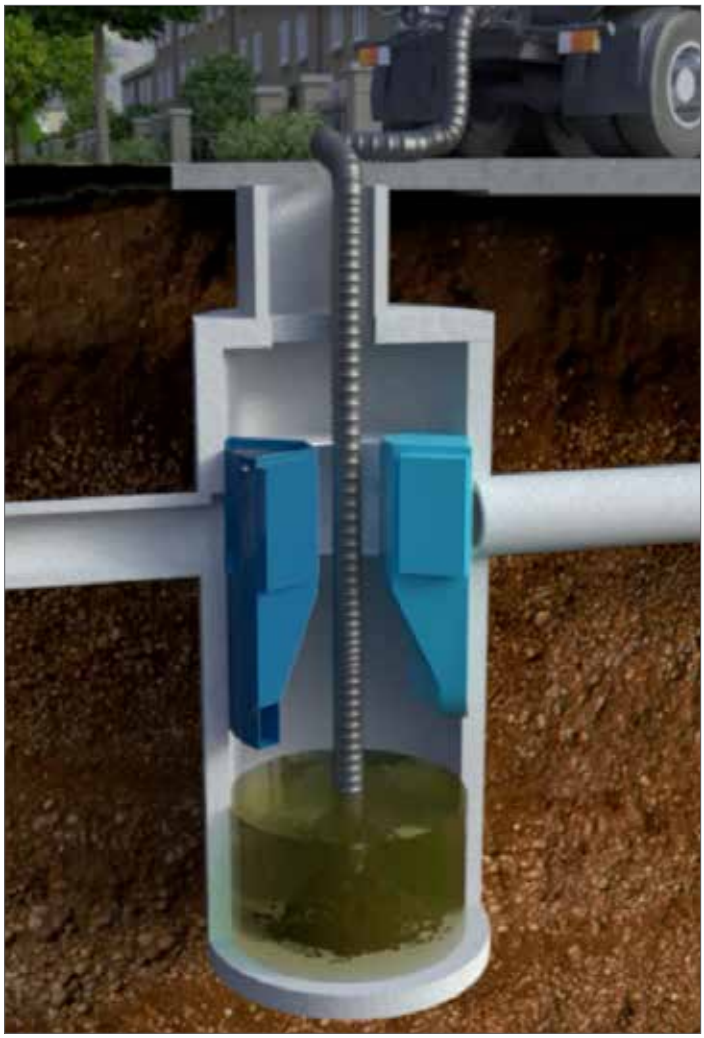


Fig.5 Sediment is removed with a vactor hose (First Defense model FD-4, shown).

Maintenance at a Glance

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area
NOTE: For most clean outs the entire volume of liquid does not need to be removed from the manhole. Only remove the first few inches of oils and floatables from the water surface to reduce the total volume of liquid removed during a clean out.	

First Defense® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL SIZE (CIRCLE ONE): **FD-4** **FD-4HC** **FD-6** **FD-6HC**

INLET (CIRCLE ALL THAT APPLY): **GRATED INLET (CATCH BASIN)** **INLET PIPE (FLOW THROUGH)**

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

First Defense® Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment Depth Measured	Volume of Sediment Removed	Site Activity and Comments

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

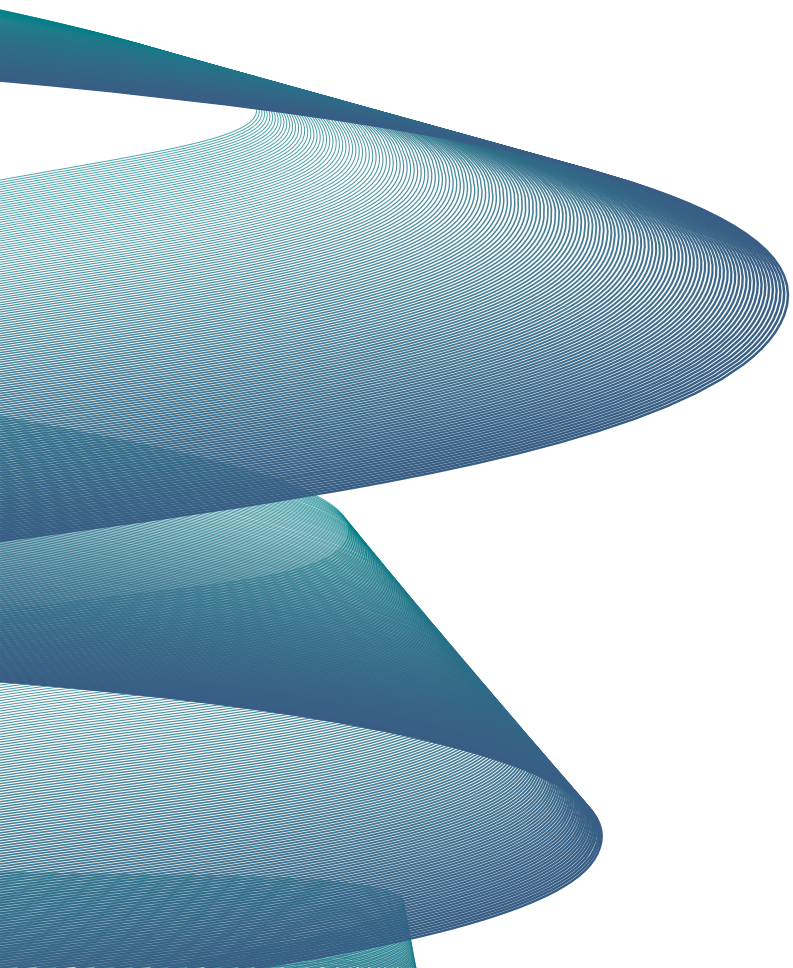
Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

What is HX?

HX is Hydro Experience, it is the essence of Hydro. It's interwoven into every strand of Hydro's story, from our products to our people, our engineering pedigree to our approach to business and problem-solving.

HX is a stamp of quality and a mark of our commitment to optimum process performance. A Hydro solution is tried, tested and proven.

There is no equivalent to Hydro HX.



Stormwater Solutions

94 Hutchins Drive
Portland, ME 04102

Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

www.hydro-int.com

Turning Water Around...®

FD_O+M_D1502

CITY OF PORTSMOUTH
Planning Department
1 Junkins Avenue
Portsmouth, New
Hampshire 03801

(603) 610-7216

PLANNING BOARD

May 4, 2020

Rick Green
4 Amigos, LLC
321 Lafayette Road, Unit D
Hampton, NH 03842

RE: Conditional Use Permit approval and Site Plan Review approval for property located at 1400 Lafayette Road, Peverly Hill Road and 721 Peverly Hill Road

Dear Mr. Green:

The Planning Board, at its regularly scheduled meeting of Thursday, April 30, 2020, considered your application for Conditional Use Permit approval for a Development Site according to the requirements of Section 10.5B40 of the Zoning Ordinance and Site Plan Review approval for the construction of a 53-unit Garden and Townhouse Style residential development consisting of 6 structures with a combined total footprint of 37,775 +/- s.f. and 122,000 +/- GFA with associated grading, lighting, utilities, stormwater management, landscape improvements and community space. Said property is shown on Assessor Map 252 Lots 7, 4 & 5 and lies within the Gateway Neighborhood Mixed Use Center (G2) District. As a result of said consideration, the Board voted to as follows:

1) To find that the application meets the requirements of Section 10.5B43.10 and to grant the Conditional Use Permit for a Development Site;

2) To grant Site Plan Review Approval with the following stipulations:

2.1) Conditions precedent (to be completed prior to building permit issuance):
a) Water service design shall be reviewed and approved by the Portsmouth Water Department;
b) Applicant shall confirm with Eversource that both poles proposed to have service drops are able to provide them. Plan revisions shall be reviewed and approved by Portsmouth DPW, as required;
c) Applicant shall coordinate addressing and numbering of the buildings with Portsmouth DPW and Fire Department. Proposed sign locations shall be added to the plan set and separate sign permits may be required;
d) Owner shall provide an access easement to the City for water valve access and leak detection. The easement shall be reviewed and approved by the Planning and Legal Departments prior to acceptance by the City Council;
e) Owner shall provide a sidewalk public access easement to the City subject to review and approval by the Planning and Legal Departments prior to acceptance by City Council;
f) The site plan and any easement plans and deeds shall be reviewed for pre-approval by the Rockingham County Registry of Deeds and subsequently recorded or as deemed appropriate by the Planning Department;

g) Plans shall be updated to include signage prohibiting truck traffic from entering the development from Peverly Hill Road;
h) The applicant shall document the condition, verify ownership, and provide or produce any easements and agreements pertaining to the access and maintenance of sewer lines that cross the property to the satisfaction of the Department of Public Works;
i) Applicant shall coordinate with COAST to determine if an additional bus stop can be located along Route 1 or Peverly Hill Road to serve the development.

2.2) Conditions subsequent (to be completed subsequent to building permit issuance):
a) The applicant shall design and construct a pedestrian crossing of Peverly Hill Road at the West Road intersection, along with an pedestrian activated signal. Plans shall be reviewed and approved by DPW;
b) The applicant shall provide engineered plans for a sidewalk along Peverly Hill Road between West Road and the Market Basket driveway for future construction by the City. Plans shall be reviewed and approved by DPW;
c) The applicant shall replace the water main in Peverly Hill Road as required per Portsmouth DPW requirements;
d) The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed according to the approved plans and specifications and will meet the design performance;
e) All utilities being installed shall be witnessed by a third party inspection company to be determined by the City.

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.

This site plan approval shall not be effective until a site plan agreement has been signed satisfying the requirements of Section 2.12 of the City's Site Review Approval Regulations.

Unless otherwise indicated above, applicant is responsible for applying for and securing a building permit from the Inspection Department prior to starting any project work.

The Planning Director must certify that all stipulations of approval have been completed prior to issuance of a building permit unless otherwise indicated above.

This site plan approval shall expire unless a building permit is issued within a period of one (1) year from the date granted by the Planning Board unless an extension is granted by the Planning Board in accordance with Section 2.14 of the Site Review Regulations.

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

Very truly yours,



Dexter R. Legg, Chairman of the Planning Board

cc: Robert Marsilia, Chief Building Inspector
Rosann Maurice-Lentz, City Assessor

Peter H. Rice, Director of Public Works

Robert White, GPI, Inc.

CITY OF PORTSMOUTH

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

PLANNING BOARD

April 28, 2021

Rick Green
4 Amigos, LLC
321 Lafayette Road, Unit D
Hampton, NH 03842

RE: Request for 1-year Extension for Conditional Use Permit approval and Site Plan Review approval for property located at 1400 Lafayette Road, Peverly Hill Road and 721 Peverly Hill Road

Dear Mr. Green:

The Planning Board, at its meeting of Thursday, April 22, 2021, considered your request for a 1-year extension of Conditional Use Permit approval for a Development Site according to the requirements of Section 10.5B40 of the Zoning Ordinance and Site Plan Review approval for the construction of a 53-unit Garden and Townhouse Style residential development consisting of 6 structures with a combined total footprint of 37,775 +/- s.f. and 122,000 +/- GFA with associated grading, lighting, utilities, stormwater management, landscape improvements and community space. The original approval was granted on April 30, 2020.

As a result of said consideration, the Board voted to **grant** a 1-year extension as requested to April 30, 2022.

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.

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

Very truly yours,

Dexter R. Legg, Chairman of the Planning Board

cc: Robert Marsilia, Chief Building Inspector
Rosann Maurice-Lentz, City Assessor

Christopher Tymula, GPI

AMBIT ENGINEERING, INC. CIVIL ENGINEERS AND LAND SURVEYORS

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

6 April 2022

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Preliminary Conceptual Consultation and Design Review at 161 Deer Street *to be known as* 88 Maplewood Avenue, Mixed Use Site Development

Dear Mr. Chellman and Planning Board Members:

On behalf of Tom Balon and EightKPH, LLC we are pleased to submit the attached plan set for **Preliminary Conceptual Consultation as well as Design Review** for the above-mentioned project and request that we be placed on the agenda for your **April 21, 2022** Planning Board Meeting. The project consists of the replacement of the existing One Story commercial building at 161 Deer Street with a new 4 Story with a Penthouse building with the associated and required site improvements. The new building is intended to be known as 88 Maplewood Avenue. The re-development will include parking below street level.

The site redevelopment consists of replacing the existing structure with a new structure. The site is known as DSA Lot 5; part of the Consolidation and Subdivision Approved by the Planning Board in 2016. The property was a part of the overall planning for development on the 5 lots and had a proposed building designed; however that building did not go through and complete the permit process entirely. This application revises the proposed building and as such will go through HDC review. The property is located in the CD – 5, Downtown Overlay, North End Incentive, and Historic Districts. The application conforms to the required Density and Development Standards with a few exceptions to codes. The project therefore requires the filing of an application with the Zoning Board of Adjustment for those items; although the Development team would like feedback from the Planning Board and the Public before committing to that part of the process.

This applicant seeks Planning Board input as required under Section 2.4.2.1 of the Site Plan Regulations (**Preliminary Conceptual Consultation**) and would like to go to a Public Hearing to get additional public feedback under the **Design Review** process.

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Subdivision Plan – This plan show the plan which created the current property boundaries.
- Easement Plan – This plan shows the location of the Restrictive Covenant granted to the parcel.
- Existing Conditions Plan C1 – This plan shows the existing site conditions in detail.
- Demolition Plan C2 – This plan shows demolition of the existing building.

- Site Plan C3 – This plan shows the site development in detail with the associated Zoning Development Standards and Floor Area calculations.
- Parking Level Plan C4 – This plan shows the lower level parking layout.
- Utility Plan C5 – This plan shows proposed site utilities.
- Grading Plan C6 – This plan shows proposed site grading.
- Deer Street Elevation Massing and First Floor Plan – This plan shows a DRAFT Elevation and the layout of the first floor.
- Detail Sheets D1 to D4 – These plans show site details.

We look forward to the Planning Boards review of this submission and the Boards feedback on the proposed design.

Sincerely,

John Chagnon

John R. Chagnon, PE
CC: Tom Balon, Carla Goodknight, Terrance Parker

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE
PERMIT PLANS

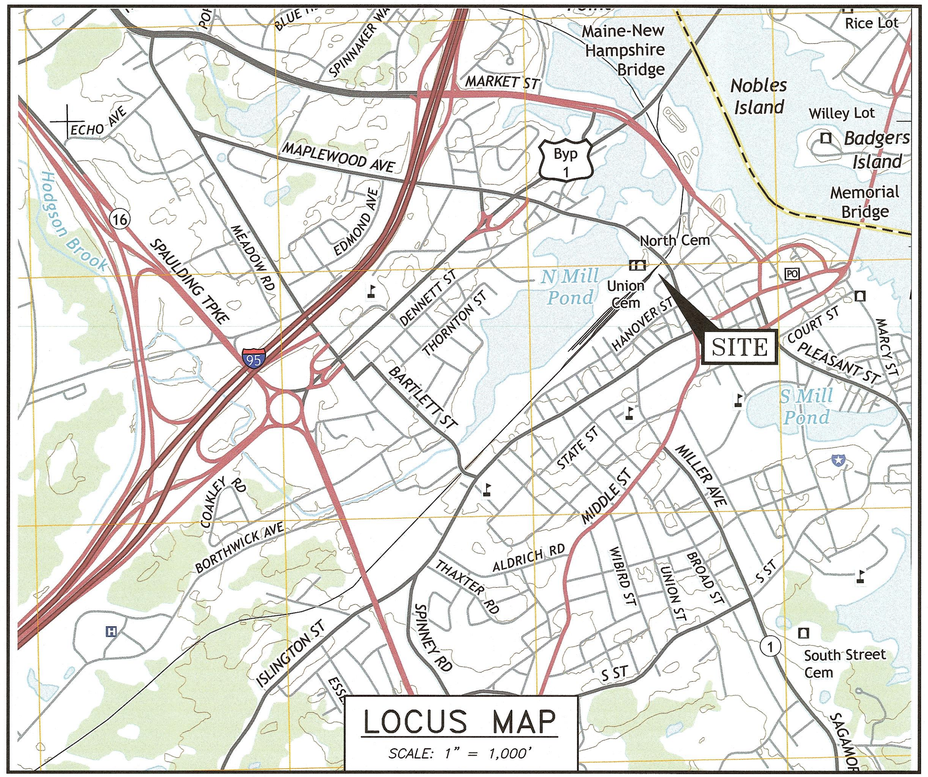
PERMIT LIST:
NHDES SEWER DISCHARGE PERMIT:
PORTSMOUTH BOA:
PORTSMOUTH HDC:
PORTSMOUTH SITE PLAN:

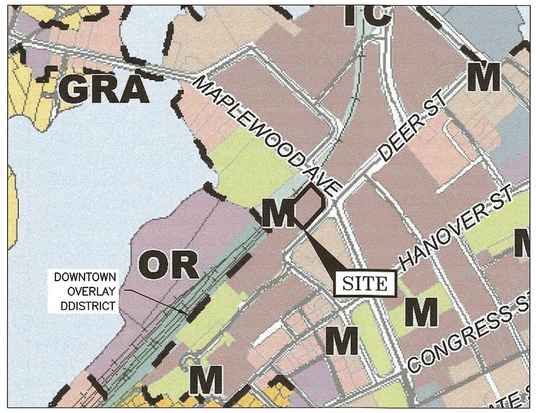
OWNER/APPLICANT:
EIGHT KPH, LLC
233 VAUGHAN STREET, UNIT 301
PORTSMOUTH, N.H. 03801
Tel. (617) 901–7993

CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430–9282
Fax (603) 436–2315

ARCHITECT:
CJ ARCHITECTS
233 VAUGHAN STREET, SUITE 101
PORTSMOUTH, N.H. 03801
TEL. (603) 431–2808

LANDSCAPE ARCHITECT:
TERRA FIRMA LANDSCAPE ARCHITECTURE
163A COURT STREET
PORTSMOUTH, NH 03801
TEL. (603) 430–8388





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

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	98x0	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
PM		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

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INDEX OF SHEETS

DWG NO.	
–	SUBDIVISION PLAN
–	EASEMENT PLAN
C1	EXISTING CONDITIONS PLAN
C2	DEMOLITION PLAN
C3	SITE PLAN
C4	PARKING LEVEL PLAN
C5	UTILITY PLAN
C6	GRADING PLAN
–	DEER STREET ELEVATION MASSING & FIRST FLOOR PLAN
D1–D4	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

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
SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

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

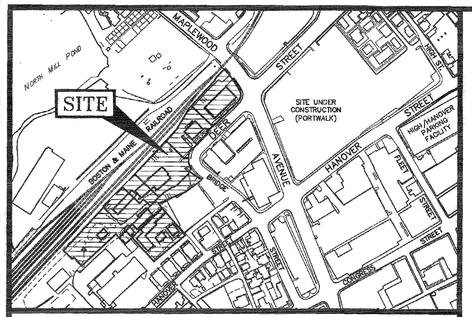
PLAN SET SUBMITTAL DATE: 6 APRIL 2022

2271.04

J:\JOBS2\JN2200s\JN2270s\JN2271\2022 Site Plan\Plans & Specs\Site\2271.04 Cover 2022.dwg, 4/6/2022 2:31:23 PM, Canon TX-3000_HIGH C.pc3

C/H
L-CHIP
ROA338649

2016 SEP -9 PM 3:48 040324



LOCATION MAP SCALE: 1" = 300'

ABUTTERS LIST

(125/1) N/F HANOVER APARTMENTS, LLC
c/o CATHARTES PRIVATE INVESTMENTS
11 BEACON STREET, SUITE 1120
BOSTON, MA 02108
5387/2814

(125/2) N/F THIRTY MAPLEWOOD, LLC
117 BOW STREET
PORTSMOUTH, N.H. 03801
5098/2424

(125/3) N/F EMERSON HOVEY
POST 168 VFW
238 DEER STREET
PORTSMOUTH, N.H. 03801

(125/11) N/F 136 HILL STREET
CONDOMINIUM ASSOCIATION
136 HILL STREET
PORTSMOUTH, N.H. 03801
4823/873
C-34853

(125/14) N/F HILL HANOVER GROUP, LLC
c/o JPK PROPERTIES, LLC
1 NEW HAMPSHIRE AVENUE, #125
PORTSMOUTH, N.H. 03801
4356/10

(125/16) N/F JOHN W. GRAY
REVOCABLE TRUST
BRADFORD A. GRAY
REVOCABLE TRUST
7 PATRIOTS WAY
RYE, N.H. 03870
3895/643

(125/21) N/F NORTH END
MASTER DEVELOPMENT L.P.
501 DANFORTH STREET
PORTLAND, ME 04102
5569/2553

(126/29) N/F GOWEN G. EDWARD, Jr.
REVOCABLE LIVING TRUST
GOWEN G. EDWARD, Jr., TRUSTEE
355 GREAT BAY ROAD
GREENLAND, N.H. 03840
4327/2531

(138/60) N/F CITY OF PORTSMOUTH
P.O. BOX 628
PORTSMOUTH, N.H. 03802

(138/61) N/F PETER HAPPNY
66 ROCK STREET
PORTSMOUTH, N.H. 03801
2302/1079
D-31107

(138/62) N/F DEER STREET ASSOCIATES
P.O. BOX 100
YORK HARBOR, ME, 03911
5518/2744

(138/63) N/F KEARSARGE MILL
CONDOMINIUM ASSOCIATION
191 HILL STREET
PORTSMOUTH, N.H. 03801
2596/1585
D-14855

(138/64) N/F HANOVER PLACE
CONDOMINIUM ASSOCIATION
349 HANOVER STREET
PORTSMOUTH, N.H. 03801
4807/16
D-33379

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	486.00'	104.20'	104.00'	S35°55'41"E	12°17'05"
C2	37.00'	48.72'	45.28'	S07°56'11"W	75°26'43"
C3	155.00'	56.30'	55.99'	N53°24'20"E	20°48'45"
C4	86.00'	71.12'	69.11'	S04°30'52"E	47°22'49"
C5	86.00'	45.63'	45.10'	S13°00'13"E	30°24'08"
C6	86.00'	25.48'	25.39'	S10°41'12"W	16°58'41"

LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N31°17'20"E	39.07'
L2	N31°26'32"E	17.92'
L3	N43°07'25"E	47.08'
L4	S46°46'25"E	7.89'
L5	S40°13'28"E	24.63'
L6	S47°00'33"W	38.74'
L7	N42°48'33"W	54.65'
L8	N43°03'00"W	46.10'
L9	S46°48'04"W	10.00'
L10	N46°09'30"W	48.26'
L11	N43°06'02"E	61.50'
L12	N30°51'54"E	56.64'
L13	N43°06'02"E	22.52'
L14	S46°53'58"E	38.87
L15	N43°06'02"E	49.82'
L16	N63°48'43"E	28.42'
L17	N45°20'34"E	64.73'
L18	N28°12'12"E	10.82'
L19	N28°12'12"E	10.70
L20	N55°38'43"W	57.54'
L21	N45°47'00"E	31.08'
L22	S87°48'09"E	20.15'
L23	N45°47'00"E	34.67'
L24	S40°13'28"E	20.31'
L25	S40°13'28"E	4.32'
L26	N39°12'52"E	42.20'
L27	S43°06'02"W	48.48'

PLAN REFERENCES:

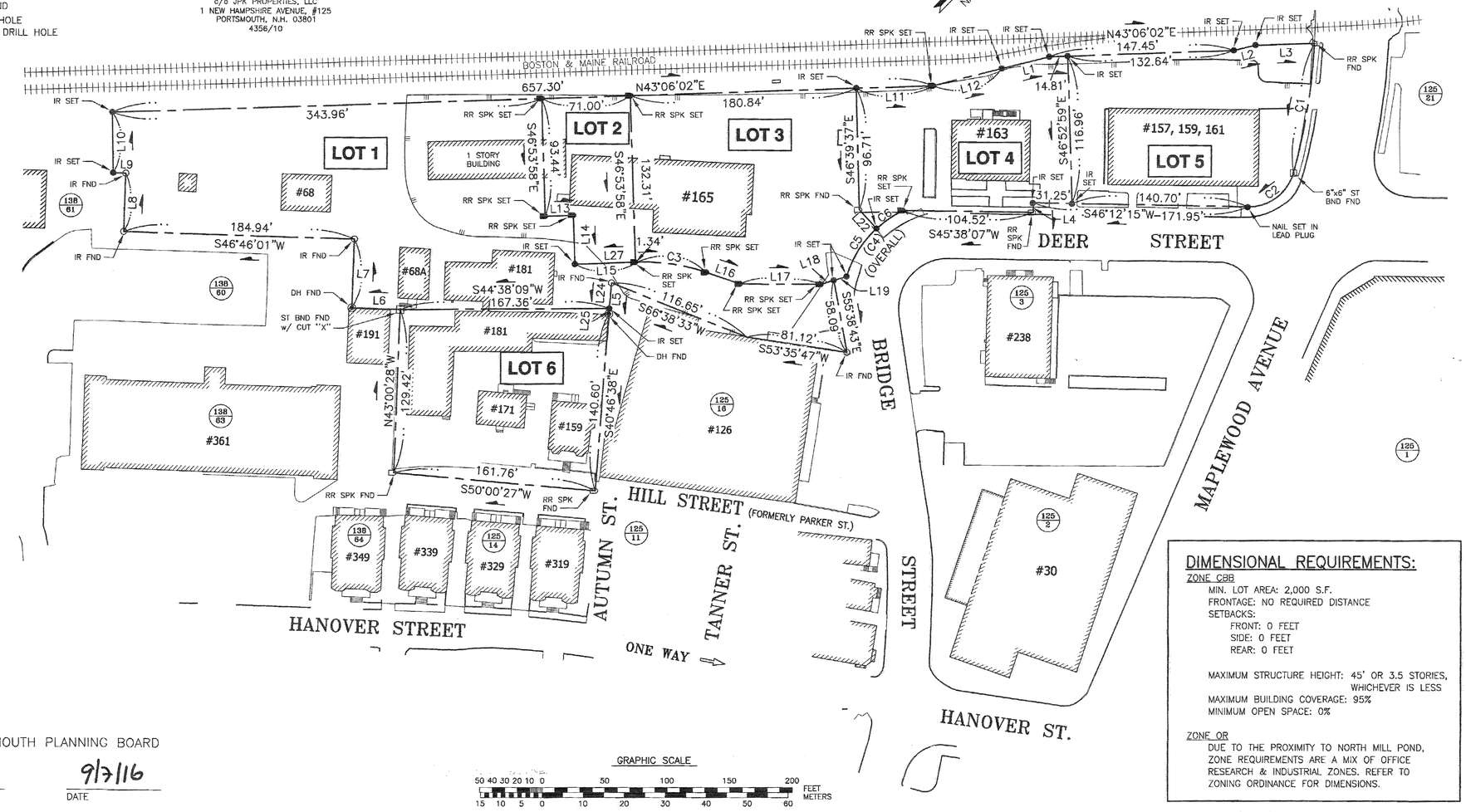
1. PLAN OF LAND FOR NETTY AND GERALD TAUBE, AUGUST 2004 BY MILLETTE, SPRAGUE & COLWELL. RCRD D-32051.
2. CONDOMINIUM SITE PLAN FOR HANOVER PLACE CONDOMINIUM, 349 HANOVER STREET, PORTSMOUTH NH. BY MILLETTE, SPRAGUE AND COLWELL, INC. DATED 12/20/05. RCRD D-33379.
3. KEARSARGE MILL CONDOMINIUMS, HANOVER STREET, PORTSMOUTH, NH. BY KIMBALL CHASE DATED 2/16/17. RCRD D-34716.
4. BOUNDARY LINE AGREEMENT PLAN, KEARSARGE MILL CONDOMINIUMS, PORTSMOUTH, NH. BY JONES & BEACH ENGINEERS, INC. DATED 4/10/97. RCRD D-25421.
5. KEARSARGE MILLS CONDOMINIUM PLANS FOR MAYFAIR REALTY TRUST, CAMBRIDGE PORT TRUST, PORTSMOUTH, NH. BY KIMBALL CHASE. RCRD D-14855.
6. EASEMENT PLAN, TAX MAP 164 – LOT 4, BOSTON & MAINE CORPORATION TO THE CITY OF PORTSMOUTH OFF BREWSTER STREET, PORTSMOUTH, NH. BY AMBIT ENGINEERING, INC. DATED 4/19/03. RCRD D-37720.
7. SUBDIVISION OF LAND OF PORTSMOUTH MFG. AND POWER CO., PORTSMOUTH, NH BY JOHN W. DURGIN DATED NOV. 1925. RCRD #0368.
8. LAND IN PORTSMOUTH, NH PORTS. MFG. & POWER CO. TO HAROLD S. WOODS. BY JOHN W. DURGIN DATED NOV. 1926. RCRD #00389.
9. TAX MAP 125 LOT 14 & MAP 138 LOT 62, PROPERTY OF HILL HANOVER GROUP, LLC, HILL, HANOVER & AUTUMN STREETS, PORTSMOUTH , NH. BY MSC, INC. DATED 10/10/2008. NOT RECORDED.
10. PLAN OF LAND IN PORTSMOUTH, NH, PORTSMOUTH MFG. & POWER CO. TO FRANK E. BROOKS BY JOHN W. DURGIN DATED FEB. 1918. RCRD #078.
11. CONDOMINIUM SITE PLAN, 136 HILL STREET CONDOMINIUM, PORTSMOUTH, NH, TAX MAP 125 LOT 11. BY ANDOVER CONSULTANTS, INC. DATED JULY 12, 2007. RCRD C-34853.
12. LAND IN PORTSMOUTH, NH, BOSTON & MAINE RAILROAD TO ROGER E. MOULTON AND CHESTER GOODWIN. DATED MARCH 1950. RCRD 01684.
13. PROPOSED PROPERTY TRANSFER, TAX MAP 125 – LOT 17, BOSTON & MAINE TO DEER STREET LIMITED PARTNERSHIP, 165 DEER STREET, PORTSMOUTH, NH BY AMBIT ENGINEERING, INC. DATED 6/13/13. RCRD D-37797.
14. PLAN OF LAND FOR DEER STREET ASSOCIATES, DEER & BRIDGE STREETS AND MAPLEWOOD AVENUE, PORTSMOUTH AVENUE BY AMBIT SURVEY DATED SEPTEMBER 1993. RCRD D-22543.
15. PROPOSED ROADWAY ALIGNMENT AND LAND TRANSFER PLAN, CITY OF PORTSMOUTH TO DEER STREET ASSOCIATES (TO BE RECORDED).

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
(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
◉ NHHB	NHDOT BOUND FOUND
◉ BND w/DH	BOUND WITH DRILL HOLE
◉ ST BND w/DH	STONE BOUND WITH DRILL HOLE
⊐ RR SPK	RAILROAD SPIKE
138-62-1	ASSESSOR'S MAP 138 LOT 62-1

ASSESSOR'S MAP/LOT NUMBER ASSIGNMENT

LOT 1	138-62-1
LOT 2	125-17-1
LOT 3	125-17
LOT 4	125-17-2
LOT 5	125-17-3
LOT 6	138-62



GRAPHIC SCALE
50 40 30 20 10 0 50 100 150 200 FEET
15 10 5 0 10 20 30 40 50 60 METERS

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE 9/7/16

DIMENSIONAL REQUIREMENTS:

ZONE CBB
- MIN. LOT AREA: 2,000 S.F.
- FRONTAGE: NO REQUIRED DISTANCE
- SETBACKS:
  - FRONT: 0 FEET
  - SIDE: 0 FEET
  - REAR: 0 FEET
- MAXIMUM STRUCTURE HEIGHT: 45' OR 3.5 STORIES, WHICHEVER IS LESS
- MAXIMUM BUILDING COVERAGE: 95%
- MINIMUM OPEN SPACE: 0%

ZONE OR
- DUE TO THE PROXIMITY TO NORTH MILL POND, ZONE REQUIREMENTS ARE A MIX OF OFFICE RESEARCH & INDUSTRIAL ZONES. REFER TO ZONING ORDINANCE FOR DIMENSIONS.

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

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAPS AS MAP 125, LOT 17 & MAP 138, LOT 62.

2) OWNERS OF RECORD:
MAP 125, LOT 17
DEER STREET ASSOCIATES
P.O. BOX 100
YORK HARBOR, ME 03911
3395/2669, 5534/2077, 5453/138

MAP 138, LOT 62
DEER STREET ASSOCIATES
P.O. BOX 100
YORK HARBOR, ME 03911
5518/2744

3) PARCELS ARE NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259E. MAY 17, 2005.

4) EXISTING LOT AREA:

LOT 17	LOT 62
109,987 S.F.	42,604 S.F.
2.5250 ACRES	0.9781 AC

PROPOSED LOT AREAS:

LOT 1	LOT 2	LOT 3
54,017 S.F.	8,519 S.F.	26,503 S.F.
1.2401 AC.	0.1956 AC.	0.6084 AC.
LOT 4	**LOT 5**	**LOT 6**
18,347 S.F.	22,667 S.F.	22,538 S.F.
0.4212 AC.	0.5204 AC.	0.5174 AC.

5) ZONING DISTRICTS:
CENTRAL BUSINESS B (CBB), HISTORIC OVERLAY DISTRICT (PARTIAL), & OFFICE RESEARCH (OR)

6) THE PURPOSE OF THIS PLAN IS TO SHOW THE CONSOLIDATION OF TAX MAP 125 LOT 17 AND TAX MAP 138 LOT 62 AND THE SUBDIVISION OF THAT LOT INTO 6 LOTS.

7) LOT 2 TO BE A NON-BUILDABLE LOT UNTIL SUCH TIME AS FRONTAGE IS CREATED OR LOT 2 IS MERGED WITH AN ADJACENT PARCEL.

8) THE EXISTING SITE IMPROVEMENTS SHALL BE ALLOWED TO REMAIN. AT SUCH TIME AS THE LOTS ARE NOT UNDER COMMON OWNERSHIP, EASEMENTS SHALL BE CREATED TO ALLOW THE BUILDINGS ACROSS BOUNDARY LINES TO REMAIN OR THE BUILDINGS SHALL BE REMOVED. ANY EASEMENTS CREATED SHALL BE REVIEWED AND APPROVED BY THE CITY OF PORTSMOUTH.

9) FOR SITE EASEMENT RESTRICTIONS AND LOCATIONS SEE "PROPERTY EASEMENTS" PLAN DATED 12/15/14 BY AMBIT ENGINEERING.

NO.	DESCRIPTION	DATE
4	TAX MAP/LOT NUMBERS	5/18/16
3	ISSUED FOR RECORDING; MONUMENTS	3/24/16
2	REVISED LOTS 1, 2, AND 3	8/6/15
1	ISSUED FOR APPROVAL	7/31/15
0	ISSUED FOR COMMENT	7/28/15

REVISIONS

CONSOLIDATION & SUBDIVISION PLAN
TAX MAP 125, LOT 17
&
TAX MAP 138, LOT 62

DEER STREET ASSOCIATES

BRIDGE, DEER, & HILL STREETS
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 50' JULY 2015

FB 302, PG 1 2271.01

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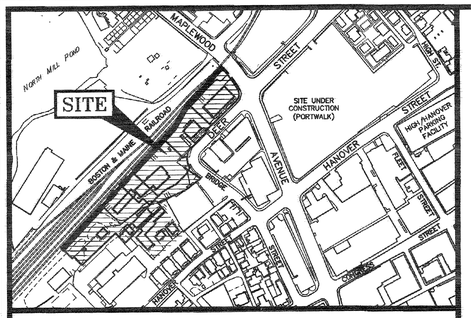
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C/H
L-CHIP
ROA355694

R 3-55-45



LOCATION MAP SCALE: 1" = 300'

CURVE TABLE

No.	Delta	Radius	Arc Length	Chord Length	Chord Bearing
C1	1°10'56"	486.00'	10.03'	10.03'	S42°39'42"E

LENGTH TABLE

No.	Bearing	Distance
L1	N46°09'30"W	10.00'
L2	S46°53'58"E	10.00'
L3	N46°53'58"W	10.00'
L4	N31°17'20"E	40.14'
L5	N31°26'32"E	17.92'
L6	N43°07'25"E	48.84'
L7	S43°07'25"W	47.08'
L8	S31°26'32"W	17.92'
L9	S31°17'20"W	39.07'
L10	S43°06'02"W	61.50'

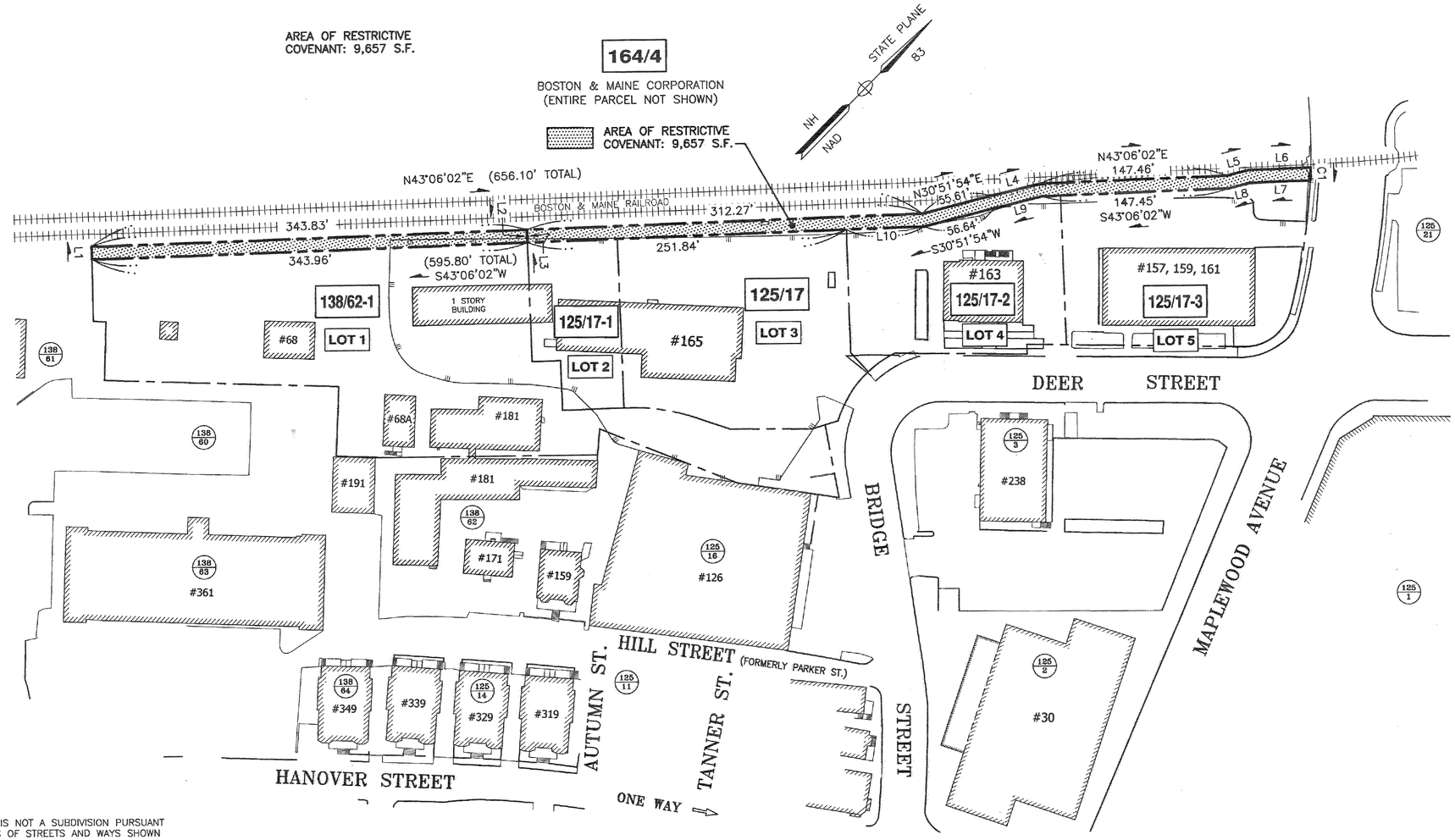
LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
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
▣ BND w/DH	BOUND WITH DRILL HOLE
▣ ST BND w/DH	STONE BOUND WITH DRILL HOLE
⊐ RR SPK	RAILROAD SPIKE
138/62-1	ASSESSOR'S MAP 138 LOT, 62-1

PLAN REFERENCE:

1. CONSOLIDATION & SUBDIVISION PLAN, DEER STREET ASSOCIATES, 1" = 50', JULY 2015. RCRD D-39699.

AREA OF RESTRICTIVE COVENANT: 9,657 S.F.



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.

JOHN R. CHAGNON, LLS #738

12/16/16
DATE

GRAPHIC SCALE
50 40 30 20 10 0 50 100 150 200 FEET
15 10 5 0 10 20 30 40 50 60 METERS

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP AS MAP 164, LOT 4.

2) OWNER OF RECORD:
BOSTON & MAINE CORPORATION
c/o PAN AM SYSTEMS, INC.
IRON HORSE PARK
HIGH STREET
NORTH BILLERICA, MA 01862

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE LOCATION OF AN AREA ON MAP 164, LOT 4 AS SHOWN ON THIS PLAN WHICH WILL BE ENCUMBERED BY A RESTRICTIVE COVENANT TO BENEFIT THE ADJACENT PARCELS.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	12/16/16

REVISIONS

PLAN OF RESTRICTIVE COVENANT
TAX MAP 164, LOT 4
BOSTON & MAINE CORPORATION
TO
DEER STREET ASSOCIATES

BRIDGE & DEER STREETS
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 50' DECEMBER 2016

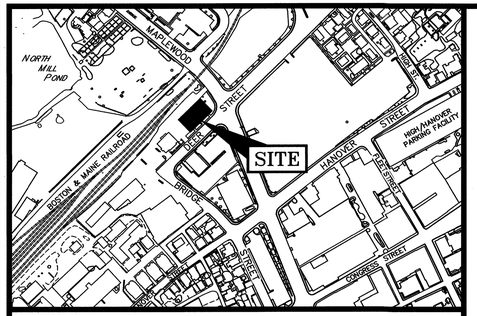
FB 302, PG 1

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R 3-55-45

D-39951

J:\JOBS\2271\DWG\PAN\2271PANPLAN2016 Design Work\Plans & Sheets\Sht\2271_Covenant Plan.DWG, RESTRICTIVE COVENANT



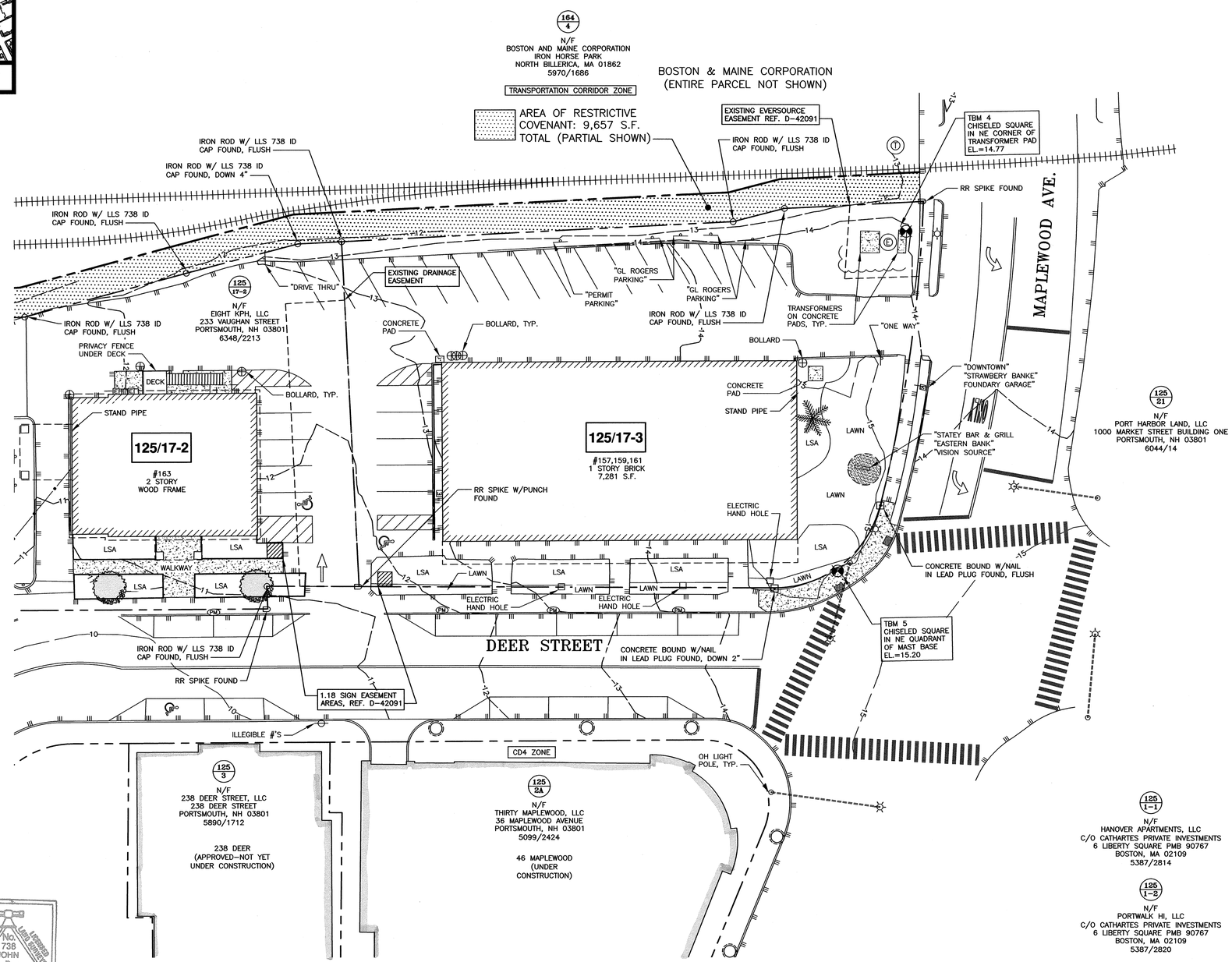
LOCATION MAP SCALE: 1" = 300'

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) CONSOLIDATION & SUBDIVISION PLAN TAX MAP 125, LOT 17 & TAX MAP 138, LOT 62 DEER STREET ASSOCIATES, BRIDGE, DEER, AND HILL STREETS. PREPARED BY AMBIT ENGINEERING, INC. DATED JULY 2015. SCALE: 1"=50'. RCRD D-39699.
2) PLAN OF RESTRICTIVE COVENANT TAX MAP 164, LOT 4 BOSTON AND MAINE CORPORATION TO DEER STREET ASSOCIATES. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2016. SCALE: 1"=50'.
3) EASEMENT PLAN TAX MAP 125- LOT 17, FOR FOUNDRY PLACE, LLC. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2018. LATEST REVISION #3 DATED 4/16/20. SCALE: 1" = 20'.



"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."

4.6.22

JOHN R. CHAGNON, LLS DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON SEAL

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOT 17-3.

2) OWNER OF RECORD:
EIGHT KPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 ZONE; DOWNTOWN OVERLAY, NORTH END INCENTIVE OVERLAY & HISTORIC DISTRICTS.

4) DIMENSIONAL REQUIREMENTS:
CHARACTER DISTRICT 5:

MIN. LOT AREA:	NO REQUIREMENT
FRONTAGE:	NO REQUIREMENT
SETBACKS:	
FRONT (MAX.)	5 FEET (PRIMARY)
FRONT (MAX.)	5 FEET (SECONDARY)
SIDE	NO REQUIREMENT
REAR	GREATER OF 5 FEET FROM REAR LOT LINE OR 10 FEET FROM CENTER OF ALLEY
MAXIMUM STRUCTURE HEIGHT:	SEE CITY PLAN
MAXIMUM STRUCTURE COVERAGE:	90%
MAXIMUM BUILDING FOOTPRINT:	20,000 S.F.
MINIMUM OPEN SPACE:	5%
MINIMUM FRONT LOT LINE BUILDOUT:	80%

5) LOT AREA: 22,667 S.F.
0.5204 ACRES

6) PARCEL IS 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 EXISTING CONDITIONS ON TAX MAP 125, LOT 17-3 IN PORTSMOUTH, NH.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) PARCEL MAY BE SUBJECT TO TEMPORARY CONSTRUCTION EASEMENTS AS SHOWN ON RCRD D-42091 SHEET 2.

10) PARCEL IS SUBJECT TO AGREEMENT REGARDING RELOCATION OF UNDERGROUND FACILITIES 5751/1504.

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

SCALE: 1" = 20' MARCH 2022

EXISTING CONDITIONS PLAN C1

FB 265 PG 18 2271.04

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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).

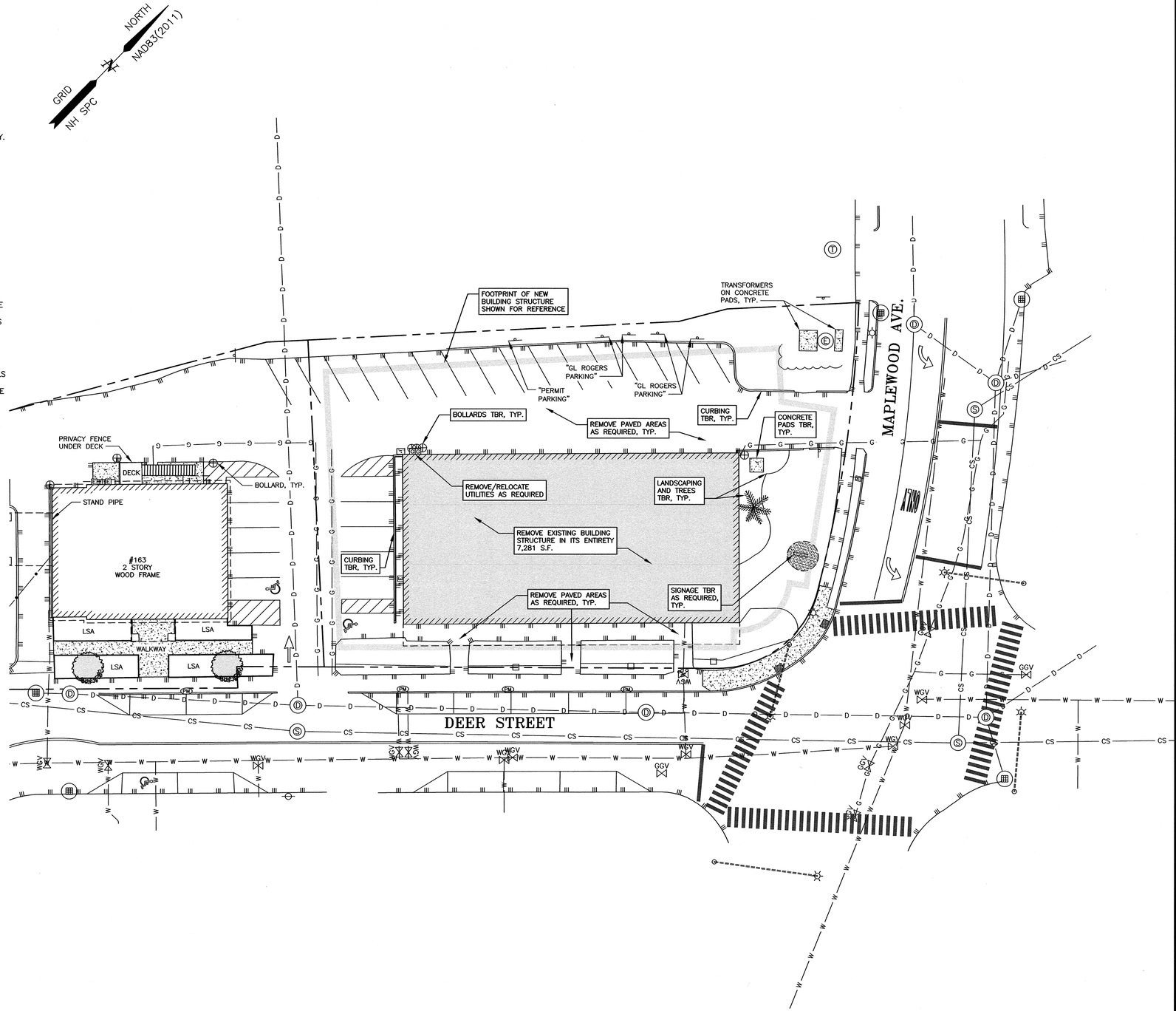
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

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



GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS

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

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).

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

SCALE: 1" = 20' MARCH 2022

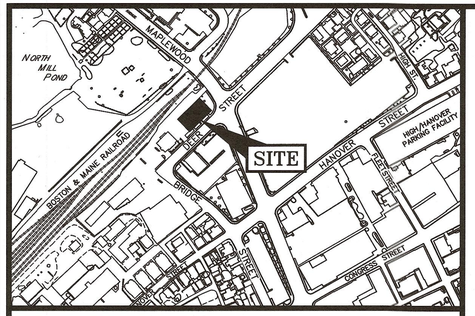
DEMOLITION PLAN

C2

FB 265 PG 18

2271.04

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LOCATION MAP SCALE: 1" = 300'

PLAN REFERENCES:

1) CONSOLIDATION & SUBDIVISION PLAN TAX MAP 125, LOT 17 & TAX MAP 138, LOT 62 DEER STREET ASSOCIATES, BRIDGE, DEER, AND HILL STREETS. PREPARED BY AMBIT ENGINEERING, INC. DATED JULY 2015. SCALE: 1"=50'. RCRD D-39699.
2) PLAN OF RESTRICTIVE COVENANT TAX MAP 164, LOT 4 BOSTON AND MAINE CORPORATION TO DEER STREET ASSOCIATES. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2016. SCALE: 1"=50'.
3) EASEMENT PLAN TAX MAP 125- LOT 17, FOR FOUNDRY PLACE, LLC. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2018. LATEST REVISION #3 DATED 4/16/20. SCALE: 1" = 20'.

CONCEPTUAL AREA SUMMARY:

FIRST FLOOR: 17,713 GSF
SECOND FLOOR: 17,713 GSF
THIRD FLOOR: 17,713 GSF
FOURTH FLOOR: 17,713 GSF
PENTHOUSE: 7,085 GSF

TOTAL GSF: 77,937 GSF

BUILDING DATA:

PROPOSED BUILDING:
17,713 S.F. FOOTPRINT

HEIGHT DATA:

LOT	REQUIRED HEIGHT & STORIES	PROPOSED HEIGHT & STORIES
17-3	4 STORIES AND PENTHOUSE	58'

ZONING DEVELOPMENT STANDARD

CD5: CHARACTER DISTRICT 5

BUILDING PLACEMENT (PRINCIPAL):

		157-161 DEER	88 MAPLEWOOD
	REQUIRED	EXISTING	PROPOSED
MAX. PRINCIPLE FRONT YARD:	5 FEET	15'	6'
MAX. SECONDARY FRONT YARD:	5 FEET	24'	5'
MIN. SIDE YARD:	NR	29'	10.6'
MIN. REAR YARD:	5 FEET	42'	5.0'
FRONT LOT LINE BUILDOUT:	80% MIN	75%	97%
ABUT RAILROAD:	15'	42'	10.6'

BUILDING TYPES:

PERMITTED BUILDING TYPES: LIVE/WORK BUILDING*, SMALL COMMERCIAL BUILDING, LARGE COMMERCIAL BUILDING, MIXED-USE BUILDING*, FLEX SPACE BUILDING, COMMUNITY BUILDING PROPOSED: MIXED-USE BUILDING

*RESIDENTIAL USES ARE NOT PERMITTED ON THE GROUND FLOOR IN THE DOWNTOWN OVERLAY DISTRICT.

PERMITTED FACADE TYPES: STOOP, STEP, SHOPFRONT, OFFICEFRONT, RECESSED ENTRY, GALLERY, ARCADE

BUILDING FORM:

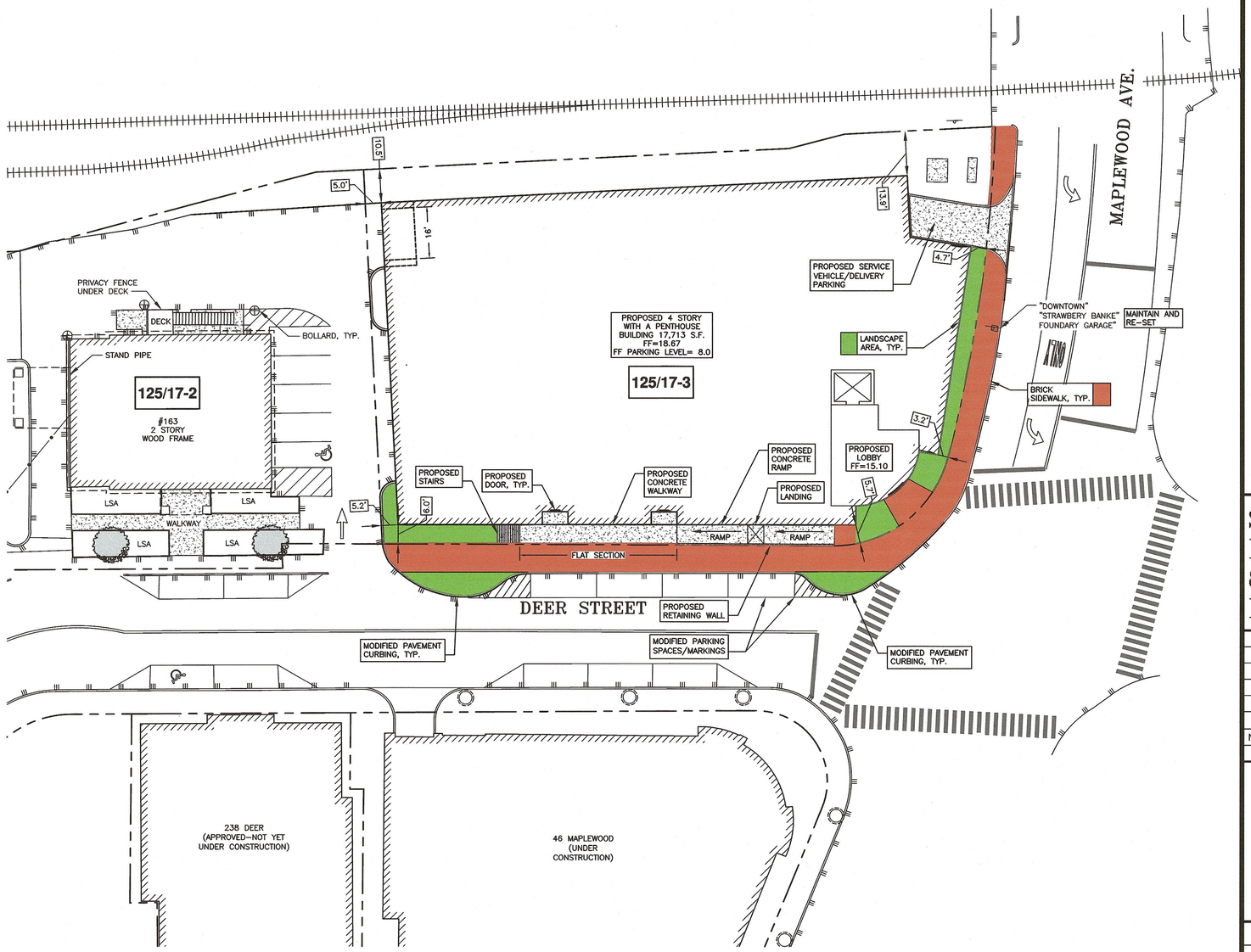
	REQUIRED	EXISTING	PROPOSED
MAX STRUCTURE HEIGHT:	35 FEET	<35'	58'
MAX. FINISHED FLOOR SURFACE OF GROUND FLOOR ABOVE SIDEWALK GRADE:	36 INCHES	4"	80"
MIN. GROUND STORY HEIGHT:	12 FEET	–	TBD
MIN. SECOND STORY HEIGHT:	10 FEET	–	TBD
FACADE GLAZING (WINDOW/PERIMETER):	70% SHOP 20-50% OTHER	–	TBD

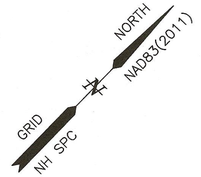
ROOF TYPE ALLOWED: FLAT, GABLE, HIP

LOT OCCUPATION:

	REQUIRED	EXISTING	PROPOSED
MAX BUILDING BLOCK:	225 FEET	120'	156'
MAX FACADE MOD. LENGTH:	100 FEET	120'	66'
MIN. ENTRANCE SPACING:	50 FEET	40'+/-	70'
MAX BUILDING COVERAGE:	90%	32%	78%
MAX BUILDING FOOTPRINT:	20,000 SF	7,281 S.F.	17,713 S.F.
MIN. LOT AREA:	NR	22,667 S.F.	22,667 S.F.
MIN. LOT AREA/DWELLING (LOT AREA/# OF UNITS):	NR	–	–
MIN. OPEN SPACE :	5%	68%	22%

NA = NOT APPLICABLE





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 _____

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOT 17-3.

2) OWNER OF RECORD:
EIGHT KPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 ZONE; DOWNTOWN OVERLAY, NORTH END INCENTIVE OVERLAY & HISTORIC DISTRICTS.

4) DIMENSIONAL REQUIREMENTS:
CHARACTER DISTRICT 5:

MIN. LOT AREA:	NO REQUIREMENT
FRONTAGE:	NO REQUIREMENT
SETBACKS:	
FRONT (MAX.)	5 FEET (PRIMARY)
FRONT (MAX.)	5 FEET (SECONDARY)
SIDE	NO REQUIREMENT
REAR	GREATER OF 5 FEET FROM REAR LOT LINE OR 10 FEET FROM CENTER OF ALLEY
MAXIMUM STRUCTURE HEIGHT:	SEE CITY PLAN
MAXIMUM STRUCTURE COVERAGE:	90%
MAXIMUM BUILDING FOOTPRINT:	20,000 S.F.
MINIMUM OPEN SPACE:	5%
MINIMUM FRONT LOT LINE BUILDOUT:	80%

5) LOT AREA: 22,667 S.F.
0.5204 ACRES

6) PARCEL IS 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 125, LOT 17-3 IN PORTSMOUTH, NH. PROPOSED USE: FIRST FLOOR COMMERCIAL AND 19 RESIDENTIAL UNITS ON UPPER FLOORS.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

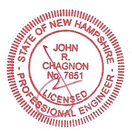
9) PARCEL IS BENEFITTED BY A RESTRICTIVE COVENANT (NO BUILD EASEMENT) ON THE ADJACENT BOSTON AND MAINE PROPERTY.

10) REQUIRED PARKING:
FIRST FLOOR: EXEMPT
19 DWELLING UNITS: 1.3/UNIT X 19 UNITS = 25
VISITOR: 19/5 X 1 = 4
TOTAL REQUIRED: 29
TOTAL PROVIDED: 49-52

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS





SCALE: 1" = 20' MARCH 2022

SITE PLAN C3

FB 265 PG 18

2271.04

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NORTH
NAD83(2011)
GRID
NH SPC

PORTSMOUTH APPROVAL CONDITIONS NOTE:
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APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

GRAPHIC SCALE
10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 125 AS LOT 17-3.

2) OWNER OF RECORD:
EIGHT KPH, LLC
233 VAUGHAN STREET
UNIT 301
PORTSMOUTH, NH 03801
6348/2213

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE PARKING FOR THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 125 LOT 17-3 IN THE CITY OF PORTSMOUTH.

4) REQUIRED PARKING:
FIRST FLOOR: EXEMPT
29 DWELLING UNITS: 1.3/UNIT X 19 UNITS = 25
VISITOR: 19/5 X 1 = 4
TOTAL REQUIRED: 29
TOTAL PROVIDED: 49-52

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
NO. 7551
LICENSED
PROFESSIONAL ENGINEER

SCALE: 1" = 10' MARCH 2022

PARKING LEVEL PLAN

C4

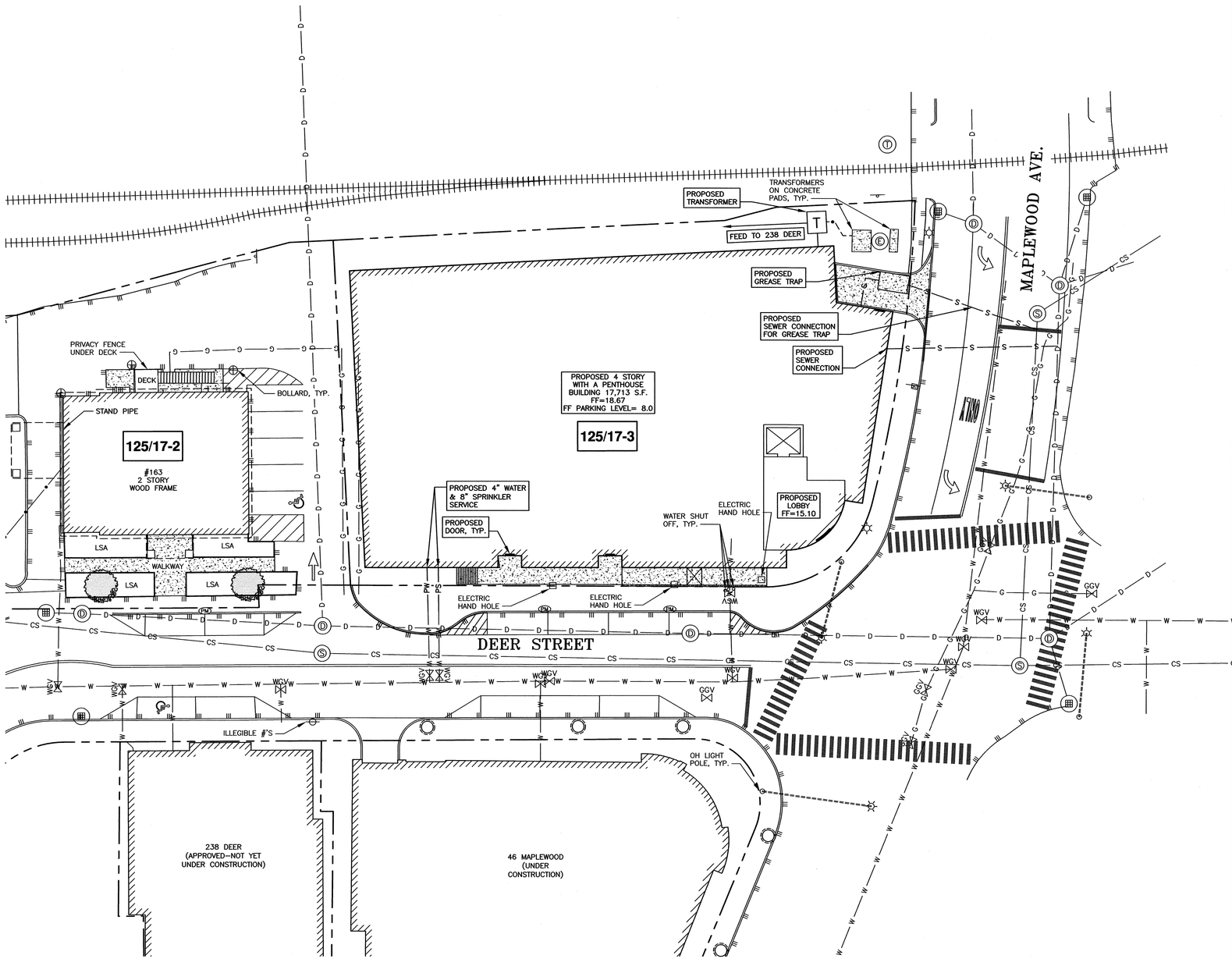
FB 265 PG 18

2271.04

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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.



GRAPHIC SCALE

10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

PORTSMOUTH APPROVAL CONDITIONS NOTE:
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APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

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

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) INSTALL CATCH BASIN INLET PROTECTION ON ALL EXISTING AND PROPOSED CATCH BASINS UNTIL CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.

5) ALL WATER MAIN AND SANITARY SEWER WORK SHALL MEET THE STANDARDS OF THE NEW HAMPSHIRE STATE PLUMBING CODE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

6) UTILITY AS-BUILTS SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF THE PROJECT.

7) EVERSOURCE WORK ORDER #TBD.

8) PROPOSED SEWER FLOW (NEW CONSTRUCTION):
17,000+/- S.F. OFFICE SPACE.
17,000+/- X (2.5 GPD/100 S.F.)=425 GALLONS PER DAY.
(POSSIBLE RESTAURANT) (4,000 GPD)
19 UNITS X 210 GPD=3,990 GPD
TOTAL FLOW: 4,415 GPD TO 8,415 GPD

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

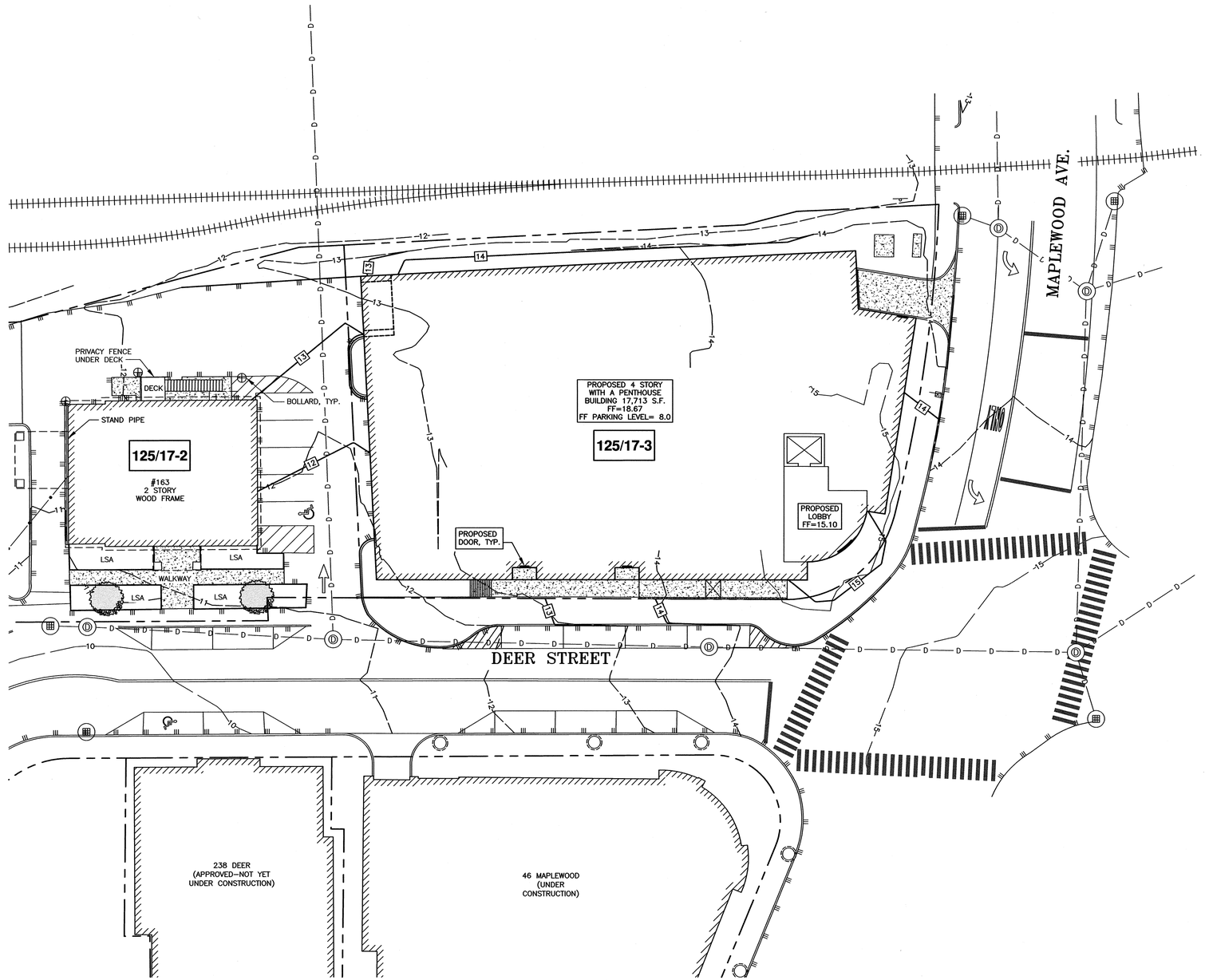
STATE OF NEW HAMPSHIRE · JOHN R CHAGNON No. 7651 · LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' MARCH 2022

UTILITY PLAN **C5**

FB 265 PG 18 2271.04

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PORTSMOUTH APPROVAL CONDITIONS NOTE:
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APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

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Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

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).

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

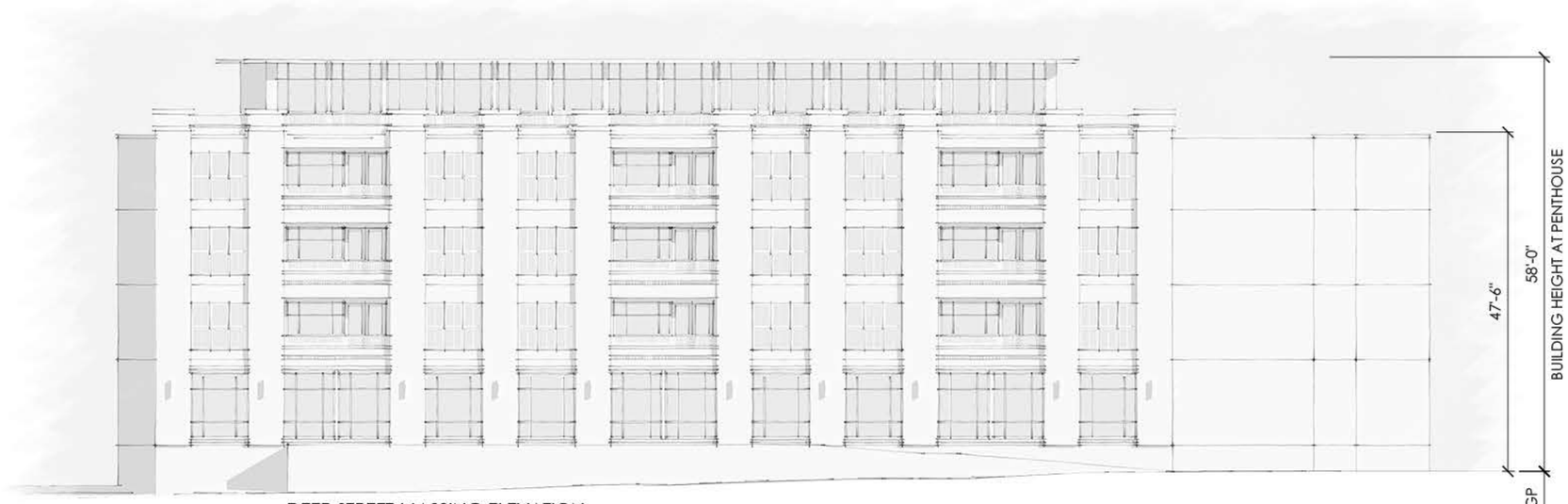
STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7651
LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20' MARCH 2022

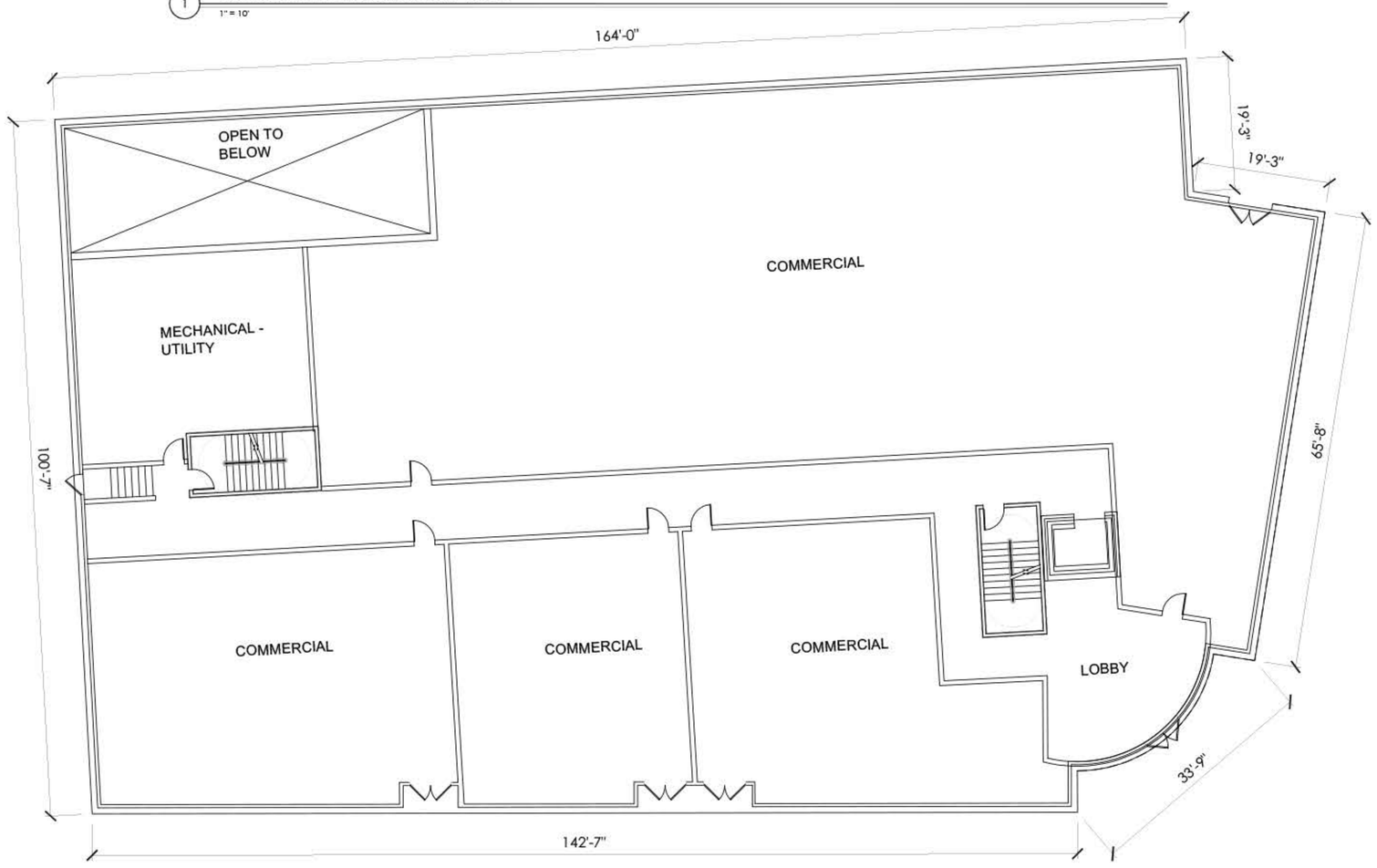
GRADING PLAN C6

FB 265 PG 18 2271.04

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1 DEER STREET MASSING ELEVATION
1" = 10'



2 FIRST FLOOR PLAN
1" = 10'

NOT FOR CONSTRUCTION

REVISIONS:

EIGHT KPH, LLC

88 MAPLEWOOD AVENUE
PORTSMOUTH, NEW HAMPSHIRE

CJ ARCHITECTS
233 VAUGHAN STREET
SUITE 101
PORTSMOUTH, NH 03801
(603) 431-2808
www.cjarchitects.net

PLAN AND MASSING

DATE:	04/06/2022
DRAWN BY:	JAW
APPROVED BY:	CJG
SCALE:	1" = 10'
JOB NUMBER:	

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.

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.

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.

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.

DUST CONTROL: 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.

SILT FENCES AND SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

ADDITIONAL TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS--CONSTRUCT SILT FENCE OR SILTSOXX AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED OF IN AN APPROVED FACILITY.

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

NOTE: DEER STREET SHALL BE SWEEPED DAILY DURING THE EXCAVATION PHASE OF THE BUILDING CONSTRUCTION.

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	

SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)

CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

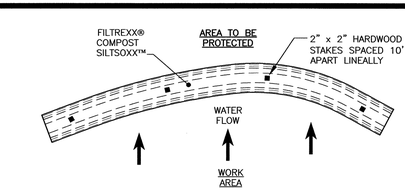
SILT FENCING AND SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, 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.

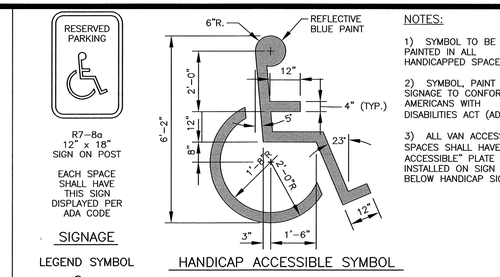
ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, 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.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A / C6 FILTREXX® SILTSOXX™ FILTRATION SYSTEM (AS NEEDED) NTS

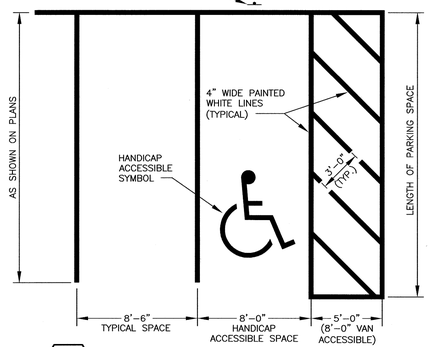


NOTES:

1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.

2) SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).

3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.



C / C4 HANDICAP PARKING DETAIL NTS

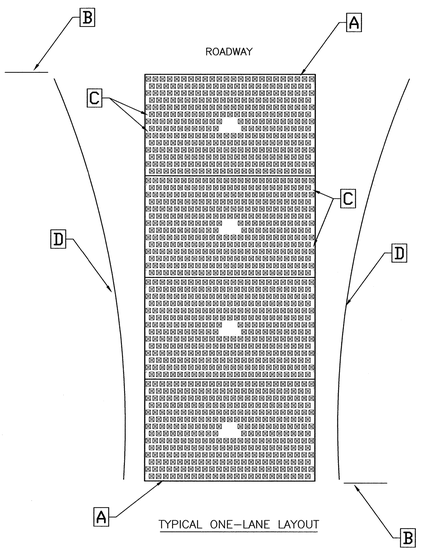
FODS TRACKOUT CONTROL SYSTEM

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.

B / C6 FODS (USE AS REQUIRED) NTS

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

NOTES:

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SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

STATE OF NEW HAMPSHIRE - JOHN R. CHAGNON No. 7861 - LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN MARCH 2022

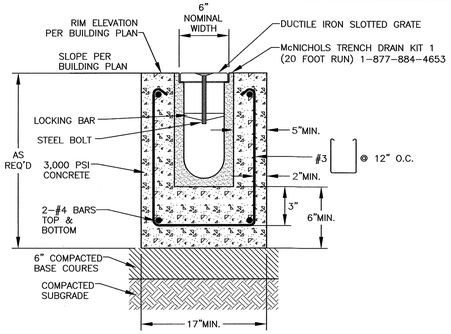
EROSION PROTECTION NOTES AND DETAILS

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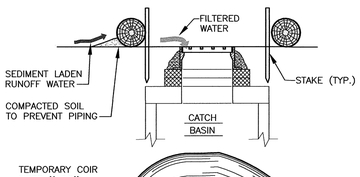
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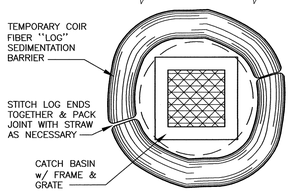
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D C4 TRENCH DRAIN DETAIL

EVAPORATIVE NTS

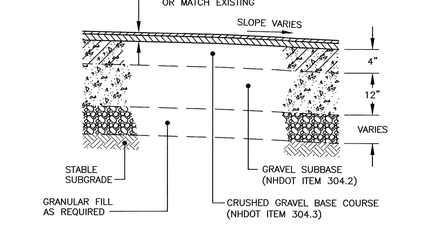




NOTE:
1. PRIOR TO INSTALLATION, SILT LOGS SHALL BE KEPT DRY AND STORED IN THEIR ORIGINAL WRAPPING.
2. MINIMUM CROSS SECTIONAL DIAMETER OF SILT LOGS: 12".
3. SILT LOGS MAY BE CUT AND RE-STITCHED AS NEEDED PER MANUFACTURERS RECOMMENDATIONS.
4. SILT LOGS SHALL BE INSPECTED AFTER EACH STORM EVENT.
5. REMOVE ACCUMULATED SILT WHEN DEPTH REACHES ONE HALF OF SILT LOG DIAMETER.
6. IF LOGS ARE TOO STIFF TO BEND AROUND CATCH BASIN INLET, THEY MAY BE CUT AND LAID SQUARE.

E C6 "SILT LOG" BARRIER AT CATCH BASIN INLET

(AS NEEDED) NTS

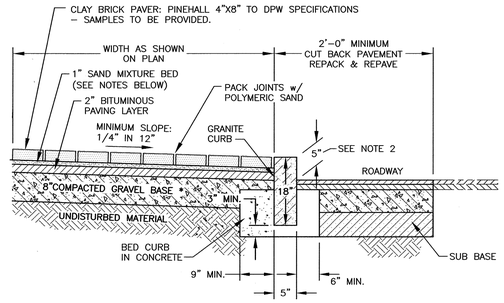


F C3 TYPICAL PAVEMENT CROSS-SECTION

NTS

CONSTRUCTION NOTE:

EXISTING GRANITE CURB DISTURBED BY CONSTRUCTION SHALL BE REUSED AND ANY MISSING CURB SHALL BE REPLACED WITH NEW CURB MATCHING EXISTING CURB SIZE. NO CURB LESS THAN 3' IN LENGTH WILL BE ALLOWED.



BRICK PAVEMENT NOTES

SCOPE OF WORK:

1) THE WORK SHALL CONSIST OF CONSTRUCTING/RECONSTRUCTING THE SUB-BASE AND CONSTRUCTING A NEW BRICK SIDEWALK AND DRIVEWAY PAVERS AS DIRECTED IN THE FIELD BY THE ENGINEER.
2) REVEAL SHALL BE 5" (COORDINATE WITH PORTSMOUTH DPW).

METHODS OF CONSTRUCTION:

A) ALL LABOR AND MATERIALS SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 608, AND CITY OF PORTSMOUTH SPECIFICATIONS FOR NEW BRICK SIDEWALK, SECTION 6.

B) ALL BRICKS SHALL CONFORM TO THE REQUIREMENTS OF ASTM STANDARD SPECIFICATIONS FOR BUILDING BRICKS: CLASS SX, TYPE 1, APPLICATION PX. THE BRICKS SHALL BE NO. 1, WIRE CUT TYPE FOR PAVING, WITH A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 POUNDS PER SQUARE INCH. THE BRICKS SHALL NOT BE CORED OR HAVE FROGS AND SHALL BE OF A STANDARD SIZE (2.25" X 4 X 8"). 60 MM FOR SIDEWALK AND 80 MM FOR DRIVEWAY ENTRANCE.

C) EXCAVATION FOR SIDEWALKS SHALL BE AT A DEPTH OF 10 INCHES BELOW FINISH GRADE. IN AREAS NOT BUTTING CURBING OR BUILDINGS, THE EXCAVATION SHALL BE 6 INCHES WIDER THAN THE FINISHED SIDEWALK WIDTH. AT ALL DRIVE CROSSINGS, THE DEPTH OF EXCAVATION SHALL BE INCREASED ACCORDINGLY. THE CONTRACTOR SHALL PROVIDE NEAT AND SQUARE CUTTING OF EXISTING ASPHALT ROAD SURFACE AS NEEDED. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT THE CONTRACTOR'S OWN EXPENSE.

D) THE BASE MATERIAL SHALL CONSIST OF A MIXTURE OF STONES OR ROCK FRAGMENTS AND PARTICLES WITH 100% PASSING THE 3 INCH SIEVE, 95% TO 100% PASSING THE 2 INCH SIEVE, 55% TO 85% PASSING THE 1 INCH SIEVE, AND 27% TO 52% PASSING THE NO. 4 SIEVE. AT LEAST 50% OF THE MATERIALS RETAINED ON THE 1 INCH SIEVE SHALL HAVE A FRACTURED FACE. THE BASE MATERIAL SHALL BE THOROUGHLY COMPACTED TO THE DEPTH SPECIFIED OR DIRECTED. IN THE WAY OF ALL DRIVE CROSSINGS THE BASE WILL BE INCREASED TO A COMPACTED DEPTH OF 12 INCHES. GRAVEL REQUIREMENTS FOR RECONSTRUCTION WILL BE AS DIRECTED, BASED ON SITE CONDITIONS. THE WORK INCLUDES BACKING UP ANY AND ALL CURB BEING INSTALLED BY OTHERS ON BOTH SIDES.

E) THE CLAY BRICK PAVERS SHALL BE LAID IN A 1 INCH BED OF A SAND MIXTURE COMPRISED OF: 3 PARTS SAND MIXED WITH 1 PART PORTLAND CEMENT.

F) THE CONTRACTOR SHALL LAY THE BRICKS SO THAT APPROXIMATELY 4.5 BRICKS SHALL COVER ONE SQUARE FOOT.

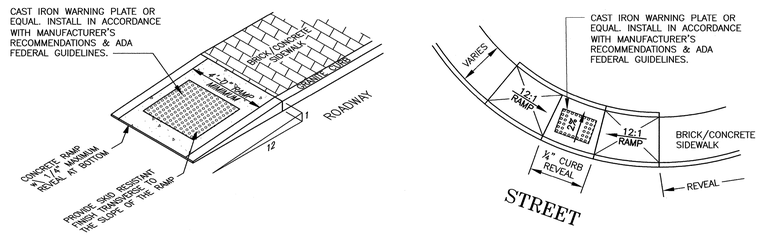
G) THE SIDEWALK SHALL PITCH TOWARDS THE STREET AS SHOWN ON THE GRADING PLAN.

H) IN AREAS WHERE THE FRONT OF THE BRICK SIDEWALK IS NOT ADJACENT TO GRANITE CURBING, THE CONTRACTOR SHALL INSTALL EDGING TO HOLD THE BRICKS IN PLACE. SUCH EDGING SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

I) THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE BRICKS FOR APPROVAL BY THE CITY BEFORE BRICKS ARE INSTALLED.

G C3 BRICK SIDEWALK w/ VERTICAL GRANITE CURB

(STONE DUST BEDDING OVER BITUMINOUS PAVING) NTS



H C3 TYPICAL SIDEWALK TIP DOWNS

NTS

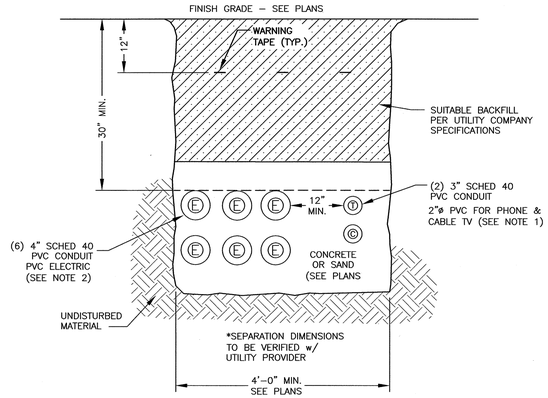
NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCHED. 40 FOR THE REMAINDER.

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.



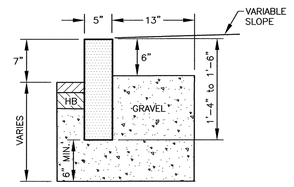
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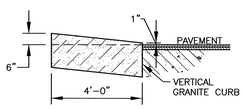
MIN. LENGTH OF CURB STONES 3FT.
MAX. LENGTH OF CURB STONES 10FT.
MAX. LENGTH OF STRAIGHT CURB STONES LAID ON CURVES SEE CHART

NOTE: ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

Radius	Max. length
21'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
over 60'	10'

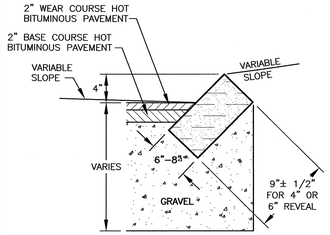


VERTICAL GRANITE CURB



NOTE: JOINTS BETWEEN STONES TO BE MORTARED

GRANITE CURB END



SLOPE GRANITE CURB

MIN. LENGTH OF STRAIGHT CURB STONES: 18"
MAX. LENGTH OF STRAIGHT CURB STONES: 8FT.
MAX. LENGTH OF STRAIGHT STRAIGHT CURB STONES LAID ON CURVE: SEE CHART

Radius for stones with square joints	Maximum length
16' - 28'	6" - 1'
29' - 41'	2'
42' - 55'	3'
56' - 68'	4'
69' - 82'	5'
83' - 96'	6'
97' - 110'	7'
over 110'	8'

I C3 GRANITE CURBING DETAILS

NTS

AMBIT ENGINEERING, INC.
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SCALE: AS SHOWN MARCH 2022

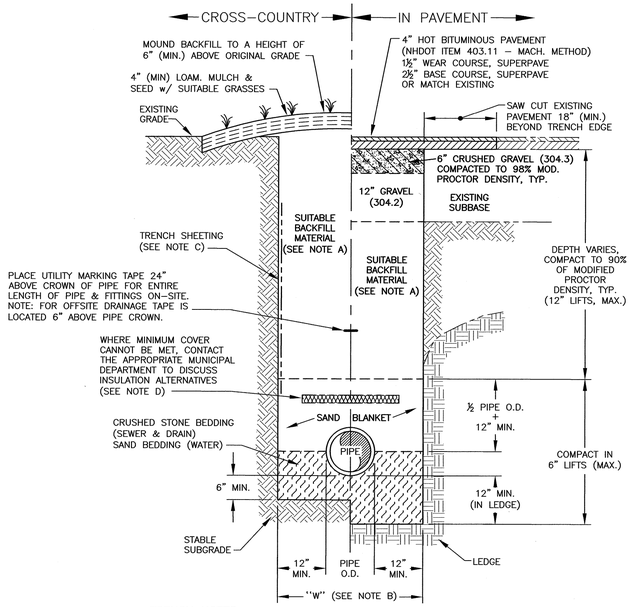
DETAILS

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TRENCH NOTES:

A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

– IN CROSS–COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

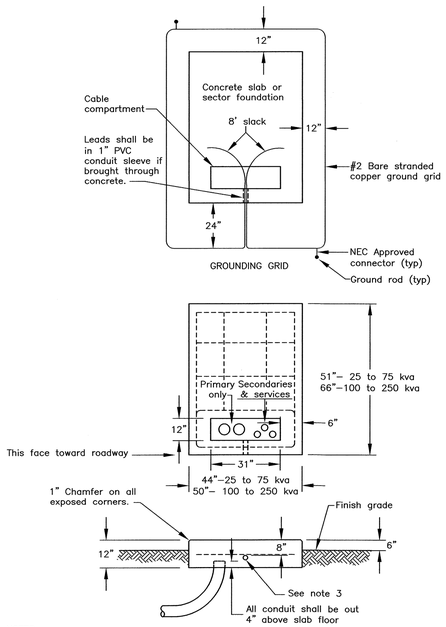
B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

C) TRENCH SHEETING:
THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFE EXCAVATION PRACTICES.

D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
- 5' MINIMUM FOR SEWER (IN PAVEMENT)
- 4' MINIMUM FOR SEWER (CROSS COUNTRY)
- 3' MINIMUM FOR STORMWATER DRAINS
- 5' MINIMUM FOR WATER MAINS

E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.

L / C5 TYPICAL PIPE TRENCH
NTS



NOTES
1. See sheet "Requirements for Padmounted Transformer Slab Details".
2. All reinforcing to be #6 bars.
3. 1" PVC conduit sleeve for ground grid leads.
4. The ground grid shall be supplied and installed by the customer and is to be buried at least 12" below grade. Eight feet of extra wire for each ground grid leg shall be left exposed in the cable compartment to allow for the connection to the transformer. the two 8' ground rods may be either galvanized steel or copperweld and they shall be connected to the grid with NEC approved connectors.

K / C5 TRANSFORMER PAD
PSNH NTS

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

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).

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 7851
LICENSED PROFESSIONAL ENGINEER

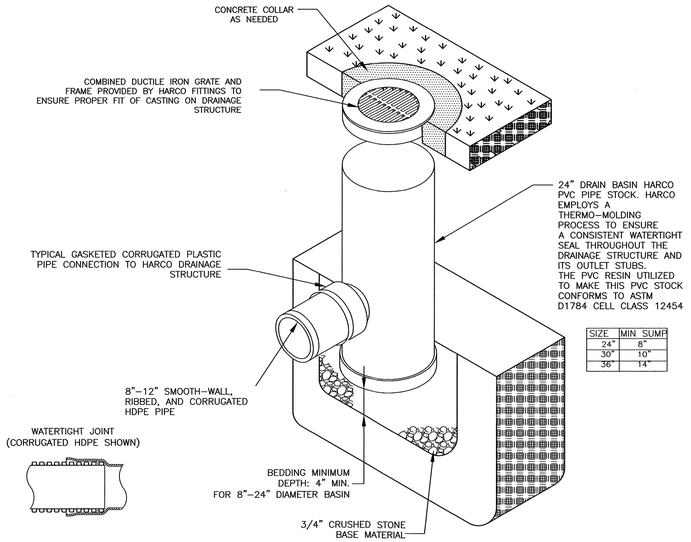
SCALE: AS SHOWN MARCH 2022

DETAILS D3

FB 265 PG 18

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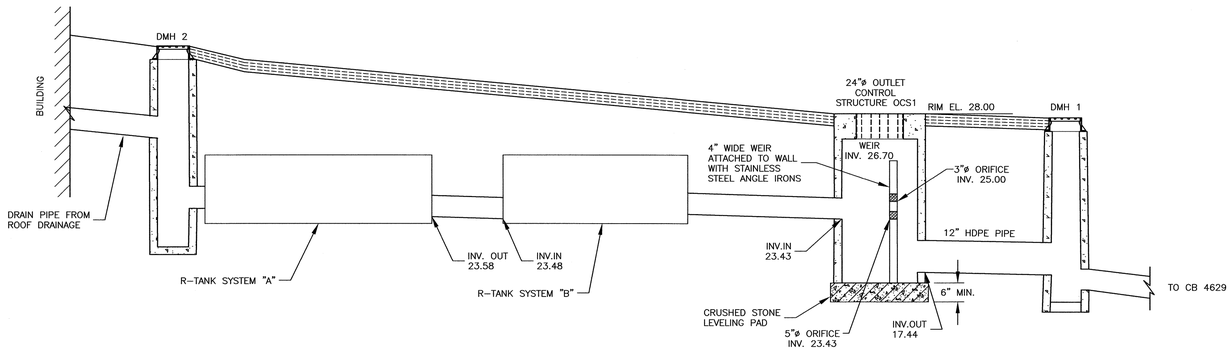
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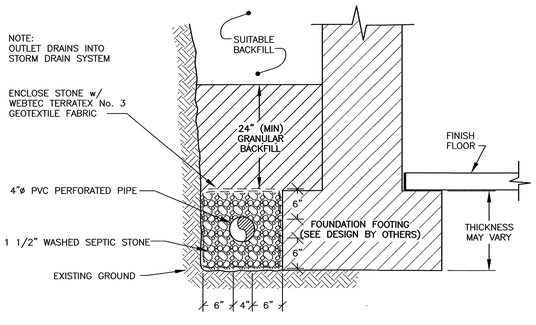
SIZE	MIN. SUMP
24"	8"
30"	10"
36"	14"

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

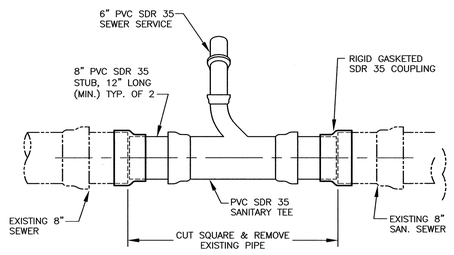
Q / C6 HARCO DRAIN BASIN DETAIL



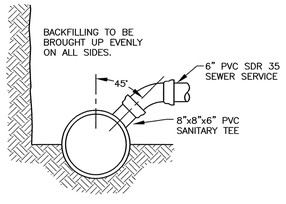
S / C4 R-TANK SYSTEM
NTS



R / C6 TYPICAL FOUNDATION DRAIN
NTS



PLAN



SECTION

T / C4 SEWER SERVICE CONNECTION DETAIL
NTS

NOTE: COORDINATE DESIGN OF SEWER CONNECTION WITH CITY OF PORTSMOUTH DPW. PROVIDE SHOP DRAWINGS FOR REVIEW.

GENERAL NOTES:

1) MINIMUM PIPE SIZE FOR HOME SERVICES SHALL BE SIX 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)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 To T-3)
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.

B. DUCTILE IRON PIPE, FITTINGS AND JOINTS.
1. DUCTILE IRON PIPE AND FITTINGS FOR SEWERS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOULDS OR SAND LINED MOULDS FOR SEWER APPLICATIONS.
2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.

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) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE DEPENDING ON THE PIPE ENCOUNTERED, FOR PVC PIPE, USE PVC SADDLES OR INSERT-A-TEE, OR CUT IN A SANITARY TEE. FOR CLAY PIPE, USE INSERT-A-TEE OR CUT IN A SANITARY TEE. ALL WORK TO BE APPROVED BY GOVERNING BODY.

6) 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.
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 704.07.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM DWELLING 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) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE, UNLESS IT IS ON A SHELF 12" HIGHER, AND 18" APART.

GENERAL NOTES- CONT'D:

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 TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.

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) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE HOUSE CONNECTION OR MAIN. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

14) 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.

15) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB-SITE SAFETY AND COMPLIANCE WITH GOVERNING REGULATIONS.

16) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. FOR TRENCH WIDTH SEE TRENCH DETAIL.

17) 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.

18) 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.

19) FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

20) 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.

21) 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).

22) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION.

23) THE PURPOSE OF THESE NOTES IS TO DETAIL STANDARDS FOR SEWER CONSTRUCTION.

24) ALL WORK SHALL BE IN COMPLIANCE WITH NHDES CODE OF ADMINISTRATIVE RULES PART ENV-WQ 704 DESIGN OF SEWERS.

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

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).

SITE DEVELOPMENT
EIGHT KPH, LLC
88 MAPLEWOOD AVENUE
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/6/22

REVISIONS

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER

SCALE: AS SHOWN — MARCH 2022

DETAILS — D4

FB 265 PG 18 — 2271.04

J:\CIVIL\2022\2271.04 Eight KPH, LLC - 88 Maplewood Ave, Portsmouth, NH\Plans & Specs\Site\2271.04 Site Plan.dwg, DETAILS 24, 4/6/2022 7:25:58 PM

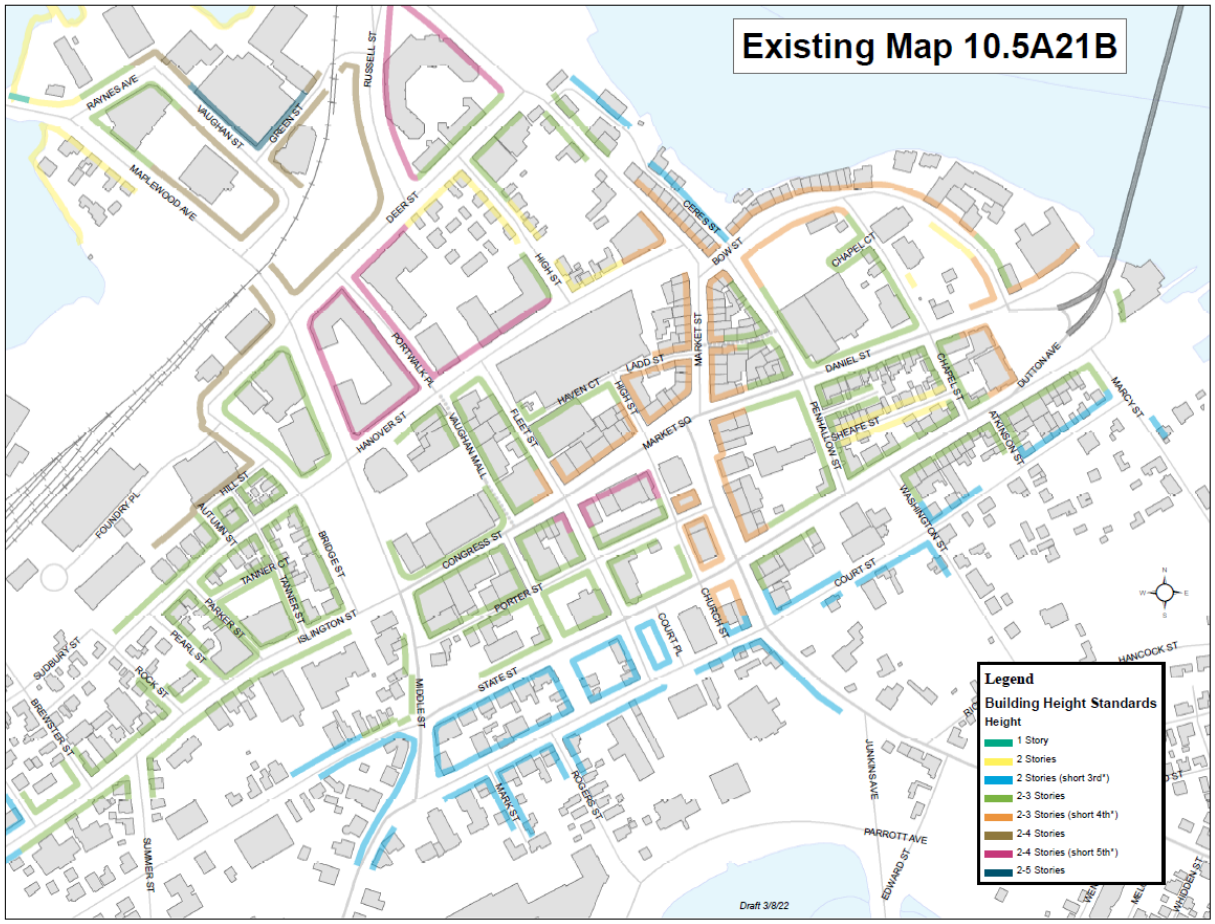
April 11, 2022

RE: <u>Draft Zoning Amendments – Building Height Standards</u>

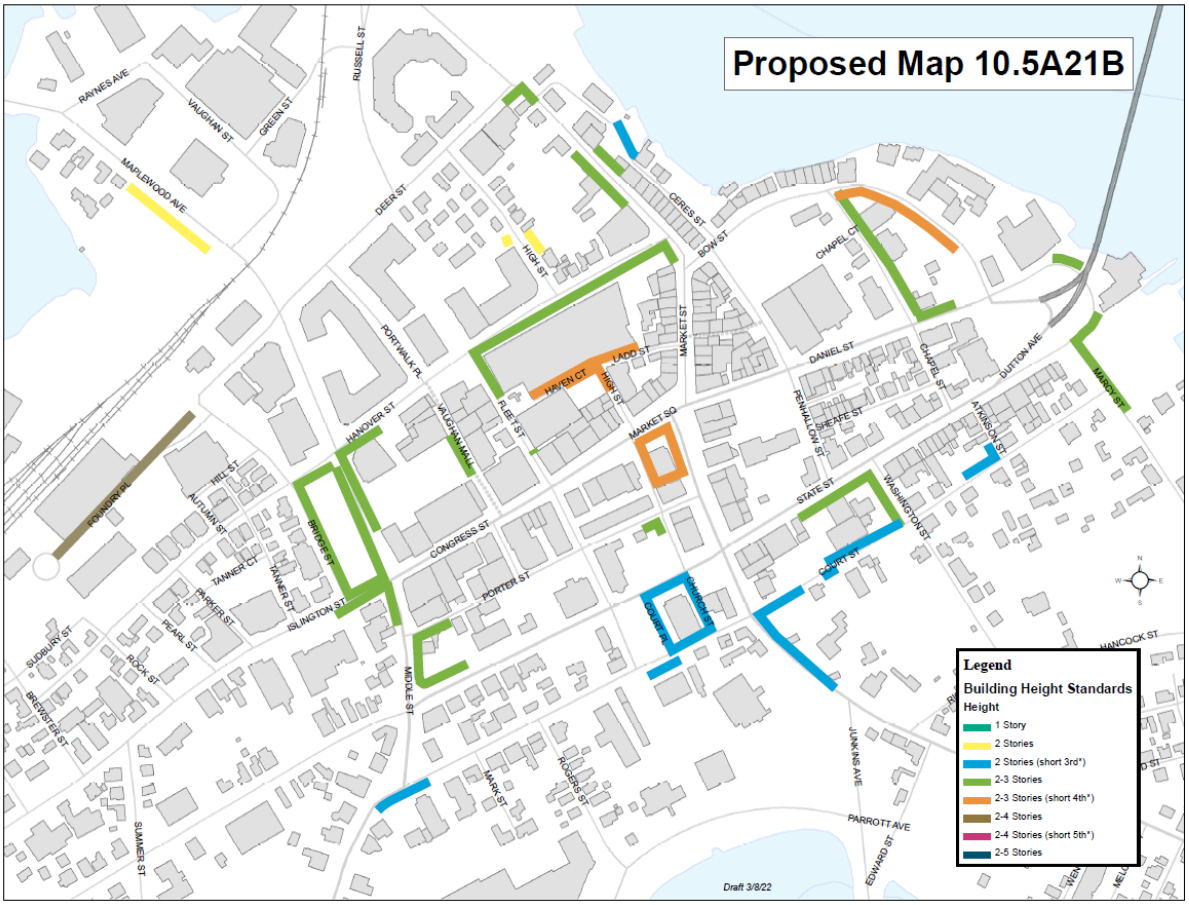
1. Map 10.5A21B Building Height Standards

a) Amend Map 10.5A21B to add Building Height Standards for Municipal and Civic Districts and modify or add Building Height Standards for:

1. High Street and Haven Court from 2-3 Stories or 40' to 2-3 Stories (short 4th) or 45 feet;
2. Foundry Place to 2 – 4 stories or 50 feet; and
3. All civic and municipal properties to match the adjacent maximum building heights.



Existing Building Height Map



Proposed Amendments to the Building Height Map

b) Amend Map 10.5A21B to correct the reference to the North End and West End Incentive Overlay Districts as follows:

The maximum building height within the North End and West End Overlay Districts may be increased pursuant to Section 10.5A4~~7~~6.

2. Building Height Standards

Amend Section 10.5A21.21 as follows:

10.5A21.21 Assignments for specific **building height** require a building to have no more than the designated maximum number of **stories** or the maximum height in feet (whichever is lower) and no less than the designated minimum number of **stories**.~~-~~ Subject to review under Section 10.630, within the Historic District, the specific **building height** may be lower than the maximum designated number of **stories** or the maximum height in feet.

Amend Section 10.5A21.21 as follows:

10.5A21.22 When a **lot** is assigned to more than one **building height** standard the **lot** shall be apportioned as follows:

(a) A **building height** standard designated along ~~the~~ either a **front lot line** or a **street** shall apply to the portion of the **lot** that is 50 feet or less from such **lot line** or **street**.
(b) A **building height** standard designated along a water body shall apply to the portion of the **lot** that is 100 feet or less from the mean high water line.
(c) More than ~~50~~ 25 feet from either a **front lot line** or a **street** and more than 100 feet from a water body, the **building height** may increase to the highest **building height** standard designated for the **lot**.
(d) Where a **lot** has less depth from the **front lot line**, **street** or water body than the required minimum distances stated above, the lowest **building height** standard for the **lot** shall be applied to the required linear distance from the **lot line**, **street** or water body.

3. Civic Districts

Amend Section 10.5A52.40 as follows:

10.5A52.40 New structures, alterations and expansions of existing structures in the Civic district shall conform to the Development Standards for the CD4 District and are exempt from the requirements of 10.5A42 and 10.5A43 provided that all uses remain civic.

4. Definitions

Amend Section 10.1530 as follows:

Lot line, front

A boundary of a **lot** that separates the **lot** from either a **street** or a public place. In the case of a **corner lot** or a **through lot** or a waterfront **lot**, the ~~**front lot line**~~**principal front yard** shall be the line bordering ~~the~~ a **street** on which the **lot** has its address. A **corner lot** or a **through lot** or a waterfront **lot** shall have ~~two~~ multiple **front lot line**s.

Public Place

A **street**, way, park, **pedestrian alleyway** or other **community space** type that provides deeded public access.

Existing Grade Plane

A reference plane representing the average existing ground level within 6 feet of the existing or proposed **building.** The existing grade plane shall be used to calculate the **Building height.**

Building height

The greatest vertical measurement between two reference points defined as follows:

(a) The lower reference point shall be the **existing grade plane** as defined herein.

(b) The upper reference point shall be any of the following:
(1) For a flat or **mansard roof**, the highest point of the roof surface;
(2) For a pitched, hip, or gambrel roof, the elevation midway between the level of the eaves and highest point of the roof. For this purpose, the "level of the eaves" shall mean the highest level where the plane of the roof intersects the plane of the outside wall on a side containing the eaves, but at no time shall this level be lower than the floor level of the uppermost **story** or **attic.**

(c) A **parapet wall**, fence, railing or similar **structure** that extends more than two feet above the roof surface shall be included in the determination of **building height**, but shall not be included if it does not extend more than two feet above the roof surface.

(d) To determine **building height**, measurements shall be taken at least every 5 feet around the entire perimeter of an existing or proposed **building**. An average is calculated from these figures and that figure shall be the **building**'s height for purposes of this Ordinance.

(See also: **existing grade plane**, **parapet wall**.)

ORDINANCE #

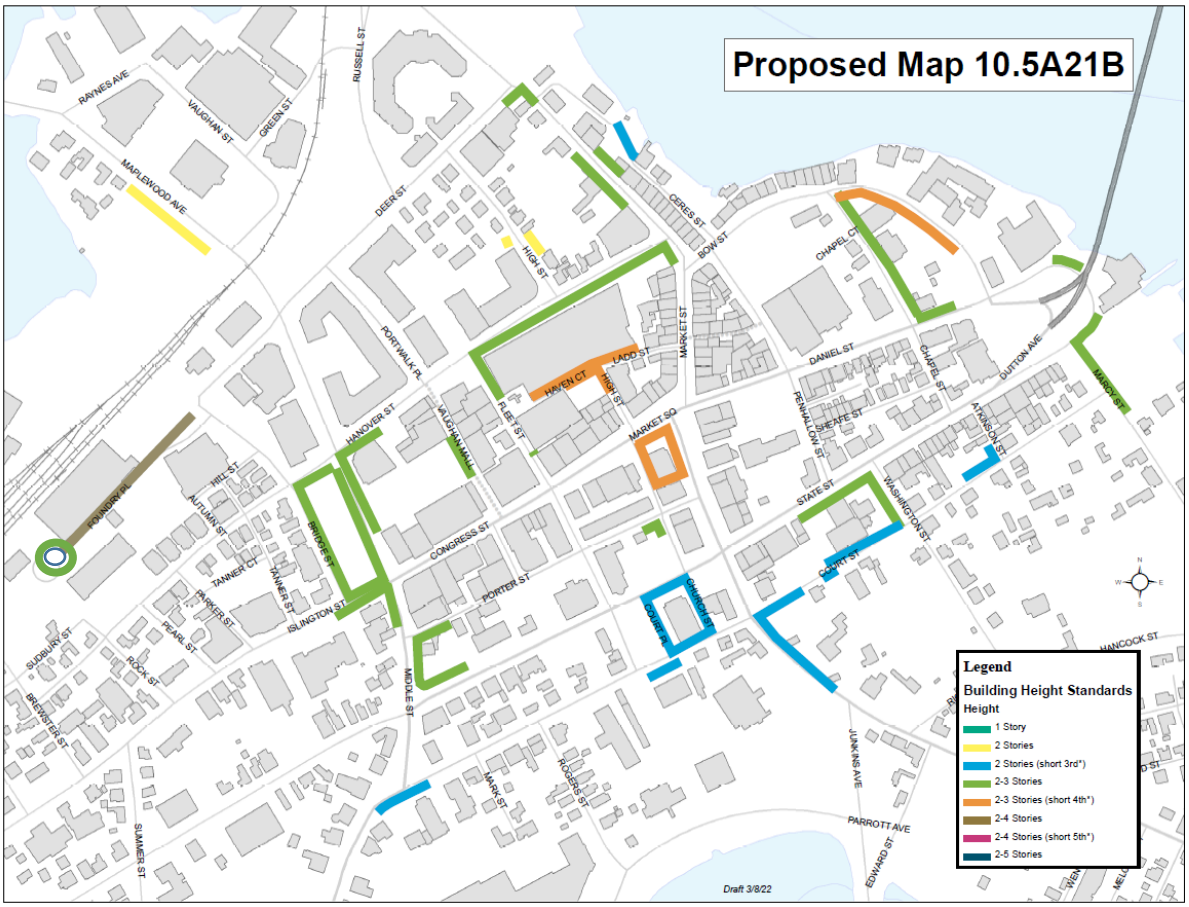
THE CITY OF PORTSMOUTH ORDAINS

That the Ordinances of the City of Portsmouth, Chapter 10 – Zoning Ordinance, be amended as follows:

Amend Article 5 – Dimensional and Intensity Standards - Section 10.5A21.10: Contents of Regulating Plan as follows (deletions from existing language ~~stricken~~; additions to existing language colored and underlined; remaining language unchanged from existing):

1) Amend Section 10.5A21B - Building Height Standards Map as follows:

a. Add the following Building Height Standards:



b. Amended the following note on Map 10.5A21B as follows:

Incentive Overlay Districts

Within the Incentive Overlay Districts, certain specified development standards, including height, density and parking, may be modified pursuant to Section 10.5A46~~7~~.

2) **Amend Article 5 - Section 10.5A21.20 - Building Height Standards (deletions from existing language ~~stricken~~; additions to existing language colored and underlined; remaining language unchanged from existing):**

a. Amend Section 10.5A21.21 as follows:

10.5A21.21 Assignments for specific **building height** require a building to have no more than the designated maximum number of **stories** or the maximum height in feet (whichever is lower) and no less than the designated minimum number of **stories**. ~~Subject to review under Section 10.630, w~~Subject to Section 10.635.70 – Review Criteria, within the Historic District, the ~~specific~~approved **building height** may be lower than the maximum designated number of **stories** or the maximum height in feet provided in Section 10.5A43.30 but shall be not lower than the minimum designated number of **stories** or the minimum height in feet provided.

b. Amend Section 10.5A21.21 as follows:

10.5A21.22 When a **lot** is assigned to more than one **building height** standard the **lot** shall be apportioned as follows:

(a) A **building height** standard designated along ~~the either~~ a **front lot line** ~~or~~ on a **street** or **public place** shall apply to the portion of the **lot** that is 50 feet or less from such **lot line** or **street** or **public place**.
(b) A **building height** standard designated along a water body shall apply to the portion of the **lot** that is 100 feet or less from the mean high water line.
(c) More than 50 feet from ~~either~~ a **front lot line** ~~or~~ on a **street** or **public place** and more than 100 feet from a water body, the **building height** may increase to the highest **building height** standard designated for the **lot**.
(d) Where a **lot** has less depth from ~~the~~ a **front lot line**, **street**, **public place** or water body than the required minimum distances stated above, the lowest **building height** standard for the **lot** shall be applied to the required linear distance from the **lot line**, **street** or **public place** or water body.

3) **Amend Article 5 – Section 10.5A50: Civic Districts (deletions from existing language stricken; additions to existing language colored and underlined; remaining language unchanged from existing):**

a. Amend Section 10.5A52.40 as follows:

10.5A52.40 New structures, alterations and expansions of existing structures in the Civic district shall conform to the Building Placement and Form Standards for Principal and Outbuildings listed in 10.5A41.10C. ~~Development Standards for the CD4 District and~~ Such uses are subject to the applicable ~~are exempt from the~~ requirements of 10.5A42 and 10.5A43 provided that all uses remain civic.

4) Amend Article 15 – Definitions - Section 10.1530: Terms of General Applicability (deletions from existing language ~~stricken~~; additions to existing language colored and underlined; remaining language unchanged from existing):

Lot line, front

A boundary of a **lot** that separates the **lot** from either a **street** or a public place. ~~In the case of a **corner lot** or a **through lot** or a waterfront **lot**, the **front lot line**~~**principal front yard** ~~shall be the line bordering the a **street** on which the **lot** has its address.~~ A **corner lot** or a **through lot** or a waterfront **lot** shall have ~~two~~ multiple **front lot line**s. In the case of a **corner lot** or a **through lot** or a waterfront **lot**, the **principal front yard** shall be the line bordering a **street** or **public place** on which the **lot** has its address.

Public place

A **street**, way, park, **pedestrian alleyway** or other **community space** type that provides ~~deeded~~ public access.

Existing grade plane

A reference plane representing the average existing ground level on the lot within 6 feet of ~~the~~an existing or proposed **building.** The existing grade plane shall be used to calculate the ~~**B**~~**building height.** When the existing ground level slopes away from existing or proposed exterior walls, the reference plan shall be established by the lowest points within the area between the **building** and the **lot line** or, when the **lot line** is more than 6 feet from the **building**, between the **building** and a point 6 feet from the **building**.

Building height

The greatest vertical measurement between two reference points defined as follows:

(a) The lower reference point shall be the **existing grade plane** as defined herein.

(b) The upper reference point shall be any of the following:
(1) For a flat or flat-topped **mansard roof**, the highest point of the roof surface;
(2) For a pitched roof, hip-topped **mansard**, or gambrel roof, the elevation midway between the level of the eaves and highest point of the roof. For this purpose, the "level of the eaves" shall mean the highest level where the plane of the roof intersects the plane of the outside wall on a side containing the eaves, but at no time shall this level be lower than the floor level of the uppermost **story** or **attic**.

(c) A **parapet wall**, fence, railing or similar **structure** that extends more than two feet above the roof surface shall be included in the determination of **building height**, but shall not be included if it does not extend more than two feet above the roof surface.

(d) To determine **building height**, measurements shall be taken at least every 5 feet around the entire perimeter of an existing or proposed **building**. An average is calculated from these figures and that figure shall be the **building**'s height for purposes of this Ordinance.

(See also: **existing grade plane**, **parapet wall**.)

May 5, 2022

Re: Planning Board Work Session – Issues Matrix on Building Height Standards

The following comments were discussed at the Planning Board Work Session held on May 5th.

Issue	Section	Suggestion
Haven Court	10.5A21.10	Consider maintaining the existing height to along the entire Newbury building
Foundry Place	10.5A21.10	Add building height to both sides of the street
Parrott Ave. and Ceres St.	10.5A21.10	Add building heights
Hill Street to Bridge Street	10.5A21.10	Consider changing to 3 Stories or 40’
Existing Grade	10.1530	Assess the impact of cuts & fills

ORDINANCE #

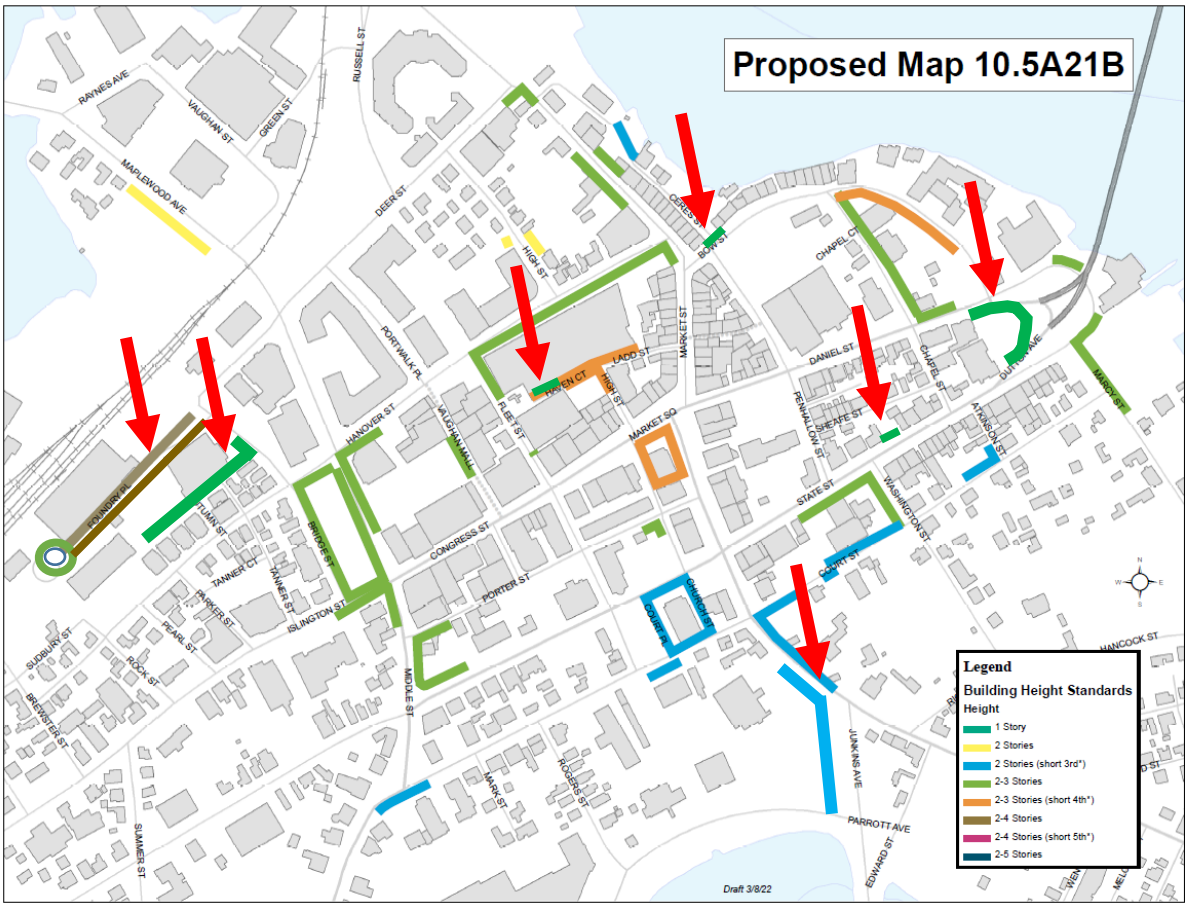
THE CITY OF PORTSMOUTH ORDAINS

That the Ordinances of the City of Portsmouth, Chapter 10 – Zoning Ordinance, be amended as follows:

Amend Article 5 – Dimensional and Intensity Standards - Section 10.5A21.10: Contents of Regulating Plan as follows (deletions from existing language ~~stricken~~; additions to existing language colored and underlined; remaining language unchanged from existing):

1) Amend Section 10.5A21B - Building Height Standards Map as follows:

a. Add the following Building Height Standards:



b. Amended the following note on Map 10.5A21B as follows:

Incentive Overlay Districts

Within the Incentive Overlay Districts, certain specified development standards, including height, density and parking, may be modified pursuant to Section 10.5A46~~7~~.

2) **Amend Article 5 - Section 10.5A21.20 - Building Height Standards (deletions from existing language ~~stricken~~; additions to existing language colored and underlined; remaining language unchanged from existing):**

a. Amend Section 10.5A21.21 as follows:

10.5A21.21 Assignments for specific **building height** require a building to have no more than the designated maximum number of **stories** or the maximum height in feet (whichever is lower) and no less than the designated minimum number of **stories**. ~~Subject to review under Section 10.630, w~~Subject to Section 10.635.70 – Review Criteria, within the Historic District, the ~~specific~~approved **building height** may be lower than the maximum designated number of **stories** or the maximum height in feet provided in Section 10.5A43.30 but shall be not lower than the minimum designated number of **stories** or the minimum height in feet provided.

b. Amend Section 10.5A21.21 as follows:

10.5A21.22 When a **lot** is assigned to more than one **building height** standard the **lot** shall be apportioned as follows:

(a) A **building height** standard designated along ~~the either~~ a **front lot line** ~~or~~ on a **street** or **public place** shall apply to the portion of the **lot** that is 50 feet or less from such **lot line** or **street** or **public place**.
(b) A **building height** standard designated along a water body shall apply to the portion of the **lot** that is 100 feet or less from the mean high water line.
(c) More than 50 feet from ~~either~~ a **front lot line** ~~or~~ on a **street** or **public place** and more than 100 feet from a water body, the **building height** may increase to the highest **building height** standard designated for the **lot**.
(d) Where a **lot** has less depth from ~~the~~ a **front lot line**, **street**, **public place** or water body than the required minimum distances stated above, the lowest **building height** standard for the **lot** shall be applied to the required linear distance from the **lot line**, **street** or **public place** or water body.

3) **Amend Article 5 – Section 10.5A50: Civic Districts (deletions from existing language stricken; additions to existing language colored and underlined; remaining language unchanged from existing):**

a. Amend Section 10.5A52.40 as follows:

10.5A52.40 New structures, alterations and expansions of existing structures in the Civic district shall conform to the Building Placement and Form Standards for Principal and Outbuildings listed in 10.5A41.10C. ~~Development Standards for the CD4 District and~~ Such uses are subject to the applicable ~~are exempt from the~~ requirements of 10.5A42 and 10.5A43 provided that all uses remain civic.

4) Amend Article 15 – Definitions - Section 10.1530: Terms of General Applicability (deletions from existing language ~~stricken~~; additions to existing language colored and underlined; remaining language unchanged from existing):

Lot line, front

A boundary of a **lot** that separates the **lot** from either a **street** or a public place. ~~In the case of a **corner lot** or a **through lot** or a waterfront **lot**, the **front lot line**~~**principal front yard** ~~shall be the line bordering the a **street** on which the **lot** has its address.~~ A **corner lot** or a **through lot** or a waterfront **lot** shall have ~~two~~ multiple **front lot line**s. In the case of a **corner lot** or a **through lot** or a waterfront **lot**, the **principal front yard** shall be the line bordering a **street** or **public place** on which the **lot** has its address.

Public place

A **street**, way, park, **pedestrian alleyway** or other **community space** type that provides ~~deeded~~ public access.

Existing grade plane

A reference plane representing the average existing ground level on the lot within 6 feet of ~~the~~an existing or proposed **building.** The existing grade plane shall be used to calculate the ~~**B**~~**building height.** When the existing ground level slopes away from existing or proposed exterior walls, the reference plan shall be established by the lowest points within the area between the **building** and the **lot line** or, when the **lot line** is more than 6 feet from the **building**, between the **building** and a point 6 feet from the **building**.

Building height

The greatest vertical measurement between two reference points defined as follows:

(a) The lower reference point shall be the **existing grade plane** as defined herein.

(b) The upper reference point shall be any of the following:
(1) For a flat or flat-topped **mansard roof**, the highest point of the roof surface;
(2) For a pitched roof, hip-topped **mansard**, or gambrel roof, the elevation midway between the level of the eaves and highest point of the roof. For this purpose, the "level of the eaves" shall mean the highest level where the plane of the roof intersects the plane of the outside wall on a side containing the eaves, but at no time shall this level be lower than the floor level of the uppermost **story** or **attic**.

(c) A **parapet wall**, fence, railing or similar **structure** that extends more than two feet above the roof surface shall be included in the determination of **building height**, but shall not be included if it does not extend more than two feet above the roof surface.

(d) To determine **building height**, measurements shall be taken at least every 5 feet around the entire perimeter of an existing or proposed **building**. An average is calculated from these figures and that figure shall be the **building**'s height for purposes of this Ordinance.

(See also: **existing grade plane**, **parapet wall**.)

Margot and Edward Thompson

Application to the City of Portsmouth for an Urbanized Shoreland Exemption

57 Salter Street, Tax Map #102, Lot #32

1. **Project Information and Location**: The project is the renovation of a building located at 57 Salter Street, Portsmouth, Tax Map #102, Lot #32. The building is Unit 1 of the Point of View Condominium. Grant of the Urbanized Shoreland Exemption will provide relief from certain requirements of the Shoreland Water Quality Protection Act and allow the Thompsons to resolve an outstanding appeal pending with the Wetlands Council. Application for this exemption is being done at the recommendation of NHDES. An application was made to the Portsmouth City Council on April 25, 2022. The full application was sent to the City Council with copy to the Planning Board. On May 2, 2022 the Council subsequently referred this matter to the Portsmouth Planning Board for a recommendation.

2. **Building and Permitting History**:

There are two buildings on the Property – a larger residence once the primary home of the Thompsons for over 32 years, and a smaller building formerly used for commercial use. The smaller commercial building was constructed in 1963 as a shop to build and repair lobster and fishing boats. The building is a two-story building consisting of approximately 640 square feet, cantilevered approximately 5 feet over the water with the majority of the building located on land, containing at the time electricity, water, wood heat and a telephone (hereinafter "Unit 1"). On June 27, 1990, the Thompsons purchased the Property, which also contained the larger residential structure they used as their primary residence (now Unit 2). In February 1991 the Thompsons appeared before the City of Portsmouth Historic District Commission ("HDC") to request permission to remediate and renovate Unit 1, and modify its use from a boat repair shop to office space. The City of Portsmouth granted that approval, and Unit 1 was renovated to add a city sanitary sewer connection. The building had existing city water, natural gas, electric and telephone service connections. At that time, Unit 1 was zoned for Waterfront Business use by the City, and there was no change in zoning use with the 1991 approval. In November 2018, the Thompsons submitted an application to the City of Portsmouth's Zoning Board of Adjustment ("ZBA") to renovate Unit 1 to convert it to residential use. The renovation included the relocation of stairs to the second level, the addition of a dormer and two 19 square foot entrance overhangs, and a change of use for the building from Waterfront Business to Residential Use. On December 18, 2018, the ZBA approved the application for these changes, including the change in use to residential. The Thompsons also received two wetlands permits issued by NHDES for the proposed renovations to Unit 1 in July 2019 (2019-01730) and July 2020 (2020-1252).

Relevant Permits:

1. Building Permit No. 4459 – April 18, 1991
2. Portsmouth Certificate of Occupancy – August 30, 1991
3. Zoning Board of Adjustment Decision Change of Use – December 18, 2018
3. Building Permit No. 35117 – August 20, 2019
4. NHDES Wetlands and Non-Site Specific Permit 2019-01730 – July 10, 2019
5. NHDES Wetlands and Non-Site Specific Permit 2020-01252 – July 20, 2020

3. **Applicable State Regulations Related to the Project:**

RSA 483-B:12 – Urbanized Shoreland Exemption – RSA 483-B:12, the City of Portsmouth may in its discretion apply for an Urbanized Shoreland Exemption for the property if it finds that "special local urbanization conditions as defined in RSA 483-B:4, XXV, exist in the protected shoreland for which the exemption is sought." See also Env-Wq 1410.02(a).

RSA 483-B:4, XXV – Definition of "Urbanization" - means the concentrated development found in the sections of towns or cities where there has been an historic pattern of intensive building for residential, commercial, industrial, or mixed uses such that it contributed to or constitutes the municipality's downtown, community center, or central business district and wherein all vegetative buffers have been depleted, impervious surfaces are in excess of 50 percent, and residential uses are of at least 10 dwelling units per acre.

RSA 482-B:26 – prohibitions on buildings over water.

RSA 483-B:9, II(b) – primary structure 50' setback from the reference line.

RSA 483-B:9, V(e) – minimum lot requirements for shoreland properties.

4. **Specific Request** - That the Planning Board recommend to the City Council to apply for an Urbanized Shoreland Exemption for Lot 32, Tax Map 102 (57 Salter Street) which will provide the Thompsons relief from the Shoreland Water Quality Protection Act allowing them to complete renovation of the building maintenance of the building as a primary residence (RSA 483-B:9 and 483-B:9). Because of the hardship that otherwise will befall the Thompsons if the application is not forwarded, the limited nature of this request, the lack of impact to the water quality of the Piscataqua River, and the other evidence submitted with the application showing the property meets the definition of urbanization, we urge the Portsmouth Planning Board to favorably recommend that the City Council approve the request and apply for an urbanized shoreland exemption for 57 Salter Street. The application is made to the NH Office of Strategic Initiatives which makes a recommendation to the Commissioner of the NH Department of Environmental Services. The Commissioner then makes a recommendation to the Governor and Governor's Executive Council which ultimately approves the exemption. Upon grant of an exemption, the Thompsons would work with NHDES to resolve the appeal and relocate the building approximately 5 feet so it is no longer located over the Piscataqua River and would resolve any conflicts with RSA 483-A:26.

Sherilyn Burnett Young
Attorney-At-Law
sby@rathlaw.com
Please reply to: Concord Office

April 25, 2022

VIA OVERNIGHT DELIVERY AND ELECTRONIC MAIL

The Honorable Mayor Deaglan McEachern
Members of the Portsmouth City Council
c/o Kelli Barnaby, City Clerk
City of Portsmouth
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

RE: Application for Urbanized Shoreland Exemption – RSA 483-B:12
Subject Property: 57 Salter Street, Portsmouth, Tax Map #102, Lot #32

Dear Mayor McEachern and City Council Members:

We write on behalf of Margot Thompson and Edward Thompson ("Thompsons") to request that the Portsmouth City Council apply for an Urbanized Shoreland Exemption pursuant to RSA 483-B:12 for the property located at 57 Salter Street, Tax Map 102, Lot 32 in the City of Portsmouth, located along the shores of the Piscataqua River (the "Property"). If granted, this would exempt the Property from the provisions of the Shoreland Water Quality Protection Act, as discussed below. The City was granted such an Exemption once before, in 2007, for Tax Parcel 106, Lot 54 at 99 Bow Street. For your information, the process to apply for an Urbanized Shoreland Exemption is as follows:

1. The Portsmouth City Council, following a public hearing, would vote to make an application for an Urbanized Shoreland Exemption to the New Hampshire Office of Strategic Initiatives ("OSI").
2. OIS reviews the application and, if approved, makes a recommendation to the Commissioner of the New Hampshire Department of Environmental Services ("NHDES").
3. If approved by NHDES Commissioner Scott, the application would then be recommended by NHDES to the Governor and Governor's Council for approval.

Should the City of Portsmouth approve this request and apply to the Planning Department of OSI, and the application is allowed, it would grant the Thompsons relief from certain requirements of the Shoreland Water Quality Protection Act and allow them to reside in their downsized home located on the Property.

Background/History

There are two buildings on the Property – a larger residence once the primary home of the Thompsons for over 32 years, and a smaller building formerly used for commercial use. The smaller commercial building was constructed in 1963 as a shop to build and repair lobster and fishing boats. The building is a two-story building consisting of approximately 640 square feet, cantilevered approximately 5 feet over the water with the majority of the building located on land, containing at the time electricity, water, wood heat and a telephone (hereinafter "Unit 1"). On June 27, 1990, the Thompsons purchased the Property, which also contained the larger residential structure they used as their primary residence (now Unit 2). In February 1991 the Thompsons appeared before the City of Portsmouth Historic District Commission ("HDC") to request permission to remediate and renovate Unit 1, and modify its use from a boat repair shop to office space. The City of Portsmouth granted that approval, and Unit 1 was renovated to add a city sanitary sewer connection. The building had existing city water, natural gas, electric and telephone service connections. At that time, Unit 1 was zoned for Waterfront Business uses by the City, and there was no change in zoning use with the 1991 approval.

In November 2018, the Thompsons submitted an application to the City of Portsmouth's Zoning Board of Adjustment ("ZBA") to renovate Unit 1 to convert it to residential use. The renovation included the relocation of stairs to the second level, the addition of a dormer and two 19 square foot entrance overhangs, and a change of use for the building from Waterfront Business to Residential Use. A copy of the set of plans submitted to the ZBA on November 28, 2018, is attached for your review. On December 18, 2018, the ZBA approved the application for these changes, including the change in use to residential.

The Thompsons also received two wetlands permits issued by NHDES for the proposed renovations to Unit 1 in July 2019 (2019-01730) and July 2020 (2020-1252). With all necessary approvals in hand, the Thompsons created the Point of View Condominium Association for 57 Salter Street (Unit 2) and 75 Salter Street (Unit 1). The Thompsons sold Unit 2 (their former primary residence) in October 2020, but retained ownership of Unit 1 to convert into their new, downsized primary residence.

In April 2021, while in the middle of the construction renovations, the Thompsons were informed by NHDES that they were in violation of the Wetlands Act (RSA 482-B) and Shoreland Water Quality Protection Act (RSA 483-B) related to their conversion of the building to residential use. On August 20, 2021, NHDES issued an Administrative Order alleging a violation of the Wetlands Act because the residence (Unit 1) was located over State waters, and violations of the Shoreland Protection Act because the residence was located within 50 feet of the shoreline and the two-unit condominium violated the minimum shorefront

requirements[1]. The Thompsons filed a Notice of Appeal in September 2021 with the Wetlands Council.

The Wetlands Council accepted the Appeal (with the agreement of the State), and the appeal is currently stayed pending this application to the City of Portsmouth[2]. If the City finds that an application for an Urbanized Shoreland Exemption is warranted and the application is ultimately approved, then the Thompsons plan to pull the structure back 5 feet so it is no longer over water, eliminating any Wetlands Act violation, and will be exempt from the Shoreland Protection Act requirement for the 50-foot setback for a primary residence as well as the minimum shorefront requirements for the two-Unit Condominium Association. This would also resolve the pending appeal with NHDES. Once the appeal is resolved, the Thompsons will then work diligently with the City of Portsmouth Planning and Inspections Departments to revise the permit and complete renovations of their downsized Unit 1 home.

The Thompsons conversion of Unit 1 to their home is part of an overarching retirement plan whereby the Thompsons would create the 2-unit condominium, sell their Unit 2 larger residence, "downsize" their residence into the Unit 1 structure, and use the proceeds from the sale of Unit 2 for the renovations to Unit 1 and their retirement. Prior to being notified by NHDES of the alleged violations of the Wetlands and Shoreland Acts, the Thompsons had spent in excess of $382,000 on this project. Their plan is to remain in the same neighborhood in Portsmouth, where they have raised three children, and where they have many friends and neighbors which they have cultivated over the past 40 years, including 8 years on Pickering Street and later 32 years on Salter Street. The Thompsons are active members in the community and participated in local non-profits, including service on the Boards of the Strawbery Banke and Portsmouth Children's Museum. They are deeply committed to remaining in Portsmouth, but currently find themselves unable to afford the purchase of a suitable alternative residence in the City.

Discussion

Pursuant to RSA 483-B:12, the City of Portsmouth may in its discretion apply for an Urbanized Shoreland Exemption for the property if it finds that "special local urbanization conditions as defined in RSA 483-B:4, XXV, exist in the protected shoreland for which the exemption is sought." See also Env-Wq 1410.02(a).

RSA 483-B:4, XXV states that:

[1] The minimum shorefront requirements under the Shoreland Protection Act require XX feet of frontage for each residential lot. The Property has a total of YY feet of frontage.
[2] In fact, the NHDES suggested that the Thompsons pursue an Urbanized Shoreland Exemption for possible resolution of this matter.

> "Urbanization" means the concentrated development found in the sections of towns or cities where there has been an historic pattern of intensive building for residential, commercial, industrial, or mixed uses such that it contributed to or constitutes the municipality's downtown, community center, or central business district and wherein all vegetative buffers have been depleted, impervious surfaces are in excess of 50 percent, and residential uses are of at least 10 dwelling units per acre.

In support of a finding that those special local urbanization conditions exist for the grant of an Urbanized Shoreland Exemption, the City must submit evidence to the NHDES of existing and historical patterns of building and development in the protected shoreland in demonstration of the special local urbanization conditions. Such evidence shall address:

(a) Current and past building density.
(b) Commercial, industrial, or residential uses.
(c) Municipal or other public utilities.
(d) Current municipal land use regulations which affect the protected shoreland.
(e) Designation as a downtown, community center, central business district, or urbanized area or urban cluster as delineated by the United States Census Bureau.
(f) Any other information which the commissioner may reasonably require.

(a). Current and past building density, lack of vegetated buffers and impervious area.

As stated above, Unit 1 was formerly a commercial boat repair shop and later converted into an office. The property and lot are currently located within the Waterfront Business District which does not have minimum density requirements for residential uses (which are either grandfathered or allowed by variance). As shown on Attachment A, there is a historic pattern of residential development in the Waterfront Business District and vicinity of the Property including ten units within 1 acre. Most of the homes adjacent to the Property and in the area were built in the 18th and 19th centuries on small lots.

In addition, both the Property and surrounding properties were built right on the water's edge with retaining walls, so there are no vegetative barriers between the properties and the Piscataqua River. See Attachment B and Attachment C. As of 2020, the impervious area for the Property was previously 57% of the property and that was reduced to 52% due to the improvements by the Thompsons. Even with the reduction of impervious area and improvements to stormwater runoff from the site, the Property exceeds the 50% impervious area threshold of the statute. See Attachments A and C.

A total of 33 residential homes are visible from the shoreline of the Property, along with the Naval Shipyard and 2 other dock buildings attached to nearby properties along the

Piscataqua River. Photographs of the views of these properties from the shoreline of the Property are included as Attachment B. In addition, please see photographs demonstrating the past and current condition of Unit 1 in Attachment D.

(b). Commercial, industrial or residential uses allowed.

The Waterfront District is currently zoned to accommodate and support business uses that depend upon the ocean or the Piscataqua River for transportation or resources. See City of Portsmouth Zoning Ordinance, Article 10, §10.410. As stated above, the Property has previously been used for mixed commercial and residential uses and is consistent with the mix of residential and commercial buildings in the area. In December 2018, the Thompsons did receive a variance granted by the ZBA to convert Unit 1 from a commercial to residential use. Work was also approved by the Historic District Commission on February 6, 2019.

(c). Municipal or other public utilities.

As stated above and as shown on the 2018 plans submitted to the ZBA, both Units 1 and 2 are currently served by municipal water and sewer provided by the City of Portsmouth, as well as natural gas services, electrical and telephone. See Attachment E. This is particularly relevant because there are no septic systems that could leach or discharge to the Piscataqua from use of either Unit 1 or Unit 2 on the property. The use of Unit 1 as a primary residence will have no impact to the water quality of the River.

(d). Current municipal land use regulations which affect the protected shoreland.

The Property is located at Tax Map 102, Lot 32 which is governed by the City of Portsmouth's Zoning Ordinance Article 10, as amended on January 11, 2021. A copy of the City of Portsmouth Zoning Maps are attached for your review. See Attachment F. As shown on Attachment F. the Property also falls within the Historical District subject to review under Zoning Code Article 6, Sections 630 – 637. The Property is also located within the Flood Plain District, specifically Flood Zone AE, as shown on Attachment G, subject to Zoning Code Article 6, Sections 620 – 10.629. Finally, any development at the Property and shoreland is subject to review by the Portsmouth Conservation Commission pursuant to Zoning Code Article 10, Sections 1010 – 1018 because it is situated along the Piscataqua River.

(e). Designation as a downtown, community center, central business district, or urbanized area or urban cluster as delineated by the United States Census Bureau.

The property is located within the Waterfront Business district and is also located within an urban cluster as shown on the attached Urbanized Area Reference Map, dated March 8, 2012 prepared by the United States Census Bureau, utilizing 2010 Census data. See

Attachment H. An "urban cluster" is defined as an area of at least 2,500 and less than 50,000 people by the 2010 U.S. Census Urban and Rural Classification and Urban Areas Criteria[3].

(f). Clearly Defined Map with Boundaries

Attached hereto is a copy of the City of Portsmouth's Assessing Department Tax Map 102, Lot 32, showing the clear boundaries of the Property that the Thompsons seek for a Shoreland Exemption. See Attachment I. The Thompsons ask that the Shoreland Exemption be limited to only Lot 32 as shown on Map 102. Please also see the aerial photograph of the Property showing both Unit 1 and Unit 2 from Google Maps dated 2022. See Attachment J.

Conclusion

Because of the hardship that otherwise will befall the Thompsons, the limited nature of this request, the lack of impact to the water quality of the Piscataqua River, and the other evidence we've submitted, we urge the Portsmouth City Council to find that the property meets the special local urbanization conditions and is eligible for an application for an Urbanized Shoreland Exemption. We ask that you please submit this request on the agenda for consideration by the City Council at the next meeting on May 2, 2022. We plan to present these materials and answer any questions that the Council may have at that meeting.

Thank you for your consideration and attention to this request. If you have any questions, please don't hesitate to contact me by phone or email.

Very truly yours,

Sherilyn Burnett Young

SBY/smw

[3] To qualify as an urban area, the territory identified according to criteria must encompass at least 2,500 people, at least 1,500 of which reside outside institutional group quarters. The Census Bureau identifies two types of urban areas: (1) Urbanized Areas (UAs) of 50,000 or more people; and (2) Urban Clusters (UCs) of at least 2,500 and less than 50,000 people. 2010 Census Urban and Rural Classification and Urban Area Criteria.

Enc.
Cc: Margot and Edward Thompson (via electronic mail)
Karen S. Conard, City Manager (via electronic mail)
Shanti Wolph, Chief Building Inspector (via electronic mail)
Beverly Zendt, Planning Director (via electronic mail)
Assistant City Attorney Jane Ferrini (via electronic mail)

EXHIBIT A

Thompson Application for Urbanized Shoreland Exemption

Evidence of Urbanization

Thompson Shoreland Urban Exemption Application

Evidence of Urbanization

1. Building Density – Analysis of the residential buildings within the Waterfront Business District adjacent to and in the vicinity of 57 Salter Street show a density of 10 residential units per 1 acre. Specifically, the following properties demonstrate a historic pattern of density where homes in the area were typically built during the 18th and 19th centuries:

Residential Unit	Map and Lot	Number of Units	Designated Use	Year Built	Acreage*
1. 57 Salter Street	Map 102, Lot 32	2	Condominium	1720	.25 acres
2. 35 Salter Street	Map 102, Lot 29	1	Single Family	1886	.13 acres
3. 41 Salter Street	Map 102, Lot 30	1	Single Family	1820	.07 acres
4. 53 Salter Street	Map 102, Lot 31	1	Single Family	1720	.12 acres
5. 56 Salter Street	Map 102, Lot 33	1	Single Family	1780	.10 acres
6. 39 Pray Street	Map 102, Lot 38	1	Single Family	1760	.12 acres
7. 43 Pray Street	Map 102, Lot 39	1	Single Family	1750	.05 acres
8. 53 Pray Street	Map 102, Lot 40	1	Single Family	1750	.10 acres
9. 39 Partridge Street	Map 101, Lot 6	1	Single Family	1900	.06 acres
	Total Units	10		Total Acreage	1.00

*****Acreage per City of Portsmouth Assessing Office

2. Impervious Area – The subject parcel at 57 Salter Street contains more than 50% impervious area. Even after approved improvements to the site, the impervious area will be 52.4%. This is shown on the table below taken from a plan submitted to NHDES for the Thompson's application for Wetlands Permit No. 2020-01252. A copy of the plan dated April 20, 2020 is also submitted with this application.

IMPERVIOUS SURFACE AREAS
(TO PROPERTY LINE)
ENTIRE PROPERTY IS IN THE
TIDAL BUFFER & SHORELAND ZONE

STRUCTURE	PRE– CONSTRUCTION IMPERVIOUS (S.F.)	POST– CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	2,000	2,000
CONCRETE	43	43
SHED	216	216
BULKHEAD	30	30
PAVED DRIVE	1,431	945
DECK & PATIO	902	902
STAIRS	237	247
COBBLESTONE	372	246
STONE EDGING	23	95
GRAVEL	143	143
RETAINING WALLS	270	270
PIER (ABOVE MHW)	138	101
CURB/STONE SLAB	18	18
STONE SEAWALL	287	287
ACCESSORY STRUCTURE	352	388
TOTAL	6,462	5,931
LOT SIZE	11,327	11,327
% LOT COVERAGE	57.0%	52.4%

EXHIBIT B

Thompson Application for Urbanized Shoreland Exemption

Photographs of Buildings Visible from the Shoreline

Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



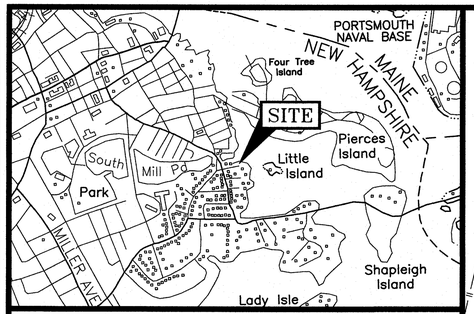
Photographs Demonstrating the View of Homes and Buildings from the Shoreline – 57 Salter Street, Portsmouth



EXHIBIT C

Thompson Application for Urbanized Shoreland Exemption

NHDES Permit Plan C2 – Impervious Area



LOCATION MAP SCALE 1"=1,000'

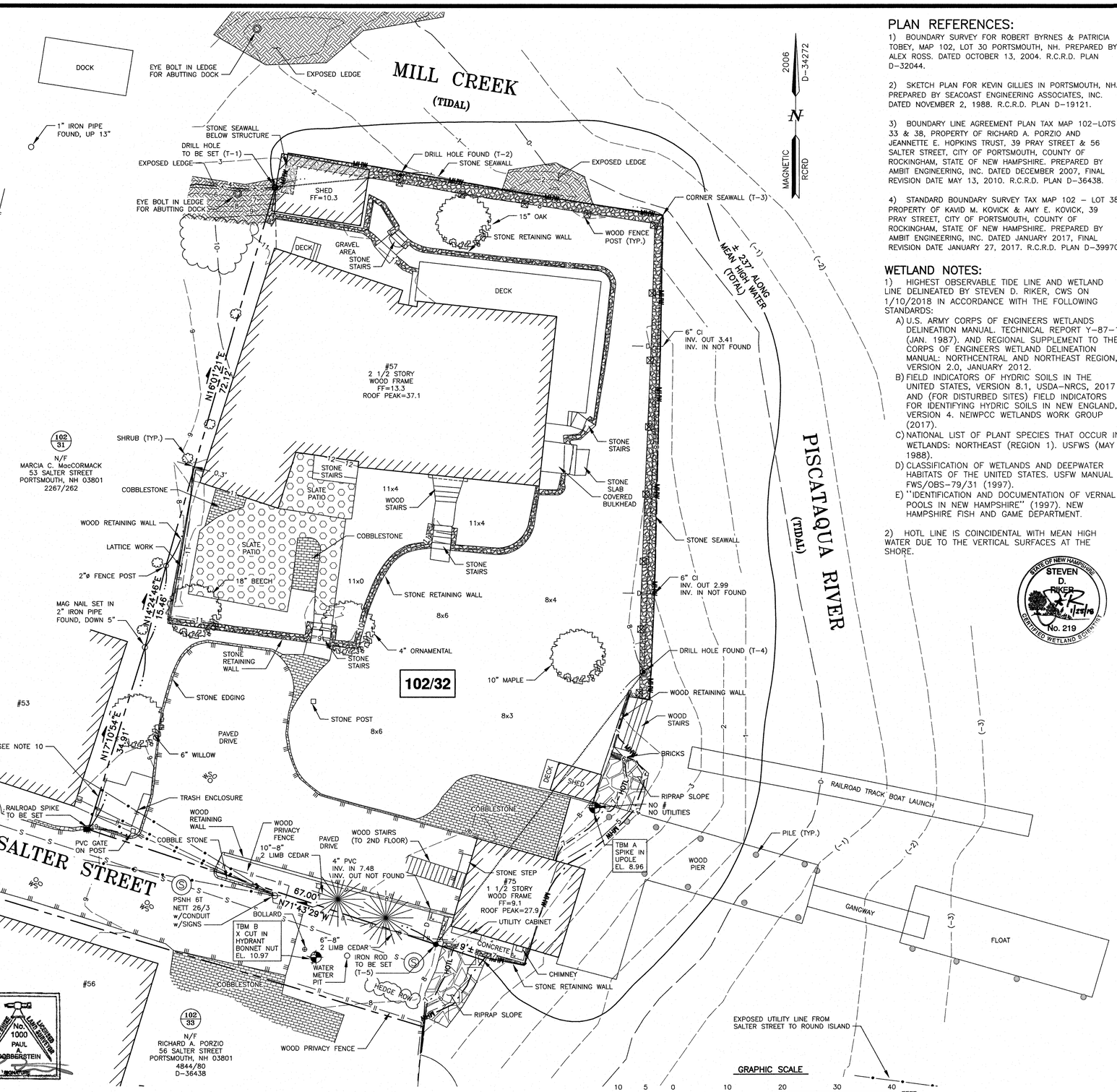
LEGEND:

EXISTING

N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
RCRD		ROCKINGHAM COUNTY REGISTRY OF DEEDS
11/27		MAP 11 / LOT 21
RR SPK FND	RR SPK SET	RAILROAD SPIKE FOUND/SET
IR FND	IR SET	IRON ROD FOUND/SET
IP FND	IP SET	IRON PIPE FOUND/SET
DH FND	DH SET	DRILL HOLE FOUND/SET
NHHB FND		NHDOT BOUND FOUND
TB FND		TOWN BOUND FOUND
BND w/DH	BND w/DH	BOUND w/ DRILL HOLE
ST BND w/DH	ST BND w/DH	STONE BOUND w/DRILL HOLE
HOTL		HIGHEST OBSERVABLE TIDE LINE
		WETLAND LINE
100		OVERHEAD ELECTRIC/WIRES
97x3		CONTOUR
		SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
HYD		UTILITY POLE (w/ GUY)
		HYDRANT
GWE		METER (GAS, WATER, ELECTRIC)
AC		AIR CONDITIONER UNIT
		SIGNS
A-1		EDGE OF WETLAND FLAGGING
		SWAMP / MARSH
CMP		CORRUGATED METAL PIPE
PVC		POLYVINYL CHLORIDE PIPE
RCP		REINFORCED CONCRETE PIPE
EL.		ELEVATION
EP		EDGE OF PAVEMENT
F.F.		FINISHED FLOOR
INV.		INVERT
TBM		TEMPORARY BENCHMARK
TYP.		TYPICAL
LSA		LANDSCAPED AREA

TIE LINES FOR CLOSURE– NOT BOUNDARY LINES

LINE SEGMENT	BEARING	DISTANCE
T–1 TO T–2	N84°15'47"E	23.07'
T–2 TO T–3	S81°21'44"E	48.56'
T–3 TO T–4	S02°22'38"W	83.80'
T–4 TO T–5	S37°13'44"W	62.71'



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.

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. 1000 PAUL A. DOBBERSTEIN LICENSED LAND SURVEYOR SIGNATURE

PAUL A. DOBBERSTEIN, LLS #1000

1/25/2018
DATE

PLAN REFERENCES:

1) BOUNDARY SURVEY FOR ROBERT BYRNES & PATRICIA TOBEY, MAP 102, LOT 30 PORTSMOUTH, NH. PREPARED BY ALEX ROSS. DATED OCTOBER 13, 2004. R.C.R.D. PLAN D–32044.

2) SKETCH PLAN FOR KEVIN GILLIES IN PORTSMOUTH, NH. PREPARED BY SEACOAST ENGINEERING ASSOCIATES, INC. DATED NOVEMBER 2, 1988. R.C.R.D. PLAN D–19121.

3) BOUNDARY LINE AGREEMENT PLAN TAX MAP 102–LOTS 33 & 38, PROPERTY OF RICHARD A. PORZIO AND JEANNETTE E. HOPKINS TRUST, 39 PRAY STREET & 56 SALTER STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE. PREPARED BY AMBIT ENGINEERING, INC. DATED DECEMBER 2007, FINAL REVISION DATE MAY 13, 2010. R.C.R.D. PLAN D–36438.

4) STANDARD BOUNDARY SURVEY TAX MAP 102 – LOT 38, PROPERTY OF KAVID M. KOVICK & AMY E. KOVICK, 39 PRAY STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE. PREPARED BY AMBIT ENGINEERING, INC. DATED JANUARY 2017, FINAL REVISION DATE JANUARY 27, 2017. R.C.R.D. PLAN D–39970.

WETLAND NOTES:

1) HIGHEST OBSERVABLE TIDE LINE AND WETLAND LINE DELINEATED BY STEVEN D. RIKER, CWS ON 1/10/2018 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
- A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. TECHNICAL REPORT Y–87–1 (JAN. 1987). AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
- B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.1, USDA–NRCS, 2017 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEIWPCC WETLANDS WORK GROUP (2017).
- C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).
- D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS–79/31 (1997).
- E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.

2) HOTL LINE IS COINCIDENTAL WITH MEAN HIGH WATER DUE TO THE VERTICAL SURFACES AT THE SHORE.

STATE OF NEW HAMPSHIRE STEVEN D. RIKER 1/25/18 No. 219 CERTIFIED WETLAND SCIENTIST

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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH, NH, ASSESSOR'S MAP 102 AS LOT 32.

2) OWNER OF RECORD:
MARGOT L. THOMPSON
57 SALTER STREET
PORTSMOUTH, NH 03801
2959/811

3) PARCEL IS IN A SPECIAL FLOOD HAZARD AREA (ZONE AE, EL. 9) AS SHOWN ON FIRM PANEL 33015C0278E. EFFECTIVE DATE MAY 17, 2005.

4) EXISTING LOT AREA: (TO MEAN HIGH WATER)
11,327 S.F. ±
0.2600 ACRE ±

5) PARCEL IS LOCATED IN (GRB) GENERAL RESIDENCE B AND THE HISTORIC DISTRICT.

6) DIMENSIONAL REQUIREMENTS:
MIN. LOT AREA: 5,000 SQ. FT.
FRONTAGE: 80 FT.
SETBACKS:
FRONT 5 FT.
SIDE 10 FT.
REAR 25 FT.
MAXIMUM STRUCTURE HEIGHT: 35 FT.
MAXIMUM STRUCTURE COVERAGE: 30%
MINIMUM OPEN SPACE: 25%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF A STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY OF TAX MAP 102 LOT 32.

8) VERTICAL DATUM IS MEAN SEA LEVEL NGVD 1929. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS (±0.2').

9) MEAN HIGH WATER (MHW) LINE AS SHOWN IS BASED ON NOAA TIDE STATION 8419870 – SEAVEY ISLAND, PORTSMOUTH HARBOR. MHW LINE IS AT ELEVATION 4.59.

10) PARCEL IS SUBJECT TO AND BENEFITS FROM "A RIGHT TO USE, IN COMMON WITH SAID SCHLEGEL THE GATEWAY ON SALTER STREET, WHICH GATEWAY IS PARTLY ON EITHER SIDE OF SAID STRAIGHTENED BOUNDARY LINE." LAND OF SCHLEGEL IS NOW LAND OF MacCORMACK. SEE RCRD 676/123.

11) LOT IS ENTIRELY WITHIN THE 100' TIDAL BUFFER ZONE.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	1/25/18

REVISIONS

STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY TAX MAP 102 – LOT 32

OWNER

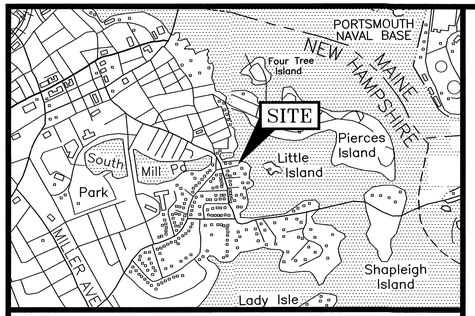
MARGOT L. THOMPSON

57 SALTER STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE 1"=10' JANUARY 2018

FB 332 PG 31 2858

J:\JOBS\MJOMAP\MJOMAP.DWG\MJOMAP.DWG 1/25/2018 3:24:59 PM, HP Designjet T1300 (4PG).pc3



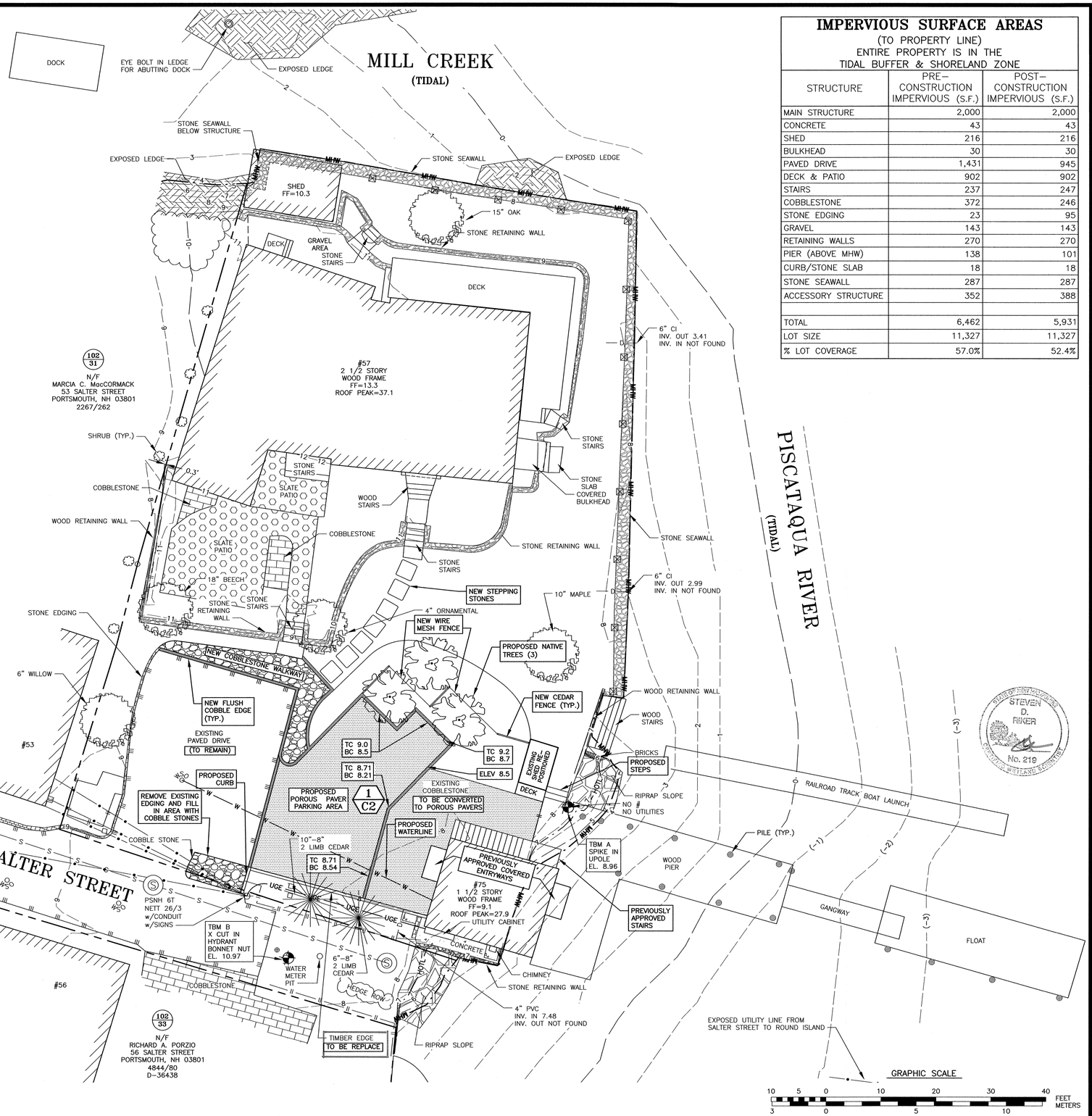
LOCATION MAP SCALE 1"=1,000'

LEGEND:

EXISTING

N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
RCRD		ROCKINGHAM COUNTY REGISTRY OF DEEDS MAP 11 / LOT 21
11/21		
RR SPK FND	RR SPK SET	RAILROAD SPIKE FOUND/SET
IR FND	IR SET	IRON ROD FOUND/SET
IP FND	IP SET	IRON PIPE FOUND/SET
DH FND	DH SET	DRILL HOLE FOUND/SET
NHHB FND		NHDOT BOUND FOUND
TB FND		TOWN BOUND FOUND
BND w/DH	BND w/DH	BOUND w/ DRILL HOLE
ST BND w/DH	ST BND w/DH	STONE BOUND w/DRILL HOLE
		UNDERGROUND ELECTRIC
		OVERHEAD ELECTRIC/WIRES
100		CONTOUR
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
1		PHOTO LOCATIONS
25 x		SPOT ELEVATION

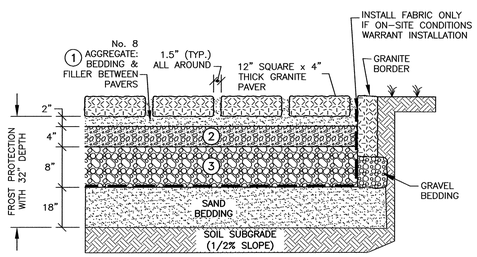
2006 D-34272 N MAGNETIC RCRD



ASTM D 448 GRADATION TABLE

①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85–100	1" (25mm)	95–100	2.5" (63mm)	90–100
No. 4 (4.75mm)	10–30	1/2" (12.5mm)	25–60	2" (50mm)	35–70
No. 8 (2.36mm)	0–10	No. 4 (4.75mm)	0–10	1.5" 37.5mm)	0–15
No. 16 (1.16mm)	0–5	No. 8 (2.36mm)	0–5	3/4" (19mm)	0–5

NOTES:
1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO-STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.



1 C2 POROUS PAVER SECTION
12" SQUARE GRANITE PAVERS OR APPROVED EQUAL NTS

IMPERVIOUS SURFACE AREAS

(TO PROPERTY LINE)
ENTIRE PROPERTY IS IN THE TIDAL BUFFER & SHORELAND ZONE

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	2,000	2,000
CONCRETE	43	43
SHED	216	216
BULKHEAD	30	30
PAVED DRIVE	1,431	945
DECK & PATIO	902	902
STAIRS	237	247
COBBLESTONE	372	246
STONE EDGING	23	95
GRAVEL	143	143
RETAINING WALLS	270	270
PIER (ABOVE MHW)	138	101
CURB/STONE SLAB	18	18
STONE SEAWALL	287	287
ACCESSORY STRUCTURE	352	388
TOTAL	6,462	5,931
LOT SIZE	11,327	11,327
% LOT COVERAGE	57.0%	52.4%

AMBIT ENGINEERING, INC.
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NOTES:

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11,327 S.F. ±
0.2600 ACRE ±

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6) DIMENSIONAL REQUIREMENTS:
MIN. LOT AREA: 5,000 SQ. FT.
FRONTAGE: 80 FT.
SETBACKS:
FRONT 5 FT.
SIDE 10 FT.
REAR 25 FT.
MAXIMUM STRUCTURE HEIGHT: 35 FT.
MAXIMUM STRUCTURE COVERAGE: 30%
MINIMUM OPEN SPACE: 25%

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE IMPROVEMENTS ON TAX MAP 102 LOT 32.

8) 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.

9) 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.

10) 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).

11) VERTICAL DATUM IS MEAN SEA LEVEL NGVD 1929. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GPS OBSERVATIONS (±0.2').

12) MEAN HIGH WATER (MHW) LINE AS SHOWN IS BASED ON NOAA TIDE STATION 8419870 – SEAVEY ISLAND, PORTSMOUTH HARBOR. MHW LINE IS AT ELEVATION 4.59.

STATE OF NEW HAMPSHIRE STEVEN D. PARKER No. 219 CERTIFIED WETLAND SCIENTIST

THOMPSON RESIDENCE
57 SALTER STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
2	REVISED UTILITIES	4/29/20
1	ISSUED FOR PERMITTING	4/10/20
0	ISSUED FOR APPROVAL	3/5/20

REVISIONS

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

SCALE: 1"=10' MARCH 2020

NHDES PERMIT PLAN

C2

FB 332 PG 31

2858

J:\JOBS2\N2800's\JN 2850's\JN 2858\2017 Accessory Dwelling Unit\Plans & Specs\Site\2858 SITE 2018.dwg, C2

EXHIBIT D

Thompson Application for Urbanized Shoreland Exemption

Photographs of Unit 1 – Past and Current Conditions

Pictures of Unit 1 at Salter Street – Circa 1990







Picture of Unit 1 at Salter Street – Circa 1994



Picture of Unit 1 at Salter Street – Circa 2021



Picture of 57 Salter Street – Units 1 and 2 – Circa 2021



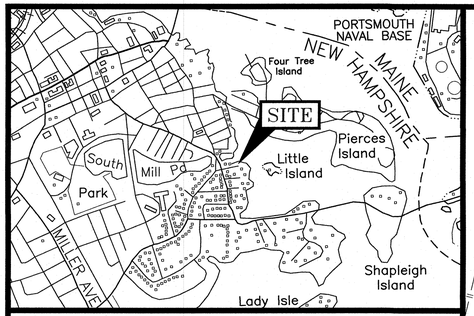
Picture of Unit 2 – 57 Salter Street – Circa 2021



EXHIBIT E

Thompson Application for Urbanized Shoreland Exemption

November 28, 2018 Variance Application Plans

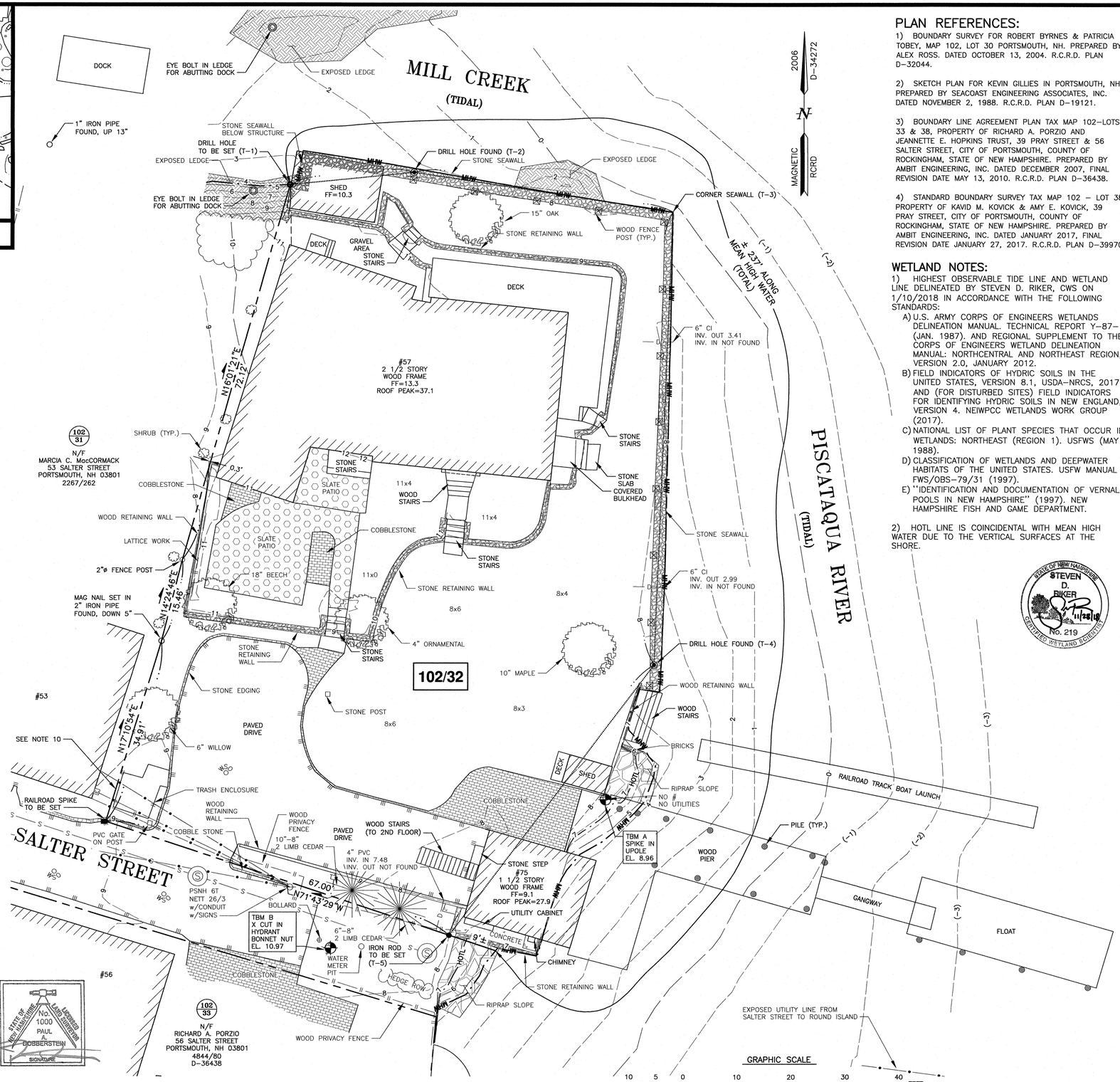


LOCATION MAP SCALE 1"=1,000'

LEGEND:

EXISTING

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TYP.		TYPICAL
LSA		LANDSCAPED AREA



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STATE OF NEW HAMPSHIRE No. 1000 PAUL A. DOBBERSTEIN LICENSED LAND SURVEYOR SIGNATURE

PAUL A. DOBBERSTEIN, LLS #1000 — DATE 11/28/2018

PLAN REFERENCES:

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WETLAND NOTES:

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STATE OF NEW HAMPSHIRE STEVEN D. RIKER 11/28/18 No. 219 CERTIFIED WETLAND SCIENTIST

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NOTES:

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11,327 S.F. ±
0.2600 ACRE ±

5) PARCEL IS LOCATED IN THE WATERFRONT BUSINESS (WB) AND THE HISTORIC DISTRICT.

6) DIMENSIONAL REQUIREMENTS:
MIN. LOT AREA: 20,000 SQ. FT.
FRONTAGE: 100 FT.
SETBACKS:
FRONT 30 FT.
SIDE 30 FT.
REAR 20 FT.
MAXIMUM STRUCTURE HEIGHT: 35 FT.
MAXIMUM STRUCTURE COVERAGE: 30%
MINIMUM OPEN SPACE: 20%

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11) LOT IS ENTIRELY WITHIN THE 100' TIDAL BUFFER ZONE.

BUILDING RENOVATION THOMPSON RESIDENCE 57 SALTER STREET PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED PER COMMENTS	11/28/18
0	ISSUED FOR COMMENT	11/27/18

REVISIONS

SCALE 1"=10' NOVEMBER 2018

EXISTING CONDITIONS PLAN — **C1**

FB 322 PG 31 — 2858

LEGEND:

EXISTING

N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
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IP FND	IP SET	IRON PIPE FOUND/SET
DH FND	DH SET	DRILL HOLE FOUND/SET
NHHB FND		NHDOT BOUND FOUND
TB FND		TOWN BOUND FOUND
BND w/DH	BND w/DH	BOUND w/ DRILL HOLE
ST BND w/DH	ST BND w/DH	STONE BOUND w/DRILL HOLE
HOTL		HIGHEST OBSERVABLE TIDE LINE
		WETLAND LINE
		OVERHEAD ELECTRIC/WIRES
100		CONTOUR
97x3		SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
		UTILITY POLE (w/ GUY)
HYD		HYDRANT
G W E		METER (GAS, WATER, ELECTRIC)
AC		AIR CONDITIONER UNIT
		SIGNS
A-1		EDGE OF WETLAND FLAGGING
		SWAMP / MARSH
CMP		CORRUGATED METAL PIPE
PVC		POLYVINYL CHLORIDE PIPE
RCP		REINFORCED CONCRETE PIPE
EL.		ELEVATION
EP		EDGE OF PAVEMENT
F.F.		FINISHED FLOOR
INV.		INVERT
TBM		TEMPORARY BENCHMARK
TYP.		TYPICAL
LSA		LANDSCAPED AREA

STRUCTURE COVERAGE AREAS
(TO PROPERTY LINES)

STRUCTURE	PRE–CONSTRUCTION COVERAGE (S.F.)	POST–CONSTRUCTION COVERAGE (S.F.)
MAIN STRUCTURE	2,000	2,000
BOAT HOUSE*	259	278
SHEDS	209	209
DECK & STAIRS	551	577
TOTAL	3,019	3,064
AREA OF LOT	11,327	11,327
% LOT COVERAGE	26.7%	27.1%

*THE PORTION OF THE BOAT HOUSE THAT IS OVER THE PROPERTY LINE (MEAN HIGH WATER) IS 86 S.F. TOTAL BOAT HOUSE FOOTPRINT IS 345 S.F.

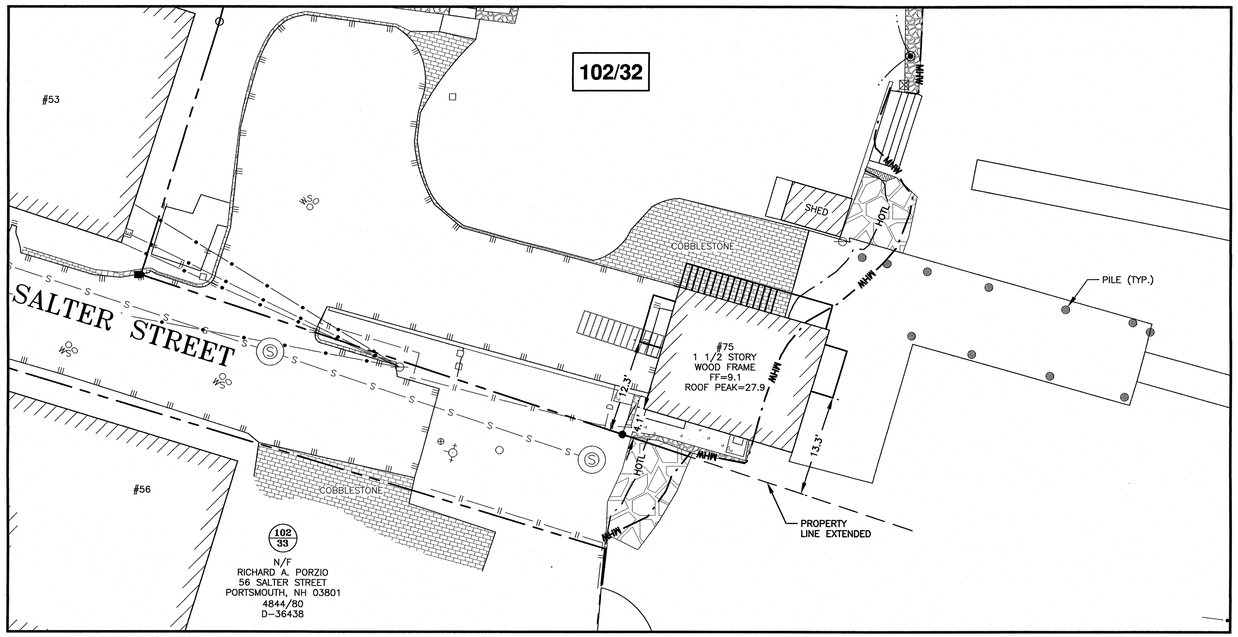
"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

PAUL A DOBBERSTEIN, LLS — DATE 11/28/2018

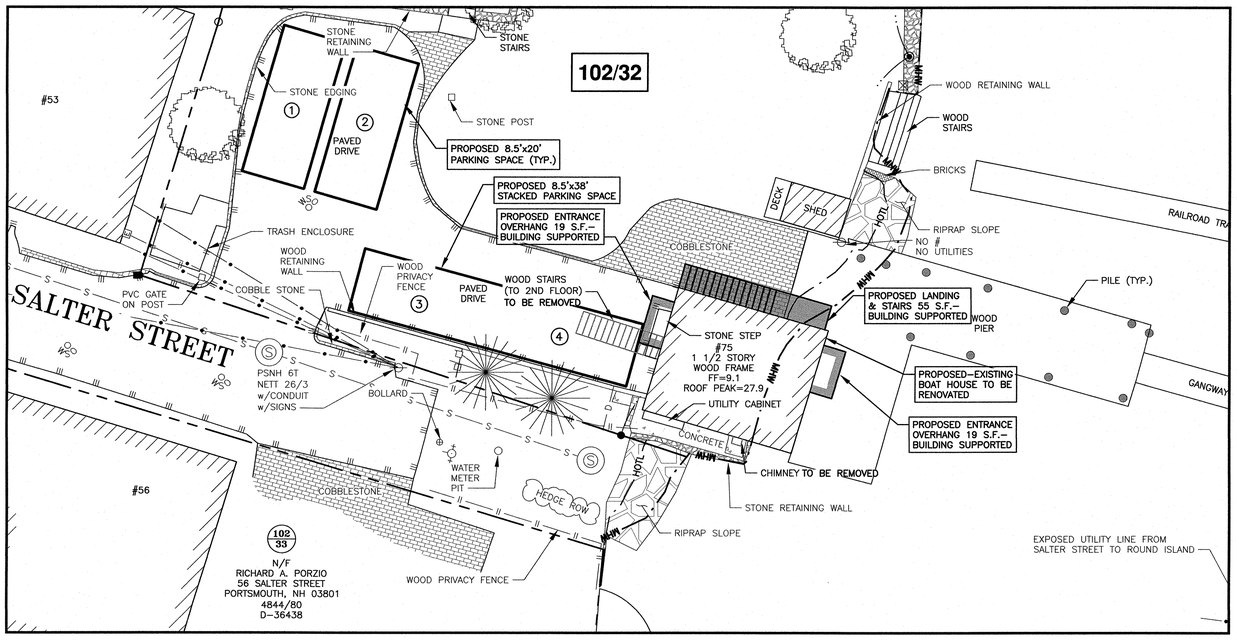
STATE OF NEW HAMPSHIRE — No. 1000 — PAUL A. DOBBERSTEIN — LICENSED LAND SURVEYOR — SIGNATURE

APPROVED BY THE PORTSMOUTH ZONING BOARD

CHAIRMAN — DATE



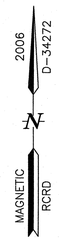
SETBACK PLAN



SITE PLAN

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS



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

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH, NH, ASSESSOR'S MAP 102 AS LOT 32.

2) OWNER OF RECORD:
MARGOT L. THOMPSON
57 SALTER STREET
PORTSMOUTH, NH 03801
2959/811

3) PARCEL IS IN A SPECIAL FLOOD HAZARD AREA (ZONE AE, EL. 9) AS SHOWN ON FIRM PANEL 33015C0278E. EFFECTIVE DATE MAY 17, 2005.

4) EXISTING LOT AREA: (TO MEAN HIGH WATER)
11,327 S.F. ±
0.2600 ACRE ±

5) PARCEL IS LOCATED IN THE WATERFRONT BUSINESS (WB) AND THE HISTORIC DISTRICT.

6) DIMENSIONAL REQUIREMENTS:
MIN. LOT AREA: 20,000 SQ. FT.
FRONTAGE: 100 FT.
SETBACKS:
FRONT 30 FT.
SIDE 30 FT.
REAR 20 FT.
MAXIMUM STRUCTURE HEIGHT: 35 FT.
MAXIMUM STRUCTURE COVERAGE: 30%
MINIMUM OPEN SPACE: 20%

7) THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED IMPROVEMENTS TO AN EXISTING BOATHOUSE.

8) LOT IS ENTIRELY WITHIN THE NHDES 100' TIDAL BUFFER ZONE.

9) EXISTING AND PROPOSED OPEN SPACE IS 41.3%. NOTE THERE IS NO PROPOSED CHANGE IN OPEN SPACE.

BUILDING RENOVATION
THOMPSON RESIDENCE
57 SALTER STREET
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	REVISED PER COMMENTS	11/28/18
0	ISSUED FOR COMMENT	11/27/18

REVISIONS

SCALE 1"=10' — NOVEMBER 2018

VARIANCE APPLICATION PLAN — **C2**

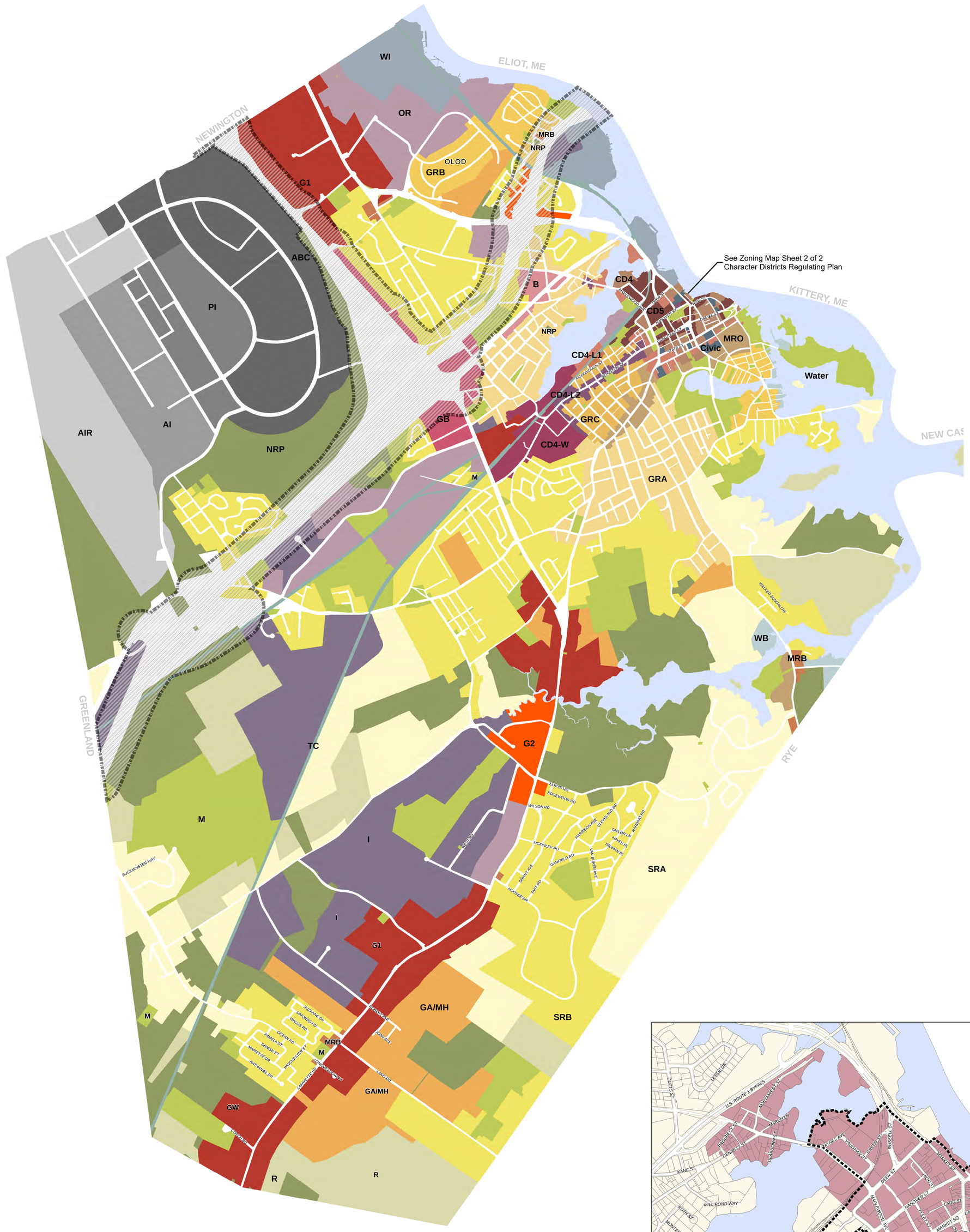
EXHIBIT F

Thompson Application for Urbanized Shoreland Exemption

City of Portsmouth Zoning Maps

City of Portsmouth Zoning Map

Sheet 1 of 2



Legend

Character Districts
- Character-Based Zoning Area (Refer to Zoning Map Sheet 2 of 2 Character Districts Regulating Plan)

Residential Districts
- R — Rural
- SRA — Single Residence A
- SRB — Single Residence B
- GRA — General Residence A
- GRB — General Residence B
- GRC — General Residence C
- GA/MH — Garden Apartment/Mobile Home Park

Mixed Residential Districts
- MRO — Mixed Residential Office
- MRB — Mixed Residential Business
- G1 — Gateway Corridor
- G2 — Gateway Center

Business Districts
- GB — General Business
- B — Business
- WB — Waterfront Business

Industrial Districts
- OR — Office Research
- I — Industrial
- WI — Waterfront Industrial

Airport Districts
- AIR — Airport
- AI — Airport Industrial
- PI — Pease Industrial
- ABC — Airport Business Commercial

Other Districts
- M — Municipal
- NRP — Natural Resource Protection
- TC — Transportation Corridor

Overlay Districts
- OLOD — Osprey Landing Overlay District
- HNOD — Highway Noise Overlay District
- DOD — Downtown Overlay District (See Inset Map and Zoning Map Sheet 2 of 2 Character Districts Regulating Plan)
- HD — Historic District (See Inset Map)
- FP — Flood Plain District (See FEMA Flood Insurance Rate Map)

0 1,000 2,000 4,000 6,000 Feet

1 inch = 1,000 ft

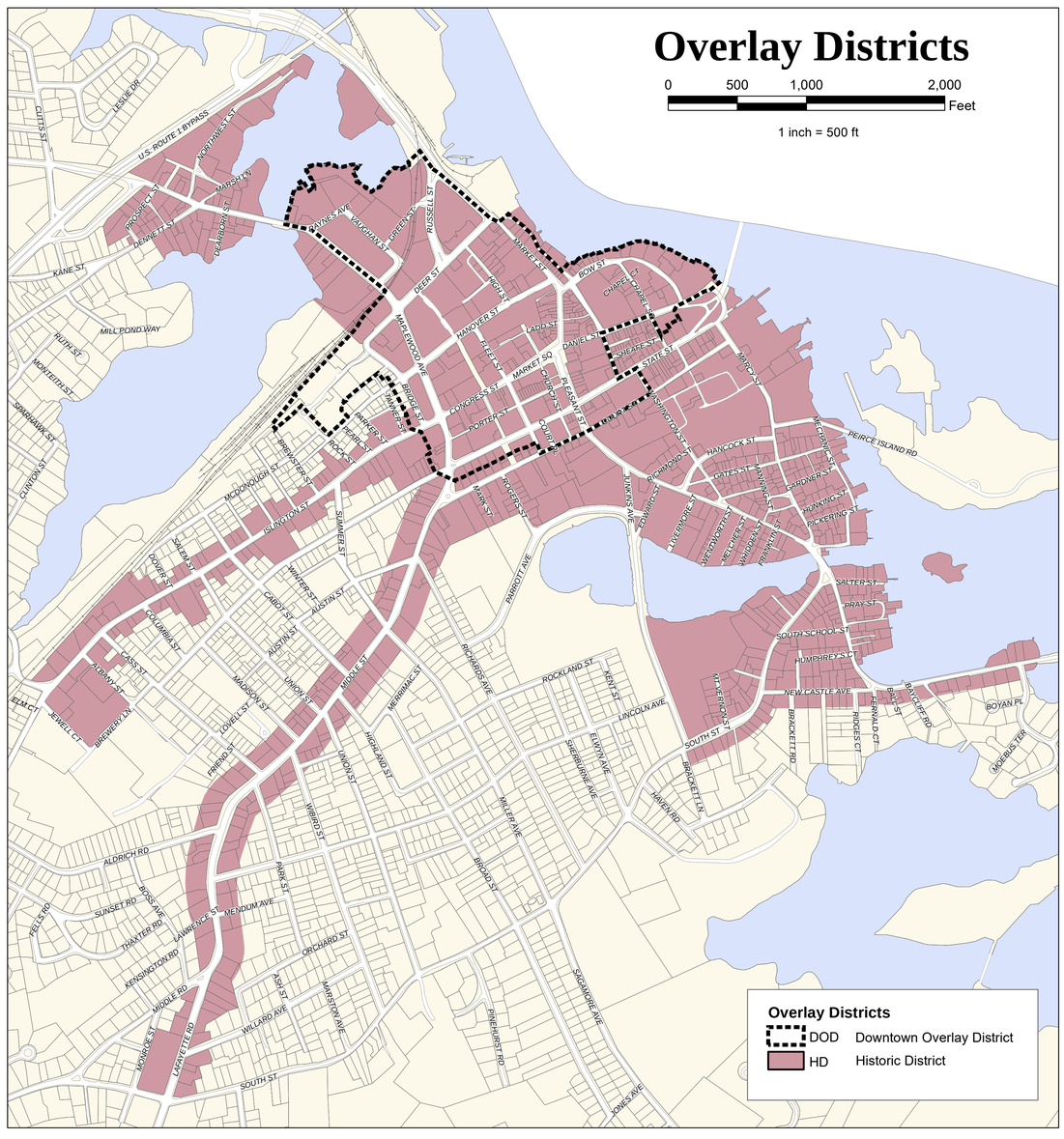
Adopted by City Council: December 21, 2009
Effective date: January 1, 2010

As Amended Through: February 4, 2019

Map prepared by Portsmouth Planning Department 3/1/2019

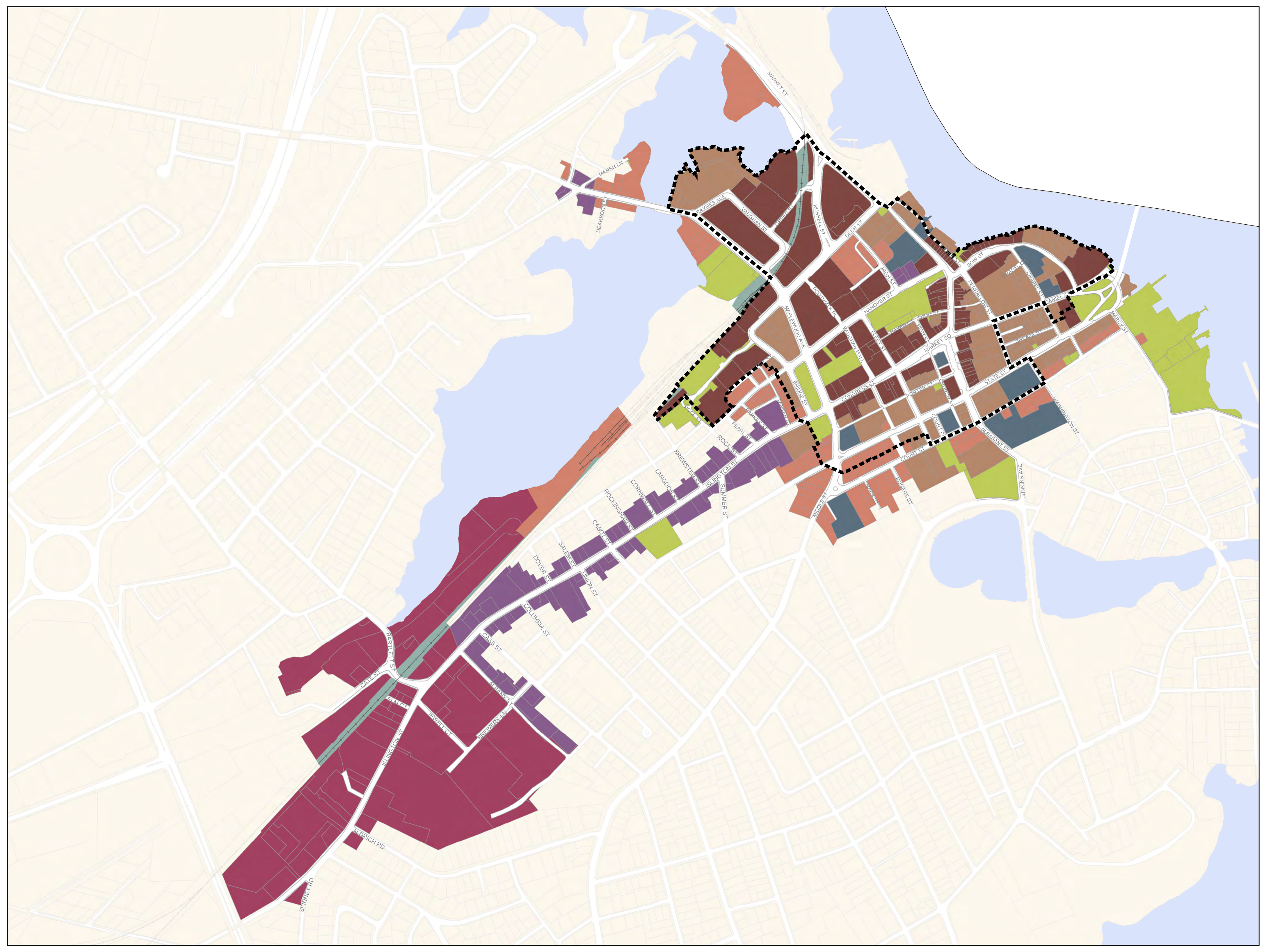
Amendments

1. June 21, 2010 - Rezone Assessor's Map 201, Lots 3-8 (1-6 Sagamore Grove) from Waterfront Business (WB) to Single Residence B (SRB)
2. October 18, 2010 - Rezone Assessor's Map 285, Lot 12 (2700 Lafayette Road) from Municipal (M) to Gateway (GW)
3. June 6, 2011 - Rezone a portion of Assessor's Map 116, Lot 44 (54 Rogers Street) from Municipal (M) to Mixed Residence Office (MRO)
4. November 13, 2012 - Rezone Assessor's Map 105, Lot 19 (143 Daniel Street) from Municipal (M) to Central Business B (CBB) and to place that property in the Downtown Overlay District (DOD)
5. April 21, 2014 - Adoption of Character Based Zoning Districts as shown on Maps 10.5A21A-C
6. July 20, 2015 - Rezone the following lots from Industrial (I), Office Research (OR) or Municipal (M) to Gateway (GW): Assessors Map 163, Lots 33, 34 and 37; Assessors Map 165, Lots 1, 2 and 14; Assessors Map 172, Lots 1 and 2; and Assessors Map 173, Lots 2 and 10
7. August 17, 2015 - Expansion of Character Based Zoning Districts as shown on Maps 10.5A21A-C
8. December 21, 2015 - Portion of Map 201, Lot 1 rezonged from Waterfront Business to Single Residence B
9. April 25, 2016 - Rezone to following lots or parts thereof to the Transportation Corridor District: Assessors Map 165, Lot14; Assessors Map 234, Lot 2A; Part of Assessors Map 164, Lot 4; Assessors Map 125, Lot 20; Assessors Map 124, Lot 13; Assessors Map 119, Lot 3; and Part of Assessors Map 119, Lot 5
10. July 11, 2016 - Expansion of Character Based Zoning Districts as shown on Maps 10.5A21A-C
11. July 11, 2016 - Rezone the following lots from Character District 4-L1, Mixed Residence Business, Business and Central Business B to General Residence C: Assessors Map 139, Lots 2, 3, 4, 5 and 6; Assessors Map 144, Lot 40; Assessors Map 145, Lots 14, 19, 20, 21, 29 and 30; Assessors Map 146, Lots 19, 20, 21, 22 and 23; Assessors Map 147, Lots 22, 23,24, 25, 26, 27, 28, 29,30 and 30A; Assessors Map 156, Lots 24 and 35; Assessors Map 157, Lots 10, 11, 12,13 and 14
12. December 4, 2017 - Adoption of Gateway Mixed Use Districts, Gateway Corridor (G1) and Gateway Center (G2) including the following: Rezone the following lots along Route 1/Lafayette Rd. from Gateway to Gateway Neighborhood Mixed Use Corridor (G1) that are located south of Campus Drive to the Portsmouth/Rye border. Rezone the following lots along Route 1/Lafayette Rd. from Gateway to Gateway Neighborhood Mixed Use Corridor (G1) that are located south of Middle Road and north of Sagamore Creek. Rezone the following lots from Gateway to Gateway Neighborhood Mixed Use Corridor (G1): Assessors Map 163 Lot 33, Map 163 Lot 34, Map 163 Lot 37, Map 165 Lot 2, Map 172 Lot 1, Map 172 Lot 2, Map 173 Lot 2, and Map 173 Lot 10. Rezone the following lots along Route 1/Lafayette Rd. from Gateway to Gateway Neighborhood Mixed Use Center (G2) that are located south of Sagamore Creek and north of Wilson Road. Rezone the following lots from General Business to Gateway Neighborhood Mixed Use Corridor (G1) that are located along Spaulding Turnpike west of Echo Avenue to the Newington border and from the intersection of Woodbury Ave and Market St west to the Newington border along Woodbury Ave. Rezone a portion of the following lots from General Business to Gateway Neighborhood Mixed Use Corridor (G1): Assessors Map 217 Lot 1, Map 217 Lot 2A. Rezoned the following lots from General Business to Gateway Neighborhood Mixed Use Center (G2): Assessors Map 218 Lot 22, Map 218 Lot 24, Map 218 Lot 25, Map 218 Lot 28, Map 218 Lot 29, Map 218 Lot 30, Map 218 Lot 32, Map 218 Lot 33, Map 218 Lot 34, Map 218 Lot 38, and Map 218 Lot 39. Rezoned the following lots from Single Residence B to Gateway Neighborhood Mixed Use Center (G2): Assessors Map 210 Lot 2, Map 210 Lot 3, Map 210 Lot 4, and Map 210 Lot 5. Rezone the following lots from Garden Apartment / Mobile Home to Gateway Neighborhood Mixed Use Corridor (G1): Assessors Map 239 Lot 12. Rezone the following lots from Single Residence A to Gateway Neighborhood Mixed Use Corridor (G1): A portion of Assessors Map 239 Lot 8
13. August 20, 2018 - Rezone the following lots from Office Research (OR) to Character District 4 West End (CD4-W): Assessors Map 157, Lots 1 and 2. Rezone a portion of Map 164 Lot 4 from OR and Transportation Corridor (TC) to CD4-W. Add new building height standards to the Character-Based Zoning Regulation Plan Maps (Maps 10.5A21B) to extend the West End Overlay District and add New Building Height Standards for Tax Map 157 Lots 1 and 2 and a Portion of Tax Map 164 Lot 4.
14. October 15, 2018 (effective January 1, 2019) - Adoption of Highway Noise Overlay District (HNOD) which includes all land within 500 feet of the centerline of I-95 or NH 16, except land subject to the land use regulations of the Pease Development Authority.
15. February 4, 2019: Rezone Assessor's Map 213 Lot 1 from Waterfront Indistrial (WI) to Office Research (OR).



City of Portsmouth Zoning Map

Sheet 2 of 2 Character Districts Regulating Plan



Map 10.5A21A
Character Districts and Civic Districts

Legend

DOD	Downtown Overlay District	
HD	Historic District	

Character Districts

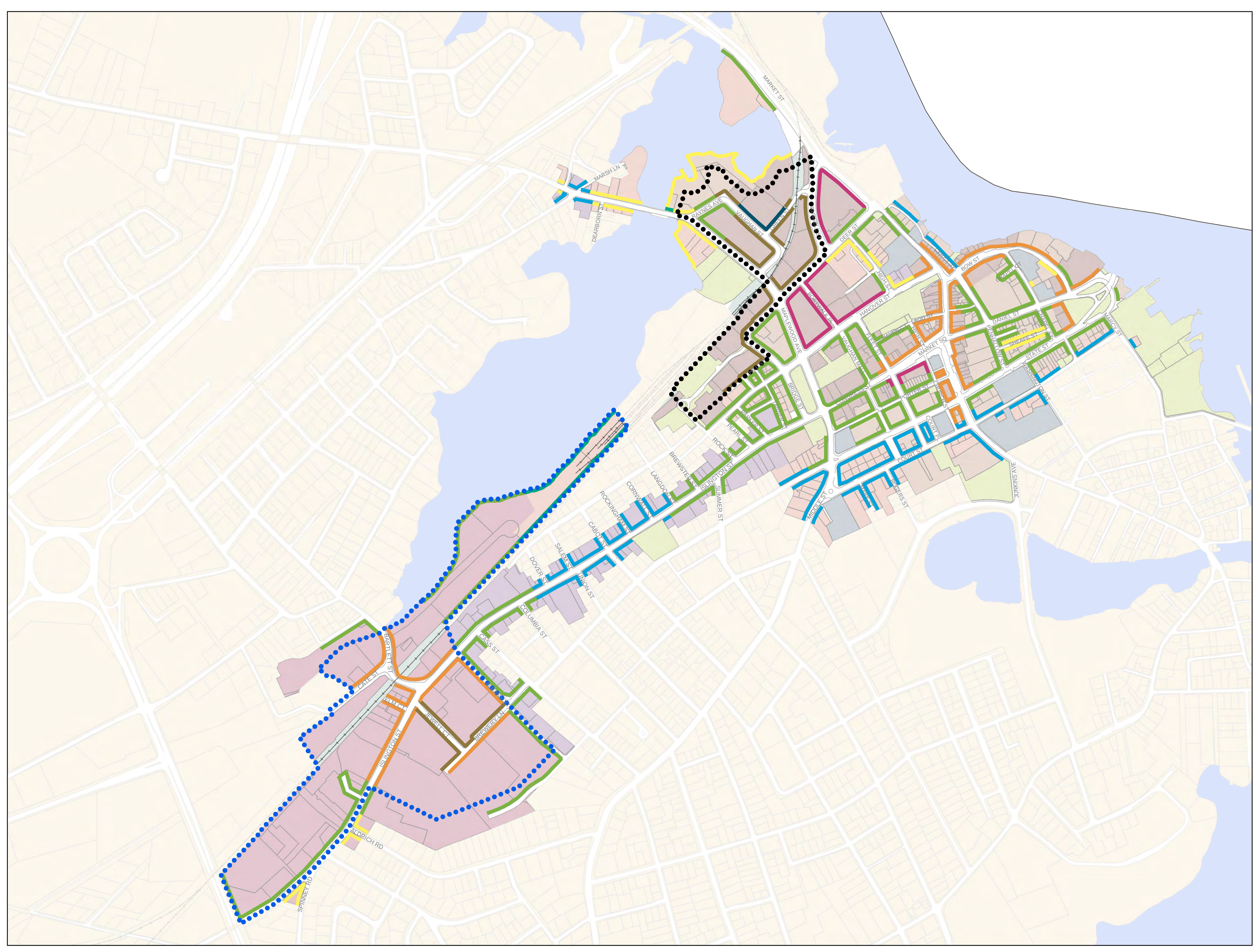
CD5	Character District 5
CD4	Character District 4
CD4-W	Character District 4-B
CD4-L1	Character District 4-L1
CD4-L2	Character District 4-L2

Civic District

CIVIC	Civic District

Other Districts

M	Municipal District
TC	Transportation Corridor



Map 10.5A21B
Building Height Standards

Legend

Height requirement area	Maximum building height*
1 Story	20'
2 Stories	35'
2 Stories (short 3rd*)	35'
2-3 Stories	40'
2-3 Stories (short 4th*)	45'
2-4 Stories	50'
2-4 Stories (short 5th*)	60'
2-5 Stories	60'

*Penthouse Levels may exceed the building height by 2 feet.

1. A short story includes either: 1) use of a top story below the cornice line of a sloped roof that is at least 20% shorter in height than the story below; or 2) a story within a mansard roof with a pitch no greater than 30:12.

2. When a lot is assigned to more than one height requirementstandard refer to the requirements listed in Section 10.5A21.22.

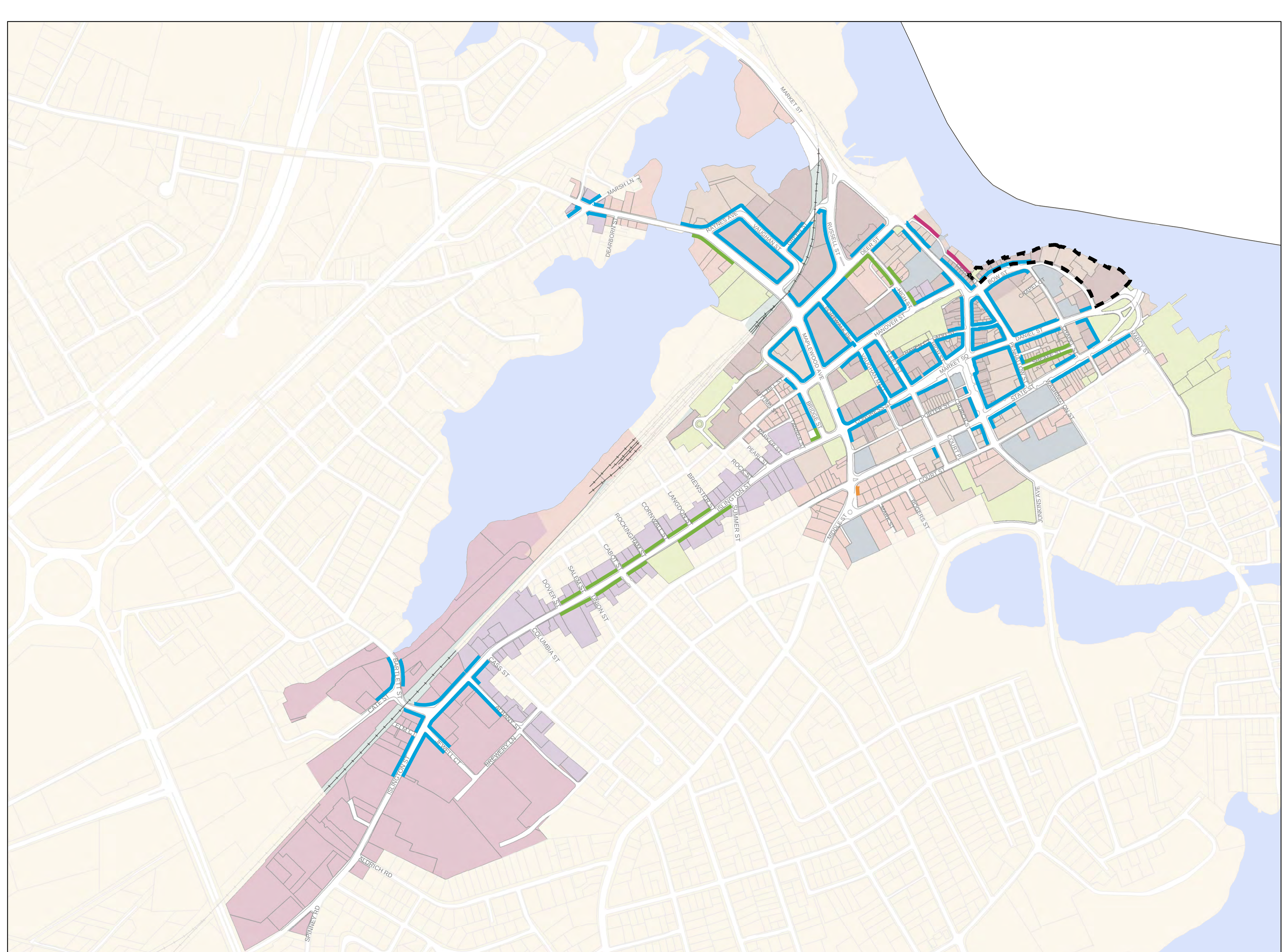
3. Attic space within either a gable, gambrel, hip or hip-top mansard roof or a penthouse level on a flat roof is not considered a story. Attic space is permitted above the top story provided the proposed building is no greater than the maximum building height.

Incentive Overlay Districts

Within the Incentive Overlay Districts, certain specified development standards, including height, density and parking, may be modified pursuant to Section 10.5A47.

North End Incentive Overlay District
Between Maplewood Avenue and Russell Street, the boundary of the North End Incentive Overlay District is established at 100 feet from the mean high water line.

West End Incentive Overlay District
The boundary of the West End Incentive Overlay District is established at 200 feet from the rear lot lines of the abutting Aldrich Road lots and/or 100 feet from the rear lot lines of lots that abut the public or private portions of Chevrolet Avenue, whichever is greater.



Map 10.5A21C
Special Requirements for Façade Types, Front Lot Line Buildout, and Uses

Legend

Required Façade Types

- Shopfront façade type
- Step, stoop or recessed entry façade type
- Officefront façade type

Waterfront Lots

Waterfront Use Overlay
In addition to the uses permitted in the underlying Character districts, lots in the Waterfront Use Overlay shall also permit uses 9.60, 12.20, 12.22, and 12.40 as set forth in Section 10.440 (Table of Uses). (Section 10.5A34).

Waterfront lots on Ceres Street
For waterfront lots on Ceres Street, the maximum front lot line buildout shall be 50%, and buildings shall have a wood-sided appearance (Section 10.5A21.30).

In addition to the uses permitted in Character District 4, waterfront lots on Ceres Street shall also permit the uses permitted in the Waterfront Industrial district as set forth is Section 10.440 (Section 10.5A35).

N

0 1,000 2,000 Feet

1 inch = 440 feet

Adopted by City Council April 21, 2014
As Amended Through: February 4, 2019

CITY OF PORTSMOUTH, N.H. · SETTLED · 1623 · INCORPORATED · 1849

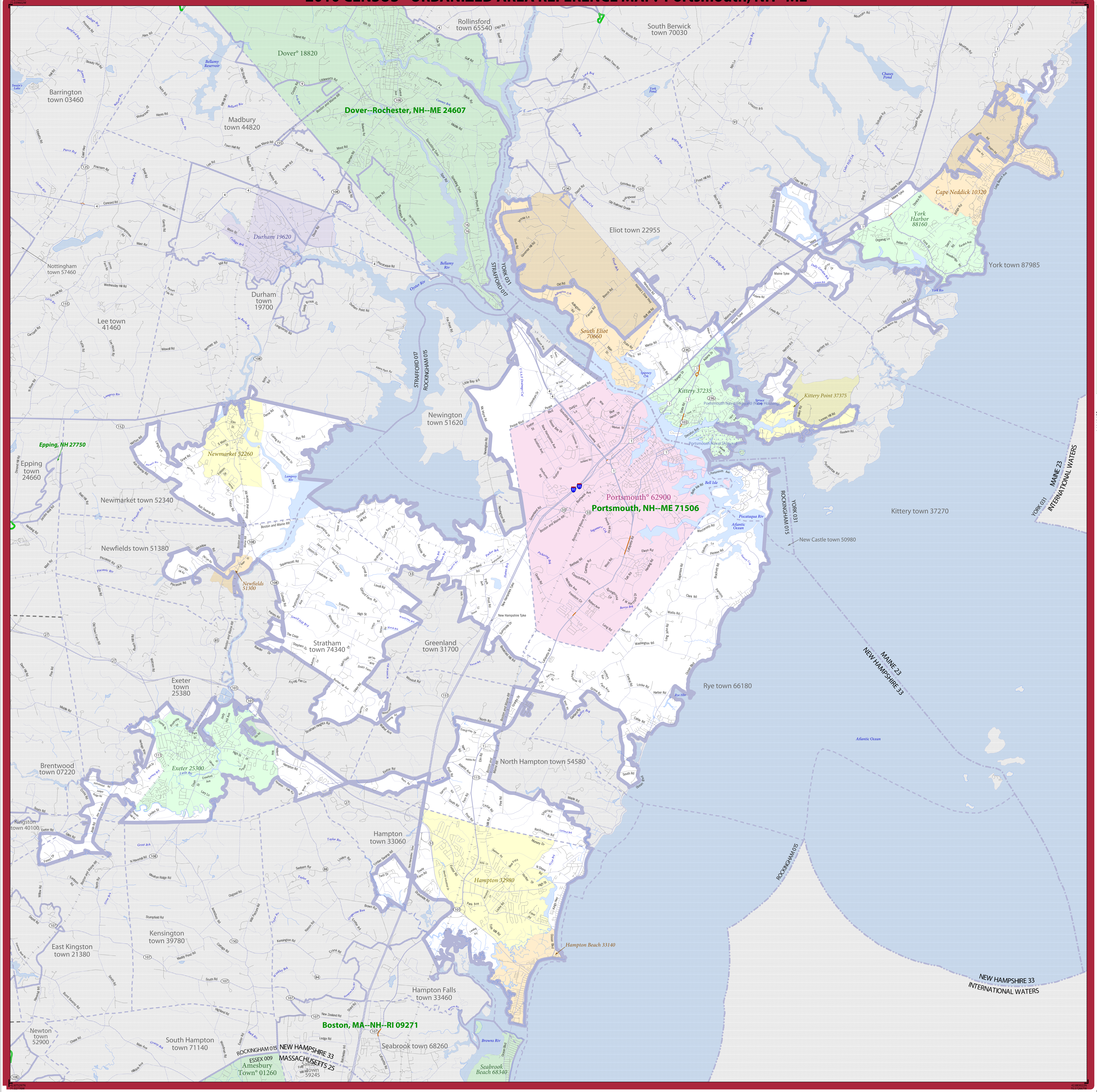
Map prepared by Portsmouth Planning Department 3/1/2019

EXHIBIT G

Thompson Application for Urbanized Shoreland Exemption

2010 US Census Bureau – Urbanized Area Reference Map – Portsmouth, NH

2010 CENSUS - URBANIZED AREA REFERENCE MAP: Portsmouth, NH--ME



LEGEND

SYMBOL DESCRIPTION	LABEL STYLE
International	CANADA
Federal American Indian Reservation	L'ANSE RES 1880
Off-Reservation Trust Land	T1880
Urbanized Area	Dover, DE 24580
Urban Cluster	Tooele, VT 88057
State (or statistically equivalent entity)	NEW YORK 36
County (or statistically equivalent entity)	ERIE 029
Minor Civil Division (MCD) [1,2]	Bristol town 07485
Consolidated City	MILFORD 47500
Incorporated Place [1,3]	Davis 18100
Census Designated Place (CDP) [3]	Incline Village 35100

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate		Water Body	Pleasant Lake
U.S. Highway		Military	Fort Belvoir
State Highway		Outside Subject Area	
Other Road	Marsh Ln		
Railroad	Southern RR		
Perennial Stream	Tumbling Cr		
Intermittent Stream	Piney Cr		

Where international, state, county, and/or MCD boundaries coincide, the map shows the boundary symbol for only the highest-ranking of these boundaries.

1 A ' ° ' following an MCD name denotes a false MCD. A ' ° ' following a place name indicates that a false MCD exists with the same name and FIPS code as the place; the false MCD label is not shown.

2 MCD boundaries are shown in the following states in which some or all MCDs function as general-purpose governmental units: Connecticut, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, and Wisconsin. (Note that Illinois and Nebraska have some counties covered by nongovernmental precincts and Missouri has most counties covered by nongovernmental townships.)

3 Place label color corresponds to the place fill color.
Label colors: Davis Davis Davis Davis Davis

SUBJECT AREA COUNTIES ON MAP SHEET
23031 York
33015 Rockingham
33017 Strafford

42.875297N 71.02776W

42.883022N 70.572667W

All legal boundaries and names are as of January 1, 2010. Urban areas are based on results from the 2010 Decennial Census. The boundaries shown on this map are for Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

Geographic Vintage: 2010 Census (reference date: January 1, 2010)
Data Source: U.S. Census Bureau's MAF/TIGER database (TAB10)
Map Created by Geography Division: March 08, 2012

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau

Projection: Albers Equal Area Conic
Datum: NAD 83
Spheroid: GRS 80
1st Standard Parallel: 43 40 26
2nd Standard Parallel: 46 42 09
Central Meridian: -68 56 15
Latitude of Projection's Origin: 42 55 01
False Easting: 0
False Northing: 0

0 1 2 3 4 5 Kilometers
0 1 2 3 4 5 Miles
The plotted map scale is 1:50952

PARENT SHEET 1

Total Sheets: 1
- Index Sheets: 0
- Parent Sheets: 1

UA NAME: Portsmouth, NH--ME
UA CODE: 71506
ENTITY TYPE: Urbanized Area (UA)
ST: Maine (23), New Hampshire (33)

2010 CENSUS UA REF MAP (PARENT)
231071506001

EXHIBIT H

Thompson Application for Urbanized Shoreland Exemption

NH Flood Hazard Maps – 57 Salter Street, Portsmouth, NH

New Hampshire Flood Hazard Map – 57 Salter Street, Portsmouth, NH

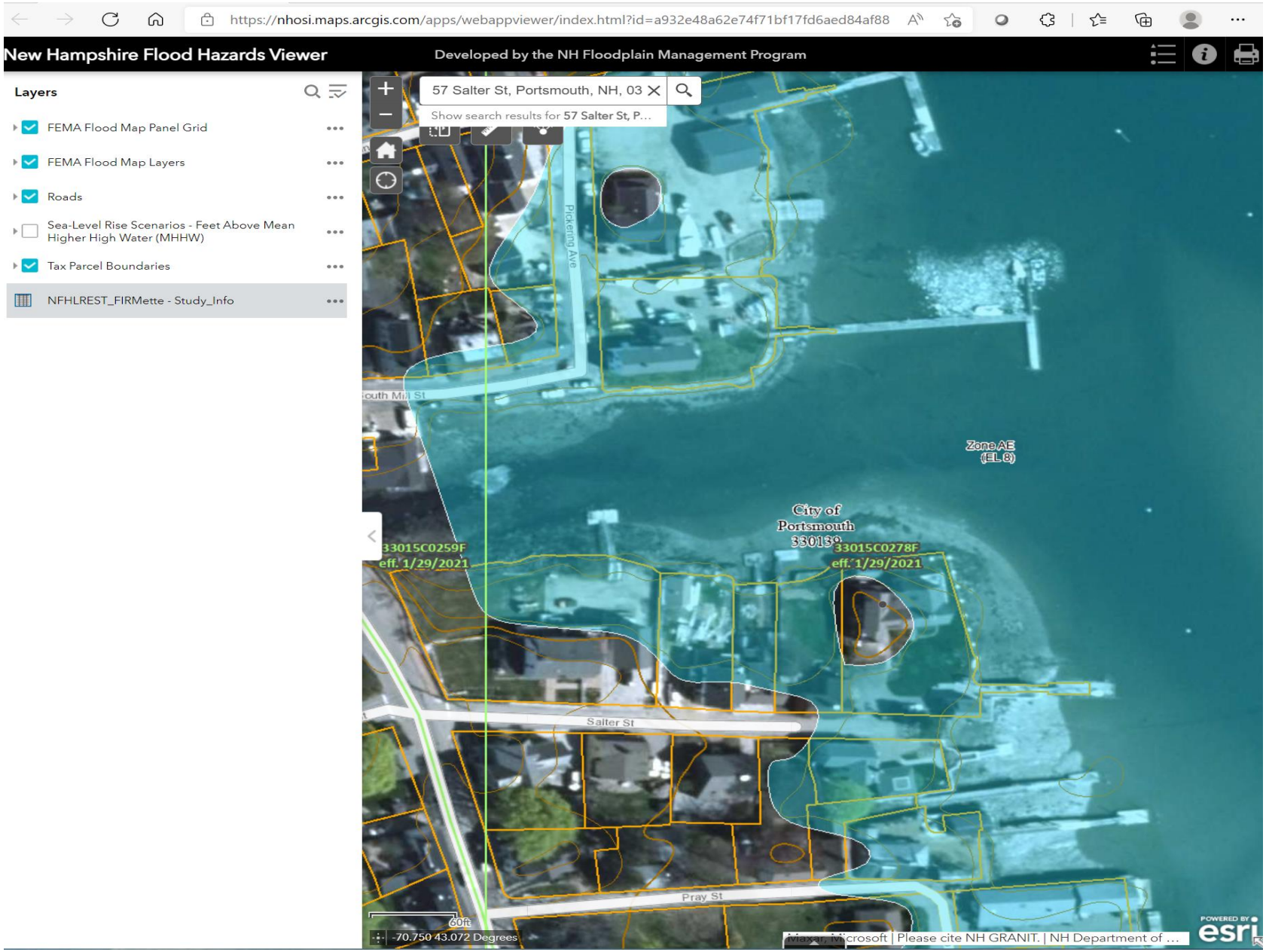


EXHIBIT I

Thompson Application for Urbanized Shoreland Exemption

Aerial Photograph – 57 Salter Street, Portsmouth, NH

Aerial Photograph – 57 Salter Street, Portsmouth, NH



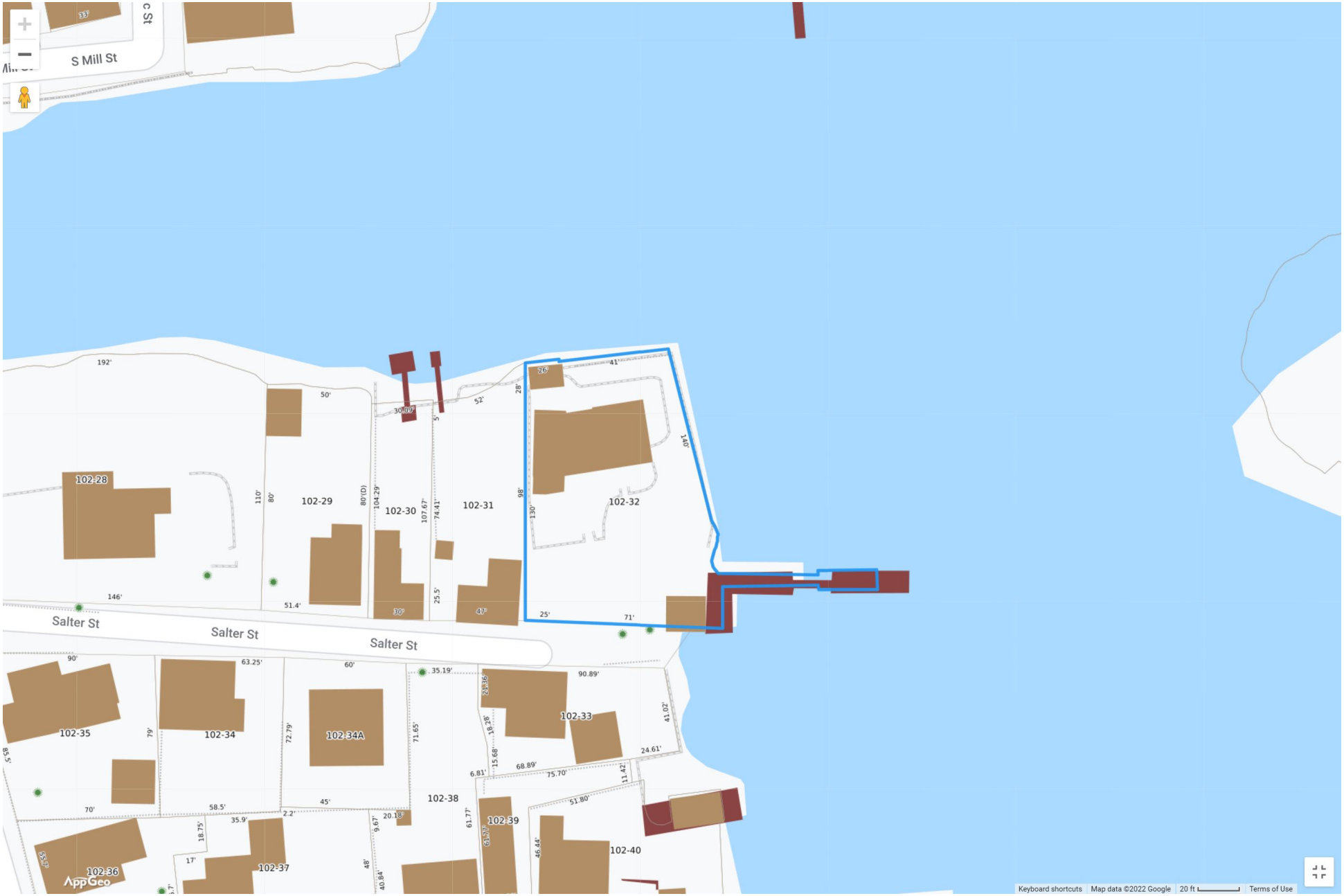
EXHIBIT J

Thompson Application for Urbanized Shoreland Exemption

City of Portsmouth Assessing Tax Maps – 57 Salter Street

Map 102, Lot 0032

City of Portsmouth Tax Maps – 57 Salter Street – Map 102, Lot 0032



City of Portsmouth Tax Maps – 57 Salter Street – Map 102, Lot 0032



City of Portsmouth Tax Maps – 57 Salter Street – Map 102, Lot 0032



RECEIVED
MAY 09 2022
By 11:56am

Daniel Posternak
57 Salter Street
Portsmouth, NH 03801

VIA ELECTRONIC MAIL

May 3, 2022

City of Portsmouth Planning Board
C/O: Beverly M. Zendt, Planning Director
City of Portsmouth
1 Junkins Avenue, 3rd Floor
Portsmouth, NH 03801

RE: Margot Thompson and Edward Thompson - Application for Urbanized Shoreland Exemption – 57 Salter Street, Tax Map #102, Lot #32
May 19, 2022 Planning Board Meeting

Dear Planning Board Members:

My wife and I are owners of Unit 2 of the Point of View Condominium Association located at 57 Salter Street, Tax Map #102, Lot #32 in the City of Portsmouth. We have owned and resided in our home since October 2020, which is located on the same lot as the Thompsons' Unit 1 building. We reviewed the application and discussed this matter with the Thompsons. We understand that the Thompsons' application was referred by the City Council on May 2, 2022 to the Planning Board for consideration at the May 19, 2022 meeting.

We support their Application for Urbanized Shoreland Exemption and ask that the Portsmouth Planning Board favorably recommend that the City Council submit an Application for Urbanized Shoreland Exemption to the NH Office of Strategic Initiatives for 57 Salter Street. We believe a favorable recommendation, submission of an application by the City and eventual grant of the exemption will allow the Thompsons to resolve an outstanding appeal with NHDES. Once resolved, the Thompsons can then take the necessary steps to complete renovations of Unit 1 for their use and enjoyment.

If you have any questions, I can be reached at dan@roundaboutdiner.com. Thank you for your time and consideration.

Sincerely,



Daniel Posternak