

**PLANNING BOARD  
PORTSMOUTH, NEW HAMPSHIRE**

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

**7:00 PM Public Hearings begin**

**May 16, 2024**

**AGENDA**

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**REGULAR MEETING 7:00pm**

**I. APPROVAL OF MINUTES**

- A. Approval of the April 18, 2024 meeting minutes.
- B. Approval of the April 25, 2024 meeting minutes.

**II. DETERMINATIONS OF COMPLETENESS**

**SITE PLAN REVIEW**

- A. The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District.
- B. The request of **15 Middle Street Real Estate Holding CO, LLC (Owner)**, for property located at **15 Middle Street** requesting Site Plan approval for the addition of 3 residential units in an existing commercial building. Said property is located on Assessor Map 126 Lot 12 and lies within the Character District 4 (CD4), Downtown Overlay and Historic Districts.
- C. The request of **RIGZ Enterprises LLC (Owner)**, for property located at **822 Rt 1 Bypass** requesting Site Plan review approval to demolish the existing building and construct a new commercial building as well as associated paving, stormwater management, lighting, utilities and landscaping.



### III. PUBLIC HEARINGS -- UNFINISHED 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 **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District. (LU-23-189)

### 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 Planning Board will hold a public hearing on the following amendments to Chapter 10, ZONING ORDINANCE, CITY OF PORTSMOUTH, of the Ordinances of the City of Portsmouth, be amended to language related to solar energy in Article 6 Overlay Districts and Article 15 Definitions, pursuant to Section 10.150 of the Zoning Ordinance.
- B. The request of **City of Portsmouth (Owner)**, for property located at **0 Maplewood Avenue**. The City is requesting a Wetland Conditional Use Permit to complete upgrades to the existing drainage outfall behind the cemeteries (adjacent to Deer Street) by adding an additional 48" pipe in parallel to the existing 48" pipe. This work is being proposed in preparation for increased capacity needs to accommodate sewer separation on Fleet Street and surrounding areas. Compensatory mitigation is proposed to offset proposed wetlands impacts. The proposed mitigation will also serve as embankment revetement to aid in stabilizing the slope behind the cemetery that is currently being undermined. Area of disturbance includes approximately 590 SF impacts from outfall improvements, 3,870 SF proposed for mitigation/Marsh restoration. A portion of the outfall work is located on the abutting property of #90 Maplewood Avenue. City DPW has been corresponding with the owner of this property and draft easement documents have been provided to the property owner. Said property is located on Assessor Map 124 Lot 2, Map 125 Lot 19, and Map 164 Lot 4 and lies within the Office Research (OR) Municipal and Historic Districts. (LU-24-43)

- C. The request of **15 Middle Street Real Estate Holding CO, LLC (Owner)**, for property located at **15 Middle Street** requesting Site Plan approval for the addition of 3 residential units in an existing commercial building. Said property is located on Assessor Map 126 Lot 12 and lies within the Character District 4 (CD4), Downtown Overlay and Historic Districts. (LU-24-35)
- D. The request of **RIGZ Enterprises LLC (Owner)**, for property located at **822 Rt 1 Bypass** requesting Site Plan review approval to demolish the existing building and construct a new commercial building as well as associated paving, stormwater management, lighting, utilities and landscaping. Said property is located on Assessor Map 160 Lot 29 and lies within the Business (B) District. (LU-23-209)
- E. **361 Hanover Steam Factory, LLC (Owner)**, for property located at **361 Hanover Street**, seeking Design Review for the construction of a new building along Hanover Street with a 20-foot tunnel entrance from Hanover Street to a central courtyard between the new building and the existing 361 Hanover Street (Portsmouth Steam Factory) building. The courtyard will provide access to the indoor parking areas at both the existing and the new building. The upper floors of the new Hanover Street building will contain 12 residential dwelling units and the Portsmouth Steam Factory Building would contain 24 dwelling units; for a total of 36 dwelling units. There would be 72 off-street parking spaces in the aggregate. Said property is located on Assessor Map 138 Lot 63 and lies within the Character District 5 (CD5) Downtown Overlay and North End Overlay Districts. (LUPD-24-3)

## V. OTHER BUSINESS

- A. Chairman updates and discussion items
- B. Board discussion of Regulatory Amendments, Master Plan Scope & other matters

## VI. ADJOURNMENT

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

[https://us06web.zoom.us/webinar/register/WN\\_xK6B5F1rSWKfFUEEAGaAjA](https://us06web.zoom.us/webinar/register/WN_xK6B5F1rSWKfFUEEAGaAjA)



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

Memorandum

To: Planning Board

From: Peter Stith, AICP  
Planning Manager

Date: May 16, 2024

Re: Recommendations for the May 16, 2024 Planning Board Meeting

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## I. APPROVAL OF MINUTES

- A. Approval of the April 18, 2024 meeting minutes.
- B. Approval of the April 25, 2024 meeting minutes.

### Planning Department Recommendation

1) Board members should determine if the draft minutes include all relevant details for the decision-making process that occurred at the April 18 and April 25, 2024 meetings and vote to approve meeting minutes with edits if needed.

## II. DETERMINATIONS OF COMPLETENESS

### SITE PLAN REVIEW

- A. The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District. (LU-23-189)
- B. The request of **15 Middle Street Real Estate Holding CO, LLC (Owner)**, for property located at **15 Middle Street** requesting Site Plan approval for the

addition of 3 residential units in an existing commercial building. Said property is located on Assessor Map 126 Lot 12 and lies within the Character District 4 (CD4), Downtown Overlay and Historic Districts.

- C. The request of **RIGZ Enterprises LLC (Owner)**, for property located at **822 Rt 1 Bypass** requesting Site Plan review approval to demolish the existing building and construct a new commercial building as well as associated paving, stormwater management, lighting, utilities and landscaping. Said property is located on Assessor Map 160 Lot 29 and lies within the Business (B) District.

Planning Department Recommendation

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- 1) *Vote to determine that Items A, B and C are complete according to the Site Plan Review Regulations, (contingent on the granting of any required waivers under Section IV of the agenda) and to accept the applications for consideration.*

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**III. PUBLIC HEARINGS – UNFINISHED BUSINESS**

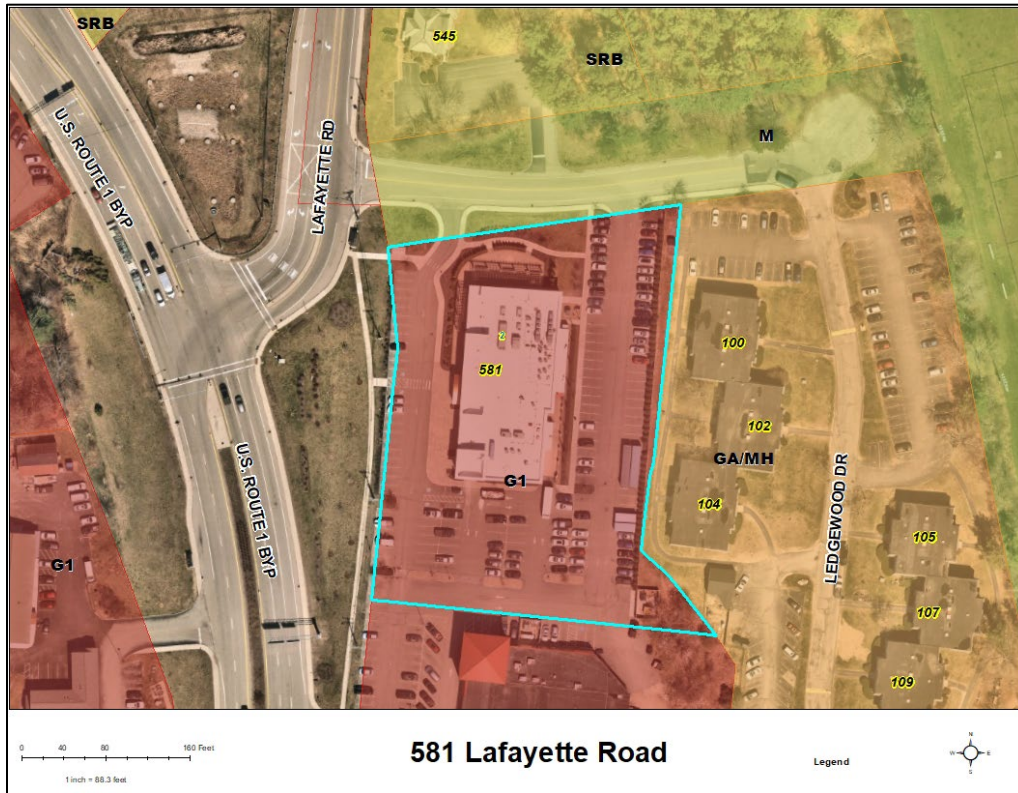
*The Board’s action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.*

- D. The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District. (LU-23-189)

**Background**

The existing building contains two restaurants and is located in the Gateway Neighborhood Mixed-Use, G-1 District. The applicant is proposing two additions totaling 72 residential apartments, creating a mixed-use building on the lot. The proposal is seeking density incentives for building height and footprint as well as dwelling units per building. A conditional use permit is required for the incentives and the applicant must provide workforce housing and public realm improvements in order to receive multiple incentives. Such conditional use permit shall be contingent upon satisfying the requirements of Section 10.5B73.

The project will provide 20% of the units as workforce housing for rent and will comply with the requirements under Section 10.5B73.10.



The project is seeking multiple incentives and thus must provide public realm improvements in addition to the workforce housing requirement. The proposed public realm improvement is a multi-use path on the adjacent High School property that would promote pedestrian and bicycle access to the facility and would create a connection to Andrew Jarvis Drive and residents of this project and the surrounding area.

Gateway zoning was designed to create opportunities for workforce housing and public realm improvements through incentives via a conditional use permit process. Through the CUP incentive process, zoning allows for modifications of the regulations in Article 5B and the applicant is seeking several modifications including community space, 7.6% where 10% is required. The proposal includes improving City property adjacent to the proposed community space; however, it cannot be counted towards the 10% requirement. The other modifications include maximum dwellings per building, building footprint, and setback from Lafayette Road as outlined in the submission.

There has been a decades long encroachment of the parking on NHDOT property and the updated application removes this encroachment, while maintaining compliance with the parking requirements for the development.

**Project Review, Decisions, and Recommendations**

The applicant was before the Technical Advisory Committee. See below for details.

**Technical Advisory Committee**

The applicant was before the Technical Advisory Committee at its regularly scheduled meeting of Tuesday, March 5, 2024 and the Committee voted to recommend approval with the following conditions:

- 1. The public realm improvements must be reviewed and approved by all relevant parties.*
- 2. All updates as discussed during the 3/5/2024 TAC meeting will be made to final set of plans, including:
  - a. A complete list of previous staff comments and responses.*
  - b. Please provide a complete list of changes that were made to the plan set between the dates of 2/6/2024 and 3/5/2024.*
  - c. Place labels on the shelf pipe profile and on Sheet C5 that indicate the size of the pipe (8").*
  - d. Final sewer pipe design to be reviewed and approved by DPW.*
  - e. The 4" PVC pipe coming from the manhole for the vent should be changed to a gasketed pipe as it will be underground, this should be changed from the Scheduled 40 to an SDR 35.*
  - f. A sidewalk detail will be included for Ledgewood Drive.*
  - g. Fire hydrant to be added to the final set of plans with proposed location reviewed and approved by Fire Dept.*
  - h. Sliders for bicycle parking must have fire rating confirmed in the final building design.**

*To be satisfied subsequent to Planning Board approval:*

- 1. Landscape license with adequate insurance for maintenance on City property.*

***The TAC conditions have been satisfied or carried over into the Staff recommendation as conditions of approval.***

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**Planning Department Recommendation**

**Conditional Use Permit**

1) *Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.5B11 and 10.5B73 and to adopt the findings of fact as presented.*

*(Alt.) Vote to find that the Conditional Use Permit application meets the criteria set forth in Section 10.5B11 and 10.5B73 and to adopt the findings of fact as amended and read into the record.*

2) *Vote to grant modifications of standards from Section 10.5B22.40 Special Setback Requirements on Lafayette Road, Section 10.5B73.20 to allow the public realm improvements to be located in a different zoning district, Section 10.5B34.80 to allow a building with 72 units, Section 10.5B41.80 to allow 7.6% community space where 10% is required, and to allow a building footprint of 42,434 square feet where 24,000 is allowed.*

3) *Vote to grant the Conditional Use Permit with the following condition:*

3.1) *Prior to issuance of a Certificate of Occupancy, the applicant will work with the City to finalize the location and design of the proposed path on the High School property.*

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**Planning Department Recommendation**

**Site Plan Approval**

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

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

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

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

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

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

- 2.3) *Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal. For more information visit <https://www.cityofportsmouth.com/publicworks/stormwater/ptap>*
- 2.4) *A landscape license with adequate insurance for maintenance of City property.*
- 2.5) *Final site plan set shall be updated to show revised parking layout.*

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

- 2.6) *The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed to the approved plans and specifications and will meet the design performance;*
  - 2.7) *A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.*
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#### 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 Planning Board will hold a public hearing on the following amendments to Chapter 10, ZONING ORDINANCE, CITY OF PORTSMOUTH, of the Ordinances of the City of Portsmouth, be amended to language related to solar energy in Article 6 Overlay Districts and Article 15 Definitions, pursuant to Section 10.150.

#### Background

At the April 25, 2024 Planning Board meeting, the Board voted to schedule a public hearing on the solar zoning amendments and to have Councilor Moreau include the draft amendments under her name at the May 6, 2024 Council meeting. Below is the action that took place related to the solar amendments at the Council meeting.

Aside from the solar amendments the Board is considering, there is a separate amendment proposed by Councilor Denton that is provided in the first section below that would exempt flush mounted solar energy panels that do not require other alterations to existing structures, including the accessory equipment.

8. First Reading of Ordinance amending Chapter 10, Article 6, Section 10.633.20 by adding a new numbered paragraph 28 "Solar Energy Panels flush mounted to rooftops of existing structures which do not require other alterations to existing structures" and by adding a new numbered paragraph 29 "Accessory Elements to Solar Energy Panels which do not require other alterations to existing structures" – Moved to pass first reading and schedule a public hearing and second reading regarding Solar Energy Panel amendments to Chapter 10, Article 6, Section 10.633.20, as presented, on June 3, 2024.

Moved to amend paragraph 28 to add the phrase "made of materials other than slate or wood" after the word "rooftop", so the paragraph would now read:

28) *Solar Energy Panels flush mounted to rooftops made of materials other than slate or wood of existing structures which do not require other alterations to existing structures.*

**Voted** to suspend the rules to bring forward Item XV. D.1. – Update from Planning Board regarding Revised Solar Amendments.

HDC Chair Ruedig and Planning Board Chair Chellman provided a report on the regulations and requirements for solar panels. They announced that there will be a public hearing by the Planning Board on this matter at their May 16<sup>th</sup> meeting and would like the opportunity to report back to the Council with their findings before the Council holds their public hearing and second reading of the ordinance.

**On a roll call 5-4, voted** to pass to amend paragraph 28 to add the phrase "made of materials other than slate or wood" after the word "rooftop", so the paragraph would now read:  
28) *Solar Energy Panels flush mounted to rooftops made of materials other than slate or wood of existing structures which do not require other alterations to existing structures.* Councilors Tabor, Denton, Blalock, Bagley and Mayor McEachern voted in favor. Assistant Mayor Kelley, Councilors Cook, Moreau and Lombardi voted opposed.

**Voted** to postpone first reading of the ordinance as amended until the June 3, 2024 City Council meeting.

Below is the section in the Ordinance that relates to solar panels.

10.517.30	All <b>roof appurtenances</b> and other features that exceed the allowed <b>structure</b> height for the zoning district shall not exceed 33 percent of the total roof area of the <b>structure</b> and, except for elevators and stair towers, shall be set back at least 10 feet from any edge of the roof.
10.517.31	Solar energy panels shall not be subject to the 33 percent limitation provided that they are not visible from a point 20 feet above the edge of the <b>street</b> right-of-way on the opposite side of the <b>street</b> .

The amendments discussed at the April 25<sup>th</sup> Planning Board meeting are included in the packet. As part of the motion, the Board may want to weigh in on the other amendments before the Council. There may be additional edits that will be sent out next week, pending review by the legal department.

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**Planning Department Recommendation**

- 1) Vote to recommend to City Council to hold first reading on the zoning amendments for solar panels.*

**IV. PUBLIC HEARINGS – NEW BUSINESS**

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**B.** The request of **City of Portsmouth (Owner)**, for property located at **0 Maplewood Avenue**. The City is requesting a Wetland Conditional Use Permit to complete upgrades to the existing drainage outfall behind the cemetery (adjacent to Deer Street) by adding an additional 48" pipe in parallel to the existing 48" pipe. This work is being proposed in preparation for increased capacity needs to accommodate sewer separation on Fleet Street and surrounding areas. Compensatory mitigation is proposed to offset proposed wetlands impacts. The proposed mitigation will also serve as embankment revetement to aid in stabilizing the slope behind the cemetery that is currently being undermined. Area of disturbance includes approximately 590 SF impacts from outfall improvements, 3,870 SF proposed for mitigation/Marsh restoration. A portion of the outfall work is located on the abutting property of #90 Maplewood Avenue. City DPW has been corresponding with the owner of this property and draft easement documents have been provided to the property owner. Said property is located on Assessor Map 124 Lot 2, Map 125 Lot 19, and Map 164 Lot 4 and lies within the Office Research (OR) Municipal and Historic Districts. (LU-24-43)



Staff Analysis – Wetland CUP

According to Article 10 Section 10.1017.650 the applicant must satisfy the following conditions for approval of this utility project.

**1. The proposed project is in the public interest.**

This is part of an overall project to separate the existing combined sewer overflow systems in downtown Portsmouth and provide additional capacity for stormwater in the downtown. This separation is in the public interest as it will be separating stormwater principally originating from the Fleet, Congress and Vaughn Areas from entering the sewer lines, which will reduce the likelihood of sewer overflow into tidal waters during heavy precipitation and storm events. The term combined sewer system overflow means that when there is a large enough storm, the stormwater flow is too much for the combined system and the system overflows combined sewer and stormwater flow into the river and into the South Mill Pond. With separated systems, the likelihood of this combined overflow flowing into the tidal waters would now be much lower during heavy storm events. In addition, the additional capacity will provide protection from future heavy rainfall flooding events.

**2. Design, construction, and maintenance methods will utilize best management practices to minimize any detrimental impact of such use upon the wetland and will include restoration of the site as nearly as possible to its original grade condition and vegetated state.**

The use of erosion control measures where excavation is proposed along with the use of silt booms within the pond will help to mitigate any sediment and debris entering the pond. The restoration of the bank through a living shoreline project including expanded saltmarsh areas will help restore the nearby marsh population while working to protect that shoreline. The long-term success of this restoration area is crucial to the safety of that bank and the historic graveyard just beyond it.

**3. No alternative feasible routes exist which does not cross or alter a wetland or have a less detrimental impact on a wetland.**

This overflow system has been in place since the 1970's and is directly connected to an existing system of properties and drain manholes that exist all over the downtown. The best placement for the addition 2 of an upgraded line is parallel to the existing line. The applicants are proposing to offset the permanent impacts to the wetland (outfall headwall and stone riprap) with the planting of salt marsh species to strengthen the bank.

**4. Alterations of natural vegetation or managed woodland will occur only to the extent necessary to achieve construction goals.**

To construct the new line, existing pavement, lawn, dirt and marsh areas will be disturbed to dig the trench and construct the infrastructure. Maintenance and replacement of the line in the future will likely require that no trees or large vegetation be planted directly over the piping. If possible, all areas disturbed within the buffer that is not marsh should be replanted with a wetland buffer seed mix.

**Project Review, Decisions, and Recommendations**

The applicant was before the Conservation Commission. See below for details.

**Conservation Commission**

The applicant was before the Commission at its regularly scheduled meeting of Wednesday, April 10, 2024 and the Commission voted unanimously to recommend approval with the following conditions:

- 1. In accordance with Section 10.1018.40 of the Zoning Ordinance, applicant shall install permanent wetland boundary markers. These markers shall be placed along the 25' vegetative buffer at intervals of every 50' along the City-owned property. These must be installed prior to the start of any construction. These can be purchased through the City of Portsmouth Planning and Sustainability Department. In addition to the wetland boundary markers, an educational sign describing the project shall be installed near the restoration area and fencing should be utilized to keep disturbances such as dogs and geese from the area.*
- 2. A long-term maintenance schedule and plan be included in the permit application and submitted to the Planning & Sustainability Department that commits to long-term maintenance of the marsh restoration area and a commitment to ensuring a marsh migration pathway for marsh adaptation impacts from climate change on City-owned land.*
- 3. A note will be added to the plans stating that all soil and plant material excavated on site shall be removed and disposed of off-site, as recommended by the TES Environmental Consultants LLC report.*
- 4. All necessary approvals from involved property owners will be acquired prior to the issuance of a City building permit and prior to any associated approvals from the New Hampshire Department of Environmental Services.*
- 5. A conservation seed mix or other appropriate native species seed mix and/or plantings shall be used for surface areas disturbed by the pipe installation within the wetland buffer.*

***The Conservation Commission recommended conditions have been satisfied or***

***added to the staff recommendation.***

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**Planning Department Recommendation**  
**Wetland Conditional Use Permit**

*1) Vote to find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1017.650 of the Ordinance and adopt the findings of fact as presented.*

*(Alt.) Vote to find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1017.650 of the Ordinance and adopt the findings of fact as amended.*

*2.) Vote to grant the Conditional Use Permit with the following conditions:*

*2.1) All necessary approvals from involved property owners will be acquired prior to the issuance of a City building permit and prior to any associated approvals from the New Hampshire Department of Environmental Services.*

*2.2) The applicant shall remove all debris/trash from the wetland and 25' vegetative buffer, including the wood decking/pallet structure.*

*2.3) In accordance with Section 10.1018.40 of the Zoning Ordinance, applicant shall install permanent wetland boundary markers where applicable. In addition to the wetland boundary markers, an educational sign describing the project shall be installed near the restoration area and fencing should be utilized to keep disturbances such as dogs and geese from the area.*

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#### 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.*

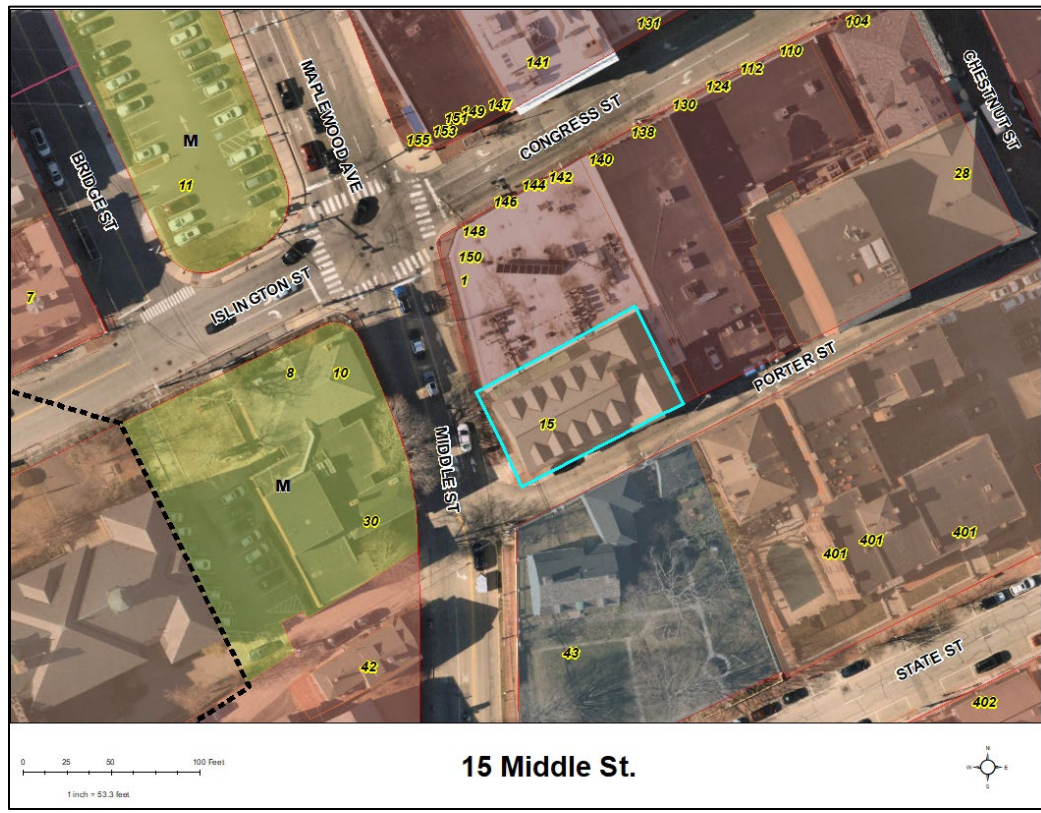
- C. The request of **15 Middle Street Real Estate Holding CO, LLC (Owner)**, for property located at **15 Middle Street** requesting Site Plan approval for the addition of 3 residential units in an existing commercial building. Said property is located on Assessor Map 126 Lot 12 and lies within the Character District 4 (CD4), Downtown Overlay and Historic Districts.

##### **Project Background**

The subject property was the former location of the Salvation Army and in 2020 the current owner purchased the property and received approvals for conversion of the interior into a 15-room inn with restaurant. The work completed in 2020 included the Inn and restaurant and the addition of roof dormers with unfinished attic space, which did not trigger site plan review. An agreement was signed by the City and owner that acknowledged the work in 2020 did not need site review at the time but site plan approval would be required if the attic space was converted into dwellings.

The conversion of the unfinished attic space into three dwelling units triggers site plan review, thus the request before the Board. No site work outside of the fit up of the interior of the building is proposed and the applicant is requesting several waivers from the site plan review regulations. The property is located in the Downtown Overlay District (DOD), where parking is not required for the Inn or the restaurant. The three units require 4 parking spaces and the DOD provides for a credit of 4 parking spaces, therefore no parking is required for this site.





**Project Review, Decisions, and Recommendations**

The applicant was before the Technical Advisory Committee. See below for details.

**Technical Advisory Committee**

The applicant was before the Technical Advisory Committee at its regularly scheduled meeting of Tuesday, April 2, 2024 and the Committee voted to recommend approval with the following conditions:

- 1. Information on sustainable/green practices used for interior construction will be provided.*
- 2. The development agreement from Juliet Walker will be provided.*
- 3. Waiver requests for site review agreement and associated surety will be provided.*

***The TAC recommended conditions have been addressed with the Planning Board submission.***



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**Planning Department Recommendation**

**Site Plan Approval**

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

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

2) *Vote to find that the requested waivers will not have the effect of nullifying the spirit and intent of the City's Master Plan or the Site Plan Review Regulations, and to waive the regulations as requested.*

*[Note: An affirmative vote of six members of the Planning Board is required to grant a waiver.]*

3) *Vote to grant Site Plan approval with the following condition:*

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

#### IV. PUBLIC HEARINGS – NEW BUSINESS

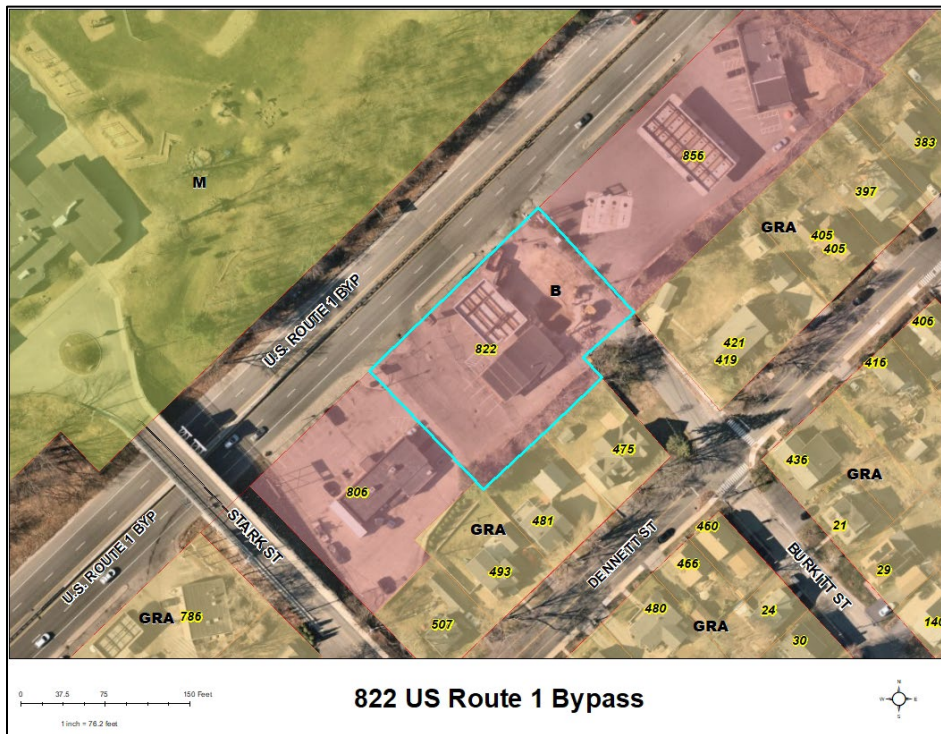
*The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.*

**C.** The request of **RIGZ Enterprises LLC (Owner)**, for property located at **822 Rt 1 Bypass** requesting Site Plan review approval to demolish the existing building and construct a new commercial building as well as associated paving, stormwater management, lighting, utilities and landscaping. Said property is located on Assessor Map 160 Lot 29 and lies within the Business (B) District.

##### **Project Background**

The subject property was a former service station and the applicant is proposing to demolish the existing structure and build a new commercial building. The applicant owns the adjacent property at 806 Route 1 Bypass where The City Beverage and Tobacco is located. The plan is to relocate this business to the subject parcel in the proposed building. The applicant is requesting waivers from the following site plan regulations: Section 3.2.1 & 2 for a traffic impact analysis, Section 7.4 for Stormwater Management and Erosion Control Plan, and from Section 2.5.3.2B for providing other reports or studies.

The improvements related to this project will require amendments to the site plan on the adjacent parcel at 806 Route 1 Bypass. The applicant intends to be back before TAC and Planning Board for an additional extension and amended plan in June for the 806 Route 1 Bypass site plan.



### **Project Review, Decisions, and Recommendations**

The applicant was before the Zoning Board of Adjustment and Technical Advisory Committee. See below for details.

### **Board of Adjustment**

The applicant was before the Board of Adjustment at its regularly scheduled meeting of Tuesday, January 23, 2024 and the Board voted to grant variances to allow parking spaces to be located between the principal building and a street and to allow a zero (0) foot setback from the front lot line where 20 feet is required for parking.

### **Technical Advisory Committee**

The applicant was before the Technical Advisory Committee at its regularly scheduled meeting of Tuesday, April 2, 2024 and the Committee voted to recommend approval with the following conditions:

#### ***To be satisfied prior to submission to the Planning Board submission:***

- 1. All permanent drainage to be installed will need drainage easements from the lots connected.***
- 2. Meet with DPW to determine hookup fees.***
- 3. Provide an easement plan.***
- 4. Proposed utilities must be installed in Burkitt Street, not in grass strip.***
- 5. Change 6" fire service into a 6" main with flushing hydrant at the end. Connect fire services and domestic services to the new 6" main. Connect 2" service for adjacent property to the 6" main, cut and cap all old services for both properties***

*as necessary at water main on Dennett.*

*6. Need for third party oversight of work in City right of way to be determined by Department of Public Works.*

*7. Burkitt Street shall be milled & overlaid after the conclusion of utility work.*

*8. Dumpsters must be moved 10' further toward the back of building for sight distance. No manholes shall be covered by the dumpsters.*

*9. Outline of the roof overhanging the front sidewalk must be shown on plans.*

*10. The light pole, LP1, shall be moved closer to the building, away from the stormwater main, and out of DOT right of way.*

*11. The light pole 2 must be moved closer to the parking lot entrance and the Route 1 Bypass.*

*12. A light pole shall be added to the west entrance of the parking lot out of the NHDOT right of way.*

*13. All drain manholes must have inverts.*

*14. The Stormwater Management Operations and Maintenance Manual shall include language detailing that an annual report on maintenance operations shall be submitted to the City of Portsmouth Department of Public Works.*

*15. Please provide documentation from NHDOT for work to be completed in the NHDOT right of way.*

*16. Site plan amendment needed for 806 Rt 1 bypass property to show new drain line.*

*17. Utility plans need to be updated to show utilities in pavement area of Burkitt St.*

***The TAC conditions have been satisfied or carried over into the Staff recommendation as conditions of approval.***

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### **Planning Department Recommendation**

#### **Site Plan Approval**

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

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

2) *Vote to find that the requested waivers will not have the effect of nullifying the spirit and intent of the City's Master Plan or the Site Plan Review Regulations, and to waive the regulations as requested.*

*[Note: An affirmative vote of six members of the Planning Board is required to grant a waiver.]*

3) *Vote to grant Site Plan approval with the following conditions:*

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

- 3.1) *The site plan and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.*
- 3.2) *The applicant shall prepare a Construction Management and Mitigation Plan (CMMP) for review and approval by the City's Legal and Planning Departments.*
- 3.3) *The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.*
- 3.4) *Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal. For more information visit <https://www.cityofportsmouth.com/publicworks/stormwater/ptap>*

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

- 3.5) *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;*
- 3.6) *A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.*

#### 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.*

- E. **361 Hanover Steam Factory, LLC (Owner)**, for property located at **361 Hanover Street**, requesting Design Review for the construction of a new building along Hanover Street with a 20-foot tunnel entrance from Hanover Street to a central courtyard between the new building and the existing 361 Hanover Street (Portsmouth Steam Factory) building. The courtyard will provide access to the indoor parking areas at both the existing and the new building. The upper floors of the new Hanover Street building will contain 12 residential dwelling units and the Portsmouth Steam Factory Building would contain 24 dwelling units; for a total of 36 dwelling units. There would be 72 off-street parking spaces in the aggregate. (LUPD-24-3)

##### Description

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.

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.*

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.

**Planning Department Recommendation**

*1) Vote to find the design review process is complete.*

**V. OTHER BUSINESS**

**A.** Chairman's Updates and Discussion Items

**B.** Board Discussion of Regulatory Amendments and Other Matters

**VI. ADJOURNMENT**

**PLANNING BOARD  
PORTSMOUTH, NEW HAMPSHIRE**

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

**7:00 p.m.**

**April 18, 2024**

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

.....

**ALSO PRESENT:** Peter Stith, Planning Manager

**MEMBERS ABSENT:** None.

.....

Chair Chellman called the meeting to order at 7:00 p.m. He said Mr. Bowen would take a voting seat that evening and the public hearings would be heard at the April 25 meeting.

**I. APPROVAL OF MINUTES**

**A.** Approval of the March 21, 2024 meeting minutes.

The March 21 minutes were **approved** as presented.

**II. DETERMINATIONS OF COMPLETENESS**

**SITE PLAN REVIEW**

**A. REQUEST TO POSTPONE** The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District. **REQUEST TO POSTPONE**

The request will be heard at the May 16 meeting.



### III. PUBLIC HEARINGS – NEW BUSINESS

- A. The request of **ZJBV Properties LLC (Owner)**, for property located at **180 Islington Street** requesting a Conditional Use Permit in accordance with Section 10.1112.14 of the Zoning Ordinance to provide 2 preexisting nonconforming parking spaces where 9 are required. Said property is located on Assessor Map 137 Lot 19 and lies within the Character District 4-L2 (CD4-L2) and Historic Districts. (LU-24-27)
- B. **REQUEST TO POSTPONE** The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District. **REQUEST TO POSTPONE** (LU-23-189)
- C. The request of **Edward R. Reynolds (Owner)**, for property located on **110 Aldrich Road** requesting a Wetland Conditional Use Permit in accordance with Section 10.1017 for the construction of a 768 s.f. detached, two car garage with an accessory dwelling unit on the second floor. Approximately 522 s.f. will be impacting the 100 ft wetland buffer as a permanent impervious impact, with the edge of the proposed garage located approximately 76 ft from the wetland resource and a Conditional Use permit to construct a Detached Accessory Dwelling unit in accordance with Section 10.814.62 Said property is located on Assessor Map 153 Lot 3 and lies within the Single Residence B (SRB) District. (LU-23-174)
- D. Consider amendments to change the definition of a home occupation found in Chapter 10, Article 15 Definitions, pursuant to Section 10.150 of the Zoning Ordinance.

The four public hearings will be heard at the April 25 meeting.

### IV. PRELIMINARY CONCEPTUAL CONSULTATION

- A. **361 Hanover Steam Factory, LLC (Owner)**, for property located at **361 Hanover Street**, requesting Preliminary Conceptual Consultation for the construction of a new building along Hanover Street with a 20-foot tunnel entrance from Hanover Street to a central courtyard between the new building and the existing 361 Hanover Street (Portsmouth Steam Factory) building. The courtyard will provide access to the indoor parking areas at both the existing and the new building. The upper floors of the new Hanover Street building will contain 12 residential dwelling units and the Portsmouth Steam Factory Building would contain 24 dwelling units, for a total of 36 dwelling units. There would be 72 off-street parking spaces in the aggregate. (LUPD-24-3)

## **SPEAKING TO THE PETITION**

[Video timestamp 5:08] Attorney John Bosen was present on behalf of the applicant, along with developer Steve Wilson, project engineer John Chagnon, and planning consultant Nick Cracknell. Attorney Bosen said the property was a complicated one because it was fully contained within the Downtown Overlay District (DOD) and partially contained within the North End Incentive Overlay District. He reviewed the neighborhood and historic contexts. Mr. Chagnon reviewed the existing conditions survey plan and said the developer wanted to propose a further licensing area that would extend along Rock Street to be used as part of an offsite green space. He said it would be licensed to the development and that the retaining wall on the north and west edges would be part of the licensing area. He reviewed the proposed subdivision plan and said they wanted to subdivide off the Steam Factory building (Building A) and retain eight parking spaces and five percent open space, with the remainder being the development lot. He said the proposed plan called for an addition to Building A. He said vehicular access would be provided to the subdivided lot and the site development would be accessed from Hanover Street in an area where the first floor of the buildings had a gap for traffic to flow through. He said building coverage on the site would be 75 percent. He said the Steam Factory building would have 24 residential units and two ground-floor commercial units and the new building would have 12 residential units and 2-4 ground-floor commercial units. He said the front building's height would be three stories with a mansard roof. He said there would be 24 stacked spaces in the Steam Factory Building and 18 single spaces would be assigned to units, with six unassigned spaces. Attorney Bosen said they wanted to move the project forward for design review on May 16 and noted that there were also alternative plans.

[Timestamp 24:33] Mr. Bowen asked if some of the condos would be available for individual purchase. Attorney Bosen said the district allowed for an additional story and required community space and workforce spaces, so there would be an opportunity to utilize some of those incentives. Chair Chellman confirmed that the Steam Factory building's front was as defined and that the Foundry Place was treated as the back. He said the grade was problematic and asked if the applicant considered doing more than a license and if it was structurally possible for the addition to take up some of the grade and reach out to the street. Mr. Wilson said they considered owning and controlling it. He said if they did acquire it and dug out Foundry Place, it would lower the overall elevation potential for the building by ten feet, so it would be counterproductive. He said they figured out a fair way to value the property with the help of the City Council, and the appraiser valued the property at more than \$500,000. He said he wasn't interested in owning it because it wouldn't add a nickel of value to the project, but it was easy to put the onus for maintaining the retaining wall on the condo association. He said the property in the rear was urban and they wanted to put some green space and to maintain it. He said the Rock Street property had a lot of dog walkers but wasn't maintained by the City, so he wanted to formalize and maintain it to benefit the nearby residents. He said they would ask if the City would license it them because it made sense to improve it but not occupy it with a building. He said 100 people used the area between the buildings as a pedestrian cut-through to downtown, so the purpose of the modal way was to continue that pedestrian traffic and have the site active.

[Timestamp 34:02] Chair Chellman said the biggest problem if the applicant were to occupy that space would be the building height calculation due to the attachment of the lower grade. Mr. Wilson said it might be worth if it ended up as a valuable piece of property, but they couldn't dig close to the building so it would be a very narrow area. He said they could dig back 20 feet before undermining the main building, so it wasn't just the upgrade. Mr. Samonas asked the applicant to explain the logic of the pass-through in Building B and why the building wasn't shifted to the right or left of Hanover Street to have the access on one end of the building. Mr. Wilson said the front building was a symmetrical driveway that went through the building. He said they originally looked at having two buildings separated by the driveway, but if it was lined up with the entry to the existing building, they would have to chop away a lot of the old façade. Mr. Chagnon said that lining those two entries up might be a mistake because people would fly right through to the back garage. Mr. Samonas asked if the garage entries for Building B would be in the development's interior, and Mr. Wilson agreed.

[Timestamp 39:16] Mr. Cracknell said the building had a commercial use for the last 175 years and the shape of the property was unique, but there was no access on Foundry Place and it had a big surface parking lot of 65 spaces. He said it was in a unique location as a transition from the north end in a low-density neighborhood of traditional single-family and 2- and 3-family homes. He said the CD5 District was intended to be a high density and urban environment with 95 percent coverage, very little open space, and large and tall building footprints, and the DOD's complexity was added to that. He said there were no residential units on the ground floors and the North End Incentive Overlay District bifurcated the property. He said the parking lot along Hanover Street was not in the North End Overlay District, so it wasn't allowed to add to the building. He said the applicant wanted to discuss alternatives due to the combination of the property's complexity and the zoning and address long-standing neighborhood concerns relating to traffic, parking, spillover parking and so on. He said what the code required in ground-floor commercial was more potential conflict with the parking spaces on the street because the DOD did not require on-site parking for a commercial use and the communities required 20-30 spaces. He explained why it would be difficult to market commercial spaces on Foundry Place and the Steam Factory [timestamp 44:36].

[Timestamp 47:45] Mr. Cracknell said the first alternative (Alternative 1) was the same as the of-right design review plan but changed the ground-floor use to residential in both buildings. He said it would require a variance from the Board of Adjustment because the current zoning did not allow a ground-floor residential use. He said there would be concerns about traffic, lighting, noise, and spillover traffic, and he asked if it was the right move to have the commercial use on the ground floor. He said if the commercial spaces were converted to residential, smaller units could be created and increase the affordability in a Conditional Use Permit situation. He noted that they would have to upgrade the courtyard to get from Rock Street, which would be formalized in space and easement. He said 2-4 residential units could occupy the commercial space, and the 72 parking spaces would provide more than ample parking. He said it would be about 1.7 spaces per unit, which exceeded the code requirement. He said the bottom residential units would be left and right of the middle entry, and the shared modal way could be part of the Conditional Use Permit. He said the alternative was simply to change the ground floor from commercial to residential. He said Alternative 2 was to have the extra story added to the existing

Steam Factory building and not the Hanover Street building. He said the two incentives were the Conditional Use Permit that would allow another story or ten feet of additional height and increase the size of the footprint from 20,000 sf to 30,000 sf. He said the benefit to the community would be 10 percent of the site designated as community space, and either 10 percent of the housing units in the building would be designed as workforce housing if they were rentals or 20 percent if they were ownership units. He said if they were to pursue the Conditional Use Permit in the other alternative, 10 percent would have to be for rented workforce housing. He said there would be 6-8 more units in the back, and the front building would not change. He estimated that there would be three workforce units in Building A and 2-4 residential units in in the back. Instead of a mansard roof on both buildings, he said there could be a penthouse design but not have it recessed as much as the code required.

[Timestamp 1:02:27] Mr. Hewitt said Mr. Cracknell mentioned that the fifth-story alternative incentive would offer 10 percent as rental units and 20 percent as ownership units. Mr. Cracknell said that Building A, the existing building, was in the North End Overlay District and would receive the benefit of the additional story. He said if it got the Conditional User Permit, the applicant would have to provide 10 percent of the units as rentals at 60 percent AMI, or 20 percent of the units as ownership ones at 100 percent AMI. He said ten percent of the units would be workforce housing and for rent. Mr. Hewitt said he thought the percentage was 20 percent for rental and ownership, but it was a different zone. Mr. Cracknell said it was reduced due to the 20 percent resulting in zero workforce housing and it wasn't economic for someone to take advantage of it. Mr. Hewitt asked if more parking would be built if a fifth story was added. Mr. Cracknell said the 72 spaces would support the fifth level. Mr. Giuliano said the by-right design had 6,000 sf of commercial on the first floor, and if the applicant were to receive the relief, it would be just that commercial space converted to residential and not the parking space. Mr. Cracknell said that was the intention. Chair Chellman confirmed that the applicant would not seek a variance to go up if they didn't get the variance for the residential on the first floor. Chair Chellman asked if the applicant had considered a single storefront as part of the project. Mr. Wilson said he felt that a convenience store would be disruptive and that there were already two coffee shops in the area, and he said it would compete with other businesses for street parking. He said there could be smaller residential units instead of a commercial one.

[Timestamp 1:14:56] Chair Chellman asked how the Board felt about the Conditional User Permit. Vice-Chair Mahanna said he knew the neighborhood well and did not think first-floor commercial would work due to traffic flow, parking, and so on. He said he could not speak for zoning, but regarding the ten percent incentive and the stepdown from Foundry Place, he said the fifth story in the back would still step down from the Foundry Place. He said the applicant used the term 'affordable housing' instead of 'below market', which he thought was good. Mr. Samonas said it would help the neighborhood and other land use board to see what those two building heights would look like in context with the rest of the neighborhood. He noted that a 40-ft building next to the development was underway, and having a shadow study or visual study done would be helpful. Mr. Almeida said things like deliveries and waste removal would make the building feel bigger than it was proposed and would require allocated space. He said the building could accommodate commercial on the first floor, like coffee shops or barber shops, noting that a lot of people were moving to the immediate neighborhood. He said he liked the idea

of that building's language being very different from the front building and remembering its factory use. Mr. Giuliano said the first-floor residential would be the most interesting part of the project and wondered whether they would be ADA-compliant units or workforce units, and he noted that the entries were right on the street for those units.

[Timestamp 1:20:48] Mr. Wilson said the architecture was preliminary and their focus that night was to move forward to a design review meeting and discuss the potential for residential on the first floor, which may be four units on Hanover Street. He said two of the units entering from Hanover Street would have separate doorways but there was also a lobby on each end of the building, so the interior units could enter from that lobby. He said they would be ADA accessible. He said a coffee shop could go in but pointed out that there was a convenience store two blocks away as well as a grocery store and a few coffee and sandwich shops. He said the project would compete with those stores and noted that limited product places were dying.

[Timestamp 1:26:08] Chair Chellman said he liked the idea of getting away from the mansard roof because it was getting old in town and he liked the idea of the extra floor, but he was concerned about long-term growth and dedicating all the first floor to residential and that he would like a small part reserved for commercial. He said the design details, how the pedestrian space was detailed, and how it accessed the street next door would be important. He said he would look further into the zoning relating to the front to back of the Steam Factory building, and he wasn't fully convinced that the applicant couldn't do something more towards Foundry Place because the applicant proposed to add onto the building and there was an opportunity to clear up that side. Mr. Hewitt said he'd like to hear from the abutters about having a Conditional Use Permit for all residential on the first floor. He noted that the units appeared to be similar in the market range to the new buildings on Deet Street and Maplewood and 2 Russell Street and that each of those had two parking spaces per unit. Mr. Almeida asked if there was an opportunity for transformers to feed that end of town and if it would be a beneficial potential use. Mr. Wilson said they had recently placed a new transformer that fed their building at the rear. Mr. Bowen asked if Lot 1 would remain an eyesore in the middle of a developing area. Mr. Cracknell said there was no plan to replace the building.

Chair Chellman said the proposal would be on the agenda for the May 16 Planning Board meeting.

- B. The Portsmouth Housing Authority (Applicant),** for property located at **1035 Lafayette Road** proposing to construct a 4-story, 44-unit multi-family residential building to the south of the existing church building. HAVEN will convert and renovate the first floor of the existing church into office space and will construct a 7-unit transitional housing building to the north of the office. The lower level of the existing church will be renovated for Little Blessings Childcare Center. The Christ Episcopal Church will be relocated to the existing rectory building on the southern portion of the site. The project will include associated site improvements such as parking, pedestrian connections, access to public transportation, utilities, stormwater management, lighting, and landscaping. (LUPD-24-4)

## **SPEAKING TO THE PETITION**

[Timestamp 1:33:50] Patrick Crimmins of Tighe and Bonds was present on behalf of the applicant, with landscape architect Robbie Woodburn and Craig Welch, Executive Director of the Portsmouth Housing Authority. Mr. Crimmins said the project would consist of 44 units of affordable housing in an apartment building to the south of the church and go up from three stories to four stories. He said they would seek a Conditional Use Permit for density incentives as well. He discussed the building access and parking, noting that they had a conceptual parking analysis that would utilize the shared use parking provisions, which might reduce the parking requirement by 20 percent, and the south side parking lot would perhaps be used for overflow parking. He discussed storm management and said they were working through design aspects and had met with the Department of Public Works to discuss utilities.

[Timestamp 1:40:47] Mr. Samonas asked if the applicant considered pushing apartment building Section 2 to the south toward the cemetery while still respecting the 25-ft setback and putting parking between the through-way and the building. Mr. Crimmins said they felt that positioning it along the street would create a better open space and green space amenity for the building and be more respectful to the burial ground. Mr. Samonas asked about parking near the rear buffer. Mr. Crimmins said they were allowed to put parking back there and that there would be a pedestrian connection connecting with the Urban Forestry Center trail. It was further discussed. Councilor Moreau said there were a lot of height degradation between the lower and upper driveways and asked if there would be enough room for a bus to turn in there and if bikes would be accommodated as well. Mr. Crimmins said they would have to modify the driveway slightly and were trying to expand Route One to have bike lanes.

[Timestamp 1:43:40] Mr. Hewitt asked the applicant to explain the difference between the two versions of the plan. Mr. Crimmins said the first version could be disregarded. Mr. Hewitt asked if there would be bike racks, and Mr. Crimmins agreed. Mr. Hewitt said Portsmouth parking regulations allowed 84 spaces, and with the bike allowance it could go down to 79 spaces, but the applicant proposed 99 or 93 spaces. He said parking could be huge expense, and he asked why the applicant was providing so much extra parking if they were trying to keep the units inexpensive. Mr. Crimmins said they were still working through the details but that the paved area supported the site and the gravel part could provide overflow parking. Mr. Bowen said there was a Route 41 COAST bus that went from Hanover Street north and the system operated on a hourly and tight cycle, so the City would have to think about having bus service on Lafayette Road. He said the applicant was predicating the bus service on the fact that the bus would be able to stop at the applicant's building on the way and going south on Lafayette Drive would be difficult. Mr. Crimmins said they were in early discussions with COAST in terms of how that would operate. Mr. Bowen noted that almost 90 percent of the people who worked in Portsmouth didn't live there, and there was a question when building housing through the Portsmouth Housing Authority of whether the tenants would be Portsmouth residents or others. Mr. Welch said it could be a combination of both. He said they operated 670 housing units in the city and preferred people who lived in or worked in Portsmouth. He said it was highly regulated by the Fair Housing Law as to how exclusive they could be to a certain community.

[Timestamp 1:50:15] Mr. Almeida asked if the project could be twice the size it was proposed and if it was being held back for any reason. Mr. Welch said they thought about how to accommodate the four different units on the site and felt that the best plan was to respect the significant resource of the African Slave Burial Ground. He said the site was 3-1/2 acres and the childcare was licensed for 70 or so children, so they anticipated that people would share the parking. He said there wasn't a lot of opportunity for overflow parking because it was surrounded by conservation land on three sides. He said a good-sized project for the Portsmouth Housing Authority was 40-50 units per the tax credit program. Mr. Bowen said a lot of what the applicant did was based on low-income housing tax credits, and he asked if the project would use those credits. Mr. Welch said they would be applying for the credits but in order to do that, they needed an approved project that was ready to go by the end of August. He said that would bring between 7-1/2 to 8-1/2 million dollars into the equity. Mr. Bowen asked what timeline had to be followed to make that happen. Mr. Welch said it would be a G2 zone and they would have meetings with the Technical Advisory Committee (TAC) and the Planning Board to make sure the site fit. He said they expected to get a tax credit awarded by the end of the year.

## V. DESIGN REVIEW APPLICATION ACCEPTANCE

- A. **361 Hanover Steam Factory, LLC (Owner)**, for property located at **361 Hanover Street**, requesting Design Review application acceptance for the construction of a new building along Hanover Street with a 20-foot tunnel entrance from Hanover Street to a central courtyard between the new building and the existing 361 Hanover Street (Portsmouth Steam Factory) building. The courtyard will provide access to the indoor parking areas at both the existing and the new building. The upper floors of the new Hanover Street building will contain 12 residential dwelling units and the Portsmouth Steam Factory Building would contain 24 dwelling units; for a total of 36 dwelling units. There would be 72 off-street parking spaces in the aggregate. (LUPD-24-3)

There will be a public hearing at the May 16 Planning Board meeting.

## VI. CITY COUNCIL REFERRALS

- A. Home Occupation (*See above notice*)

This will be heard at the April 25 meeting.

- B. Disposition of Tax Deeded Real Estate

[Timestamp 1:57:42] Deputy City Trevor McCourt was present to discuss the three properties that the City deeded (508 Richards Avenue, 150 Bartless Street, and 323 Islington Street) and the options for the City to dispose of the properties. He explained that the City deeded three properties through the tax deeding process, which was unusual. He said each property was owned by different partnership entities and had all been deeded to the City and that he was now seeking the Planning Board's and City Council's opinions on how to dispose of the three properties. He said there was a significant amount of equity in each of the properties that must be

returned to the prior owners, but the City was entitled by statute to recoup the unpaid tax amounts. He said he included several options for accomplishing that goal in his memo but that Option 1, public auction, was the most common option for retaining fair market value for the properties to get the most money back to the prior owners. He said he did not recommend the other options, which he further discussed [Timestamp 2:00:20].

The four options were:

Option 1 – Public Auction.

Option 2 – Appraisal and Offer by the City.

Option 3 – Auction Property and Bid by the City.

Option 4 – Identify Bidder and Purchase Option.

[Timestamp 2:01:14] Attorney McCourt discussed the properties in more detail.

[Timestamp 2:04] Mr. Giuliano said Attorney McCourt was referring to them as the prior owners of the property but it wasn't clear who had legal right to any proceeds over and above what the City has. Attorney McCourt agreed and said the City found deeds from the 1990s for each of the properties with limited partnerships, but two of those partnerships were not registered at the Secretary of State's office and he could find no record of them. He said the other one was registered but the City was unable to locate the records. Mr. Giuliano said Option 1 seemed to convey to the property rate payers in the City that if someone is not paying their share, the City will and has seized the property and is only interested in recouping what is owned to the City. Mr. Mahanna asked how the ongoing litigation would dovetail with the City's effort to dispose of the properties. Attorney McCourt explained that the property manager wasn't registered to do business in New Hampshire and had been paying taxes for a considerable amount of time. He said the tax collector would take the tax bill from anyone, but it was different when there was a lien involved and a redemption period. He said there was a separate statute that limits who the tax collector can accept funds from, and it had to be someone with a legal interest in the property. He said in this case, the tax collector determined that the so-called management company wasn't registered in New Hampshire and provided the funds but had no identification or legal interest in the property, so the checks were not accepted. Chair Chellman said municipalities used to be able to take taxes but couldn't anymore because the Supreme Court said it wasn't constitutional. He said if the City owns the properties and sell them, the money would get put into escrow. Attorney McCourt agreed and said the City would file an ?? action in Superior Court and let the process take its natural course. In his memo, he said he included Option 5 because affordable housing was a hot item and he anticipated that the City Council or others would see it as an opportunity to provide affordable housing. He said there was a statutory option that the City could convey out the properties subject to a deed restriction such that the properties would only be used for affordable housing. He said that statute had not been overturned but it happened to be next to the other statutes that were found to be unconstitutional.

[Timestamp 2:10:15] Mr. Hewitt said he had never heard of a situation where the City takes property and doesn't know who the owner is, and that typically someone went to the registry and tracked the deeds. He said he would feel better if the first step was to find out who the owner was and then auction off the properties. He said auctioning it beforehand and putting it in escrow



could take forever, but if the owner was known before the auction, then one would know what to do with the money. Attorney McCourt said it wasn't a bad idea in a case like this to file something in court in advance of auctioning off the property, but that had to be balanced against the ongoing liability that the properties presented to the City. He said the properties were on the City's books and insurance and it would be the City's responsibility to fix anything that went wrong. He said that was the balance that the City and the City Council would have to undertake.

[Timestamp 2:11:58] Mr. Samonas said it wasn't the Planning Board's problem to figure out who the money got paid to. Attorney McCourt said it wasn't at this time but would be. Mr. Samonas said the City didn't want to be liable for the money either, and he asked if there was a Right of First Refusal in the lease agreement. Attorney McCourt said there wasn't. Mr. Samonas asked if a City staff member or an auctioneer would conduct the auction. Attorney McCourt said the City had been speaking with a few auction companies and that the cost of auctioning off the properties was something they could bill against the proceeds. He said they also talked to a law firm that specialized in it. Mr. Samonas asked where the funds would come from if the City didn't want to bid. Attorney McCourt said there were funds available and that the City could always undertake a special appropriation to purchase it. He said that would procedurally be done in a non-public session of the City Council and they would decide a bidding limit, and the City Manager would participate in the auction. Mr. Samonas said that seemed to require a longer deliberation with the public, who probably wanted to spend the money for affordable housing. Attorney McCourt said if the City wanted to auction off the properties, it should be done as soon as possible unless they had a solid plan for what they would do with the properties.

[Timestamp 2:15:48] Mr. Almeida asked if the City determined that there were no liens or mortgages on the properties. Attorney McCourt said the tax collector did extensive title researches on the properties, called the Secretary of State's office and registered agent companies, and tried to find any way to avoid it, and even when a representative of the property management company came in and tried to redeem the properties, there was an issue of who was paying and the City gave them extra time and it still didn't come through. Councilor Moreau said she always considered the option where there were CDBG funds, which said it was either for purchase or renovation, and she wondered if it was possible to do both. She said if the City could get enough money to do an appraised purchase of one of the properties, she asked if there would be enough money if the property needed renovations to get them done. Attorney McCourt said he didn't know if there was enough money in the CDBG funds to afford both, given the values of property in Portsmouth and the amount of money involved. He said if the City pursued it, they could put together a more detailed presentation. Councilor Moreau said it should at least be explored because the questions would come up at the City Council session and the councilors would want to know if there were funds and if the City could own on of the properties for affordable housing.

[Timestamp 2:18:34] Ms. Conard said she was in an awkward spot. She said that she, Attorney McCourt and staff worked to implement what was a policy revision, but given the fact that she could sit on the Planning Board and share comments, and given the unprecedented nature of never having been in the position to take residential property, it wasn't the City's core competency to be residential landlords. Regarding the liability concerns, she said the longer the City continued to own or manage residential properties and most notably her core function of

being the fiduciary responsibly party for the City, it would be hard for her to suggest that the City take off the table some portion of limited resources for what they usually allocated for essential services and provide it to the residents. She said she would not be comfortable doing any option other than Option 1, or recommending to the City Council that they do it from a prudent fiscal perspective. She said the City would try to identify the owner do their best to get the money to them, and if there were any proceeds to be disbursed afterward, she said that was a conversation to have about affordable housing, but the immediate goal was to get out of the chain of liability and title of the property. Chair Chellman agreed and said he was concerned about time. He said another town set the precedent in a case that made the prior method unconstitutional, where the city could not take over the equity in a piece of property, and the Supreme Court mentioned the time factor and the town delayed things a bit. He said, regarding any of the other options, in addition to the ongoing liability like someone getting hurt or the City being liable, if the City tried to do something short of a public auction, the City could be a bidder too, but then it would be out to the world and couldn't come back to the City with allegations that it was sold for less than market value. He said any of the other options other than Option 1 was asking for additional headaches down the road. Vice-Chair Mahanna said he was in favor of Option 1 because it was like a mortgage meltdown. He said the banks were horrible landlords and got sued and nothing came out of it. He said the faster the City got rid of it, the less liability. Mr. Samonas asked if the City would know how the properties were conveyed out of auction via what type of deed and so on. Attorney McCourt said it would be by quick land deed and would terminate the City's relationship with the properties.

*Vice-Chair Mahanna moved that the City move forward with pursuing the public auction method of disposing of the three properties. Mr. Almeida seconded. The motion **passed** unanimously.*

### C. Solar Amendments

The HDC solar amendments will be included in the packet for the April 25th meeting for discussion by the Planning Board.

## VII. OTHER BUSINESS

### A. 765 Middle Street – One-Year Extension Request

*Councilor Moreau moved to grant the one-year extension request, seconded by Mr. Almeida. The motion **passed** unanimously.*

### B. Chairman Updates and Discussion Items

There was no discussion.

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

There was no discussion.

**VIII. ADJOURNMENT**

The meeting adjourned at 9:22 p.m.

Respectfully submitted,

Joann Breault  
Planning Board Recording Secretary

**PLANNING BOARD  
PORTSMOUTH, NEW HAMPSHIRE**

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

**7:00 PM Public Hearings begin**

**April 25, 2024**

**MEMBERS PRESENT:** Rick Chellman, Chairman; Joseph Almeida, Facilities Manager;  
Beth Moreau, City Councilor; James Hewitt; Paul Giuliano;  
Andrew Samonas, Alternate; Bill Owen, Alternate

.....

**ALSO PRESENT:** Peter Stith, Principal Planner

**MEMBERS ABSENT:** Greg Mahanna, Vice Chair; Karen Conard, City Manager

.....

Chair Chellman called the meeting to order at 7:00 p.m. Alternate Mr. Owen took a voting seat for the evening. Chair Chellman called for a motion to consider Items I.A and II.B together.

*Councilor Moreau moved to consider Items I.A and II.B together, seconded by Mr. Samonas. The motion **passed** with all in favor.*

*Councilor Moreau moved to postpone Items I.A, and II.B for 581 Lafayette Rd to the May 16 meeting, seconded by Mr. Samonas. The motion **passed** with all in favor.*

**I. DETERMINATIONS OF COMPLETENESS**

**SITE PLAN REVIEW**

- A. REQUEST TO POSTPONE** The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District. **REQUEST TO POSTPONE**

**DECISION OF THE BOARD**

*The site plan review was **postponed** to the May 16 meeting.*

## II. PUBLIC HEARINGS – NEW BUSINESS

- A. The request of **ZJBV Properties LLC (Owner)**, for property located at **180 Islington Street** requesting a Conditional Use Permit in accordance with Section 10.1112.14 of the Zoning Ordinance to provide two preexisting nonconforming parking spaces where 9 are required. Said property is located on Assessor Map 137 Lot 19 and lies within the Character District 4-L2 (CD4-L2) and Historic Districts. (LU-24-27)

### SPEAKING TO THE PETITION

[Timestamp 7:30] Attorney Chris Mulligan was present on behalf of the applicant, with project engineer Eric Weinrieb and applicant/owner Zeke Blumenfeld. Attorney Mulligan said Mr. Blumenfeld wanted to operate a retail antiques dealership on the first floor and a Conditional Use Permit was necessary for parking. He said the employees would use public parking and that most customers would walk to the store. He said they would provide alternative parking by installing a bike rack in front of the building and placing signage to reserve a portion of the front of the building for scooters and mopeds. He said the project met all the Conditional Use Permit requirements and the number of off-street parking spaces required were enough for the use.

[Timestamp 15:00] Mr. Bowen noted that the applicant's basic premise was that there was ample nearby public parking for the use. Mr. Bowen said the neighborhood parking would be different in the near future due to how the north end was evolving and the area's demographics. He said he didn't think customers would ride bikes to the antiques market. He said it would be helpful to have an update on the north end from the time the Foundry Garage was built as to the implications for a walkable neighborhood and for parking. Chair Chellman said there were two issues, and the bigger issue was the neighborhood parking demand. Attorney Mulligan said the provision of bike racks did not necessarily correlate to the customers for the particular use that triggered the project. He said the zoning ordinance required provisions for a certain number of parking spaces for all the building's uses. He said there was no space on the property to add more parking but they could do alternatives to mitigate the lack of parking for the other uses and that some of the property's other users might utilize those alternatives. Mr. Weinrieb said they prepared the parking demand analysis from a common-sense viewpoint that fell in line with the zoning. He said the antiques store would likely have only one or two customers at a time and that the customers might come by bike or scooter to shop and buy an item and then return with a larger vehicle to pick it up. He said there was also public parking and a COAST bus route stop.

[Timestamp 21:38] Councilor Moreau said she knew that the Foundry Garage alleviated some parking issues and would be a logical place for the antiques store's employees to park in. She said once the Islington Street Corridor streetscape was finished, people would walk up and down it or ride bikes or scooters. She noted that there was a parking space in front of the store and that the two busy establishments across the street didn't seem to have parking issues. Mr. Giuliano asked the applicant if he offered delivery. Mr. Blumenfeld said he did, depending on the item. Mr. Almeida said the project made sense and was an opportunity to support small businesses in the downtown core and to also support a housing unit that was below the luxury rate. He said the

documentation showed vehicles parking in the requested location and proved that two cars would fit in that space. Mr. Samonas noted that the corridor improvement project was happening right in front of the unit. Councilor Moreau said the improvements would stop at Brewster Street. It was further discussed. Chair Chellman verified that the request was for two existing tandem residential spaces on the right-hand side of the building and that the undersized area to the left of the building was not being proposed for vehicle parking.

Chair Chellman opened the public hearing.

### **SPEAKING TO, FOR, OR AGAINST THE PETITION**

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

### **DECISION OF THE BOARD**

*1) Mr. Giuliano moved that the Board find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1112.14 of the Ordinance and adopt the findings of fact as presented. Mr. Almeida seconded. The motion **passed** with all in favor.*

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

*2.1) Parking in front of the building shall be designated for moped/motorcycle parking with appropriate signage.*

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

**B. REQUEST TO POSTPONE** The request of **Atlas Commons LLC (Owner)**, for property located on **581 Lafayette Road** requesting Site Plan review approval for two 4-story additions to the existing building that will total 72 residential units with associated site improvements including lighting, utilities, landscaping, and stormwater treatment/management and a Conditional Use Permit from Section 10.5B72 for increased density, building height and footprint. Said property is located on Assessor Map 229 Lot 8B and lies within the Gateway Corridor (G1) District.  
**REQUEST TO POSTPONE (LU-23-189)**

### **DECISION OF THE BOARD**

*The public hearing was **postponed** to the May 16 meeting.*

**C.** The request of **Edward R. Reynolds (Owner)**, for property located on **110 Aldrich Road** requesting a Wetland Conditional Use Permit in accordance with Section 10.1017 for the construction of a 768 s.f. detached, two car garage with an accessory dwelling unit on the second floor. Approximately 522 s.f. will be impacting the 100 ft wetland buffer as a permanent impervious impact, with the edge of the proposed garage located approximately 76 ft from the wetland resource and a Conditional Use permit to construct a Detached Accessory Dwelling unit in accordance with Section

10.814.62. Said property is located on Assessor Map 153 Lot 3 and lies within the Single Residence B (SRB) District. (LU-23-174)

### **SPEAKING TO THE PETITION**

[Timestamp 30:50] The applicant Edward Raynolds was present via Zoom and said he wanted to build a two-car garage with an ADU above it. He said half his lot was within the 100-ft wetland buffer zone and that he got approval from the Conservation Commission. He said the garage's design would reflect his home's architectural features. He said he needed relief for the percentage of roof area taken up by the dormers and from the two-car double-wide garage door as opposed to a single-width garage door. He said he would change his asphalt driveway to pavers and would use a plastic grid system for the two-car garage driveway.

[Timestamp 37:03] Councilor Moreau asked if the door on the back side of the new structure was a garage door. Mr. Raynolds agreed and said it was to get lawn and recreation equipment in and out but there would be no vehicles. Mr. Almeida said the relief requested was mostly architectural. Mr. Hewitt said the agenda showed that the applicant was only requesting a Conditional Use Permit for the wetland impacts and not architectural things like the garage doors and the dormers. Mr. Raynolds said he needed a Conditional Use Permit for the wetland impact, and the ADU required a Conditional Use Permit from the Planning Board and that he was only asking relief for the garage doors and dormers. Mr. Stith said the Planning Board could grant modifications from the requirements in the ordinance through the Conditional Use Permit process and that they did not need to be noticed. Mr. Hewitt asked why there were eight parking spaces for the ADU. Mr. Raynolds said his existing driveway could have 4-5 stacked cars and the two-car garage would fit two cars and the driveway would fit two cars.

Chair Chellman opened the public hearing.

### **SPEAKING TO, FOR, OR AGAINST THE PETITION**

Ellen Fineberg of 75 Aldrich Road said the applicant had a large vehicle that he was thinking of parking in his garage and if he did, he may have to park all the other cars in the driveway and use the street. Mr. Raynolds said Ms. Fineberg was referring to his van and trailer combination that he used for his bicycle touring business. He said he conducted tours all over the country and had two 15-passenger vans and two 15-ft utility trailers that returned to Portsmouth at the end of October and were put in private storage facilities. He said part of his new garage would house his trailers and the vans would be stored elsewhere.

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

### **DECISION OF THE BOARD**

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

2) Councilor Moreau moved that the Board grant the Conditional Use Permit with the following conditions:

2.1) In accordance with Section 10.1018.40 of the Zoning Ordinance, applicant shall permanently install wetland boundary markers, which may be purchased through the City of Portsmouth Planning & Sustainability Department. Markers are to be placed along the 25' vegetative buffer at 50-foot intervals and must be installed prior to the start of any construction.

2.2) Applicant shall remove all debris/trash from the wetland and 25' vegetative buffer, including the wood decking/pallet structure.

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

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

2) Councilor Moreau moved that the Board grant the following modifications:

2.1) Modification from Section 10.814.53 to allow a 16' wide garage door.

2.2) Modification from Section 10.814.436 to allow a roof dormer to occupy 57% of the roof plan where 33% is the maximum.

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

3) Councilor Moreau moved that the Board grant the Conditional Use Permit with the following conditions:

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

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

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

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



- D.** Consider amendments to change the definition of a home occupation found in Chapter 10, Article 15 Definitions, pursuant to Section 10.150 of the Zoning Ordinance.

[Timestamp 55:50] Chair Chellman said he talked to City Staff and they thought it made sense to include a modification to Home Occupation No. 2. He suggested leaving Home Occupation 1 as presented and allowing up to 5 or 6 students for Home Occupation 2. He said it would change the existing special exception requirement to a Conditional Use Permit that would come before the Planning Board and allow a greater number of students taking art or music lessons. He said it was in keeping with the goals of the master plan and land use committee discussions. He said there were concerns that Home Occupation 1 may not be enough. Councilor Moreau said the addition could probably get support from the City Council and that she had no issues adding the change. It was further discussed. Mr. Hewitt asked if Home Occupation 2 would expand to have more home occupation uses like yoga or hairdressing. Mr. Stith said it allowed no more than two people at any time, and a home occupation had to meet certain criteria. He used the example of a hair salon and said in Home Occupation 1, it could only be within 300 sf and only have two clients at a time. He said Home Occupation 2 would have up to 5 or 6 clients allowed by a Conditional Use Permit where it currently was allowed by special exception. Chair Chellman said Home Occupation 1 was allowed as a matter of right, but Home Occupation 2 would be something more. By having a Conditional Use Permit, he said the applicant would have to show how the particular use in the particular neighborhood worked.

Chair Chellman opened the public hearing.

### **SPEAKING TO, FOR, OR AGAINST THE AMENDMENTS**

Karen Rosania of 32 Boss Avenue said she was a local artist and a member of the Arts and Cultural Commission and was in support of changing the definition of home occupation to allow artists to teach small classes in their home studios. She said she also sent a letter to the Board signed by 17 other individuals who were part of the Portsmouth Arts Nonprofit Committee and/or the Arts and Cultural Commission and were in favor of the change. She said survey respondents to the Cultural Plans wanted fewer zoning barriers for artists and more work/living spaces for in-home instruction of music, visual arts, and other educational programs. She said it would allow Portsmouth to better attract and retain artists.

Jeffrey Cooper of Park Street said he was a local artist and agreed with Ms. Rosania.

Julia Higgins of 344 Aldrich Street said she was an educator and in support of changing the definition of Home Occupations 1 and 2.

Petra Huda of 280 South Street said she questioned the process because the Board wanted input from the public but the public was not aware of the second amendment.

Anna Stratton said she was the Executive Director of the Portsmouth Historical Society and was on the Arts and Cultural Commission and that her organization's work depended on the local

artists and featuring them in exhibitions. She said finding a way to have artists host classes in their homes was a wonderful addition and she supported the change.

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

## **DISCUSSION OF THE BOARD**

[Timestamp 1:13:08] Chair Chellman explained how the process worked and said there was nothing sneaky going on. He said they could make the language specific to be 5 or 6 students. He asked for opinions on Condition 1. Mr. Bowen said there could also be musical artists, so a provision was needed to protect neighbors from noise pollution. Chair Chellman said the City had a noise ordinance and he thought it was covered, especially under a Conditional Use Permit. Mr. Bowen asked if those 'by right' would be handled under the City's noise ordinance. Chair Chellman said there was a noise ordinance and a nuisance ordinance, and a nuisance would be a separate matter, and he thought it was covered, especially under the 'by right' term. Mr. Almeida said he was in full support of the 'by right' effort but asked how the Board would defend themselves against someone renting an apartment or duplex. He said he was concerned about creating conflicts in buildings where a landlord may not want groups of people coming into the building. Councilor Moreau said the landlord would have the power. Chair Chellman said that, unlike an ADU, there was no ownership requirement for home occupation. It was further discussed. Mr. Giuliano said he was concerned about what would come before the Board in the future, like friends going to a house to play drums or make chainsaw art. He asked if the Board would see people come forward for a Conditional Use Permit for six students and if the Board would have to ask them what they were teaching, and how the Board would base their decision. Chair Chellman said that might happen randomly and that the purpose of a Conditional Use Permit was a home occupation with up to six regular students. He said it could be three times a week for a few hours. Mr. Giuliano asked about dog grooming. Mr. Stith read the definitions of Home Occupation 1 and 2 and said people had to follow those criteria. Chair Chellman said it was about the neighborhood character and that Home Occupation 1 would allow no more than two students and Home Occupation 2 would allow up to six. He said the Board could say six students or six people. Councilor Moreau said the Board should stick to the word 'client' because it was a paying customer at that point. Mr. Samonas said it was discretionary based on the character of the neighborhood, the occupation, and the preexisting conditions to that occupation and that there were several governing parameters. He said it all sounded fine to him and noted that at the very least it would be a self-policing policy that the neighbors would do. There was further discussion and it was decided that Condition 1 would be the same language but would say 'up to six'.

## **DECISION OF THE BOARD**

### **Planning Department Recommendation**

*1) Councilor Moreau moved that the Board recommend to City Council to hold first reading on the zoning amendments for home occupation as follows:*

Proposed language shown in red.

### Home Occupation

An **office** or other **use** customarily conducted as an **accessory use** to a **dwelling**, complying with all the following standards:

- (a) Conducted entirely within a **dwelling** or an existing **accessory building**, and with no change to the character of the **dwelling** or **accessory building**;
- (b) Maximum floor area of 300 square feet;
- (c) No **outdoor storage** of materials or products;
- (d) Outdoor parking of no more than one vehicle related to the **home occupation**;
- (e) No deliveries by vehicles with more than two axles.

#### Home Occupation 1

A **home occupation** with no nonresident employees; no **sign** related to the business; no **more than 2** client, vendor or general public visitations **at one time**; and no deliveries other than by regular postal service and no more than one package delivery service truck (e.g., FedEx, UPS, etc.) per day.

#### Home Occupation 2

A **home occupation** with not more than one nonresident employee **and not more than 6 client, vendor or general public visitations at one time**.

Change Home Occupation 2 to a Conditional Use Permit where it currently requires a Special Exception.

*Mr. Giuliano seconded. The motion passed by a vote of 6-1, with Mr. Bowen voting in opposition.*

### III. CITY COUNCIL REFERRALS

#### A. Home Occupation (see above notice)

#### B. Solar Amendments

[Timestamp 1:33:32] Chair Chellman referred to the last clause under the definition ‘not visible from a public way’ and said the clause at the end that said “or a place to which the public has a right to access” should be deleted and that the City Attorney and HDC Chair Reagan Rudig had agreed with him. Mr. Almeida said he would hesitate changing anything that the Historic District Commission (HDC) had not weighed in on as a group. Chair Chellman said the issue was that people could see a lot more from roofs than walking around and that it would not change the substance of what the HDC had with it. It was further discussed. Mr. Almeida said he was concerned that the Board was simply making a recommendation forward and that the City Council might follow the recommendation, noting that there was still talk about taking responsibility for solar panels away from the HDC. Chair Chellman said he asked the City Council for more time to address it and that the proposal was to move it to a Planning Board public hearing. He said the City Council would consider it at their first reading on May 6 and that the Planning Board would get feedback from that. Councilor Moreau offered to put the change as a review under her name at the City Council meeting so that it was there at first reading on May 6, and the Board agreed.

#### **IV. OTHER BUSINESS**

##### **A. Chairman Updates and Discussion Items**

[Timestamp 1:46:35] Chair Chellman said he and Mr. Samonas spoke to a few master plan consulting firms and would have a list of consultants for the RFQ at the June or July meeting. Mr. Bowen asked about the inclusionary zoning ordinance. Chair Chellman said there would be drafts proposed to make changes to the Gateway and elsewhere, and it was further discussed.

#### **V. ADJOURNMENT**

The meeting adjourned at 8:47 p.m.

Respectfully submitted,

Joann Breault  
Planning Board Recording Secretary

# Findings of Fact | Density Bonus Incentives Conditional Use Permit

## City of Portsmouth Planning Board

Date: 8 May 2024

Property Address: 581 Lafayette Road

Application #: LU – 23 - 189

Decision:  Approve     Deny     Approve with Conditions

### Findings of Fact:

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

### Density Bonus Incentives Conditional Use Permit

10.5B72 A conditional use permit may be granted by the Planning Board for increased housing density or for increased building height and footprint.

	<b>Density Bonus Incentive Findings</b>	<b>Finding</b> (Meets Criteria/Requirement)	<b>Supporting Information</b>
1	The proposed project (and any conditions of approval) satisfies the requirements in Section 10.5B73 for providing workforce housing and Public Realm improvements (if seeking more than 1 incentive).	<p style="text-align: center;"><b>Meets</b></p> <p style="text-align: center;"><b>Does Not Meet</b></p>	<p><u>Public Realm</u>: Section 10.5B73.20 1) Off road trail equal in length to the public street frontage of the site as provided in 10.5B73.20 (4) to be located on a different lot than the development lot, with a waiver to criteria (b) as the Public Realm Improvement is on a lot that is in a different Zoning District.</p> <p><u>Workforce Housing</u>: The development was designed in compliance with Section 10.5B73.10 Workforce Housing by providing 20% of the proposed dwelling units (15) as workforce housing units for rent. The Workforce Housing Covenant Document outlines the intended compliance with the workforce Housing Requirement. The Architectural details identify the units within the project that will be workforce housing, with locations and square foot areas.</p>

	<b>Density Bonus Incentive Findings</b>	<b>Finding</b> (Meets Criteria/Requirement)	<b>Supporting Information</b>
<b>2</b>	The proposed project is consistent with the purpose and intent set forth in Section 10.5B11	<b>Meets</b> <b>Does Not Meet</b>	The project meets the purpose (and intent) of Section 10.5B11 and the project supports the Master Plan goals in a significant way by providing affordable housing and a mixed-use development.
<b>3</b>	10.5B11.10 Purpose of Article 5B is to implement and support the goals of the City's Master Plan and Housing Policy to encourage walkable mixed-use development and continued economic vitality in the City's primary gateway areas, ensure that new development complements and enhances its surroundings, provide housing stock that is suited for changing demographics, and accommodate the housing needs of the City's current and future workforce.	<b>Meets</b> <b>Does Not Meet</b>	The project meets the purpose of Section 10.5B11.10 by providing affordable housing and creating a mixed-use development.
<b>4</b>	10.5B11.20 a) Promote development that is consistent with the goals of the Master Plan to create vibrant, authentic, diverse, connected and resilient neighborhoods;	<b>Meets</b> <b>Does Not Meet</b>	This project bookends another recently approved residential development in an area where dense housing in close proximity to retail and other services serves to create a vibrant neighborhood.
	b) Encourage high quality housing for a variety of household types and income ranges;	<b>Meets</b> <b>Does Not Meet</b>	The project Architecture is high quality, and at the same time integrates affordable housing at the desired scale and percentage of units.
	c) Guide the physical character of development by providing a menu of building and site development types that are based on established community design principles; and	<b>Meets</b> <b>Does Not Meet</b>	The character of the building provides a unique quality and a varied building type with quality as a key component.
	d) Create quality places by allowing for whole site development with meaningful public spaces and neighborhood centers.	<b>Meets</b> <b>Does Not Meet</b>	The inclusion of Community Space provides the public spaces needed for the enjoyment of the residents. The public space at the other end of the neighborhood (adjacent to the marsh and Sagamore Creek) provide and enhance the area and create a defined neighborhood.

	<b>Density Bonus Incentive Findings</b>	<b>Finding</b> (Meets Criteria/Requirement)	<b>Supporting Information</b>
5	<u>Other Board Findings:</u>		

DRAFT

# Findings of Fact | Site Plan Review

## City of Portsmouth Planning Board

Date: 8 May 2024

Property Address: 581 Lafayette Road

Application #: LU – 23 - 189

Decision:  Approve     Deny     Approve with Conditions

### Findings of Fact:

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

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

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
1	Compliance with all City Ordinances and Codes and these regulations. <u>Applicable standards</u>	Meets  Does Not Meet	The project did not need Variances, just reasonable Planning Board Waivers to be compliant.
2	Provision for the safe development, change or expansion of use of the site.	Meets  Does Not Meet	The project received TAC Approval indicating that the city departments agree that the proposed design is safe.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	Meets  Does Not Meet	The site plans contain the required Erosion Control measurements to ensure that there are no downstream impacts.
4	Adequate protection for the quality of groundwater.	Meets  Does Not Meet	There are no infiltrations to groundwater from the project.



	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>5</b>	Adequate and reliable water supply sources.	<b>Meets</b> <b>Does Not Meet</b>	City water is available for the development.
<b>6</b>	Adequate and reliable sewage disposal facilities, lines, and connections.	<b>Meets</b> <b>Does Not Meet</b>	City sewer is available for the development.
<b>7</b>	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	<b>Meets</b> <b>Does Not Meet</b>	The project received TAC Approval indicating that the city departments agree that the proposed design is not harmful to the environment or adjacent properties.
<b>8</b>	Adequate provision for fire safety, prevention and control.	<b>Meets</b> <b>Does Not Meet</b>	The Fire Department requested the addition of a fire hydrant to meet this concern.
<b>9</b>	Adequate protection of natural features such as, but not limited to, wetlands.	<b>Meets</b> <b>Does Not Meet</b>	There are no wetlands on the subject property.
<b>10</b>	Adequate protection of historical features on the site.	<b>Meets</b> <b>Does Not Meet</b>	There are no historical features on the subject property.
<b>11</b>	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	<b>Meets</b> <b>Does Not Meet</b>	The project received TAC Approval indicating that the city departments agree that the proposed plan provides adequate on-site traffic flow.
<b>12</b>	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	<b>Meets</b> <b>Does Not Meet</b>	The project received TAC Approval indicating that the city departments agree that the proposed use does not require off-site traffic improvements.
<b>13</b>	Adequate insulation from external noise sources.	<b>Meets</b> <b>Does Not Meet</b>	There are no known sources of exterior noise.
<b>14</b>	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	<b>Meets</b> <b>Does Not Meet</b>	The project received TAC Approval indicating that the city departments agree that the proposed development does not create unreasonable demand on public infrastructure.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>15</b>	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	<b>Meets</b> <b>Does Not Meet</b>	The site provides Community Space and off-site Public Realm Space to address the recreational needs of the residents.
<b>16</b>	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	<b>Meets</b> <b>Does Not Meet</b>	The proposed Public Realm sidewalk provides a link to the High School.
<b>17</b>	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	<b>Meets</b> <b>Does Not Meet</b>	The project received TAC Approval indicating that the city departments agree that the site is suited to the proposed use and improvements.
<b>18</b>	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	<b>Meets</b> <b>Does Not Meet</b>	The site has a professionally prepared landscaping plan.
<b>19</b>	Compliance with applicable City approved design standards.	<b>Meets</b> <b>Does Not Meet</b>	The project received TAC Approval indicating that the city departments agree that the proposal is in compliance with city design standards.
	<b>Other Board Findings:</b>		



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

1 May, 2024

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

**RE: Supplemental Submission for Site Plan Approval at 581 Lafayette Road; Mixed Use Development; Tax Map 229 Lot 8B**

Dear Mr. Chellman and Planning Board Members:

On behalf of Atlas Common, LLC (Owner) we submit this updated supporting material for the above-mentioned project. We understand that the application will be placed on the Agenda for the **May 16, 2024, Planning Board meeting**. The April 1, 2024, submission included design plans and a project narrative which described the actual existing site condition along Lafayette Road. The existing site has 30 parking spaces which encroach into the NHDOT right-of-way. The plans outlined an alternative parking design which would be completed if the NHDOT required the encroachment to be removed. This supplemental submission shows the removal of the encroachment. In addition, the applicant has re-programmed some interior space which had been reserved for restaurant expansion to storage for the residential dwelling units. This change re-calculates the parking demand, resulting in a conforming site design which does not require the use of any off-site easement parking to meet Portsmouth Ordinance parking requirements.

**Proposed Development Revision**

The submission includes a revision to the basement parking level, expanding a section towards Lafayette Road. The revised Basement Level will provide a parking level with eighty vehicle, eight bike, five motorcycle, and six scooter spaces. The first-floor level remains the same and contains seventy-three vehicle spaces, seventy-four bicycle spaces, and two motorcycle spaces. The exterior parking spaces are reduced from thirty to twenty. The site plan revision removes some on site pavement and reduces the on-site impervious surface coverage by 519 square feet. The revision to the existing first floor commercial space and the creation of the storage area for the residential units is shown on Architectural Plan PB 1.01.

**Project Parking**

The revised Basement Level parking spaces are shown on Architectural Plans PB 1.00. The revised site plan contains a total of 173 parking spaces (formerly 178 parking spaces).

Tandem parking spaces will still be assigned to particular residential units, as well as assigned to the restaurants as employee and valet spaces. The assignments are detailed on Sheet C4.

### **Traffic and Access**

The site access is established and not changing. The previously submitted Trip Generation Memo and Traffic Impact Study are not impacted by this change.

### **Project Site Details**

The complete development plan set was submitted with the April 1, 2024, submission package. The change to the site would require re-plotting most of the plan set, but we believe the supplemental changes are highlighted in the following updated plans. The entire set would be updated to show the revised layout as a Condition of Approval. The revised Site Plans for this Supplemental Submission include:

- Cover Sheet – Updated submission date and included (supplemental) plans list.
- Sheet C2 – Demolition Plan: The plan update details the off-site pavement removal.
- Sheet C3 – Site Plan: This sheet shows the re-design of the parking required by the removal of the pavement on NHDOT property. Parking has been re-designed as angled parking.
- Sheet C4 – Parking Plan: The plan shows the basement and first floor parking and the totals, as well as the stacked parking assignments.
- Sheet C5 – Utility Plan: The plan shows the proposed hydrant and sewer relocation to accommodate the parking and basement revisions.
- Floor Plans – Basement and First Floor – The expanded basement parking is detailed, and the first floor included for reference. The architectural plans remain the same for the upper floors.

### **Parking Calculations**

Included in this supplemental submission are revised parking calculations with the updated parking from the revised plans. The calculations show that 173 spaces are provided where the maximum total required parking is 162 spaces.

### **Approval Requested**

We look forward to a Planning Board review of this submission and our in-person presentation at your meeting.

Sincerely,



John Chagnon, PE; Ambit Engineering – Haley Ward

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			<b>with gateway deduct - 20%</b>
<b>Apartments Parking Required</b>			
subtotal base parking spaces required			86.00
Gateway deduct -20%			(17.20)
Subtotal parking required			68.80
	# excess bike spaces	# car spaces deducted	
Bicycle parking deduction 1 space for 6 bikes, max 5%:	(24.0)	4.66%	(4.0)
max 5% allowed =	4.3 spaces		
<b>Apartment Parking Required (adjusted for gateway &amp; bikes)</b>			<b>65.00</b>

Restaurant/Recreation Parking Required	spaces/gfa	gfa or occ	spaces (rounded up)	subtotal w/20% gateway
Restaurant , Suite 1 (Tour)	1/100	8,562	86	69
Restaurant , Suite 3 (Thai)	1/100	3,506	36	29
Mezzanine Office (restaurant)	1/350	1,060	4	4
Recreation (golf)	1per 4 occ.	20	5	4
subtotal			131	
Gateway deduct -20%			-26.2	
Subtotal restaurant/recreation parking required				106
	# excess bike spaces	# car spaces deducted	round down	
Bicycle parking deduction - 1 space for 6 bikes, max 5%	(37.0)	-5.87%	(6.2)	(6.00)
max 5% allowed =	5.25 spaces			
<b>Restaurant/Recreation Parking Required (adjusted for gateway &amp; bikes)</b>				<b>100</b>

<b>bicycle deduct 5%</b>	<b>total</b>
(6.00)	92.0
0.00	4.0
<b>0.00</b>	<b>4.0</b>

9. Eating and Drinking Places		
9.10-9.50	All eating and drinking places	1 per 100 sf GFA

4. Recreational Uses		
4.10	Religious, sectarian or private non-profit recreational use	Parking demand analysis
4.20	Cinema or similar indoor amusement use with no live performance	0.4 per seat, or Parking demand analysis
4.30	Indoor recreation use, such as bowling alley or arcade	1 per 4 persons maximum occupancy
4.40	Health club, yoga studio, martial arts school, or similar use	1 per 250 sf GFA
4.50	Outdoor recreation use	Parking demand analysis
4.60	Amusement park, water park or theme park	NA – Prohibited Use

<b>TOTAL parking required all uses (adjusted for gateway &amp; bikes)</b>	<b>165.0</b>
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**Shared Parking 10.1112.60**

Total Parking Required	Weekday				Weekend				Nighttime		Maximum TOTAL Required
	daytime (8am-5pm)	spaces required	evening (6-12pm)	spaces required	daytime (8am-5pm)	spaces required	evening (6-midnight)	spaces required	(midnight-6am)	spaces required	
Apartments	60%	39.0	100%	65.0	80%	52.0	100%	65.0	100%	65.0	
restaurant	70%	64.4	100%	92.0	80%	73.6	100%	92.0	10%	9.2	
Office	100%	4.0	20%	0.8	10%	0.4	5%	0.2	5%	0.2	
Entertainment (golf)	40%	1.6	100%	4.0	80%	3.2	100%	4.0	10%	0.4	
<b>ADJUSTED TOTAL Required, all uses, shared</b>		<b>109.0</b>		<b>161.80</b>		<b>129.2</b>		<b>161.2</b>		<b>74.8</b>	<b>162</b>

<b>Total Parking Proposed</b>	
In-building, level 1 + basement	153
Open air, on site	20
Off-site parking per deeded easement	0
<b>Total parking proposed</b>	<b>173</b>
<b>EXCESS (Defecit)</b>	<b>11</b>
Existing total available-today	154
Proposed Net Increase (reduction) in parking	8



Level	Room No.	# bedrooms	Area (sf)	spaces/unit	Workforce	Accessible
LEVEL 5	B504	STUDIO	369	0.50		
LEVEL 5	A505	STUDIO	424	0.50		
LEVEL 5	A507	STUDIO	424	0.50		
LEVEL 5	A503	STUDIO	425	0.50		
LEVEL 5	A504	STUDIO	425	0.50		
LEVEL 5	A509	STUDIO	425	0.50		
LEVEL 4	B406	STUDIO	425	0.50		
LEVEL 3	B306	STUDIO	426	0.50		
LEVEL 5	B503	STUDIO	434	0.50		
LEVEL 5	A511	STUDIO	457	0.50		
LEVEL 4	B411	STUDIO- ACCESSIBLE	494	0.50		Fully Accessible-1
LEVEL 5	A508	STUDIO	499	0.50		
LEVEL 3	B303	1BR	499	0.50		
LEVEL 3	B311	1BR	499	0.50		
LEVEL 4	B403	1BR	499	0.50		
LEVEL 3	B304	1BR	524	1.00		
LEVEL 4	B404	1BR	531	1.00		
LEVEL 5	B505	1BR	532	1.00		
LEVEL 5	B506	1BR	532	1.00		
LEVEL 5	B502	1BR	541	1.00		
LEVEL 2	B207	1BR	542	1.00		
LEVEL 3	B309	1BR	572	1.00		
LEVEL 4	B409	1BR	572	1.00		
LEVEL 4	A407	STUDIO- ACCESSIBLE	580	1.00		Fully Accessible-2
LEVEL 4	B410	1BR	599	1.00		
LEVEL 4	A408	1BR	620	1.00		
LEVEL 3	B310	1BR	621	1.00		
LEVEL 3	B307	1BR- ACCESSIBLE	644	1.00		Fully Accessible-3
LEVEL 4	B408	1BR	645	1.00		
LEVEL 2	B206	1BR	651	1.00		
LEVEL 3	B308	1BR	652	1.00		
LEVEL 4	B407	1BR	659	1.00		
LEVEL 2	A205	1BR	660	1.00		
LEVEL 3	A305	1BR	660	1.00		
LEVEL 4	B401	1BR	667	1.00		
LEVEL 5	A502	1BR	672	1.00		
LEVEL 3	A309	1BR	682	1.00		
LEVEL 3	A307	1BR	694	1.00		
LEVEL 2	A207	1BR	698	1.00		
LEVEL 3	A308	1BR	699	1.00		
LEVEL 4	A405	1BR	702	1.00		
LEVEL 3	B301	1BR	703	1.00		
LEVEL 4	B402	2BR	708	1.00		
LEVEL 2	A209	1BR	709	1.00		
LEVEL 2	A208	1BR	723	1.00		
LEVEL 5	B507	2BR- ACCESSIBLE	733	1.00		Fully Accessible-4
LEVEL 4	A406	1BR	749	1.00		
LEVEL 3	B305	2BR	749	1.00		
LEVEL 4	B405	2BR	749	1.00		
LEVEL 3	B302	2BR	780	1.30		
LEVEL 2	B202	2BR	782	1.30		
LEVEL 2	A206	1BR	786	1.30		
LEVEL 3	A306	1BR	823	1.30		
LEVEL 2	B201	2BR-WORKFORCE	872	1.30	Workforce 1	
LEVEL 2	A203	1BR- ACCESSIBLE- WF	886	1.30	Workforce 2	Fully Accessible-5
LEVEL 5	A506	1BR- ACCESSIBLE- WF	910	1.30	Workforce 3	Fully Accessible-6
LEVEL 3	A303	2BR- WF	988	1.30	Workforce 4	
LEVEL 5	B501	2BR-WORKFORCE	1007	1.30	Workforce 5	
LEVEL 2	B203	3BR-WORKFORCE	1146	1.30	Workforce 6	
LEVEL 4	A402	3BR-WORKFORCE	1365	1.30	Workforce 7	
LEVEL 2	B204	3BR- WF	1456	1.30	Workforce 8	
LEVEL 2	B205	3BR-WORKFORCE- ACCESSIBL	1497	1.30	Workforce 9	Fully Accessible-7
LEVEL 3	A302	3BR-WORKFORCE	1504	1.30	Workforce 10	
LEVEL 2	A202	3BR-WORKFORCE	1535	1.30	Workforce 11	
LEVEL 5	A510	3BR- WF	1535	1.30	Workforce 12	
LEVEL 4	A403	3BR- WF	1726	1.30	Workforce 13	
LEVEL 4	A401	3BR-WORKFORCE	2034	1.30	Workforce 14	
LEVEL 3	A301	3BR-WORKFORCE	2056	1.30	Workforce 15	
LEVEL 2	A204	3BR	2144	1.30		
LEVEL 4	A404	3BR	2153	1.30		
LEVEL 3	A304	3BR-ACCESSIBLE	2172	1.30		Fully Accessible-8
LEVEL 2	A201	3BR	2200	1.30		
<b>Total Units</b>			<b>Parking Req.</b>	<b>workforce housing</b>		
<b>Total Units:</b>	<b>72</b>		71.40	20% of units	average unit size	
Visitor Parking - 1 space per every 5 dwellings			14.40	14.4	848	
Residential automobile parking required (base, unadjusted)			85.80	86.00	ROUNDED UP	

Unit Size	Required
0-500	0.5
500-750	1.0
751-1900	1.3

use	spaces required per use	total required
multifamily	1 bicycle for every 5 dwelling units	15
restaurant/rec	1 bicycle for each 10 car parking spaces	11
<b>TOTAL Required</b>		<b>26</b>
Total Provided (in building, basement + 1st floor)		
		82
Total Provided (outside)		
		8
<b>Total Provided, inside &amp; outside</b>		
		<b>90</b>
Excess Provided (beyond required)		
		64
CAR SPACES DEDUCTED @ 1:6		
Excess applied to New Additions (housing)		
		24.0
Excess applied to Existing Building		
		37.0
Net leftover excess bicycle parking		
		3.0
Scooter parking provided (none required)		
		18
Motorcycle parking provided (none required)		
		7

Apartment Types - Unit Mix & Locations

level	number of bedrooms per apartment					Total
	0	1	2	3	4	
5	9	5	2	1		17
4	3	10	2	4		19
3	1	13	3	3		20
2	0	8	2	6		16
<b>total</b>	<b>13</b>	<b>36</b>	<b>9</b>	<b>14</b>		<b>72</b>
Total bedrooms	13	36	18	42		109

Apartment Types - Unit Distribution per Building

Level	Building A	Building B	TOTAL
5	10	7	17
4	8	11	19
3	9	11	20
2	9	7	16
<b>total units</b>	<b>36</b>	<b>36</b>	<b>72</b>



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Phone (603) 430-9282 Fax 436-2315

1 April, 2024

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

**RE: Submission for Conditional Use Permit and Site Plan Approval at 581 Lafayette Road; Mixed Use Development; Tax Map 229 Lot 8B**

Dear Mr. Chellman and Planning Board Members:

On behalf of Atlas Common, LLC (Owner) we submit the attached Plans and additional supporting material for the above-mentioned project. We request that the application be placed on the Agenda for the **April 18, 2024, Planning Board meeting**. The project consists of the addition of 72 residential units (including 20% of the units as Workforce Housing) at 581 Lafayette Road with two new building additions, with the associated and required site improvements. The site is currently developed with two restaurants. The re-development will include creating additional car parking below first floor building level. The project received approval at the March 5, 2024, Technical Advisory Committee meeting. The project specifics are as follows.

**Project Summary**

The project is located at 581 Lafayette Road at the corner of Lafayette Road and Ledgewood Drive, the lot is known as Tax Map 229, Lot 8B. The lot is a 98,124 square foot parcel with frontage on both streets. The existing conditions plan shows the current site features.

The existing building was renovated in 2016 when the site was changed from a Cinema to the Tuscan Restaurant – Tuscan Marketplace. The Tuscan Restaurant moved to downtown Portsmouth, and that portion of the site was re-purposed to a restaurant with golf simulators, known as Tour. The Tuscan Marketplace closed, but recently the Tuscan Marketplace space was converted to another restaurant known as Five 81° Northeast Thai Restaurant. Both restaurants have outside seating as depicted on the Site Plan. The project consists of two proposed additions to an existing building, and associated site improvements.

The property is in the Gateway Neighborhood Mixed-Use District - G1. The purpose of the district is to support the goals of the Portsmouth Master Plan and Housing Policy. The aim of the policy is to encourage walkable, mixed-use development, and continued economic vitality in the cities primary gateway areas. The district seeks to ensure that new



developments complement and enhance the surroundings, provide housing stock that is suitable for changing demographics, and accommodate the housing needs of the city's current and future workforce. This plan works towards that standard by adding a housing component to the existing site. Two additions are proposed with 72 new dwelling units, 15 of which will be Workforce Units, as defined in the application in the "Workforce Housing Covenant" document, detailing the workforce housing restrictions. The workforce housing units will be affordable to a household earning 60 % of the Average Median Income (AMI) for the Portsmouth-Rochester Metropolitan Area. The proposed site components, restaurant use and dwelling units, are both permitted uses in the district.

### **Proposed Development**

The proposed building is submitted as a Mixed-Use Building on a single lot under Section 10.5B34.80 of the Portsmouth Ordinance. The existing commercial building (15,153 SF) with the restaurant uses will be increased with two first floor and above additions (16,096 SF and 11,185 SF), each with 36 dwelling units. The project includes a new basement level under both additions which is accessed from Ledgewood Drive. The Basement Level will provide a parking level with seventy-five vehicle, eight bike, five motorcycle, and eighteen scooter spaces. The basement level is below and between the proposed upper floor building additions. The first-floor level building space is set back to allow for parking under the upper floors of the building and contains seventy-three vehicle spaces, seventy-four bicycle spaces, and two motorcycle spaces. There are thirty exterior parking spaces. The proposed loading zone for the commercial (restaurant) uses is at the first-floor level, accessed from the rear of the site, and open to the sky. Site Plan Sheet C3 shows the first-floor building locations, the extent of the basement, and the upper story building extents. On the Ledgewood Drive side of the development the elevation of the building and the associated setbacks comply with Section 10.5B22.20 of the Ordinance. Currently the project proposes additions that are set back 38 feet from Ledgewood Drive, 40 feet from Lafayette Road, 23 feet from the southerly abutting property line, and 38 feet from the easterly abutting property line. The site complies with Section 10.5B34.80 Mixed Use Building Type Standards with the exception of Maximum Building Footprint and Dwelling Units per Building, even after the density bonus incentives, which we address with waiver requests to those standards, as allowed in the Conditional Use Permit process.

The proposed building additions maintain the ability for traffic circulation around the property, as required by deed restrictions and easements on the property. The proposed building height increase, allowed by Section 10.5B72.30 with a Conditional Use Permit from the Planning Board, in addition to the dwelling unit increase allowed by Section 10.5B70.10, create the need for a Public Realm improvement under Section 10.5B73.20. The Public Realm is discussed in detail later in this letter.

The Portsmouth Ordinance has special setback requirements on Lafayette Road, specifically:

*Special Setback Requirements on Lafayette Road: For all lots and development sites with **frontage** on Lafayette Road **buildings** shall be **setback** a minimum of 70 feet and a maximum of 90 feet from the centerline of the road.*



Regarding the special setback requirement on Lafayette Road, the project is in a location where there is a significant open space in front of the subject parcel. This open space was created when the Lafayette Road / Route 1 Bypass intersection was restructured around 2011. The relocation of the intersection created a large open space area in front of the lot. The location of 581 Lafayette Road property is outside even the 90-foot offset line from the centerline of Lafayette Road at the location. Since the ordinance section cannot be complied with, a Waiver to the Portsmouth Ordinance Section 10.5B22.40 is included in the Planning Board application package. A plan showing the offset line is included in the submission.

The submitted site plan shows the impervious surface calculations for the proposed development. When the site was redeveloped to the Tuscan Restaurant and Marketplace, relief was provided by a Variance from the Zoning Board of Adjustment allowing 16.5% open space where 20% open space was required. The submitted site plan proposes a coverage reduction of impervious surfaces with the replacement of some hardscape spaces to porous surfaces. When the proposed open space is calculated with the allowable 50% impervious / 50% non-impervious allowance for sidewalks, the proposed open space is compliant with the 20% requirement.

### **Project Parking**

The project parking spaces are shown on the Architectural Plans PB 1.00 and PB 1.01, and also on-Site Plan C4. The proposed site plan contains a total of 178 parking spaces. Tandem parking spaces will be assigned to particular residential units, as well as assigned to the restaurants as valet spaces. The assignments are detailed on Sheet C4. Level 1 parking spaces are accessed from driveways to the parking areas at first floor level, as shown on the plan. Basement Level parking is accessed from a driveway ramp on the north side of the proposed structure off Ledgewood Drive. The total parking provided meets the ordinance requirements of the city of Portsmouth, as detailed in the attached parking calculations. The site's proximity to a dedicated bus route allows a reduction in the required parking. The parcel benefits from a cross parking easement with the abutting property owner, as recorded in the Rockingham Registry of Deeds in Book 5446 Page 2588. Any future loss of parking spaces is easily provided for in the cross-parking easement. A copy of the recorded easement depicting the shared parking rights, and a plan showing the ownership at the time of the creation of the shared parking rights, is also included in the submission. Also included is a parking summary of the 599 Lafayette Road required and provided parking for the adjacent property included and subject to the shared parking agreement.

There is an existing encroachment of approximately 30 parking spaces (as adjusted to current code for landscape island adjustments) on a portion of the land owned by the State of New Hampshire as a part of the Route 1 Corridor. The encroachment results in parking spaces being approximately zero to seven feet onto property owned by the State of New Hampshire. The land area involved is approximately 1200 square feet. This parking encroachment has existed for many decades and the encroachment is shown on the State of New Hampshire plans for the widening of Route 1, which occurred when the overpass over Route 1 was eliminated in favor of the traffic lights and traffic lanes that exist today, around 2011. A copy of the NHDOT Highway plans, showing the relationship between the right-of-way line and the pavement at the time of the improvement project, are included in the submission.

The applicant proposes no changes to those parking spaces in that area other than adding current ordinance parking lot design required landscape islands, and a space for a new transformer, and therefore requests they be left as is in their nonconforming use, as adjusted. As a Planning Board Condition of Approval for leaving the parking encroachment as-is, the Applicant proposes to pay the cost and reconfigure that immediate area, when and if the State of New Hampshire formally requires the Applicant to cease use of the encroachment area. The abutting property owner has a similar encroachment of parking spaces onto State of New Hampshire land and there are many parking encroachments of State-owned land system wide. Some encroachments have existed for many decades, some for longer than 20 years. The Applicant does not want to voluntarily give up a long-established use. Should the Applicant be required to cease use of the parking encroachment, then improvements would be completed in accordance with the Alternative Parking Layout as shown on Sheet C4 of the plan set. If that area is required to be vacated and parking spaces installed according to the Alternative Parking Layout, then a total of 7 parking spaces would be lost.

### **Traffic and Access**

The site access is established and not changing. Included in the submission is a Trip Generation Memo and a Traffic Impact Study. The Portsmouth TAC approved the project without requiring any off-site traffic improvements.

### **Project Drainage**

The existing site drainage consists of roof drain connections and parking lot catch basins connected to the City of Portsmouth drainage network, which flow off-site. The property drainage is divided into two watersheds, one that flows to the south along the front of the adjacent mall and the other flows to the south along the back of the adjacent mall and across the adjacent property. The intent of this design is to maintain those flow directions, and re-purpose the drainage in accordance with the proposed site addition roof drains. The roof drains will replace the catch basins that served the surface parking (now replaced with covered parking) and direct the water in the same direction and flow amounts as the previous approved design, with the same contributing areas. The current site plan calls for the addition of a Jellyfish Filter, which will provide more advanced treatment than the existing on-site mechanical separator.

### **Density Bonus**

The proposed development requests two Density Bonus Incentives, as allowed under Section 10.5B72 of the Zoning Ordinance. The project seeks a bonus under Section 10.5B72.10 to allow 36 dwelling units per building (with a waiver to more units) and Section 10.5B72.30 to allow an increase in building height by one story. In order to receive the multiple bonus incentives requested, the project needs to comply with the Bonus Incentive Requirements listed in Section 10.5B73. The development was designed in compliance with Section 10.5B73.10 Workforce Housing by providing 20% of the proposed dwelling units (15) as workforce housing units for rent, and under Section 10.5B73.20 by providing Public Realm Improvements.

## **Workforce Housing**

The development includes a Workforce Housing Covenant Document that outlines the intended compliance with the workforce Housing Requirement. The Architectural details identify the units within the project that will be workforce housing, with locations and square foot areas.

## **Proposed Public Realm**

Under Section 10.5B73.20(1) the development proposes an off-site sidewalk connection to Portsmouth High School and an improved basketball facility with bench seating at the end of Ledgewood Drive, all on city property. A conceptual plan of the public realm improvements is included in the plan set. The submission also includes a Draft Memorandum of Understanding (MOU) that outlines that the Developer would be responsible for planning and building the public realm project. Since the final design needs to be completed with the input of all of the stakeholders, namely, the School Board, City Council, abutters and the public, with detailed cost estimates, and funding identified, we hereby request that the project be approved with a condition that the completion of the public realm plan must occur prior to issuance of a building permit.

The development team has worked with the Planning Department regarding the use of the School property to construct the Public Realm Improvement required for this project. Peter Britz met with the City Manager and School Superintendent, and they reviewed and approved the direction proposed by the applicant, subject to final engineering and design by the applicant, and a scope of work and contract for the proposed improvements. This requires that the Planning Board allow the public realm improvement to be located on a different lot than the development lot, as allowed in Section 10.5B73.20(4). Relief from subsection (b) is requested, as the property proposed for the public realm is zoned Municipal, a different designation than the subject property.

Given the need for this public connection, as evidenced by an existing unauthorized trail serving the same purpose, which is on private property, these ordinance issues should be overcome given the need and overall usefulness of the proposal. An exhibit showing how this connection relates to the city's bicycle / pedestrian network is included in the submission.

## **Project Community Space**

The Community Space on the site plan consists of an Outdoor Dining Café and a Pocket Park. The Pocket Park includes a proposed public bike rack in close proximity to the existing bus stop. The Outdoor Dining Café provides an area of outside use for the public, as well as the building residents, which will be furnished with tables and chairs. The area includes an outdoor fireplace. The space dedicated to the existing restaurants for outdoor dining is not included in the Community Space Easement area.

The Site Plan provides for 7.6% Community Space where 10% is required, thereby requiring a waiver from the Ordinance, which is permitted by the Planning Board. The Developer has met with city staff and has identified areas adjacent to the on-site Community Space on property owned by the City of Portsmouth and State of New Hampshire that can be expanded and enhanced. Those spaces will be landscaped and maintained by the developer under a

license agreement. The Applicant requests approval with the condition a license agreement is approved by the Legal Department and as required the City Council prior to issuance of a building permit. The area of the proposed off-site landscaping and the proposed plantings are identified on the Landscaping Plans in the plan set.

### **Conditional Use Permit – Modification of Standards**

Modifications to the standards are allowed for requirements in Section 10.5B74 Density Bonus Incentives under Section 10.5B74.30 Modification of Standards, as a part of the Conditional Use Permit. In granting a conditional use permit, the Planning Board may modify specific standards and requirements set forth in Section 10.5B20, 10.5B30, 10.5B40 and 10.5B70 provided that the Planning Board finds such modification will promote design flexibility and overall project quality, or that such modification is required for the development to provide a proposed workforce housing component, and that such modification is consistent with the purpose and intent set forth in Section 10.5B11. We submit that the project meets the purpose (and intent) of Section 10.5b11 as follows:

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

Section 10.5B11.20 sets forth the intent of the standards. **The project meets the standards and will create a mixed-use development that will help to create a vibrant neighborhood. The introduction of Workforce Housing provides much needed relief to the need for affordable housing in an area outside of the downtown core, with easy access to abutting retail and public transportation. The project will be the other bookend from the recently approved residential development at the other end of this commercial strip.**

The specific standards of 10.5B11.20 are listed below:

- a) Promote development that is consistent with the goals of the Master Plan to create vibrant, authentic, diverse, connected and resilient neighborhoods;

**This project bookends another recently approved residential development in an area where dense housing in close proximity to retail and other services serves to create a vibrant neighborhood.**

b) Encourage high quality housing for a variety of household types and income ranges.

**The project Architecture is high quality, and at the same time integrates affordable housing at the desired scale and percentage of units.**

c) Guide the physical character of development by providing a menu of building and site development types that are based on established community design principles;

**The character of the building provides a unique quality and a varied building type with quality as a key component.**

d) Create quality places by allowing for whole site development with meaningful public spaces and neighborhood centers.

**The inclusion of Community Space provides the public spaces needed for the enjoyment of the residents. The public space at the other end of the neighborhood (adjacent to the marsh and Sagamore Creek) provide and enhance the area and create a defined neighborhood.**

Under Section 10.5B74.31 in considering a request for a modification of the standards and requirements, the Planning Board may request that the applicant provide additional documentation and information from the applicant demonstrating that the requirements of this Ordinance are prohibitive to the successful completion of the project as proposed. Such information shall include, but not be limited to, project cost factors related to land acquisition, improvements for roads, utilities & drainage, insurance, labor, building materials, and profit to identify a total gross cost of the project and per unit gross costs.

**We believe that this proposed development fits the intent of the Gateway Neighborhood Mixed Use District Ordinance. The submission package contains an identification of improvements to infrastructure and site development needed to be complete. If the Board needs additional information the development team is ready to assist. The modifications requested by the Applicant will promote design flexibility and quality and are needed to provide for the proposed workforce housing, particularly in light of the unique location and configuration of the parcel.**

### **Project Site Details**

The complete development plan is shown on the attached Proposed Site Plans and the Supplemental Material. The development Site Plans include:

- Cover Sheet – Shows the Development Team, Zoning, Location, and Utility contacts.
- Community Space Easement Plan – Proposed project easements.
- Sheet C1 – Existing Conditions Plan: The plan shows current site conditions.
- Sheet C2 – Demolition Plan: The plan shows required site demolition.

- Sheet C3 –Site Plan: This sheet shows the location of the proposed building additions, outdoor seating area, and associated site improvements.
- Sheet L1 – L3 – This plan shows the site landscaping, on-site and off-site.
- Sheet LT1 – Lighting Plan – site lighting and illumination levels.
- Sheet C4 – Parking Plan: The plan shows the basement and first floor parking and the totals, as well as the stacked parking assignments.
- Sheet C5 – Utility Plan: The plan shows proposed utility connections.
- Sheet C6 – Grading, Drainage, Erosion Control Plan: The plan shows the proposed drainage connections for the site.
- Sheet C7 – Open Space Plan - The plan shows proposed site open space.
- Sheet C8 – On-site Community Space Plan - The plan shows proposed on-site Community Space.
- Sheet C8.1 – Off Site Landscape Maintenance Area - The plan shows proposed off-site landscape maintenance area.
- Sheet C9 and C10 – Public Realm Plan: These plans shows proposed public realm off-site improvements.
- Sheet T1 & T2 – Turning Plans: The plans show fire truck and delivery truck turning movements.
- Sheets D1 to D6 – These sheets show the site construction details, including erosion control.
- Floor Plans - Elevations - Renderings - These are the Architectural site designs.

### **Supplemental Material**

The following Supplemental Material is submitted herewith:

Green Building Statement  
 Property Deed (with Easements)  
 Lot Plan (Historic)  
 Workforce Housing Covenants  
 Conservation Easement Deed  
 Memorandum of Agreement – Public Realm  
 Waiver Requests  
 Trip Generation  
 Abutting Property Parking Analysis  
 Traffic Impact Statement  
 US Route One Construction Plans – 2011  
 Bicycle Network Plan  
 Drainage Study  
 Jellyfish Design Calculations  
 Lighting Specifications  
 TAC Comments  
 Basement Sewer Design

### **Project Approvals**

The Technical Advisory Committee approval comments are repeated below, with our response in **bold text**:

1. The public realm improvements must be reviewed and approved by all relevant parties. **The development team has worked with the Planning Department and our understanding is that the City Manager and Portsmouth School Superintendent reviewed and approved the direction proposed by the applicant, subject to final engineering and design by the applicant, and construction of the proposed improvements at the sole expense of the applicant.**
2. All updates as discussed during the 3/5/2024 TAC meeting will be made to final set of plans, including:
  - a. A complete list of previous staff comments and responses. **Previous staff comment emails repeated with responses are attached hereto in the supplemental material for the Planning Board's review.**
  - b. Please provide a complete list of changes that were made to the plan set between the dates of 2/6/2024 and 3/5/2024. **The plans were revised as follows:**
    - **The building footprint was revised by the Architectural team to respond to the comments regarding conforming ADA parking spaces, and to expand the amount of parking on site. Those changes were brought to the site plan and minor adjustments made to align.**
    - **Changes to individual sheets are noted in the Revision Block(s).**
  - c. Place labels on the shelf pipe profile and on Sheet C5 that indicate the size of the pipe (8"). **Sheet C5 has been updated, and a Basement Sewer Plan and Profile updated.**
  - d. Final sewer pipe design to be reviewed and approved by DPW. **DPW has updated plans with the requested changes.**
  - e. The 4" PVC pipe coming from the manhole for the vent should be changed to a gasketed pipe as it will be underground, this should be changed from the Scheduled 40 to an SDR 35. **Plans have been updated.**
  - f. A sidewalk detail will be included for Ledgewood Drive. **The detail has been included on the C9 Public Realm Plan.**
  - g. Fire hydrant to be added to the final set of plans with proposed location reviewed and approved by Fire Department. **The location has been added to the plans and submitted to the Fire Department.**
  - h. Sliders for bicycle parking must have fire rating confirmed in the final building design. **This should be a condition of the Building Permit.**

**To be satisfied subsequent to Planning Board approval:**

1. Landscape license with adequate insurance for maintenance on City property. **We assume this will be a Condition of Planning Board Approval.**

**Planning Board Relief**

The following is a list of the approval requirements for the project, as a recap and for clarity of the application:

- Section 10.5B41.10 Development Site Standards: Conditional Use Permit approval from the Planning Board.
- Section 10.5B74 Approval of Density Bonus Incentives: Conditional Use Permit from the Planning Board for an increase in the maximum building height by one story, and a building with 72 units is proposed.
- Condition of Approval Section under Section 10.5B73.20 1) Off road trail equal in length to the public street frontage of the site as provided in 10.5B73.20 (4) to be located on a different lot than the development lot, with a waiver to criteria (b) as the Public Realm Improvement is on a lot that is in a different Zoning District.
- Section 10.5B41.80 (2) Community Space coverage relief is sought from the required 10% of lot area as Community Space.
- Planning Board Waiver from Section 10.5B22.40, Special Setback Requirement from Lafayette Road.

### **Approval Requested**

We look forward to a Planning Board review of this submission and our in-person presentation at your meeting. We hereby request that the project be approved and allowed to move forward to a conclusion based on satisfaction of any Conditions of Approval.

Sincerely,



John Chagnon, PE; Ambit Engineering – Haley Ward

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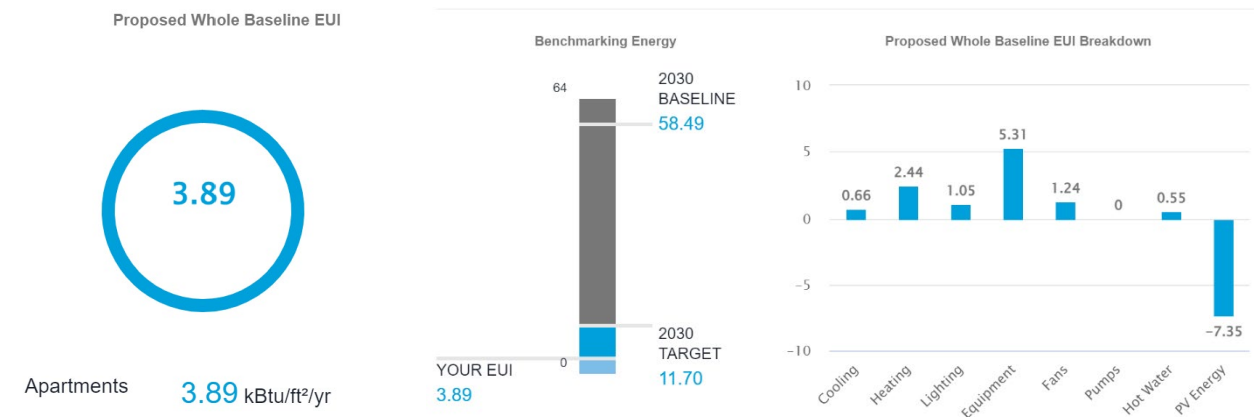


## 581 Lafayette Apartment

### Green Building Statement

3/04/24

Energy modelling was performed using CoveTool software. The results show energy use intensity of the building is 3.89 kBtu/ft<sup>2</sup>/yr which is a reduction by 92% of the baseline average building energy usage with the same function, area, occupancy load and in the same climate zone. The Baseline is based on the RECS 2001 (RESIDENTIAL ENERGY CONSUMPTION SURVEY by the U.S. Energy Information Administration) database.



## 1 Passive Strategies

### 1.1 Orientation

The building orientation has been balancing between site efficiency and is to provide daylight optimizing as much solar orientation for passive heating and cooling strategies.

### 1.2 Shading

The building shading devices are designed to protect the fenestrations from excess solar radiation during the summer and provide passive heat by solar radiation during winter. This strategy helps to provide a comfort level for occupants and reduces the energy consumption of the building.

### 1.3 Envelope

#### 1.3.1 Daylight

The envelope fenestrations are designed to maximize the natural daylight which provides a comfortable lighting level during the day and cuts down the energy consumption. The building will also have daylight and occupancy sensors, that helps to cut down the need for turning on the lighting fixtures.

#### 1.3.2 Air Infiltration

The envelope is designed to meet 0.03 air changes per hour with tight envelope detailing and products such as smart membrane to seal the envelope.

### 1.3.3 Walls and roof insulation

The walls are designed to have cavity insulation of R-19 plus continuous of R-15 to reduce the heat gains or losses. The roof is vented with R-60 insulation to reduce heat losses or gains as much as possible. Below grade walls and slabs have continuous R-20.

### 1.3.4 Fenestration performance

The building uses high-performance glazing with a maximum U-value of 0.14 and low E film to optimize solar heat gains or losses.

## 2 Active strategies

### 2.1 Mechanical Systems

The building uses a fresh air mechanical system with an energy recovery ventilator heat exchanger to capture heat from conditioned air before exhausting.,

### 2.2 Lighting fixtures

LED lighting with occupancy and daylight sensors throughout.

### 2.3 Appliances

Energy Star rating appliances.

Building Performance -- Use industry tools to monitor and benchmark buildings.

Train staff on proper building operation with comprehensive Facilities Staff Training protocols.

## 3 MATERIALS & RESOURCES

Minimize waste (during construction and operation)

Use regional, renewable materials.

Embodied carbon interior finishes such as wood millwork, flooring, and natural fiber textiles.

Low carbon building materials such as concrete and insulation.

## 4 Renewable Energy

Rooftop Solar Photovoltaic system of 10,000 sf and Solar Hot Water collectors of 1,000 sf for 65% of the building's energy needs.

## 5 Water

Protect water quality – Reduce parking asphalt by adding landscaped traffic aisles and edges.

Conserve Water -- Target 30% reduction in fixtures water use over building code, meeting EPACT 2005.



LCHIP	ROA646155	25.00
RECORDING		22.00
SURCHARGE		2.00

**WARRANTY DEED**

**JOHN GALT, LLC**, a New Hampshire limited liability company with a mailing address of 3 Pleasant Street, Suite 400, Portsmouth, New Hampshire 03801 ("Grantor") for consideration paid grants to **ATLAS COMMONS, LLC**, a New Hampshire limited liability company with a mailing address of 3 Pleasant Street, Suite 400, Portsmouth, New Hampshire 03801 ("Grantee") **WITH WARRANTY COVENANTS**

**THE FOLLOWING DESCRIBED PREMISES:**

1. A certain tract or parcel of land, together with any buildings or improvements thereon, situate in Portsmouth, County of Rockingham and State of New Hampshire, bounded and described as follows:

Beginning at a point in the Easterly sideline of Lafayette Road at the Northwestern corner of the parcel herein described and at land of the City of Portsmouth; thence running North 81°43 East by City of Portsmouth land, two hundred eighty-one and seven tenths (281.7) feet to a corner at land of Ledgewood Manor Associates; thence turning and running South 5°56' West two hundred forty-six and thirty-one hundredths (246.31) feet, South 15°05'30" West fourteen and twenty-one hundredths (14.21) feet, South 07°12' West seventy-two and no hundredths (72.00) feet, South 48°45' East thirty-three and thirty-two hundredths (33.32) feet and South 39°04' East seventy-five and seven hundredths (75.07) feet, all by land of Ledgewood Manor Associates to a corner of land now or formerly of William N. Genimatas; thence turning and running North 84°04' West three hundred thirty and forty hundredths (330.40) feet by land of said Genimatas to Lafayette Road; thence turning and running North 05°56' East two hundred thirty-nine and thirty-nine hundredths (239.39) feet and North 05°31' West ninety-six and two tenths (96.2) feet by said Lafayette Road to the point of beginning. Containing 2.25 acres, more or less.

2. Together with the perpetual right to use in common with DLR, Inc., and William N. Genimatas, their heirs, devisees, successors and assigns, the Lafayette Road entrance-exit way as developed by DLR, Inc., (formerly MDL, Inc.) near the southwest corner of the land retained by Genimatas, together with the perpetual right hereby granted to grantees,

their heirs, devisees and assigns, to use in common with said DLR, Inc., and Genimatas, their heirs, devisees, successors and assigns, the other Lafayette Road entrance-exit ways on the DLR, Inc. and the Bowl-O-Rama lots adjoining the premises hereby conveyed.

3. Subject to, and with the benefit of mutual parking rights in common with said DLR, Inc., and said Genimatas respecting this lot and the adjoining Bowl-O-Rama and DLR, Inc., lots, namely and respectively, that said DLR, Inc., Genimatas and Robbins shall have free parking as may be necessarily available on any of these three parcels of land, and such parking rights for each of them in each other's adjacent land shall be mutually interchangeable, for said Genimatas, DLR, Inc., and said Robbins, their respective heirs, devisees, successors and assigns, such mutual parking rights and benefits to extend to any other persons or corporations and any other lands and premises, which said Genimatas, said Robbins, MGR Realty and/or MGR Realty, Inc., may have heretofore conveyed and reserved such rights, benefits or privileges. The foregoing parking rights shall not limit or restricts the rights of the owners of the said lots to construct buildings or additions to same, upon the said lots, provided no unreasonable imposition of owner's parking is caused the abutters by such buildings or additions thereto.
4. Also being conveyed with the benefit of, a certain right of way in common with others, including Petzold, et al, and Ledgewood Manor Associates on the Southerly part of the DLR, Inc., Lot #3, second lot south of this lot, said right of way being also subject to a restriction against the erection of a barrier, fence or other obstruction on either side of said right of way as it runs to Lafayette Road, all as per agreement acknowledged on July 23, 1973, recorded in Rockingham Registry of Deeds, Book 2209, Page 1400.
5. The foregoing premises are further conveyed subject to, and with the benefit of, a perpetual easement for a roadway thirty (30) feet in width extending from Lafayette Road on the South, adjacent to land of Petzold, running thence along the southerly and easterly boundary of the DLR (former Tower Restaurant) Lot of 1.92 acres, the easterly boundary of the Genimatas (Bowl-O-Rama) Lot of 2.82 acres, and the easterly boundary of the Robbins (Jerry Lewis Cinema) Lot of 2.25 acres, as shown on plan of "Subdivision of Land, Portsmouth, N.H., for Genimatas and Robbins" dated November 1978, Revised June 7, 1979 which roadway easement is reserved for use in common of, and the benefit in common of, William N. Genimatas, Henry J. Robbins, Joan M. Robbins, and DLR, Inc., and their respective heirs, devisees, successors and assigns. Owners of Lots #1, 2, and 3 in said Subdivision agree that they will equally contribute to development and maintenance of such thirty (30) foot right-of-right as a passable gravel way, excluding winter maintenance such as snow plowing and clearing way of snow, ice, slush or water.
6. The premises hereby conveyed (the "Premises") shall be SUBJECT TO the restriction (this "Use Restriction") that the business of a movie theater shall not be conducted or maintained upon the Premises or any portion thereof for a period of twenty (20) years from October 10, 2007, the date of the recording of the deed from Canavan Properties, LLC, to MANI Properties, LLC recorded in the Rockingham County Registry of Deeds at Book 4851, Page 526 (the "Restriction Term"). By the acceptance of this Deed, the within grantee agrees to be bound by this Use Restriction. This Use Restriction shall run with the land and be binding upon the within grantee, the within grantee's successor and

assigns, and the Premises and every part thereof for the duration of the Restriction Term; and in each and every Deed to the Premises or any portion thereof given during the Restriction Term, the then grantor shall undertake to insert a clause referring to this Use Restriction. This Use Restriction is for the benefit of Hoyts Cinemas Corporation, a Delaware Corporation, and its subsidiaries, and their respective successors and assigns (collectively, "Hoyts"), and Hoyts, as a former tenant of the Premises and for consideration paid to the within grantor, shall have the right to enforce this Use Restriction.

7. A portion of the above premises, more particularly bounded and described as set forth below, is subject to a perpetual easement for the installation and maintenance of utility lines:

A certain tract or parcel of land situate on the Easterly side of Lafayette Road, Portsmouth, Rockingham County, New Hampshire, described as follows:

Beginning at a point in the Easterly sideline of Lafayette Road at the Northwest corner of the parcel herein described and the Southwest corner of land of the City of Portsmouth; thence running North  $81^{\circ}43'$  East two hundred eighty-one and seven tenths (281.7) feet to an iron pipe at land now or formerly of Ledgewood Manor Associates; thence turning and running South  $05^{\circ}56'$  West by said Ledgewood Manor Associates land ten and thirty-two hundredths (10.32) feet to a corner at other land now or formerly of MGR Realty; thence turning and running South  $81^{\circ}43'$  West sixty-seven and fifty-six hundredths (67.56) feet; South  $59^{\circ}00'$  West ten and eighty-eight hundredths (10.88) feet and South  $66^{\circ}12'$  West one hundred seventy-eight and ten hundredths (178.10) feet to a point; thence continuing on the arc of a curve to the left having a radius of 50 feet an arc distance of fifty-two and fifty-nine hundredths (52.59) feet to a point in the easterly sideline of Lafayette Road, said previous four courses being along land now or formerly of MGR Realty; thence turning and running North  $05^{\circ}56'$  East one and sixty-nine hundredths (1.69) feet and North  $05^{\circ}31'$  West ninety-six and two tenths (96.2) feet by the Easterly sideline of Lafayette Road to the point of beginning.

The said easement rights are preserved and more fully described in a certain Partial Termination of Easement granted by RPL Properties, LLC to DiLorenzo Lafayette Ledgewood Real Estate, LLC, dated November 3, 2015 and recorded in the Rockingham County Registry of Deeds as of the date hereof, and as set forth therein consist of the rights of RPL Properties, LLC, its successors and assigns ("RPL") to install, lay, maintain, replace and repair and use utility lines of all types including, without limitation, water mains, gas mains, electric wires (above and below grade) and telephone lines (above and below grade), storm and sanitary sewer drains and catch basins, together with all facilities related to the use, operations and maintenance of such utility lines, and the right to pass and re-pass over said premises for the foregoing purposes. Any such work performed by RPL shall be undertaken so as to minimize disruption, disturbance or damage to the premises herein conveyed, and once commenced, such work shall be diligently

pursued to completion. Any damage or disturbance to the premises herein conveyed shall be repaired or restored in a prompt and workmanlike manner as nearly as practicable to the condition that existed immediately prior to such damage or destruction.

Meaning and intending to convey Lot #1, as shown on plan entitled "Subdivision of Land, Portsmouth, N.H., for Genimatas and Robbins" dated November 1978, Revised June 7, 1979, being Durgin Plan #5558, File #689, drawn by John W. Durgin Civil Engineers, which Plan is recorded in the Rockingham County Registry of Deeds as Plan D-8806. See also Warranty Deed of DiLorenzo Lafayette Ledgewood Real Estate, LLC to Grantor dated November 9, 2015 and recorded in the Rockingham County Registry of Deeds at Book 5669, Page 667.


Meaning and intending to describe and convey the same premises conveyed to the Grantor by deed of OMJ Realty dated October 20, 2022 and recorded in the Rockingham County Registry of Deeds at Book 6448, Page 1309 on October 25, 2022.

**Transfer Tax:** This transfer is exempt from transfer tax pursuant to RSA 78-B:2, XXII.

**Homestead:** This is not homestead property.

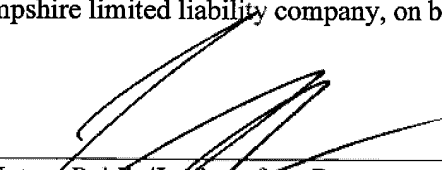
March 30, 2023

John Galt, LLC

By:   
Mark A. McNabb, Manager

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

The foregoing instrument was acknowledged before me this 30 day of March, 2023 by Mark A. McNabb, Manager of John Galt, LLC a New Hampshire limited liability company, on behalf of the company.

  
Notary Public/Justice of the Peace  
My Commission expires:



JOHN W DURGIN ASSOCIATES, INC.

ENGINEERS  
SURVEYORS  
DESIGNERS

800 GREENLAND ROAD  
PORTSMOUTH, N.H. 03801  
1 WAKEFIELD STREET  
SUITE 204  
ROCHESTER, N.H. 03867



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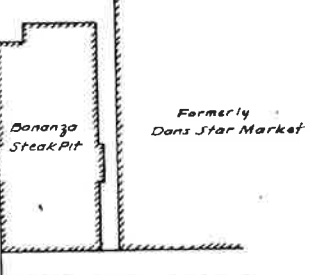
REG. PROFESSIONAL SURVEYOR  
REGISTRY OF DEEDS

REVISIONS-

LEDGEWOOD MANOR ASSOCIATES

Apartment Buildings

Apartment Buildings



Formerly  
Dans Star Market

Bananza  
Steak Pit

PETZOLD

AREA = 1.92 ACRES

AREA = 2.82 ACRES

AREA = 2.25 ACRES

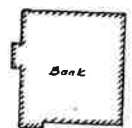
BOWL-O-RAMA

SCOREBOARD  
LOUNGE



FRENCH TERRACE RESTAURANT

FIRST NATIONAL BANK



Bank

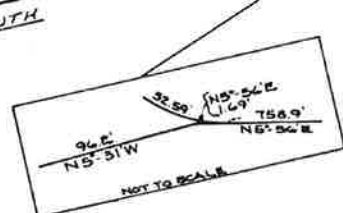


Pump Station

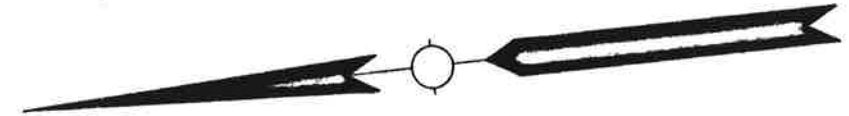
CITY OF PORTS.

LAFAYETTE ROAD

CITY OF PORTSMOUTH



NOT TO SCALE



SUBDIVISION OF LAND  
**PORTSMOUTH, N.H.**  
FOR  
GENIMATAS AND ROBBINS

SCALE: 1 IN = 40 FT.

NOVEMBER 1978  
REV. JUNE 7, 1979



D-8806

APPROVED FOR RECORD

*William Clark* 6/29/79  
PORTSMOUTH PLANNING BOARD

File No. 689  
Plan No. 5555

Return to:  
City of Portsmouth  
Legal Department  
1 Junkins Ave  
Portsmouth, NH 03801

## WORKFORCE HOUSING COVENANT

THIS LAND USE RESTRICTION COVENANT FOR WORKFORCE HOUSING ("Covenant") is made and entered into on this \_\_\_\_\_ day of \_\_\_\_\_, 2024 between the **City of Portsmouth**, a municipal corporation organized under the laws of the State of New Hampshire and having a place of business at 1 Junkins Avenue, Portsmouth, County of Rockingham, State of New Hampshire (the "City") and **Atlas Commons, LLC**, a New Hampshire limited company with an address of 3 Pleasant Street, Suite 400, Portsmouth, New Hampshire 03801 (the "Owner")(the City and the Owner are collectively the "Parties").

### PREAMBLE

WHEREAS, the Owner owns a certain tract or parcel of land, together with any buildings or improvements thereon, situated at 581 Lafayette Road in the City of Portsmouth, County of Rockingham and State of New Hampshire as defined, described and identified in the Warranty Deed dated March 30, 2023, recorded in the Rockingham County Registry of Deeds ("Registry"), Book 6474, Page 1538 (the "Property"); and

WHEREAS, the Owner has obtained site plan approval of as mixed-use development (the "Project") and a conditional use permit from the City Planning Board to develop the property pursuant to correspondence from the City Planning Department dated \_\_\_\_\_ (the "Approval"); and

WHEREAS, as part of the approval process for the Project, the Owner agreed to maintain 20% of the completed residential dwellings at the Property, evenly distributed, as workforce housing units as defined herein; and

WHEREAS, the Owner further agreed to a stipulation with the Portsmouth Planning Board at the meeting on \_\_\_\_\_, to allow units that are affordable to a household with a HUD Median Family Income for the Portsmouth-Rochester Metropolitan Area program of 60% of AMI for a 3-person household to qualify as workforce housing; and



WHEREAS, this Covenant is designed to satisfy the aforementioned stipulations placed on the Approval by requiring that 20% percent of the residential dwelling Units (the “Designated Workforce Housing Units”), shall be maintained for a full term of 30 years as workforce housing for a household with an income of 60% of the median income for a 3-person housing for the Portsmouth-Rochester HUD Metropolitan Fair Market Rent; and

WHEREAS, this Covenant shall apply solely to the “Designated Workforce Housing Units” in the Project, and the Parties agree that this Covenant shall not apply to, burden or encumber the remaining dwelling units in the Project, or the tenants of those units; and

WHEREAS, this Covenant is intended to require that any tenant of the Workforce Housing Unit qualify as a Qualifying Occupant; and

WHEREAS, this Covenant shall apply to and be enforceable by the City as set forth in this Covenant; and

WHEREAS, the City or its designated agent or successor, shall have the authority to monitor and enforce this Covenant.

NOW, THEREFORE, in consideration of the mutual covenants and undertakings set forth herein, and other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the City and the Owner do hereby contract and agree as follows:

### **COVENANT**

Section 1. Definitions and Interpretation. In addition to the words and terms defined elsewhere in this Covenant, unless otherwise expressly provided herein or unless the context clearly requires otherwise, the following terms shall have the respective meanings set forth below for all purposes of this Covenant:

“Affordable” means that the rent shall be affordable to a Qualifying Tenant. Rent for any unit shall be set at the 60% Rent Limit for a 3-person household, determined on a per-bedroom basis, as established by the Portsmouth-Rochester HUD Metropolitan Fair Market Rent Areas as published annually by HUD.

"Annual Income Certification" means the Annual Income Certification described in Section 4(b) of this Covenant.

“Certification of Continuing Program Compliance” means the Certification of Continuing Compliance described in Section 4(d) of this Covenant and by any document required by the City or the City’s agent confirming compliance.

“Gross Rent” means net rent plus utilities, including electricity, heating and ventilation, water heating, and cooking, but shall not include telephone, television (cable or satellite) services, Wi-Fi, internet services, web-based services, or other such electronic systems or services. Calculation of utility costs may be based on the Utility Allowance Schedule for New Hampshire, published by the New Hampshire Housing Finance Authority.

"Qualifying Occupant" means any individual (a prospective tenant or present tenant of the Project) whose income is 60% or less of median income for a three (3) person household in the Portsmouth-Rochester HUD Metropolitan Fair Market Rent as published annually by HUD.

"State" means the state of New Hampshire.

"Term" or "Term of this Covenant" means the period during which this Covenant is in effect, as determined pursuant to Section 6.

“Workforce Housing” means a dwelling, or group of dwellings, developed as a single project, containing workforce housing units, provided that a housing development that excludes minor children from more than 20 percent of the units, or in which more than 50 percent of the dwelling units have fewer than two bedrooms, shall not constitute workforce housing for the purposes of this Covenant.

“Workforce Housing Unit” means a housing unit which qualifies as “workforce housing” under this Covenant, including rental housing which is Affordable to a Qualifying Tenant.

All capitalized words and terms used but not defined in this Covenant shall have the common and ordinary meaning ascribed to them unless the word or term is defined in this Covenant including any future amendments hereto to the extent applicable to the Project.

Unless the context clearly requires otherwise, words of the masculine gender shall be construed to include correlative words of the feminine and neuter genders and vice versa, and words of the singular number shall be construed to include correlative words of the plural number and vice versa. This Covenant and all the terms and provisions hereof shall be construed to effectuate the purposes set forth herein and to sustain the validity hereof.

The titles and headings of the sections of this Covenant have been inserted for convenience of reference only and are not to be considered a part hereof and shall not in any way modify or restrict any of the terms or provisions hereof and shall never be considered or given any effect in construing this Covenant or any provision hereof or in ascertaining intent if any question of intent shall arise.

Section 2. Representations, Covenants and Warranties of Owner.

(a) The Owner

(i) is a New Hampshire limited liability company duly organized under the laws of the State of New Hampshire, and is qualified to transact business under the laws of the State,

(ii) has the power and authority to own its properties and assets and to carry on its business as now being conducted and as now contemplated by this Covenant, and

(iii) has the full legal right, power and authority to execute and deliver this Covenant and to perform all the undertakings of the Owner hereunder.

(b) The execution and performance of this Covenant by the Owner

(i) will not violate or, as applicable, have not violated a provision of law, rule or regulation, or any order of any court or other agency or governmental body, and

(ii) will not violate or, as applicable, have not violated any provision of any indenture, Covenant, mortgage, mortgage note, or other instrument to which the Owner is a party or by which it or its property is bound, and

(iii) will not result in the creation or imposition of any prohibited lien, charge or encumbrance of any nature. The Owner agrees to obtain the written recordable consent of any prior lienholder to this Covenant, and to record it prior to the issuance of any building permit for this project.

Section 3. Workforce Housing. The City and the Owner hereby declare their understanding and intent that the Property will be owned, managed, and operated to always include the 20% “Designated Workforce Housing Units” during the Term of this Covenant. To that end, the Owner hereby represents, covenants, and agrees that:

(a) At least 20% of the completed dwelling units to be developed in the Project shall be Workforce Housing as defined herein. The Designated Workforce Housing Units shall be evenly distributed throughout the building.

(b) Any tenant or leasee of any Workforce Housing Unit, if any, shall also qualify as Qualifying Occupants for the Term of this Covenant.

(c) Each of the Designated Workforce Housing Units shall be both Affordable and occupied by a Qualifying Tenants.

(d) The form of lease to be utilized by the Owner in renting any Designated Workforce Housing Units in the Project to any person who is intended to be a Qualifying Tenant shall provide for termination of the lease and consent by such person to immediate eviction for failure to qualify

as a Qualifying Tenant as a result of any material misrepresentation made by such person with respect to the income certification at the time of lease or the failure by such tenant to execute an income certification annually or within 12 months of disqualifying as a Qualifying Tenant. If a Qualifying Tenant exceeds the income requirements because of an improved financial condition, that tenant shall be entitled to ninety (90) day notice of eviction but shall be responsible for complying with all terms of this Covenant and the Tenant's lease after the notice of eviction is served.

(e) Owner agrees to take any reasonable lawful action (including amendment of this Covenant as may be necessary) to comply fully with all applicable rules, rulings, or additional regulations relating and affecting the Project.

(f) If the Owner becomes aware of any situation, event or condition which would result in Non-compliance of the Project or the Owner with this Covenant, the Owner shall promptly give written notice thereof to the City.

(g) The Owner shall insure that the Designated Workforce Housing Units occupied by Qualifying Tenants with valid leases shall be of comparable quality to other apartment units of the Project; and the Designated Workforce Housing Units must be suitable for occupancy, subject to reasonable wear and tear. Notwithstanding the terms of this Section 3(g) the Qualifying Tenant, and not the Owner, shall remain fully responsible for any intentional or negligent acts of Qualifying Tenant, members of the Qualifying Tenants' household, and/or those in the Designated Workforce Housing Units or on the Property at the invitation or control of the Qualifying Tenant, which causes damage to the condition or habitability of the Designated Workforce Housing Units.

(h) Any Qualifying Tenant that does not abide by the terms of the lease or occupancy agreement, or by the terms of this Covenant, may be evicted from any Designated Workforce Housing Unit by the Owner, and said eviction, shall not change the character of the apartment as being designated as one of the Designated Workforce Housing Units during the time the tenant is being removed from the apartment, provided however, the apartment is re-rented to a new Qualifying Tenant subsequent to the prior Qualifying Tenant's eviction and removal.

#### Section 4. Records and Certifications.

(a) During the Term of this Covenant, the Owner shall deliver to the City, or its designee, any and all documents related to costs, expenses and income for the Designated Workforce Housing Units, required to be provided to the City or that the City's agents may require or request.

(b) During the Term of this Covenant, the Owner will maintain complete and accurate records pertaining to the Designated Workforce Housing Units which are the subject of this Covenant. Without limiting the generality of the foregoing, the Owner will obtain and maintain on file an Annual Income Certification from each Qualifying Occupant within any Designated Workforce Housing Units.

(c) the Owner will permit any duly authorized representative of the City to inspect, and make copies of the books and records of the Owner pertaining to the incomes of present, past or prospective Qualified Tenants of the Project upon reasonable notice and at reasonable times; and

(d) At all times during the term of this Covenant, the Owner shall maintain with the Planning Department of the City, or its designee, a Certification of Continuing Compliance including verification that the rent for the Designated Workforce Housing Units and that the Qualifying Tenants meet the definitions as provided in this covenant.

Section 5. Reliance. The Owner hereby agrees that the representations and covenants set forth herein and in the Annual Income Certification by the Owner to the City may be relied upon by the City. In performing its duties and obligations hereunder, the City may rely upon the statements and certificates of the Owner. In addition, at its own expense, the City may consult with counsel, and the opinion of such counsel shall be full and complete authorization and protection in respect of any action taken or suffered by the City hereunder in good faith and in conformity with the opinion of such counsel. In performing its duties and obligation hereunder, the Owner may rely upon certificates of Qualifying Tenants reasonably believed to be genuine and to have been executed by the proper person or persons.

Section 6. Term

(a) This Covenant became effective on \_\_\_\_\_ and shall remain in full force and effect for a period of thirty (30) years following the date of issuance of a certificate of occupancy, for the Designated Workforce Housing Units.

Section 7. Defaults and Remedies & Right to Cure. Any failure by the Owner to perform or comply with any obligation, agreement, covenant, or warranty of the Owner under this Covenant that is not corrected within a reasonable period after written notice from the City to the Owner setting forth the specific details of the event of default shall constitute an “event of default” hereunder. For the purposes of this Covenant a “reasonable period” is not more than sixty (60) days after such failure is first discovered by the Owner or would have been discovered by the exercise of reasonable diligence.

Upon the occurrence of an event of default hereunder that is not cured within 60 days after City provides Owner with a written notice of default, the City may take whatever action may be permitted at law or in equity or in this Covenant to enforce the obligations of and restrictions applying to the Owner hereunder. The City shall have the right to require the curing of any failure of the Owner to perform or comply with any obligation, agreement, covenant, or warranty of the Owner under this Covenant prior to the time such failure has become an event of default hereunder as the City may deem necessary.

Each Party acknowledges and agrees that a breach or threatened breach by such Party of any of its obligations hereunder would cause the other Party irreparable harm for which monetary damages would not be an adequate remedy and agrees that, in the event of breach or threatened breach, the other Party will be entitled to equitable relief, including a restraining order, an injunction, specific performance and any other relief that may be available from any court. Such remedies are not exclusive and are in addition to all other remedies that may be available at law, in equity or otherwise. Without limiting the generality of the foregoing, the City shall have the right to seek specific performance of any obligation, agreement, covenant, or warranty of the Owner

hereunder, whether or not failure to comply with the obligation, agreement, covenant or warranty for which specific performance is sought has become an event of default hereunder.

No remedy conferred upon or reserved to the City by this Covenant is intended to be exclusive of any other available remedy or remedies, but each such remedy shall be cumulative and shall be in addition to every other remedy given under this Covenant or any other document now or hereafter existing at law or in equity. No delay or omission to exercise any right or power accruing upon any failure of the Owner to perform or comply with any obligation, agreement, covenant, or warranty of the Owner under this Covenant shall impair any such right or power or shall be construed to be a waiver thereof.

The terms of this Section 7 are to ensure the Owner's compliance with the terms of this Covenant to the City only, namely, to provide the Designated Workforce Housing Units occupied by Qualifying Tenants as defined herein. At no time shall the terms of this Section 7 or the rights and remedies set forth under the terms of this Section 7, give any Qualifying Tenant any rights or remedies against the Owner for violation of the terms of this Covenant. In addition, at no time shall any Qualifying Tenant use or allege the Owner's breach of the terms of this Covenant, as grounds to avoid eviction from the Designated Workforce Housing Unit, if the Qualifying Tenant is otherwise in violation of the terms of its lease or occupancy agreement with the Owner.

Notwithstanding the terms of this Section 7, the Owner is not waiving any rights, remedies, or defenses, it might have to validly contest any alleged default of the Owner under this Covenant.

Section 8. Recording and Filing; Covenants To Run with the Land; Successors Bound.

(a) A signed executed Covenant shall be submitted to the Planning Department for recording at the Rockingham County Registry of Deeds.

(b) This Covenant and the covenants contained herein shall run with the land. These Covenants and the covenants contained herein shall bind, and the benefits shall inure to, respectively, the Owner and its successors and assigns and all subsequent Owners of the Project or any interest therein, the City's agent and each of the Qualifying Tenants during said Tenants' occupancy of a Designated Workforce Housing Unit during the Term of this Covenant.

Section 9. Governing Law. This Covenant shall be governed by the laws of the State of New Hampshire.

Section 10. Notices. Any notice, demand or other communication required or permitted hereunder shall be in writing unless explicitly permitted to be given otherwise than in writing and shall be deemed to have been given if personally delivered, or when deposited in United States express mail, postage prepaid, or with a private courier service guaranteeing next day delivery. Any such notice, demand or other communication shall be addressed as set forth below or to such other address as the entity to receive such notice may have designated to all other entities named in this list by notice in accordance herewith:

If to the Owner:

**Atlas Commons, LLC  
3 Pleasant Street, Suite 400  
Portsmouth, New Hampshire 03801**

If to the City:

**City Manager  
Portsmouth City Hall  
Municipal Complex  
1 Junkins Avenue  
Portsmouth, NH 03801**

Section 11. Severability. If any provision of this Covenant shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining portions shall not in any way be affected or impaired.

Section 12. Multiple Counterparts. This Covenant may be executed in counterparts, each of which shall be deemed to be an original, and such counterparts shall together constitute but one and the same instrument.

Section 13. Arbitration. In the event of any controversy or dispute arising out of or relating to this Covenant or the breach or default thereon, such controversy, breach, default, or dispute shall be resolved by arbitration in Rockingham County, New Hampshire, in an arbitration proceeding conforming to the rules of the American Arbitration Association.

Section 14. Modification or Amendment. Any modifications or amendments to this Covenant shall require approval by the Portsmouth Planning Board.

IN WITNESS WHEREOF, the Owner and the City have caused this Covenant to be executed under seal and by duly authorized representatives, all as of the date first written hereinabove.

**CITY OF PORTSMOUTH**

By: \_\_\_\_\_  
Name and Title: Karen Conard, City Manager  
Date: \_\_\_\_\_

**Atlas Commons LLC**

By: \_\_\_\_\_  
Name and Title: Mark A. McNabb, Manager  
Date: \_\_\_\_\_

ACKNOWLEDGEMENT

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

This instrument was acknowledged before me on this \_\_\_\_ day of \_\_\_\_\_,  
2024, by Karen Conard, Portsmouth City Manager.

\_\_\_\_\_  
Notary Public  
(Seal, if any)  
My Commission Expires:

\_\_\_\_\_

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

This instrument was acknowledged before me on this \_\_\_\_ day of \_\_\_\_\_,  
2024, by Mark A. McNabb, Manager of Atlas Commons, LLC.

\_\_\_\_\_  
Notary Public/Justice of the Peace  
(Seal, if any)  
My Commission Expires: \_\_\_\_\_



After recording return to:  
City of Portsmouth  
Planning Department  
1 Junkins Avenue  
Portsmouth, NH 03801

### **EASEMENT FOR PUBLIC ACCESS AND USE OF COMMUNITY SPACE**

THIS EASEMENT FOR PUBLIC ACCESS AND USE OF COMMUNITY SPACE (the “Community Space Easement”) is granted this \_\_\_\_ day of \_\_\_\_\_, 2024 by **Atlas Commons, LLC**, a New Hampshire limited company with an address of 3 Pleasant Street, Suite 400, City of Portsmouth, County of Rockingham, State of New Hampshire 03801, (“Grantor”) and for consideration of One Dollar (\$1.00) paid by the City, and other good and valuable consideration, receipt of which is acknowledged by Grantor, grants unto the **City of Portsmouth**, a municipal corporation, 1 Junkins Avenue, City of Portsmouth, County of Rockingham, State of New Hampshire 03801 (“City”) with warranty covenants, an easement for public access to and use of certain community space as set forth herein as an outdoor dining café easement and a pocket park easement..

### **WITNESSETH**

**WHEREAS**, Grantor acquired a tract of land located at 581 Lafayette Road, City of Portsmouth, County of Rockingham, State of New Hampshire, identified as Map 229, Lot 8B (the “Property”), by Warranty Deed of John Galt, LLC, dated March 30, 2023 and recorded at the Rockingham County Registry of Deeds at Book 6474, Page 1538, where a future building to be known as 581 Lafayette Road will be constructed; and

**WHEREAS**, reference is made to a plan entitled “Community Space Easement Plan,” prepared by Haley Ward, dated January, 2024, as revised, and recorded at the Rockingham County Registry of Deeds as Plan \_\_\_\_\_ (the “Easement Plan”); and

**WHEREAS**, reference is made to a site plan entitled “Site Plan,” prepared by Haley Ward, dated July, 2023, as revised, and recorded at the Rockingham County Registry of Deeds as Plan \_\_\_\_\_ (the “Site Plan”).

**NOW THEREFORE**, in consideration of the sum of One Dollar (\$1.00), to be paid, and other good and valuable consideration, the receipt of which is hereby acknowledged by the Grantor, Grantor conveys the easements as follows, located in the City of Portsmouth, County of Rockingham, State of New Hampshire (hereinafter collectively referred to as the “Easements”):

1. Outdoor Dining Cafe Easement 1. The Grantor hereby grants to the City and declares for the benefit of the public a permanent right to use and enjoy the area identified on the Easement Plan as a “Outdoor Dining Café Easement 1.”
2. Pocket Park Easement 2. The Grantor hereby grants to the City and declares for the benefit of the public a permanent right to use and enjoy the area identified on the Easement Plan as a “Pocket Park Easement 2.”

The Easements granted herein shall be subject to the following terms and conditions:

1. **Terms of Public Use:** The public use (the “Public Use”) permitted by the Easements shall be governed and determined at the sole discretion of the City, as expressed by the City Manager or the highest-ranking administrative officer of the City, subject to the terms and conditions of these easement. The City shall provide reasonable notice to the Grantor of an extraordinary event to be scheduled for the easement areas but failure to do so shall not be a breach of these easements.
2. **Rights to Private Property:** This Community Space Easement does not convey any right to the public to access or utilize the private property of the Grantor outside the easement areas. Grantor’s use of the Easements shall be subject to and regulated through the City of Portsmouth’s rules and ordinances governing public sidewalks.
3. **Maintenance:** Maintenance of the easement areas shall be the sole responsibility of the Grantor, its successors, or assigns. The City shall have the right, but not the obligation, to access the easement areas for the purpose of maintenance, repair, or replacement, after providing reasonable notice to the Grantor of the scope and cost of such work, all as reasonably determined by the City. Such maintenance costs incurred by the City shall be at the sole expense of the Grantor, its successors, or assigns.
4. **Encroachments:** The Easements are subject to all existing encroachments of utilities and improvements on, over and under the Easements.
5. **Covenants Run with the Land:** The Easements granted herein shall be perpetual in nature, shall run with the land and shall benefit and be binding upon the Grantor, its successors and assigns. The Easements shall be recorded in the Rockingham County Registry of Deeds.
6. **City Ordinance Application:** Any use, public or private, of the Easements shall be subject to and comply with the City Ordinances of the City of Portsmouth.
7. **Notices:** Any notice, demand, request, or other communication that either party desires or is required to give to the other under this Easement shall be in writing and either served personally

or sent by United States mail, postage prepaid, certified, return receipt requested, and shall be mailed to the parties at the following addresses:

To Grantor:

Atlas Commons, LLC  
3 Pleasant Street, Suite 400  
Portsmouth, NH 03801

(or as listed and at the address shown on the City's current Tax Records)

To City:

City Manager (or the highest-ranking administrative officer)  
City of Portsmouth, New Hampshire  
1 Junkins Avenue  
Portsmouth, NH 03801

**8. Amendment:** Grantor, or its successors and/or assigns, and City may mutually agree to amend or modify the Community Space Easement, provided that any such amendment or modification is approved by the City Council at a noticed public hearing, in writing and signed by both parties, and is consistent with the purpose and intent of the Zoning Ordinance. No amendment or modification of this Community Space Easement shall take effect unless and until it is recorded in the Rockingham County Registry of Deeds.

**9. Costs and Liabilities:** Grantor agrees to bear all costs and liabilities of any kind related to the operation, upkeep, and maintenance of the Property, and to defend, indemnify, hold harmless, and release the City of Portsmouth, from and against any and all actions, claims, damages, liabilities, or expenses that may be asserted by any person or entity, including Grantor, relating thereto. Without limiting the foregoing, the City of Portsmouth shall not be liable to Grantor or any other person or entity in connection with any entry upon the Property pursuant to this Community Space Easement, or on account of any claim, liability, damage, or expense suffered or incurred by or threatened against Grantor or any other person or entity, except as such claim, liability, damage, or expense is the result of the City of Portsmouth's, its agents or employee's negligence or willful misconduct.

**10. Applicable Law:** This Community Space Easement shall be construed and interpreted according to the substantive laws of the State of New Hampshire.

**11. Community Space Easement to Bind Successors:** The provisions of this Community Space Easement shall be binding upon and insure to the benefit of Grantor and its successors and assigns. The Community Space Easement shall be appurtenant to, and for the benefit of, Grantee and shall run with title to the Property and shall continue in perpetuity.

Meaning and intending to convey an easement over a portion of the Property conveyed to the Grantor by Warranty Deed of John Galt, LLC, dated March 30, 2023, and recorded at the Rockingham County Registry of Deeds at Book 6474, Page 1538.

This is an exempt transfer pursuant to RSA 78-B:2(I).

IN WITNESS WHEREOF, Grantor and City have executed this Community Space Easement as set forth, below.

Grantor:

Atlas Commons, LLC

By: \_\_\_\_\_  
Mark A. McNabb, Manager

Grantee:

City of Portsmouth, New Hampshire

By: \_\_\_\_\_  
Karen S. Conard, City Manager

As authorized by vote of the Portsmouth City Council taken on \_\_\_\_\_, during its meeting that commenced on \_\_\_\_\_.

ACKNOWLEDGEMENTS

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this \_\_\_\_ day of \_\_\_\_\_, 2024, before me, the undersigned notary public, personally appeared Mark A. McNabb, Manager of Atlas Commons, LLC, a New Hampshire limited liability company, proved to me through satisfactory evidence of identification, which was a valid driver's license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public:  
My Commission Expires:

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this \_\_\_\_ day of \_\_\_\_\_, 2024, before: me, the undersigned notary public, personally appeared Karen S. Conard, City Manager of the City of Portsmouth New Hampshire, proved to me through satisfactory evidence of identification, which was a valid driver's license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it in his/her capacity as stated therein and voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public:  
My Commission Expires:

**MEMORANDUM OF AGREEMENT**

THIS AGREEMENT (“Agreement”) is entered into this \_\_\_\_ day of, 2024, between the **Atlas Commons, LLC**, a New Hampshire limited liability company, with an address of 3 Pleasant Street, Suite 400, Portsmouth, NH 03801 (the “Developer”) and the **City of Portsmouth [School Board?]**, a New Hampshire municipality, with an address of 1 Junkins Avenue, Portsmouth, NH 03801 (the “City”). The Developer and the City may be collectively referred to herein as the “Parties.”

WITNESSETH:

**WHEREAS**, the Developer is the owner of certain real property located at 581 Lafayette Road in the City of Portsmouth, located at Tax Map/Lot 229/8B (the “Atlas Property”); and

**WHEREAS**, the City is the owner of certain adjacent real property located at 50 Andrew Jarvis Drive in the City of Portsmouth, located at Tax Map/Lot 229/3, which property currently serves at Portsmouth High School and which property contains a certain right of way abutting the Atlas Property known as Ledgewood Drive and associated cul-de-sac (the “School Property”); and

**WHEREAS**, the Developer has obtained certain approvals from the City’s land use boards to construct a 5-story mixed-use building with associated on-site and off-site improvements (see generally City permit number LU-23-189) (the “Developer’s Project”); and

**WHEREAS**, the Developer is seeking a density incentive bonus pursuant to Section 10.5B73 of the Portsmouth Zoning Ordinance (the “Ordinance”), and, as such, the Parties have entered into this Agreement to satisfy the requirements of Section 10.5B73.20 of the Ordinance and the Parties recognize the public benefit to be derived from creating greater pedestrian connectivity from Ledgewood Drive through and to the School Property; and

**WHEREAS**, the Parties desire for the Developer, at its sole cost, to design, engineer and construct certain public realm improvements within the School Property (collectively, and as further defined herein, the “Public Realm Improvements”).

**NOW, THEREFORE**, the Parties agree as follows:

**Section I: The Developer’s Obligations.**

A. The Public Realm Improvements

The Developer shall, at its sole cost and obligation design, engineer and install the following and other minimal Public Realm Improvements shown on the plan set entitled, “Public Realm Plan,” dated January 4, 2024, as revised, prepared by Haley Ward and attached as Exhibit A within the School Property:

1. Install an 8 foot gravel path with lighting and benches that extends from the existing sidewalk on Ledgewood Drive over and across the School Property.

2. Install public benches, a bike rack, a picnic table, basketball court markings, and other minor infrastructure within the School Property.

3. All Public Realm Improvements made by the Developer on the School Property shall be compliant with the Americans with Disabilities Act (ADA),.

4. All changes to the Public Realm Improvements from what is depicted in Exhibit A shall be submitted to the City Manager in writing and reviewed and approved by the Director of Public Works.

**B. Construction Obligations**

The Developer shall complete at its sole cost and obligation the following tasks to secure the construction of the infrastructure described in Section I, A:

1. Prior to commencing any construction, the Developer shall submit construction plans to the City (the “Construction Plans”). The construction plans must be reviewed and approved by the Director of Public Works for consistency with City standards. The City may, at its sole discretion and cost, employ a third-party engineer to conduct a peer review of the construction plans.

2. The Developer shall secure the construction of the items above via a security instrument, such as a bond or letter of credit, in a form acceptable to the City Attorney. The value of the security instrument shall be estimated by the Developer and set by the Director of Public Works.

3. The Developer shall enter into a Construction Management Mitigation Agreement (CMMP) with the City sufficient to describe the Developer’s construction plan for the Public Realm Improvements and the Developer’s Project.

4. As a part of the CMMP, the Developer shall designate a Project Manager, who shall serve as the point of contact for all public inquiries regarding the Public Realm Improvements, the Developer’s Project, and the related impacts on vehicular travel. This point of contact shall be available to respond to public inquiries and respond to requests within 24 hours.

5. The Developer shall provide the City with proof of insurance at the City’s customary levels for the period of construction of the Public Realm Improvements. The proof of insurance shall list the City as an additional insured.

**Section II: The City’s Obligations**

1. The City shall employ a third-party engineer to oversee the construction of the Public Realm Improvements. The cost of the third-party engineer shall be paid by the City.

2. The City hereby waives all fees applicable to the construction of the Public Realm Improvements. This provision shall not apply to any permit fees required pursuant to the Developer's Project.

3. The City shall designate a Project Manager for the Public Realm Improvements. All communications regarding the Public Realm Improvements from the Developer shall be addressed to the Project Manager, with a copy to the City Attorney.

4. Following approval of the Public Realm Improvements by the City's third-party engineer and the Director of Public Works, the City shall accept ownership in writing of all Public Realm Improvements. If review by the City's third-party engineer or the City's Public Works Department reveal the Public Realm Improvements are not constructed to City standards or the Construction Plans, the Developer shall cause the insufficiencies to be remedied to the City's satisfaction.

### **Section III: Miscellaneous**

1. Compliance with other laws: The Developer acknowledges that their obligations under this contract are subject to full compliance with all applicable state, federal, and local laws, and failure to adhere to such laws shall constitute a material breach of this contract.

2. Costs: Following acceptance of the Public Realm Improvements by the City, the City shall assume maintenance of the Public Realm Improvements. The City's maintenance obligations shall not exceed the ordinary maintenance responsibilities for any property in the City.

3. Entire Agreement. This Agreement and the attachments hereto, each of which is hereby incorporated herein, sets forth all the agreements, promises, covenants conditions and undertakings between the parties with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements and understandings, inducements, or conditions, express or implied, oral or written.

4. Amendment. No waiver or modification of any of the terms of this Agreement shall be valid unless in writing and signed by each of the parties hereto. Failure by any party to enforce any rights under this Agreement shall not be construed as a waiver of such rights, and a waiver by any party of a default hereunder in one or more instances shall not be construed as constituting a continuing waiver or as a waiver of other instances of default.

5. Waiver of Breach: The failure of either party to enforce any provision of this contract shall not be construed as a waiver of subsequent breaches or as a relinquishment of the right to enforce such provisions. No waiver by either party of any breach of this contract shall be deemed to be a waiver of any other or subsequent breach.

6. Governing Law. The construction and effect of the terms of this Agreement shall be determined in accordance with the laws of the State of New Hampshire.



As authorized by vote of the Portsmouth City Council taken on \_\_\_\_\_, during its meeting that commenced \_\_\_\_\_.

**Atlas Commons, LLC**

By: \_\_\_\_\_  
Mark. A. McNabb  
Its Manager

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this \_\_\_\_ day of \_\_\_\_\_, 2024, before: me, the undersigned notary public, personally appeared Mark A. McNabb, Manager of Atlas Commons, LLC, proved to me through satisfactory evidence of identification, which was a valid driver's license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it in his capacity as stated therein and voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public  
My Commission expires:

**City of Portsmouth, New Hampshire**

By: \_\_\_\_\_  
Karen S. Conard, City Manager

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this \_\_\_\_ day of \_\_\_\_\_, 2024, before: me, the undersigned notary public, personally appeared Karen S. Conard, City Manager of the City of Portsmouth New Hampshire, proved to me through satisfactory evidence of identification, which was a valid driver's license, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she signed it in her capacity as stated therein and voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public:  
My Commission Expires:



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

27 March, 2024

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

**RE: Request for Waiver of Zoning Ordinance Section 10.5B34.80 for property located at 581 Lafayette Road. (Map 229 / Lot 8B)**

Dear Mr. Chellman and Planning Board members:

On behalf of Atlas Common, LLC (Owner) we submit this Waiver Request for conformance with Section 10.5B34.80 of the Portsmouth Zoning Ordinance, Article 5 B Gateway Neighborhood Mixed Use District. The Ordinance sections states, under Design Standards in the Table:

*Maximum building footprint: 20,000 square feet*

The applicant is submitting plans for a Density Bonus Incentive with the inclusion of 20% Workforce Housing. Under Section 10.5B72.30 the allowable maximum building footprint is allowed to increase by 20%, for an allowable footprint of 24,000 square feet. The proposal is to construct a Mixed-Use Building Type, combining the existing commercial building with residential additions to create a building footprint with a total square footage of 42,434 square feet. We hereby request that the Planning Board allow the expanded building footprint to be 42,434 square feet, where 24,000 square feet is allowed.

The proposed building additions are 16,096 square feet and 11,185 square feet, both within the 20,000 square foot allowance when taken separately. When combined, the building is larger than the ordinance maximum. The project would qualify for a larger single mixed use building under Section 10.5B42.20 as a Mixed Use Development, allowing 70% Building Coverage (a potential footprint of 68,686 square feet at this property), however the requirements of Section 10.5B50 regulating building additions, which are non-waivable, contain specific regulations which don't work with this property, as it is currently developed. The waiver is in keeping with the Portsmouth Master Plan.

Planning Board approval of this Waiver is hereby requested.

Sincerely,

John Chagnon, PE



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

26 March, 2024

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

**RE: Request for Waiver of Zoning Ordinance Section 10.5B41.80 for property located at 581 Lafayette Road. (Map 229 / Lot 8B)**

Dear Mr. Chellman and Planning Board members:

On behalf of Atlas Common, LLC (Owner) we submit this Waiver Request for conformance with Section 10.5B41.80 of the Portsmouth Zoning Ordinance, Article 5 B Gateway Neighborhood Mixed Use District. The Ordinance sections states, under Open Space and Community Space Coverage:

*2) In the G1 District, the minimum community space coverage shall be equal to 10% of the total site area of the development site.*

The Site Plan provides for 7.6% Community Space where 10% is required. The property is a previously developed site with the building in the center and parking along the edges. The parcel is burdened by an access easement which allows travel between adjacent commercial properties. The project abuts significant green spaces along Lafayette Road and Ledgewood Drive. The developer met with city staff and identified areas adjacent to the on-site Community Space that can be expanded and enhanced. Those spaces are on property owned by the City of Portsmouth and State of New Hampshire (DOT), with the DOT space landscaped and under a city obligation to maintain. With this proposal the spaces shown on the site plan will be professionally landscaped and maintained by the developer under a license agreement. The area of the proposed off-site landscaping and the proposed plantings are identified on the Landscaping Plans in the plan set. The additional landscaped space will seamlessly integrate the on-site Community Space into a larger area, in keeping with the spirit and intent of the ordinance.

Planning Board approval of this Waiver is hereby requested.

Sincerely,

John Chagnon, PE

P:\NH\5010156-McNabb\_Properties\1397.03-Lafayette Rd., Portsmouth-JRC\2023 Site Plan 1397.03\Applications\Portsmouth Site Plan\Planning Board Waiver Request Community Space.doc



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

26 March, 2024

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

**RE: Request for Waiver of Zoning Ordinance Section 10.5B34.80 for property located at 581 Lafayette Road. (Map 229 / Lot 8B)**

Dear Mr. Chellman and Planning Board members:

On behalf of Atlas Common, LLC (Owner) we submit this Waiver Request for conformance with Section 10.5B34.80 of the Portsmouth Zoning Ordinance, Article 5 B Gateway Neighborhood Mixed Use District. The Ordinance sections states, under Building and Lot Use in the Standards:

*Maximum dwelling units per building: 24*

The applicant is submitting plans for a Density Bonus Incentive with the inclusion of 20% Workforce Housing to allow 36 dwelling units per building. The proposal is to construct a Mixed-Use Building Type, combining the existing commercial building with residential additions to create a building with a total of 72 dwelling units. We hereby request that the Planning Board allow the building to contain 72 units where 36 units are allowed.

The proposal provides much needed workforce housing. Allowing additional density creates more workforce units. The building density request has been granted at other locations for similar projects. The change is in keeping with the Portsmouth Master Plan.

Planning Board approval of this Waiver is hereby requested.

Sincerely,

John Chagnon, PE



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

24 March, 2024

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

**RE: Request for Waiver of Zoning Ordinance Section 10.5B22.40 for property located at 581 Lafayette Road. (Map 229 / Lot 8B)**

Dear Mr. Chellman and Planning Board members:

On behalf of Atlas Common, LLC (Owner) we submit this Waiver Request for conformance with Section 10.5B22.40 of the Portsmouth Zoning Ordinance, Article 5 B Gateway Neighborhood Mixed Use District. The Ordinance sections states:

*Special **Setback** Requirements on Lafayette Road: For all **lots** and **development sites** with **frontage** on Lafayette Road **buildings** shall be **setback** a minimum of 70 feet and a maximum of 90 feet from the centerline of the road.*

Please find attached a Plan titled "Ordinance Section 10.5B22.40 Waiver Request". The plan shows the location of the centerline of Lafayette Road (shown in red) at the 581 Lafayette Road property in the background ortho-photo image. The plan shows the 581 Lafayette Road property line (black line). The plan also shows a 90-foot offset line (also shown in red), from the Lafayette Road centerline. The offset line falls outside the 581 property line. Clearly, the ordinance section cannot be complied with, since the maximum building offset line does not even reach property under control of the developer and the subject of this application. Since there is no way to comply, and as advised by the Planning Department, a Waiver is required.

Planning Board approval of this Waiver is hereby requested.

Sincerely,

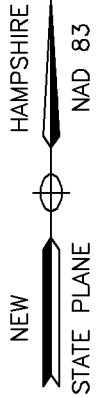
John Chagnon, PE



# ORDINANCE SECTION 10.5B22.40 WAIVER REQUEST

OWNER: JOHN GALT, LLC  
581 LAFAYETTE ROAD

CITY OF PORTSMOUTH  
COUNTY OF ROCKINGHAM  
STATE OF NEW HAMPSHIRE



1" = 50'

5 MARCH 2024

 **AMBIT ENGINEERING, INC.**  
A DIVISION OF HALEY WARD, INC. 

WWW.HALEYWARD.COM

200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

FB 259, PG 10

5010156-1397.04

P:\NA\5010156-McNabb\_Proj\proj\1397.04-Lafayette Rd., Portsmouth\RC\2023 Site Plan\_1397.03\Plan & Specs\Site\1397.04 SITE 2023.dwg, 3/5/2024 11:58:56 AM



581 Lafayette Road					Workforce	Accessible
Unit/Parking Analysis						
March 27, 2024						
Level	Room No.	# bedrooms	Area (sf)	spaces/unit		
LEVEL 5	B504	STUDIO	369	0.50		
LEVEL 5	A505	STUDIO	424	0.50		
LEVEL 5	A507	STUDIO	424	0.50		
LEVEL 5	A503	STUDIO	425	0.50		
LEVEL 5	A504	STUDIO	425	0.50		
LEVEL 5	A509	STUDIO	425	0.50		
LEVEL 4	B406	STUDIO	425	0.50		
LEVEL 3	B306	STUDIO	426	0.50		
LEVEL 5	B503	STUDIO	434	0.50		
LEVEL 5	A511	STUDIO	457	0.50		
LEVEL 4	B411	STUDIO- ACCESSIBLE	494	0.50		
LEVEL 5	A508	STUDIO	499	0.50		
LEVEL 3	B303	1BR	499	0.50		
LEVEL 3	B311	1BR	499	0.50		
LEVEL 4	B403	1BR	499	0.50		
LEVEL 3	B304	1BR	524	1.00		
LEVEL 4	B404	1BR	531	1.00		
LEVEL 5	B505	1BR	532	1.00		
LEVEL 5	B506	1BR	532	1.00		
LEVEL 5	B502	1BR	541	1.00		
LEVEL 2	B207	1BR	542	1.00		
LEVEL 3	B309	1BR	572	1.00		
LEVEL 4	B409	1BR	572	1.00		
LEVEL 4	A407	STUDIO- ACCESSIBLE	580	1.00		
LEVEL 4	B410	1BR	599	1.00		
LEVEL 4	A408	1BR	620	1.00		
LEVEL 3	B310	1BR	621	1.00		
LEVEL 3	B307	1BR- ACCESSIBLE	644	1.00		
LEVEL 4	B408	1BR	645	1.00		
LEVEL 2	B206	1BR	651	1.00		
LEVEL 3	B308	1BR	652	1.00		
LEVEL 4	B407	1BR	659	1.00		
LEVEL 2	A205	1BR	660	1.00		
LEVEL 3	A305	1BR	660	1.00		
LEVEL 4	B401	1BR	667	1.00		
LEVEL 5	A502	1BR	672	1.00		
LEVEL 3	A309	1BR	682	1.00		
LEVEL 3	A307	1BR	694	1.00		
LEVEL 2	A207	1BR	698	1.00		
LEVEL 3	A308	1BR	699	1.00		
LEVEL 4	A405	1BR	702	1.00		
LEVEL 3	B301	1BR	703	1.00		
LEVEL 4	B402	2BR	708	1.00		
LEVEL 2	A209	1BR	709	1.00		
LEVEL 2	A208	1BR	723	1.00		
LEVEL 5	B507	2BR- ACCESSIBLE	733	1.00		
LEVEL 4	A406	1BR	749	1.00		
LEVEL 3	B305	2BR	749	1.00		
LEVEL 4	B405	2BR	749	1.00		
LEVEL 3	B302	2BR	780	1.30		
LEVEL 2	B202	2BR	782	1.30		
LEVEL 2	A206	1BR	786	1.30		
LEVEL 3	A306	1BR	823	1.30		
LEVEL 2	B201	2BR-WORKFORCE	872	1.30		
LEVEL 2	A203	1BR- ACCESSIBLE- WF	886	1.30	Workforce 1	Fully Accessible-5
LEVEL 5	A506	1BR- ACCESSIBLE- WF	910	1.30	Workforce 2	Fully Accessible-6
LEVEL 3	A303	2BR- WF	988	1.30	Workforce 3	
LEVEL 5	B501	2BR-WORKFORCE	1007	1.30	Workforce 4	
LEVEL 2	B203	3BR-WORKFORCE	1146	1.30	Workforce 5	
LEVEL 4	A402	3BR-WORKFORCE	1365	1.30	Workforce 6	
LEVEL 2	B204	3BR- WF	1456	1.30	Workforce 7	
LEVEL 2	B205	3BR-WORKFORCE- ACCESSIBL	1497	1.30	Workforce 8	Fully Accessible-7
LEVEL 3	A302	3BR-WORKFORCE	1504	1.30	Workforce 9	
LEVEL 2	A202	3BR-WORKFORCE	1535	1.30	Workforce 10	
LEVEL 5	A510	3BR- WF	1535	1.30	Workforce 11	
LEVEL 4	A403	3BR- WF	1726	1.30	Workforce 12	
LEVEL 4	A401	3BR-WORKFORCE	2034	1.30	Workforce 13	
LEVEL 3	A301	3BR-WORKFORCE	2056	1.30	Workforce 14	
LEVEL 2	A204	3BR	2144	1.30	Workforce 15	
LEVEL 4	A404	3BR	2153	1.30		
LEVEL 3	A304	3BR-ACCESSIBLE	2172	1.30		
LEVEL 2	A201	3BR	2200	1.30		
<b>Total Units</b>				<b>Parking Req.</b>	<b>workforce housing</b>	
<b>Total Units:</b>			<b>72</b>	71.40	20% of units	average unit size
Visitor Parking - 1 space per every 5 dwellings				14.40	14.4	848
Residential automobile parking required (base, unadjusted)				85.80	86.00	ROUNDED UP

Car Parking Spaces Required per Unit Size	
0-500	0.5
500-750	1.0
751-1900	1.3

Bicycle Parking Required		
use	spaces required per use	total required
multifamily	1 bicycle for every 5 dwelling units	15
restaurant/rec	1 bicycle for each 10 car parking spaces	12
<b>TOTAL Required</b>		<b>27</b>
Total Provided (in building, basement + 1st floor)		82
Total Provided (outside)		8
<b>Total Provided, inside &amp; outside</b>		<b>90</b>
Excess Provided (beyond required)		63
Excess applied to New Additions (housing)		24.0
Excess applied to Existing Building		36.0
Net leftover excess bicycle parking		3.0
Scooter parking provided (none required)		18
Motorcycle parking provided (none required)		7

CAR SPACES DEDUCTED @ 1:6	4
	6
	10

**Apartment Types - Unit Mix & Locations**

level	number of bedrooms per apartment					Total
	5	1	2	3		
5	9	5	2	1		17
4	3	10	2	4		19
3	1	13	3	3		20
2	0	8	2	6		16
<b>total</b>	<b>13</b>	<b>36</b>	<b>9</b>	<b>14</b>		<b>72</b>
Total bedrooms	13	36	18	42		109

**Apartment Types - Unit Distribution per Building**

Level	Building A	Building B	TOTAL
5	10	7	17
4	8	11	19
3	9	11	20
2	9	7	16
<b>total units</b>	<b>36</b>	<b>36</b>	<b>72</b>



		with gateway deduct -20%
<b>Apartments Parking Required</b>		
subtotal base parking spaces required		86.00
Gateway deduct -20%		(17.20)
Subtotal parking required		68.80
	# excess bike spaces	# car spaces deducted
Bicycle parking deduction 1 space for 6 bikes, max 5%:	(24.0)	4.66% (4.0)
max 5% allowed =	4.3 spaces	
<b>Apartment Parking Required (adjusted for gateway &amp; bikes)</b>		<b>Rounded Up 65.00</b>

		spaces (rounded up)	subtotal w/20% gateway
<b>Restaurant/Recreation Parking Required</b>			
restaurant	spaces/gfa	gfa or occ	spaces
mezzanine office	1/100	13,982.00	140
recreation (golf)	1/350	1,060.00	4
	1per 4 occ.	20.00	5
subtotal			149
Gateway deduct -20%			-29.8
Subtotal restaurant/recreation parking required			120
	# excess bike spaces	# car spaces deducted	round down
Bicycle parking deduction - 1 space for 6 bikes, max 5%	(36.0)	-5.00% (6.0)	(6.00)
max 5% allowed =	6 spaces		
<b>Restaurant/Recreation Parking Required (adjusted for gateway &amp; bikes)</b>			<b>114</b>

bicycle deduct 5%	total
(6.00)	106.0
0.00	4.0
0.00	4.0

Use	Requirement	Notes
<b>9. Eating and Drinking Places</b>		
9.10-9.50	All eating and drinking places	1 per 100 sf GFA
<b>7. RECREATION USES</b>		
4.10	Religious, sectarian or private non-profit recreational use	Parking demand analysis
4.20	Cinema or similar indoor amusement use with no live performance	0.4 per seat, or Parking demand analysis
4.30	Indoor recreation use, such as bowling alley or arcade	1 per 4 persons maximum occupancy
4.40	Health club, yoga studio, martial arts school, or similar use	1 per 250 sf GFA
4.50	Outdoor recreation use	Parking demand analysis
4.60	Amusement park, water park or theme park	NA - Prohibited Use

<b>TOTAL parking required all uses (adjusted for gateway &amp; bikes)</b>	<b>179.0</b>
---	--------------

**Shared Parking 10.1112.60**

Total Parking Required	Weekday				Weekend				Nighttime		Maximum TOTAL Required
	daytime (8am-5pm)	spaces required	evening (6-12pm)	spaces required	daytime (8am-5pm)	spaces required	evening (6-midnight)	spaces required	(midnight-6am)	spaces required	
Land Use											
Apartments	60%	39.0	100%	65.0	80%	52.0	100%	65.0	100%	65.0	
restaurant	70%	74.2	100%	106.0	80%	84.8	100%	106.0	10%	10.6	
Office	100%	4.0	20%	0.8	10%	0.4	5%	0.2	5%	0.2	
entertainment (golf)	40%	1.6	100%	4.0	80%	3.2	100%	4.0	10%	0.4	
<b>ADJUSTED TOTAL Required, all uses, shared</b>		<b>118.8</b>		<b>175.80</b>		<b>140.4</b>		<b>175.2</b>		<b>76.2</b>	<b>176</b>

<b>Total Parking Proposed</b>	
In-building, level 1 + basement	148
Open air, on site	32
Off-site parking per deeded easement	0
<b>Total parking proposed</b>	<b>180</b>
Excess (Defecit)	4
Existing total available-today	154
<b>Proposed Net Increase (reduction) in parking</b>	<b>22</b>



### 599 Lafayette Tenant SF & Parking Analysis

Tenant	Unit	S.F.	Use/Occ.	Parking Req.	Spaces/unit
Convenient Md, Inc.	1	5,326	B	1/250 gfa	21
Steven Little dba Seacoast Hearing Center	2	1,050	B	1/250 gfa	4
Route 1 Carpet and Decor.	2B	1,160	M	1/300 gfa	4
Cortes Deli (Honey Ham)	3	883	A2	1/100 gfa	9
Bowl O' Rama	4	21,890	A3	parking analy	93
New England Printing & Copying	6	2,668	B	1/400 gfa	7
Seacoast Sewing & Quilting	7	2,450	M	1/300 gfa	8
Port City Coin & Jewelry	8	1,135	M	1/300 gfa	4
Peter Fisher (Station 23 Grooming)	9	2,553	B	1/400 gfa	6
Mac Edge, LLC	10	3,528	M	1/300 gfa	12
Route 1 Carpet and Decor.	11	2,599	M	1/300 gfa	9
L.A. Nails	12	1,795	B	1/400 gfa	5
Kim Lai Chinese Food	13	2,407	A2	1/100 gfa	24
Domino's	14	1,745	A2	1/100 gfa	18
AAA Travel & Insurance	15	2,735	B	1/350 gfa	8
<b>Total: 15 Spaces</b>		<b>53,924</b>			<b>232</b>
					<b>311 existing spaces</b>
Bowl O' Rama Parking Analysis					
Renovated restaurant + kitchen = 2,180 sf / 100 = 22 spaces					
New function rooms = 772 sf. @ 1 occ. / 15 sf. = 51 occ. / 4 = 13 spaces					
Bowling alley = 22 lanes @ 5 occ. / lane = 110 occ / 4 = 28 spaces					
Arcade = 1,828 sf / 100 = 18 spaces					
Staff areas = 1,137 s.f / 100 = 12 spaces					

A5109-001  
November 10, 2023

Mr. Roger Appleton, P.E.  
Assistant District 6 Engineer  
New Hampshire Department of Transportation  
271 Main Street, P.O. Box 740  
Durham, New Hampshire 03824

Re: **Trip Generation Memorandum  
581 Lafayette Road Development  
Portsmouth, New Hampshire**

Dear Roger:

Tighe & Bond has prepared a trip generation memorandum to outline the anticipated study area of the Traffic Impact Assessment (TIA) for the proposed Lafayette Road residential development located at 581 Lafayette Road (US Route 1) in Portsmouth, NH. The project proposes to add 72 residential units to the to the existing restaurant and restaurant/ indoor golf uses at 581 Lafayette Road. The site is bounded by Ledgewood Drive to the north, residential land use to the east, a shopping plaza to the south, and Lafayette Road (US Route 1) to the west. The project consists of the construction of 72 residential units in two new buildings adjacent to the existing building, which is to remain. Structured parking will be provided below the apartments on the ground level and basement levels of the building. The existing parking area will be reconfigured to accommodate the building addition. Access to the development will be provided via three driveways. The existing western entrance-only driveway located on Ledgewood Drive will be maintained. The existing eastern driveway on Ledgewood Drive will be replaced by two separate full-access driveways, one providing access to the structured parking and the other providing access to the surface parking spaces. The trip generation estimate for the proposed development will serve as the basis for the traffic impact assessment.

## Study Area

Based on a preliminary review of expected trip generation and distribution for the surrounding area, the following intersections have been identified to be included in the study area:

- US Route 1 Bypass at Greenleaf Avenue (signalized)
- US Route 1 Bypass at Lafayette Road (US Route 1) (signalized)
- US Route 1 at North Shopping Plaza Driveway (Bowl-O-Rama/ Urgent Care)
- Lafayette Road (US Route 1) at Ledgewood Drive (signalized)
- Ledgewood Drive at East Site Driveway
- Ledgewood Drive at West Site Driveway

Turning movement count (TMC) data was collected at the study area intersections on Wednesday November 1, 2023 and Saturday November 4, 2023. Automatic traffic recorder (ATR) counts were collected along Ledgewood Drive in the vicinity of the site driveways. The ATR was installed for a 48-hour period from October 31 to November 1, 2023, collecting directional traffic volume flows and vehicular travel speeds.



The anticipated study area intersections are shown in Figure 1.

## Traffic Volume Adjustments

The NHDOT continuous count station located along Route 16 (Spaulding Turnpike) between Exit 6 and Exit 7 (ID 02125090) will be used to compare 2023 traffic volumes to 2019 traffic volumes to determine if any adjustments to the turning movement counts are necessary per current NHDOT guidelines.

## Trip Generation

Trips expected to be generated by the proposed development were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 11<sup>th</sup> Edition, 2021. Multifamily Housing (Mid-Rise) (LUC-221) was used to estimate vehicle trips generated by the development based on the current development program, which proposes 5-story buildings with structured parking on the ground level and residential units on floors 2 through 5.

Based on the ITE data, the proposed development is estimated to generate 27 trips (6 entering, 21 exiting) during the weekday morning peak hour, 28 trips (17 entering, 11 exiting) during the weekday afternoon peak hour, and 29 trips (15 entering, 14 exiting) during the Saturday midday peak hour. There will be no changes to the existing uses on site; trips generated by these uses will be captured through existing turning movement counts. Table 1 provides a detailed summary of the trip generation.

**TABLE 1**  
Site-Generated Traffic Summary

<b>Proposed - 72 Apartments Peak Hour Period</b>	<b>Enter</b>	<b>Exit</b>	<b>LUC Total</b>
Weekday Morning	6	21	27
Weekday Afternoon	17	11	28
Saturday Midday	15	14	29
Weekday	164	163	327
Saturday	175	176	351

**Source:** Institute of Transportation Engineers, Trip Generation, 11th Edition, 2021  
Land Use - 221 [Multifamily Housing (Mid-Rise)]

## Trip Distribution

The distribution of the proposed traffic entering and exiting the site expected to be generated by the proposed residential use was reviewed based on U.S. Census journey-to-work data for people residing in Portsmouth. The following arrival/departure distributions are anticipated:

- 30% to/ from the North to Portsmouth Center via US Route 1
- 25% to/ from the South via US Route 1 (Lafayette Road)
- 20% to/ from the West to US Route 4 (Spaulding Turnpike) via US Route 1 Bypass
- 15% to/ from the South to I-95 South via Route 33
- 5% to/ from the West via Route 33



- 5% to/ from the North to I-95 North via US Route 1 Bypass

Based on the regional distribution, it is estimated that 45% of site traffic will access the site via US Route 1 Bypass to the northwest, 30% will access the site to/ from the northeast via US Route 1 and 25% will access the site to/ from the south via US Route 1.

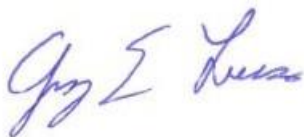
Figure 1 presents the anticipated regional site traffic distributions of the traffic through the study area roadways.

## **Conclusion**

The proposed development program includes 72 residential units. Based on the estimated trip generation and trip distribution, the TIA will analyze traffic operations at three intersections during the weekday morning, weekday afternoon, and Saturday midday peak periods.

Sincerely,

**TIGHE & BOND, INC.**



Greg Lucas, PE, PTOE, RSP1  
Senior Project Manager

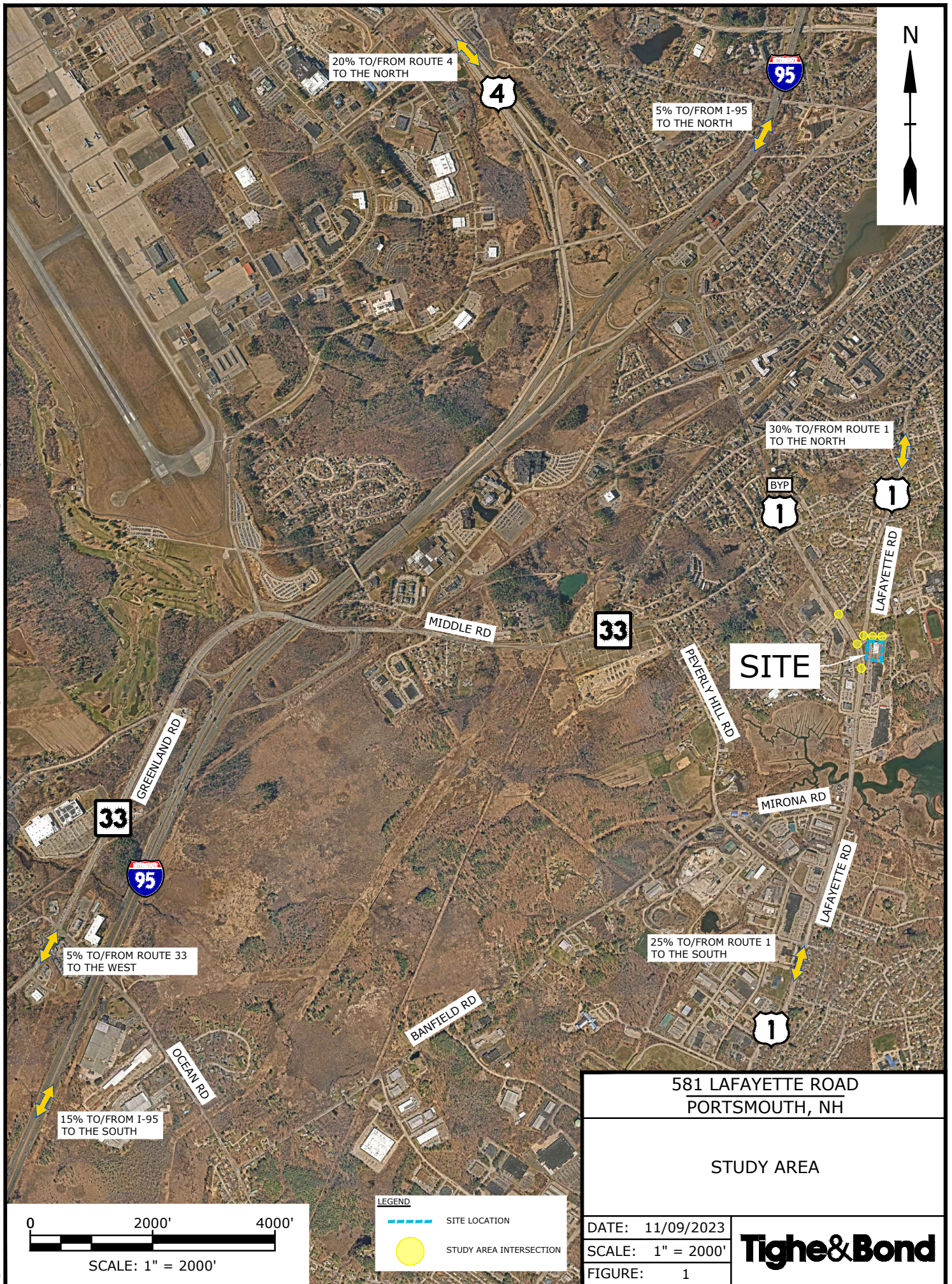
Copy: Marie Bodi, Atlas Commons, LLC  
John Chagnon, Ambit Engineering, Inc.

Enclosures: Study Area Map (Figure 1)

\\tighebond.com\data\Data\Projects\A\A5109 Atlas Commons, LLC\001 - 581 Lafayette Road Traffic Study\Reports\2023-11-09 Trip Generation Memo\A5109-001 581 Lafayette Rd Trip Gen Memo.docx



Nov 09, 2023-2:54pm Plotted By: MStout  
Tighe & Bond, Inc. J:\VA5109 Atlas Commons, LLC\001 - 581 Lafayette Road Traffic Study\Drawings\AutoCAD\Figures\VA5109-001 Traffic Study Area Figure.dwg



20% TO/FROM ROUTE 4  
TO THE NORTH

5% TO/FROM I-95  
TO THE NORTH

30% TO/FROM ROUTE 1  
TO THE NORTH

**SITE**

25% TO/FROM ROUTE 1  
TO THE SOUTH

5% TO/FROM ROUTE 33  
TO THE WEST

15% TO/FROM I-95  
TO THE SOUTH

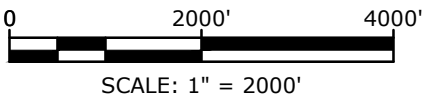
581 LAFAYETTE ROAD  
PORTSMOUTH, NH

STUDY AREA

**LEGEND**

- SITE LOCATION
- STUDY AREA INTERSECTION

DATE: 11/09/2023  
SCALE: 1" = 2000'  
FIGURE: 1







581 Lafayette Road Residential Development  
Portsmouth, NH

# TRAFFIC IMPACT STUDY

Atlas Commons, LLC

February 28, 2024

**Tighe&Bond**



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- A. Traffic Count Data
- B. NHDOT Traffic Volume Data
- C. Traffic Volume Adjustment Calculations
- D. Capacity Analysis Methodology
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- F. COAST Bus Maps
- G. U.S. Census Journey-to-Work Data
- H. Site Development Plan
- I. Other Development Traffic Volumes
- J. Collision History Summary



## **Section 1**

# **Study Overview**

This Traffic Impact Study (TIS) evaluates the potential traffic impact of the proposed residential development located at 581 Lafayette Road, in the City of Portsmouth, New Hampshire. The site is bounded by Ledgewood Drive to the north, residential land use to the east, a shopping plaza to the south, and Lafayette Road (US Route 1) to the west. Figure 1 shows the Site location relative to the surrounding roadway network.

The project proposes the construction of 72 residential units in two new buildings adjacent to the existing building. The existing building, which houses a restaurant and a restaurant/indoor golf area, will remain. Structured parking will be provided below the apartments on the ground level and basement levels of the building. The existing surface parking lot will be reconfigured to accommodate the building addition. Site access will be provided via three driveways. The existing western driveway entrance will be maintained, and the existing eastern driveway will be replaced by two separate full-access driveways. The project is expected to be completed in 2025.

Based on the analyses conducted, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed residential development is not expected to have a significant impact to traffic operations within the study area.

## **Section 2**

# **Existing Conditions**

The Project site is bounded by Ledgewood Drive to the north, residential land use to the east, a shopping plaza to the south, and Lafayette Road (US Route 1) to the west. The property is currently accessible via two driveways from Ledgewood Drive and from the shopping plaza to the south that has multiple entrances onto Lafayette Road. The eastern driveway from Ledgewood Drive is full-access and the western driveway is entrance only; both driveways are unsignalized. The following sections provide details on the adjacent roadways within the study area.

### **2.1 Roadways**

#### **2.1.1 Lafayette Road (US Route 1)**

Lafayette Road (US Route 1) is classified as a principal arterial adjacent to the project site. The roadway runs in a north-south direction, providing local and regional connectivity through southeastern New Hampshire, generally running parallel to I-95 between the Massachusetts state line and the Maine state line.

Adjacent to the project site, Lafayette Road (US Route 1) intersects with itself at a signalized intersection with US Route 1 Bypass. Lafayette Road (US Route 1) to the south and US Route 1 Bypass to the north form a continuous roadway, generally providing two travel lanes in each direction, with additional turn lanes provided at signalized intersections. A third travel lane is provided northbound from the North Shopping Plaza driveway to the intersection with Lafayette Road, supporting northbound right turning traffic remaining on Lafayette Road. North of this intersection, Lafayette Road (US Route 1) generally provides one travel lane in each direction with additional turn lanes provided at signalized intersections. Lafayette Road is under NHDOT District 6 jurisdiction south of this signalized intersection, and under City of Portsmouth jurisdiction north of the intersection.

A sidewalk is provided along the east side of Lafayette Road adjacent to the project site with crosswalks provided at the intersections with US Route 1 Bypass and Ledgewood Drive. A wide shoulder with a width of 11 feet is provided in the northbound direction south of Ledgewood Drive to accommodate a bus stop. Outside of the bus stop, a shoulder of typically 3 to 5 feet wide exists delineated by a solid white edge line. The speed limit is posted at 30 miles per hour (mph) in both directions in the vicinity of the site for the segment of Lafayette Road north of US Route 1 Bypass, and posted at 35 mph for the continuous segment of Lafayette Road and US Route 1 Bypass.

#### **2.1.2 US Route 1 Bypass**

US Route 1 Bypass is classified as a principal arterial under NHDOT District 6 jurisdiction. The roadway runs primarily in the north-south direction, beginning at the intersection with Lafayette Road (US Route 1) , providing access to the Portsmouth Traffic Circle to the northeast and running north to the Maine state line. Within the study area, US Route 1 Bypass typically provides two lanes of travel in each direction, with a median barrier dividing northbound and southbound traffic.

A sidewalk is provided along both sides of the roadway, ending at the intersection with Greenleaf Avenue. An outside shoulder of typically 4 to 5 feet wide exists delineated by a solid white edge line and an inside shoulder of typically 2 to 4 feet wide exists delineated by a solid yellow edge line. The speed limit is posted at 35 mph in both directions in the vicinity of the site.

## 2.2 Study Area Intersections

### 2.2.1 US Route 1 Bypass at Greenleaf Avenue

Greenleaf Avenue intersects US Route 1 Bypass from the east and west to form a four-way signalized intersection. The northbound and southbound approaches provide a shared through/right-turn lane, a through lane, and a dedicated left-turn lane. Both the northbound and southbound left-turn movements operate under a protected signal phase. Both the eastbound and westbound approaches provide a single all-purpose lane.

A marked crosswalk is provided only on the south leg with a concurrent pedestrian phase provided. A sidewalk is present on both sides of the south leg and only on the south side of the east and west legs; no sidewalk is present at the north leg. The south and north legs have a concrete raised median of about 4 feet wide separating northbound and southbound traffic. Marked edge lines provide 4 to 6 foot shoulders on the northbound and southbound approaches.

### 2.2.2 US Route 1 Bypass and Lafayette Road (US Route 1)

Lafayette Road (US Route 1) intersects Lafayette Road and US Route 1 Bypass from the east to form a three-way signalized intersection. The southbound approach provides two through lanes and a dedicated right-turn lane and is separated from opposing traffic by a 12 foot wide raised concrete median. The northbound approach provides two through lanes and a dedicated left-turn lane which are separated from opposing traffic by a 4 foot wide raised concrete median. The left-turn movement operates under a protected signal phase. The westbound approach provides two dedicated left-turn lanes and a dedicated right-turn lane and is separated from opposing traffic by a 4 foot wide raised concrete median. An overlap phase accommodates northbound right turns with a green right arrow concurrent with the westbound phase, serving the continuous movement of US Route 1 in both directions.

A marked crosswalk is provided across the south and east legs with an exclusive pedestrian phase. Sidewalks are present on both sides of the north and south legs and the southern side of the east leg. Four foot wide shoulders are provided with marked edge lines on all approaches.

### 2.2.3 Lafayette Road (US Route 1) at North Shopping Plaza Driveway

The North Shopping Plaza Driveway provides access to a shopping plaza that contains a bowling alley, an urgent care facility, and several other businesses; the plaza also provides connection to the south edge of the Project site. The driveway intersects with the northbound direction of US Route 1, with a raised median prohibiting turns to and from US Route 1 southbound.

US Route 1 provides two lanes of through traffic which widens to accommodate a third lane of through traffic north of the intersection. A bus stop is located on the right shoulder 75 feet south of the intersection. The driveway provides a single approach lane

under stop control. A sidewalk is provided along the east side of US Route 1 northbound, with no formalized, marked crosswalk across the driveway.

#### **2.2.4 Lafayette Road (US Route 1) at Ledgewood Drive**

Ledgewood Drive intersects Lafayette Road (US Route 1) from the east to form a three-way unsignalized intersection with Ledgewood Drive operating under stop control. The northbound and westbound approaches have one all purpose lane. The southbound approach has three lanes that are marked for the Lafayette Road/ US Route 1 Bypass intersection which is located approximately 150 feet to the south. The marked left-turn lane serves as a through/left-turn lane at this intersection. The intersection is marked with Do Not Block Intersection pavement markings.

A crosswalk is provided across Ledgewood Drive and sidewalks are present on the eastern side of Lafayette Road and the southern side of Ledgewood Drive. A 12 foot wide shoulder is provided at the northbound approach which also functions as a bus stop. Marked edge lines provide 4 to 6 foot shoulders at the westbound and southbound approaches.

#### **2.2.5 Ledgewood Drive at West Site Driveway**

The West Site Driveway intersects Ledgewood Drive from the south and is located approximately 85 feet east of the Lafayette Road (US Route 1)/Ledgewood Drive intersection. Ledgewood Drive has one travel lane in each direction and the driveway is one-way entering only. A sidewalk is present on the southern side of Ledgewood Drive and on both sides of the entrance driveway.

#### **2.2.6 Ledgewood Drive at East Site Driveway**

The East Site Driveway intersects Ledgewood Drive from the south and is located approximately 150 feet east of the West Site Driveway. Ledgewood Drive has one travel lane in each direction and the driveway is full-access with one all-purpose lane under stop control. A sidewalk is present along the southern side of Ledgewood Drive and the western side of the driveway.

### **2.3 Traffic Volumes**

Turning movement counts (TMC) were collected at the study area intersections on Wednesday, November 1, 2023, during the weekday morning (7:00 AM to 9:00 AM) and weekday afternoon peak periods (4:00 PM to 6:00 PM) and on Saturday, November 4, 2023, during the weekend afternoon peak period (11:00 AM to 2:00 PM). Automatic Traffic Recorder (ATR) counts were collected along Ledgewood Drive in the vicinity of the site driveways during a 48-hour period from Tuesday, October 31, 2023, thru Wednesday, November 1, 2023, concurrently with the TMC to record hourly traffic volumes and vehicular speeds.

Based on current NHDOT guidance, 2023 traffic volumes were compared to 2019 traffic volumes to determine if adjustments to the collected traffic volumes should be made to account for pandemic-related impacts to daily traffic volumes. The City of Portsmouth provided continuous TMC data for the intersection of Lafayette Road and South Street, which is located approximately a third of a mile north of the Project study area. Localized data from Lafayette Road was determined to be more applicable to the study area than permanent count station data maintained by NHDOT on I-95 and Spaulding Turnpike. The average traffic volumes from Tuesday to Thursday during the same week

in November 2019 and November 2023 were used as a basis for comparison for weekday morning and weekday afternoon peak periods. The traffic volume from Saturday during the same week in November 2019 and November 2023 was used as a basis of comparison for the weekend afternoon peak period. The review shows November 2023 traffic volumes at the intersection during the week the TMC were collected were 19.0% higher during the weekday morning peak hour than 2019 data. The City of Portsmouth provided an hourly count breakdown for the Lafayette Street and South Street intersection so two time periods were considered for comparison since the afternoon peak hour was 4:30 PM to 5:30 PM. The hours from 4:00-5:00 PM and from 5:00-6:00 PM saw an increase in November 2023 of 6.5% and 16.1%, respectively, compared to 2019 data. The review shows that the November 2023 traffic volumes were slightly lower for the Saturday midday peak period with a minimal decrease of 0.7%. The daily volume data for both weekday and Saturday were higher in November 2023 than in November 2019. Given the overall increases in weekday hourly data, weekday daily data, and Saturday midday data, and given the decrease of less than one percent in the Saturday midday, no pandemic-related adjustment were made to the weekday morning, weekday afternoon, or weekend afternoon peak periods.

The ATR data from Ledgewood Drive indicates average daily traffic (ADT) of approximately 550 vehicles per day in the eastbound direction and 650 vehicles per day in the westbound direction. The measured 85<sup>th</sup> percentile speeds, also known as the operating speed of the roadway, were approximately 23 mph and 24 mph in the eastbound and westbound directions, respectively.

The weekday morning and weekday afternoon turning movement counts were each seasonally adjusted to the peak and adjusted as applicable based on the historical volume comparison per NHDOT guidelines. The adjusted 2023 existing traffic volumes for the weekday morning, weekday afternoon, weekend afternoon peak hours are shown in Figure 2. The raw TMC data and ATR data are provided in Appendix A. The City of Portsmouth historical TMC from Lafayette Street and South Street intersection, seasonal adjustment factors, and historical growth rates are enclosed in Appendix B. The traffic volume adjustment factor calculation and supporting data is provided in Appendix C.

## 2.4 Capacity and Queue Analyses - Existing Condition

Capacity and queue analyses were performed for the study intersections for the 2023 Existing Conditions during the weekday morning, weekday afternoon, and weekend peak hours. Analyses were conducted using Trafficware Synchro Studio 11 software, which conducts the analysis based on *Highway Capacity Manual (HCM)* methodology. Consistent with NHDOT guidelines, analyses for signalized intersections were conducted using methods of the 2000 HCM, while analysis for unsignalized intersections utilized the HCM 6<sup>th</sup> Edition methodology. The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. A summary of the HCM capacity analysis methodology and a detailed definition of LOS is provided in Appendix D. The queue analysis results are summarized based upon the length of vehicle queueing on an intersection approach. For unsignalized intersections, queues are quantified for 95<sup>th</sup> percentile (design queues). For signalized intersections, queues are quantified by 95<sup>th</sup> percentile (design) and 50<sup>th</sup> percentile (average) queues. Tables 1 and 2 in Section 7 summarize the capacity and queue analyses results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

As shown in Table 1, the majority of the overall intersections and individual intersection approaches operated acceptably at LOS D or better during the peak hours with the following exceptions:

- **US Route 1 Bypass at Lafayette Road (US Route 1)**
  - The southbound left turn movement to Lafayette Road operates at LOS E during the weekday afternoon peak hour.
- **US Route 1 Bypass at Greenleaf Avenue**
  - The eastbound shared approach operates at LOS E during the weekday morning and weekday afternoon peak hours.
  - The northbound left turn movement operates at LOS E during the Saturday midday peak hour.
- **Lafayette Road (US Route 1) at Ledgewood Drive**
  - The Ledgewood Drive approach operates at LOS E during the weekday morning peak hour.

A review of the queuing results in Table 2 shows that a majority of the design queues are accommodated within the available storage between intersections. The following queue extends past available storage:

- **US Route 1 Bypass at Greenleaf Avenue**
  - Design queues on the shared northbound through/ right movements are shown to exceed available storage by approximately five vehicle lengths and spill back beyond the US Route 1 Bypass and Lafayette Road (US Route 1) intersection to the south during the weekday afternoon peak period.

## 2.5 Collision History

Vehicle collision data for the study intersections was provided by the Portsmouth Police Department (PPD). Traffic accident data for the areas around Lafayette Road and Route 1 Bypass for a four-year period between January 2020 and December 2023 was reviewed. Table 3 provides a summary of the collisions within the study area including type, severity, day and time, and location. Appendix J includes detailed collision summaries for each of the study intersections.

As shown in Table 3, there were 27 motor vehicle collisions reported in the study area during the four-year period analyzed. Crashes most frequently occurred at the US Route 1 Bypass and Lafayette Road intersection with 14 total collisions and accounting for about 52% of the reported total. The US Route 1 Bypass at Greenleaf Avenue intersection experienced the second highest number of collisions with eight, accounting for about 30% of the total crashes. The Lafayette Road and Ledgewood Drive intersection experienced the third highest reported collisions with four, accounting for 15% of total crashes. The remaining one reported crash occurred at the intersection of US Route 1 and the North Shopping Plaza Driveway. Both the West Site Driveway and the East Site Driveway with Ledgewood Drive experienced zero reported collisions in the time period analyzed.

The most frequent type of collisions was rear-end, accounting for about 52% of the total collisions within the study area. The second most frequent collision type was angle which made up about 19% of the total collisions. The remainder of collisions were fixed object or sideswipe, same direction collisions, both of which had four reported collisions and accounted for about 15% of the total collisions each.

About 82% of the collisions occurred on weekdays, spread throughout the day. Weather and roadway conditions at the time of the collisions were not able to be determined from the police reports.

The collisions data indicates no reported fatalities and four crashes with injuries recorded: three suspected minor injuries and one incapacitating injury. The remaining crashes resulted in property damage only.

**TABLE 3**

Study Area Crash History Summary

<b>COLLISION TYPE</b>						
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Angle	1	2	1	1	<b>5</b>	<b>18.5%</b>
Fixed Object	1	0	0	3	<b>4</b>	<b>14.8%</b>
Rear-End	3	4	5	2	<b>14</b>	<b>51.9%</b>
Sideswipe, Same Direction	1	2	0	1	<b>4</b>	<b>14.8%</b>
<b>TOTAL</b>	<b>6</b>	<b>8</b>	<b>6</b>	<b>7</b>	<b>27</b>	<b>100%</b>

<b>SEVERITY</b>						
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Personal Injury	1	1	1	1	<b>4</b>	<b>14.8%</b>
Property Damage Only (PDO)	5	7	5	6	<b>23</b>	<b>85.2%</b>
<b>TOTAL</b>	<b>6</b>	<b>8</b>	<b>6</b>	<b>7</b>	<b>27</b>	<b>100%</b>

<b>DAY &amp; TIME</b>						
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Weekday 6-9 A.M.	0	1	0	0	<b>1</b>	<b>3.7%</b>
Weekday 3-6 P.M.	3	3	1	0	<b>7</b>	<b>25.9%</b>
Weekday Off-Peak	2	4	3	5	<b>14</b>	<b>51.9%</b>
Weekend Off-Peak	1	0	2	2	<b>5</b>	<b>18.5%</b>
<b>TOTAL</b>	<b>6</b>	<b>8</b>	<b>6</b>	<b>7</b>	<b>27</b>	<b>100%</b>

<b>CRASHES BY STUDY AREA INTERSECTION</b>						
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
US 1 at N Shopping Plaza Driveway	0	1	0	0	<b>1</b>	<b>3.7%</b>
US 1 Bypass at Lafayette Road	2	3	5	4	<b>14</b>	<b>51.9%</b>
Lafayette Road at Ledgewood Drive	2	1	1	0	<b>4</b>	<b>14.8%</b>
US 1 Bypass at Greenleaf Avenue	2	3	0	3	<b>8</b>	<b>29.6%</b>
<b>TOTAL</b>	<b>6</b>	<b>8</b>	<b>6</b>	<b>7</b>	<b>27</b>	<b>100%</b>



## 2.6 Alternative Travel Modes

The study area is in a moderately densely developed setting in the City of Portsmouth where several multimodal travel options are readily available. The following summarizes the details of various alternative travel modes supported within the study area.

Pedestrian facilities are present throughout the study area. There are existing sidewalks on both sides of US Route 1/US Route 1 Bypass until the intersection with Greenleaf Avenue. Ledgewood Drive and Lafayette Road both have sidewalks on one side of the roadway. Marked crosswalks are provided at both signalized intersections; US Route 1 Bypass/Greenleaf Avenue provides a concurrent pedestrian phase and US Route 1 Bypass/ Lafayette Road (US Route 1) provides an exclusive pedestrian phase.

The Cooperative Alliance for Seacoast Transportation (COAST) provides transit service within the study area. Bus Route 41 is the primary bus route in the study area with stops along Lafayette Road between Hanover Station to the north and Hillcrest Estates to the south. An existing bus stop is located less than a quarter mile south of the site, just south of the US Route 1 and North Shopping Plaza Driveway and another stop is located approximately 200 feet west of the site, located just south of the Lafayette Road and Ledgewood Drive intersection. The route operates from 6:00 AM to 8:49 PM Monday through Saturday. The Route 41 map and schedule are included in Appendix F.

---

## Section 3

# No-Build Conditions

The No-Build Condition represents the projection of traffic volumes and operating conditions without the anticipated additional site generated traffic. Consistent with NHDOT guidelines, the study area is analyzed for an Opening Year (2025) and Design Year (2035). This section describes the growth and development considerations included in the 2025 and 2035 No-Build traffic volumes.

### 3.1 Traffic Growth

To develop the traffic volumes for the 2025 and 2035 No-Build Conditions, the 2023 Existing traffic volumes were grown by one percent per year to represent the general growth of traffic on the study area roadways. This growth rate is consistent with the average growth rate in NHDOT Region E - Southeast, the region in which Portsmouth is located. Background NHDOT growth data is included in Appendix B.

NHDOT and the City of Portsmouth were contacted about other planned/approved developments in the area that may add new traffic to the study area prior to 2025. The following developments were identified:

- **815 Lafayette Road – Residential Development:** The project proposes 72 residential units. The project has been approved and is anticipated to be occupied in 2025. Estimated site traffic volumes were reviewed from the project’s Traffic Impact Assessment and included in the development of the 2025 and 2035 No-Build traffic volumes.
- **105 Bartlett Street – North Mill Pond Residential Development:** The project proposes to construct 152 residential units. The project has been approved and construction is anticipated to begin in Spring 2024. Based on a review of the previous analyses, it was determined that the estimated project trips will not add traffic to the study intersections based on anticipated travel patterns, and therefore was not added to the No-Build traffic volumes.

It is assumed that other smaller developments or small vacancies in existing developments are also captured by the background traffic growth rate. The 2025 and 2035 No-Build traffic volumes for the weekday morning, weekday afternoon, and Saturday midday peak hours are shown in Figures 3 and 4, respectively.

### 3.2 Capacity and Queue Analyses – No-Build Conditions

Capacity and queue analyses were conducted for the 2025 and 2035 No-Build Conditions traffic volumes for all peak periods using the methodology described in Section 2.4. Tables 1 and 2 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

The increase in expected future traffic based on the one percent per year compounded growth rate and background development traffic volumes that were added to the existing 2023 traffic volumes resulted in no degradation in LOS of operations when compared to existing conditions for the 2025 No-Build Condition. The 2035 No-Build

Condition resulted in some degradation of LOS based on the addition of ten years of compounded annual growth. The following intersections showed some degradation of operations in the future 2035 No-Build Conditions compared to existing:

- **US Route 1 Bypass at Lafayette Road (US Route 1)**
  - The northbound through movement degrades from LOS D to LOS F for the weekday morning peak hour.
- **Lafayette Road (US Route 1) at Ledgewood Drive**
  - The westbound approach degrades from LOS E to LOS F for the weekday morning peak hour.
- **US Route 1 at Greenleaf Avenue**
  - It should be noted that while the overall LOS of the intersection remains the same and the volume-to-capacity ratio increases in 2025 during the Saturday midday peak hour, the northbound left turn movement improves in LOS from E to D due to a decrease of less than one second of average delay. This improvement is offset by an increase in delay for the eastbound and southbound approaches.

Design queues increased by two vehicle lengths or less at all intersection approaches between the existing and 2025 No-Build conditions. Design queues exceeding available storage that were not predicted in 2023 are now predicted at the following movements in 2035 as a result of compounded annual growth and background development:

- **US Route 1 Bypass at Lafayette Road (US Route 1)**
  - Design queue for the northbound through approach is predicted to exceed available storage by approximately two vehicle lengths during the weekday afternoon peak period and spillback into the Lafayette Road (US Route 1) and Greenleaf Woods Drive intersection.
  - Design queue for the southbound through approach is predicted to exceed available storage by three vehicle lengths during the weekday afternoon peak period and spillback into the US Route 1 Bypass and Greenleaf Avenue intersection.
- **US Route 1 Bypass at Greenleaf Avenue**
  - An increase in the design queue of approximately five vehicle lengths is predicted on the northbound through/ right turn movements. The increased queue will increase the spillback into the US Route 1 Bypass and Lafayette Road (US Route 1) intersection.

It is important to note that the 95<sup>th</sup> percentile (design queue) is the queue length that is predicted to be reached only 5 percent of the time, or approximately 3 minutes out of 60 minutes in the affected peak hour.

## Section 4

# Proposed Conditions

The proposed 72-unit residential development will include two new buildings with structured parking on the ground level and basement level of each building. The existing building will remain on the site and the existing parking area will be reconfigured to accommodate the two additional buildings. The proposed development is expected to be complete and occupied in 2025. The Site Plan is presented in Appendix H.

### 4.1 Site Access

Access to the site is currently provided via two driveways on Ledgewood Drive. The western driveway is located approximately 85 feet east of the Lafayette Road (US Route 1) and Ledgewood Drive intersection. The existing enter-only western driveway provides will be maintained as part of the project. The existing eastern driveway, located approximately 150 feet east of the western driveway, will be shifted approximately 30 feet east and will continue to provide access to the surface parking. A new driveway located 100 feet east of the existing western driveway will provide access to the underground parking only.

Stopping sight distance (SSD) and intersection sight distance (ISD) were reviewed at the proposed site driveways on Ledgewood Road, in accordance with criteria set forth in the AASHTO publication *A Policy on the Geometric Design of Highways and Streets*, 7<sup>th</sup> Edition, 2018. Available sight distances were estimated based on the site layout plan and available aerial mapping. The 85<sup>th</sup> percentile speeds were measured to be approximately 23 mph in the eastbound direction and 24 mph in the westbound direction on Ledgewood Drive. A design speed of 25 mph was used as a basis for the analysis.

Based on AASHTO guidelines, roadway grades, and the 85<sup>th</sup> percentile speed of the roadway, the stopping sight distance requirement is 155 feet for vehicles traveling in both the eastbound and westbound directions. Available sight distance exceeds the required SSD at the proposed garage driveway and shifted eastern driveway for vehicles traveling both eastbound and westbound.

Recommended intersection sight distance was also reviewed at the proposed parking garage driveway and shifted eastern site driveway. The desirable ISD based on AASHTO guidelines and a design speed of 25 mph is 280 feet. Based on the proposed development plan and measurement of sight distance utilizing available aerial mapping, the ISD is only met for the east site driveway looking left. Approximately 180 feet of sight distance is provided looking right at the eastern site driveway. The proposed garage driveway will provide approximately 230 feet and 180 feet of sight distance looking left and right, respectively. Sight lines looking left to the west are limited by the terminus of Ledgewood Drive at the intersection with Lafayette Road. Sight lines looking right to the east are limited by the curvature of Ledgewood Drive. However, it is expected that the east site driveway will operate safely given the low volume of traffic traveling westbound on Ledgewood Road as shown in the collected traffic volume data and presumed slower westbound travel speeds around the curve. Similarly, at the proposed garage driveway it is reasonable to assume that vehicles turning onto Ledgewood Drive from Lafayette Road will be traveling at a lower rate of speed after

completing their turning movement and thus require less sight distance, allowing the intersection to operate safely.

## 4.2 Trip Generation

Site generated traffic volumes for the proposed residential development were estimated using rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021. Land Use Code (LUC) 221 – Residential – Multifamily Housing (Mid-Rise) was used, with the proposed site generated traffic volumes calculated based on the number of proposed apartments. Trip generation is based on the peak hour of the adjacent street (site). It is estimated that the proposed development may generate a total of 27 trips (6 entering, 21 exiting) during the weekday morning peak hour, 28 trips (17 entering, 11 exiting) during the weekday afternoon peak hour, and 29 trips (15 entering, 14 exiting) during the Saturday midday peak hour. The proposed site generated traffic is summarized in Table 4.

**TABLE 4**  
Site-Generated Traffic Summary

<b>Proposed - 72 Apartments (4 Stories)</b> <b>Peak Hour Period</b>	<b>Enter</b>	<b>Exit</b>	<b>LUC 221 Total</b>
Weekday Morning	6	21	27
Weekday Afternoon	17	11	28
Saturday Midday	15	14	29
Weekday	164	163	327
Saturday	175	176	351

**Source:** Institute of Transportation Engineers, Trip Generation, 11th Edition, 2021  
Land Use - 221 [Multifamily Housing (Mid-Rise)]

## 4.3 Arrival and Departure Distribution

The distribution of the proposed site-generated traffic entering and exiting the Site was applied to the roadway network based on existing traffic patterns within the study area as well as a review of US Census Journey-to-Work data which is included in Appendix G. The following arrival/departure distributions are anticipated:

- 30% to/ from the North to Portsmouth Center via US Route 1
- 25% to/ from the South via US Route 1 (Lafayette Road)
- 20% to/ from the West to US Route 4 (Spaulding Turnpike) via US Route 1 Bypass
- 15% to/ from the South to I-95 South via Route 33
- 5% to/ from the West via Route 33
- 5% to/ from the North to I-95 North via US Route 1 Bypass

Based on the regional distribution, it is estimated that 45% of site traffic will access the site via US Route 1 Bypass to the northwest, 30% will access the site to/ from the northeast via US Route 1 and 25% will access the site to/ from the south via US Route 1.

Figure 5 presents the arrival and departure distributions of the traffic through the study area by intersection movement. Figure 6 shows the proposed site generated traffic distributed to the study area roadways for the weekday morning, weekday afternoon peak periods, and Saturday midday peak periods.

## **Section 5**

# **Build Conditions**

The anticipated site generated traffic volumes associated with the proposed development were added to the 2025 and 2035 No-Build Conditions traffic volumes to develop the 2025 and 2035 Build Conditions traffic volumes, which are presented in Figures 7 and 8, respectively.

### **5.1 Capacity and Queue Analyses - Build Condition**

Capacity and queue analyses were conducted for the 2025 and 2035 Build Conditions for the peak hours using the methodology described in Section 2.4. Tables 1 and 2 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

A majority of the study area intersections and individual intersection approaches continue to operate at acceptable LOS D or better during the peak hours in the 2025 and 2035 Build Conditions. Study area intersections that were identified in Section 2.4 and 3.2 to operate at LOS E or LOS F in the 2025 No-Build Conditions continue to operate at the same LOS under 2025 Build Conditions, with the exception of the following:

- **Lafayette Road (US Route 1) at Ledgewood Drive**
  - The westbound approach is predicted to degrade from LOS E to LOS F during the weekday morning peak hour.

All study area intersections that were identified in Section 2.4 and 3.2 to operate at LOS E or LOS F in the 2035 No-Build Conditions continue to operate at the same LOS under the 2035 Build Conditions.

Design queues on all intersection approaches increased by less than two vehicle lengths or experience increases in design queues that are accommodated within available storage when compared to 2025 and 2025 No-Build Conditions.

## **Section 6**

# **Conclusions & Recommendations**

1. The project proposes to construct 72 residential units in two new buildings adjacent to the existing building located at 581 Lafayette Road. The existing building and its current restaurant and restaurant/indoor golf uses will remain. Structured parking will be provided below the apartments on the ground level and basement levels of the building. The existing surface parking lot will be reconfigured to accommodate the building addition. The development is expected to be complete and occupied in 2025.
2. Access to the site will be provided via three driveways to Ledgewood Drive. An existing entrance-only driveway will be retained. The existing second driveway will be relocated slightly to the east, with a new middle driveway added to provide direct access to proposed structured parking. Exit driveways will operate under stop control.
3. Based on the ITE data, the project is expected to generate 27 trips during the weekday morning peak hour (6 entering, 17 exiting), 28 trips during the weekday afternoon peak hour (17 entering, 11 exiting), and 29 trips during the Saturday midday peak hour (15 entering, 14 exiting).
4. The project proposes internal sidewalk connections to the existing sidewalk network along Ledgewood Drive and Lafayette Road, promoting connections to the existing sidewalk network along study area roadways.
5. Vehicle collision history, compiled from local police, do not indicate a significant or notable pattern of collisions in the study area.
6. Consistent with NHDOT guidelines, existing traffic volumes have been seasonally adjusted to the peak month condition. A review of 2023 and 2019 data provided by the City of Portsmouth revealed higher or stagnant volumes in 2023; therefore, no adjustment to a pre-pandemic condition was necessary.
7. The capacity analyses show that the study area intersections will continue to operate at the same LOS under Build Conditions as compared to the No-Build Conditions for both the 2025 opening year and 2035 design year, except for the Ledgewood Drive approach at Lafayette Road which experiences a minor increase in delay and degradation from LOS E to LOS F in the weekday morning peak hour in the 2025 Build Condition. A review of design queues indicates minor increases of two vehicles or less in the 2025 and 2035 Build Conditions compared to the corresponding No Build Conditions.
8. Based on the results of the foregoing analysis, it is the professional opinion of Tighe & Bond that the addition of site-generated traffic is expected to have a negligible effect on traffic operations within the study area.



## **Section 7 Tables**

**TABLE 1**  
Intersection Operation Summary - Capacity

		Weekday Morning Peak Hour														
Lane Use		2023 Existing			2025 No-Build			2035 No-Build			2025 Build			2035 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
<b>Traffic Signal - US Route 1 Bypass at Lafayette Road (US Route 1)</b>																
<b>Overall</b>		<b>B</b>	<b>19.1</b>	<b>0.83</b>	<b>C</b>	<b>20.3</b>	<b>0.90</b>	<b>D</b>	<b>36.1</b>	<b>1.11</b>	<b>C</b>	<b>20.8</b>	<b>0.91</b>	<b>D</b>	<b>36.9</b>	<b>1.12</b>
Lafayette Road (US Route 1)	WBL	C	28.8	0.59	C	28.3	0.59	C	28.3	0.63	C	28.3	0.59	C	28.5	0.64
	WBR	B	12.8	0.06	B	12.1	0.06	B	10.6	0.07	B	11.9	0.07	B	10.6	0.08
US Route 1	NBT	C	32.3	0.83	D	38.7	0.90	F	94.8	1.11	D	40.5	0.91	F	98.2	1.12
	NBR	A	9.9	0.41	B	10.3	0.43	B	11.7	0.47	B	10.5	0.43	B	11.9	0.47
US Route 1 Bypass	SBL	C	25.5	0.48	C	23.8	0.48	C	22.8	0.47	C	23.5	0.48	C	22.7	0.47
	SBT	A	8.0	0.47	A	6.8	0.49	A	9.3	0.56	A	6.9	0.49	A	9.3	0.56
<b>Traffic Signal - US Route 1 Bypass at Greenleaf Avenue</b>																
<b>Overall</b>		<b>C</b>	<b>26.5</b>	<b>0.84</b>	<b>C</b>	<b>27.4</b>	<b>0.85</b>	<b>C</b>	<b>29.3</b>	<b>0.90</b>	<b>C</b>	<b>27.3</b>	<b>0.85</b>	<b>C</b>	<b>29.3</b>	<b>0.90</b>
Greenleaf Avenue	EB	E	55.6	0.84	E	56.9	0.85	E	64.7	0.90	E	56.9	0.85	E	64.7	0.90
	WB	C	27.9	0.25	C	27.7	0.25	C	26.5	0.27	C	27.7	0.25	C	26.5	0.27
	NBL	B	18.2	0.33	B	15.8	0.32	B	15.6	0.36	B	16.0	0.32	B	15.8	0.36
US Route 1 Bypass	NBTR	C	30.8	0.62	C	30.8	0.64	C	32.8	0.75	C	30.5	0.65	C	32.6	0.76
	SBL	D	38.7	0.44	D	38.7	0.45	D	38.8	0.48	D	38.7	0.45	D	38.8	0.48
	SBTR	B	15.9	0.60	B	18.1	0.65	B	19.5	0.71	B	18.2	0.65	B	19.5	0.71
<b>Unsignalized TWSC - US Route 1 at North Shopping Plaza Driveway</b>																
North Shopping Plaza Driveway	WBR	C	18.8	0.02	C	19.5	0.02	C	21.6	0.02	C	19.5	0.02	C	21.6	0.02
<b>Unsignalized TWSC - Lafayette Road (US Route 1) at Ledgewood Drive</b>																
Ledgewood Drive	WB	E	36.1	0.44	E	40.0	0.47	F	62.3	0.65	F	53.9	0.64	F	95.1	0.85
Lafayette Road (US Route 1)	SBL	B	10.3	0.05	B	10.4	0.05	B	11.0	0.06	B	10.5	0.05	B	11.1	0.07
<b>Unsignalized TWSC - Ledgewood Drive at West Site Driveway</b>																
Ledgewood Drive	WB	A	7.4	0.00	A	7.4	0.00	A	7.4	0.00	A	7.4	0.00	A	7.4	0.00
<b>Unsignalized TWSC - Ledgewood Drive at East Site Driveway</b>																
East Site Driveway	NB	A	9.3	0.04	A	9.3	0.04	A	9.5	0.06	A	9.6	0.08	A	9.7	0.10
Ledgewood Drive	WB	A	7.4	0.01	A	7.4	0.01	A	7.4	0.01	A	7.4	0.01	A	7.4	0.01
<b>Unsignalized TWSC - Ledgewood Drive at Proposed Garage Driveway</b>																
Proposed Garage Driveway	NB	--	--	--	--	--	--	--	--	--	A	9.2	0.01	A	9.2	0.01
Ledgewood Drive	WB	--	--	--	--	--	--	--	--	--	A	0.0	0.00	A	0.0	0.00

**Legend**  
LOS - Level of Service  
Delay - average delay per vehicle in seconds  
V/C - volume to capacity ratio

**TABLE 1 (CONTINUED)**  
 Intersection Operation Summary - Capacity

		Weekday Afternoon Peak Hour														
Lane Use		2023 Existing			2025 No-Build			2035 No-Build			2025 Build			2035 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
<b>Traffic Signal - US Route 1 Bypass at Lafayette Road (US Route 1)</b>																
<b>Overall</b>		<b>C</b>	<b>27.2</b>	<b>0.75</b>	<b>C</b>	<b>28.1</b>	<b>0.79</b>	<b>C</b>	<b>33.3</b>	<b>0.93</b>	<b>C</b>	<b>28.6</b>	<b>0.80</b>	<b>C</b>	<b>34.3</b>	<b>0.94</b>
Lafayette Road (US Route 1)	WBL	D	51.0	0.66	D	50.2	0.67	D	48.1	0.67	D	50.0	0.66	D	47.9	0.67
	WBR	C	31.7	0.02	C	30.8	0.02	C	28.3	0.03	C	30.3	0.03	C	27.8	0.03
US Route 1	NBT	C	32.4	0.75	C	34.6	0.79	D	47.7	0.93	D	35.6	0.80	D	50.3	0.94
	NBR	A	8.7	0.37	A	8.9	0.38	A	9.8	0.44	A	9.2	0.39	B	10.1	0.44
US Route 1 Bypass	SBL	E	64.0	0.54	E	64.0	0.55	E	64.1	0.57	E	64.3	0.57	E	64.3	0.59
	SBT	B	15.3	0.46	B	16.2	0.48	B	19.1	0.55	B	16.4	0.48	B	19.2	0.55
<b>Traffic Signal - US Route 1 Bypass at Greenleaf Avenue</b>																
<b>Overall</b>		<b>C</b>	<b>32.0</b>	<b>0.91</b>	<b>C</b>	<b>33.1</b>	<b>0.91</b>	<b>D</b>	<b>44.5</b>	<b>0.98</b>	<b>C</b>	<b>33.3</b>	<b>0.91</b>	<b>D</b>	<b>45.0</b>	<b>0.98</b>
Greenleaf Avenue	EB	E	62.9	0.91	E	63.9	0.91	E	69.5	0.95	E	63.9	0.91	E	69.5	0.95
	WB	C	28.0	0.17	C	27.7	0.17	C	25.8	0.19	C	27.7	0.17	C	25.8	0.19
	NBL	D	53.3	0.32	D	53.5	0.33	D	53.7	0.36	D	53.5	0.33	D	53.7	0.36
US Route 1 Bypass	NBTR	C	29.5	0.79	C	31.1	0.82	D	50.6	0.98	C	31.3	0.83	D	51.5	0.98
	SBL	D	51.8	0.47	D	51.9	0.48	D	52.2	0.51	D	51.9	0.48	D	52.2	0.51
	SBTR	C	25.0	0.69	C	26.0	0.72	C	33.3	0.84	C	26.2	0.72	C	33.6	0.85
<b>Unsignalized TWSC - US Route 1 at North Shopping Plaza Driveway</b>																
North Shopping Plaza Driveway	WBR	C	23.8	0.14	C	24.8	0.15	D	29.4	0.20	C	24.8	0.15	D	29.6	0.20
<b>Unsignalized TWSC - Lafayette Road (US Route 1) at Ledgewood Drive</b>																
Ledgewood Drive	WB	C	19.9	0.23	C	21.0	0.25	D	25.1	0.32	C	23.3	0.31	D	28.5	0.39
Lafayette Road (US Route 1)	SBL	A	9.1	0.05	A	9.2	0.06	A	9.5	0.07	A	9.3	0.06	A	9.6	0.07
<b>Unsignalized TWSC - Ledgewood Drive at West Site Driveway</b>																
Ledgewood Drive	WB	A	7.5	0.00	A	7.5	0.00	A	7.5	0.00	A	7.5	0.00	A	7.5	0.00
<b>Unsignalized TWSC - Ledgewood Drive at East Site Driveway</b>																
East Site Driveway	NB	A	9.1	0.02	A	9.1	0.02	A	9.2	0.03	A	9.1	0.03	A	9.2	0.03
Ledgewood Drive	WB	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
<b>Unsignalized TWSC - Ledgewood Drive at Proposed Garage Driveway</b>																
Proposed Garage Driveway	NB	--	--	--	--	--	--	--	--	--	A	9.1	0.01	A	9.2	0.01
Ledgewood Drive	WB	--	--	--	--	--	--	--	--	--	A	0.0	0.00	A	0.0	0.00

**Legend**  
 LOS - Level of Service  
 Delay - average delay per vehicle in seconds  
 V/C - volume to capacity ratio

**TABLE 1 (CONTINUED)**  
 Intersection Operation Summary - Capacity

Saturday Midday Peak Hour																
Lane Use	2023 Existing			2025 No-Build			2035 No-Build			2025 Build			2035 Build			
	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	
<b>Traffic Signal - US Route 1 Bypass at Lafayette Road (US Route 1)</b>																
<b>Overall</b>	<b>B</b>	<b>19.9</b>	<b>0.76</b>	<b>C</b>	<b>20.3</b>	<b>0.78</b>	<b>C</b>	<b>23.8</b>	<b>0.90</b>	<b>C</b>	<b>20.5</b>	<b>0.78</b>	<b>C</b>	<b>24.3</b>	<b>0.91</b>	
Lafayette Road (US Route 1)	WBL	C	30.2	0.54	C	30.1	0.54	C	29.5	0.57	C	30.2	0.55	C	29.5	0.57
	WBR	B	20.0	0.02	B	19.9	0.02	B	18.7	0.02	B	19.7	0.03	B	18.6	0.03
US Route 1	NBT	C	24.8	0.76	C	25.6	0.78	C	34.5	0.90	C	26.1	0.78	D	35.7	0.91
	NBR	A	7.5	0.29	A	7.5	0.29	A	7.9	0.32	A	7.6	0.29	A	8.0	0.32
US Route 1 Bypass	SBL	D	52.6	0.54	D	52.7	0.55	D	52.5	0.58	D	52.6	0.57	D	53.2	0.61
	SBT	B	13.8	0.51	B	14.2	0.53	B	16.1	0.60	B	14.2	0.53	B	16.1	0.60
<b>Traffic Signal - US Route 1 Bypass at Greenleaf Avenue</b>																
<b>Overall</b>	<b>B</b>	<b>17.3</b>	<b>0.72</b>	<b>B</b>	<b>17.7</b>	<b>0.73</b>	<b>B</b>	<b>19.3</b>	<b>0.78</b>	<b>B</b>	<b>17.7</b>	<b>0.73</b>	<b>B</b>	<b>19.3</b>	<b>0.78</b>	
Greenleaf Avenue	EB	D	43.1	0.72	D	44.1	0.73	D	47.7	0.78	D	44.1	0.73	D	47.7	0.78
	WB	C	29.3	0.19	C	29.1	0.19	C	28.1	0.20	C	29.1	0.19	C	28.1	0.20
	NBL	E	55.1	0.31	E	55.6	0.31	D	55.0	0.33	E	55.5	0.31	D	54.0	0.33
US Route 1 Bypass	NBTR	B	11.0	0.56	B	11.3	0.59	B	11.5	0.68	B	11.3	0.60	B	11.6	0.68
	SBL	D	41.5	0.45	D	38.6	0.36	D	38.7	0.39	D	38.6	0.36	D	38.7	0.39
	SBTR	B	15.0	0.64	B	15.6	0.66	B	18.6	0.75	B	15.7	0.66	B	18.7	0.75
<b>Unsignalized TWSC - US Route 1 at North Shopping Plaza Driveway</b>																
North Shopping Plaza Driveway	WBR	C	20.3	0.15	C	20.8	0.16	C	23.8	0.20	C	20.8	0.16	C	23.9	0.20
<b>Unsignalized TWSC - Lafayette Road (US Route 1) at Ledgewood Drive</b>																
Ledgewood Drive	WB	C	18.9	0.25	C	19.6	0.26	C	23.3	0.33	C	22.3	0.35	D	27.8	0.44
Lafayette Road (US Route 1)	SBL	A	9.1	0.06	A	9.1	0.06	A	9.4	0.07	A	9.2	0.07	A	9.5	0.08
<b>Unsignalized TWSC - Ledgewood Drive at West Site Driveway</b>																
Ledgewood Drive	WB	A	7.5	0.00	A	7.5	0.00	A	7.5	0.00	A	7.5	0.00	A	7.5	0.00
<b>Unsignalized TWSC - Ledgewood Drive at East Site Driveway</b>																
East Site Driveway	NB	A	9.0	0.03	A	9.0	0.03	A	9.1	0.03	A	9.1	0.04	A	9.4	0.05
Ledgewood Drive	WB	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	7.3	0.01
<b>Unsignalized TWSC - Ledgewood Drive at Proposed Garage Driveway</b>																
Proposed Garage Driveway	NB	--	--	--	--	--	--	--	--	--	A	9.1	0.01	A	9.2	0.01
Ledgewood Drive	WB	--	--	--	--	--	--	--	--	--	A	0.0	0.00	A	0.0	0.00

**Legend**  
 LOS - Level of Service  
 Delay - average delay per vehicle in seconds  
 V/C - volume to capacity ratio

**TABLE 2**  
Intersection Operation Summary - Queues (In Feet)

		Weekday Morning Peak Hour										
Lane Use	Available Storage	2023 Existing		2025 No-Build		2025 No-Build		2025 Build		2025 Build		
		50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	
<b>Traffic Signal - US Route 1 Bypass at Lafayette Road (US Route 1)</b>												
Lafayette Road (US Route 1)	WBL	280	124	141	125	145	140	161	126	147	142	163
	WBR	280	0	14	0	13	0	13	0	14	0	14
US Route 1	NBT	1000	237	386	254	416	339	486	256	417	341	487
	NBR	560	0	36	0	38	0	41	0	38	0	41
US Route 1 Bypass	SBL	230	82	81	41	75	91	81	42	75	91	82
	SBT	500	214	28	106	29	267	32	116	29	267	32
<b>Traffic Signal - US Route 1 Bypass at Greenleaf Avenue</b>												
Greenleaf Avenue	EB	900	94	151	96	166	107	199	96	166	107	199
	WB	100	20	72	21	74	22	79	21	74	22	79
	NBL	170	9	13	13	18	10	10	13	18	10	11
US Route 1 Bypass	NBTR	475	290	356	296	339	333	314	298	337	336	314
	SBL	200	39	77	40	78	44	85	40	78	44	85
	SBTR	680	147	330	238	349	198	433	238	350	199	435
<b>Unsignalized TWSC - US Route 1 at North Shopping Plaza Driveway</b>												
North Shopping Plaza Driveway	WBR	50	--	0	--	0	--	3	--	0	--	3
<b>Unsignalized TWSC - Lafayette Road (US Route 1) at Ledgewood Drive</b>												
Ledgewood Drive	WB	210	--	53	--	57	--	90	--	93	--	143
Lafayette Road (US Route 1)	SBL	180	--	3	--	5	--	5	--	5	--	5
<b>Unsignalized TWSC - Ledgewood Drive at West Site Driveway</b>												
Ledgewood Drive	WB	120	--	0	--	0	--	0	--	0	--	0
<b>Unsignalized TWSC - Ledgewood Drive at East Site Driveway</b>												
East Site Driveway	NB	25	--	3	--	3	--	5	--	8	--	8
Ledgewood Drive	WB	100	--	0	--	0	--	0	--	0	--	0
<b>Unsignalized TWSC - Ledgewood Drive at Proposed Garage Driveway</b>												
Proposed Garage Driveway	NB	30	--	--	--	--	--	--	--	0	--	0
Ledgewood Drive	WB	35	--	--	--	--	--	--	--	0	--	0

**Legend**  
50th & 90th - 50th and 95th percentile queue lengths in feet

**TABLE 2 (CONTINUED)**

Intersection Operation Summary - Queues (In Feet)

		Weekday Afternoon Peak Hour										
Lane Use	Available Storage	2023 Existing		2025 No-Build		2025 No-Build		2025 Build		2025 Build		
		50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	
<b>Traffic Signal - US Route 1 Bypass at Lafayette Road (US Route 1)</b>												
Lafayette Road (US Route 1)	WBL	280	222	260	230	267	250	285	107	137	251	286
	WBR	280	0	13	0	13	0	12	0	10	0	12
US Route 1	NBT	1000	388	897	409	948	518	1132	236	608	525	1144
	NBR	560	4	59	6	69	16	125	0	46	16	130
US Route 1 Bypass	SBL	230	82	138	84	140	92	150	58	96	100	160
	SBT	500	191	446	203	474	257	571	86	395	257	571
<b>Traffic Signal - US Route 1 Bypass at Greenleaf Avenue</b>												
Greenleaf Avenue	EB	900	202	224	205	229	235	264	84	131	235	264
	WB	100	22	39	21	39	24	42	16	62	24	42
	NBL	170	19	47	20	49	22	53	13	19	22	53
US Route 1 Bypass	NBTR	475	406	596	429	621	563	726	11	253	566	730
	SBL	200	45	87	45	89	51	96	30	61	51	96
	SBTR	680	344	468	366	494	441	621	165	387	446	627
<b>Unsignalized TWSC - US Route 1 at North Shopping Plaza Driveway</b>												
North Shopping Plaza Driveway	WBR	50	--	13	--	13	--	18	--	13	--	18
<b>Unsignalized TWSC - Lafayette Road (US Route 1) at Ledgewood Drive</b>												
Ledgewood Drive	WB	210	--	23	--	23	--	33	--	33	--	45
Lafayette Road (US Route 1)	SBL	180	--	5	--	5	--	5	--	5	--	5
<b>Unsignalized TWSC - Ledgewood Drive at West Site Driveway</b>												
Ledgewood Drive	WB	120	--	0	--	0	--	0	--	0	--	0
<b>Unsignalized TWSC - Ledgewood Drive at East Site Driveway</b>												
East Site Driveway	NB	25	--	3	--	3	--	3	--	3	--	3
Ledgewood Drive	WB	100	--	0	--	0	--	0	--	0	--	0
<b>Unsignalized TWSC - Ledgewood Drive at Proposed Garage Driveway</b>												
Proposed Garage Driveway	NB	30	--	--	--	--	--	--	--	0	--	0
Ledgewood Drive	WB	35	--	--	--	--	--	--	--	0	--	0

**Legend**

50th & 90th - 50th and 95th percentile queue lengths in feet

**TABLE 2 (CONTINUED)**

Intersection Operation Summary - Queues (In Feet)

		Saturday Midday Peak Hour										
Lane Use	Available Storage	2023 Existing		2025 No-Build		2025 No-Build		2025 Build		2025 Build		
		50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	50 <sup>th</sup>	95 <sup>th</sup>	
<b>Traffic Signal - US Route 1 Bypass at Lafayette Road (US Route 1)</b>												
Lafayette Road (US Route 1)	WBL	280	104	133	106	136	115	150	107	137	116	152
	WBR	280	0	9	0	9	0	9	0	10	0	10
US Route 1	NBT	1000	224	595	233	608	286	676	236	608	288	676
	NBR	560	0	45	0	46	0	48	0	46	0	48
US Route 1 Bypass	SBL	230	53	92	53	90	60	89	58	96	63	94
	SBT	500	84	383	86	395	97	463	86	395	97	463
<b>Traffic Signal - US Route 1 Bypass at Greenleaf Avenue</b>												
Greenleaf Avenue	EB	900	81	127	84	131	93	147	84	131	93	147
	WB	100	15	61	16	62	16	65	16	62	16	65
	NBL	170	13	19	13	19	14	18	13	19	14	19
US Route 1 Bypass	NBTR	475	10	245	11	251	12	311	11	253	13	314
	SBL	200	29	60	30	61	33	65	30	61	33	65
	SBTR	680	155	368	163	381	206	488	165	387	208	492
<b>Unsignalized TWSC - US Route 1 at North Shopping Plaza Driveway</b>												
North Shopping Plaza Driveway	WBR	50	--	13	--	13	--	18	--	13	--	18
<b>Unsignalized TWSC - Lafayette Road (US Route 1) at Ledgewood Drive</b>												
Ledgewood Drive	WB	210	--	23	--	25	--	35	--	38	--	53
Lafayette Road (US Route 1)	SBL	180	--	5	--	5	--	5	--	5	--	5
<b>Unsignalized TWSC - Ledgewood Drive at West Site Driveway</b>												
Ledgewood Drive	WB	120	--	0	--	0	--	0	--	0	--	0
<b>Unsignalized TWSC - Ledgewood Drive at East Site Driveway</b>												
East Site Driveway	NB	25	--	3	--	3	--	3	--	3	--	3
Ledgewood Drive	WB	100	--	0	--	0	--	0	--	0	--	0
<b>Unsignalized TWSC - Ledgewood Drive at Proposed Garage Driveway</b>												
Proposed Garage Driveway	NB	30	--	--	--	--	--	--	--	0	--	0
Ledgewood Drive	WB	35	--	--	--	--	--	--	--	0	--	0

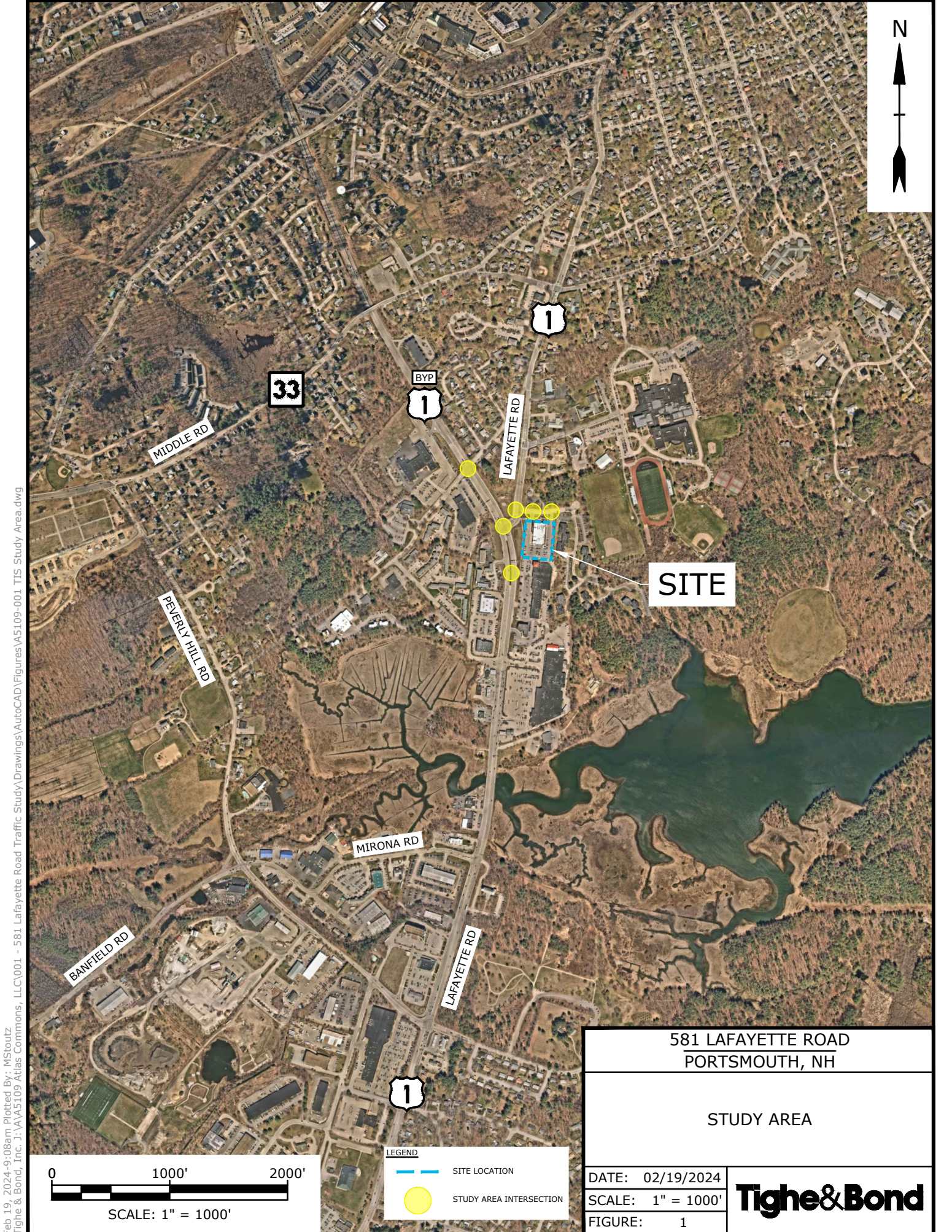
**Legend**

50th & 90th - 50th and 95th percentile queue lengths in feet

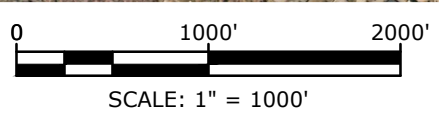
# **Section 8**

## **Figures**





Feb 19, 2024-9:08am Plotted By: MStoutz Tighe & Bond, Inc. J:\VA5109 Atlas Commons, LLC\001 - 581 Lafayette Road Traffic Study\Drawings\AutoCAD\Figures\VA5109-001 TIS Study Area.dwg

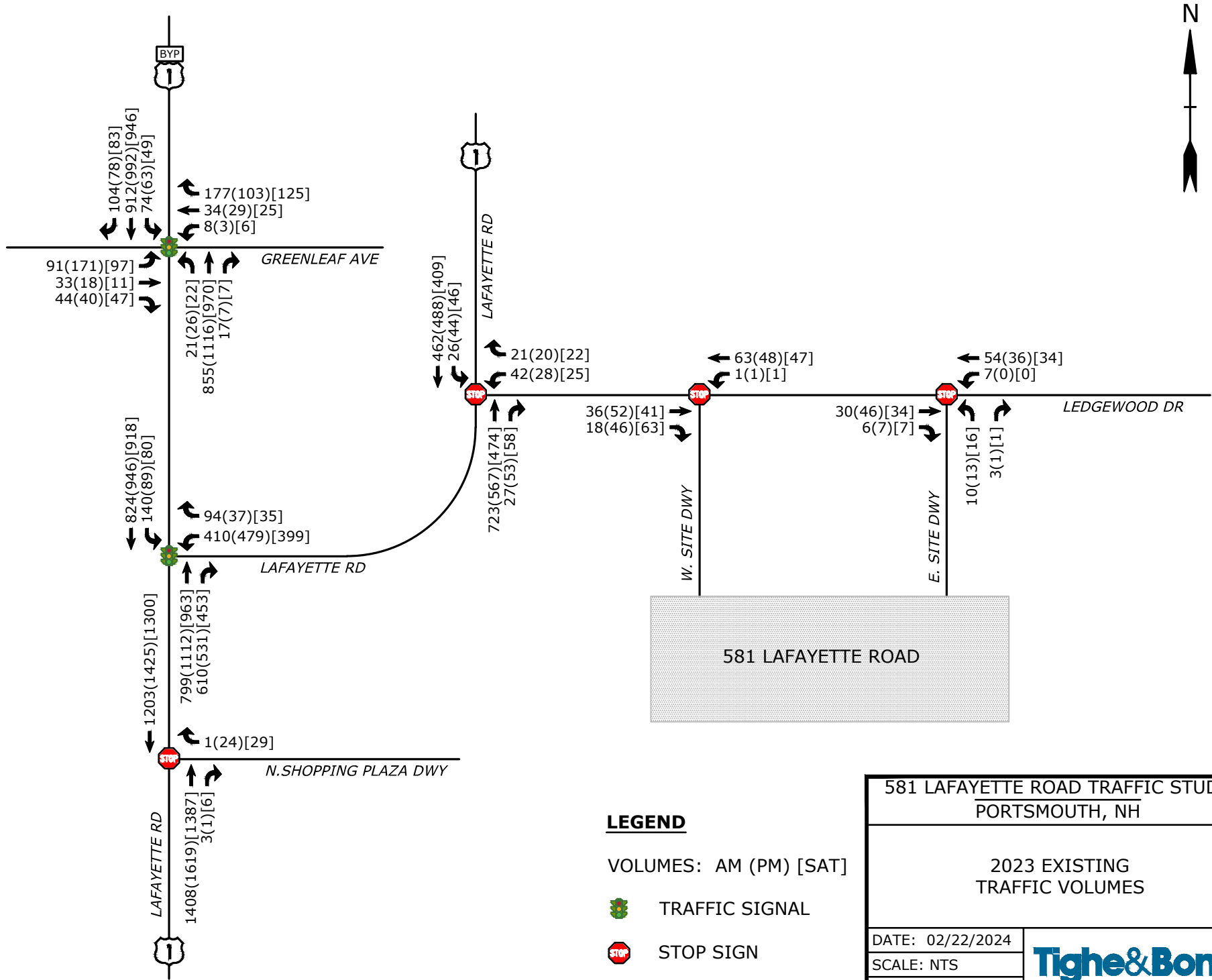


**LEGEND**

- SITE LOCATION
- STUDY AREA INTERSECTION



<b>581 LAFAYETTE ROAD</b> <b>PORTSMOUTH, NH</b>	
<b>STUDY AREA</b>	
DATE: 02/19/2024 SCALE: 1" = 1000' FIGURE: 1	




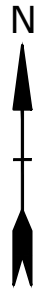
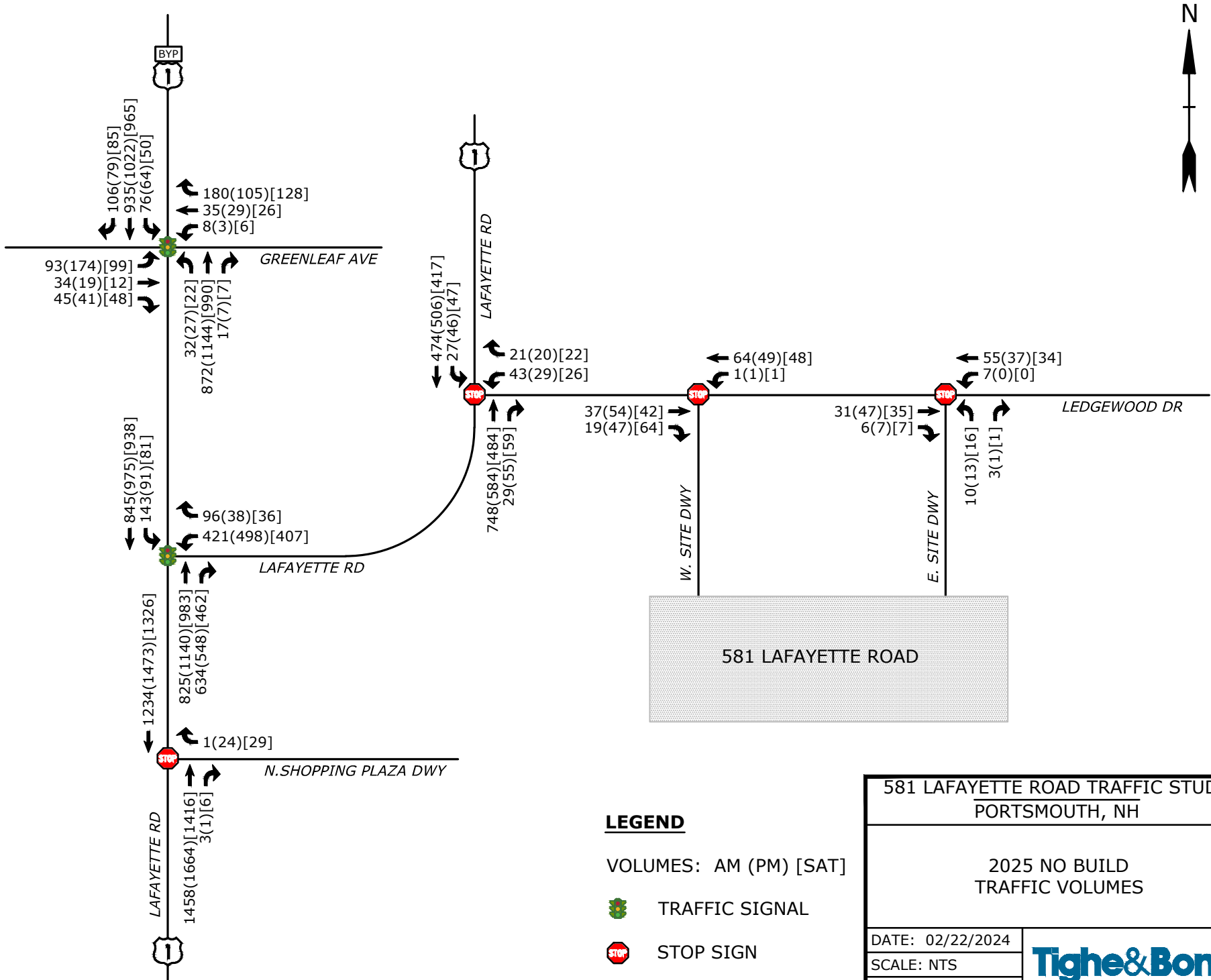


**LEGEND**

VOLUMES: AM (PM) [SAT]



-  TRAFFIC SIGNAL
-  STOP SIGN


581 LAFAYETTE ROAD TRAFFIC STUDY PORTSMOUTH, NH	
2023 EXISTING TRAFFIC VOLUMES	
DATE: 02/22/2024	
SCALE: NTS	
FIGURE 2	

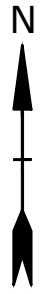
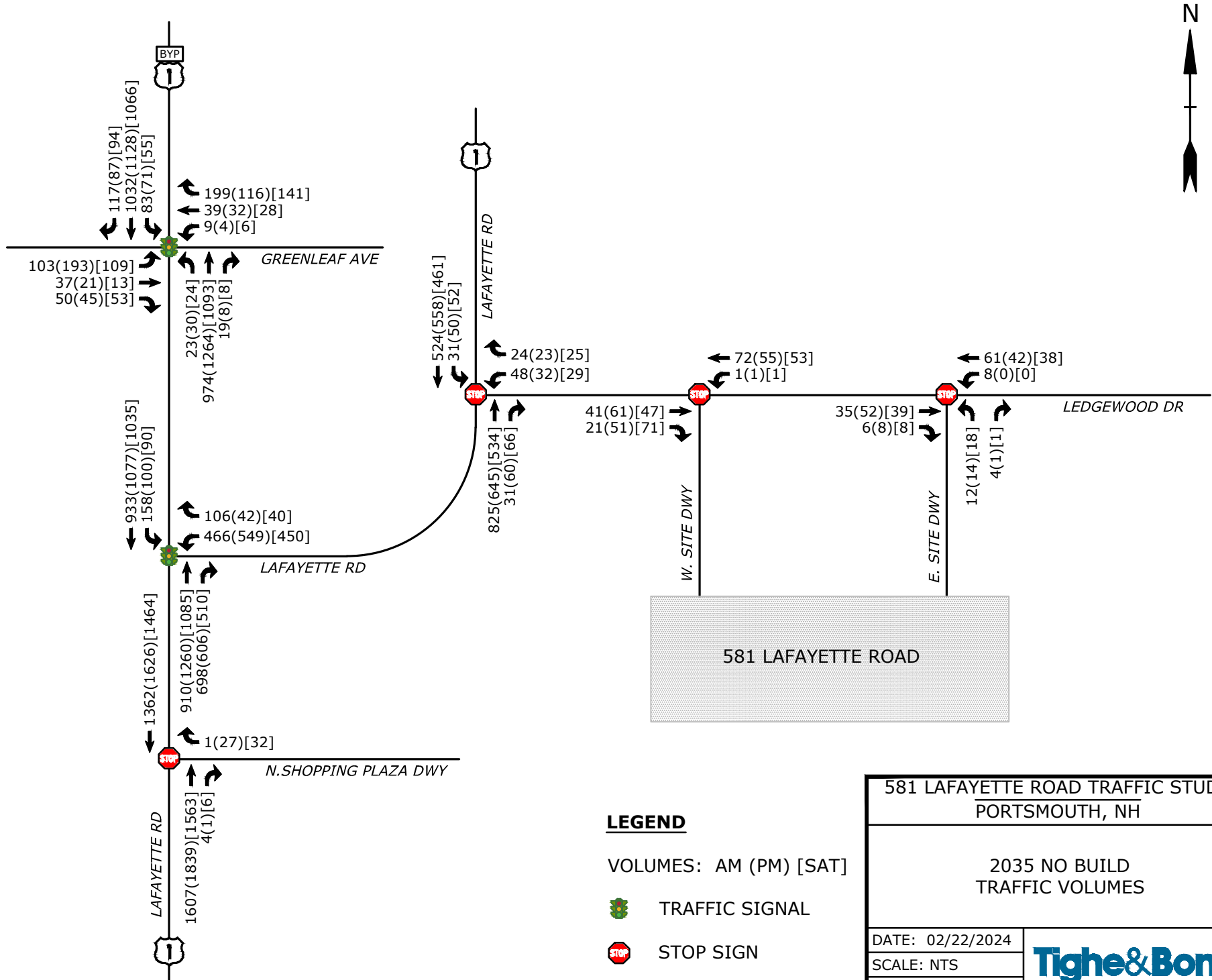


**LEGEND**

VOLUMES: AM (PM) [SAT]

-  TRAFFIC SIGNAL
-  STOP SIGN

581 LAFAYETTE ROAD TRAFFIC STUDY PORTSMOUTH, NH	
2025 NO BUILD TRAFFIC VOLUMES	
DATE: 02/22/2024	
SCALE: NTS	
FIGURE 3	



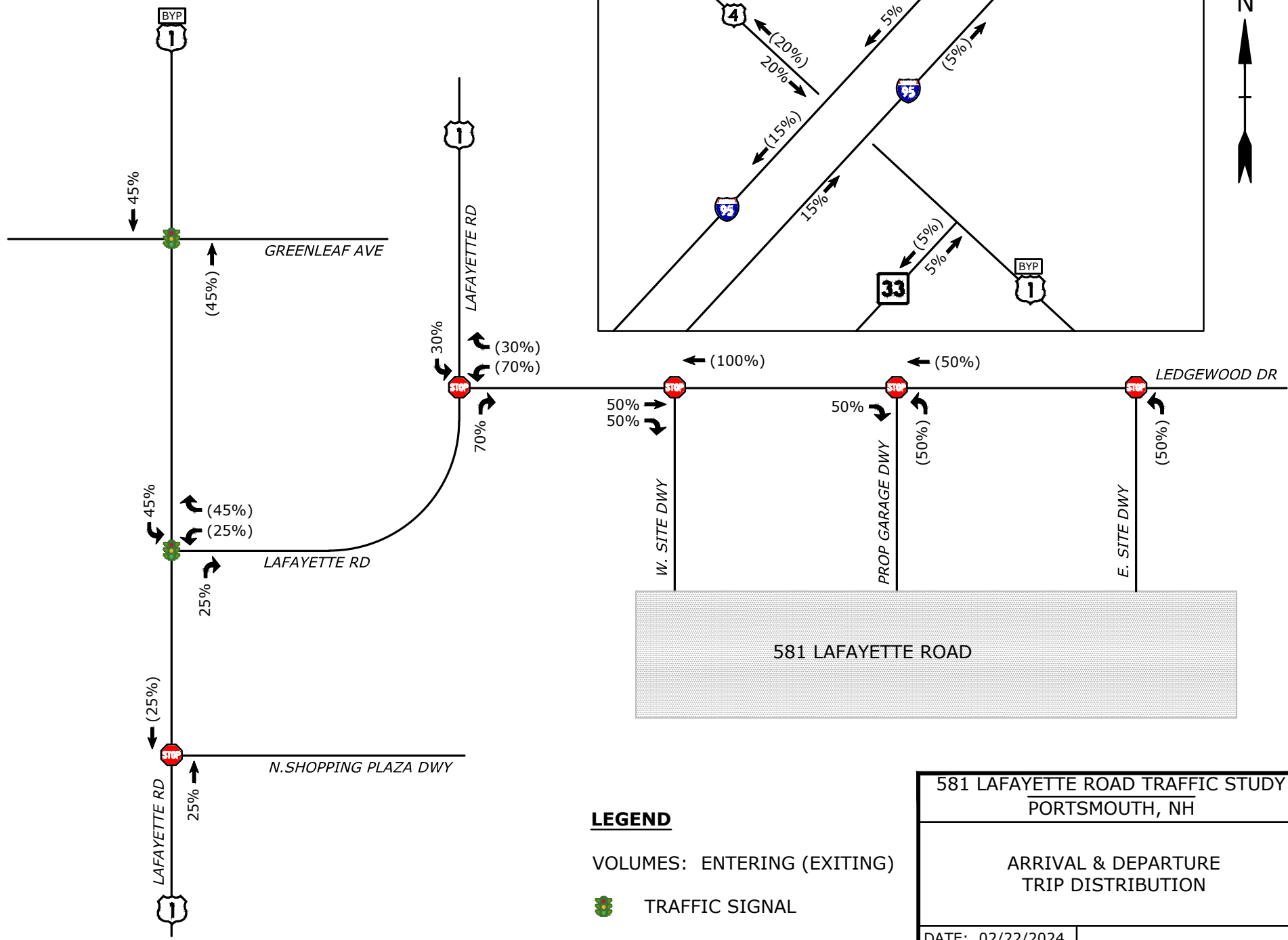
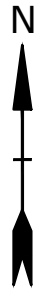
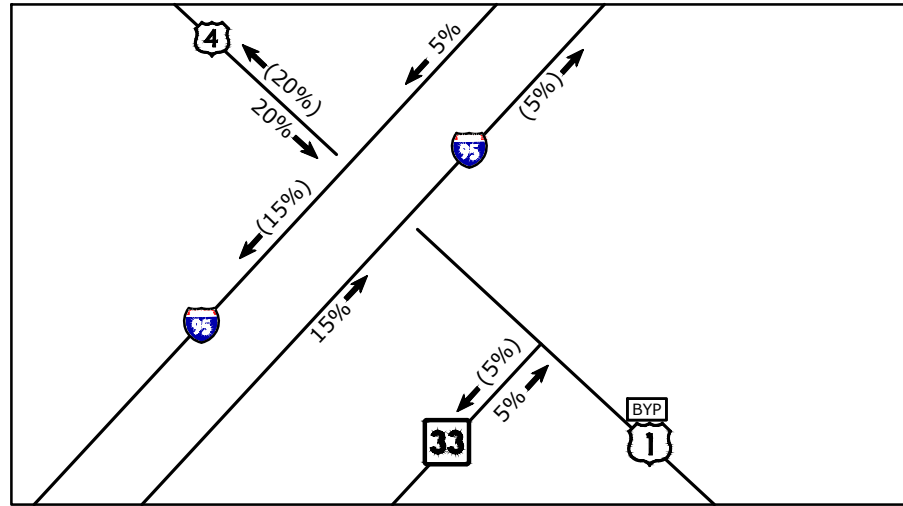
**LEGEND**

VOLUMES: AM (PM) [SAT]

- TRAFFIC SIGNAL
- STOP SIGN

581 LAFAYETTE ROAD TRAFFIC STUDY PORTSMOUTH, NH	
2035 NO BUILD TRAFFIC VOLUMES	
DATE: 02/22/2024	
SCALE: NTS	
FIGURE 4	

**REGIONAL TRIP DISTRIBUTION**



**LEGEND**

VOLUMES: ENTERING (EXITING)

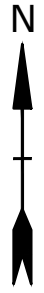
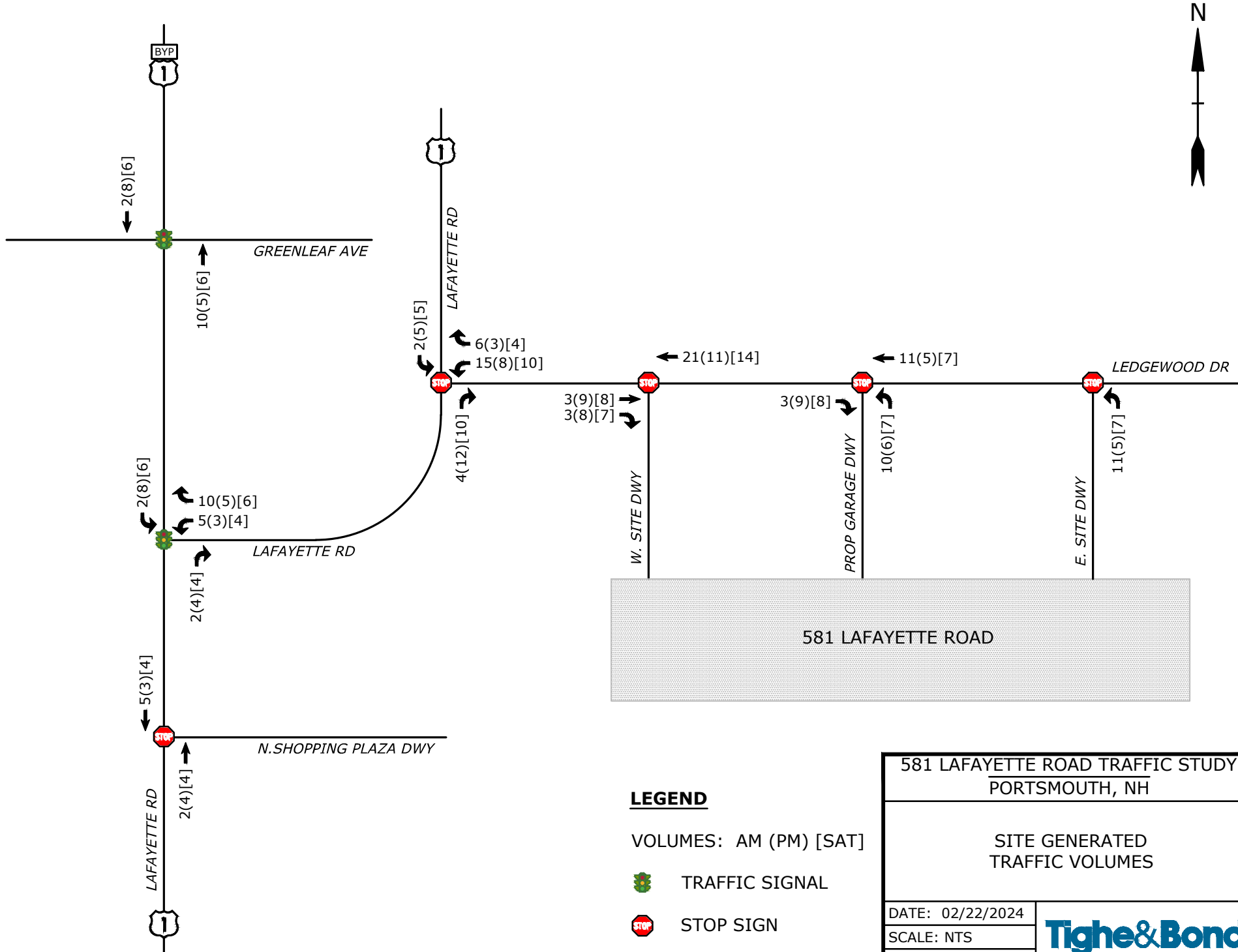


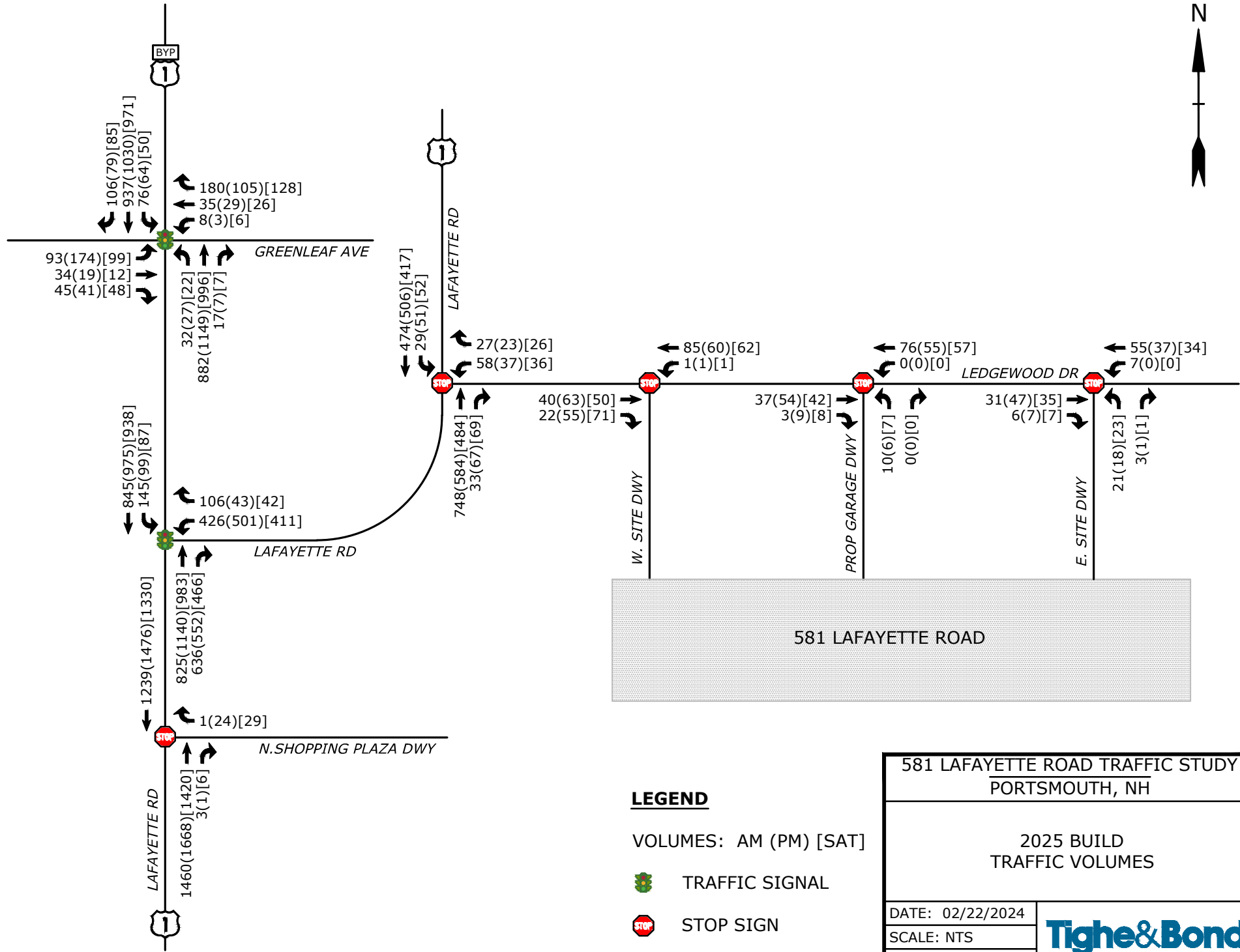
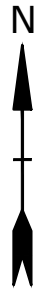
TRAFFIC SIGNAL



STOP SIGN

581 LAFAYETTE ROAD TRAFFIC STUDY PORTSMOUTH, NH	
ARRIVAL & DEPARTURE TRIP DISTRIBUTION	
DATE: 02/22/2024	
SCALE: NTS	
FIGURE 5	





106(79)[85]  
 937(1030)[971]  
 76(64)[50]

180(105)[128]  
 35(29)[26]  
 8(3)[6]

93(174)[99]  
 34(19)[12]  
 45(41)[48]

32(27)[22]  
 882(1149)[996]  
 17(7)[7]

474(506)[417]  
 29(51)[52]

27(23)[26]  
 58(37)[36]

85(60)[62]  
 1(1)[1]

76(55)[57]  
 0(0)[0]

55(37)[34]  
 7(0)[0]

845(975)[938]  
 145(99)[87]

106(43)[42]  
 426(501)[411]

748(584)[484]  
 33(67)[69]

40(63)[50]  
 22(55)[71]

37(54)[42]  
 3(9)[8]

10(6)[7]  
 0(0)[0]

31(47)[35]  
 6(7)[7]

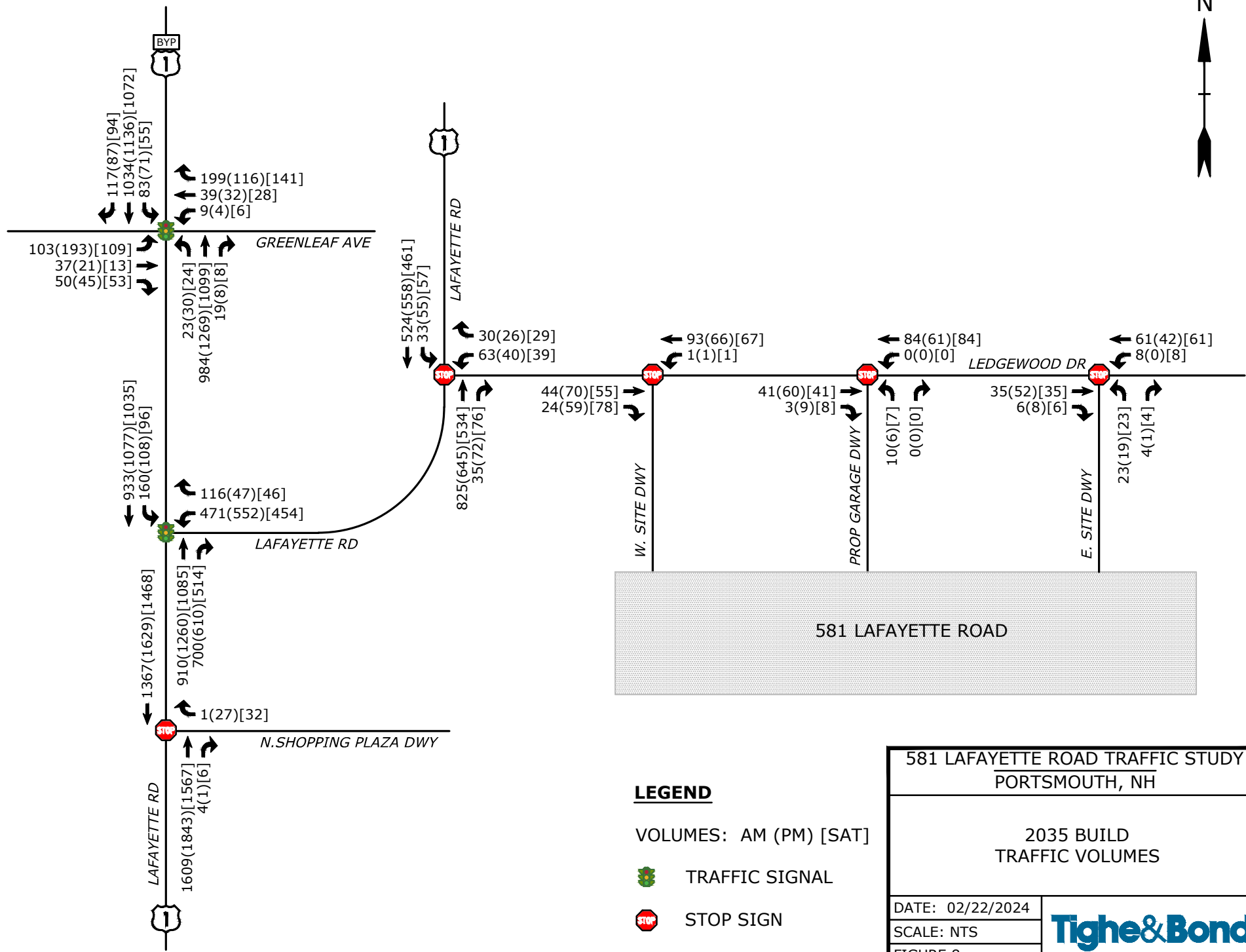
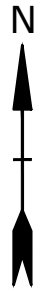
21(18)[23]  
 3(1)[1]

1239(1476)[1330]

825(1140)[983]  
 636(552)[466]

1(24)[29]

1460(1668)[1420]  
 3(1)[6]



**GREENLEAF AVE**

117(87)[94] ←  
 1034(1136)[1072] ←  
 83(71)[55] ←

199(116)[141] →  
 39(32)[28] →  
 9(4)[6] →

103(193)[109] →  
 37(21)[13] →  
 50(45)[53] →

23(30)[24] →  
 984(1269)[1099] →  
 19(8)[8] →

**LAFAYETTE RD**

524(558)[461] ←  
 33(55)[57] ←

30(26)[29] →  
 63(40)[39] →

825(645)[534] →  
 35(72)[76] →

44(70)[55] →  
 24(59)[78] →

93(66)[67] ←  
 1(1)[1] ←

84(61)[84] ←  
 0(0)[0] ←

61(42)[61] ←  
 8(0)[8] ←

**LAFAYETTE RD**

933(1077)[1035] ←  
 160(108)[96] ←

116(47)[46] →  
 471(552)[454] →

825(645)[534] →  
 35(72)[76] →

**LEDGEWOOD DR**

41(60)[41] →  
 3(9)[8] →

10(6)[7] →  
 0(0)[0] →

35(52)[35] →  
 6(8)[6] →

23(19)[23] →  
 4(1)[4] →

**W. SITE DWY**

**PROP GARAGE DWY**

**E. SITE DWY**

**581 LAFAYETTE ROAD**

**N. SHOPPING PLAZA DWY**

1367(1629)[1468] ←

910(1260)[1085] →  
 700(610)[514] →

1(27)[32] →

1609(1843)[1567] →  
 4(1)[6] →

**BYP**





**APPENDIX A**  
Traffic Count Data

# 518 Lafayette Rd Counts Map



TMC: 6 intersections  
Weekday 7-9AM and 4-6 PM, Sat 11AM-2PM

ATR: 48-hour on Ledgewood Drive



Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 1  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: North Shopping Plaza Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PASSENGER CARS & HEAVY VEHICLES COMBINED**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	139	0	0	0	168	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	189	0	0	0	184	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	196	1	0	0	202	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	229	0	0	0	229	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	292	1	0	0	242	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	296	1	0	0	259	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	224	0	0	0	217	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	272	1	0	0	207	0	0	0	0	0	0	0	0	0

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	293	0	0	0	251	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	312	0	0	0	271	0	0	0	0	0	0	0	0	6
4:30 PM	0	0	291	0	0	0	297	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	304	1	0	0	244	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	310	0	0	0	283	0	0	0	0	0	0	0	0	6
5:15 PM	0	0	339	0	0	0	272	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	285	2	0	0	213	0	0	0	0	0	0	0	0	5
5:45 PM	0	0	282	2	0	0	194	0	0	0	0	0	0	0	0	5

AM PEAK HOUR 8:00 AM to 9:00 AM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	1084	3	0	0	925	0	0	0	0	0	0	0	0	1
<b>PHF</b>	0.91				0.89				0.00				0.25			
<b>HV %</b>	0.0%	0.0%	4.5%	0.0%	0.0%	0.0%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

PM PEAK HOUR 4:30 PM to 5:30 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	1244	1	0	0	1096	0	0	0	0	0	0	0	0	18
<b>PHF</b>	0.92				0.92				0.00				0.75			
<b>HV %</b>	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 1  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: North Shopping Plaza Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	13	0	0	0	7	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	17	0	0	0	9	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	14	0	0	0	4	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	12	0	0	0	13	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	10	0	0	0	13	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	10	0	0	0	7	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	17	0	0	0	5	0	0	0	0	0	0	0	0	0

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM PHF	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	53	0	0	0	39	0	0	0	0	0	0	0	0	0
	<b>0.78</b>				<b>0.75</b>				<b>0.00</b>				<b>0.00</b>			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	15	0	0	0	10	0	0	0	0	0	0	0	0	0
	<b>0.75</b>				<b>0.63</b>				<b>0.00</b>				<b>0.00</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 1  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: North Shopping Plaza Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR <sup>1</sup> 8:00 AM to 9:00 AM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1

PM PEAK HOUR <sup>1</sup> 4:30 PM to 5:30 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

<sup>1</sup> NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 1  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: North Shopping Plaza Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	262	0	0	0	216	0	0	0	0	0	0	0	0	5
11:15 AM	0	0	252	0	0	0	209	0	0	0	0	0	0	0	0	7
11:30 AM	0	0	252	0	0	0	257	0	0	0	0	0	0	0	0	8
11:45 AM	0	0	285	0	0	0	245	0	0	0	0	0	0	0	0	7
12:00 PM	0	0	248	1	0	0	286	0	0	0	0	0	0	0	0	8
12:15 PM	0	0	264	1	0	0	231	0	0	0	0	0	0	0	0	5
12:30 PM	0	0	268	2	0	0	260	0	0	0	0	0	0	0	0	4
12:45 PM	0	0	287	0	0	0	222	0	0	0	0	0	0	0	0	5
1:00 PM	0	0	266	0	0	0	215	0	0	0	0	0	0	0	0	12
1:15 PM	0	0	280	0	0	0	240	0	0	0	0	0	0	0	0	5
1:30 PM	0	0	279	0	0	0	247	0	0	0	0	0	0	0	0	8
1:45 PM	0	0	279	0	0	0	230	0	0	0	0	0	0	0	0	7

MID PEAK HOUR 11:45 AM to 12:45 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	1065	4	0	0	1022	0	0	0	0	0	0	0	0	24
<b>PHF</b>	<b>0.94</b>				<b>0.89</b>				<b>0.00</b>				<b>0.75</b>			
<b>HV %</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.5%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 1  
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 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM <i>PHF</i>	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	12	0	0	0	7	0	0	0	0	0	0	0	0	0
	<b>0.75</b>				<b>0.58</b>				<b>0.00</b>				<b>0.00</b>			



Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
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 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:45 AM to 12:45 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				North Shopping Plaza Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 2  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Lafayette Road  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PASSENGER CARS & HEAVY VEHICLES COMBINED**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	105	29	0	6	140	0	0	0	0	0	0	34	0	5
7:15 AM	0	0	136	51	0	18	132	0	0	0	0	0	0	46	0	2
7:30 AM	0	0	138	61	0	21	159	0	0	0	0	0	0	39	0	4
7:45 AM	0	0	143	80	0	24	152	0	0	0	0	0	0	78	0	5
8:00 AM	0	0	141	145	0	34	182	0	0	0	0	0	0	64	0	14
8:15 AM	0	0	149	149	0	29	161	0	0	0	0	0	0	104	0	18
8:30 AM	0	0	142	81	0	20	138	0	0	0	0	0	0	77	0	20
8:45 AM	0	0	175	93	1	22	141	0	0	0	0	0	0	72	0	10

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	203	76	0	20	170	0	0	0	0	0	0	78	0	10
4:15 PM	0	0	236	88	0	13	183	0	0	0	0	0	0	88	0	8
4:30 PM	0	0	212	84	0	10	192	0	0	0	0	0	0	93	0	10
4:45 PM	0	0	192	107	0	13	163	0	0	0	0	0	0	80	0	8
5:00 PM	1	0	212	106	0	15	181	0	0	0	0	0	0	104	0	4
5:15 PM	0	0	225	111	0	22	174	0	0	0	0	0	0	91	0	6
5:30 PM	0	0	187	99	0	16	130	0	0	0	0	0	0	92	0	15
5:45 PM	0	0	188	102	0	20	141	0	0	0	0	0	0	60	0	10

AM PEAK HOUR 8:00 AM to 9:00 AM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	607	468	1	105	622	0	0	0	0	0	0	317	0	62
<b>PHF</b>	0.90				0.84				0.00				0.78			
<b>HV %</b>	0.0%	0.0%	6.4%	2.8%	0.0%	5.7%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	0.0%	4.8%

PM PEAK HOUR 4:30 PM to 5:30 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	0	841	408	0	60	710	0	0	0	0	0	0	368	0	28
<b>PHF</b>	0.93				0.95				0.00				0.92			
<b>HV %</b>	0.0%	0.0%	0.8%	1.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 2  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Lafayette Road  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	9	0	0	1	12	0	0	0	0	0	0	1	0	0
7:15 AM	0	0	10	2	0	0	6	0	0	0	0	0	0	1	0	0
7:30 AM	0	0	14	3	0	1	9	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	12	2	0	0	5	0	0	0	0	0	0	1	0	0
8:00 AM	0	0	10	4	0	2	8	0	0	0	0	0	0	4	0	0
8:15 AM	0	0	6	3	0	1	9	0	0	0	0	0	0	6	0	1
8:30 AM	0	0	7	3	0	2	6	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	16	3	0	1	4	0	0	0	0	0	0	1	0	1

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	4	0	0
4:15 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	4	2	0	0	1	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0
5:15 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM PHF	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	42	12	0	4	31	0	0	0	0	0	0	11	0	1
	<b>0.79</b>				<b>0.88</b>				<b>0.00</b>				<b>0.43</b>			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	11	3	0	0	8	0	0	0	0	0	0	5	0	0
	<b>0.58</b>				<b>0.67</b>				<b>0.00</b>				<b>0.31</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 2  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Lafayette Road  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR <sup>1</sup> 8:00 AM to 9:00 AM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR <sup>1</sup> 4:30 PM to 5:30 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1

<sup>1</sup> NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 2  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Lafayette Road  
 Count Date: 11/4/23  
 Day of Week: Saturday  
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# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
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 www.BostonTrafficData.com

## PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	174	87	0	19	124	0	0	0	0	0	0	87	0	9
11:15 AM	0	0	179	84	1	12	148	0	0	0	0	0	0	65	0	5
11:30 AM	0	0	184	78	0	12	182	0	0	0	0	0	0	69	0	10
11:45 AM	4	0	188	98	0	11	169	0	0	0	0	0	0	68	0	6
12:00 PM	2	0	184	72	1	11	208	0	0	0	0	0	0	81	0	4
12:15 PM	0	0	187	79	0	18	154	0	0	0	0	0	0	80	0	4
12:30 PM	0	0	180	95	0	11	191	0	0	0	0	0	0	73	0	8
12:45 PM	0	0	185	101	0	23	149	0	0	0	0	0	0	69	0	11
1:00 PM	0	0	203	81	0	16	137	0	0	0	0	0	0	70	0	9
1:15 PM	0	0	211	71	0	12	168	0	0	0	0	0	0	72	0	6
1:30 PM	0	0	201	89	0	9	170	0	0	0	0	0	0	73	0	5
1:45 PM	0	0	189	93	0	10	159	0	0	0	0	0	0	65	0	10

MID PEAK HOUR 11:45 AM to 12:45 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	6	0	739	344	1	51	722	0	0	0	0	0	0	302	0	22
<i>PHF</i>	0.94				0.88				0.00				0.95			
<i>HV %</i>	0.0%	0.0%	0.4%	0.6%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 2  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Lafayette Road  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	3	1	0	0	1	0	0	0	0	0	0	1	0	0
11:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	4	1	0	0	2	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0
12:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0
1:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0
1:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM <i>PHF</i>	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	9	3	0	0	6	0	0	0	0	0	0	1	0	0
	<b>0.60</b>				<b>0.50</b>				<b>0.00</b>				<b>0.25</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 2  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Lafayette Road  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
11:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
11:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:45 AM to 12:45 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Eastbound				Lafayette Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 3  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Greenleaf Avenue  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PASSENGER CARS & HEAVY VEHICLES COMBINED**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	3	113	1	0	12	146	20	0	5	0	3	0	0	1	25
7:15 AM	0	4	131	1	0	13	148	32	0	4	4	3	0	3	5	27
7:30 AM	0	4	138	2	1	11	170	31	0	12	3	5	0	2	4	44
7:45 AM	0	3	148	1	0	12	180	28	0	24	7	10	0	2	8	35
8:00 AM	0	3	157	3	0	15	197	16	0	18	4	14	0	2	4	31
8:15 AM	1	5	162	4	0	20	185	19	0	18	12	8	0	1	12	39
8:30 AM	1	3	151	1	1	12	155	20	0	12	5	7	0	2	4	37
8:45 AM	0	5	188	3	0	12	164	25	0	20	4	5	0	1	6	27

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	1	9	214	1	2	15	193	18	0	30	3	10	0	2	4	41
4:15 PM	0	6	236	1	4	11	174	21	0	30	0	8	0	2	3	30
4:30 PM	0	9	217	0	0	7	203	17	0	52	1	8	0	0	6	17
4:45 PM	0	5	197	2	1	11	169	18	0	21	7	6	0	0	7	22
5:00 PM	0	2	209	1	2	15	196	9	0	36	3	6	0	3	3	25
5:15 PM	0	4	224	2	0	14	193	12	0	22	3	11	0	0	6	17
5:30 PM	0	4	194	1	1	11	143	21	0	24	6	9	0	2	4	21
5:45 PM	0	2	207	0	0	10	145	13	0	22	0	9	0	2	4	9

AM PEAK HOUR 7:30 AM to 8:30 AM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	15	605	10	1	58	732	94	0	72	26	37	0	7	28	149
<b>PHF</b>	0.92				0.97				0.82				0.88			
<b>HV %</b>	0.0%	13.3%	6.3%	0.0%	0.0%	0.0%	3.6%	4.3%	0.0%	1.4%	0.0%	8.1%	0.0%	0.0%	0.0%	1.3%

PM PEAK HOUR 4:00 PM to 5:00 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	29	864	4	7	44	739	74	0	133	11	32	0	4	20	110
<b>PHF</b>	0.92				0.95				0.72				0.71			
<b>HV %</b>	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.8%	0.0%	6.3%	0.0%	0.0%	0.0%	0.9%



Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 3  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Greenleaf Avenue  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	9	0	0	0	13	2	0	0	0	0	0	0	0	0
7:15 AM	0	0	9	0	0	0	4	1	0	0	2	0	0	2	0	0
7:30 AM	0	1	13	0	0	0	8	0	0	0	0	1	0	0	0	0
7:45 AM	0	1	10	0	0	0	4	0	0	0	0	1	0	0	0	0
8:00 AM	0	0	8	0	0	0	10	1	0	1	0	1	0	0	0	0
8:15 AM	0	0	7	0	0	0	4	3	0	0	0	0	0	0	0	2
8:30 AM	0	0	8	0	0	1	8	1	0	1	0	0	0	0	0	0
8:45 AM	0	1	15	0	0	0	5	0	0	0	0	0	0	0	1	0

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM	0	0	2	0	0	0	3	0	0	0	0	1	0	0	0	0
4:30 PM	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM PHF	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	2	41	0	0	0	29	3	0	0	2	2	0	2	0	0
	<b>0.77</b>				<b>0.53</b>				<b>0.50</b>				<b>0.25</b>			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	8	0	0	0	6	0	0	1	0	2	0	0	0	1
	<b>0.50</b>				<b>0.50</b>				<b>0.75</b>				<b>0.25</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 3  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Greenleaf Avenue  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR <sup>1</sup> 7:30 AM to 8:30 AM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR <sup>1</sup> 4:00 PM to 5:00 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0

<sup>1</sup> NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 3  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Greenleaf Avenue  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	1	6	170	1	2	5	135	11	0	19	2	4	0	2	8	25
11:15 AM	1	7	175	5	2	7	158	8	0	14	4	2	0	1	4	22
11:30 AM	0	2	189	2	0	13	186	11	0	21	2	5	0	2	6	20
11:45 AM	1	4	188	2	2	7	170	10	0	16	1	10	0	0	3	29
12:00 PM	0	3	182	2	1	8	215	15	0	26	2	7	0	1	3	23
12:15 PM	0	5	188	0	1	11	158	17	0	15	1	11	0	0	5	28
12:30 PM	1	5	176	1	1	6	183	16	0	16	4	12	0	2	7	19
12:45 PM	0	4	196	1	0	13	169	14	0	16	2	6	0	1	4	25
1:00 PM	1	9	198	2	3	10	143	9	0	21	4	4	0	2	7	25
1:15 PM	0	9	209	1	0	6	176	16	0	13	4	7	0	0	6	13
1:30 PM	0	5	204	0	2	14	168	18	0	18	6	5	0	1	6	22
1:45 PM	1	8	185	4	2	5	166	11	0	17	0	5	0	0	6	14

MID PEAK HOUR 11:30 AM to 12:30 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	14	747	6	4	39	729	53	0	78	6	33	0	3	17	100
<b>PHF</b>	<b>0.98</b>				<b>0.86</b>				<b>0.84</b>				<b>0.91</b>			
<b>HV %</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.8%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.7%</b>	<b>3.8%</b>	<b>0.0%</b>	<b>1.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>1.0%</b>

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 3  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Greenleaf Avenue  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## HEAVY VEHICLES

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
12:15 PM	0	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0
12:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
12:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM <i>PHF</i>	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	9	0	0	0	4	1	0	0	0	0	0	0	0	1
	0.56				0.63				0.00				0.25			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 3  
 Location: Portsmouth, NH  
 Street 1: U.S. Route 1 Bypass  
 Street 2: Greenleaf Avenue  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:30 AM to 12:30 PM	U.S. Route 1 Bypass Northbound				U.S. Route 1 Bypass Southbound				Greenleaf Avenue Eastbound				Greenleaf Avenue Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 4  
 Location: Portsmouth, NH  
 Street 1: Lafayette Road  
 Street 2: Ledgewood Drive  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PASSENGER CARS & HEAVY VEHICLES COMBINED**

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	35	0	0	1	37	0	0	0	0	0	0	6	0	2
7:15 AM	0	0	65	4	0	6	39	0	0	0	0	0	0	5	0	3
7:30 AM	0	0	78	4	0	4	45	0	0	0	0	0	0	4	0	1
7:45 AM	0	0	100	4	0	2	69	0	0	0	0	0	0	5	0	4
8:00 AM	0	0	174	5	0	5	71	0	0	0	0	0	0	11	0	2
8:15 AM	1	0	171	5	0	7	110	0	0	0	0	0	0	10	0	7
8:30 AM	1	0	96	4	0	4	94	0	0	0	0	0	0	4	0	3
8:45 AM	0	0	107	6	0	4	80	0	0	0	0	0	0	7	0	4

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	85	12	0	7	81	0	0	0	0	0	0	9	0	4
4:15 PM	1	0	96	5	0	7	95	0	0	0	0	0	0	5	0	5
4:30 PM	0	0	85	8	0	8	96	0	0	0	0	0	0	9	0	5
4:45 PM	0	0	111	9	0	6	84	0	0	0	0	0	0	6	0	4
5:00 PM	0	0	113	8	0	7	94	0	0	0	0	0	0	2	0	4
5:15 PM	0	0	118	15	0	12	100	0	0	0	0	0	0	4	0	2
5:30 PM	0	0	106	8	0	8	91	0	0	0	0	0	0	9	0	4
5:45 PM	0	0	108	15	0	11	71	0	0	0	0	0	0	5	0	4

AM PEAK HOUR 8:00 AM to 9:00 AM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	2	0	548	20	0	20	355	0	0	0	0	0	0	32	0	16
<b>PHF</b>	0.80				0.80				0.00				0.71			
<b>HV %</b>	0.0%	0.0%	3.3%	5.0%	0.0%	0.0%	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	0.0%	6.3%

PM PEAK HOUR 4:45 PM to 5:45 PM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	448	40	0	33	369	0	0	0	0	0	0	21	0	14
<b>PHF</b>	0.92				0.90				0.00				0.67			
<b>HV %</b>	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 4  
 Location: Portsmouth, NH  
 Street 1: Lafayette Road  
 Street 2: Ledgewood Drive  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	5	1	0	0	3	0	0	0	0	0	0	1	0	1
8:15 AM	0	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
<i>PHF</i>	<b>0</b>	<b>0</b>	<b>18</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
	<b>0.79</b>				<b>0.46</b>				<b>0.00</b>				<b>0.25</b>			

PM PEAK HOUR 4:00 PM to 5:00 PM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
<i>PHF</i>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
	<b>0.38</b>				<b>0.25</b>				<b>0.00</b>				<b>0.25</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 4  
 Location: Portsmouth, NH  
 Street 1: Lafayette Road  
 Street 2: Ledgewood Drive  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

AM PEAK HOUR <sup>1</sup> 8:00 AM to 9:00 AM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	5

PM PEAK HOUR <sup>1</sup> 4:45 PM to 5:45 PM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3

<sup>1</sup> NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.



Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 4  
 Location: Portsmouth, NH  
 Street 1: Lafayette Road  
 Street 2: Ledgewood Drive  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	94	11	0	7	87	0	0	0	0	0	0	6	0	2
11:15 AM	0	0	84	10	0	6	63	0	0	0	0	0	0	6	0	4
11:30 AM	0	0	85	8	0	3	71	0	0	0	0	0	0	9	0	7
11:45 AM	0	0	98	11	0	9	63	0	0	0	0	0	0	11	0	4
12:00 PM	0	0	78	5	0	13	86	0	0	0	0	0	0	1	0	6
12:15 PM	0	0	82	14	0	10	80	0	0	0	0	0	0	2	0	4
12:30 PM	0	0	96	11	0	5	72	0	0	0	0	0	0	6	0	1
12:45 PM	0	0	109	16	0	7	73	0	0	0	0	0	0	10	0	6
1:00 PM	0	0	84	10	0	3	71	0	0	0	0	0	0	7	0	1
1:15 PM	0	0	76	9	0	2	73	0	0	0	0	0	0	6	0	8
1:30 PM	0	0	87	11	0	5	70	0	0	0	0	0	0	4	0	1
1:45 PM	1	0	96	5	0	8	71	0	0	0	0	0	0	5	0	1

MID PEAK HOUR 12:00 PM to 1:00 PM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	365	46	0	35	311	0	0	0	0	0	0	19	0	17
<i>PHF</i>	0.82				0.87				0.00				0.56			
<i>HV %</i>	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 4  
 Location: Portsmouth, NH  
 Street 1: Lafayette Road  
 Street 2: Ledgewood Drive  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## HEAVY VEHICLES

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM <i>PHF</i>	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
	0.75				0.25				0.00				0.00			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 4  
 Location: Portsmouth, NH  
 Street 1: Lafayette Road  
 Street 2: Ledgewood Drive  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	10
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 12:00 PM to 1:00 PM	Lafayette Road Northbound				Lafayette Road Southbound				Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 5  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: West Site Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PASSENGER CARS & HEAVY VEHICLES COMBINED**

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	9	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	6	4	0	0	7	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	4	0	0	5	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	4	3	0	0	10	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	5	5	0	0	12	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	9	3	0	1	17	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	2	0	0	8	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	6	4	0	0	10	0

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	14	5	0	0	13	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	13	0	0	0	10	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	9	7	0	0	13	0
4:45 PM	0	0	0	0	0	0	0	0	1	0	10	4	0	1	11	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	8	6	0	0	6	0
5:15 PM	0	0	0	1	0	0	0	0	0	0	11	17	0	0	7	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	4	12	0	0	13	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	13	13	0	0	8	0

AM PEAK HOUR 8:00 AM to 9:00 AM	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	26	14	0	1	47	0
<b>PHF</b>	<b>0.00</b>				<b>0.00</b>				<b>0.83</b>				<b>0.67</b>			
<b>HV %</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>7.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>4.3%</b>	<b>0.0%</b>

PM PEAK HOUR 5:00 PM to 6:00 PM	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	1	0	0	0	0	0	0	36	48	0	0	34	0
<b>PHF</b>	<b>0.25</b>				<b>0.00</b>				<b>0.75</b>				<b>0.65</b>			
<b>HV %</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 5  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: West Site Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM PHF	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
	<b>0.00</b>				<b>0.00</b>				<b>0.75</b>				<b>0.38</b>			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
	<b>0.00</b>				<b>0.00</b>				<b>0.25</b>				<b>0.25</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 5  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: West Site Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR <sup>1</sup> 8:00 AM to 9:00 AM	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR <sup>1</sup> 5:00 PM to 6:00 PM	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0

<sup>1</sup> NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 5  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: West Site Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	7	11	0	1	8	0
11:15 AM	0	0	0	0	0	0	0	0	1	0	7	7	0	0	10	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	5	7	0	0	15	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	9	11	0	0	15	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	7	11	0	1	7	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	7	17	0	0	8	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	6	10	0	0	5	0
12:45 PM	0	2	0	0	0	0	0	0	0	0	12	10	0	0	14	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	6	8	0	0	8	0
1:15 PM	0	1	0	0	0	0	0	0	0	0	7	4	0	0	13	0
1:30 PM	0	1	0	0	0	0	0	0	0	0	7	9	0	0	4	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	3	10	0	0	6	0

MID PEAK HOUR 11:30 AM to 12:30 PM	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	28	46	0	1	45	0
<i>PHF</i>	0.00				0.00				0.77				0.77			
<i>HV %</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 5  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: West Site Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## HEAVY VEHICLES

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 10:00 AM to 11:00 AM <i>PHF</i>	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.00				0.00				0.00				0.00			



Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTM #: Location 5  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: West Site Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:30 AM to 12:30 PM	West Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 6  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: East Site Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PASSENGER CARS & HEAVY VEHICLES COMBINED**

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	7	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	5	1	0	0	6	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	2	2	0	0	4	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	10	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	2	0	3	12	0
8:15 AM	0	5	0	3	0	0	0	0	0	0	7	2	0	2	13	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	6	0	0	0	7	0
8:45 AM	0	2	0	0	0	0	0	0	0	0	5	0	0	0	8	0

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	4	0	0	0	0	0	0	0	0	14	0	0	0	9	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	12	0	0	1	10	0
4:30 PM	0	2	0	0	0	0	0	0	0	0	9	0	0	0	10	0
4:45 PM	0	4	0	0	0	0	0	0	1	0	7	3	0	0	7	0
5:00 PM	0	2	0	0	0	0	0	0	0	0	8	0	0	0	5	0
5:15 PM	0	2	0	1	0	0	0	0	0	0	11	1	0	0	4	0
5:30 PM	0	4	0	1	0	0	0	0	0	0	4	0	0	0	8	0
5:45 PM	0	2	0	0	0	0	0	0	0	0	13	0	0	0	6	0

AM PEAK HOUR 8:00 AM to 9:00 AM	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	8	0	3	0	0	0	0	0	0	21	4	0	5	40	0
<b>PHF</b>	0.34				0.00				0.69				0.75			
<b>HV %</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%	5.0%	0.0%

PM PEAK HOUR 4:00 PM to 5:00 PM	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	10	0	1	0	0	0	0	1	0	42	3	0	1	36	0
<b>PHF</b>	0.69				0.00				0.82				0.84			
<b>HV %</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	0.0%	0.0%	2.8%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 6  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: East Site Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**HEAVY VEHICLES**

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM PHF	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
	<b>0.00</b>				<b>0.00</b>				<b>0.75</b>				<b>0.38</b>			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
	<b>0.00</b>				<b>0.00</b>				<b>0.25</b>				<b>0.25</b>			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 6  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: East Site Driveway  
 Count Date: 11/1/2023  
 Day of Week: Wednesday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	20
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR <sup>1</sup> 8:00 AM to 9:00 AM	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	23

PM PEAK HOUR <sup>1</sup> 4:00 PM to 5:00 PM	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

<sup>1</sup> NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 6  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: East Site Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	2	0	1	0	0	0	0	0	0	5	2	0	0	7	0
11:15 AM	0	5	0	0	0	0	0	0	0	0	6	1	0	0	5	0
11:30 AM	0	4	0	0	0	0	0	0	0	0	5	0	0	1	11	0
11:45 AM	0	2	0	0	0	0	0	0	0	0	6	2	0	0	12	0
12:00 PM	0	3	0	0	0	0	0	0	0	0	6	1	0	0	5	0
12:15 PM	0	3	0	0	0	0	0	0	0	0	6	1	0	0	5	0
12:30 PM	0	3	0	1	0	0	0	0	0	0	5	0	0	0	2	0
12:45 PM	0	3	0	0	0	0	0	0	0	0	9	3	0	0	10	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	8	0
1:15 PM	0	5	0	0	0	0	0	0	0	0	6	1	0	0	8	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	6	1	0	0	4	0
1:45 PM	0	2	0	0	0	0	0	0	0	0	2	1	0	0	4	0

MID PEAK HOUR 11:00 AM to 12:00 PM	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	13	0	1	0	0	0	0	0	0	22	5	0	1	35	0
<i>PHF</i>	0.70				0.00				0.84				0.75			
<i>HV %</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 6  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: East Site Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

## HEAVY VEHICLES

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 10:00 AM to 11:00 AM <i>PHF</i>	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.00				0.00				0.00				0.00			

Client: Matthew Stoutz  
 Project #: 1385\_2\_TB  
 BTD #: Location 6  
 Location: Portsmouth, NH  
 Street 1: Ledgewood Drive  
 Street 2: East Site Driveway  
 Count Date: 11/4/23  
 Day of Week: Saturday  
 Weather: Clouds & Sun, 50°F



**PEDESTRIANS & BICYCLES**

Start Time	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
11:15 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM	East Site Driveway Northbound				Southbound				Ledgewood Drive Eastbound				Ledgewood Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

# Speed Report

Job 1385\_2\_TB\_ATR  
 Area Portsmouth, NH  
 Location Ledgewood Drive, ~150-200' east of Lafayette Rd  
 Dir Eastbound  
 Tuesday, October 31, 2023



PO BOX 1723, Frammingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

Time	Total	Speed Bins (mph)															
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
0000	10	0	0	1	4	4	1	0	0	0	0	0	0	0	0	0	0
0100	7	0	1	0	5	1	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
0300	3	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
0400	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0500	6	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0
0600	9	0	1	0	4	4	0	0	0	0	0	0	0	0	0	0	0
0700	16	0	0	1	9	6	0	0	0	0	0	0	0	0	0	0	0
0800	22	0	1	3	7	10	1	0	0	0	0	0	0	0	0	0	0
0900	20	0	0	0	7	10	3	0	0	0	0	0	0	0	0	0	0
1000	26	0	0	5	6	12	3	0	0	0	0	0	0	0	0	0	0
1100	19	0	0	2	9	7	1	0	0	0	0	0	0	0	0	0	0
1200	43	0	0	3	12	26	2	0	0	0	0	0	0	0	0	0	0
1300	31	0	0	4	14	12	1	0	0	0	0	0	0	0	0	0	0
1400	44	0	0	2	23	17	2	0	0	0	0	0	0	0	0	0	0
1500	42	0	0	4	22	15	1	0	0	0	0	0	0	0	0	0	0
1600	50	0	1	1	18	24	6	0	0	0	0	0	0	0	0	0	0
1700	40	0	0	2	15	21	2	0	0	0	0	0	0	0	0	0	0
1800	34	0	0	3	16	13	2	0	0	0	0	0	0	0	0	0	0
1900	44	0	1	0	22	18	3	0	0	0	0	0	0	0	0	0	0
2000	35	0	0	1	19	15	0	0	0	0	0	0	0	0	0	0	0
2100	25	0	1	0	9	12	3	0	0	0	0	0	0	0	0	0	0
2200	26	0	0	1	11	13	1	0	0	0	0	0	0	0	0	0	0
2300	10	0	0	1	2	7	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>566</b>	<b>0</b>	<b>6</b>	<b>35</b>	<b>241</b>	<b>252</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

100.00% 0.00% 1.06% 6.18% 42.58% 44.52% 5.65% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%

Maximum = 29.6 mph, Minimum = 5.9 mph, Mean = 19.6 mph  
 85% Speed = 22.59 mph, 95% Speed = 25.61 mph, Median = 19.99 mph  
 10 mph Pace = 14 - 24, Number in Pace = 490 (87.81%)  
 Variance = 11.91, Standard Deviation = 3.45 mph



# Speed Report

Job 1385\_2\_TB\_ATR  
 Area Portsmouth, NH  
 Location Ledgewood Drive, ~150-200' east of Lafayette Rd  
 Dir Eastbound  
**Wednesday, November 1, 2023**



PO BOX 1723, Frammingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

Time	Total	Speed Bins (mph)															
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
0000	8	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0
0100	9	0	0	0	6	3	0	0	0	0	0	0	0	0	0	0	0
0200	3	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
0300	5	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0
0400	5	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0
0500	4	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
0600	7	0	1	0	3	2	1	0	0	0	0	0	0	0	0	0	0
0700	15	0	0	0	10	5	0	0	0	0	0	0	0	0	0	0	0
0800	26	0	0	1	12	13	0	0	0	0	0	0	0	0	0	0	0
0900	17	0	0	2	5	8	1	1	0	0	0	0	0	0	0	0	0
1000	30	0	0	6	14	9	1	0	0	0	0	0	0	0	0	0	0
1100	26	0	0	1	15	9	1	0	0	0	0	0	0	0	0	0	0
1200	31	0	2	3	15	11	0	0	0	0	0	0	0	0	0	0	0
1300	29	0	0	2	16	10	1	0	0	0	0	0	0	0	0	0	0
1400	39	0	0	4	16	15	4	0	0	0	0	0	0	0	0	0	0
1500	46	0	0	2	25	19	0	0	0	0	0	0	0	0	0	0	0
1600	47	0	0	3	15	23	6	0	0	0	0	0	0	0	0	0	0
1700	37	0	0	4	16	15	2	0	0	0	0	0	0	0	0	0	0
1800	35	0	0	1	20	13	1	0	0	0	0	0	0	0	0	0	0
1900	27	0	0	3	12	11	1	0	0	0	0	0	0	0	0	0	0
2000	24	0	0	0	12	12	0	0	0	0	0	0	0	0	0	0	0
2100	34	0	1	2	10	17	4	0	0	0	0	0	0	0	0	0	0
2200	26	0	0	0	11	14	1	0	0	0	0	0	0	0	0	0	0
2300	14	0	0	1	3	9	1	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>544</b>	<b>0</b>	<b>4</b>	<b>36</b>	<b>251</b>	<b>226</b>	<b>26</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

100.00% 0.00% 0.74% 6.62% 46.14% 41.54% 4.78% 0.18% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%

Maximum = 30.1 mph, Minimum = 5.3 mph, Mean = 19.7 mph  
 85% Speed = 22.96 mph, 95% Speed = 25.04 mph, Median = 19.80 mph  
 10 mph Pace = 15 - 25, Number in Pace = 478 (87.87%)  
 Variance = 10.82, Standard Deviation = 3.29 mph

# Speed Report

Job 1385\_2\_TB\_ATR  
 Area Portsmouth, NH  
 Location Ledgewood Drive, ~150-200' east of Lafayette Rd  
 Dir Westbound  
 Tuesday, October 31, 2023



PO BOX 1723, Frammingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

Time	Total	Speed Bins (mph)															
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
0000	3	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
0100	4	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
0200	4	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0
0300	3	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
0400	13	0	0	1	7	4	1	0	0	0	0	0	0	0	0	0	0
0500	13	0	0	0	3	10	0	0	0	0	0	0	0	0	0	0	0
0600	26	0	0	1	7	18	0	0	0	0	0	0	0	0	0	0	0
0700	39	0	0	1	18	17	3	0	0	0	0	0	0	0	0	0	0
0800	48	0	0	6	20	17	5	0	0	0	0	0	0	0	0	0	0
0900	32	0	0	0	7	21	4	0	0	0	0	0	0	0	0	0	0
1000	37	0	0	3	13	15	6	0	0	0	0	0	0	0	0	0	0
1100	38	0	0	3	16	17	2	0	0	0	0	0	0	0	0	0	0
1200	50	0	0	7	14	23	5	1	0	0	0	0	0	0	0	0	0
1300	42	0	2	8	14	17	1	0	0	0	0	0	0	0	0	0	0
1400	47	0	0	5	17	25	0	0	0	0	0	0	0	0	0	0	0
1500	44	0	0	5	19	17	2	1	0	0	0	0	0	0	0	0	0
1600	38	0	2	1	9	21	4	1	0	0	0	0	0	0	0	0	0
1700	35	0	0	9	15	11	0	0	0	0	0	0	0	0	0	0	0
1800	43	0	0	4	17	20	2	0	0	0	0	0	0	0	0	0	0
1900	26	0	0	2	15	6	3	0	0	0	0	0	0	0	0	0	0
2000	32	0	0	1	17	12	2	0	0	0	0	0	0	0	0	0	0
2100	17	0	1	3	4	7	2	0	0	0	0	0	0	0	0	0	0
2200	14	0	0	0	5	8	1	0	0	0	0	0	0	0	0	0	0
2300	6	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>654</b>	<b>0</b>	<b>6</b>	<b>64</b>	<b>242</b>	<b>294</b>	<b>45</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

100.00% 0.00% 0.92% 9.79% 37.00% 44.95% 6.88% 0.46% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%

Maximum = 33.3 mph, Minimum = 6.3 mph, Mean = 19.8 mph  
 85% Speed = 23.38 mph, 95% Speed = 26.14 mph, Median = 20.19 mph  
 10 mph Pace = 14 - 24, Number in Pace = 550 (84.36%)  
 Variance = 14.73, Standard Deviation = 3.84 mph

# Speed Report

Job 1385\_2\_TB\_ATR  
 Area Portsmouth, NH  
 Location Ledgewood Drive, ~150-200' east of Lafayette Rd  
 Dir Westbound  
**Wednesday, November 1, 2023**



PO BOX 1723, Frammingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

Time	Total	Speed Bins (mph)															
		0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
0000	3	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
0100	5	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0
0200	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0300	6	0	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0
0400	14	0	0	3	7	3	1	0	0	0	0	0	0	0	0	0	0
0500	15	0	0	0	3	9	3	0	0	0	0	0	0	0	0	0	0
0600	25	0	0	1	12	10	2	0	0	0	0	0	0	0	0	0	0
0700	30	0	0	1	9	16	4	0	0	0	0	0	0	0	0	0	0
0800	48	0	1	2	19	21	5	0	0	0	0	0	0	0	0	0	0
0900	35	0	0	3	12	17	3	0	0	0	0	0	0	0	0	0	0
1000	35	0	0	5	13	15	2	0	0	0	0	0	0	0	0	0	0
1100	48	0	1	7	17	22	1	0	0	0	0	0	0	0	0	0	0
1200	40	0	0	5	14	18	3	0	0	0	0	0	0	0	0	0	0
1300	32	0	0	4	11	13	4	0	0	0	0	0	0	0	0	0	0
1400	48	0	0	4	20	18	6	0	0	0	0	0	0	0	0	0	0
1500	43	0	0	5	21	15	2	0	0	0	0	0	0	0	0	0	0
1600	48	0	0	3	19	24	2	0	0	0	0	0	0	0	0	0	0
1700	33	0	0	2	20	9	2	0	0	0	0	0	0	0	0	0	0
1800	36	0	0	3	18	15	0	0	0	0	0	0	0	0	0	0	0
1900	29	0	0	2	18	7	2	0	0	0	0	0	0	0	0	0	0
2000	32	0	0	4	18	6	4	0	0	0	0	0	0	0	0	0	0
2100	21	0	0	2	10	8	0	1	0	0	0	0	0	0	0	0	0
2200	9	0	0	1	2	6	0	0	0	0	0	0	0	0	0	0	0
2300	6	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>642</b>	<b>0</b>	<b>2</b>	<b>59</b>	<b>272</b>	<b>261</b>	<b>47</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

100.00% 0.00% 0.31% 9.19% 42.37% 40.65% 7.32% 0.16% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%

Maximum = 32.8 mph, Minimum = 8.6 mph, Mean = 19.9 mph  
 85% Speed = 23.82 mph, 95% Speed = 25.77 mph, Median = 19.80 mph  
 10 mph Pace = 15 - 25, Number in Pace = 534 (83.18%)  
 Variance = 13.28, Standard Deviation = 3.64 mph

# Volume Report

**Job** 1385\_2\_TB\_ATR  
**Area** Portsmouth, NH  
**Location** Ledgewood Drive, ~150-200' east of Lafayette Rd

# BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

**Tuesday, October 31, 2023**

Time	Total	EB	WB		Time	Total	EB	WB
0000	4	3	1		1200	22	12	10
0015	3	3	0		1215	19	11	8
0030	3	2	1		1230	28	12	16
0045	3	2	1	3	1245	24	8	16
0100	7	4	3		1300	20	12	8
0115	2	2	0		1315	20	7	13
0130	0	0	0		1330	22	7	15
0145	2	1	1	4	1345	11	5	6
0200	2	1	1		1400	21	11	10
0215	1	1	0		1415	29	11	18
0230	2	1	1		1430	24	12	12
0245	2	0	2	4	1445	17	10	7
0300	2	2	0		1500	14	7	7
0315	3	1	2		1515	31	13	18
0330	1	0	1		1530	24	12	12
0345	0	0	0	3	1545	17	10	7
0400	3	1	2		1600	27	16	11
0415	3	0	3		1615	18	12	6
0430	4	0	4		1630	23	11	12
0445	4	0	4	13	1645	20	11	9
0500	2	0	2		1700	22	15	7
0515	4	4	0		1715	20	10	10
0530	8	2	6		1730	15	7	8
0545	5	0	5	13	1745	18	8	10
0600	9	1	8		1800	20	10	10
0615	5	1	4		1815	22	7	15
0630	10	2	8		1830	17	7	10
0645	11	5	6	26	1845	18	10	8
0700	13	3	10		1900	22	15	7
0715	15	5	10		1915	13	6	7
0730	11	4	7		1930	16	12	4
0745	16	4	12	39	1945	19	11	8
0800	25	8	17		2000	19	8	11
0815	25	7	18		2015	19	9	10
0830	10	3	7		2030	20	15	5
0845	10	4	6	48	2045	9	3	6
0900	11	5	6		2100	6	4	2
0915	8	3	5		2115	7	3	4
0930	21	6	15		2130	17	8	9
0945	12	6	6	32	2145	12	10	2
1000	16	9	7		2200	15	9	6
1015	17	6	11		2215	8	5	3
1030	20	8	12		2230	14	10	4
1045	10	3	7	37	2245	3	2	1
1100	12	5	7		2300	8	5	3
1115	6	3	3		2315	5	5	0
1130	19	7	12		2330	2	0	2
1145	20	4	16	38	2345	1	0	1
<b>Total</b>	<b>1220</b>	<b>566</b>	<b>654</b>					



**APPENDIX B**  
NHDOT Traffic Data

Year 2019 Monthly Data

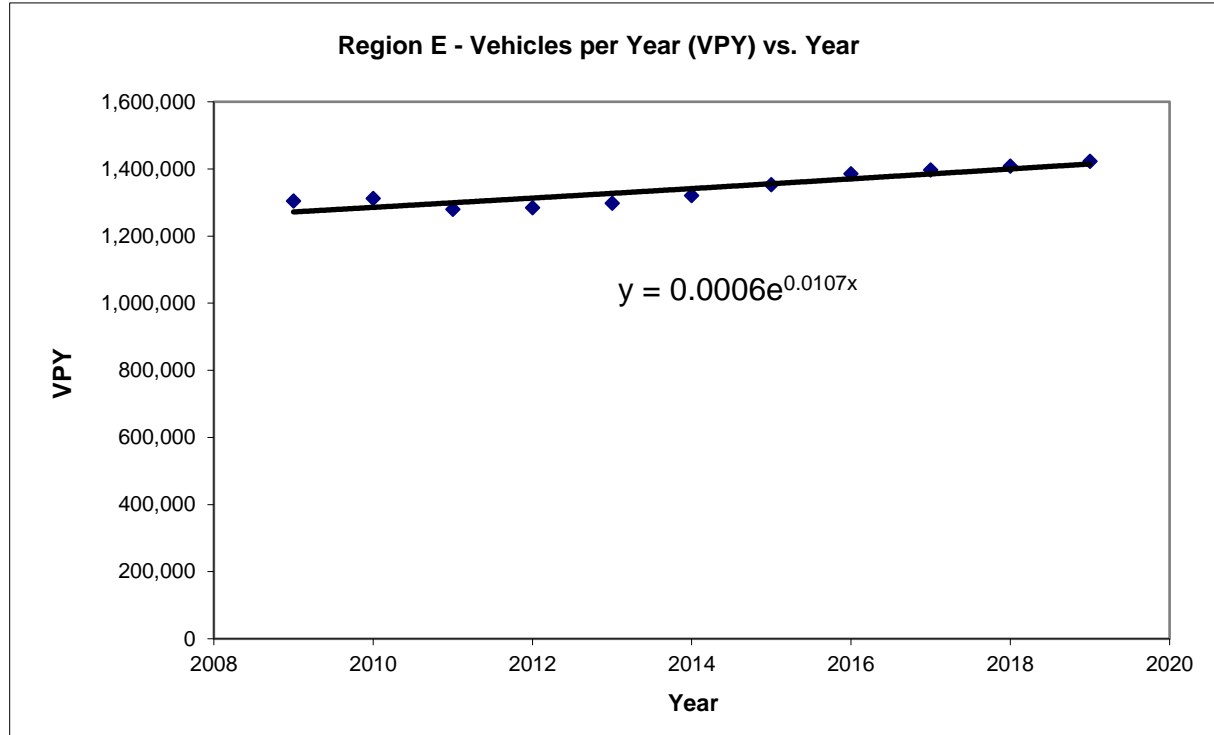
Group 4 Averages: Urban Highways

<u>Month</u>	<u>ADT</u>	<u>Adjustment to Average</u>	<u>Adjustment to Peak</u>	<u>GROUP</u>	<u>COUNTER</u>	<u>TOWN</u>	<u>LOCATION</u>
January	11,431	1.12	1.23	04	02051003	BOW	NH 3A south of Robinson Rd
February	11,848	1.08	1.18	04	02089001	CHICHESTER	NH 28 (Suncook Valley Rd) north of Bear Hill Rd
March	12,141	1.06	1.15	04	02091001	CLAREMONT	NH 12/103 east of Vermont SL
April	12,860	1.00	1.09	04	62099056	CONCORD	NH 106 (Sheep Davis Rd) at Loudon TL (north of Ashby Rd)
May	13,551	0.95	1.03	04	72099278	CONCORD	US 3 (Fisherville Rd) north of Sewalls Falls Rd
June	13,785	0.93	1.02	04	02125001	DOVER	Dover Point Rd south of Thornwood Ln
July	13,942	0.92	1.01	04	02133021	DURHAM	US 4 east of NH 108
August	14,016	0.92	1.00	04	82197076	HAMPTON	US 1 (Lafayette Rd) south of Ramp to NH 101
September	13,379	0.96	1.05	04	02229022	HUDSON*	<i>Circumferential Hwy east of Nashua TL</i>
October	13,339	0.96	1.05	04	02253025	LEBANON	NH 120 1 mile south of Hanover TL (south of Lahaye Dr)
November	12,265	1.05	1.14	04	02255001	LEE	NH 125 (Calef Hwy) north of Pinkham Rd
December	11,496	1.12	1.22	04	02287001	MARLBOROUGH	NH 12 at Swanzey TL
				04	02297001	MERRIMACK	US 3 (Daniel Webster Hwy) north of Hilton Dr
Average ADT:	12,838			04	02303001	MILFORD*	<i>NH 101A at Amherst TL (west of Overlook Dr)</i>
Peak ADT:	14,016			04	02315051	NASHUA*	<i>NH 111 (Bridge / Ferry St) at Hudson TL</i>
				04	02339001	NEWPORT	NH 10 1 mile south of Croydon TL (north of Corbin Rd)
				04	02345001	NORTH HAMPTON	US 1 (Lafayette Rd) north of North Rd
				04	62387052	RINDGE*	<i>US 202 at Jaffrey TL (north of County Rd)</i>
				04	02445001	TEMPLE	NH 101 at Wilton TL (west of Old County Farm Rd)
				04	02489001	WINDHAM	NH 28 at Derry TL (north of Northland Rd)

\* denotes counter that is not included in calculation

Year	Total
2009	1303948
2010	1312251
2011	1279824
2012	1284314
2013	1298171
2014	1320862
2015	1353486
2016	1385361
2017	1396932
2018	1408237
2019	1422176

CAGR	0.87%
Exp	1.07%
Avg	0.97%





**APPENDIX C**

Traffic Volume Adjustment Calculation





# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/5/2019

	Northbound			Eastbound			Southbound				Westbound			
	R	T	L	R	T	L	R	T	L	U	R	T	L	U
00:00		4	2	3	4	1		14	1			4	6	
01:00		2		4	2		1	6				1		
02:00		3		1	1	1	1	6	1		1	2		
03:00		7	1	1		1		6	1			4	4	
04:00	6	9		5	4	1	2	18			2	11	16	
05:00	14	48	5	8	11	1	4	58	1		6	23	41	
06:00	74	134	9	5	65	21	4	92	2		3	63	114	
07:00	92	239	31	33	121	56	12	268	28		33	108	168	
08:00	89	260	20	27	117	53	12	201	7		15	97	117	
09:00	78	281	32	20	94	68	5	196	8		16	84	115	
10:00	119	241	37	20	85	64	9	205	7		9	72	114	
11:00	89	304	18	22	102	89	10	251	13		17	90	162	
12:00	92	339	17	21	85	76	12	228	18	1	10	74	140	
13:00	100	263	26	15	75	54	9	232	8		14	77	131	
14:00	90	239	22	28	109	57	9	245	9		22	91	149	1
15:00	117	319	55	18	110	70	12	250	16		33	110	153	
16:00	89	179	25	40	129	33	11	244	15		29	86	105	
17:00	56	147	23	54	127	21	5	173	11		22	77	105	
18:00	71	97	21	30	87	19	3	118	8		12	29	86	
19:00	41	94	24	15	55	8	2	94	11		11	40	58	
20:00	22	50	15	21	49	6	2	87	6		11	36	33	
21:00	14	39	3	14	19	5	3	56	2		3	18	37	
22:00	6	16	8	3	14	2		38			3	15	17	
23:00	3	6	3	1	8	2	1	20			1	12	17	
<b>Total</b>	<b>1262</b>	<b>3320</b>	<b>397</b>	<b>409</b>	<b>1473</b>	<b>709</b>	<b>129</b>	<b>3106</b>	<b>173</b>	<b>1</b>	<b>273</b>	<b>1224</b>	<b>1888</b>	<b>1</b>



# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/6/2019

	Northbound				Eastbound			Southbound			Westbound			
	R	T	L	U	R	T	L	R	T	L	R	T	L	U
00:00	2	4			2	7	1		16		1	3	4	
01:00	1	1	1		1	1			7			1	5	
02:00	1	3	1		2	4			4		1	5	4	
03:00	3	4			2		1		9	2		2	4	
04:00	8	11			6	6		1	24		2	9	19	
05:00	18	36	5		5	9	2	4	54	1	2	22	32	
06:00	56	116	11		6	71	15	3	85	4	2	63	115	
07:00	78	266	21		38	121	47	40	351	21	27	113	136	
08:00	66	274	25		27	130	61	12	316	4	15	78	149	
09:00	87	246	21		20	82	55	8	201	10	11	58	120	
10:00	95	238	17	2	17	97	52	14	173	10	6	65	108	
11:00	83	276	24	1	28	100	65	10	227	17	16	68	115	
12:00	81	315	29		25	92	57	11	236	11	19	80	115	1
13:00	78	276	40	1	28	92	64	9	238	9	11	77	131	
14:00	120	279	21	1	36	123	70	10	261	12	32	76	118	
15:00	95	326	63		28	127	85	17	281	13	37	140	172	
16:00	96	245	46		38	128	78	6	267	23	24	121	128	
17:00	67	147	32		59	127	27	6	227	15	18	70	80	
18:00	40	99	25		35	85	20	5	131	10	8	41	74	
19:00	42	60	16		23	46	7	4	129	12	8	22	35	
20:00	22	35	10		9	44	6	5	122	2		24	46	
21:00	14	24	3		6	46	3	3	56	1	4	14	21	
22:00	3	13	2		3	17	3	1	26		3	19	22	
23:00	5	9	3		2	10	3		19			11	11	
<b>Total</b>	<b>1161</b>	<b>3303</b>	<b>416</b>	<b>5</b>	<b>446</b>	<b>1565</b>	<b>722</b>	<b>169</b>	<b>3460</b>	<b>177</b>	<b>247</b>	<b>1182</b>	<b>1764</b>	<b>1</b>



# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/7/2019

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00	1	4			3	3	2		7				4	2
01:00	1	4	1			2	1		7					1
02:00		5				4	1		2			2	6	3
03:00	3	1	1		1	2			9			3	4	4
04:00	4	10			5	6		1	22			3	12	12
05:00	9	45	3		3	9	4	4	64	2			22	31
06:00	49	135	7		8	58	14	5	91			6	57	96
07:00	81	244	36		32	132	61	8	258	30		33	105	146
08:00	81	261	39		17	103	64	6	195	2		12	91	131
09:00	95	232	25		18	77	47	10	180	8		14	68	127
10:00	79	243	20	1	19	104	68	10	206	6		19	70	101
11:00	84	281	17		26	86	83	10	223	12		16	77	116
12:00	99	293	31	1	16	79	75	18	206	10		13	78	125
13:00	78	263	34		16	103	82	9	212	12		8	89	105
14:00	95	269	31		25	107	70	13	268	16	1	19	111	154
15:00	106	339	50		20	109	82	17	274	10		44	129	165
16:00	61	176	23		52	147	29	3	245	8		22	112	124
17:00	53	185	20		56	105	26	9	190	11		14	67	99
18:00	52	123	23		37	92	10	6	163	5	1	11	50	71
19:00	32	84	31		17	40	6	1	79	4		26	46	62
20:00	13	54	12		17	46	4	1	93	5		12	26	44
21:00	8	27	8		4	20	4	2	79	1		4	20	21
22:00	5	14	5		5	16	2		34	1		3	14	22
23:00	2	8	1		2	11	1		24			1	14	8
<b>Total</b>	<b>1091</b>	<b>3300</b>	<b>418</b>	<b>2</b>	<b>399</b>	<b>1461</b>	<b>736</b>	<b>133</b>	<b>3131</b>	<b>143</b>	<b>2</b>	<b>285</b>	<b>1272</b>	<b>1770</b>



# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/9/2019

	Northbound				Eastbound			Southbound				Westbound			
	R	T	L	U	R	T	L	R	T	L	U	R	T	L	U
00:00	4	12	2		5	11	2	2	36			1	5	8	
01:00	1	12	1		1	4			32				6	8	
02:00		6				3			10				2	4	
03:00	3	3				1		1	10			1	2	2	
04:00	8	5			3	10			11	1			7	10	
05:00	8	13			1	11	1		19			1	11	10	
06:00	40	54	2		7	24	3	1	40	1		3	18	32	
07:00	34	127	8		5	42	7	7	113	5		8	51	60	1
08:00	58	173	18		19	75	21	6	210	11		13	72	109	
09:00	70	227	22		19	91	30	8	176	16		18	104	145	
10:00	69	279	29	2	20	101	24	8	187	11		10	97	129	
11:00	84	292	24		26	133	34	11	207	16	1	20	83	128	
12:00	93	274	17		25	111	32	10	200	16		25	88	120	
13:00	81	273	27		15	130	35	10	203	7		15	80	143	
14:00	90	278	26		32	109	36	8	205	16		31	75	108	
15:00	90	261	39		9	87	21	7	172	13		16	72	118	
16:00	54	158	12		17	76	23	8	205	8		5	64	108	
17:00	53	102	15		26	72	17	12	171	8		7	31	73	
18:00	36	78	5		11	47	17	5	151	8		7	32	49	
19:00	31	68	11		16	36	10	4	107	4		6	32	65	
20:00	16	40	6		15	27	2	4	89	3		1	34	48	
21:00	16	32	5		6	29	9	5	108	3		5	18	33	
22:00	8	30	4		7	25	4	2	79	2		4	23	37	
23:00	8	22	3		5	15	4	2	45	1		3	16	14	
<b>Total</b>	<b>955</b>	<b>2819</b>	<b>276</b>	<b>2</b>	<b>290</b>	<b>1270</b>	<b>332</b>	<b>121</b>	<b>2786</b>	<b>150</b>	<b>1</b>	<b>200</b>	<b>1023</b>	<b>1561</b>	<b>1</b>



# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/7/2023

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00	2	6	1		1	6			10				4	10
01:00	2	2	1		2	1			7				1	2
02:00	1	7	2			1	1		5	1			3	3
03:00	2	11	1		1				3			1	1	4
04:00	1	23	1		1	3		1	12			1	6	14
05:00	10	54	2		6	14		1	42	1		1	16	40
06:00	58	93	8		9	73	4	2	79	5		4	46	93
07:00	102	175	12		46	132	12	11	151	11		9	100	182
08:00	121	254	53	3	49	181	11	12	219	25		14	116	180
09:00	135	201	39		28	104	14	6	175	10		16	99	177
10:00	119	235	34	1	21	110	11	8	170	19		17	82	152
11:00	128	249	39	3	41	136	20	9	185	17		25	92	175
12:00	128	296	31		39	105	21	5	210	11		21	94	164
13:00	130	215	33	2	26	121	14	11	206	7		26	89	149
14:00	108	239	46	1	35	128	11	16	192	11		26	118	141
15:00	143	267	70	2	48	133	29	9	258	14	1	38	159	214
16:00	133	287	31		37	127	22	5	202	7		11	155	149
17:00	93	298	22		40	130	16	7	166	15		20	84	113
18:00	67	219	18		31	76	19	2	113	9	1	8	57	73
19:00	46	126	6		21	45	10	3	102	8		6	23	52
20:00	37	92	7		11	36	6	3	82	2		5	34	47
21:00	17	57	2		10	22	5	1	72	3		1	24	33
22:00	10	27	2		3	14	3	1	34	1			11	13
23:00	5	17			2	4	1		14				11	23
<b>Total</b>	<b>1598</b>	<b>3450</b>	<b>461</b>	<b>12</b>	<b>508</b>	<b>1702</b>	<b>230</b>	<b>113</b>	<b>2709</b>	<b>177</b>	<b>2</b>	<b>250</b>	<b>1425</b>	<b>2203</b>



# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/8/2023

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00	2	6				3	2	1	10				3	8
01:00	1	7							4					2
02:00		4					2		6	2			2	1
03:00	3	9			2				2				1	3
04:00	2	28	1						15				5	17
05:00	17	49			9	12		2	27	2		1	18	47
06:00	65	89	8		8	88	1	5	85	3		5	50	88
07:00	95	192	23		30	134	14	29	183	15		14	114	185
08:00	126	292	53	1	39	202	12	24	321	31		12	85	162
09:00	88	232	51	2	21	100	17	11	153	14		21	79	143
10:00	121	223	24		32	105	16	5	183	8		12	98	168
11:00	121	256	25	1	36	103	21	9	209	11	1	9	104	157
12:00	146	278	29		40	100	14	7	228	10		11	100	187
13:00	125	223	34		23	114	21	7	218	14		18	105	155
14:00	122	212	41		36	115	23	11	191	12	1	28	127	222
15:00	115	272	66		50	144	29	9	256	22		31	155	213
16:00	130	288	32		32	138	24	11	239	16		13	132	137
17:00	84	322	28		38	117	27	3	163	12		11	101	109
18:00	55	220	13		36	64	17	6	124	9		9	43	71
19:00	49	116	13		21	40	10	2	106	1		4	40	52
20:00	38	99	6		15	38	13	1	77	4		2	20	39
21:00	17	59	2		8	22	5	3	70	4		1	25	35
22:00	12	31	1		7	10	1	1	32				15	16
23:00	8	18				7	1		13				9	23
<b>Total</b>	<b>1542</b>	<b>3525</b>	<b>450</b>	<b>4</b>	<b>483</b>	<b>1656</b>	<b>270</b>	<b>147</b>	<b>2915</b>	<b>190</b>	<b>2</b>	<b>202</b>	<b>1431</b>	<b>2240</b>





# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/9/2023

	Northbound				Eastbound			Southbound			Westbound		
	R	T	L	U	R	T	L	R	T	L	R	T	L
00:00	2	6	1		2	5			12			2	7
01:00	3	5			2	3			6			1	5
02:00	1	4				1	1		4	1		4	2
03:00	3	10							5			3	2
04:00	1	21	1			1			10	1		2	15
05:00	7	46	4		13	8	2	3	33	1		12	42
06:00	40	79	7		2	67	5	4	75	1	2	52	80
07:00	98	185	17		28	78	6	8	164	16	7	84	167
08:00	132	215	47	3	62	174	14	8	233	32	14	105	140
09:00	106	212	25	1	19	106	14	7	169	11	13	82	134
10:00	101	233	28		20	97	11	7	168	10	13	79	138
11:00	106	267	38		24	85	17	11	185	15	7	94	148
12:00	123	251	34		25	111	15	16	208	9	13	88	147
13:00	107	214	33	1	28	105	6	6	215	10	15	103	150
14:00	119	225	40	1	38	124	21	12	198	8	21	118	164
15:00	120	255	67	3	47	118	26	10	216	14	40	131	192
16:00	102	257	27		40	125	38	6	157	9	20	126	130
17:00	93	288	20		39	95	19	5	140	9	10	94	108
18:00	64	220	24		37	80	18	5	100	11	10	40	64
19:00	34	144	24		22	42	8	2	70	3	5	27	56
20:00	29	89	14		9	30	10	4	72	5	4	28	44
21:00	12	67	3		12	25	10	6	65	1	2	18	53
22:00	12	34	8		5	17	5	2	46	3		18	34
23:00	3	22	1		4	11	2	1	24		1	8	19
<b>Total</b>	<b>1418</b>	<b>3349</b>	<b>463</b>	<b>9</b>	<b>478</b>	<b>1508</b>	<b>248</b>	<b>123</b>	<b>2575</b>	<b>170</b>	<b>197</b>	<b>1319</b>	<b>2041</b>



# Turning Movement Counts

**Intersection** South & Lafayette

**Date** 11/11/2023

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00	6	16	1		3	5	2	1	33	1			8	10
01:00	3	14			1	5			20			1		5
02:00	1	5			2	1			11	2		1	5	4
03:00	3	2				1	1				2			4
04:00	1	1						2	4	1			1	3
05:00	5	9			2	2	1		8				9	11
06:00	37	24	4	1	3	22	1		27			1	19	47
07:00	32	89	8		8	32	2	14	106	2		4	30	82
08:00	62	144	20	1	30	70	6	9	192	5		8	40	90
09:00	78	214	29		20	83	12	9	187	9		11	80	135
10:00	118	233	23		24	103	18	14	180	6		15	109	151
11:00	126	297	26	4	45	123	26	6	207	5		16	111	178
12:00	95	286	28		34	131	17	6	165	17		12	72	141
13:00	99	264	23		22	108	22	10	209	9		16	82	144
14:00	117	246	35		19	137	23	11	178	13	1	15	84	136
15:00	83	261	19		21	135	19	2	187	31		20	81	151
16:00	82	237	22		41	99	19	7	158	11		10	67	113
17:00	54	199	8		49	79	19	7	126	10		3	47	91
18:00	43	180	7		29	60	14	3	91	5		8	40	78
19:00	51	140	10		28	43	8	3	77	4		1	22	58
20:00	27	117	11		20	32	11	1	86	4		2	22	46
21:00	19	65	4		7	22	7	9	82	3		4	48	58
22:00	10	47	4		4	36	6	3	60	4		4	24	43
23:00	8	39			4	12	4		46			2	13	32
<b>Total</b>	<b>1160</b>	<b>3129</b>	<b>282</b>	<b>6</b>	<b>416</b>	<b>1341</b>	<b>238</b>	<b>117</b>	<b>2440</b>	<b>144</b>	<b>1</b>	<b>154</b>	<b>1014</b>	<b>1811</b>

**APPENDIX D**  
Capacity Analysis Methodology

## CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).<sup>1</sup> The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

### Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. A v/c ratio of  $\geq 1.00$  represents conditions when the traffic signal cycle capacity is fully utilized and indicates a capacity failure. The level-of-service criteria for signalized intersections are shown in Table A-1.

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<sup>1</sup>*Highway Capacity Manual, 6<sup>TH</sup> Edition: A Guide for Multimodal Mobility Analysis*. Washington, D.C.: Transportation Research Board, 2016.

## Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay at an unsignalized intersection is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a movement's capacity at an intersection. A v/c ratio of  $\geq 1.00$  represents conditions when the movement is fully utilized and indicates a capacity failure. The capacity of the movements is based on the distribution of gaps in the major street traffic stream, the selection of gaps to complete the desired movement, and the follow-up headways for each driver in the queue. When an unsignalized intersection is located within 0.25 miles of a signalized intersection, traffic flows may not be random and some platoon structure may exist, thereby affecting the minor street operations. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

**TABLE A-1**  
Level-of-Service Criteria for Intersections

Level of Service	Signalized Intersection Criteria	Unsignalized Intersection Criteria	V/C Ratio >1.00 <sup>a</sup>
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle)	
A	$\leq 10$	$\leq 10$	F
B	>10 and $\leq 20$	>10 and $\leq 15$	F
C	>20 and $\leq 35$	>15 and $\leq 25$	F
D	>35 and $\leq 55$	>25 and $\leq 35$	F
E	>55 and $\leq 80$	>35 and $\leq 50$	F
F	>80	>50	F

Note: <sup>a</sup>For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: *Highway Capacity Manual, 6<sup>th</sup> Edition: A Guide for Multimodal Mobility Analysis*. Washington, D.C.: Transportation Research Board, 2016. Exhibit 19-8, Pg. 19-16.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches.

**APPENDIX E**  
Capacity Analysis Worksheets

101: US Route 1 Bypass & Lafayette Road  
2023 Existing Conditions Weekday AM Peak





















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	410	94	799	610	140	824
Future Volume (vph)	410	94	799	610	140	824
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3352	1706	3288	1471	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3352	1706	3288	1471	1736	3471
Peak-hour factor, PHF	0.78	0.78	0.90	0.90	0.84	0.84
Adj. Flow (vph)	526	121	888	678	167	981
RTOR Reduction (vph)	0	65	0	277	0	0
Lane Group Flow (vph)	526	56	888	401	167	981
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	22.8	39.9	28.1	50.9	17.1	51.2
Effective Green, g (s)	22.8	39.9	28.1	50.9	17.1	51.2
Actuated g/C Ratio	0.27	0.46	0.33	0.59	0.20	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	888	910	1074	973	345	2066
v/s Ratio Prot	c0.16	0.01	c0.27	0.11	0.10	c0.28
v/s Ratio Perm		0.02		0.16		
v/c Ratio	0.59	0.06	0.83	0.41	0.48	0.47
Uniform Delay, d1	27.5	12.7	26.7	9.5	30.5	9.8
Progression Factor	1.00	1.00	1.00	1.00	0.79	0.75
Incremental Delay, d2	1.2	0.0	5.6	0.4	1.3	0.7
Delay (s)	28.8	12.8	32.3	9.9	25.5	8.0
Level of Service	C	B	C	A	C	A
Approach Delay (s)	25.8		22.6			10.6
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

102: US Route 1 Bypass & Greenleaf Avenue  
 2023 Existing Conditions Weekday AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	33	44	8	34	177	21	855	17	74	912	104
Future Volume (vph)	91	33	44	8	34	177	21	855	17	74	912	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.89		1.00	1.00		1.00	0.98	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1673		1662	3314		1694	3336	
Flt Permitted		0.56			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		989			1652		1662	3314		1694	3336	
Peak-hour factor, PHF	0.82	0.82	0.82	0.88	0.88	0.88	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	111	40	54	9	39	201	23	929	18	76	940	107
RTOR Reduction (vph)	0	16	0	0	155	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	189	0	0	94	0	23	946	0	76	1040	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		19.6			19.6		3.6	39.6		8.8	44.8	
Effective Green, g (s)		19.6			19.6		3.6	39.6		8.8	44.8	
Actuated g/C Ratio		0.23			0.23		0.04	0.46		0.10	0.52	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		225			376		69	1525		173	1737	
v/s Ratio Prot							0.01	0.29		c0.04	c0.31	
v/s Ratio Perm		c0.19			0.06							
v/c Ratio		0.84			0.25		0.33	0.62		0.44	0.60	
Uniform Delay, d1		31.7			27.2		40.0	17.5		36.3	14.3	
Progression Factor		1.00			1.00		0.39	1.71		1.00	1.00	
Incremental Delay, d2		23.9			0.7		2.5	0.7		2.4	1.5	
Delay (s)		55.6			27.9		18.2	30.8		38.7	15.9	
Level of Service		E			C		B	C		D	B	
Approach Delay (s)		55.6			27.9			30.5			17.4	
Approach LOS		E			C			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			26.5				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			78.3%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												



201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2023 Existing Conditions Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑
Traffic Vol, veh/h	0	1	1408	3	0	1203
Future Vol, veh/h	0	1	1408	3	0	1203
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	25	25	91	91	89	89
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	0	4	1547	3	0	1352

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	776	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-
Pot Cap-1 Maneuver	0	265	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	265	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	265
HCM Lane V/C Ratio	-	-	0.015
HCM Control Delay (s)	-	-	18.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0

202: Lafayette Road & Ledgewood Drive  
 2023 Existing Conditions Weekday AM Peak

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	42	21	723	27	26	462
Future Vol, veh/h	42	21	723	27	26	462
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	71	71	80	80	80	80
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	59	30	904	34	33	578

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1224	927	0	0	944
Stage 1	927	-	-	-	-
Stage 2	297	-	-	-	-
Critical Hdwy	6.51	6.46	-	-	4.145
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	6.46	-	-	-	-
Follow-up Hdwy	3.688	3.338	-	-	2.2285
Pot Cap-1 Maneuver	187	305	-	-	719
Stage 1	334	-	-	-	-
Stage 2	664	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	173	303	-	-	715
Mov Cap-2 Maneuver	173	-	-	-	-
Stage 1	332	-	-	-	-
Stage 2	619	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.1	0	0.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	202	715
HCM Lane V/C Ratio	-	-	0.439	0.045
HCM Control Delay (s)	-	-	36.1	10.3
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q(veh)	-	-	2.1	0.1

203: West Site Driveway & Ledgewood Drive  
 2023 Existing Conditions Weekday AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	36	18	1	63	0	0
Future Vol, veh/h	36	18	1	63	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	67	67	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	43	22	1	94	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	66	0	151
Stage 1	-	-	-	-	55
Stage 2	-	-	-	-	96
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1523	-	846
Stage 1	-	-	-	-	973
Stage 2	-	-	-	-	933
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1522	-	844
Mov Cap-2 Maneuver	-	-	-	-	844
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	932

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1522	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
2023 Existing Conditions Weekday AM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	30	6	7	54	10	3
Future Vol, veh/h	30	6	7	54	10	3
Conflicting Peds, #/hr	0	3	3	0	1	23
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	34	34
Heavy Vehicles, %	7	7	4	4	0	0
Mvmt Flow	43	9	9	72	29	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	55	0	142 74
Stage 1	-	-	-	-	51 -
Stage 2	-	-	-	-	91 -
Critical Hdwy	-	-	4.14	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.236	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1537	-	856 993
Stage 1	-	-	-	-	977 -
Stage 2	-	-	-	-	938 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1533	-	847 971
Mov Cap-2 Maneuver	-	-	-	-	847 -
Stage 1	-	-	-	-	974 -
Stage 2	-	-	-	-	931 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	873	-	-	1533	-
HCM Lane V/C Ratio	0.044	-	-	0.006	-
HCM Control Delay (s)	9.3	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2023 Existing Conditions Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1609	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1609	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1609	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
 2023 Existing Conditions Weekday PM Peak





















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑	↔	↔	↑↑
Traffic Volume (vph)	479	37	1112	531	89	946
Future Volume (vph)	479	37	1112	531	89	946
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1494	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1494	1787	3574
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.95	0.95
Adj. Flow (vph)	521	40	1196	571	94	996
RTOR Reduction (vph)	0	27	0	164	0	0
Lane Group Flow (vph)	521	13	1196	407	94	996
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	31.9	45.5	65.3	97.2	13.6	84.9
Effective Green, g (s)	31.9	45.5	65.3	97.2	13.6	84.9
Actuated g/C Ratio	0.23	0.33	0.47	0.70	0.10	0.61
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	784	569	1590	1109	174	2182
v/s Ratio Prot	c0.15	0.00	c0.35	0.08	0.05	c0.28
v/s Ratio Perm		0.01		0.19		
v/c Ratio	0.66	0.02	0.75	0.37	0.54	0.46
Uniform Delay, d1	48.7	31.7	30.2	8.5	59.7	14.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	2.2	0.3	4.2	0.7
Delay (s)	51.0	31.7	32.4	8.7	64.0	15.3
Level of Service	D	C	C	A	E	B
Approach Delay (s)	49.7		24.8			19.5
Approach LOS	D		C			B

Intersection Summary

HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	139.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 1 Bypass & Greenleaf Avenue  
2023 Existing Conditions Weekday PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	18	40	3	29	103	26	1116	7	63	992	78
Future Volume (vph)	171	18	40	3	29	103	26	1116	7	63	992	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1771			1686		1728	3452		1728	3417	
Flt Permitted		0.61			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1112			1675		1728	3452		1728	3417	
Peak-hour factor, PHF	0.72	0.72	0.72	0.71	0.71	0.71	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	238	25	56	4	41	145	28	1213	8	66	1044	82
RTOR Reduction (vph)	0	8	0	0	100	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	311	0	0	90	0	28	1220	0	66	1122	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		34.1			34.1		5.6	49.0		8.9	52.3	
Effective Green, g (s)		34.1			34.1		5.6	49.0		8.9	52.3	
Actuated g/C Ratio		0.31			0.31		0.05	0.45		0.08	0.48	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		344			519		87	1537		139	1624	
v/s Ratio Prot							0.02	c0.35		c0.04	c0.33	
v/s Ratio Perm		c0.28			0.05							
v/c Ratio		0.91			0.17		0.32	0.79		0.47	0.69	
Uniform Delay, d1		36.4			27.7		50.4	26.2		48.3	22.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		26.5			0.3		2.9	3.4		3.5	2.4	
Delay (s)		62.9			28.0		53.3	29.5		51.8	25.0	
Level of Service		E			C		D	C		D	C	
Approach Delay (s)		62.9			28.0			30.1			26.5	
Approach LOS		E			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			32.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			78.6%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2023 Existing Conditions Weekday PM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↙ ↚	↗ ↘ ↙ ↚			↗ ↘
Traffic Vol, veh/h	0	24	1619	1	0	1425
Future Vol, veh/h	0	24	1619	1	0	1425
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	75	75	92	92	92	92
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	32	1760	1	0	1549

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	881	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	223	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	223	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	223
HCM Lane V/C Ratio	-	-	0.143
HCM Control Delay (s)	-	-	23.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5



202: Lafayette Road & Ledgewood Drive  
 2023 Existing Conditions Weekday PM Peak

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	28	20	567	53	44	488
Future Vol, veh/h	28	20	567	53	44	488
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	67	67	92	92	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	42	30	616	58	49	542

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	961	646	0	0	675
Stage 1	646	-	-	-	-
Stage 2	315	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	276	458	-	-	920
Stage 1	475	-	-	-	-
Stage 2	658	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	255	458	-	-	919
Mov Cap-2 Maneuver	255	-	-	-	-
Stage 1	475	-	-	-	-
Stage 2	608	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	313	919
HCM Lane V/C Ratio	-	-	0.229	0.053
HCM Control Delay (s)	-	-	19.9	9.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0.2

203: West Site Driveway & Ledgewood Drive  
 2023 Existing Conditions Weekday PM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	46	1	48	0	0
Future Vol, veh/h	52	46	1	48	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	65	65	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	69	61	2	74	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	131	0	179
Stage 1	-	-	-	-	101
Stage 2	-	-	-	-	78
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1467	-	815
Stage 1	-	-	-	-	928
Stage 2	-	-	-	-	950
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1466	-	813
Mov Cap-2 Maneuver	-	-	-	-	813
Stage 1	-	-	-	-	927
Stage 2	-	-	-	-	949

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1466	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2023 Existing Conditions Weekday PM Peak

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	7	0	36	13	1
Future Vol, veh/h	46	7	0	36	13	1
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	84	84	69	69
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	56	9	0	43	19	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	67	0	106
Stage 1	-	-	-	-	63
Stage 2	-	-	-	-	43
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1528	-	897
Stage 1	-	-	-	-	965
Stage 2	-	-	-	-	985
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1525	-	895
Mov Cap-2 Maneuver	-	-	-	-	895
Stage 1	-	-	-	-	963
Stage 2	-	-	-	-	985

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	902	-	-	1525	-
HCM Lane V/C Ratio	0.022	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2023 Existing Conditions Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1615	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1615	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A



















Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1615	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
 2023 Existing Conditions Saturday Midday Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↶	↶	↶↶	↷	↷	↶↶
Traffic Volume (vph)	399	35	963	453	80	918
Future Volume (vph)	399	35	963	453	80	918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1515	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1515	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.88	0.88
Adj. Flow (vph)	420	37	1024	482	91	1043
RTOR Reduction (vph)	0	25	0	179	0	0
Lane Group Flow (vph)	420	12	1024	303	91	1043
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	19.6	27.6	34.4	54.0	8.0	48.4
Effective Green, g (s)	19.6	27.6	34.4	54.0	8.0	48.4
Actuated g/C Ratio	0.23	0.32	0.40	0.63	0.09	0.56
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	778	558	1354	1056	167	2031
v/s Ratio Prot	c0.12	0.00	c0.30	0.07	0.05	c0.29
v/s Ratio Perm		0.00		0.13		
v/c Ratio	0.54	0.02	0.76	0.29	0.54	0.51
Uniform Delay, d1	29.2	20.0	22.2	7.3	37.3	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.31	1.13
Incremental Delay, d2	0.9	0.0	2.6	0.2	3.7	0.8
Delay (s)	30.2	20.0	24.8	7.5	52.6	13.8
Level of Service	C	B	C	A	D	B
Approach Delay (s)	29.3		19.3			16.9
Approach LOS	C		B			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			19.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			58.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

102: US Route 1 Bypass & Greenleaf Avenue  
 2023 Existing Conditions Saturday Midday Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	11	47	6	25	125	22	970	7	49	946	83
Future Volume (vph)	97	11	47	6	25	125	22	970	7	49	946	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749			1674		1728	3451		1711	3380	
Flt Permitted		0.64			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1160			1651		1728	3451		1711	3380	
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	115	13	56	7	27	137	22	990	7	57	1100	97
RTOR Reduction (vph)	0	20	0	0	110	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	164	0	0	61	0	22	997	0	57	1192	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.0			17.0		3.5	44.6		6.4	47.5	
Effective Green, g (s)		17.0			17.0		3.5	44.6		6.4	47.5	
Actuated g/C Ratio		0.20			0.20		0.04	0.52		0.07	0.55	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		229			326		70	1789		127	1866	
v/s Ratio Prot							0.01	0.29		c0.03	c0.35	
v/s Ratio Perm		c0.14			0.04							
v/c Ratio		0.72			0.19		0.31	0.56		0.45	0.64	
Uniform Delay, d1		32.2			28.7		40.1	14.0		38.1	13.3	
Progression Factor		1.00			1.00		1.31	0.75		1.00	1.00	
Incremental Delay, d2		10.8			0.6		2.5	0.5		3.4	1.7	
Delay (s)		43.1			29.3		55.1	11.0		41.5	15.0	
Level of Service		D			C		E	B		D	B	
Approach Delay (s)		43.1			29.3			12.0			16.2	
Approach LOS		D			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			17.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			73.6%				ICU Level of Service				D	
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2023 Existing Conditions Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↙ ↘	↗ ↘ ↙ ↘			↗ ↘
Traffic Vol, veh/h	0	29	1387	6	0	1300
Future Vol, veh/h	0	29	1387	6	0	1300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	69	69	93	93	87	87
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	42	1491	6	0	1494

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	749	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-
Pot Cap-1 Maneuver	0	277	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %					
Mov Cap-1 Maneuver	-	277	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	277
HCM Lane V/C Ratio	-	-	0.152
HCM Control Delay (s)	-	-	20.3
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

202: Lafayette Road & Ledgewood Drive  
 2023 Existing Conditions Saturday Midday Peak

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	22	474	58	46	409
Future Vol, veh/h	25	22	474	58	46	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	56	56	82	82	87	87
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	45	39	578	71	53	470

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	908	614	0	0	649
Stage 1	614	-	-	-	-
Stage 2	294	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	297	479	-	-	941
Stage 1	493	-	-	-	-
Stage 2	676	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	274	479	-	-	941
Mov Cap-2 Maneuver	274	-	-	-	-
Stage 1	493	-	-	-	-
Stage 2	625	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	343	941
HCM Lane V/C Ratio	-	-	0.245	0.056
HCM Control Delay (s)	-	-	18.9	9.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0.2



203: West Site Driveway & Ledgewood Drive  
 2023 Existing Conditions Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	63	1	47	0	0
Future Vol, veh/h	41	63	1	47	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	53	82	1	61	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	135	0	157
Stage 1	-	-	-	-	94
Stage 2	-	-	-	-	63
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1462	-	839
Stage 1	-	-	-	-	935
Stage 2	-	-	-	-	965
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1462	-	838
Mov Cap-2 Maneuver	-	-	-	-	838
Stage 1	-	-	-	-	935
Stage 2	-	-	-	-	964

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1462	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2023 Existing Conditions Saturday Midday Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	34	7	0	34	16	1
Future Vol, veh/h	34	7	0	34	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	75	75	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	8	0	45	23	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	48	0	89
Stage 1	-	-	-	-	44
Stage 2	-	-	-	-	45
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1572	-	917
Stage 1	-	-	-	-	984
Stage 2	-	-	-	-	983
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1572	-	917
Mov Cap-2 Maneuver	-	-	-	-	917
Stage 1	-	-	-	-	984
Stage 2	-	-	-	-	983

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	923	-	-	1572	-
HCM Lane V/C Ratio	0.026	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2023 Existing Conditions Saturday Midday Peak
















Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028



















Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1635	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2025 No-Build Weekday AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	421	96	825	634	143	845
Future Volume (vph)	421	96	825	634	143	845
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3352	1706	3288	1471	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3352	1706	3288	1471	1736	3471
Peak-hour factor, PHF	0.78	0.78	0.90	0.90	0.84	0.84
Adj. Flow (vph)	540	123	917	704	170	1006
RTOR Reduction (vph)	0	64	0	292	0	0
Lane Group Flow (vph)	540	59	917	412	170	1006
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	23.5	41.2	26.8	50.3	17.7	50.5
Effective Green, g (s)	23.5	41.2	26.8	50.3	17.7	50.5
Actuated g/C Ratio	0.27	0.48	0.31	0.58	0.21	0.59
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	915	936	1024	962	357	2038
v/s Ratio Prot	c0.16	0.01	c0.28	0.12	0.10	c0.29
v/s Ratio Perm		0.02		0.16		
v/c Ratio	0.59	0.06	0.90	0.43	0.48	0.49
Uniform Delay, d1	27.1	12.0	28.3	9.9	30.1	10.3
Progression Factor	1.00	1.00	1.00	1.00	0.75	0.59
Incremental Delay, d2	1.2	0.0	10.4	0.4	1.2	0.7
Delay (s)	28.3	12.1	38.7	10.3	23.8	6.8
Level of Service	C	B	D	B	C	A
Approach Delay (s)	25.3		26.4			9.3
Approach LOS	C		C			A
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			57.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

102: US Route 1 Bypass & Greenleaf Avenue  
2025 No-Build Weekday AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	34	45	8	35	180	32	872	17	76	935	106
Future Volume (vph)	93	34	45	8	35	180	32	872	17	76	935	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.89		1.00	1.00		1.00	0.98	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1673		1662	3314		1694	3336	
Flt Permitted		0.55			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		982			1652		1662	3314		1694	3336	
Peak-hour factor, PHF	0.82	0.82	0.82	0.88	0.88	0.88	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	113	41	55	9	40	205	35	948	18	78	964	109
RTOR Reduction (vph)	0	16	0	0	158	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	193	0	0	96	0	35	965	0	78	1066	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		19.9			19.9		5.6	39.2		8.9	42.5	
Effective Green, g (s)		19.9			19.9		5.6	39.2		8.9	42.5	
Actuated g/C Ratio		0.23			0.23		0.07	0.46		0.10	0.49	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		227			382		108	1510		175	1648	
v/s Ratio Prot							0.02	0.29		c0.05	c0.32	
v/s Ratio Perm		c0.20			0.06							
v/c Ratio		0.85			0.25		0.32	0.64		0.45	0.65	
Uniform Delay, d1		31.6			27.0		38.4	18.0		36.2	16.2	
Progression Factor		1.00			1.00		0.38	1.67		1.00	1.00	
Incremental Delay, d2		25.3			0.7		1.4	0.7		2.5	2.0	
Delay (s)		56.9			27.7		15.8	30.8		38.7	18.1	
Level of Service		E			C		B	C		D	B	
Approach Delay (s)		56.9			27.7			30.2			19.5	
Approach LOS		E			C			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			27.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.4%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2025 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑
Traffic Vol, veh/h	0	1	1458	3	0	1234
Future Vol, veh/h	0	1	1458	3	0	1234
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	25	25	91	91	89	89
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	0	4	1602	3	0	1387

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	804	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-
Pot Cap-1 Maneuver	0	253	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %					
Mov Cap-1 Maneuver	-	253	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	253
HCM Lane V/C Ratio	-	-	0.016
HCM Control Delay (s)	-	-	19.5
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0

202: Lafayette Road & Ledgewood Drive  
 2025 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔		↔↔↔	
Traffic Vol, veh/h	43	21	748	29	27	474
Future Vol, veh/h	43	21	748	29	27	474
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	71	71	80	80	80	80
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	61	30	935	36	34	593

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1264	959	0	0	977
Stage 1	959	-	-	-	-
Stage 2	305	-	-	-	-
Critical Hdwy	6.51	6.46	-	-	4.145
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	6.46	-	-	-	-
Follow-up Hdwy	3.688	3.338	-	-	2.2285
Pot Cap-1 Maneuver	177	291	-	-	699
Stage 1	322	-	-	-	-
Stage 2	658	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	163	289	-	-	695
Mov Cap-2 Maneuver	163	-	-	-	-
Stage 1	320	-	-	-	-
Stage 2	610	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40	0	0.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	190	695
HCM Lane V/C Ratio	-	-	0.474	0.049
HCM Control Delay (s)	-	-	40	10.4
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q(veh)	-	-	2.3	0.2

203: West Site Driveway & Ledgewood Drive  
 2025 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	19	1	64	0	0
Future Vol, veh/h	37	19	1	64	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	67	67	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	45	23	1	96	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	69	0	156 58
Stage 1	-	-	-	-	58 -
Stage 2	-	-	-	-	98 -
Critical Hdwy	-	-	4.14	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.236	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1519	-	840 1014
Stage 1	-	-	-	-	970 -
Stage 2	-	-	-	-	931 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1518	-	838 1013
Mov Cap-2 Maneuver	-	-	-	-	838 -
Stage 1	-	-	-	-	969 -
Stage 2	-	-	-	-	930 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1518	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-



204: East Site Driveway & Ledgewood Drive  
 2025 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	6	7	55	10	3
Future Vol, veh/h	31	6	7	55	10	3
Conflicting Peds, #/hr	0	3	3	0	1	23
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	34	34
Heavy Vehicles, %	7	7	4	4	0	0
Mvmt Flow	45	9	9	73	29	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	57	0	145
Stage 1	-	-	-	-	53
Stage 2	-	-	-	-	92
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1535	-	852
Stage 1	-	-	-	-	975
Stage 2	-	-	-	-	937
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1531	-	843
Mov Cap-2 Maneuver	-	-	-	-	843
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	930

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	-	-	1531	-
HCM Lane V/C Ratio	0.044	-	-	0.006	-
HCM Control Delay (s)	9.3	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2025 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1609	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1609	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1609	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2025 No-Build Weekday PM Peak





















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑	↔	↔	↑↑
Traffic Volume (vph)	498	38	1140	548	91	975
Future Volume (vph)	498	38	1140	548	91	975
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1494	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1494	1787	3574
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.95	0.95
Adj. Flow (vph)	541	41	1226	589	96	1026
RTOR Reduction (vph)	0	27	0	165	0	0
Lane Group Flow (vph)	541	14	1226	424	96	1026
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	33.1	46.8	64.0	97.1	13.7	83.7
Effective Green, g (s)	33.1	46.8	64.0	97.1	13.7	83.7
Actuated g/C Ratio	0.24	0.34	0.46	0.70	0.10	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	813	585	1559	1108	176	2152
v/s Ratio Prot	c0.16	0.00	c0.36	0.09	0.05	c0.29
v/s Ratio Perm		0.01		0.19		
v/c Ratio	0.67	0.02	0.79	0.38	0.55	0.48
Uniform Delay, d1	47.9	30.8	31.7	8.6	59.7	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	2.9	0.3	4.3	0.8
Delay (s)	50.2	30.8	34.6	8.9	64.0	16.2
Level of Service	D	C	C	A	E	B
Approach Delay (s)	48.8		26.2			20.3
Approach LOS	D		C			C

Intersection Summary

HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	139.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 1 Bypass & Greenleaf Avenue  
2025 No-Build Weekday PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	19	41	3	29	105	27	1144	7	64	1022	79
Future Volume (vph)	174	19	41	3	29	105	27	1144	7	64	1022	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1771			1685		1728	3452		1728	3418	
Flt Permitted		0.60			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1109			1674		1728	3452		1728	3418	
Peak-hour factor, PHF	0.72	0.72	0.72	0.71	0.71	0.71	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	242	26	57	4	41	148	29	1243	8	67	1076	83
RTOR Reduction (vph)	0	8	0	0	101	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	317	0	0	92	0	29	1250	0	67	1155	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		34.6			34.6		5.6	48.5		8.9	51.8	
Effective Green, g (s)		34.6			34.6		5.6	48.5		8.9	51.8	
Actuated g/C Ratio		0.31			0.31		0.05	0.44		0.08	0.47	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		348			526		87	1522		139	1609	
v/s Ratio Prot							0.02	c0.36		c0.04	c0.34	
v/s Ratio Perm		c0.29			0.05							
v/c Ratio		0.91			0.17		0.33	0.82		0.48	0.72	
Uniform Delay, d1		36.2			27.3		50.4	27.0		48.3	23.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		27.6			0.3		3.1	4.2		3.6	2.8	
Delay (s)		63.9			27.7		53.5	31.1		51.9	26.0	
Level of Service		E			C		D	C		D	C	
Approach Delay (s)		63.9			27.7			31.6			27.5	
Approach LOS		E			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			33.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2025 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘
Traffic Vol, veh/h	0	24	1664	1	0	1473
Future Vol, veh/h	0	24	1664	1	0	1473
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	75	75	92	92	92	92
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	32	1809	1	0	1601

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	905	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	214	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	214	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	214
HCM Lane V/C Ratio	-	-	0.15
HCM Control Delay (s)	-	-	24.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

202: Lafayette Road & Ledgewood Drive  
 2025 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			↑↑↑
Traffic Vol, veh/h	29	20	584	55	46	506
Future Vol, veh/h	29	20	584	55	46	506
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	67	67	92	92	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	43	30	635	60	51	562

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	993	666	0	0	696
Stage 1	666	-	-	-	-
Stage 2	327	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	264	446	-	-	904
Stage 1	464	-	-	-	-
Stage 2	648	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	242	446	-	-	903
Mov Cap-2 Maneuver	242	-	-	-	-
Stage 1	464	-	-	-	-
Stage 2	595	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	298	903
HCM Lane V/C Ratio	-	-	0.245	0.057
HCM Control Delay (s)	-	-	21	9.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0.2

203: West Site Driveway & Ledgewood Drive  
2025 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	47	1	49	0	0
Future Vol, veh/h	54	47	1	49	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	65	65	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	72	63	2	75	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	136	0	184
Stage 1	-	-	-	-	105
Stage 2	-	-	-	-	79
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1461	-	810
Stage 1	-	-	-	-	924
Stage 2	-	-	-	-	949
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1460	-	808
Mov Cap-2 Maneuver	-	-	-	-	808
Stage 1	-	-	-	-	923
Stage 2	-	-	-	-	948

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1460	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2025 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	7	0	37	13	1
Future Vol, veh/h	47	7	0	37	13	1
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	84	84	69	69
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	57	9	0	44	19	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	68	0	108
Stage 1	-	-	-	-	64
Stage 2	-	-	-	-	44
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1527	-	894
Stage 1	-	-	-	-	964
Stage 2	-	-	-	-	984
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1524	-	892
Mov Cap-2 Maneuver	-	-	-	-	892
Stage 1	-	-	-	-	962
Stage 2	-	-	-	-	984

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	899	-	-	1524	-
HCM Lane V/C Ratio	0.023	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-



301: Prop. Garage Driveway & Ledgewood Drive  
 2025 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1615	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1615	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1615	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2025 No-Build Saturday Midday Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↖	↖	↕↕	↖	↖	↕↕
Traffic Volume (vph)	407	36	983	462	81	938
Future Volume (vph)	407	36	983	462	81	938
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1515	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1515	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.88	0.88
Adj. Flow (vph)	428	38	1046	491	92	1066
RTOR Reduction (vph)	0	26	0	183	0	0
Lane Group Flow (vph)	428	12	1046	308	92	1066
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	19.8	27.8	34.2	54.0	8.0	48.2
Effective Green, g (s)	19.8	27.8	34.2	54.0	8.0	48.2
Actuated g/C Ratio	0.23	0.32	0.40	0.63	0.09	0.56
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	786	562	1346	1056	167	2023
v/s Ratio Prot	c0.13	0.00	c0.31	0.07	0.05	c0.30
v/s Ratio Perm		0.01		0.14		
v/c Ratio	0.54	0.02	0.78	0.29	0.55	0.53
Uniform Delay, d1	29.1	19.8	22.6	7.3	37.3	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.31	1.14
Incremental Delay, d2	1.0	0.0	3.1	0.2	3.8	0.8
Delay (s)	30.1	19.9	25.6	7.5	52.7	14.2
Level of Service	C	B	C	A	D	B
Approach Delay (s)	29.3		19.8			17.3
Approach LOS	C		B			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			58.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

102: US Route 1 Bypass & Greenleaf Avenue  
2025 No-Build Saturday Midday Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (vph)	99	12	48	6	26	128	22	990	7	50	965	85
Future Volume (vph)	99	12	48	6	26	128	22	990	7	50	965	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1676		1728	3452		1711	3380	
Flt Permitted		0.63			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1145			1653		1728	3452		1711	3380	
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	118	14	57	7	29	141	22	1010	7	58	1122	99
RTOR Reduction (vph)	0	20	0	0	112	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	169	0	0	65	0	22	1016	0	58	1216	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.4			17.4		3.5	42.6		8.0	47.1	
Effective Green, g (s)		17.4			17.4		3.5	42.6		8.0	47.1	
Actuated g/C Ratio		0.20			0.20		0.04	0.50		0.09	0.55	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		231			334		70	1709		159	1851	
v/s Ratio Prot							0.01	0.29		c0.03	c0.36	
v/s Ratio Perm		c0.15			0.04							
v/c Ratio		0.73			0.19		0.31	0.59		0.36	0.66	
Uniform Delay, d1		32.1			28.5		40.1	15.5		36.6	13.7	
Progression Factor		1.00			1.00		1.32	0.69		1.00	1.00	
Incremental Delay, d2		12.0			0.6		2.5	0.6		1.9	1.8	
Delay (s)		44.1			29.1		55.6	11.3		38.6	15.6	
Level of Service		D			C		E	B		D	B	
Approach Delay (s)		44.1			29.1			12.3			16.6	
Approach LOS		D			C			B			B	

Intersection Summary

HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2025 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘
Traffic Vol, veh/h	0	29	1416	6	0	1326
Future Vol, veh/h	0	29	1416	6	0	1326
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	69	69	93	93	87	87
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	42	1523	6	0	1524

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	765	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	270	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	270	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	270
HCM Lane V/C Ratio	-	-	0.156
HCM Control Delay (s)	-	-	20.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

202: Lafayette Road & Ledgewood Drive  
 2025 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	26	22	484	59	47	417
Future Vol, veh/h	26	22	484	59	47	417
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	56	56	82	82	87	87
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	46	39	590	72	54	479

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	926	626	0	0	662	0
Stage 1	626	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095	-
Pot Cap-1 Maneuver	289	471	-	-	930	-
Stage 1	486	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	266	471	-	-	930	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.6	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	332	930
HCM Lane V/C Ratio	-	-	0.258	0.058
HCM Control Delay (s)	-	-	19.6	9.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1	0.2

203: West Site Driveway & Ledgewood Drive  
 2025 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	64	1	48	0	0
Future Vol, veh/h	42	64	1	48	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	55	83	1	62	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	138	0	161
Stage 1	-	-	-	-	97
Stage 2	-	-	-	-	64
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1458	-	835
Stage 1	-	-	-	-	932
Stage 2	-	-	-	-	964
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1458	-	834
Mov Cap-2 Maneuver	-	-	-	-	834
Stage 1	-	-	-	-	932
Stage 2	-	-	-	-	963

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1458	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2025 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	7	0	34	16	1
Future Vol, veh/h	35	7	0	34	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	75	75	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	42	8	0	45	23	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	50	0	91
Stage 1	-	-	-	-	46
Stage 2	-	-	-	-	45
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1570	-	914
Stage 1	-	-	-	-	982
Stage 2	-	-	-	-	983
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1570	-	914
Mov Cap-2 Maneuver	-	-	-	-	914
Stage 1	-	-	-	-	982
Stage 2	-	-	-	-	983

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	920	-	-	1570	-
HCM Lane V/C Ratio	0.026	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2025 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1635	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-





















101: US Route 1 Bypass & Lafayette Road  
2035 No-Build Weekday AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	466	106	910	698	158	933
Future Volume (vph)	466	106	910	698	158	933
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3352	1706	3288	1471	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3352	1706	3288	1471	1736	3471
Peak-hour factor, PHF	0.78	0.78	0.90	0.90	0.84	0.84
Adj. Flow (vph)	597	136	1011	776	188	1111
RTOR Reduction (vph)	0	66	0	340	0	0
Lane Group Flow (vph)	597	70	1011	436	188	1111
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.4	44.1	23.9	48.3	19.7	49.6
Effective Green, g (s)	24.4	44.1	23.9	48.3	19.7	49.6
Actuated g/C Ratio	0.28	0.51	0.28	0.56	0.23	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	951	993	913	928	397	2001
v/s Ratio Prot	c0.18	0.02	c0.31	0.13	0.11	c0.32
v/s Ratio Perm		0.02		0.16		
v/c Ratio	0.63	0.07	1.11	0.47	0.47	0.56
Uniform Delay, d1	26.8	10.6	31.1	11.2	28.7	11.3
Progression Factor	1.00	1.00	1.00	1.00	0.76	0.74
Incremental Delay, d2	1.5	0.0	63.7	0.5	1.0	0.9
Delay (s)	28.3	10.6	94.8	11.7	22.8	9.3
Level of Service	C	B	F	B	C	A
Approach Delay (s)	25.0		58.7			11.3
Approach LOS	C		E			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			36.1		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.83			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			62.2%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

102: US Route 1 Bypass & Greenleaf Avenue  
2035 No-Build Weekday AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	37	50	9	39	199	23	974	19	83	1032	117
Future Volume (vph)	103	37	50	9	39	199	23	974	19	83	1032	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.89		1.00	1.00		1.00	0.98	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1673		1662	3314		1694	3336	
Flt Permitted		0.54			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		955			1651		1662	3314		1694	3336	
Peak-hour factor, PHF	0.82	0.82	0.82	0.88	0.88	0.88	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	126	45	61	10	44	226	25	1059	21	86	1064	121
RTOR Reduction (vph)	0	16	0	0	169	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	216	0	0	111	0	25	1079	0	86	1178	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.7			21.7		3.6	37.1		9.2	42.7	
Effective Green, g (s)		21.7			21.7		3.6	37.1		9.2	42.7	
Actuated g/C Ratio		0.25			0.25		0.04	0.43		0.11	0.50	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		240			416		69	1429		181	1656	
v/s Ratio Prot							0.02	0.33		c0.05	c0.35	
v/s Ratio Perm		c0.23			0.07							
v/c Ratio		0.90			0.27		0.36	0.75		0.48	0.71	
Uniform Delay, d1		31.1			25.8		40.1	20.6		36.1	16.9	
Progression Factor		1.00			1.00		0.36	1.56		1.00	1.00	
Incremental Delay, d2		33.5			0.7		1.1	0.7		2.7	2.6	
Delay (s)		64.7			26.5		15.6	32.8		38.8	19.5	
Level of Service		E			C		B	C		D	B	
Approach Delay (s)		64.7			26.5			32.4			20.8	
Approach LOS		E			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			29.3				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			84.8%				ICU Level of Service				E	
Analysis Period (min)			15									
c	Critical Lane Group											

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2035 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑↑			↑↑
Traffic Vol, veh/h	0	1	1607	4	0	1362
Future Vol, veh/h	0	1	1607	4	0	1362
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	25	25	91	91	89	89
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	0	4	1766	4	0	1530

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	886	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	221	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	221	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	221
HCM Lane V/C Ratio	-	-	0.018
HCM Control Delay (s)	-	-	21.6
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.1

202: Lafayette Road & Ledgewood Drive  
 2035 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	48	24	825	31	31	524
Future Vol, veh/h	48	24	825	31	31	524
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	71	71	80	80	80	80
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	68	34	1031	39	39	655

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1397	1057	0	0	1076
Stage 1	1057	-	-	-	-
Stage 2	340	-	-	-	-
Critical Hdwy	6.51	6.46	-	-	4.145
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	6.46	-	-	-	-
Follow-up Hdwy	3.688	3.338	-	-	2.2285
Pot Cap-1 Maneuver	147	254	-	-	641
Stage 1	286	-	-	-	-
Stage 2	628	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	132	253	-	-	637
Mov Cap-2 Maneuver	132	-	-	-	-
Stage 1	284	-	-	-	-
Stage 2	568	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	62.3	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	157	637
HCM Lane V/C Ratio	-	-	0.646	0.061
HCM Control Delay (s)	-	-	62.3	11
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	3.6	0.2

203: West Site Driveway & Ledgewood Drive  
 2035 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	21	1	72	0	0
Future Vol, veh/h	41	21	1	72	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	67	67	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	49	25	1	107	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	75	0	172
Stage 1	-	-	-	-	63
Stage 2	-	-	-	-	109
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1512	-	823
Stage 1	-	-	-	-	965
Stage 2	-	-	-	-	921
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1511	-	821
Mov Cap-2 Maneuver	-	-	-	-	821
Stage 1	-	-	-	-	964
Stage 2	-	-	-	-	920

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1511	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2035 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	6	8	61	12	4
Future Vol, veh/h	35	6	8	61	12	4
Conflicting Peds, #/hr	0	3	3	0	1	23
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	34	34
Heavy Vehicles, %	7	7	4	4	0	0
Mvmt Flow	51	9	11	81	35	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	63	0	163
Stage 1	-	-	-	-	59
Stage 2	-	-	-	-	104
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1527	-	832
Stage 1	-	-	-	-	969
Stage 2	-	-	-	-	925
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1523	-	822
Mov Cap-2 Maneuver	-	-	-	-	822
Stage 1	-	-	-	-	966
Stage 2	-	-	-	-	917

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1523	-
HCM Lane V/C Ratio	0.055	-	-	0.007	-
HCM Control Delay (s)	9.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2035 No-Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1609	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1609	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1609	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2035 No-Build Weekday PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↕↕	↖	↖	↕↕
Traffic Volume (vph)	549	42	1260	606	100	1077
Future Volume (vph)	549	42	1260	606	100	1077
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1495	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1495	1787	3574
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.95	0.95
Adj. Flow (vph)	597	46	1355	652	105	1134
RTOR Reduction (vph)	0	29	0	168	0	0
Lane Group Flow (vph)	597	17	1355	484	105	1134
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	36.3	50.7	60.1	96.4	14.4	80.5
Effective Green, g (s)	36.3	50.7	60.1	96.4	14.4	80.5
Actuated g/C Ratio	0.26	0.36	0.43	0.69	0.10	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	892	634	1464	1101	185	2069
v/s Ratio Prot	c0.17	0.00	c0.40	0.11	0.06	c0.32
v/s Ratio Perm		0.01		0.21		
v/c Ratio	0.67	0.03	0.93	0.44	0.57	0.55
Uniform Delay, d1	46.0	28.3	37.3	9.4	59.3	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.0	10.4	0.4	4.8	1.0
Delay (s)	48.1	28.3	47.7	9.8	64.1	19.1
Level of Service	D	C	D	A	E	B
Approach Delay (s)	46.7		35.4			22.9
Approach LOS	D		D			C



















Intersection Summary

HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	139.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



102: US Route 1 Bypass & Greenleaf Avenue  
2035 No-Build Weekday PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	21	45	4	32	116	30	1264	8	71	1128	87
Future Volume (vph)	193	21	45	4	32	116	30	1264	8	71	1128	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1771			1685		1728	3452		1728	3418	
Flt Permitted		0.59			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1087			1669		1728	3452		1728	3418	
Peak-hour factor, PHF	0.72	0.72	0.72	0.71	0.71	0.71	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	268	29	62	6	45	163	33	1374	9	75	1187	92
RTOR Reduction (vph)	0	7	0	0	107	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	353	0	0	107	0	33	1382	0	75	1275	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		37.6			37.6		5.8	45.1		9.3	48.6	
Effective Green, g (s)		37.6			37.6		5.8	45.1		9.3	48.6	
Actuated g/C Ratio		0.34			0.34		0.05	0.41		0.08	0.44	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		371			570		91	1415		146	1510	
v/s Ratio Prot							0.02	c0.40		c0.04	c0.37	
v/s Ratio Perm		c0.32			0.06							
v/c Ratio		0.95			0.19		0.36	0.98		0.51	0.84	
Uniform Delay, d1		35.3			25.5		50.3	31.9		48.2	27.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		34.2			0.3		3.3	18.7		4.0	5.9	
Delay (s)		69.5			25.8		53.7	50.6		52.2	33.3	
Level of Service		E			C		D	D		D	C	
Approach Delay (s)		69.5			25.8			50.7			34.3	
Approach LOS		E			C			D			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			44.5				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			85.4%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2035 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↙ ↘	↗ ↘ ↙ ↘			↗ ↘
Traffic Vol, veh/h	0	27	1839	1	0	1626
Future Vol, veh/h	0	27	1839	1	0	1626
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	75	75	92	92	92	92
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	36	1999	1	0	1767

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	1000	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	183	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	183	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	183
HCM Lane V/C Ratio	-	-	0.197
HCM Control Delay (s)	-	-	29.4
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	0.7

202: Lafayette Road & Ledgewood Drive  
 2035 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	32	23	645	60	50	558
Future Vol, veh/h	32	23	645	60	50	558
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	67	67	92	92	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	48	34	701	65	56	620

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1095	735	0	0	767
Stage 1	735	-	-	-	-
Stage 2	360	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	230	406	-	-	850
Stage 1	428	-	-	-	-
Stage 2	621	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	207	406	-	-	849
Mov Cap-2 Maneuver	207	-	-	-	-
Stage 1	428	-	-	-	-
Stage 2	558	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	260	849
HCM Lane V/C Ratio	-	-	0.316	0.065
HCM Control Delay (s)	-	-	25.1	9.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2

203: West Site Driveway & Ledgewood Drive  
 2035 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	61	51	1	55	0	0
Future Vol, veh/h	61	51	1	55	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	65	65	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	81	68	2	85	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	150	0	205
Stage 1	-	-	-	-	116
Stage 2	-	-	-	-	89
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1444	-	788
Stage 1	-	-	-	-	914
Stage 2	-	-	-	-	940
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1443	-	786
Mov Cap-2 Maneuver	-	-	-	-	786
Stage 1	-	-	-	-	913
Stage 2	-	-	-	-	939

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1443	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
2035 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	8	0	42	14	1
Future Vol, veh/h	52	8	0	42	14	1
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	84	84	69	69
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	63	10	0	50	20	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	75	0	120
Stage 1	-	-	-	-	70
Stage 2	-	-	-	-	50
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1518	-	880
Stage 1	-	-	-	-	958
Stage 2	-	-	-	-	978
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1515	-	878
Mov Cap-2 Maneuver	-	-	-	-	878
Stage 1	-	-	-	-	956
Stage 2	-	-	-	-	978

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1515	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
2035 No-Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1615	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1615	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1615	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
 2035 No-Build Saturday Midday Peak





















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰	↕↕	↰	↰	↕↕
Traffic Volume (vph)	450	40	1085	510	90	1035
Future Volume (vph)	450	40	1085	510	90	1035
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1515	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1515	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.88	0.88
Adj. Flow (vph)	474	42	1154	543	102	1176
RTOR Reduction (vph)	0	28	0	205	0	0
Lane Group Flow (vph)	474	14	1154	338	102	1176
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	21.1	29.5	32.5	53.6	8.4	46.9
Effective Green, g (s)	21.1	29.5	32.5	53.6	8.4	46.9
Actuated g/C Ratio	0.25	0.34	0.38	0.62	0.10	0.55
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	838	596	1279	1049	176	1968
v/s Ratio Prot	c0.14	0.00	c0.34	0.08	0.06	c0.33
v/s Ratio Perm		0.01		0.14		
v/c Ratio	0.57	0.02	0.90	0.32	0.58	0.60
Uniform Delay, d1	28.4	18.7	25.3	7.6	37.1	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.31	1.15
Incremental Delay, d2	1.1	0.0	9.2	0.2	3.9	1.0
Delay (s)	29.5	18.7	34.5	7.9	52.5	16.1
Level of Service	C	B	C	A	D	B
Approach Delay (s)	28.6		26.0			19.0
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

102: US Route 1 Bypass & Greenleaf Avenue  
2035 No-Build Saturday Midday Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	13	53	6	28	141	24	1093	8	55	1066	94
Future Volume (vph)	109	13	53	6	28	141	24	1093	8	55	1066	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1674		1728	3451		1711	3380	
Flt Permitted		0.62			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1111			1653		1728	3451		1711	3380	
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	130	15	63	7	31	155	24	1115	8	64	1240	109
RTOR Reduction (vph)	0	20	0	0	121	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	188	0	0	72	0	24	1122	0	64	1344	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		18.7			18.7		3.6	41.1		8.2	45.7	
Effective Green, g (s)		18.7			18.7		3.6	41.1		8.2	45.7	
Actuated g/C Ratio		0.22			0.22		0.04	0.48		0.10	0.53	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		241			359		72	1649		163	1796	
v/s Ratio Prot							0.01	0.33		c0.04	c0.40	
v/s Ratio Perm		c0.17			0.04							
v/c Ratio		0.78			0.20		0.33	0.68		0.39	0.75	
Uniform Delay, d1		31.7			27.5		40.0	17.4		36.6	15.7	
Progression Factor		1.00			1.00		1.32	0.61		1.00	1.00	
Incremental Delay, d2		15.9			0.6		2.1	0.9		2.1	2.9	
Delay (s)		47.7			28.1		55.0	11.5		38.7	18.6	
Level of Service		D			C		D	B		D	B	
Approach Delay (s)		47.7			28.1			12.4			19.5	
Approach LOS		D			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.6%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												



201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2035 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘
Traffic Vol, veh/h	0	32	1563	6	0	1464
Future Vol, veh/h	0	32	1563	6	0	1464
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	69	69	93	93	87	87
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	46	1681	6	0	1683

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	844	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	237	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	237	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	237
HCM Lane V/C Ratio	-	-	0.196
HCM Control Delay (s)	-	-	23.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.7

202: Lafayette Road & Ledgewood Drive  
 2035 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			↑↑↑
Traffic Vol, veh/h	29	25	534	66	52	461
Future Vol, veh/h	29	25	534	66	52	461
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	56	56	82	82	87	87
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	52	45	651	80	60	530

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1023	691	0	0	731
Stage 1	691	-	-	-	-
Stage 2	332	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	253	431	-	-	877
Stage 1	451	-	-	-	-
Stage 2	644	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	228	431	-	-	877
Mov Cap-2 Maneuver	228	-	-	-	-
Stage 1	451	-	-	-	-
Stage 2	582	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.3	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	292	877
HCM Lane V/C Ratio	-	-	0.33	0.068
HCM Control Delay (s)	-	-	23.3	9.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2

203: West Site Driveway & Ledgewood Drive  
 2035 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	71	1	53	0	0
Future Vol, veh/h	47	71	1	53	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	61	92	1	69	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	153	0	178
Stage 1	-	-	-	-	107
Stage 2	-	-	-	-	71
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1440	-	816
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	957
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1440	-	815
Mov Cap-2 Maneuver	-	-	-	-	815
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	956

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1440	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2035 No-Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	8	0	38	18	1
Future Vol, veh/h	39	8	0	38	18	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	75	75	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	46	10	0	51	26	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	56	0	102
Stage 1	-	-	-	-	51
Stage 2	-	-	-	-	51
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1562	-	901
Stage 1	-	-	-	-	977
Stage 2	-	-	-	-	977
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1562	-	901
Mov Cap-2 Maneuver	-	-	-	-	901
Stage 1	-	-	-	-	977
Stage 2	-	-	-	-	977

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	907	-	-	1562	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
2035 No-Build Saturday Midday Peak
















Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028



















Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1635	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2025 Build Weekday AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	426	106	825	636	145	845
Future Volume (vph)	426	106	825	636	145	845
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3352	1706	3288	1471	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3352	1706	3288	1471	1736	3471
Peak-hour factor, PHF	0.78	0.78	0.90	0.90	0.84	0.84
Adj. Flow (vph)	546	136	917	707	173	1006
RTOR Reduction (vph)	0	70	0	296	0	0
Lane Group Flow (vph)	546	66	917	411	173	1006
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	23.6	41.6	26.4	50.0	18.0	50.4
Effective Green, g (s)	23.6	41.6	26.4	50.0	18.0	50.4
Actuated g/C Ratio	0.27	0.48	0.31	0.58	0.21	0.59
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	919	944	1009	957	363	2034
v/s Ratio Prot	c0.16	0.01	c0.28	0.12	0.10	c0.29
v/s Ratio Perm		0.02		0.16		
v/c Ratio	0.59	0.07	0.91	0.43	0.48	0.49
Uniform Delay, d1	27.0	11.9	28.6	10.0	29.9	10.4
Progression Factor	1.00	1.00	1.00	1.00	0.75	0.59
Incremental Delay, d2	1.2	0.0	11.9	0.4	1.1	0.7
Delay (s)	28.3	11.9	40.5	10.5	23.5	6.9
Level of Service	C	B	D	B	C	A
Approach Delay (s)	25.0		27.4			9.3
Approach LOS	C		C			A
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			58.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

102: US Route 1 Bypass & Greenleaf Avenue  
2025 Build Weekday AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	34	45	8	35	180	32	882	17	76	937	106
Future Volume (vph)	93	34	45	8	35	180	32	882	17	76	937	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.89		1.00	1.00		1.00	0.98	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1673		1662	3314		1694	3336	
Flt Permitted		0.55			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		982			1652		1662	3314		1694	3336	
Peak-hour factor, PHF	0.82	0.82	0.82	0.88	0.88	0.88	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	113	41	55	9	40	205	35	959	18	78	966	109
RTOR Reduction (vph)	0	16	0	0	158	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	193	0	0	96	0	35	976	0	78	1068	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		19.9			19.9		5.6	39.2		8.9	42.5	
Effective Green, g (s)		19.9			19.9		5.6	39.2		8.9	42.5	
Actuated g/C Ratio		0.23			0.23		0.07	0.46		0.10	0.49	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		227			382		108	1510		175	1648	
v/s Ratio Prot							0.02	0.29		c0.05	c0.32	
v/s Ratio Perm		c0.20			0.06							
v/c Ratio		0.85			0.25		0.32	0.65		0.45	0.65	
Uniform Delay, d1		31.6			27.0		38.4	18.1		36.2	16.2	
Progression Factor		1.00			1.00		0.38	1.65		1.00	1.00	
Incremental Delay, d2		25.3			0.7		1.3	0.7		2.5	2.0	
Delay (s)		56.9			27.7		16.0	30.5		38.7	18.2	
Level of Service		E			C		B	C		D	B	
Approach Delay (s)		56.9			27.7			30.0			19.6	
Approach LOS		E			C			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			27.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.5%				ICU Level of Service			D		
Analysis Period (min)			15									
c	Critical Lane Group											

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2025 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑
Traffic Vol, veh/h	0	1	1460	3	0	1239
Future Vol, veh/h	0	1	1460	3	0	1239
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	25	25	91	91	89	89
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	0	4	1604	3	0	1392

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	805	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	253	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	253	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	253
HCM Lane V/C Ratio	-	-	0.016
HCM Control Delay (s)	-	-	19.5
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0



202: Lafayette Road & Ledgewood Drive  
 2025 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	58	27	748	33	29	474
Future Vol, veh/h	58	27	748	33	29	474
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	71	71	80	80	80	80
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	82	38	935	41	36	593

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1271	962	0	0	982
Stage 1	962	-	-	-	-
Stage 2	309	-	-	-	-
Critical Hdwy	6.51	6.46	-	-	4.145
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	6.46	-	-	-	-
Follow-up Hdwy	3.688	3.338	-	-	2.2285
Pot Cap-1 Maneuver	175	290	-	-	696
Stage 1	321	-	-	-	-
Stage 2	654	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	160	288	-	-	692
Mov Cap-2 Maneuver	160	-	-	-	-
Stage 1	319	-	-	-	-
Stage 2	603	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	53.9	0	0.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	186	692
HCM Lane V/C Ratio	-	-	0.644	0.052
HCM Control Delay (s)	-	-	53.9	10.5
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	3.7	0.2

203: West Site Driveway & Ledgewood Drive  
2025 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	22	1	85	0	0
Future Vol, veh/h	40	22	1	85	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	67	67	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	48	27	1	127	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	76	0	192
Stage 1	-	-	-	-	63
Stage 2	-	-	-	-	129
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1510	-	801
Stage 1	-	-	-	-	965
Stage 2	-	-	-	-	902
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1509	-	799
Mov Cap-2 Maneuver	-	-	-	-	799
Stage 1	-	-	-	-	964
Stage 2	-	-	-	-	901

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1509	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
2025 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	31	6	7	55	21	3
Future Vol, veh/h	31	6	7	55	21	3
Conflicting Peds, #/hr	0	3	3	0	1	23
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	34	34
Heavy Vehicles, %	7	7	4	4	0	0
Mvmt Flow	45	9	9	73	62	9

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	57	0	145
Stage 1	-	-	-	-	53
Stage 2	-	-	-	-	92
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1535	-	852
Stage 1	-	-	-	-	975
Stage 2	-	-	-	-	937
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1531	-	843
Mov Cap-2 Maneuver	-	-	-	-	843
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	930

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	857	-	-	1531	-
HCM Lane V/C Ratio	0.082	-	-	0.006	-
HCM Control Delay (s)	9.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
2025 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	3	0	76	10	0
Future Vol, veh/h	37	3	0	76	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	40	3	0	83	11	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	43	0	125
Stage 1	-	-	-	-	42
Stage 2	-	-	-	-	83
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1553	-	875
Stage 1	-	-	-	-	986
Stage 2	-	-	-	-	945
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1553	-	875
Mov Cap-2 Maneuver	-	-	-	-	875
Stage 1	-	-	-	-	986
Stage 2	-	-	-	-	945

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	875	-	-	1553	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-



















101: US Route 1 Bypass & Lafayette Road  
2025 Build Weekday PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↙	↕↕	↘	↘	↕↕
Traffic Volume (vph)	501	43	1140	552	99	975
Future Volume (vph)	501	43	1140	552	99	975
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1494	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1494	1787	3574
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.95	0.95
Adj. Flow (vph)	545	47	1226	594	104	1026
RTOR Reduction (vph)	0	31	0	169	0	0
Lane Group Flow (vph)	545	16	1226	425	104	1026
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	33.4	47.7	63.1	96.5	14.3	83.4
Effective Green, g (s)	33.4	47.7	63.1	96.5	14.3	83.4
Actuated g/C Ratio	0.24	0.34	0.45	0.69	0.10	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	821	597	1537	1101	183	2144
v/s Ratio Prot	c0.16	0.00	c0.36	0.09	0.06	c0.29
v/s Ratio Perm		0.01		0.19		
v/c Ratio	0.66	0.03	0.80	0.39	0.57	0.48
Uniform Delay, d1	47.7	30.3	32.5	8.9	59.4	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.0	3.2	0.3	4.9	0.8
Delay (s)	50.0	30.3	35.6	9.2	64.3	16.4
Level of Service	D	C	D	A	E	B
Approach Delay (s)	48.4		27.0			20.8
Approach LOS	D		C			C
<b>Intersection Summary</b>						
HCM 2000 Control Delay			28.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.70			
Actuated Cycle Length (s)			139.0		Sum of lost time (s)	24.0
Intersection Capacity Utilization			66.3%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

102: US Route 1 Bypass & Greenleaf Avenue  
2025 Build Weekday PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	19	41	3	29	105	27	1149	7	64	1030	79
Future Volume (vph)	174	19	41	3	29	105	27	1149	7	64	1030	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1771			1685		1728	3452		1728	3418	
Flt Permitted		0.60			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1109			1674		1728	3452		1728	3418	
Peak-hour factor, PHF	0.72	0.72	0.72	0.71	0.71	0.71	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	242	26	57	4	41	148	29	1249	8	67	1084	83
RTOR Reduction (vph)	0	8	0	0	101	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	317	0	0	92	0	29	1256	0	67	1163	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		34.6			34.6		5.6	48.5		8.9	51.8	
Effective Green, g (s)		34.6			34.6		5.6	48.5		8.9	51.8	
Actuated g/C Ratio		0.31			0.31		0.05	0.44		0.08	0.47	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		348			526		87	1522		139	1609	
v/s Ratio Prot							0.02	c0.36		c0.04	c0.34	
v/s Ratio Perm		c0.29			0.05							
v/c Ratio		0.91			0.17		0.33	0.83		0.48	0.72	
Uniform Delay, d1		36.2			27.3		50.4	27.0		48.3	23.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		27.6			0.3		3.1	4.3		3.6	2.8	
Delay (s)		63.9			27.7		53.5	31.3		51.9	26.2	
Level of Service		E			C		D	C		D	C	
Approach Delay (s)		63.9			27.7			31.8			27.6	
Approach LOS		E			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			33.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2025 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↙ ↚	↗ ↘ ↙ ↚			↗ ↘
Traffic Vol, veh/h	0	24	1668	1	0	1476
Future Vol, veh/h	0	24	1668	1	0	1476
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	75	75	92	92	92	92
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	32	1813	1	0	1604

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	907	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	214	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	214	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	214
HCM Lane V/C Ratio	-	-	0.15
HCM Control Delay (s)	-	-	24.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

202: Lafayette Road & Ledgewood Drive  
 2025 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	37	23	584	67	51	506
Future Vol, veh/h	37	23	584	67	51	506
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	67	67	92	92	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	55	34	635	73	57	562

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1012	673	0	0	709	0
Stage 1	673	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095	-
Pot Cap-1 Maneuver	257	442	-	-	894	-
Stage 1	460	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	233	442	-	-	893	-
Mov Cap-2 Maneuver	233	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	579	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.3	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	285	893
HCM Lane V/C Ratio	-	-	0.314	0.063
HCM Control Delay (s)	-	-	23.3	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.3	0.2



203: West Site Driveway & Ledgewood Drive  
2025 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	63	55	1	60	0	0
Future Vol, veh/h	63	55	1	60	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	65	65	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	84	73	2	92	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	158	0	218
Stage 1	-	-	-	-	122
Stage 2	-	-	-	-	96
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1434	-	775
Stage 1	-	-	-	-	908
Stage 2	-	-	-	-	933
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1433	-	773
Mov Cap-2 Maneuver	-	-	-	-	773
Stage 1	-	-	-	-	907
Stage 2	-	-	-	-	932

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1433	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
2025 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	7	0	37	18	1
Future Vol, veh/h	47	7	0	37	18	1
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	84	84	69	69
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	57	9	0	44	26	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	68	0	108
Stage 1	-	-	-	-	64
Stage 2	-	-	-	-	44
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1527	-	894
Stage 1	-	-	-	-	964
Stage 2	-	-	-	-	984
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1524	-	892
Mov Cap-2 Maneuver	-	-	-	-	892
Stage 1	-	-	-	-	962
Stage 2	-	-	-	-	984

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	897	-	-	1524	-
HCM Lane V/C Ratio	0.031	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
2025 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	9	0	55	6	0
Future Vol, veh/h	54	9	0	55	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	59	10	0	60	7	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	69	0	124
Stage 1	-	-	-	-	64
Stage 2	-	-	-	-	60
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1526	-	876
Stage 1	-	-	-	-	964
Stage 2	-	-	-	-	968
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1526	-	876
Mov Cap-2 Maneuver	-	-	-	-	876
Stage 1	-	-	-	-	964
Stage 2	-	-	-	-	968

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A



















Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	876	-	-	1526	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
 2025 Build Saturday Midday Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕
Traffic Volume (vph)	411	42	983	466	87	938
Future Volume (vph)	411	42	983	466	87	938
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1515	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1515	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.88	0.88
Adj. Flow (vph)	433	44	1046	496	99	1066
RTOR Reduction (vph)	0	30	0	186	0	0
Lane Group Flow (vph)	433	14	1046	310	99	1066
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	19.8	28.1	33.9	53.7	8.3	48.2
Effective Green, g (s)	19.8	28.1	33.9	53.7	8.3	48.2
Actuated g/C Ratio	0.23	0.33	0.39	0.62	0.10	0.56
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	786	568	1334	1051	174	2023
v/s Ratio Prot	c0.13	0.00	c0.31	0.07	0.05	c0.30
v/s Ratio Perm		0.01		0.14		
v/c Ratio	0.55	0.03	0.78	0.29	0.57	0.53
Uniform Delay, d1	29.2	19.7	22.8	7.4	37.1	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.31	1.14
Incremental Delay, d2	1.0	0.0	3.3	0.2	4.1	0.8
Delay (s)	30.2	19.7	26.1	7.6	52.6	14.2
Level of Service	C	B	C	A	D	B
Approach Delay (s)	29.2		20.2			17.5
Approach LOS	C		C			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			58.9%		ICU Level of Service	B
Analysis Period (min)			15			
c	Critical Lane Group					

102: US Route 1 Bypass & Greenleaf Avenue  
 2025 Build Saturday Midday Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	12	48	6	26	128	22	996	7	50	971	85
Future Volume (vph)	99	12	48	6	26	128	22	996	7	50	971	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1676		1728	3452		1711	3380	
Flt Permitted		0.63			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1145			1653		1728	3452		1711	3380	
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	118	14	57	7	29	141	22	1016	7	58	1129	99
RTOR Reduction (vph)	0	20	0	0	112	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	169	0	0	65	0	22	1022	0	58	1223	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.4			17.4		3.5	42.6		8.0	47.1	
Effective Green, g (s)		17.4			17.4		3.5	42.6		8.0	47.1	
Actuated g/C Ratio		0.20			0.20		0.04	0.50		0.09	0.55	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		231			334		70	1709		159	1851	
v/s Ratio Prot							0.01	0.30		c0.03	c0.36	
v/s Ratio Perm		c0.15			0.04							
v/c Ratio		0.73			0.19		0.31	0.60		0.36	0.66	
Uniform Delay, d1		32.1			28.5		40.1	15.6		36.6	13.8	
Progression Factor		1.00			1.00		1.32	0.69		1.00	1.00	
Incremental Delay, d2		12.0			0.6		2.5	0.6		1.9	1.9	
Delay (s)		44.1			29.1		55.5	11.3		38.6	15.7	
Level of Service		D			C		E	B		D	B	
Approach Delay (s)		44.1			29.1			12.2			16.7	
Approach LOS		D			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			17.7				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			74.8%				ICU Level of Service				D	
Analysis Period (min)			15									

c Critical Lane Group

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2025 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘
Traffic Vol, veh/h	0	29	1420	6	0	1330
Future Vol, veh/h	0	29	1420	6	0	1330
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	69	69	93	93	87	87
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	42	1527	6	0	1529

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	767	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	269	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	269	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	269
HCM Lane V/C Ratio	-	-	0.156
HCM Control Delay (s)	-	-	20.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

202: Lafayette Road & Ledgewood Drive  
 2025 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	36	26	484	69	52	417
Future Vol, veh/h	36	26	484	69	52	417
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	56	56	82	82	87	87
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	64	46	590	84	60	479

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	944	632	0	0	674
Stage 1	632	-	-	-	-
Stage 2	312	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	282	467	-	-	921
Stage 1	483	-	-	-	-
Stage 2	661	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	257	467	-	-	921
Mov Cap-2 Maneuver	257	-	-	-	-
Stage 1	483	-	-	-	-
Stage 2	602	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.3	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	317	921
HCM Lane V/C Ratio	-	-	0.349	0.065
HCM Control Delay (s)	-	-	22.3	9.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.5	0.2

203: West Site Driveway & Ledgewood Drive  
 2025 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	71	1	62	0	0
Future Vol, veh/h	50	71	1	62	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	65	92	1	81	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	157	0	194
Stage 1	-	-	-	-	111
Stage 2	-	-	-	-	83
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1435	-	799
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	945
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1435	-	798
Mov Cap-2 Maneuver	-	-	-	-	798
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	944

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1435	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-



204: East Site Driveway & Ledgewood Drive  
 2025 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	7	0	34	23	1
Future Vol, veh/h	35	7	0	34	23	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	75	75	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	42	8	0	45	33	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	50	0	91
Stage 1	-	-	-	-	46
Stage 2	-	-	-	-	45
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1570	-	914
Stage 1	-	-	-	-	982
Stage 2	-	-	-	-	983
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1570	-	914
Mov Cap-2 Maneuver	-	-	-	-	914
Stage 1	-	-	-	-	982
Stage 2	-	-	-	-	983

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	918	-	-	1570	-
HCM Lane V/C Ratio	0.037	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2025 Build Saturday Midday Peak













Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	8	0	57	7	0
Future Vol, veh/h	42	8	0	57	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	46	9	0	62	8	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	55	0	113
Stage 1	-	-	-	-	51
Stage 2	-	-	-	-	62
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1563	-	888
Stage 1	-	-	-	-	977
Stage 2	-	-	-	-	966
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1563	-	888
Mov Cap-2 Maneuver	-	-	-	-	888
Stage 1	-	-	-	-	977
Stage 2	-	-	-	-	966



















Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	888	-	-	1563	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2035 Build Weekday AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	471	116	910	700	160	933
Future Volume (vph)	471	116	910	700	160	933
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3352	1706	3288	1471	1736	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3352	1706	3288	1471	1736	3471
Peak-hour factor, PHF	0.78	0.78	0.90	0.90	0.84	0.84
Adj. Flow (vph)	604	149	1011	778	190	1111
RTOR Reduction (vph)	0	72	0	343	0	0
Lane Group Flow (vph)	604	77	1011	435	190	1111
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.4	44.3	23.7	48.1	19.9	49.6
Effective Green, g (s)	24.4	44.3	23.7	48.1	19.9	49.6
Actuated g/C Ratio	0.28	0.52	0.28	0.56	0.23	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	951	997	906	925	401	2001
v/s Ratio Prot	c0.18	0.02	c0.31	0.13	0.11	c0.32
v/s Ratio Perm		0.03		0.16		
v/c Ratio	0.64	0.08	1.12	0.47	0.47	0.56
Uniform Delay, d1	26.9	10.5	31.1	11.3	28.5	11.3
Progression Factor	1.00	1.00	1.00	1.00	0.76	0.74
Incremental Delay, d2	1.6	0.0	67.0	0.5	1.0	0.9
Delay (s)	28.5	10.6	98.2	11.9	22.7	9.3
Level of Service	C	B	F	B	C	A
Approach Delay (s)	24.9		60.6			11.3
Approach LOS	C		E			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			36.9		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.83			
Actuated Cycle Length (s)			86.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			62.5%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

102: US Route 1 Bypass & Greenleaf Avenue  
2035 Build Weekday AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	37	50	9	39	199	23	984	19	83	1034	117
Future Volume (vph)	103	37	50	9	39	199	23	984	19	83	1034	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.89		1.00	1.00		1.00	0.98	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1724			1673		1662	3314		1694	3336	
Flt Permitted		0.54			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		955			1651		1662	3314		1694	3336	
Peak-hour factor, PHF	0.82	0.82	0.82	0.88	0.88	0.88	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	126	45	61	10	44	226	25	1070	21	86	1066	121
RTOR Reduction (vph)	0	16	0	0	169	0	0	1	0	0	7	0
Lane Group Flow (vph)	0	216	0	0	111	0	25	1090	0	86	1180	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.7			21.7		3.6	37.1		9.2	42.7	
Effective Green, g (s)		21.7			21.7		3.6	37.1		9.2	42.7	
Actuated g/C Ratio		0.25			0.25		0.04	0.43		0.11	0.50	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		240			416		69	1429		181	1656	
v/s Ratio Prot							0.02	c0.33		c0.05	c0.35	
v/s Ratio Perm		c0.23			0.07							
v/c Ratio		0.90			0.27		0.36	0.76		0.48	0.71	
Uniform Delay, d1		31.1			25.8		40.1	20.7		36.1	16.9	
Progression Factor		1.00			1.00		0.37	1.54		1.00	1.00	
Incremental Delay, d2		33.5			0.7		1.0	0.7		2.7	2.6	
Delay (s)		64.7			26.5		15.8	32.6		38.8	19.5	
Level of Service		E			C		B	C		D	B	
Approach Delay (s)		64.7			26.5			32.3			20.8	
Approach LOS		E			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			29.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			84.8%				ICU Level of Service			E		
Analysis Period (min)			15									
c	Critical Lane Group											

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2035 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑
Traffic Vol, veh/h	0	1	1609	4	0	1367
Future Vol, veh/h	0	1	1609	4	0	1367
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	25	25	91	91	89	89
Heavy Vehicles, %	0	0	4	4	4	4
Mvmt Flow	0	4	1768	4	0	1536

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	887	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	221	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	221	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	221
HCM Lane V/C Ratio	-	-	0.018
HCM Control Delay (s)	-	-	21.6
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.1

202: Lafayette Road & Ledgewood Drive  
 2035 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	6.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	63	30	825	35	33	524
Future Vol, veh/h	63	30	825	35	33	524
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	71	71	80	80	80	80
Heavy Vehicles, %	4	4	3	3	3	3
Mvmt Flow	89	42	1031	44	41	655

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1403	1059	0	0	1081
Stage 1	1059	-	-	-	-
Stage 2	344	-	-	-	-
Critical Hdwy	6.51	6.46	-	-	4.145
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	6.46	-	-	-	-
Follow-up Hdwy	3.688	3.338	-	-	2.2285
Pot Cap-1 Maneuver	146	253	-	-	638
Stage 1	285	-	-	-	-
Stage 2	625	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	130	252	-	-	634
Mov Cap-2 Maneuver	130	-	-	-	-
Stage 1	283	-	-	-	-
Stage 2	561	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	95.1	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	154	634
HCM Lane V/C Ratio	-	-	0.851	0.065
HCM Control Delay (s)	-	-	95.1	11.1
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	5.7	0.2

203: West Site Driveway & Ledgewood Drive  
2035 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	24	1	93	0	0
Future Vol, veh/h	44	24	1	93	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	67	67	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	53	29	1	139	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	83	0	210 69
Stage 1	-	-	-	-	69 -
Stage 2	-	-	-	-	141 -
Critical Hdwy	-	-	4.14	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.236	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1501	-	783 1000
Stage 1	-	-	-	-	959 -
Stage 2	-	-	-	-	891 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1500	-	781 999
Mov Cap-2 Maneuver	-	-	-	-	781 -
Stage 1	-	-	-	-	958 -
Stage 2	-	-	-	-	890 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1500	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
2035 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	6	8	61	23	4
Future Vol, veh/h	35	6	8	61	23	4
Conflicting Peds, #/hr	0	3	3	0	1	23
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	34	34
Heavy Vehicles, %	7	7	4	4	0	0
Mvmt Flow	51	9	11	81	68	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	63	0	163
Stage 1	-	-	-	-	59
Stage 2	-	-	-	-	104
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1527	-	832
Stage 1	-	-	-	-	969
Stage 2	-	-	-	-	925
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1523	-	822
Mov Cap-2 Maneuver	-	-	-	-	822
Stage 1	-	-	-	-	966
Stage 2	-	-	-	-	917

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	840	-	-	1523	-
HCM Lane V/C Ratio	0.095	-	-	0.007	-
HCM Control Delay (s)	9.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-



301: Prop. Garage Driveway & Ledgewood Drive  
2035 Build Weekday AM Peak

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	3	0	84	10	0
Future Vol, veh/h	41	3	0	84	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	0	0
Mvmt Flow	45	3	0	91	11	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	48	0	138
Stage 1	-	-	-	-	47
Stage 2	-	-	-	-	91
Critical Hdwy	-	-	4.14	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.236	-	3.5
Pot Cap-1 Maneuver	-	-	1546	-	860
Stage 1	-	-	-	-	981
Stage 2	-	-	-	-	938
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1546	-	860
Mov Cap-2 Maneuver	-	-	-	-	860
Stage 1	-	-	-	-	981
Stage 2	-	-	-	-	938

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	860	-	-	1546	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

101: US Route 1 Bypass & Lafayette Road  
2035 Build Weekday PM Peak





















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑	↔	↔	↑↑
Traffic Volume (vph)	552	47	1260	610	108	1077
Future Volume (vph)	552	47	1260	610	108	1077
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1495	1787	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1495	1787	3574
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.95	0.95
Adj. Flow (vph)	600	51	1355	656	114	1134
RTOR Reduction (vph)	0	32	0	172	0	0
Lane Group Flow (vph)	600	19	1355	484	114	1134
Confl. Peds. (#/hr)				1		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	36.5	51.6	59.2	95.7	15.1	80.3
Effective Green, g (s)	36.5	51.6	59.2	95.7	15.1	80.3
Actuated g/C Ratio	0.26	0.37	0.43	0.69	0.11	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	897	645	1442	1093	194	2064
v/s Ratio Prot	c0.18	0.00	c0.40	0.12	0.06	c0.32
v/s Ratio Perm		0.01		0.21		
v/c Ratio	0.67	0.03	0.94	0.44	0.59	0.55
Uniform Delay, d1	45.8	27.8	38.2	9.7	59.0	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.0	12.1	0.4	5.3	1.1
Delay (s)	47.9	27.8	50.3	10.1	64.3	19.2
Level of Service	D	C	D	B	E	B
Approach Delay (s)	46.4		37.2			23.3
Approach LOS	D		D			C

Intersection Summary

HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	139.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 1 Bypass & Greenleaf Avenue  
2035 Build Weekday PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	21	45	4	32	116	30	1269	8	71	1136	87
Future Volume (vph)	193	21	45	4	32	116	30	1269	8	71	1136	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.90		1.00	1.00		1.00	0.99	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1771			1685		1728	3452		1728	3418	
Flt Permitted		0.59			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1087			1669		1728	3452		1728	3418	
Peak-hour factor, PHF	0.72	0.72	0.72	0.71	0.71	0.71	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	268	29	62	6	45	163	33	1379	9	75	1196	92
RTOR Reduction (vph)	0	7	0	0	107	0	0	1	0	0	4	0
Lane Group Flow (vph)	0	353	0	0	107	0	33	1387	0	75	1284	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		37.6			37.6		5.8	45.1		9.3	48.6	
Effective Green, g (s)		37.6			37.6		5.8	45.1		9.3	48.6	
Actuated g/C Ratio		0.34			0.34		0.05	0.41		0.08	0.44	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		371			570		91	1415		146	1510	
v/s Ratio Prot							0.02	c0.40		c0.04	c0.38	
v/s Ratio Perm		c0.32			0.06							
v/c Ratio		0.95			0.19		0.36	0.98		0.51	0.85	
Uniform Delay, d1		35.3			25.5		50.3	32.0		48.2	27.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		34.2			0.3		3.3	19.5		4.0	6.2	
Delay (s)		69.5			25.8		53.7	51.5		52.2	33.6	
Level of Service		E			C		D	D		D	C	
Approach Delay (s)		69.5			25.8			51.5			34.7	
Approach LOS		E			C			D			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			45.0				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			85.6%				ICU Level of Service				E	
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2035 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘
Traffic Vol, veh/h	0	27	1843	1	0	1629
Future Vol, veh/h	0	27	1843	1	0	1629
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	75	75	92	92	92	92
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	36	2003	1	0	1771

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	1002	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	182	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	182	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	182
HCM Lane V/C Ratio	-	-	0.198
HCM Control Delay (s)	-	-	29.6
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	0.7

202: Lafayette Road & Ledgewood Drive  
 2035 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔		↔↔↔	
Traffic Vol, veh/h	40	26	645	72	55	558
Future Vol, veh/h	40	26	645	72	55	558
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	67	67	92	92	90	90
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	60	39	701	78	61	620

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1111	741	0	0	780
Stage 1	741	-	-	-	-
Stage 2	370	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-2.2095	-
Pot Cap-1 Maneuver	225	403	-	-	841
Stage 1	425	-	-	-	-
Stage 2	613	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	200	403	-	-	840
Mov Cap-2 Maneuver	200	-	-	-	-
Stage 1	425	-	-	-	-
Stage 2	545	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.5	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	250	840
HCM Lane V/C Ratio	-	-	0.394	0.073
HCM Control Delay (s)	-	-	28.5	9.6
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.8	0.2

203: West Site Driveway & Ledgewood Drive  
2035 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	59	1	66	0	0
Future Vol, veh/h	70	59	1	66	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	65	65	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	93	79	2	102	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	173	0	240
Stage 1	-	-	-	-	134
Stage 2	-	-	-	-	106
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1416	-	753
Stage 1	-	-	-	-	897
Stage 2	-	-	-	-	923
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1415	-	751
Mov Cap-2 Maneuver	-	-	-	-	751
Stage 1	-	-	-	-	896
Stage 2	-	-	-	-	922

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1415	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
2035 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	8	0	42	19	1
Future Vol, veh/h	52	8	0	42	19	1
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	84	84	69	69
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	63	10	0	50	28	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	75	0	120
Stage 1	-	-	-	-	70
Stage 2	-	-	-	-	50
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1518	-	880
Stage 1	-	-	-	-	958
Stage 2	-	-	-	-	978
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1515	-	878
Mov Cap-2 Maneuver	-	-	-	-	878
Stage 1	-	-	-	-	956
Stage 2	-	-	-	-	978

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	883	-	-	1515	-
HCM Lane V/C Ratio	0.033	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2035 Build Weekday PM Peak

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	9	0	61	6	0
Future Vol, veh/h	60	9	0	61	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	65	10	0	66	7	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	75	0	136
Stage 1	-	-	-	-	70
Stage 2	-	-	-	-	66
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	1518	-	862
Stage 1	-	-	-	-	958
Stage 2	-	-	-	-	962
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1518	-	862
Mov Cap-2 Maneuver	-	-	-	-	862
Stage 1	-	-	-	-	958
Stage 2	-	-	-	-	962

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	862	-	-	1518	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-



101: US Route 1 Bypass & Lafayette Road  
2035 Build Saturday Midday Peak





















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↙	↕↕	↘	↘	↕↕
Traffic Volume (vph)	454	46	1085	514	96	1035
Future Volume (vph)	454	46	1085	514	96	1035
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	14	11	11	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3418	1740	3386	1515	1805	3610
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3418	1740	3386	1515	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.88	0.88
Adj. Flow (vph)	478	48	1154	547	109	1176
RTOR Reduction (vph)	0	31	0	207	0	0
Lane Group Flow (vph)	478	17	1154	340	109	1176
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	21.2	29.8	32.2	53.4	8.6	46.8
Effective Green, g (s)	21.2	29.8	32.2	53.4	8.6	46.8
Actuated g/C Ratio	0.25	0.35	0.37	0.62	0.10	0.54
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	842	602	1267	1046	180	1964
v/s Ratio Prot	c0.14	0.00	c0.34	0.08	0.06	c0.33
v/s Ratio Perm		0.01		0.14		
v/c Ratio	0.57	0.03	0.91	0.32	0.61	0.60
Uniform Delay, d1	28.4	18.5	25.5	7.7	37.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.31	1.14
Incremental Delay, d2	1.1	0.0	10.1	0.2	4.7	1.0
Delay (s)	29.5	18.6	35.7	8.0	53.2	16.1
Level of Service	C	B	D	A	D	B
Approach Delay (s)	28.5		26.8			19.3
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	86.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

102: US Route 1 Bypass & Greenleaf Avenue  
 2035 Build Saturday Midday Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	13	53	6	28	141	24	1099	8	55	1072	94
Future Volume (vph)	109	13	53	6	28	141	24	1099	8	55	1072	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	11	11	11
Total Lost time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.97			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750			1674		1728	3451		1711	3380	
Flt Permitted		0.62			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1111			1653		1728	3451		1711	3380	
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.98	0.98	0.98	0.86	0.86	0.86
Adj. Flow (vph)	130	15	63	7	31	155	24	1121	8	64	1247	109
RTOR Reduction (vph)	0	20	0	0	121	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	188	0	0	72	0	24	1128	0	64	1351	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		18.7			18.7		3.6	41.1		8.2	45.7	
Effective Green, g (s)		18.7			18.7		3.6	41.1		8.2	45.7	
Actuated g/C Ratio		0.22			0.22		0.04	0.48		0.10	0.53	
Clearance Time (s)		6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			5.0		4.0	5.0		4.0	5.0	
Lane Grp Cap (vph)		241			359		72	1649		163	1796	
v/s Ratio Prot							0.01	0.33		c0.04	c0.40	
v/s Ratio Perm		c0.17			0.04							
v/c Ratio		0.78			0.20		0.33	0.68		0.39	0.75	
Uniform Delay, d1		31.7			27.5		40.0	17.4		36.6	15.7	
Progression Factor		1.00			1.00		1.30	0.62		1.00	1.00	
Incremental Delay, d2		15.9			0.6		2.1	0.9		2.1	3.0	
Delay (s)		47.7			28.1		54.0	11.6		38.7	18.7	
Level of Service		D			C		D	B		D	B	
Approach Delay (s)		47.7			28.1			12.5			19.6	
Approach LOS		D			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			79.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

201: US Route 1 Bypass & North Shopping Plaza Driveway  
 2035 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘	↗ ↘ ↘			↗ ↘
Traffic Vol, veh/h	0	32	1567	6	0	1468
Future Vol, veh/h	0	32	1567	6	0	1468
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	5	-	4	-	-	4
Peak Hour Factor	69	69	93	93	87	87
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	46	1685	6	0	1687

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	846	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.6	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	236	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	236	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	236
HCM Lane V/C Ratio	-	-	0.197
HCM Control Delay (s)	-	-	23.9
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.7

202: Lafayette Road & Ledgewood Drive  
 2035 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔↔↔	
Traffic Vol, veh/h	39	29	534	76	57	461
Future Vol, veh/h	39	29	534	76	57	461
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	2	-	2	-	-	-4
Peak Hour Factor	56	56	82	82	87	87
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	70	52	651	93	66	530

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1042	698	0	0	744
Stage 1	698	-	-	-	-
Stage 2	344	-	-	-	-
Critical Hdwy	6.45	6.4	-	-	4.115
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.2095
Pot Cap-1 Maneuver	247	427	-	-	867
Stage 1	447	-	-	-	-
Stage 2	634	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	220	427	-	-	867
Mov Cap-2 Maneuver	220	-	-	-	-
Stage 1	447	-	-	-	-
Stage 2	566	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.8	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	277	867
HCM Lane V/C Ratio	-	-	0.438	0.076
HCM Control Delay (s)	-	-	27.8	9.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	2.1	0.2

203: West Site Driveway & Ledgewood Drive  
 2035 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	78	1	67	0	0
Future Vol, veh/h	55	78	1	67	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	71	101	1	87	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	172	0	211
Stage 1	-	-	-	-	122
Stage 2	-	-	-	-	89
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1417	-	782
Stage 1	-	-	-	-	908
Stage 2	-	-	-	-	940
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1417	-	781
Mov Cap-2 Maneuver	-	-	-	-	781
Stage 1	-	-	-	-	908
Stage 2	-	-	-	-	939

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1417	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	0	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

204: East Site Driveway & Ledgewood Drive  
 2035 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	6	8	61	23	4
Future Vol, veh/h	35	6	8	61	23	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	75	75	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	42	7	11	81	33	6

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	49	0	149
Stage 1	-	-	-	-	46
Stage 2	-	-	-	-	103
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1571	-	848
Stage 1	-	-	-	-	982
Stage 2	-	-	-	-	926
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1571	-	842
Mov Cap-2 Maneuver	-	-	-	-	842
Stage 1	-	-	-	-	982
Stage 2	-	-	-	-	920

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	865	-	-	1571	-
HCM Lane V/C Ratio	0.045	-	-	0.007	-
HCM Control Delay (s)	9.4	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

301: Prop. Garage Driveway & Ledgewood Drive  
 2035 Build Saturday Midday Peak

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	8	0	84	7	0
Future Vol, veh/h	41	8	0	84	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	45	9	0	91	8	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	54	0	141
Stage 1	-	-	-	-	50
Stage 2	-	-	-	-	91
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1564	-	857
Stage 1	-	-	-	-	978
Stage 2	-	-	-	-	938
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1564	-	857
Mov Cap-2 Maneuver	-	-	-	-	857
Stage 1	-	-	-	-	978
Stage 2	-	-	-	-	938

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

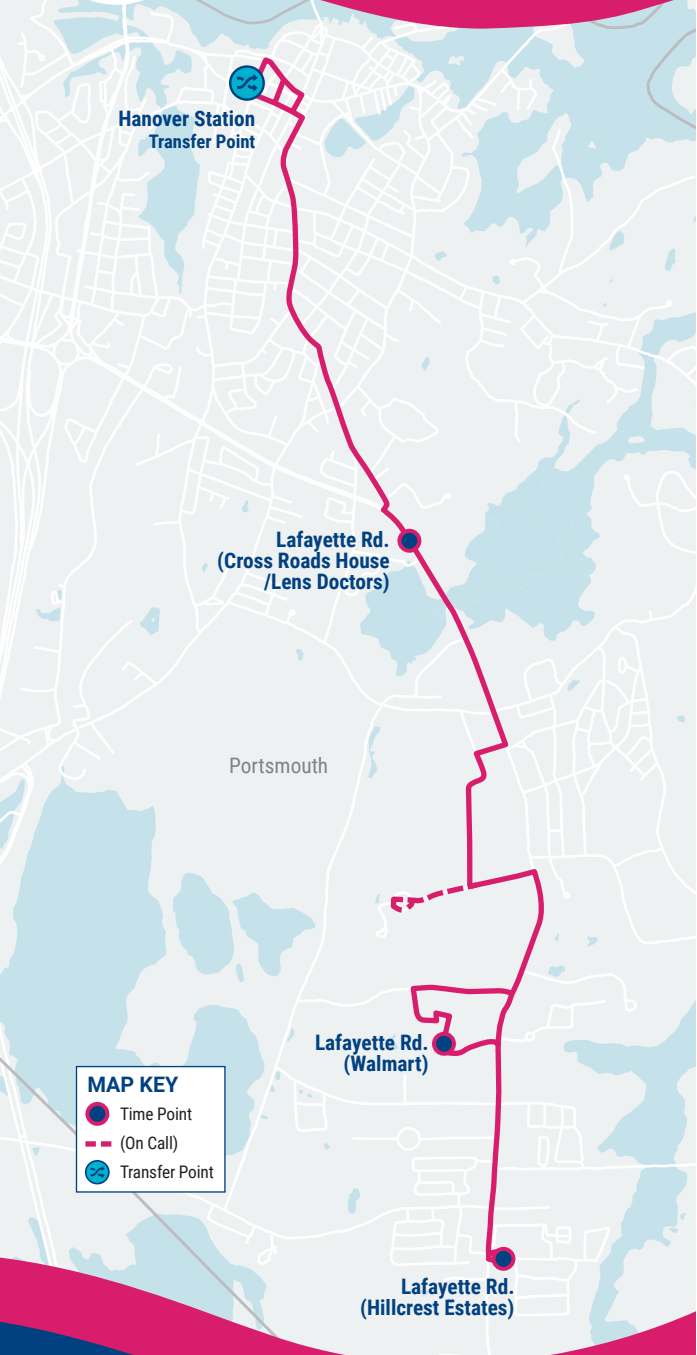
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	857	-	-	1564	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

**APPENDIX F**  
COAST Bus Schedule & Map



# 41

## Route 41 Map Portsmouth • Lafayette Road



## Ride Information

### COAST BUS FARES

**Base Cash Fare** **\$1.50**  
*All passengers ages 5 and up are required to pay this fare each time they board a COAST bus.*

**Half-Fare** **\$ 0.75**  
*Passengers 65 and older, or passengers with a disability are entitled to pay half the cash fare. Proof of eligibility is required by showing a Medicare card, photo ID with birth date, COAST ADA Paratransit Card, or COAST Half-Fare Card. Please contact COAST to apply for a Half-Fare Card.*

**Multi-Ride Tickets and Passes**  
*Available at [www.coastbus.org](http://www.coastbus.org) or call 603-743-5777, TTY 711.*

**Unlimited Monthly Pass** **\$ 52**  
*Unlimited rides on COAST Routes for the month.*

### YOUR RIGHTS

COAST adheres to all Federal regulations regarding Civil Rights. If you need to request an ADA Reasonable Modification/ Accommodation, or if you believe you have been discriminated against or would like to file a complaint under the ADA or Title VI, please contact COAST's Civil Rights Officer at 603-516-0788, TTY 711 or email [CivilRights@coastbus.org](mailto:CivilRights@coastbus.org).

### NO SERVICE DAYS

COAST does not operate on the following holidays:

- New Year's Day
- Labor Day
- Martin Luther King Jr./ Civil Rights Day
- Thanksgiving Day
- Memorial Day
- Christmas Eve Day
- Independence Day
- Christmas Day



42 Sumner Drive • Dover, NH 03820  
 603-743-5777 • TTY 711 • [www.coastbus.org](http://www.coastbus.org)  
*This brochure is available in alternative formats upon request.*

## Bus Schedule & Map 41



Effective  
09.17.22

# ROUTE 41

Portsmouth • Lafayette Road



Find all of the full COAST schedules online at [coastbus.org](http://coastbus.org)

## MAP OUT YOUR GAME PLAN

Planning your trip has never been easier!

[www.coastbus.org](http://www.coastbus.org)



# COAST SYSTEM MAP



## OUTBOUND • INBOUND

### Route 41 Portsmouth • Lafayette Road

#### How to Read the Schedule

Printed bus schedules only show the timepoints (major bus stops where the bus will hold until the scheduled departure time). In between those timepoints are many other stops that you can use. For a full listing of bus stops, visit [www.coastbus.org](http://www.coastbus.org), or use the Passio GO! App.

The times shown represent the number of minutes after the hour that the bus will depart from that stop. Last stop times are arrivals. Any exceptions will be noted.

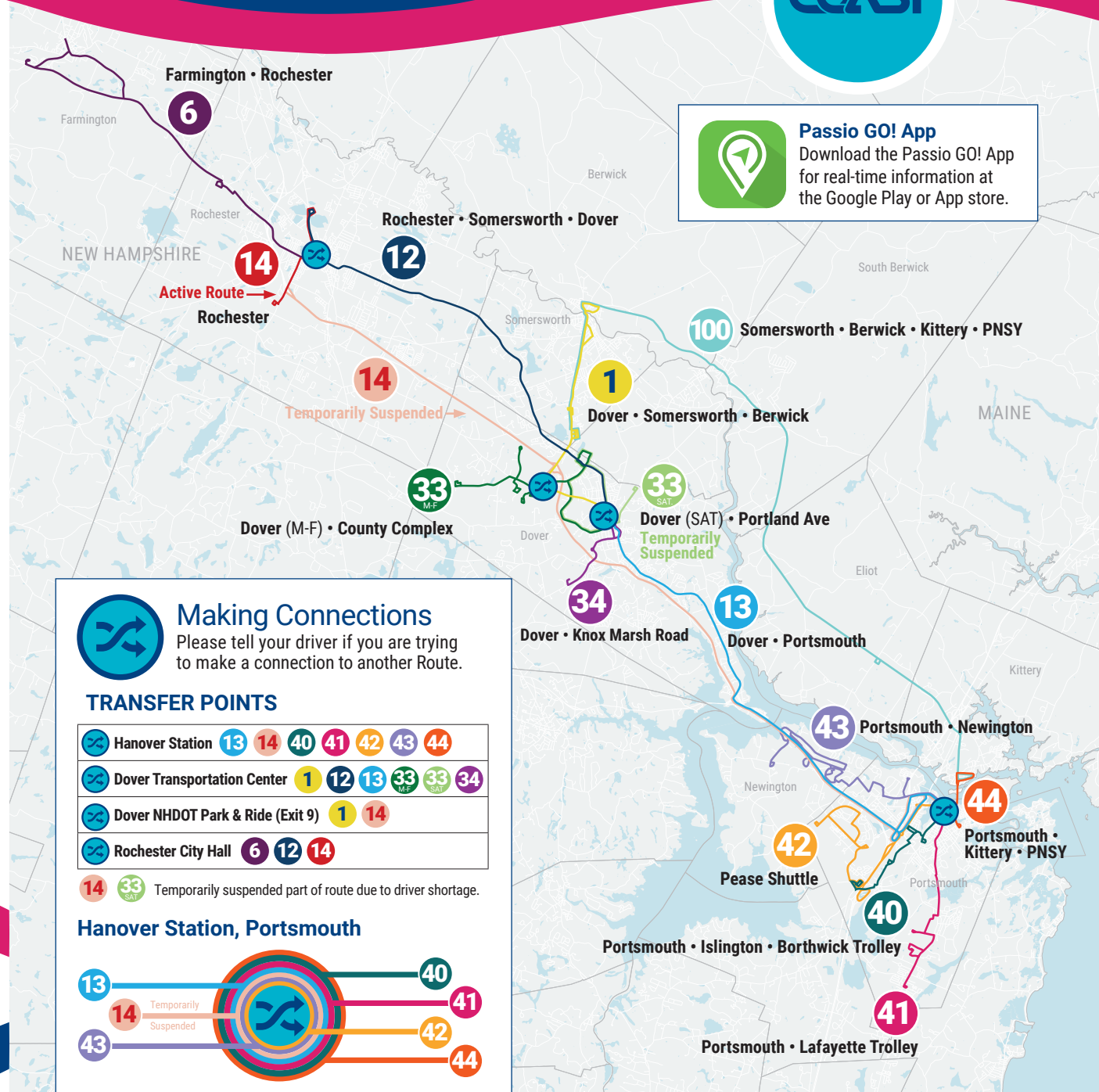
OUTBOUND (M-Sat)	Service On Every Hour		
Hanover Station - Lafayette Rd. (Hillcrest Estates)	First Bus	Minutes Past Hour	Last Bus
• Hanover Station	6:00am	:00	8:00pm
• Lafayette Rd. (Cross Roads House)	6:10am	:10	8:10pm
• Lafayette Rd. (Walmart)	6:20am	:20	8:20pm
• Lafayette Rd. (Hillcrest Estates)	6:29am	:29	8:29pm

INBOUND (M-Sat)	Service On Every Hour		
Lafayette Rd. (Hillcrest Estates) - Hanover Station	First Bus	Minutes Past Hour	Last Bus
• Lafayette Rd. (Hillcrest Estates)	6:30am	:30	8:30pm
• Lafayette Rd. (Lens Doctors)	6:38am	:38	8:38pm
• Hanover Station	6:49am	:49	8:49pm



## MAP IT!

For a full listing of bus stops, visit [www.coastbus.org](http://www.coastbus.org) or use the Passio GO! App.



**Passio GO! App**  
Download the Passio GO! App for real-time information at the Google Play or App store.

**APPENDIX G**

US Census Journey-to-Work Data

**Table 3. Residence MCD/County to Workplace MCD/County Commuting Flows for the United States and Puerto Rico**

For more information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors, see Universe: Workers 16 years and over.

Commuting flows are sorted by residence state, residence county, and residence minor civil division.

Residence		Place of Work		Commuting Flow
State Name	Minor Civil Division Name	State Name	Minor Civil Division Name	Workers in Commuting Flow
New Hampshire	Portsmouth city	New Hampshire	Portsmouth city	6,310
New Hampshire	Portsmouth city	New Hampshire	Dover city	643
New Hampshire	Portsmouth city	New Hampshire	Durham town	470
New Hampshire	Portsmouth city	New Hampshire	Exeter town	437
New Hampshire	Portsmouth city	Maine	Kittery town	379
New Hampshire	Portsmouth city	New Hampshire	Newington town	360
New Hampshire	Portsmouth city	New Hampshire	Hampton town	354
New Hampshire	Portsmouth city	Massachusetts	Boston city	164
New Hampshire	Portsmouth city	New Hampshire	North Hampton town	162
New Hampshire	Portsmouth city	New Hampshire	Salem town	159
New Hampshire	Portsmouth city	Maine	York town	142
New Hampshire	Portsmouth city	New Hampshire	New Castle town	134
New Hampshire	Portsmouth city	New Hampshire	Manchester city	129
New Hampshire	Portsmouth city	New Hampshire	Somersworth city	125
New Hampshire	Portsmouth city	New Hampshire	Rye town	123
New Hampshire	Portsmouth city	New Hampshire	Stratham town	123
New Hampshire	Portsmouth city	New Hampshire	Greenland town	112
New Hampshire	Portsmouth city	New Hampshire	Londonderry town	92
New Hampshire	Portsmouth city	New Hampshire	Concord city	89
New Hampshire	Portsmouth city	Massachusetts	Newburyport city	86
New Hampshire	Portsmouth city	New Hampshire	Seabrook town	85
New Hampshire	Portsmouth city	New Hampshire	Rochester city	80
New Hampshire	Portsmouth city	Massachusetts	Peabody city	78
New Hampshire	Portsmouth city	New Hampshire	Brentwood town	77
New Hampshire	Portsmouth city	New Hampshire	Raymond town	75
New Hampshire	Portsmouth city	Maine	North Berwick town	72
New Hampshire	Portsmouth city	New Hampshire	Bedford town	69
New Hampshire	Portsmouth city	New Hampshire	Barrington town	56
New Hampshire	Portsmouth city	New Hampshire	Hampton Falls town	53
New Hampshire	Portsmouth city	New Hampshire	Plymouth town	51
New Hampshire	Portsmouth city	Massachusetts	North Andover town	49
New Hampshire	Portsmouth city	New Hampshire	Wolfboro town	49
New Hampshire	Portsmouth city	Maine	Eliot town	48
New Hampshire	Portsmouth city	Massachusetts	Amesbury Town city	48
New Hampshire	Portsmouth city	Massachusetts	Quincy city	43
New Hampshire	Portsmouth city	Massachusetts	Andover town	41
New Hampshire	Portsmouth city	Massachusetts	Methuen Town city	40
New Hampshire	Portsmouth city	Massachusetts	Stoneham town	39
New Hampshire	Portsmouth city	New Hampshire	Plastow town	39
New Hampshire	Portsmouth city	New Hampshire	Nashua city	38
New Hampshire	Portsmouth city	Massachusetts	Burlington town	37
New Hampshire	Portsmouth city	New Hampshire	Hooksett town	37
New Hampshire	Portsmouth city	New Hampshire	Rollinsford town	37
New Hampshire	Portsmouth city	New Hampshire	Newmarket town	33
New Hampshire	Portsmouth city	Massachusetts	Haverhill city	32
New Hampshire	Portsmouth city	Maine	South Portland city	25
New Hampshire	Portsmouth city	Massachusetts	Groveland town	25
New Hampshire	Portsmouth city	Massachusetts	Cambridge city	25
New Hampshire	Portsmouth city	Massachusetts	Chelmsford town	24
New Hampshire	Portsmouth city	Maine	South Berwick town	23
New Hampshire	Portsmouth city	New Hampshire	Hampstead town	22
New Hampshire	Portsmouth city	Maine	Portland city	21
New Hampshire	Portsmouth city	Massachusetts	Boxborough town	21
New Hampshire	Portsmouth city	Massachusetts	Billerica town	20

TOTAL 12,105

TO / FROM					
I-95 NB via Route 1 Bypass	I-95 SB via NH 33	Spaulding Tpke via Route 1 Bypass	South via Route 1	Portsmouth Center via Lafayette Rd	West via Route 33
315.5		315.5	1893	3470.5	315.5
		643			
		376			117.5
	327.75				109.25
151.6				227.4	
		324			36
	106.2		247.8		
	82		82		
	48.6		113.4		
	159				
71					71
				134	
	51.6	38.7			38.7
		125			
			123		
			92.25		30.75
			84		28
		92			
			89		
		43		43	
		42.5		42.5	
			80		
		39		39	
	57.75				19.25
	37.5				37.5
36			36		
		69			
			56		
		26.5		26.5	
		45.9	5.1		
		36.75		12.25	
			49		
	24				24
		24		24	
		21.5		21.5	
		20.5		20.5	
		20		20	
		19.5		19.5	
		39			
		38			
		18.5		18.5	
		33.3	3.7		
			37		
					33
		16		16	
	25				
		12.5		12.5	
		12.5		12.5	
		12		12	
			5.75		
	17.25				
		22			
	21				
		10.5		10.5	
		10		10	

661 1,595 2,184 2,996 3,927 765 0  
 5% 15% 20% 25% 30% 5%

**APPENDIX H**  
Site Development Plan

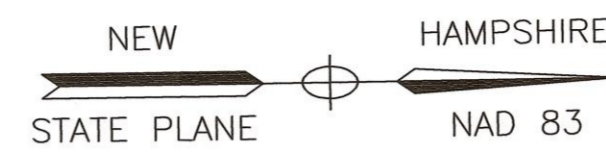


ZONING TABLE

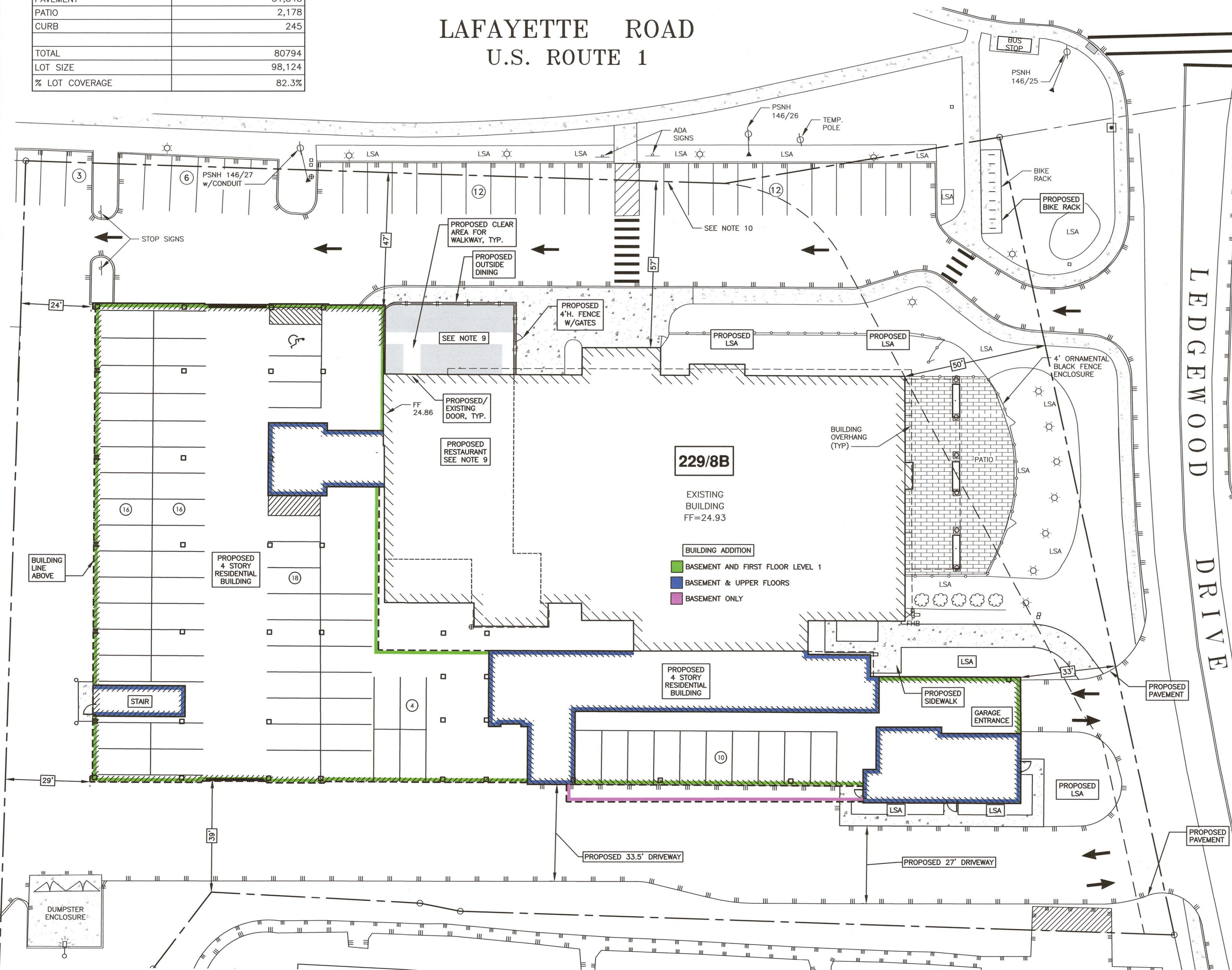
Zone	Existing	Proposed
Height	5 stories or 60 ft. per Density Bonus 10.5B72.30; G1 apartments: 4 stories or 50 ft. (+ density bonus 1 story or 10') 10.5B.22.20, at streets <60' row: 35' max <25' setback 45' max <50' setback 60' max >50' setback.	35/3 stories at street fronts 45/4 stories beyond 60/5 stories at center
Penthouses	10' above allowed building height	<10'
Roof appurtenance	Roof decks, roof gardens, and related structures and appurtenances shall not be counted in the building height limits.	<10'
Facade Types	forecourt, recessed entry, dooryard, steps, porch	recessed entry
Building Types	Dwelling units	Workforce Housing: 4 stories Podium parking at street level and one level below grade
Setbacks (ft) *		
Front (principle)	70'-90' from cl of Lafayette Rd	setback is within public way
Front (secondary)	min 10' & max 30' from Lot Line at Ledgewood	19'
Side	Minimum side setback: 15 ft. Where a development site includes a more than one building type, the minimum building setback to interior lot lines shall be 0 feet	40'
Rear	N/A. Minimum rear setback 20 ft. (& 25 ROW easement)	24'
Front lot line buildout residential	30%	85%
Front lot line buildout commercial/mixed-use	75%	85%
Frontage, Lafayette	100 ft min	337.4'
Lot area (sf)	NR	
area per dwelling	Workforce Housing units for rent: min 120 or 2 units, min. 800 sq. ft. or average unit size (larger of two)	1,363
Coverage, maximum	50%	82%
Footprint, max	NR for apartment buildings	
Offstreet parking	For developments located on public transit with year-round, 5-days-per-week, fixed-route service and where at least 50% of the building(s) are within 1/4 mile of a transit stop, the minimum offstreet parking shall be reduced by 20%.	170
ground floor area per use, max	NR	parking 15%
Open space, minimum permitted uses (G1)	multifamily, restaurant	multifamily
building length, max (ft)	200	236
facade modulation length, max (ft)	A) Symmetrical and vertically articulated bays >6' & <50' wide, minimum 3. B) Buildings greater than one hundred (100) feet in width shall read as a series of smaller buildings with varied architectural design and facade glazing patterns; or include a change in vertical plane of the facade of at least four (4) feet (in depth or projection) for at least one (1) bay in width for every one hundred (100) feet of total facade width. This change in plane applies to the entire height of the facade.	modulations < 100 ft
entrance spacing, max (ft)		entries facing street fronts
floor height above sidewalk, max	36"	8"
ground floor height, min		12'
second floor height, min		11'
glazing, shopfront, min		Streetfront Glazing at lobby entrances 100%. Sides & rear podium parking at first floor, some open and some screening
glazing, other	20%	
roof types(pitch)	NR	Flat & Sloped
Parking, off-street	All (flat roofs must have "parapet wall that acts as a structural expression of the building facade and its materials) 1 bicycle space for each 5 dwellings units or portion thereof. Off-site parking: Less than 500 sq. ft. 0.5 spaces per unit 500-700 sq. ft. 1.0 space per unit Over 750 sq. ft. 1.3 space per unit 10.1112.312 In addition to the off-street parking spaces provided in accordance with Sec. 10.1112.311, any dwelling unit shall provide one visitor parking space for every 5 dwelling units or portion thereof.	170
Units density	24 units per building, 36 units exception for workforce housing Conditional Use Permit under the provisions for Density Bonuses in Section 10.5B72.10.5B72	36 units per building * 2 buildings = 72 units

**IMPERVIOUS SURFACE AREAS (TO PROPERTY LINE)**

STRUCTURE	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	43567
CONCRETE/SIDWALK	2,956
PAVEMENT	31,848
PATIO	2,178
CURB	245
<b>TOTAL</b>	<b>80794</b>
LOT SIZE	98,124
% LOT COVERAGE	82.3%



LAFAYETTE ROAD  
U.S. ROUTE 1



PORTSMOUTH APPROVAL CONDITIONS NOTES:

- 1) 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.
- 2) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
- 3) ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

NOTES:

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270E, EFFECTIVE MAY 17, 2005
- 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY CORRIDOR (G1) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED BUILDING ADDITION ON TAX MAP 229 LOT 8B.
- 8) DESIGN BASED ON ARCHITECTURAL PLAN BY ARCOVE ARCHITECTS DATED 8/22/23.
- 9) CONVERSION OF TUSCAN MARKETPLACE TO RESTAURANT (NORTHEASTERN THAI, LLC) APPROVED UNDER PERMIT: LU-22-254

COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	9/5/23
0	ISSUED FOR COMMENT	8/31/23

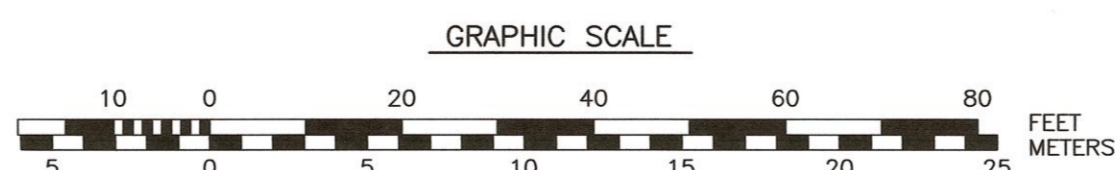


SCALE: 1"=20' JULY 2023

SITE PLAN C3

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE

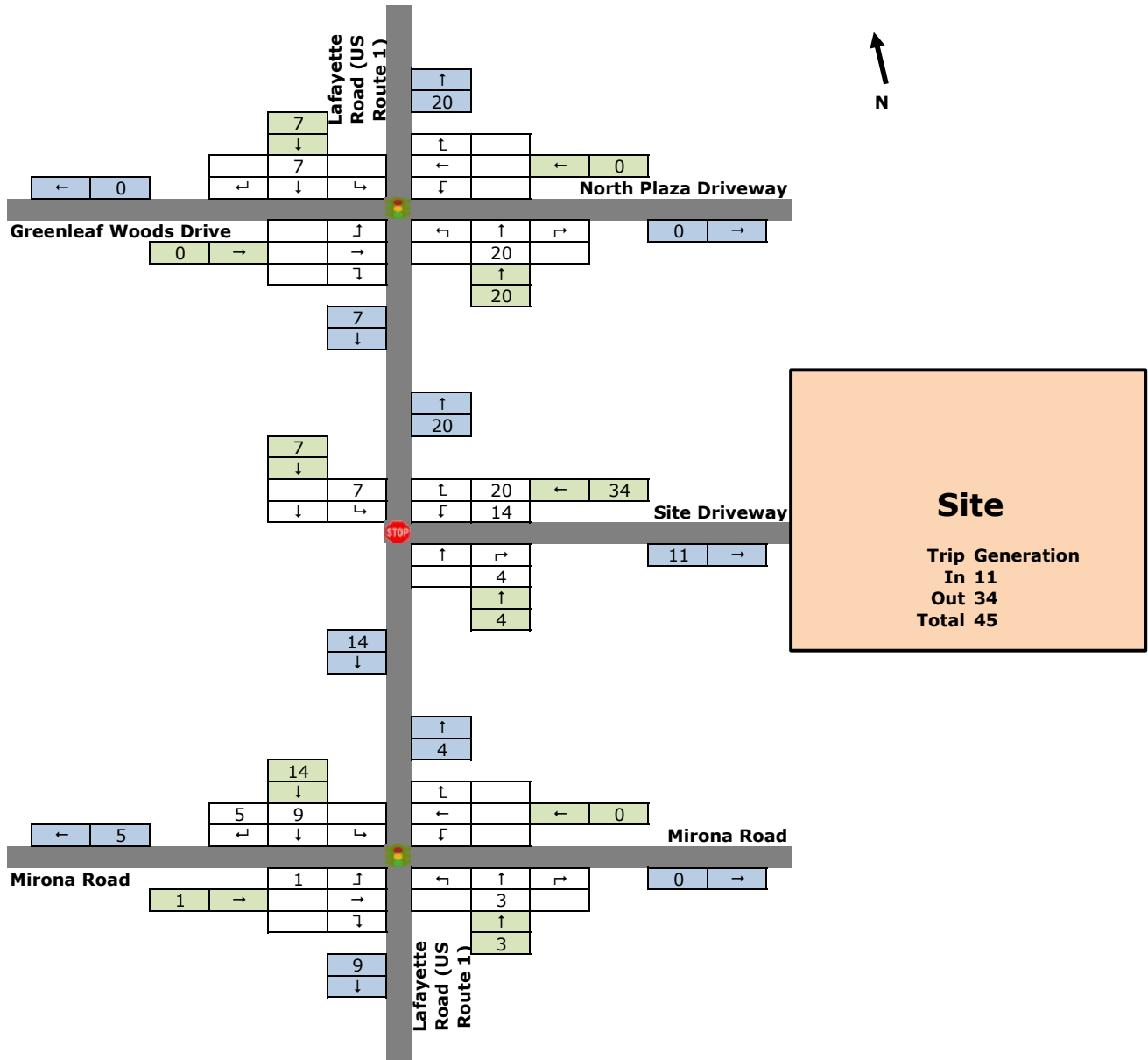


P:\NH\010\56\McNabb\Projects\197759-Lafayette Rd., Portsmouth\HCC\2023 Site Plan 197759\Plan & Specs\SitePlan197759.DWG, The Sep. 5, 15:48:13 2023. Plotter: Foster-Carter, 10/20/23



**APPENDIX I**

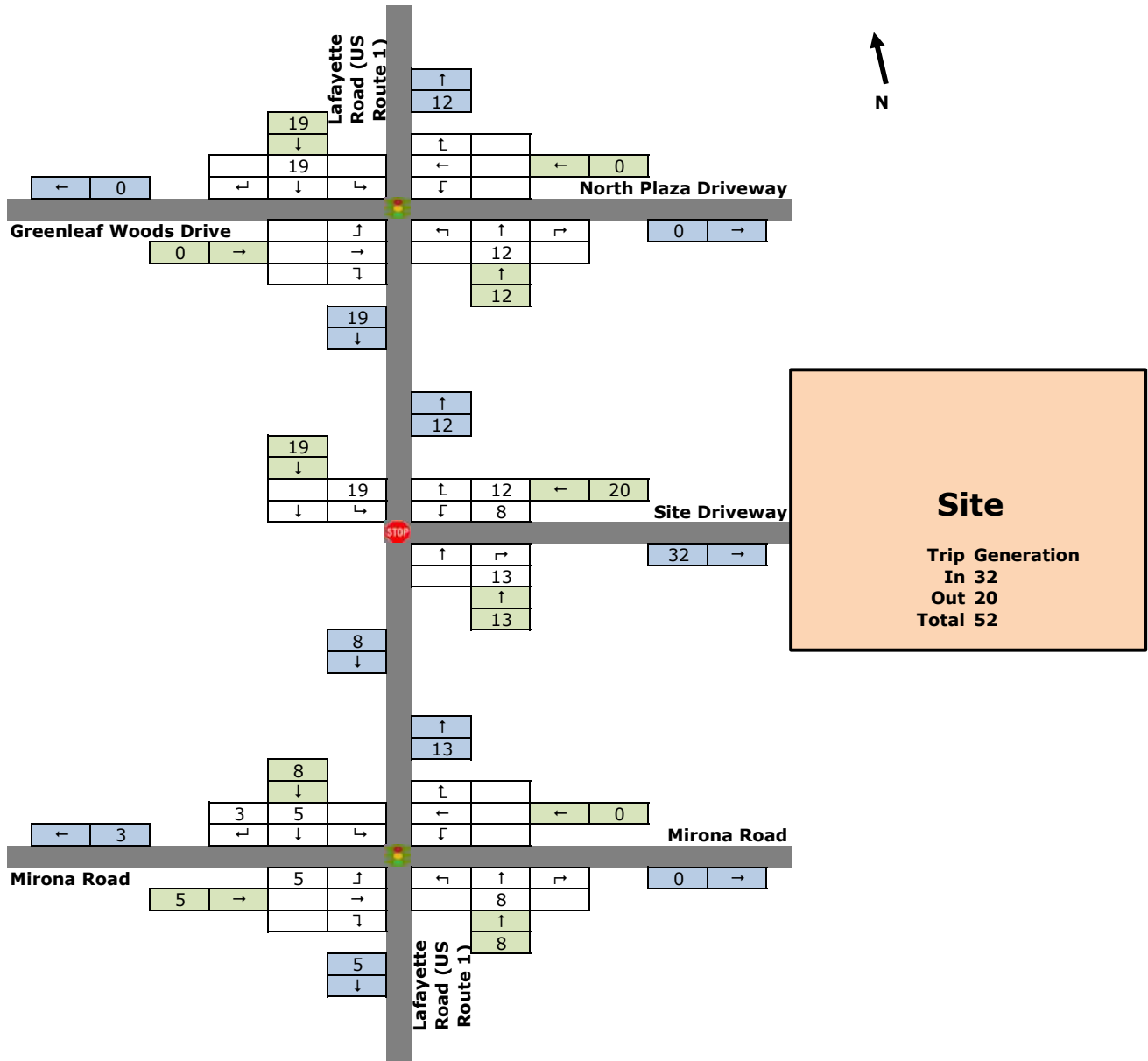
Background Development Traffic Volumes



**Site Generated Traffic Volumes  
Weekday AM Peak  
815 Lafayette Road Development**

**Figure 9**





Site Generated Traffic Volumes  
Weekday PM Peak  
815 Lafayette Road Development

Figure 10

**APPENDIX J**

Collision History Summary

**Intersection Collision History Summary**

Intersection:

US Route 1

at

North Shopping Plaza

**COLLISION TYPE**

	2020	2021	2022	2023	Total	Percent
Angle	0	1	0	0	1	100.0%
<b>TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>100%</b>

**SEVERITY**

	2020	2021	2022	2023	Total	Percent
Property Damage Only (PDO)	0	1	0	0	1	100.0%
<b>TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>100%</b>

**Day & Time**

	2020	2021	2022	2023	Total	Percent
Weekday Off-Peak	0	1	0	0	1	100.0%
<b>TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>100%</b>

**Intersection Collision History Summary**Intersection: **US Route 1 Bypass** at **Lafayette Road****COLLISION TYPE**

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Angle	0	0	1	0	<b>1</b>	<b>7.1%</b>
Fixed Object	0	0	0	2	<b>2</b>	<b>14.3%</b>
Rear-End	2	2	4	2	<b>10</b>	<b>71.4%</b>
Sideswipe, Same Direction	0	1	0	0	<b>1</b>	<b>7.1%</b>
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>14</b>	<b>100%</b>

**SEVERITY**

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Personal Injury	0	0	1	1	<b>2</b>	<b>14.3%</b>
Property Damage Only (PDO)	2	3	4	3	<b>12</b>	<b>85.7%</b>
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>14</b>	<b>100%</b>

**Day & Time**

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Weekday 6-9 A.M.	0	1	0	0	<b>1</b>	<b>7.1%</b>
Weekday 3-6 P.M.	1	1	0	0	<b>2</b>	<b>14.3%</b>
Weekday Off-Peak	1	1	3	2	<b>7</b>	<b>50.0%</b>
Weekend Off-Peak	0	0	2	2	<b>4</b>	<b>28.6%</b>
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>14</b>	<b>100%</b>

**Intersection Collision History Summary**

Intersection: Lafayette Road at Ledgewood Drive

**COLLISION TYPE**

	2020	2021	2022	2023	Total	Percent
Angle	1	0	0	0	1	25.0%
Rear-End	0	1	1	0	2	50.0%
Sideswipe, Same Direction	1	0	0	0	1	25.0%
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>100%</b>

**SEVERITY**

	2020	2021	2022	2023	Total	Percent
Personal Injury	0	1	0	0	1	25.0%
Property Damage Only (PDO)	2	0	1	0	3	75.0%
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>100%</b>

**Day & Time**

	2020	2021	2022	2023	Total	Percent
Weekday 3-6 P.M.	1	1	1	0	3	75.0%
Weekend Off-Peak	1	0	0	0	1	25.0%
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>100%</b>

**Intersection Collision History Summary**Intersection: **US Route 1 Bypass** at **Greenleaf Avenue****COLLISION TYPE**

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Angle	0	1	0	1	<b>2</b>	<b>25.0%</b>
Fixed Object	1	0	0	1	<b>2</b>	<b>25.0%</b>
Rear-End	1	1	0	0	<b>2</b>	<b>25.0%</b>
Sideswipe, Same Direction	0	1	0	1	<b>2</b>	<b>25.0%</b>
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>8</b>	<b>100%</b>

**SEVERITY**

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Personal Injury	1	0	0	0	<b>1</b>	<b>12.5%</b>
Property Damage Only (PDO)	1	3	0	3	<b>7</b>	<b>87.5%</b>
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>8</b>	<b>100%</b>

**Day & Time**

	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Percent</b>
Weekday 3-6 P.M.	1	1	0	0	<b>2</b>	<b>25.0%</b>
Weekday Off-Peak	1	2	0	3	<b>6</b>	<b>75.0%</b>
<b>TOTAL</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>8</b>	<b>100%</b>















ABUTTERS ON WEST SIDE OF LAFAYETTE ROAD

N/F J.E. SHOLDAR, T.F. GERGEN JR., N.J. CZ/KE, R.E. GERGEN & J.M. GERGEN  
155 GREENLEAF AVENUE  
PORTSMOUTH, N.H. 03801  
5495/1585

N/F CROSS ROADS HOUSE, INC.  
600 LAFAYETTE ROAD  
PORTSMOUTH, N.H. 03801  
2773/2910

N/F OPERATION BLESSING, INC.  
P.O. BOX 4069  
PORTSMOUTH, N.H. 03802  
3767/1721

**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road, Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9202  
Fax (603) 436-2315

- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
  - 2) OWNERS OF RECORD:  
DMJ REALTY, LLC  
63 MAIN STREET  
PO BOX 1195  
SALEM, N.H. 03079  
5669/0667
  - 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270E, EFFECTIVE MAY 17, 2005
  - 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
  - 5) PARCEL IS LOCATED IN THE GATEWAY (GW) DISTRICT.
  - 6) DIMENSIONAL REQUIREMENTS:  
MIN. LOT AREA: 43,560 S.F.  
FRONTAGE: 200 FT.  
DEPTH: 100 FT.  
SETBACKS: FRONT: 30 FT.  
SIDE: 30 FT.  
REAR: 50 FT.  
MAXIMUM STRUCTURE HEIGHT: 40 FT.  
MAXIMUM ROOF APPURTENANCE HEIGHT: 10 FT.  
MAXIMUM BUILDING COVERAGE: 30%  
MINIMUM OPEN SPACE: 20%
  - 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON TAX MAP 229 LOT 8B.
  - 8) EASEMENTS & RESTRICTIONS:  
A) ROAD/UTILITY EASEMENT AREA: SEE C-3316 AND RCRD 2110/428 AND 2184/184. THIS EASEMENT WAS PARTIALLY TERMINATED ON 11/9/15; SEE RCRD 5689/0645.  
B) 30' RIGHT OF WAY: SEE D-8806 AND 5446/2589.  
C) MUTUAL PARKING AND ACCESS RIGHTS FOR LOTS 1-3 ON PLAN D-8806 ARE OF RECORD, RCRD 2343/128 AND 5446/2588.

*POW*  
*PUMT*

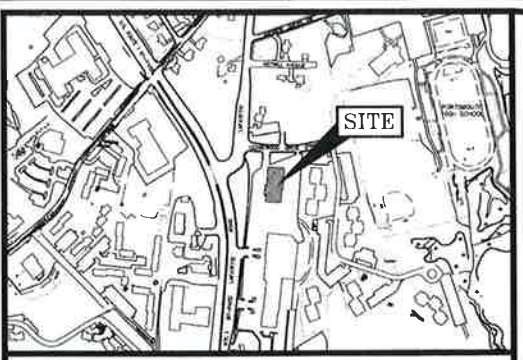
**SITE REDEVELOPMENT  
TUSCAN KITCHEN  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

3	REVISED NOTES 2 AND 8	12/21/15
2	ADDED HANDICAP PARKING	8/26/15
1	ADDED EXISTING FORCE MAIN	7/30/15
0	ISSUED FOR COMMENT	7/20/15
NO.	DESCRIPTION	DATE



SCALE: 1" = 30' JULY 2015

EXISTING CONDITIONS PLAN **C1**



LOCATION MAP SCALE: 1" = 400'±

**LEGEND:**

EXISTING	PROPOSED	DESCRIPTION
FM	FM	FORCE MAIN
S	S	SEWER LINE
G	G	GAS LINE
D	D	STORM DRAIN
SPP	SPP	SMOOTH PLASTIC PIPE
W	W	WATER LINE
UE	UE	UNDERGROUND ELECTRIC
UU	UU	UNDERGROUND UTILITIES
OE	OE	OVERHEAD ELECTRIC WIRES
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
		UTILITY POLE
		WATER SHUT OFF/CURB STOP
		GAS SHUT OFF
		GATE VALVE
		HYDRANT
		METER (GAS, WATER, ELECTRIC)
		CATCH BASIN
		TELEPHONE MANHOLE
		SEWER MANHOLE
		DRAIN MANHOLE
		WELL
		EDGE OF WETLAND FLAGGING
		SWAMP/ MARSH
		ASBESTOS CEMENT PIPE
		CAST IRON PIPE
		CORRUGATED METAL PIPE
		CONCRETE MASONRY UNIT
		DUCTILE IRON PIPE
		POLYVINYL CHLORIDE PIPE
		REINFORCED CONCRETE PIPE
		VITRIFIED CLAY PIPE
		ELEVATION
		EDGE OF PAVEMENT
		FINISHED FLOOR
		INVERT
		TEMPORARY BENCH MARK
		TYPICAL
		VERTICAL/SLOPED GRANITE CURB
		CAPE COD BERM
		CENTERLINE
		IRON ROD/CAP FOUND
		NHDOT BOUND FOUND
		POLE/ LIGHT

**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	S15°17'27"W	14.20'
L2	S48°43'16"E	33.26'

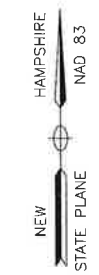
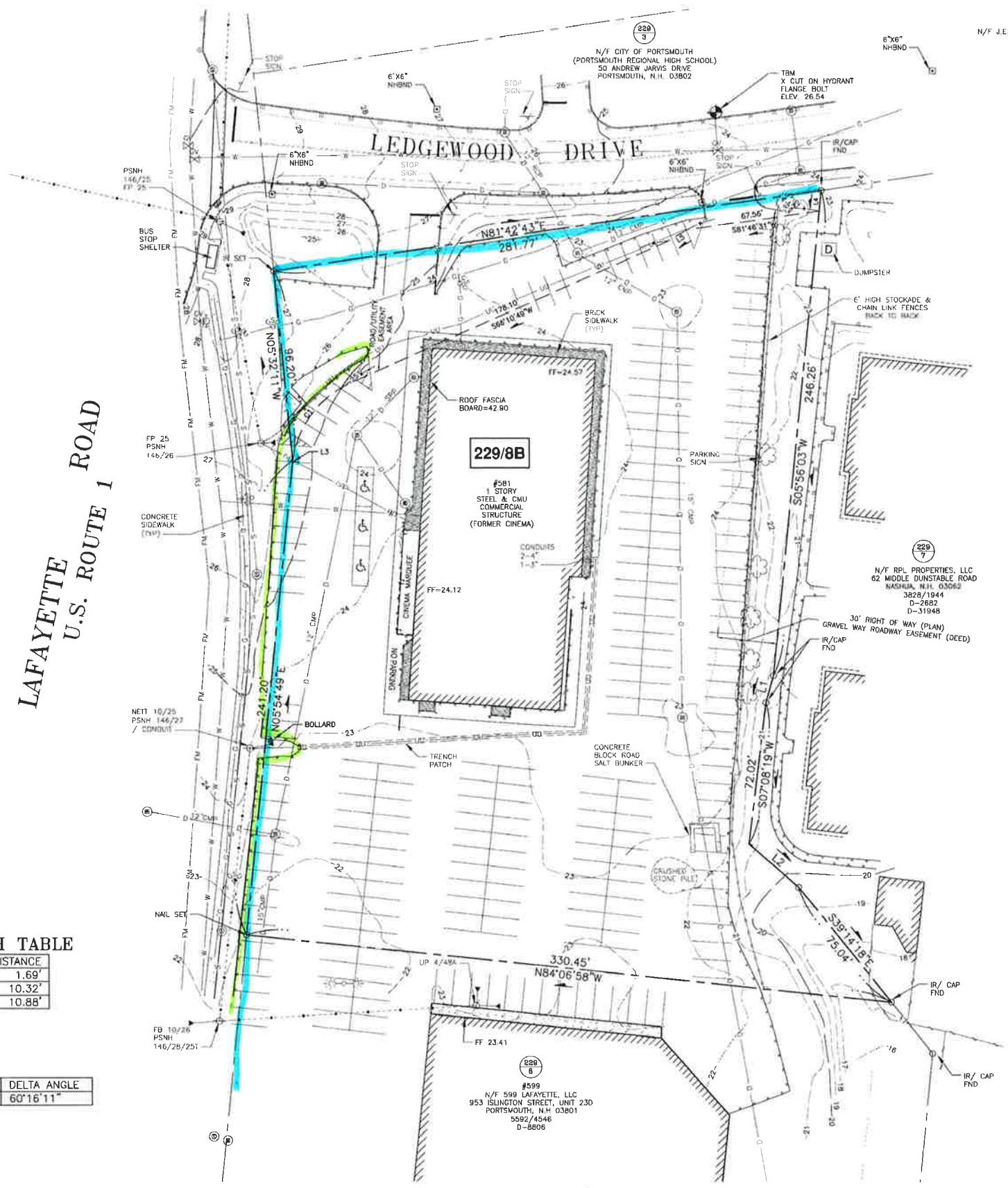
**EASEMENT LENGTH TABLE**

LINE	BEARING	DISTANCE
L3	N05°54'49"E	1.69'
L4	S05°56'03"W	10.32'
L5	S58°58'49"W	10.88'

**EASEMENT CURVE TABLE**

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	50.00'	52.60'	50.20'	S36°02'43"W	60°16'11"

LAFAYETTE  
U.S. ROUTE 1



APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

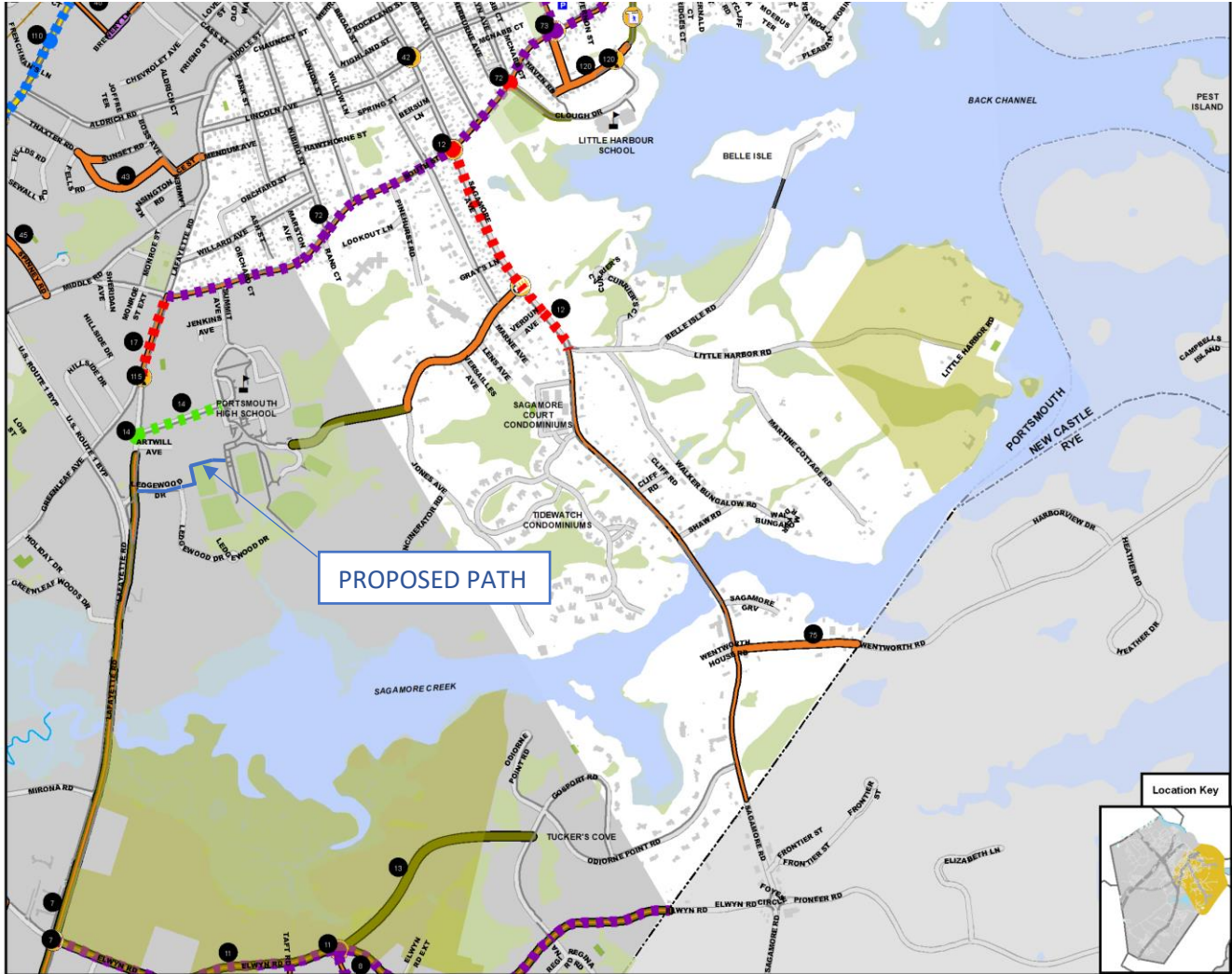




**AMBIT ENGINEERING, INC.**  
A DIVISION OF HALEY WARD, INC.

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

### Bicycle & Pedestrian Network Plan



City of Portsmouth  
**Bicycle and Pedestrian Plan**  
Pedestrian Network Plan  
September 2018

- EXISTING FACILITIES**
- Side-Path, 1-Side
  - Shared-Use Path
  - Sidepath
  - Add Sidewalk, 2-Sides
  - Reconstruct Sidewalk
  - Widen Sidewalk
  - Shared Street
  - Pedestrian Street

- PROPOSED PEDESTRIAN IMPROVEMENTS**
- Completed
  - Under Const.
  - Designed/Wait Const.
  - In Design
  - In CIP

- SPOT IMPROVEMENT STATUS**
- Completed
  - Under Const.
  - Designed/Wait Const.
  - In Design
  - In CIP

- PED IMPROVEMENT STATUS**
- Completed
  - Under Const.
  - Designed/Wait Const.
  - In Design
  - In CIP

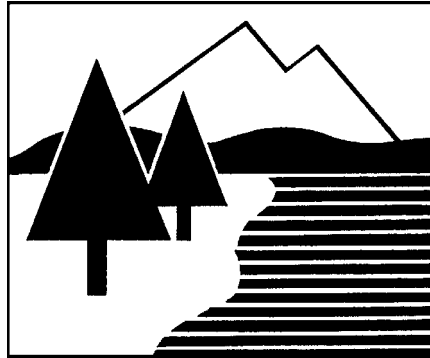
- SPOT IMPROVEMENTS**
- Safe Access
  - Raised Intersection
  - Pedestrian Refuge
  - Pedestrian-Scale Lighting
  - Actuated Signal
  - ADA-Compliant Crosswalk
  - Curb Extensions
  - Intersection Geometry
  - Trailhead



**DRAINAGE ANALYSIS**

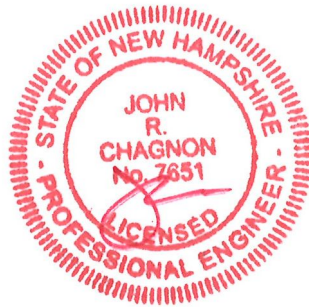
**COMMERCIAL DEVELOPMENT**

581 LAFAYETTE ROAD  
PORTSMOUTH, NH



PREPARED FOR  
ATLAS COMMONS, LLC

20 NOVEMBER 2023



200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
Phone: 603.430.9282; Fax: 603.436.2315  
E-mail: [jchagnon@haleyward.com](mailto:jchagnon@haleyward.com)  
(Ambit Job Number 5010156.1397.03)

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Proposed Subcatchment Plan	

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## **EXECUTIVE SUMMARY**

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the Commercial Development at the property known as 581 Lafayette Road in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 229 as Lot 8B. The total size of the associated drainage area is 188,901± square-feet (4.337 acres). The total size of the lot is 98,125± square-feet (2.253 acres). The total redevelopment area of the project is 66,540± square-feet (1.528 acres).

The development will provide for a new commercial building with associated parking and utilities. The development has the potential to increase stormwater pollutants to City infrastructure, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in pollutants from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

The proposed development includes a Contech Jellyfish® Filter in order to treat stormwater from the site, in compliance with local ordinance.

## **INTRODUCTION / PROJECT DESCRIPTION**

This drainage report is designed to assist the owner, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 229 as Lot 8B. Bounding the site to the north is Ledgewood Drive. Bounding the site to the east is apartments. Bounding the site to the South is commercial development. Bounding the site to the west is Lafayette Road (Route 1). A vicinity map is included in the Appendix to this report.

The proposed development will include a residential building addition with utilities and associated parking. This report includes information about the existing site and the proposed additions 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. The unadjusted table is appended to this report.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD version 10.20 program,

written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from “The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.”

Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Haley Ward and field observations to confirm.

**SITE SPECIFIC INFORMATION**

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of two soil types:

<b>Soil Symbol</b>	<b>Soil Name and Slopes</b>
<b>699</b>	Urban Land
<b>799</b>	Urban land – Canton complex, 3 to 15 percent slopes

**Urban Land** does not have any recorded geological features, including depth to bedrock or depth to water table. The Hydraulic Soil Grade is assumed to be type A.

The physical characteristics of the site not containing buildings consist of gently sloped (0-15%) grades that generally slope from the northwest of the lot to the southeast. Elevations on the site range from 17 to 27 feet above sea level. The existing site is developed with commercial buildings and associated parking.

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



development is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

### **PRE-DEVELOPMENT DRAINAGE**

In the pre-development condition, the site has been analyzed as nine subcatchment basins (E1a, E1b, E1c, E2a, E2b, E2c, E2d, E3, and O1) based on localized topography and discharge location. Subcatchments E1a, E1b, and E1c contain the west half of the lot, and flow to the southwest corner through an existing drainage network to discharge point DP1. Subcatchments E2a, E2b, E2c, and E2d flow through an existing drainage network to the southeast corner of the property to discharge point DP2. Subcatchment E3 represents overland flow in the southeast corner of the lot to discharge point DP2. Subcatchment O1 represents off-site flow that ultimately flows to DP2 through the existing drainage network.

**Table 1: Pre-Development Watershed Basin Summary**

<b>Watershed Basin ID</b>	<b>Basin Area (SF)</b>	<b>Tc (MIN)</b>	<b>CN</b>	<b>10-Year Runoff (CFS)</b>	<b>50-Year Runoff (CFS)</b>	<b>To Design Point</b>
<b>E1a</b>	20,120	5.0	77	1.77	3.20	DP1
<b>E1b</b>	27,062	5.0	92	3.34	5.23	DP1
<b>E1c</b>	4,032	5.0	98	0.53	0.80	DP1
<b>E2a</b>	8,301	5.0	64	0.45	0.97	DP2
<b>E2b</b>	16,660	5.0	91	2.02	3.20	DP2
<b>E2c</b>	16,042	5.0	93	2.01	3.12	DP2
<b>E2d</b>	7,341	5.0	95	0.94	1.45	DP2
<b>E3</b>	9,577	5.0	57	0.35	0.89	DP2
<b>O1</b>	79,768	27.6	65	2.53	5.43	DP2

### **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 nine subcatchment basins, (P1a, P1b, P1c, P2a, P2b, P2c, P2d, P3, O1). All

subcatchments occupy approximately the same location as their existing counterparts and drain to the same drainage points. This is intentional and will be a function of the roof design for the additions.

**Table 2: Post-Development Watershed Basin Summary**

<b>Watershed Basin ID</b>	<b>Basin Area (SF)</b>	<b>Tc (MIN)</b>	<b>CN</b>	<b>10-Year Runoff (CFS)</b>	<b>50-Year Runoff (CFS)</b>	<b>To Design Point</b>
<b>P1a</b>	20,120	5.0	77	1.77	3.20	DP1
<b>P1b</b>	26,173	5.0	94	3.31	5.13	DP1
<b>P1c</b>	4,594	5.0	98	0.60	0.92	DP1
<b>P2a</b>	8,300	5.0	57	0.30	0.77	DP2
<b>P2b</b>	16,660	5.0	92	2.05	3.22	DP2
<b>P2c</b>	15,044	5.0	98	1.97	3.00	DP2
<b>P2d</b>	8,407	5.0	98	1.10	1.67	DP2
<b>P3</b>	9,835	5.0	71	0.71	1.38	DP2
<b>O1</b>	79,768	27.6	65	2.53	5.43	DP2

The overall impervious coverage of the subcatchment areas analyzed in this report **increases** from 2.768 acres (63.9%) in the pre-development condition to 2.861 acres (66.0%) in the post-development condition. The City of Portsmouth specifies that 30% of existing impervious cover in addition to 100% of additional proposed impervious cover is treated in a Redevelopment project. These conditions are exceeded by treating 77,475 sf of impervious surface with a Contech Jellyfish filter.

$$(100\%)(4,012 \text{ sf impervious}) + (30\%)(81,351 \text{ sf impervious}) = 28,417 \text{ sf required treatment}$$

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for the design point. The comparison shows increased flows between the existing and proposed conditions due to the increase in impervious surfaces on the site.

**Table 3: Pre-Development to Post-Development Comparison**

Design Point	Q2 (CFS)		Q10 (CFS)		Q50 (CFS)		Description
	Pre	Post	Pre	Post	Pre	Post	
DP1	3.29	3.37	5.63	5.68	9.24	9.24	Drainage System 1
DP2	3.50	3.83	6.59	6.96	11.76	12.18	Drainage System 2

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

### **OFFSITE INFRASTRUCTURE CAPACITY**

Due to the change of impervious surfaces in the proposed plan, the impacts to the local infrastructure receptors were considered. The receiving catch basin has a 12" diameter and was likely designed for a 10-year storm event with a less stringent design storm. The current design standards would have one of the receiving catch basins (CB1 in the plan set) overflow in the 10-year storm event. However, due to the minimal increase in flow in the proposed design, it is anticipated that the receiving catch basin will not experience significant additional inundation. As a result, it is anticipated that the proposed design will have minimal impact on City infrastructure.

### **EROSION AND SEDIMENT CONTROL PRACTICES**

The erosion potential for this site as it exists is moderate due to the presence of existing impervious surfaces. 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:

- Catch basin filter baskets
- Stabilized construction entrance at access point to the site (FODS)
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by surfacing the access drives and walkways as shown on the plans.

## **CONCLUSION**

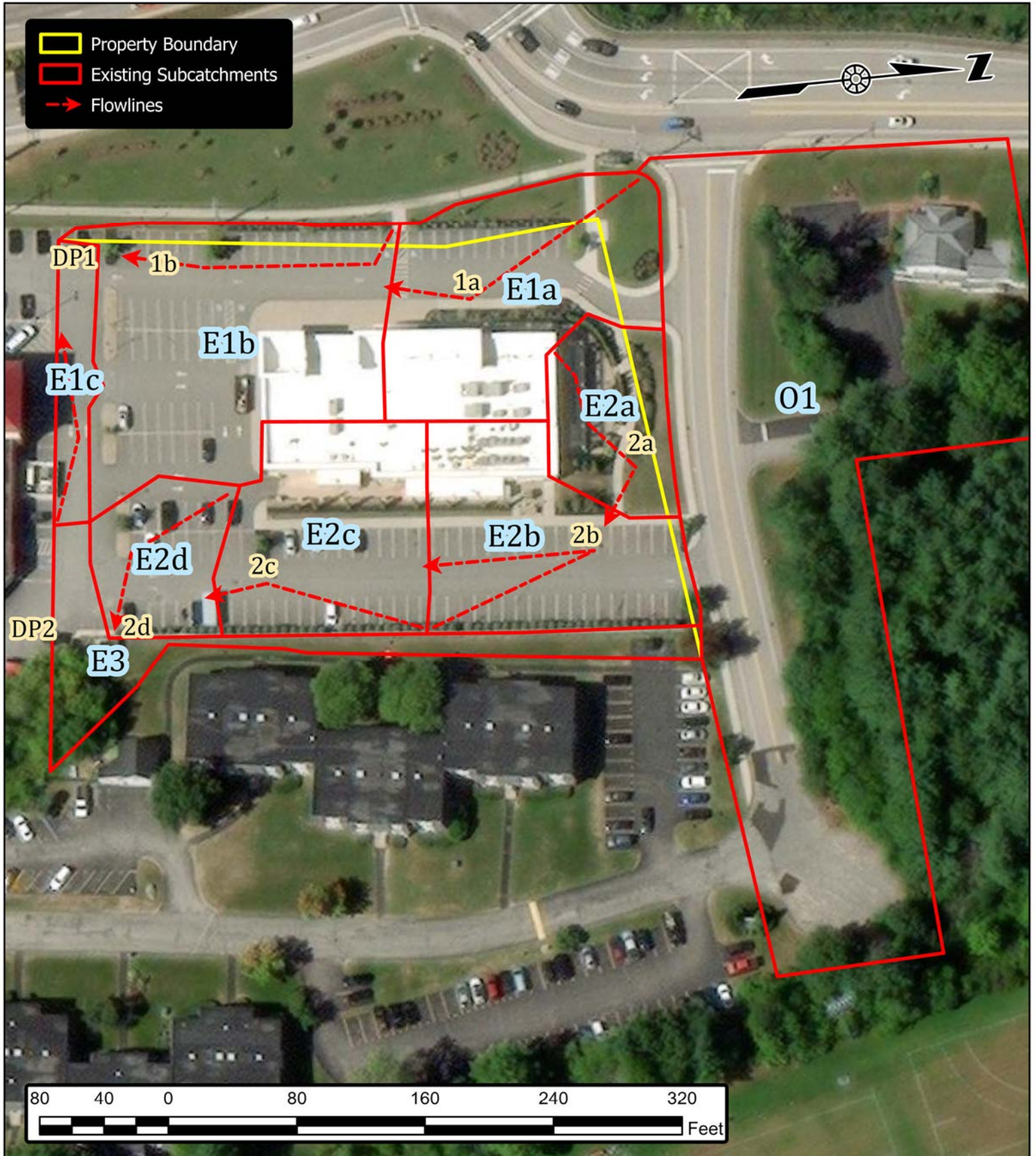
The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the Contech Jellyfish filter, the post-development runoff is treated sufficiently. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

## **REFERENCES**

1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.20* copyright 2022.

COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, NH

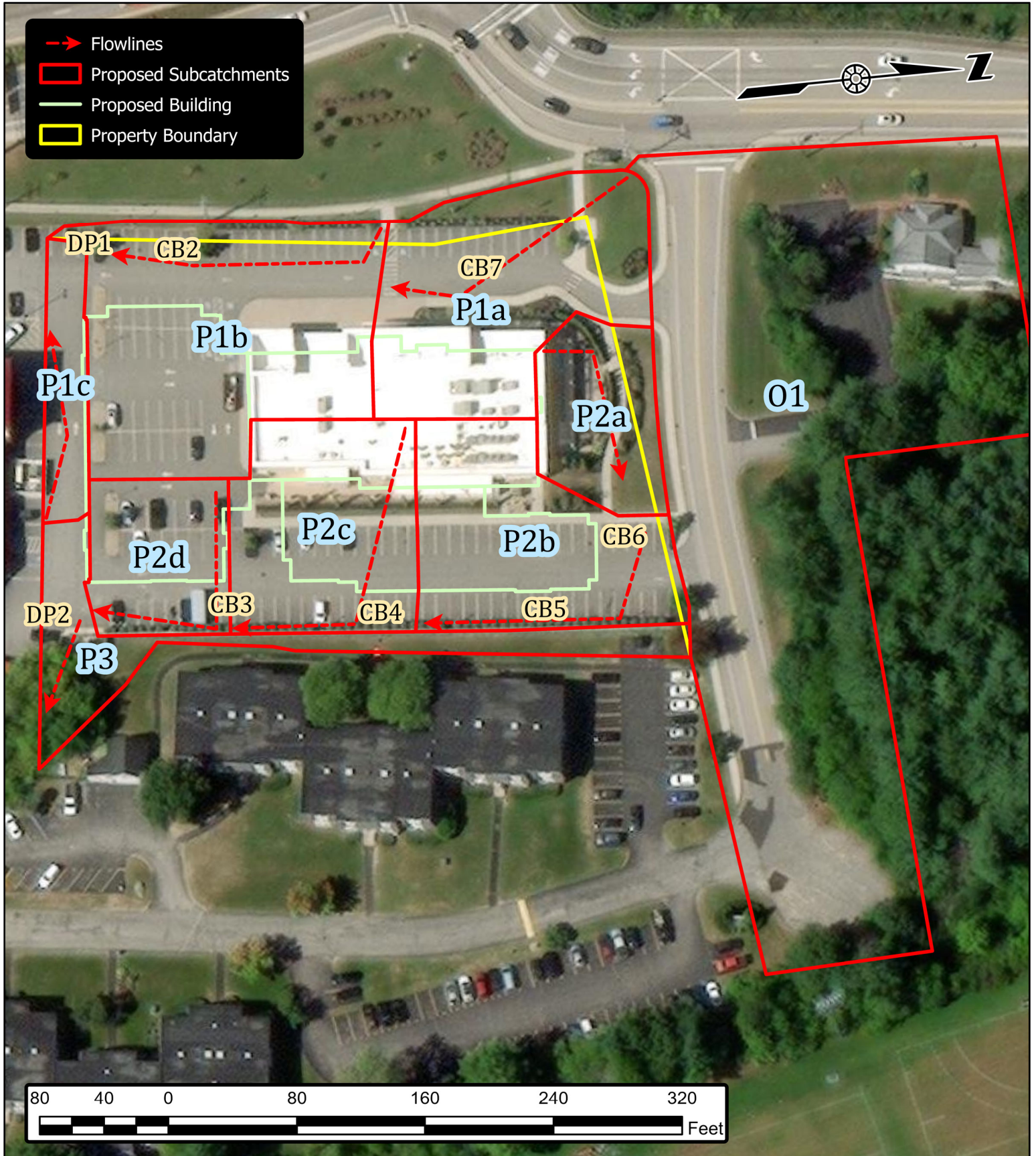
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SUBMITTED: 11-20-2023





COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, NH

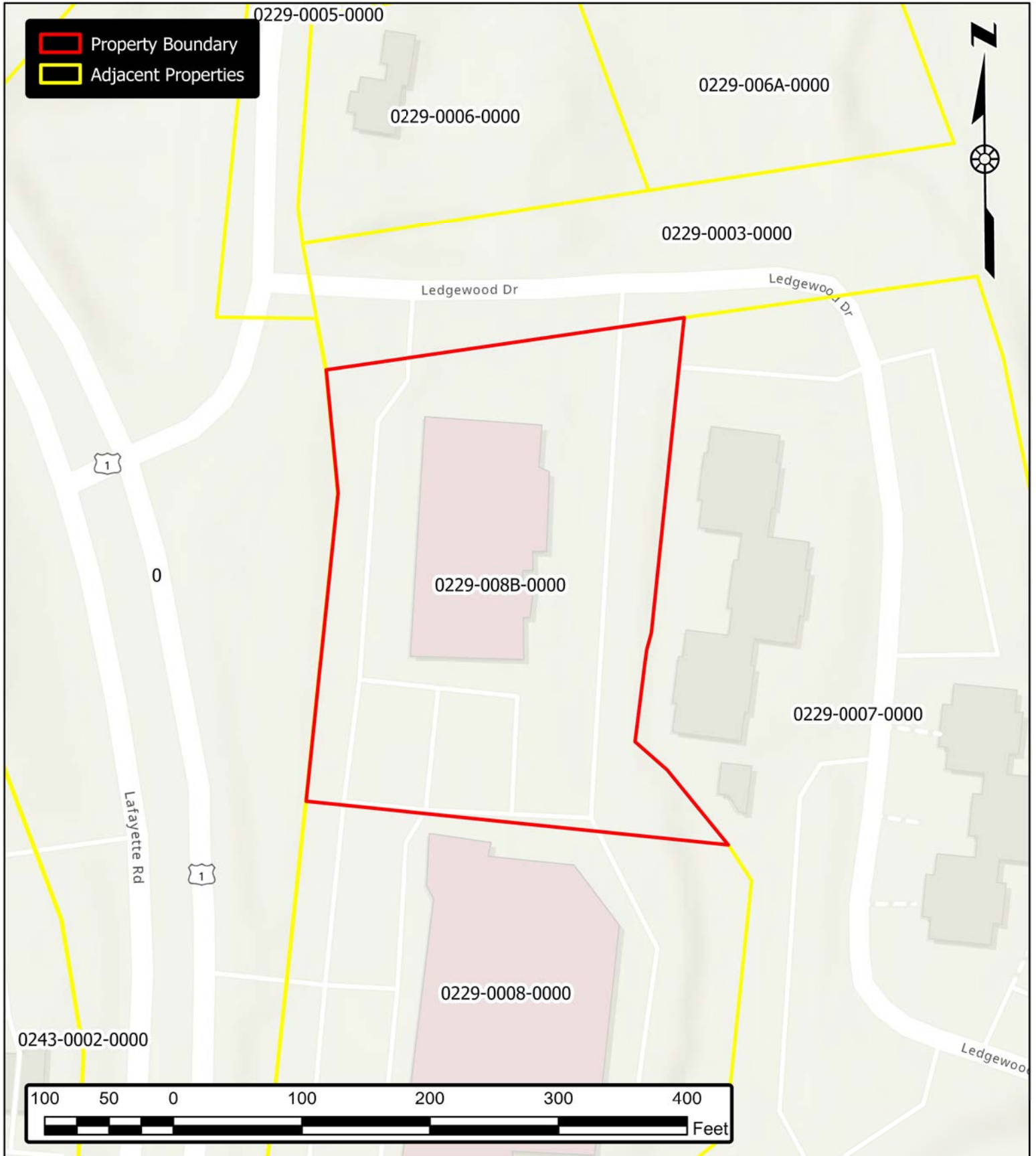
JOB NUMBER: 5010156.1397.04  
SCALE: 1" = 80'  
SUBMITTED: 11-20-2023



**APPENDIX A**  
**VICINITY (TAX) MAP**

COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, NH

JOB NUMBER: 5010156.1397.04  
SCALE: 1" = 100'  
SUBMITTED: 09-19-2023

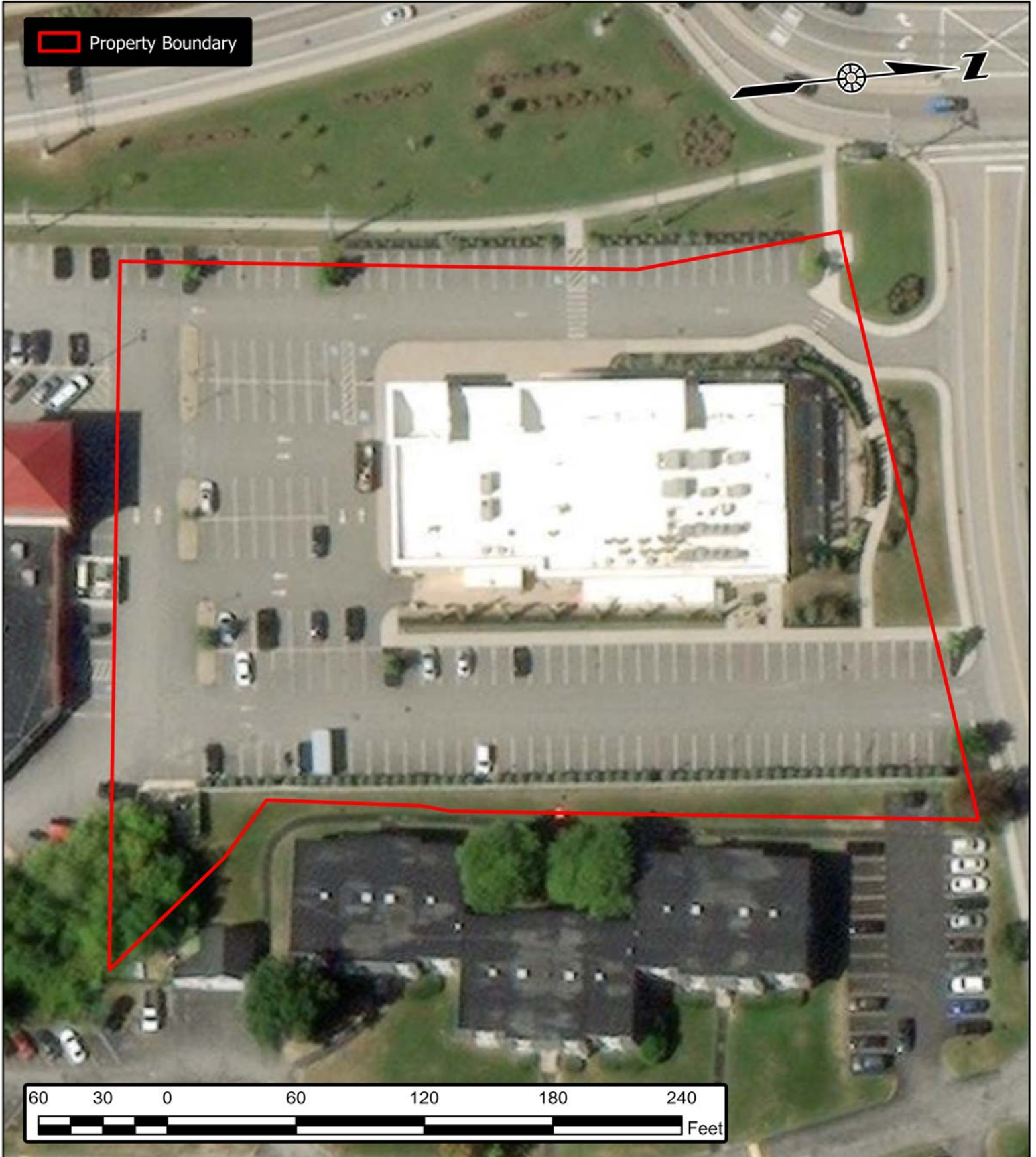




**APPENDIX B**  
**TABLES, CHARTS, ETC.**

COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, NH

JOB NUMBER: 5010156.1397.04  
SCALE: 1" = 60'  
SUBMITTED: 09-19-2023



# Extreme Precipitation Tables

## Northeast Regional Climate Center

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

Metadata for Point	
Smoothing	Yes
State	
Location	
Latitude	43.057 degrees North
Longitude	70.769 degrees West
Elevation	0 feet
Date/Time	Tue Sep 19 2023 09:52:18 GMT-0400 (Eastern Daylight Time)

### Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.26	0.40	0.50	0.65	0.82	1.04	<b>1yr</b>	0.70	0.98	1.21	1.57	2.04	2.67	2.93	<b>1yr</b>	2.36	2.82	3.23	3.96	4.57	<b>1yr</b>
<b>2yr</b>	0.32	0.50	0.62	0.82	1.02	1.30	<b>2yr</b>	0.88	1.18	1.52	1.94	2.50	3.22	3.58	<b>2yr</b>	2.85	3.45	3.95	4.70	5.35	<b>2yr</b>
<b>5yr</b>	0.37	0.58	0.73	0.98	1.25	1.61	<b>5yr</b>	1.08	1.47	1.89	2.44	3.15	4.08	4.60	<b>5yr</b>	3.61	4.42	5.06	5.96	6.73	<b>5yr</b>
<b>10yr</b>	0.41	0.65	0.82	1.12	1.45	1.89	<b>10yr</b>	1.25	1.73	2.24	2.90	3.76	4.89	5.55	<b>10yr</b>	4.33	5.34	6.11	7.14	8.01	<b>10yr</b>
<b>25yr</b>	0.48	0.76	0.97	1.34	1.78	2.34	<b>25yr</b>	1.53	2.15	2.78	3.64	4.76	6.20	7.13	<b>25yr</b>	5.49	6.86	7.85	9.07	10.10	<b>25yr</b>
<b>50yr</b>	0.54	0.86	1.10	1.54	2.08	2.76	<b>50yr</b>	1.79	2.53	3.30	4.34	5.68	7.42	8.62	<b>50yr</b>	6.57	8.29	9.48	10.87	12.03	<b>50yr</b>
<b>100yr</b>	0.60	0.97	1.25	1.78	2.42	3.27	<b>100yr</b>	2.09	2.99	3.92	5.18	6.80	8.90	10.43	<b>100yr</b>	7.87	10.03	11.46	13.04	14.35	<b>100yr</b>
<b>200yr</b>	0.68	1.10	1.43	2.05	2.83	3.85	<b>200yr</b>	2.45	3.53	4.63	6.15	8.12	10.66	12.61	<b>200yr</b>	9.44	12.13	13.85	15.64	17.11	<b>200yr</b>
<b>500yr</b>	0.80	1.32	1.72	2.49	3.49	4.78	<b>500yr</b>	3.01	4.39	5.79	7.74	10.27	13.55	16.22	<b>500yr</b>	11.99	15.60	17.81	19.91	21.61	<b>500yr</b>

### Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.23	0.36	0.44	0.59	0.72	0.88	<b>1yr</b>	0.63	0.87	0.92	1.33	1.68	2.25	2.53	<b>1yr</b>	1.99	2.43	2.88	3.18	3.91	<b>1yr</b>
<b>2yr</b>	0.32	0.49	0.60	0.81	1.00	1.19	<b>2yr</b>	0.86	1.16	1.37	1.82	2.34	3.07	3.47	<b>2yr</b>	2.72	3.34	3.84	4.57	5.10	<b>2yr</b>
<b>5yr</b>	0.35	0.54	0.67	0.92	1.17	1.40	<b>5yr</b>	1.01	1.37	1.61	2.12	2.73	3.81	4.22	<b>5yr</b>	3.37	4.06	4.74	5.57	6.28	<b>5yr</b>
<b>10yr</b>	0.39	0.59	0.74	1.03	1.33	1.60	<b>10yr</b>	1.15	1.57	1.81	2.39	3.06	4.40	4.90	<b>10yr</b>	3.89	4.71	5.49	6.46	7.24	<b>10yr</b>
<b>25yr</b>	0.44	0.67	0.83	1.19	1.57	1.90	<b>25yr</b>	1.35	1.86	2.10	2.75	3.53	4.75	5.95	<b>25yr</b>	4.20	5.72	6.72	7.87	8.75	<b>25yr</b>
<b>50yr</b>	0.48	0.74	0.92	1.32	1.77	2.17	<b>50yr</b>	1.53	2.12	2.35	3.07	3.93	5.37	6.88	<b>50yr</b>	4.75	6.61	7.83	9.14	10.11	<b>50yr</b>
<b>100yr</b>	0.54	0.81	1.02	1.47	2.02	2.47	<b>100yr</b>	1.74	2.42	2.63	3.41	4.35	6.04	7.95	<b>100yr</b>	5.35	7.65	9.12	10.64	11.68	<b>100yr</b>
<b>200yr</b>	0.60	0.90	1.14	1.64	2.29	2.82	<b>200yr</b>	1.98	2.76	2.94	3.77	4.79	6.78	9.19	<b>200yr</b>	6.00	8.84	10.63	12.40	13.51	<b>200yr</b>
<b>500yr</b>	0.69	1.03	1.32	1.92	2.73	3.37	<b>500yr</b>	2.36	3.30	3.42	4.30	5.45	7.90	11.13	<b>500yr</b>	7.00	10.70	13.00	15.20	16.37	<b>500yr</b>

### Upper Confidence Limits

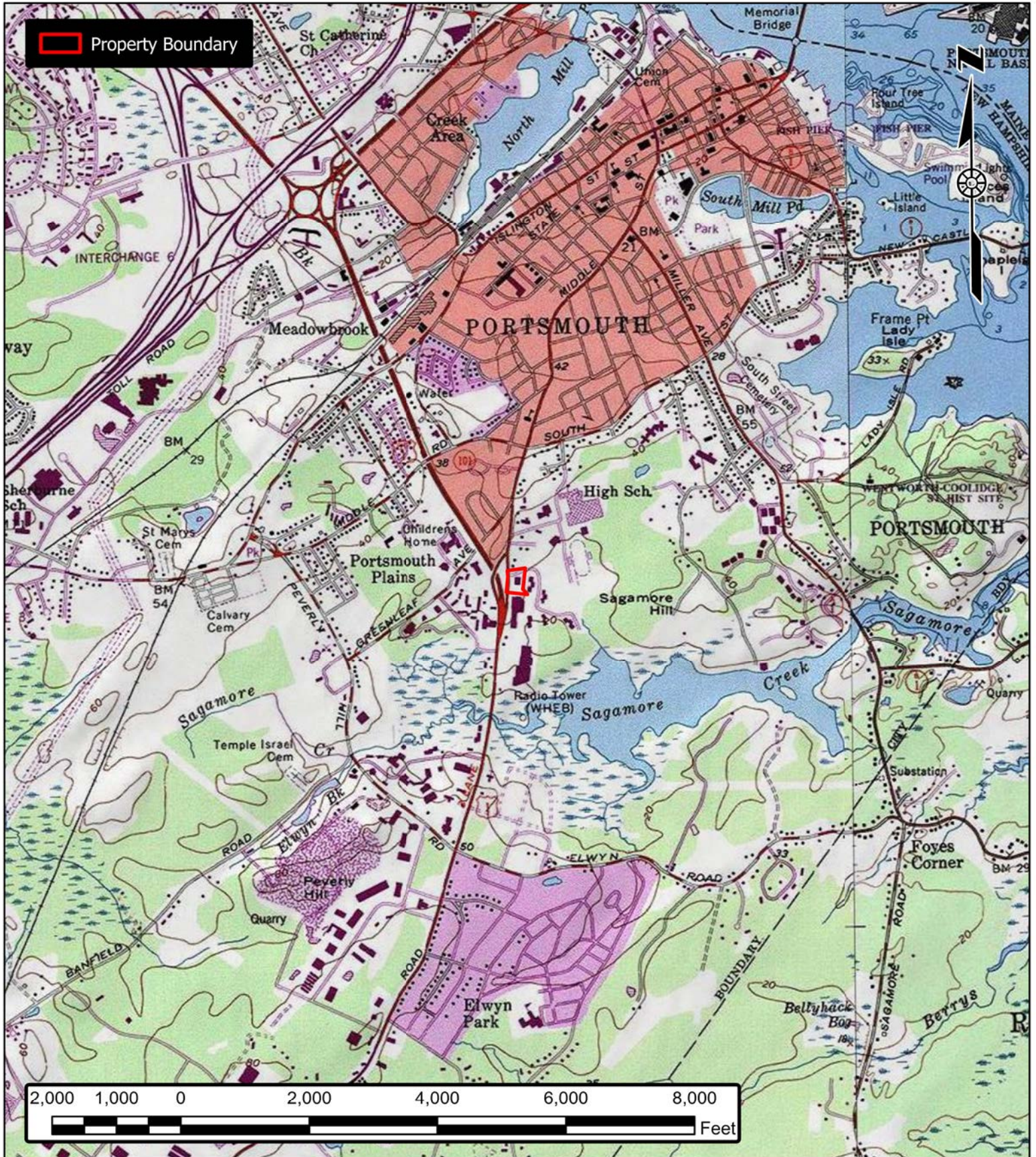
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.29	0.44	0.54	0.72	0.89	1.09	<b>1yr</b>	0.77	1.06	1.26	1.74	2.20	2.99	3.17	<b>1yr</b>	2.65	3.05	3.60	4.39	5.06	<b>1yr</b>
<b>2yr</b>	0.34	0.52	0.64	0.87	1.07	1.27	<b>2yr</b>	0.92	1.24	1.48	1.96	2.51	3.44	3.71	<b>2yr</b>	3.04	3.57	4.10	4.85	5.65	<b>2yr</b>
<b>5yr</b>	0.40	0.62	0.77	1.05	1.34	1.62	<b>5yr</b>	1.15	1.59	1.88	2.53	3.25	4.36	4.97	<b>5yr</b>	3.85	4.78	5.40	6.39	7.17	<b>5yr</b>
<b>10yr</b>	0.47	0.72	0.89	1.25	1.61	1.98	<b>10yr</b>	1.39	1.93	2.28	3.11	3.95	5.36	6.21	<b>10yr</b>	4.74	5.97	6.82	7.85	8.77	<b>10yr</b>
<b>25yr</b>	0.58	0.88	1.09	1.56	2.05	2.57	<b>25yr</b>	1.77	2.52	2.95	4.07	5.15	7.80	8.34	<b>25yr</b>	6.90	8.02	9.13	10.35	11.42	<b>25yr</b>
<b>50yr</b>	0.67	1.02	1.27	1.83	2.47	3.13	<b>50yr</b>	2.13	3.06	3.60	5.00	6.31	9.76	10.44	<b>50yr</b>	8.64	10.04	11.41	12.73	13.97	<b>50yr</b>
<b>100yr</b>	0.79	1.20	1.50	2.16	2.97	3.82	<b>100yr</b>	2.56	3.73	4.37	6.15	7.75	12.21	13.07	<b>100yr</b>	10.81	12.57	14.24	15.70	17.09	<b>100yr</b>
<b>200yr</b>	0.93	1.39	1.76	2.55	3.56	4.66	<b>200yr</b>	3.07	4.56	5.34	7.58	9.52	15.32	16.38	<b>200yr</b>	13.56	15.75	17.81	19.34	20.91	<b>200yr</b>
<b>500yr</b>	1.15	1.71	2.20	3.20	4.54	6.05	<b>500yr</b>	3.92	5.92	6.93	10.02	12.53	20.69	22.08	<b>500yr</b>	18.31	21.23	23.93	25.48	27.32	<b>500yr</b>





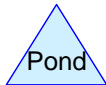
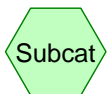
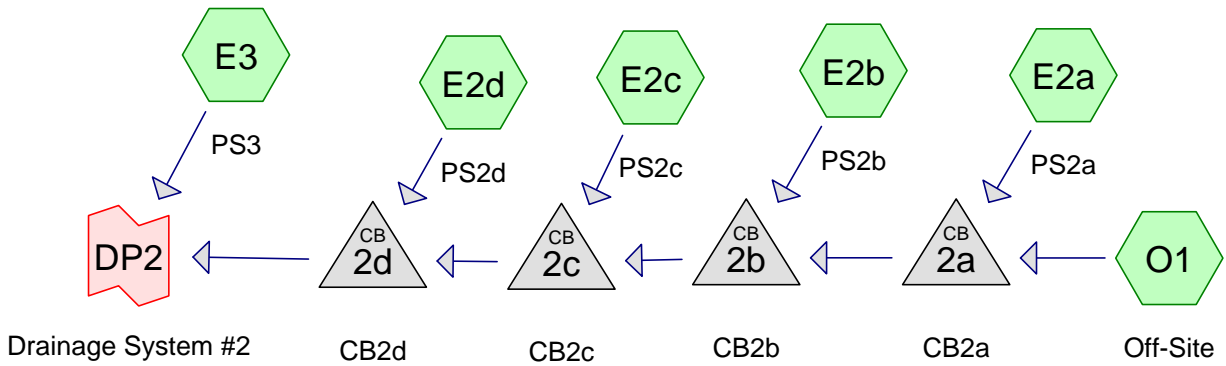
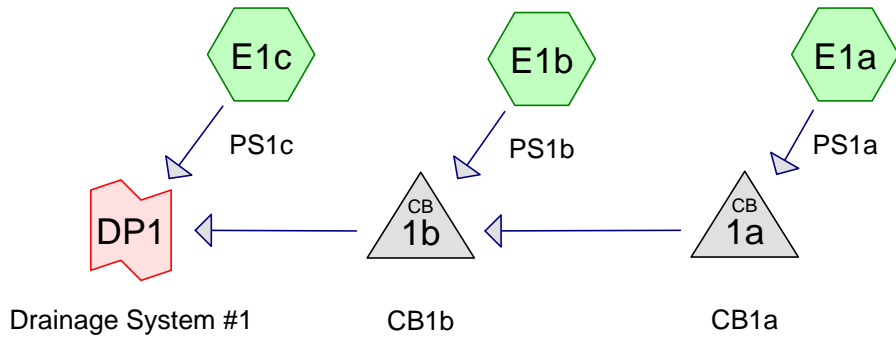
COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, NH

JOB NUMBER: 5010156.1397.04  
SCALE: 1" = 2,000'  
SUBMITTED: 09-19-2023





**APPENDIX C**  
**HYDROCAD DRAINAGE**  
**ANALYSIS CALCULATIONS**



## **Project Notes**

Defined 5 rainfall events from extreme\_precip\_tables\_output IDF

# Existing Conditions 2015-09-24

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## Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.70	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.62	2
3	25-yr	Type III 24-hr		Default	24.00	1	7.13	2
4	50-yr	Type III 24-hr		Default	24.00	1	8.53	2



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### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
46,242	39	>75% Grass cover, Good, HSG A (E1a, E1b, E1c, E2a, E2b, E2c, E2d, E3, O1)
102,162	98	Paved parking, HSG A (E1a, E1b, E1c, E2a, E2b, E2c, E2d, E3, O1)
15,994	98	Roofs, HSG A (E1a, E1b, E2a, E2b, E2c)
2,453	98	Unconnected roofs, HSG A (O1)
22,052	36	Woods, Fair, HSG A (O1)
<b>188,903</b>	<b>76</b>	<b>TOTAL AREA</b>

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## Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
188,903	HSG A	E1a, E1b, E1c, E2a, E2b, E2c, E2d, E3, O1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>188,903</b>		<b>TOTAL AREA</b>

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## 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	Sub Num
46,242	0	0	0	0	46,242	>75% Grass cover, Good	
102,162	0	0	0	0	102,162	Paved parking	
15,994	0	0	0	0	15,994	Roofs	
2,453	0	0	0	0	2,453	Unconnected roofs	
22,052	0	0	0	0	22,052	Woods, Fair	
<b>188,903</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>188,903</b>	<b>TOTAL AREA</b>	

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## 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)	Node Name
1	O1	0.00	0.00	110.0	0.0050	0.015	0.0	12.0	0.0	
2	1a	20.49	17.94	203.0	0.0126	0.025	0.0	12.0	0.0	
3	1b	17.69	14.69	200.0	0.0150	0.025	0.0	15.0	0.0	
4	2a	18.94	18.94	54.0	0.0000	0.025	0.0	12.0	0.0	
5	2b	18.34	17.78	200.0	0.0028	0.025	0.0	15.0	0.0	
6	2c	17.80	12.18	375.0	0.0150	0.025	0.0	15.0	0.0	
7	2d	17.29	16.79	100.0	0.0050	0.025	0.0	15.0	0.0	

**Existing Conditions 2015-09-24**

Type III 24-hr 2-yr Rainfall=3.70"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment E1a: PS1a</b>	Runoff Area=20,120 sf 65.08% Impervious Runoff Depth=1.58" Tc=5.0 min CN=77 Runoff=0.88 cfs 2,650 cf
<b>Subcatchment E1b: PS1b</b>	Runoff Area=27,062 sf 89.28% Impervious Runoff Depth=2.83" Tc=5.0 min CN=92 Runoff=2.07 cfs 6,379 cf
<b>Subcatchment E1c: PS1c</b>	Runoff Area=4,032 sf 99.58% Impervious Runoff Depth=3.47" Tc=5.0 min CN=98 Runoff=0.35 cfs 1,165 cf
<b>Subcatchment E2a: PS2a</b>	Runoff Area=8,301 sf 41.78% Impervious Runoff Depth=0.81" Tc=5.0 min CN=64 Runoff=0.16 cfs 559 cf
<b>Subcatchment E2b: PS2b</b>	Runoff Area=16,660 sf 87.98% Impervious Runoff Depth=2.73" Tc=5.0 min CN=91 Runoff=1.24 cfs 3,792 cf
<b>Subcatchment E2c: PS2c</b>	Runoff Area=16,042 sf 92.13% Impervious Runoff Depth=2.93" Tc=5.0 min CN=93 Runoff=1.26 cfs 3,915 cf
<b>Subcatchment E2d: PS2d</b>	Runoff Area=7,341 sf 95.70% Impervious Runoff Depth=3.14" Tc=5.0 min CN=95 Runoff=0.60 cfs 1,918 cf
<b>Subcatchment E3: PS3</b>	Runoff Area=9,577 sf 29.98% Impervious Runoff Depth=0.49" Tc=5.0 min CN=57 Runoff=0.08 cfs 394 cf
<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=0.86" Flow Length=584' Tc=27.6 min CN=65 Runoff=0.93 cfs 5,712 cf
<b>Pond 1a: CB1a</b>	Peak Elev=21.09' Inflow=0.88 cfs 2,650 cf 12.0" Round Culvert n=0.025 L=203.0' S=0.0126 '/' Outflow=0.88 cfs 2,650 cf
<b>Pond 1b: CB1b</b>	Peak Elev=18.74' Inflow=2.94 cfs 9,029 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0150 '/' Outflow=2.94 cfs 9,029 cf
<b>Pond 2a: CB2a</b>	Peak Elev=19.94' Inflow=1.00 cfs 6,271 cf 12.0" Round Culvert n=0.025 L=54.0' S=0.0000 '/' Outflow=1.00 cfs 6,271 cf
<b>Pond 2b: CB2b</b>	Peak Elev=19.43' Inflow=1.58 cfs 10,063 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0028 '/' Outflow=1.58 cfs 10,063 cf
<b>Pond 2c: CB2c</b>	Peak Elev=18.82' Inflow=2.83 cfs 13,977 cf 15.0" Round Culvert n=0.025 L=375.0' S=0.0150 '/' Outflow=2.83 cfs 13,977 cf
<b>Pond 2d: CB2d</b>	Peak Elev=19.27' Inflow=3.43 cfs 15,896 cf 15.0" Round Culvert n=0.025 L=100.0' S=0.0050 '/' Outflow=3.43 cfs 15,896 cf
<b>Link DP1: Drainage System #1</b>	Inflow=3.29 cfs 10,194 cf Primary=3.29 cfs 10,194 cf

**Existing Conditions 2015-09-24**

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*Type III 24-hr 2-yr Rainfall=3.70"*

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**Link DP2: Drainage System #2**

Inflow=3.50 cfs 16,289 cf

Primary=3.50 cfs 16,289 cf

**Total Runoff Area = 188,903 sf   Runoff Volume = 26,483 cf   Average Runoff Depth = 1.68"**  
**36.15% Pervious = 68,294 sf   63.85% Impervious = 120,609 sf**

**Existing Conditions 2015-09-24**

Type III 24-hr 2-yr Rainfall=3.70"

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**Summary for Subcatchment E1a: PS1a**

Runoff = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf, Depth= 1.58"  
Routed to Pond 1a : CB1a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
4,566	98	Roofs, HSG A
7,025	39	>75% Grass cover, Good, HSG A
8,529	98	Paved parking, HSG A
20,120	77	Weighted Average
7,025		34.92% Pervious Area
13,095		65.08% Impervious Area

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

**Summary for Subcatchment E1b: PS1b**

Runoff = 2.07 cfs @ 12.07 hrs, Volume= 6,379 cf, Depth= 2.83"  
Routed to Pond 1b : CB1b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
2,901	39	>75% Grass cover, Good, HSG A
3,319	98	Roofs, HSG A
20,842	98	Paved parking, HSG A
27,062	92	Weighted Average
2,901		10.72% Pervious Area
24,161		89.28% Impervious Area

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

**Summary for Subcatchment E1c: PS1c**

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,165 cf, Depth= 3.47"  
Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

**Existing Conditions 2015-09-24**

Type III 24-hr 2-yr Rainfall=3.70"

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Area (sf)	CN	Description
17	39	>75% Grass cover, Good, HSG A
4,015	98	Paved parking, HSG A
4,032	98	Weighted Average
17		0.42% Pervious Area
4,015		99.58% Impervious Area

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

**Summary for Subcatchment E2a: PS2a**

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 559 cf, Depth= 0.81"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
56	98	Roofs, HSG A
4,833	39	>75% Grass cover, Good, HSG A
3,412	98	Paved parking, HSG A
8,301	64	Weighted Average
4,833		58.22% Pervious Area
3,468		41.78% Impervious Area

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

**Summary for Subcatchment E2b: PS2b**

Runoff = 1.24 cfs @ 12.07 hrs, Volume= 3,792 cf, Depth= 2.73"  
 Routed to Pond 2b : CB2b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
3,630	98	Roofs, HSG A
2,003	39	>75% Grass cover, Good, HSG A
11,027	98	Paved parking, HSG A
16,660	91	Weighted Average
2,003		12.02% Pervious Area
14,657		87.98% Impervious Area



**Existing Conditions 2015-09-24**

Type III 24-hr 2-yr Rainfall=3.70"

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

**Summary for Subcatchment E2c: PS2c**

Runoff = 1.26 cfs @ 12.07 hrs, Volume= 3,915 cf, Depth= 2.93"  
Routed to Pond 2c : CB2c

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
4,423	98	Roofs, HSG A
1,262	39	>75% Grass cover, Good, HSG A
10,357	98	Paved parking, HSG A
16,042	93	Weighted Average
1,262		7.87% Pervious Area
14,780		92.13% Impervious Area

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

**Summary for Subcatchment E2d: PS2d**

Runoff = 0.60 cfs @ 12.07 hrs, Volume= 1,918 cf, Depth= 3.14"  
Routed to Pond 2d : CB2d

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
316	39	>75% Grass cover, Good, HSG A
7,025	98	Paved parking, HSG A
7,341	95	Weighted Average
316		4.30% Pervious Area
7,025		95.70% Impervious Area

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

**Summary for Subcatchment E3: PS3**

Runoff = 0.08 cfs @ 12.11 hrs, Volume= 394 cf, Depth= 0.49"  
Routed to Link DP2 : Drainage System #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

**Existing Conditions 2015-09-24**

Type III 24-hr 2-yr Rainfall=3.70"

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Area (sf)	CN	Description
6,706	39	>75% Grass cover, Good, HSG A
2,871	98	Paved parking, HSG A
9,577	57	Weighted Average
6,706		70.02% Pervious Area
2,871		29.98% Impervious Area

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

**Summary for Subcatchment O1: Off-Site**

Runoff = 0.93 cfs @ 12.45 hrs, Volume= 5,712 cf, Depth= 0.86"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Pond 1a: CB1a**

[57] Hint: Peaked at 21.09' (Flood elevation advised)

Inflow Area = 20,120 sf, 65.08% Impervious, Inflow Depth = 1.58" for 2-yr event  
 Inflow = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf  
 Outflow = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf  
 Routed to Pond 1b : CB1b

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Type III 24-hr 2-yr Rainfall=3.70"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 21.09' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.49'	<b>12.0" Round CMP_Round 12"</b> L= 203.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.49' / 17.94' S= 0.0126 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.88 cfs @ 12.08 hrs HW=21.09' (Free Discharge)

↑1=CMP\_Round 12" (Barrel Controls 0.88 cfs @ 2.53 fps)

### Summary for Pond 1b: CB1b

[57] Hint: Peaked at 18.74' (Flood elevation advised)

[79] Warning: Submerged Pond 1a Primary device # 1 OUTLET by 0.80'

Inflow Area = 47,182 sf, 78.96% Impervious, Inflow Depth = 2.30" for 2-yr event  
Inflow = 2.94 cfs @ 12.07 hrs, Volume= 9,029 cf  
Outflow = 2.94 cfs @ 12.07 hrs, Volume= 9,029 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.94 cfs @ 12.07 hrs, Volume= 9,029 cf  
Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 18.74' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.69'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.69' / 14.69' S= 0.0150 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=2.94 cfs @ 12.07 hrs HW=18.74' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 2.94 cfs @ 3.62 fps)

### Summary for Pond 2a: CB2a

[57] Hint: Peaked at 19.94' (Flood elevation advised)

Inflow Area = 88,069 sf, 45.42% Impervious, Inflow Depth = 0.85" for 2-yr event  
Inflow = 1.00 cfs @ 12.42 hrs, Volume= 6,271 cf  
Outflow = 1.00 cfs @ 12.42 hrs, Volume= 6,271 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.00 cfs @ 12.42 hrs, Volume= 6,271 cf  
Routed to Pond 2b : CB2b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 19.94' @ 12.42 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.94'	<b>12.0" Round CMP_Round 12"</b> L= 54.0' CMP, square edge headwall, Ke= 0.500

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Inlet / Outlet Invert= 18.94' / 18.94' S= 0.0000 '/ n= 0.025 Corrugated metal, Flow Area= 0.79 sf Cc= 0.900

**Primary OutFlow** Max=1.00 cfs @ 12.42 hrs HW=19.93' (Free Discharge)

↑1=CMP\_Round 12" (Barrel Controls 1.00 cfs @ 1.58 fps)

**Summary for Pond 2b: CB2b**

[57] Hint: Peaked at 19.43' (Flood elevation advised)

[79] Warning: Submerged Pond 2a Primary device # 1 by 0.49'

Inflow Area = 104,729 sf, 52.19% Impervious, Inflow Depth = 1.15" for 2-yr event  
Inflow = 1.58 cfs @ 12.08 hrs, Volume= 10,063 cf  
Outflow = 1.58 cfs @ 12.08 hrs, Volume= 10,063 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.58 cfs @ 12.08 hrs, Volume= 10,063 cf  
Routed to Pond 2c : CB2c

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 19.43' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.34' / 17.78' S= 0.0028 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=1.58 cfs @ 12.08 hrs HW=19.43' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 1.58 cfs @ 1.85 fps)

**Summary for Pond 2c: CB2c**

[57] Hint: Peaked at 18.82' (Flood elevation advised)

[79] Warning: Submerged Pond 2b Primary device # 1 INLET by 0.48'

Inflow Area = 120,771 sf, 57.50% Impervious, Inflow Depth = 1.39" for 2-yr event  
Inflow = 2.83 cfs @ 12.08 hrs, Volume= 13,977 cf  
Outflow = 2.83 cfs @ 12.08 hrs, Volume= 13,977 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.83 cfs @ 12.08 hrs, Volume= 13,977 cf  
Routed to Pond 2d : CB2d

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 18.82' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.80'	<b>15.0" Round CMP_Round 15"</b> L= 375.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.80' / 12.18' S= 0.0150 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=2.83 cfs @ 12.08 hrs HW=18.82' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 2.83 cfs @ 3.60 fps)

**Summary for Pond 2d: CB2d**

[57] Hint: Peaked at 19.27' (Flood elevation advised)  
 [81] Warning: Exceeded Pond 2c by 0.45' @ 12.07 hrs

Inflow Area = 128,112 sf, 59.69% Impervious, Inflow Depth = 1.49" for 2-yr event  
 Inflow = 3.43 cfs @ 12.07 hrs, Volume= 15,896 cf  
 Outflow = 3.43 cfs @ 12.07 hrs, Volume= 15,896 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.43 cfs @ 12.07 hrs, Volume= 15,896 cf  
 Routed to Link DP2 : Drainage System #2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.27' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.29'	<b>15.0" Round CMP_Round 15"</b> L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.29' / 16.79' S= 0.0050 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=3.42 cfs @ 12.07 hrs HW=19.26' (Free Discharge)  
 ↳ **1=CMP\_Round 15"** (Barrel Controls 3.42 cfs @ 2.79 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 51,214 sf, 80.59% Impervious, Inflow Depth = 2.39" for 2-yr event  
 Inflow = 3.29 cfs @ 12.07 hrs, Volume= 10,194 cf  
 Primary = 3.29 cfs @ 12.07 hrs, Volume= 10,194 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2**

Inflow Area = 137,689 sf, 57.62% Impervious, Inflow Depth = 1.42" for 2-yr event  
 Inflow = 3.50 cfs @ 12.08 hrs, Volume= 16,289 cf  
 Primary = 3.50 cfs @ 12.08 hrs, Volume= 16,289 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment E1a: PS1a</b>	Runoff Area=20,120 sf 65.08% Impervious Runoff Depth=3.15" Tc=5.0 min CN=77 Runoff=1.77 cfs 5,281 cf
<b>Subcatchment E1b: PS1b</b>	Runoff Area=27,062 sf 89.28% Impervious Runoff Depth=4.70" Tc=5.0 min CN=92 Runoff=3.34 cfs 10,591 cf
<b>Subcatchment E1c: PS1c</b>	Runoff Area=4,032 sf 99.58% Impervious Runoff Depth=5.38" Tc=5.0 min CN=98 Runoff=0.53 cfs 1,808 cf
<b>Subcatchment E2a: PS2a</b>	Runoff Area=8,301 sf 41.78% Impervious Runoff Depth=2.00" Tc=5.0 min CN=64 Runoff=0.45 cfs 1,381 cf
<b>Subcatchment E2b: PS2b</b>	Runoff Area=16,660 sf 87.98% Impervious Runoff Depth=4.59" Tc=5.0 min CN=91 Runoff=2.02 cfs 6,367 cf
<b>Subcatchment E2c: PS2c</b>	Runoff Area=16,042 sf 92.13% Impervious Runoff Depth=4.81" Tc=5.0 min CN=93 Runoff=2.01 cfs 6,427 cf
<b>Subcatchment E2d: PS2d</b>	Runoff Area=7,341 sf 95.70% Impervious Runoff Depth=5.03" Tc=5.0 min CN=95 Runoff=0.94 cfs 3,080 cf
<b>Subcatchment E3: PS3</b>	Runoff Area=9,577 sf 29.98% Impervious Runoff Depth=1.45" Tc=5.0 min CN=57 Runoff=0.35 cfs 1,157 cf
<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=2.08" Flow Length=584' Tc=27.6 min CN=65 Runoff=2.53 cfs 13,820 cf
<b>Pond 1a: CB1a</b>	Peak Elev=21.43' Inflow=1.77 cfs 5,281 cf 12.0" Round Culvert n=0.025 L=203.0' S=0.0126 '/' Outflow=1.77 cfs 5,281 cf
<b>Pond 1b: CB1b</b>	Peak Elev=20.98' Inflow=5.10 cfs 15,872 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0150 '/' Outflow=5.10 cfs 15,872 cf
<b>Pond 2a: CB2a</b>	Peak Elev=21.35' Inflow=2.69 cfs 15,201 cf 12.0" Round Culvert n=0.025 L=54.0' S=0.0000 '/' Outflow=2.69 cfs 15,201 cf
<b>Pond 2b: CB2b</b>	Peak Elev=21.17' Inflow=3.32 cfs 21,567 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0028 '/' Outflow=3.32 cfs 21,567 cf
<b>Pond 2c: CB2c</b>	Peak Elev=23.28' Inflow=5.31 cfs 27,995 cf 15.0" Round Culvert n=0.025 L=375.0' S=0.0150 '/' Outflow=5.31 cfs 27,995 cf
<b>Pond 2d: CB2d</b>	Peak Elev=22.12' Inflow=6.25 cfs 31,074 cf 15.0" Round Culvert n=0.025 L=100.0' S=0.0050 '/' Outflow=6.25 cfs 31,074 cf
<b>Link DP1: Drainage System #1</b>	Inflow=5.63 cfs 17,680 cf Primary=5.63 cfs 17,680 cf

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**Link DP2: Drainage System #2**

Inflow=6.59 cfs 32,232 cf  
Primary=6.59 cfs 32,232 cf

**Total Runoff Area = 188,903 sf   Runoff Volume = 49,912 cf   Average Runoff Depth = 3.17"**  
**36.15% Pervious = 68,294 sf   63.85% Impervious = 120,609 sf**

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**Summary for Subcatchment E1a: PS1a**

Runoff = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf, Depth= 3.15"  
 Routed to Pond 1a : CB1a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
4,566	98	Roofs, HSG A
7,025	39	>75% Grass cover, Good, HSG A
8,529	98	Paved parking, HSG A
20,120	77	Weighted Average
7,025		34.92% Pervious Area
13,095		65.08% Impervious Area

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

**Summary for Subcatchment E1b: PS1b**

Runoff = 3.34 cfs @ 12.07 hrs, Volume= 10,591 cf, Depth= 4.70"  
 Routed to Pond 1b : CB1b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
2,901	39	>75% Grass cover, Good, HSG A
3,319	98	Roofs, HSG A
20,842	98	Paved parking, HSG A
27,062	92	Weighted Average
2,901		10.72% Pervious Area
24,161		89.28% Impervious Area

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

**Summary for Subcatchment E1c: PS1c**

Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,808 cf, Depth= 5.38"  
 Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
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Area (sf)	CN	Description
17	39	>75% Grass cover, Good, HSG A
4,015	98	Paved parking, HSG A
4,032	98	Weighted Average
17		0.42% Pervious Area
4,015		99.58% Impervious Area

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

**Summary for Subcatchment E2a: PS2a**

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 1,381 cf, Depth= 2.00"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
56	98	Roofs, HSG A
4,833	39	>75% Grass cover, Good, HSG A
3,412	98	Paved parking, HSG A
8,301	64	Weighted Average
4,833		58.22% Pervious Area
3,468		41.78% Impervious Area

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

**Summary for Subcatchment E2b: PS2b**

Runoff = 2.02 cfs @ 12.07 hrs, Volume= 6,367 cf, Depth= 4.59"  
 Routed to Pond 2b : CB2b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
3,630	98	Roofs, HSG A
2,003	39	>75% Grass cover, Good, HSG A
11,027	98	Paved parking, HSG A
16,660	91	Weighted Average
2,003		12.02% Pervious Area
14,657		87.98% Impervious Area

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

**Summary for Subcatchment E2c: PS2c**

Runoff = 2.01 cfs @ 12.07 hrs, Volume= 6,427 cf, Depth= 4.81"  
Routed to Pond 2c : CB2c

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
4,423	98	Roofs, HSG A
1,262	39	>75% Grass cover, Good, HSG A
10,357	98	Paved parking, HSG A
16,042	93	Weighted Average
1,262		7.87% Pervious Area
14,780		92.13% Impervious Area

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

**Summary for Subcatchment E2d: PS2d**

Runoff = 0.94 cfs @ 12.07 hrs, Volume= 3,080 cf, Depth= 5.03"  
Routed to Pond 2d : CB2d

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
316	39	>75% Grass cover, Good, HSG A
7,025	98	Paved parking, HSG A
7,341	95	Weighted Average
316		4.30% Pervious Area
7,025		95.70% Impervious Area

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

**Summary for Subcatchment E3: PS3**

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 1,157 cf, Depth= 1.45"  
Routed to Link DP2 : Drainage System #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

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Area (sf)	CN	Description
6,706	39	>75% Grass cover, Good, HSG A
2,871	98	Paved parking, HSG A
9,577	57	Weighted Average
6,706		70.02% Pervious Area
2,871		29.98% Impervious Area

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

**Summary for Subcatchment O1: Off-Site**

[47] Hint: Peak is 116% of capacity of segment #3

Runoff = 2.53 cfs @ 12.42 hrs, Volume= 13,820 cf, Depth= 2.08"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Pond 1a: CB1a**

[57] Hint: Peaked at 21.43' (Flood elevation advised)

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Type III 24-hr 10-yr Rainfall=5.62"

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Inflow Area = 20,120 sf, 65.08% Impervious, Inflow Depth = 3.15" for 10-yr event  
Inflow = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf  
Outflow = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf  
Routed to Pond 1b : CB1b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 21.43' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.49'	<b>12.0" Round CMP_Round 12"</b> L= 203.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.49' / 17.94' S= 0.0126 1' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=1.76 cfs @ 12.07 hrs HW=21.43' (Free Discharge)  
↑1=CMP\_Round 12" (Barrel Controls 1.76 cfs @ 2.98 fps)

### Summary for Pond 1b: CB1b

[57] Hint: Peaked at 20.98' (Flood elevation advised)

[79] Warning: Submerged Pond 1a Primary device # 1 INLET by 0.48'

Inflow Area = 47,182 sf, 78.96% Impervious, Inflow Depth = 4.04" for 10-yr event  
Inflow = 5.10 cfs @ 12.07 hrs, Volume= 15,872 cf  
Outflow = 5.10 cfs @ 12.07 hrs, Volume= 15,872 cf, Atten= 0%, Lag= 0.0 min  
Primary = 5.10 cfs @ 12.07 hrs, Volume= 15,872 cf  
Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 20.98' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.69'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.69' / 14.69' S= 0.0150 1' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=5.10 cfs @ 12.07 hrs HW=20.96' (Free Discharge)  
↑1=CMP\_Round 15" (Barrel Controls 5.10 cfs @ 4.15 fps)

### Summary for Pond 2a: CB2a

[57] Hint: Peaked at 21.35' (Flood elevation advised)

Inflow Area = 88,069 sf, 45.42% Impervious, Inflow Depth = 2.07" for 10-yr event  
Inflow = 2.69 cfs @ 12.39 hrs, Volume= 15,201 cf  
Outflow = 2.69 cfs @ 12.39 hrs, Volume= 15,201 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.69 cfs @ 12.39 hrs, Volume= 15,201 cf  
Routed to Pond 2b : CB2b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Peak Elev= 21.35' @ 12.39 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.94'	<b>12.0" Round CMP_Round 12"</b> L= 54.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.94' / 18.94' S= 0.0000 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.69 cfs @ 12.39 hrs HW=21.35' (Free Discharge)

↑1=CMP\_Round 12" (Barrel Controls 2.69 cfs @ 3.42 fps)

**Summary for Pond 2b: CB2b**

[57] Hint: Peaked at 21.17' (Flood elevation advised)

[81] Warning: Exceeded Pond 2a by 1.00' @ 12.07 hrs

Inflow Area = 104,729 sf, 52.19% Impervious, Inflow Depth = 2.47" for 10-yr event  
 Inflow = 3.32 cfs @ 12.09 hrs, Volume= 21,567 cf  
 Outflow = 3.32 cfs @ 12.09 hrs, Volume= 21,567 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.32 cfs @ 12.09 hrs, Volume= 21,567 cf  
 Routed to Pond 2c : CB2c

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 21.17' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.34' / 17.78' S= 0.0028 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=3.32 cfs @ 12.09 hrs HW=21.16' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 3.32 cfs @ 2.71 fps)

**Summary for Pond 2c: CB2c**

[57] Hint: Peaked at 23.28' (Flood elevation advised)

[81] Warning: Exceeded Pond 2b by 2.11' @ 12.08 hrs

Inflow Area = 120,771 sf, 57.50% Impervious, Inflow Depth = 2.78" for 10-yr event  
 Inflow = 5.31 cfs @ 12.08 hrs, Volume= 27,995 cf  
 Outflow = 5.31 cfs @ 12.08 hrs, Volume= 27,995 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 5.31 cfs @ 12.08 hrs, Volume= 27,995 cf  
 Routed to Pond 2d : CB2d

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 23.28' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.80'	<b>15.0" Round CMP_Round 15"</b> L= 375.0' CMP, square edge headwall, Ke= 0.500

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Type III 24-hr 10-yr Rainfall=5.62"

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Inlet / Outlet Invert= 17.80' / 12.18' S= 0.0150 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=5.31 cfs @ 12.08 hrs HW=23.26' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 5.31 cfs @ 4.32 fps)

**Summary for Pond 2d: CB2d**

[57] Hint: Peaked at 22.12' (Flood elevation advised)

[81] Warning: Exceeded Pond 2c by 1.36' @ 12.02 hrs

Inflow Area = 128,112 sf, 59.69% Impervious, Inflow Depth = 2.91" for 10-yr event  
Inflow = 6.25 cfs @ 12.08 hrs, Volume= 31,074 cf  
Outflow = 6.25 cfs @ 12.08 hrs, Volume= 31,074 cf, Atten= 0%, Lag= 0.0 min  
Primary = 6.25 cfs @ 12.08 hrs, Volume= 31,074 cf  
Routed to Link DP2 : Drainage System #2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 22.12' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.29'	<b>15.0" Round CMP_Round 15"</b> L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.29' / 16.79' S= 0.0050 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=6.24 cfs @ 12.08 hrs HW=22.10' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 6.24 cfs @ 5.08 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 51,214 sf, 80.59% Impervious, Inflow Depth = 4.14" for 10-yr event  
Inflow = 5.63 cfs @ 12.07 hrs, Volume= 17,680 cf  
Primary = 5.63 cfs @ 12.07 hrs, Volume= 17,680 cf, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2**

Inflow Area = 137,689 sf, 57.62% Impervious, Inflow Depth = 2.81" for 10-yr event  
Inflow = 6.59 cfs @ 12.08 hrs, Volume= 32,232 cf  
Primary = 6.59 cfs @ 12.08 hrs, Volume= 32,232 cf, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment E1a: PS1a</b>	Runoff Area=20,120 sf 65.08% Impervious Runoff Depth=4.48" Tc=5.0 min CN=77 Runoff=2.51 cfs 7,516 cf
<b>Subcatchment E1b: PS1b</b>	Runoff Area=27,062 sf 89.28% Impervious Runoff Depth=6.18" Tc=5.0 min CN=92 Runoff=4.32 cfs 13,944 cf
<b>Subcatchment E1c: PS1c</b>	Runoff Area=4,032 sf 99.58% Impervious Runoff Depth=6.89" Tc=5.0 min CN=98 Runoff=0.67 cfs 2,315 cf
<b>Subcatchment E2a: PS2a</b>	Runoff Area=8,301 sf 41.78% Impervious Runoff Depth=3.10" Tc=5.0 min CN=64 Runoff=0.71 cfs 2,145 cf
<b>Subcatchment E2b: PS2b</b>	Runoff Area=16,660 sf 87.98% Impervious Runoff Depth=6.07" Tc=5.0 min CN=91 Runoff=2.63 cfs 8,423 cf
<b>Subcatchment E2c: PS2c</b>	Runoff Area=16,042 sf 92.13% Impervious Runoff Depth=6.30" Tc=5.0 min CN=93 Runoff=2.59 cfs 8,422 cf
<b>Subcatchment E2d: PS2d</b>	Runoff Area=7,341 sf 95.70% Impervious Runoff Depth=6.54" Tc=5.0 min CN=95 Runoff=1.20 cfs 3,998 cf
<b>Subcatchment E3: PS3</b>	Runoff Area=9,577 sf 29.98% Impervious Runoff Depth=2.40" Tc=5.0 min CN=57 Runoff=0.61 cfs 1,916 cf
<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=3.20" Flow Length=584' Tc=27.6 min CN=65 Runoff=3.99 cfs 21,294 cf
<b>Pond 1a: CB1a</b>	Peak Elev=22.91' Inflow=2.51 cfs 7,516 cf 12.0" Round Culvert n=0.025 L=203.0' S=0.0126 '/' Outflow=2.51 cfs 7,516 cf
<b>Pond 1b: CB1b</b>	Peak Elev=24.96' Inflow=6.83 cfs 21,460 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0150 '/' Outflow=6.83 cfs 21,460 cf
<b>Pond 2a: CB2a</b>	Peak Elev=23.45' Inflow=4.23 cfs 23,439 cf 12.0" Round Culvert n=0.025 L=54.0' S=0.0000 '/' Outflow=4.23 cfs 23,439 cf
<b>Pond 2b: CB2b</b>	Peak Elev=23.96' Inflow=5.05 cfs 31,862 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0028 '/' Outflow=5.05 cfs 31,862 cf
<b>Pond 2c: CB2c</b>	Peak Elev=32.62' Inflow=7.42 cfs 40,284 cf 15.0" Round Culvert n=0.025 L=375.0' S=0.0150 '/' Outflow=7.42 cfs 40,284 cf
<b>Pond 2d: CB2d</b>	Peak Elev=25.78' Inflow=8.61 cfs 44,282 cf 15.0" Round Culvert n=0.025 L=100.0' S=0.0050 '/' Outflow=8.61 cfs 44,282 cf
<b>Link DP1: Drainage System #1</b>	Inflow=7.50 cfs 23,776 cf Primary=7.50 cfs 23,776 cf

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**Link DP2: Drainage System #2**

Inflow=9.22 cfs 46,197 cf  
Primary=9.22 cfs 46,197 cf

**Total Runoff Area = 188,903 sf   Runoff Volume = 69,973 cf   Average Runoff Depth = 4.44"**  
**36.15% Pervious = 68,294 sf   63.85% Impervious = 120,609 sf**



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**Summary for Subcatchment E1a: PS1a**

Runoff = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf, Depth= 4.48"  
Routed to Pond 1a : CB1a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
4,566	98	Roofs, HSG A
7,025	39	>75% Grass cover, Good, HSG A
8,529	98	Paved parking, HSG A
20,120	77	Weighted Average
7,025		34.92% Pervious Area
13,095		65.08% Impervious Area

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

**Summary for Subcatchment E1b: PS1b**

Runoff = 4.32 cfs @ 12.07 hrs, Volume= 13,944 cf, Depth= 6.18"  
Routed to Pond 1b : CB1b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
2,901	39	>75% Grass cover, Good, HSG A
3,319	98	Roofs, HSG A
20,842	98	Paved parking, HSG A
27,062	92	Weighted Average
2,901		10.72% Pervious Area
24,161		89.28% Impervious Area

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

**Summary for Subcatchment E1c: PS1c**

Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,315 cf, Depth= 6.89"  
Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

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Type III 24-hr 25-yr Rainfall=7.13"

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Area (sf)	CN	Description
17	39	>75% Grass cover, Good, HSG A
4,015	98	Paved parking, HSG A
4,032	98	Weighted Average
17		0.42% Pervious Area
4,015		99.58% Impervious Area

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

**Summary for Subcatchment E2a: PS2a**

Runoff = 0.71 cfs @ 12.08 hrs, Volume= 2,145 cf, Depth= 3.10"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
56	98	Roofs, HSG A
4,833	39	>75% Grass cover, Good, HSG A
3,412	98	Paved parking, HSG A
8,301	64	Weighted Average
4,833		58.22% Pervious Area
3,468		41.78% Impervious Area

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

**Summary for Subcatchment E2b: PS2b**

Runoff = 2.63 cfs @ 12.07 hrs, Volume= 8,423 cf, Depth= 6.07"  
 Routed to Pond 2b : CB2b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
3,630	98	Roofs, HSG A
2,003	39	>75% Grass cover, Good, HSG A
11,027	98	Paved parking, HSG A
16,660	91	Weighted Average
2,003		12.02% Pervious Area
14,657		87.98% Impervious Area

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

**Summary for Subcatchment E2c: PS2c**

Runoff = 2.59 cfs @ 12.07 hrs, Volume= 8,422 cf, Depth= 6.30"  
Routed to Pond 2c : CB2c

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
4,423	98	Roofs, HSG A
1,262	39	>75% Grass cover, Good, HSG A
10,357	98	Paved parking, HSG A
16,042	93	Weighted Average
1,262		7.87% Pervious Area
14,780		92.13% Impervious Area

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

**Summary for Subcatchment E2d: PS2d**

Runoff = 1.20 cfs @ 12.07 hrs, Volume= 3,998 cf, Depth= 6.54"  
Routed to Pond 2d : CB2d

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
316	39	>75% Grass cover, Good, HSG A
7,025	98	Paved parking, HSG A
7,341	95	Weighted Average
316		4.30% Pervious Area
7,025		95.70% Impervious Area

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

**Summary for Subcatchment E3: PS3**

Runoff = 0.61 cfs @ 12.08 hrs, Volume= 1,916 cf, Depth= 2.40"  
Routed to Link DP2 : Drainage System #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

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Area (sf)	CN	Description
6,706	39	>75% Grass cover, Good, HSG A
2,871	98	Paved parking, HSG A
9,577	57	Weighted Average
6,706		70.02% Pervious Area
2,871		29.98% Impervious Area

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

**Summary for Subcatchment O1: Off-Site**

[47] Hint: Peak is 183% of capacity of segment #3

Runoff = 3.99 cfs @ 12.39 hrs, Volume= 21,294 cf, Depth= 3.20"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Pond 1a: CB1a**

[57] Hint: Peaked at 22.91' (Flood elevation advised)

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Inflow Area = 20,120 sf, 65.08% Impervious, Inflow Depth = 4.48" for 25-yr event  
Inflow = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf  
Outflow = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf  
Routed to Pond 1b : CB1b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 22.91' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.49'	<b>12.0" Round CMP_Round 12"</b> L= 203.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.49' / 17.94' S= 0.0126 1' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.50 cfs @ 12.07 hrs HW=22.89' (Free Discharge)  
↑1=CMP\_Round 12" (Barrel Controls 2.50 cfs @ 3.19 fps)

### Summary for Pond 1b: CB1b

[57] Hint: Peaked at 24.96' (Flood elevation advised)  
[81] Warning: Exceeded Pond 1a by 2.06' @ 12.07 hrs

Inflow Area = 47,182 sf, 78.96% Impervious, Inflow Depth = 5.46" for 25-yr event  
Inflow = 6.83 cfs @ 12.07 hrs, Volume= 21,460 cf  
Outflow = 6.83 cfs @ 12.07 hrs, Volume= 21,460 cf, Atten= 0%, Lag= 0.0 min  
Primary = 6.83 cfs @ 12.07 hrs, Volume= 21,460 cf  
Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 24.96' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.69'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.69' / 14.69' S= 0.0150 1' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=6.82 cfs @ 12.07 hrs HW=24.94' (Free Discharge)  
↑1=CMP\_Round 15" (Barrel Controls 6.82 cfs @ 5.56 fps)

### Summary for Pond 2a: CB2a

[57] Hint: Peaked at 23.45' (Flood elevation advised)

Inflow Area = 88,069 sf, 45.42% Impervious, Inflow Depth = 3.19" for 25-yr event  
Inflow = 4.23 cfs @ 12.39 hrs, Volume= 23,439 cf  
Outflow = 4.23 cfs @ 12.39 hrs, Volume= 23,439 cf, Atten= 0%, Lag= 0.0 min  
Primary = 4.23 cfs @ 12.39 hrs, Volume= 23,439 cf  
Routed to Pond 2b : CB2b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Peak Elev= 23.45' @ 12.39 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.94'	<b>12.0" Round CMP_Round 12"</b> L= 54.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.94' / 18.94' S= 0.0000 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=4.23 cfs @ 12.39 hrs HW=23.44' (Free Discharge)

↑1=CMP\_Round 12" (Barrel Controls 4.23 cfs @ 5.39 fps)

### Summary for Pond 2b: CB2b

[57] Hint: Peaked at 23.96' (Flood elevation advised)

[81] Warning: Exceeded Pond 2a by 2.66' @ 12.08 hrs

Inflow Area = 104,729 sf, 52.19% Impervious, Inflow Depth = 3.65" for 25-yr event  
Inflow = 5.05 cfs @ 12.36 hrs, Volume= 31,862 cf  
Outflow = 5.05 cfs @ 12.36 hrs, Volume= 31,862 cf, Atten= 0%, Lag= 0.0 min  
Primary = 5.05 cfs @ 12.36 hrs, Volume= 31,862 cf  
Routed to Pond 2c : CB2c

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 23.96' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.34' / 17.78' S= 0.0028 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=5.05 cfs @ 12.36 hrs HW=23.96' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 5.05 cfs @ 4.11 fps)

### Summary for Pond 2c: CB2c

[57] Hint: Peaked at 32.62' (Flood elevation advised)

[81] Warning: Exceeded Pond 2b by 9.04' @ 12.08 hrs

Inflow Area = 120,771 sf, 57.50% Impervious, Inflow Depth = 4.00" for 25-yr event  
Inflow = 7.42 cfs @ 12.08 hrs, Volume= 40,284 cf  
Outflow = 7.42 cfs @ 12.08 hrs, Volume= 40,284 cf, Atten= 0%, Lag= 0.0 min  
Primary = 7.42 cfs @ 12.08 hrs, Volume= 40,284 cf  
Routed to Pond 2d : CB2d

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 32.62' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.80'	<b>15.0" Round CMP_Round 15"</b> L= 375.0' CMP, square edge headwall, Ke= 0.500

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Inlet / Outlet Invert= 17.80' / 12.18' S= 0.0150 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=7.41 cfs @ 12.08 hrs HW=32.60' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 7.41 cfs @ 6.04 fps)

**Summary for Pond 2d: CB2d**

[57] Hint: Peaked at 25.78' (Flood elevation advised)

[81] Warning: Exceeded Pond 2c by 1.35' @ 11.98 hrs

Inflow Area = 128,112 sf, 59.69% Impervious, Inflow Depth = 4.15" for 25-yr event  
Inflow = 8.61 cfs @ 12.08 hrs, Volume= 44,282 cf  
Outflow = 8.61 cfs @ 12.08 hrs, Volume= 44,282 cf, Atten= 0%, Lag= 0.0 min  
Primary = 8.61 cfs @ 12.08 hrs, Volume= 44,282 cf  
Routed to Link DP2 : Drainage System #2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 25.78' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.29'	<b>15.0" Round CMP_Round 15"</b> L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.29' / 16.79' S= 0.0050 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=8.60 cfs @ 12.08 hrs HW=25.76' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 8.60 cfs @ 7.01 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 51,214 sf, 80.59% Impervious, Inflow Depth = 5.57" for 25-yr event  
Inflow = 7.50 cfs @ 12.07 hrs, Volume= 23,776 cf  
Primary = 7.50 cfs @ 12.07 hrs, Volume= 23,776 cf, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2**

Inflow Area = 137,689 sf, 57.62% Impervious, Inflow Depth = 4.03" for 25-yr event  
Inflow = 9.22 cfs @ 12.08 hrs, Volume= 46,197 cf  
Primary = 9.22 cfs @ 12.08 hrs, Volume= 46,197 cf, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment E1a: PS1a</b>	Runoff Area=20,120 sf 65.08% Impervious Runoff Depth=5.76" Tc=5.0 min CN=77 Runoff=3.20 cfs 9,662 cf
<b>Subcatchment E1b: PS1b</b>	Runoff Area=27,062 sf 89.28% Impervious Runoff Depth=7.57" Tc=5.0 min CN=92 Runoff=5.23 cfs 17,068 cf
<b>Subcatchment E1c: PS1c</b>	Runoff Area=4,032 sf 99.58% Impervious Runoff Depth=8.29" Tc=5.0 min CN=98 Runoff=0.80 cfs 2,785 cf
<b>Subcatchment E2a: PS2a</b>	Runoff Area=8,301 sf 41.78% Impervious Runoff Depth=4.21" Tc=5.0 min CN=64 Runoff=0.97 cfs 2,911 cf
<b>Subcatchment E2b: PS2b</b>	Runoff Area=16,660 sf 87.98% Impervious Runoff Depth=7.45" Tc=5.0 min CN=91 Runoff=3.20 cfs 10,340 cf
<b>Subcatchment E2c: PS2c</b>	Runoff Area=16,042 sf 92.13% Impervious Runoff Depth=7.69" Tc=5.0 min CN=93 Runoff=3.12 cfs 10,279 cf
<b>Subcatchment E2d: PS2d</b>	Runoff Area=7,341 sf 95.70% Impervious Runoff Depth=7.93" Tc=5.0 min CN=95 Runoff=1.45 cfs 4,851 cf
<b>Subcatchment E3: PS3</b>	Runoff Area=9,577 sf 29.98% Impervious Runoff Depth=3.38" Tc=5.0 min CN=57 Runoff=0.89 cfs 2,701 cf
<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=4.33" Flow Length=584' Tc=27.6 min CN=65 Runoff=5.43 cfs 28,763 cf
<b>Pond 1a: CB1a</b>	Peak Elev=25.41' Inflow=3.20 cfs 9,662 cf 12.0" Round Culvert n=0.025 L=203.0' S=0.0126 '/' Outflow=3.20 cfs 9,662 cf
<b>Pond 1b: CB1b</b>	Peak Elev=29.69' Inflow=8.43 cfs 26,730 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0150 '/' Outflow=8.43 cfs 26,730 cf
<b>Pond 2a: CB2a</b>	Peak Elev=26.44' Inflow=5.76 cfs 31,674 cf 12.0" Round Culvert n=0.025 L=54.0' S=0.0000 '/' Outflow=5.76 cfs 31,674 cf
<b>Pond 2b: CB2b</b>	Peak Elev=27.87' Inflow=6.76 cfs 42,014 cf 15.0" Round Culvert n=0.025 L=200.0' S=0.0028 '/' Outflow=6.76 cfs 42,014 cf
<b>Pond 2c: CB2c</b>	Peak Elev=44.52' Inflow=9.44 cfs 52,293 cf 15.0" Round Culvert n=0.025 L=375.0' S=0.0150 '/' Outflow=9.44 cfs 52,293 cf
<b>Pond 2d: CB2d</b>	Peak Elev=30.39' Inflow=10.88 cfs 57,144 cf 15.0" Round Culvert n=0.025 L=100.0' S=0.0050 '/' Outflow=10.88 cfs 57,144 cf
<b>Link DP1: Drainage System #1</b>	Inflow=9.24 cfs 29,516 cf Primary=9.24 cfs 29,516 cf



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**Link DP2: Drainage System #2**

Inflow=11.76 cfs 59,845 cf

Primary=11.76 cfs 59,845 cf

**Total Runoff Area = 188,903 sf   Runoff Volume = 89,361 cf   Average Runoff Depth = 5.68"**  
**36.15% Pervious = 68,294 sf   63.85% Impervious = 120,609 sf**

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**Summary for Subcatchment E1a: PS1a**

Runoff = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf, Depth= 5.76"  
Routed to Pond 1a : CB1a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
4,566	98	Roofs, HSG A
7,025	39	>75% Grass cover, Good, HSG A
8,529	98	Paved parking, HSG A
20,120	77	Weighted Average
7,025		34.92% Pervious Area
13,095		65.08% Impervious Area

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

**Summary for Subcatchment E1b: PS1b**

Runoff = 5.23 cfs @ 12.07 hrs, Volume= 17,068 cf, Depth= 7.57"  
Routed to Pond 1b : CB1b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
2,901	39	>75% Grass cover, Good, HSG A
3,319	98	Roofs, HSG A
20,842	98	Paved parking, HSG A
27,062	92	Weighted Average
2,901		10.72% Pervious Area
24,161		89.28% Impervious Area

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

**Summary for Subcatchment E1c: PS1c**

Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,785 cf, Depth= 8.29"  
Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

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Type III 24-hr 50-yr Rainfall=8.53"

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Area (sf)	CN	Description
17	39	>75% Grass cover, Good, HSG A
4,015	98	Paved parking, HSG A
4,032	98	Weighted Average
17		0.42% Pervious Area
4,015		99.58% Impervious Area

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

**Summary for Subcatchment E2a: PS2a**

Runoff = 0.97 cfs @ 12.08 hrs, Volume= 2,911 cf, Depth= 4.21"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
56	98	Roofs, HSG A
4,833	39	>75% Grass cover, Good, HSG A
3,412	98	Paved parking, HSG A
8,301	64	Weighted Average
4,833		58.22% Pervious Area
3,468		41.78% Impervious Area

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

**Summary for Subcatchment E2b: PS2b**

Runoff = 3.20 cfs @ 12.07 hrs, Volume= 10,340 cf, Depth= 7.45"  
 Routed to Pond 2b : CB2b

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
3,630	98	Roofs, HSG A
2,003	39	>75% Grass cover, Good, HSG A
11,027	98	Paved parking, HSG A
16,660	91	Weighted Average
2,003		12.02% Pervious Area
14,657		87.98% Impervious Area

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

**Summary for Subcatchment E2c: PS2c**

Runoff = 3.12 cfs @ 12.07 hrs, Volume= 10,279 cf, Depth= 7.69"  
Routed to Pond 2c : CB2c

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
4,423	98	Roofs, HSG A
1,262	39	>75% Grass cover, Good, HSG A
10,357	98	Paved parking, HSG A
16,042	93	Weighted Average
1,262		7.87% Pervious Area
14,780		92.13% Impervious Area

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

**Summary for Subcatchment E2d: PS2d**

Runoff = 1.45 cfs @ 12.07 hrs, Volume= 4,851 cf, Depth= 7.93"  
Routed to Pond 2d : CB2d

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
316	39	>75% Grass cover, Good, HSG A
7,025	98	Paved parking, HSG A
7,341	95	Weighted Average
316		4.30% Pervious Area
7,025		95.70% Impervious Area

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

**Summary for Subcatchment E3: PS3**

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 2,701 cf, Depth= 3.38"  
Routed to Link DP2 : Drainage System #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

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Area (sf)	CN	Description
6,706	39	>75% Grass cover, Good, HSG A
2,871	98	Paved parking, HSG A
9,577	57	Weighted Average
6,706		70.02% Pervious Area
2,871		29.98% Impervious Area

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

**Summary for Subcatchment O1: Off-Site**

[47] Hint: Peak is 249% of capacity of segment #3

Runoff = 5.43 cfs @ 12.39 hrs, Volume= 28,763 cf, Depth= 4.33"  
 Routed to Pond 2a : CB2a

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Pond 1a: CB1a**

[57] Hint: Peaked at 25.41' (Flood elevation advised)

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Inflow Area = 20,120 sf, 65.08% Impervious, Inflow Depth = 5.76" for 50-yr event  
Inflow = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf  
Outflow = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf, Atten= 0%, Lag= 0.0 min  
Primary = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf  
Routed to Pond 1b : CB1b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 25.41' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.49'	<b>12.0" Round CMP_Round 12"</b> L= 203.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.49' / 17.94' S= 0.0126 1' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.19 cfs @ 12.07 hrs HW=25.38' (Free Discharge)  
↑1=CMP\_Round 12" (Barrel Controls 3.19 cfs @ 4.07 fps)

### Summary for Pond 1b: CB1b

[57] Hint: Peaked at 29.69' (Flood elevation advised)  
[81] Warning: Exceeded Pond 1a by 4.29' @ 12.07 hrs

Inflow Area = 47,182 sf, 78.96% Impervious, Inflow Depth = 6.80" for 50-yr event  
Inflow = 8.43 cfs @ 12.07 hrs, Volume= 26,730 cf  
Outflow = 8.43 cfs @ 12.07 hrs, Volume= 26,730 cf, Atten= 0%, Lag= 0.0 min  
Primary = 8.43 cfs @ 12.07 hrs, Volume= 26,730 cf  
Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 29.69' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.69'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.69' / 14.69' S= 0.0150 1' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=8.42 cfs @ 12.07 hrs HW=29.66' (Free Discharge)  
↑1=CMP\_Round 15" (Barrel Controls 8.42 cfs @ 6.87 fps)

### Summary for Pond 2a: CB2a

[57] Hint: Peaked at 26.44' (Flood elevation advised)

Inflow Area = 88,069 sf, 45.42% Impervious, Inflow Depth = 4.32" for 50-yr event  
Inflow = 5.76 cfs @ 12.37 hrs, Volume= 31,674 cf  
Outflow = 5.76 cfs @ 12.37 hrs, Volume= 31,674 cf, Atten= 0%, Lag= 0.0 min  
Primary = 5.76 cfs @ 12.37 hrs, Volume= 31,674 cf  
Routed to Pond 2b : CB2b

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Peak Elev= 26.44' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.94'	<b>12.0" Round CMP_Round 12"</b> L= 54.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.94' / 18.94' S= 0.0000 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.76 cfs @ 12.37 hrs HW=26.44' (Free Discharge)

↑1=CMP\_Round 12" (Barrel Controls 5.76 cfs @ 7.34 fps)

**Summary for Pond 2b: CB2b**

[57] Hint: Peaked at 27.87' (Flood elevation advised)

[81] Warning: Exceeded Pond 2a by 4.90' @ 12.08 hrs

Inflow Area = 104,729 sf, 52.19% Impervious, Inflow Depth = 4.81" for 50-yr event  
 Inflow = 6.76 cfs @ 12.36 hrs, Volume= 42,014 cf  
 Outflow = 6.76 cfs @ 12.36 hrs, Volume= 42,014 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 6.76 cfs @ 12.36 hrs, Volume= 42,014 cf  
 Routed to Pond 2c : CB2c

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 27.87' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	<b>15.0" Round CMP_Round 15"</b> L= 200.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.34' / 17.78' S= 0.0028 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf

**Primary OutFlow** Max=6.76 cfs @ 12.36 hrs HW=27.86' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 6.76 cfs @ 5.51 fps)

**Summary for Pond 2c: CB2c**

[57] Hint: Peaked at 44.52' (Flood elevation advised)

[81] Warning: Exceeded Pond 2b by 17.71' @ 12.08 hrs

Inflow Area = 120,771 sf, 57.50% Impervious, Inflow Depth = 5.20" for 50-yr event  
 Inflow = 9.44 cfs @ 12.08 hrs, Volume= 52,293 cf  
 Outflow = 9.44 cfs @ 12.08 hrs, Volume= 52,293 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 9.44 cfs @ 12.08 hrs, Volume= 52,293 cf  
 Routed to Pond 2d : CB2d

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 44.52' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.80'	<b>15.0" Round CMP_Round 15"</b> L= 375.0' CMP, square edge headwall, Ke= 0.500

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Inlet / Outlet Invert= 17.80' / 12.18' S= 0.0150 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=9.44 cfs @ 12.08 hrs HW=44.50' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 9.44 cfs @ 7.69 fps)

**Summary for Pond 2d: CB2d**

[57] Hint: Peaked at 30.39' (Flood elevation advised)

[81] Warning: Exceeded Pond 2c by 1.30' @ 11.94 hrs

Inflow Area = 128,112 sf, 59.69% Impervious, Inflow Depth = 5.35" for 50-yr event  
Inflow = 10.88 cfs @ 12.08 hrs, Volume= 57,144 cf  
Outflow = 10.88 cfs @ 12.08 hrs, Volume= 57,144 cf, Atten= 0%, Lag= 0.0 min  
Primary = 10.88 cfs @ 12.08 hrs, Volume= 57,144 cf  
Routed to Link DP2 : Drainage System #2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 30.39' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.29'	<b>15.0" Round CMP_Round 15"</b> L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.29' / 16.79' S= 0.0050 '/ n= 0.025 Corrugated metal, Flow Area= 1.23 sf Cc= 0.900

**Primary OutFlow** Max=10.87 cfs @ 12.08 hrs HW=30.36' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 10.87 cfs @ 8.85 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 51,214 sf, 80.59% Impervious, Inflow Depth = 6.92" for 50-yr event  
Inflow = 9.24 cfs @ 12.07 hrs, Volume= 29,516 cf  
Primary = 9.24 cfs @ 12.07 hrs, Volume= 29,516 cf, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node 2R

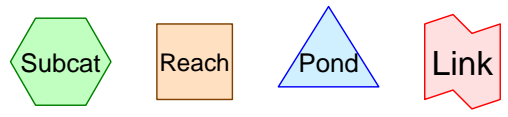
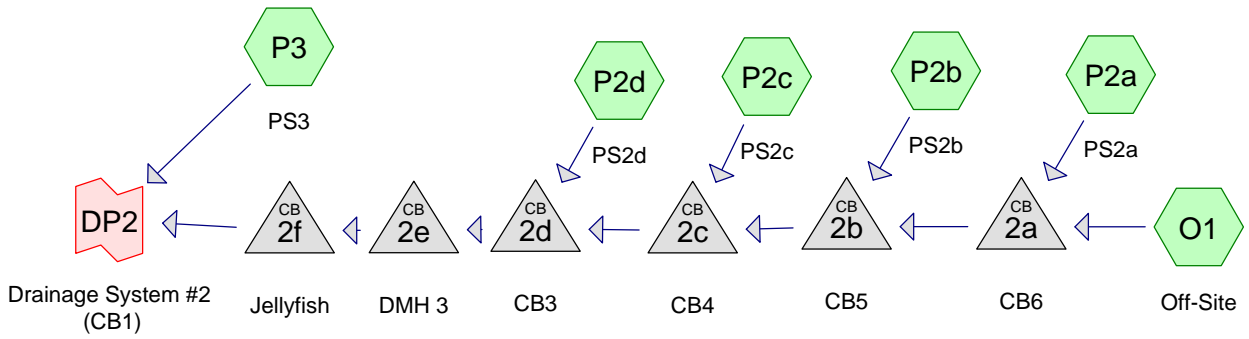
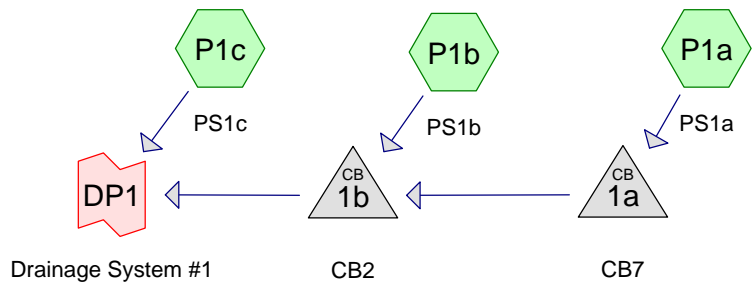
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2**

Inflow Area = 137,689 sf, 57.62% Impervious, Inflow Depth = 5.22" for 50-yr event  
Inflow = 11.76 cfs @ 12.08 hrs, Volume= 59,845 cf  
Primary = 11.76 cfs @ 12.08 hrs, Volume= 59,845 cf, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs





**Routing Diagram for Proposed Conditions 2023-09-19**  
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## **Project Notes**

Defined 5 rainfall events from extreme\_precip\_tables\_output IDF

# Proposed Conditions 2023-09-19

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## Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.70	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.62	2
3	25-yr	Type III 24-hr		Default	24.00	1	7.13	2
4	50-yr	Type III 24-hr		Default	24.00	1	8.53	2

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### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
42,228	39	>75% Grass cover, Good, HSG A (O1, P1a, P1b, P1c, P2a, P2b, P3)
78,614	98	Paved parking, HSG A (O1, P1a, P1b, P1c, P2a, P2b, P2c, P2d, P3)
43,554	98	Roofs, HSG A (P1a, P1b, P2a, P2b, P2c, P2d)
2,453	98	Unconnected roofs, HSG A (O1)
22,052	36	Woods, Fair, HSG A (O1)
<b>188,901</b>	<b>78</b>	<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (sq-ft)	Soil Group	Subcatchment Numbers
188,901	HSG A	O1, P1a, P1b, P1c, P2a, P2b, P2c, P2d, P3
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>188,901</b>		<b>TOTAL AREA</b>

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## 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	Sub Num
42,228	0	0	0	0	42,228	>75% Grass cover, Good	
78,614	0	0	0	0	78,614	Paved parking	
43,554	0	0	0	0	43,554	Roofs	
2,453	0	0	0	0	2,453	Unconnected roofs	
22,052	0	0	0	0	22,052	Woods, Fair	
<b>188,901</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>188,901</b>	<b>TOTAL AREA</b>	

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## 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)	Node Name
1	O1	0.00	0.00	110.0	0.0050	0.015	0.0	12.0	0.0	
2	1a	21.06	18.00	183.0	0.0167	0.013	0.0	12.0	0.0	
3	1b	17.95	17.81	90.0	0.0016	0.013	0.0	15.0	0.0	
4	2a	18.09	18.02	58.0	0.0012	0.013	0.0	18.0	0.0	
5	2b	18.02	17.90	96.0	0.0013	0.013	0.0	18.0	0.0	
6	2c	17.90	17.80	81.0	0.0012	0.013	0.0	18.0	0.0	
7	2d	17.70	17.69	7.0	0.0014	0.013	0.0	18.0	0.0	
8	2e	17.44	17.41	36.0	0.0008	0.013	0.0	24.0	0.0	
9	2f	17.31	17.29	22.0	0.0009	0.013	0.0	24.0	0.0	

**Proposed Conditions 2023-09-19**

Type III 24-hr 2-yr Rainfall=3.70"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=0.86" Flow Length=584' Tc=27.6 min CN=65 Runoff=0.93 cfs 5,712 cf
<b>Subcatchment P1a: PS1a</b>	Runoff Area=20,120 sf 64.85% Impervious Runoff Depth=1.58" Tc=5.0 min CN=77 Runoff=0.88 cfs 2,650 cf
<b>Subcatchment P1b: PS1b</b>	Runoff Area=26,173 sf 92.50% Impervious Runoff Depth=3.03" Tc=5.0 min CN=94 Runoff=2.10 cfs 6,610 cf
<b>Subcatchment P1c: PS1c</b>	Runoff Area=4,594 sf 99.65% Impervious Runoff Depth=3.47" Tc=5.0 min CN=98 Runoff=0.39 cfs 1,327 cf
<b>Subcatchment P2a: PS2a</b>	Runoff Area=8,300 sf 30.05% Impervious Runoff Depth=0.49" Tc=5.0 min CN=57 Runoff=0.07 cfs 341 cf
<b>Subcatchment P2b: PS2b</b>	Runoff Area=16,660 sf 89.99% Impervious Runoff Depth=2.83" Tc=5.0 min CN=92 Runoff=1.27 cfs 3,927 cf
<b>Subcatchment P2c: PS2c</b>	Runoff Area=15,044 sf 100.00% Impervious Runoff Depth=3.47" Tc=5.0 min CN=98 Runoff=1.29 cfs 4,345 cf
<b>Subcatchment P2d: PS2d</b>	Runoff Area=8,407 sf 100.00% Impervious Runoff Depth=3.47" Tc=5.0 min CN=98 Runoff=0.72 cfs 2,428 cf
<b>Subcatchment P3: PS3</b>	Runoff Area=9,835 sf 54.01% Impervious Runoff Depth=1.19" Tc=5.0 min CN=71 Runoff=0.31 cfs 978 cf
<b>Pond 1a: CB7</b>	Peak Elev=21.54' Inflow=0.88 cfs 2,650 cf 12.0" Round Culvert n=0.013 L=183.0' S=0.0167 '/' Outflow=0.88 cfs 2,650 cf
<b>Pond 1b: CB2</b>	Peak Elev=19.19' Inflow=2.97 cfs 9,261 cf 15.0" Round Culvert n=0.013 L=90.0' S=0.0016 '/' Outflow=2.97 cfs 9,261 cf
<b>Pond 2a: CB6</b>	Peak Elev=18.70' Inflow=0.97 cfs 6,053 cf 18.0" Round Culvert n=0.013 L=58.0' S=0.0012 '/' Outflow=0.97 cfs 6,053 cf
<b>Pond 2b: CB5</b>	Peak Elev=18.81' Inflow=1.52 cfs 9,980 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.0013 '/' Outflow=1.52 cfs 9,980 cf
<b>Pond 2c: CB4</b>	Peak Elev=18.98' Inflow=2.80 cfs 14,325 cf 18.0" Round Culvert n=0.013 L=81.0' S=0.0012 '/' Outflow=2.80 cfs 14,325 cf
<b>Pond 2d: CB3</b>	Peak Elev=18.83' Inflow=3.52 cfs 16,753 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0014 '/' Outflow=3.52 cfs 16,753 cf
<b>Pond 2e: DMH 3</b>	Peak Elev=18.50' Inflow=3.52 cfs 16,753 cf 24.0" Round Culvert n=0.013 L=36.0' S=0.0008 '/' Outflow=3.52 cfs 16,753 cf



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*Type III 24-hr 2-yr Rainfall=3.70"*

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**Pond 2f: Jellyfish**

Peak Elev=18.35' Inflow=3.52 cfs 16,753 cf  
24.0" Round Culvert n=0.013 L=22.0' S=0.0009 '/ Outflow=3.52 cfs 16,753 cf

**Link DP1: Drainage System #1**

Inflow=3.37 cfs 10,588 cf  
Primary=3.37 cfs 10,588 cf

**Link DP2: Drainage System #2 (CB1)**

Inflow=3.83 cfs 17,731 cf  
Primary=3.83 cfs 17,731 cf

**Total Runoff Area = 188,901 sf Runoff Volume = 28,318 cf Average Runoff Depth = 1.80"**  
**34.03% Pervious = 64,280 sf 65.97% Impervious = 124,621 sf**

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Type III 24-hr 2-yr Rainfall=3.70"

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**Summary for Subcatchment O1: Off-Site**

Runoff = 0.93 cfs @ 12.45 hrs, Volume= 5,712 cf, Depth= 0.86"  
Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Subcatchment P1a: PS1a**

Runoff = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf, Depth= 1.58"  
Routed to Pond 1a : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
8,481	98	Paved parking, HSG A
4,566	98	Roofs, HSG A
7,073	39	>75% Grass cover, Good, HSG A
20,120	77	Weighted Average
7,073		35.15% Pervious Area
13,047		64.85% Impervious Area

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

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Type III 24-hr 2-yr Rainfall=3.70"

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**Summary for Subcatchment P1b: PS1b**

Runoff = 2.10 cfs @ 12.07 hrs, Volume= 6,610 cf, Depth= 3.03"  
Routed to Pond 1b : CB2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
10,744	98	Paved parking, HSG A
13,465	98	Roofs, HSG A
1,964	39	>75% Grass cover, Good, HSG A
26,173	94	Weighted Average
1,964		7.50% Pervious Area
24,209		92.50% Impervious Area

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

**Summary for Subcatchment P1c: PS1c**

Runoff = 0.39 cfs @ 12.07 hrs, Volume= 1,327 cf, Depth= 3.47"  
Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
4,578	98	Paved parking, HSG A
16	39	>75% Grass cover, Good, HSG A
4,594	98	Weighted Average
16		0.35% Pervious Area
4,578		99.65% Impervious Area

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

**Summary for Subcatchment P2a: PS2a**

Runoff = 0.07 cfs @ 12.11 hrs, Volume= 341 cf, Depth= 0.49"  
Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

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Type III 24-hr 2-yr Rainfall=3.70"

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Area (sf)	CN	Description
2,465	98	Paved parking, HSG A
29	98	Roofs, HSG A
5,806	39	>75% Grass cover, Good, HSG A
8,300	57	Weighted Average
5,806		69.95% Pervious Area
2,494		30.05% Impervious Area

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

**Summary for Subcatchment P2b: PS2b**

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 3,927 cf, Depth= 2.83"  
Routed to Pond 2b : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
6,157	98	Paved parking, HSG A
8,836	98	Roofs, HSG A
1,667	39	>75% Grass cover, Good, HSG A
16,660	92	Weighted Average
1,667		10.01% Pervious Area
14,993		89.99% Impervious Area

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

**Summary for Subcatchment P2c: PS2c**

Runoff = 1.29 cfs @ 12.07 hrs, Volume= 4,345 cf, Depth= 3.47"  
Routed to Pond 2c : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
3,896	98	Paved parking, HSG A
11,148	98	Roofs, HSG A
15,044	98	Weighted Average
15,044		100.00% Impervious Area

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Type III 24-hr 2-yr Rainfall=3.70"

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

**Summary for Subcatchment P2d: PS2d**

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 2,428 cf, Depth= 3.47"  
Routed to Pond 2d : CB3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
2,897	98	Paved parking, HSG A
5,510	98	Roofs, HSG A
8,407	98	Weighted Average
8,407		100.00% Impervious Area

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

**Summary for Subcatchment P3: PS3**

Runoff = 0.31 cfs @ 12.08 hrs, Volume= 978 cf, Depth= 1.19"  
Routed to Link DP2 : Drainage System #2 (CB1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
5,312	98	Paved parking, HSG A
4,523	39	>75% Grass cover, Good, HSG A
9,835	71	Weighted Average
4,523		45.99% Pervious Area
5,312		54.01% Impervious Area

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

**Summary for Pond 1a: CB7**

[57] Hint: Peaked at 21.54' (Flood elevation advised)

Inflow Area = 20,120 sf, 64.85% Impervious, Inflow Depth = 1.58" for 2-yr event  
Inflow = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf  
Outflow = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.88 cfs @ 12.08 hrs, Volume= 2,650 cf  
Routed to Pond 1b : CB2

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Type III 24-hr 2-yr Rainfall=3.70"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 21.54' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	21.06'	<b>12.0" Round CMP_Round 12"</b> L= 183.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.06' / 18.00' S= 0.0167 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.88 cfs @ 12.08 hrs HW=21.54' (Free Discharge)

↳1=CMP\_Round 12" (Inlet Controls 0.88 cfs @ 2.36 fps)

**Summary for Pond 1b: CB2**

[57] Hint: Peaked at 19.19' (Flood elevation advised)

[79] Warning: Submerged Pond 1a Primary device # 1 OUTLET by 1.19'

Inflow Area = 46,293 sf, 80.48% Impervious, Inflow Depth = 2.40" for 2-yr event  
 Inflow = 2.97 cfs @ 12.07 hrs, Volume= 9,261 cf  
 Outflow = 2.97 cfs @ 12.07 hrs, Volume= 9,261 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 2.97 cfs @ 12.07 hrs, Volume= 9,261 cf  
 Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 19.19' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.95'	<b>15.0" Round CMP_Round 15"</b> L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.95' / 17.81' S= 0.0016 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

**Primary OutFlow** Max=2.97 cfs @ 12.07 hrs HW=19.19' (Free Discharge)

↳1=CMP\_Round 15" (Barrel Controls 2.97 cfs @ 3.04 fps)

**Summary for Pond 2a: CB6**

[57] Hint: Peaked at 18.70' (Flood elevation advised)

Inflow Area = 88,068 sf, 44.32% Impervious, Inflow Depth = 0.82" for 2-yr event  
 Inflow = 0.97 cfs @ 12.44 hrs, Volume= 6,053 cf  
 Outflow = 0.97 cfs @ 12.44 hrs, Volume= 6,053 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.97 cfs @ 12.44 hrs, Volume= 6,053 cf  
 Routed to Pond 2b : CB5

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 18.70' @ 12.44 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.09'	<b>18.0" Round Culvert</b>

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Type III 24-hr 2-yr Rainfall=3.70"

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L= 58.0' CMP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 18.09' / 18.02' S= 0.0012 '/ Cc= 0.900  
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=0.97 cfs @ 12.44 hrs HW=18.70' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.97 cfs @ 2.11 fps)

**Summary for Pond 2b: CB5**

[57] Hint: Peaked at 18.81' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2a by 0.41' @ 12.06 hrs

Inflow Area = 104,728 sf, 51.59% Impervious, Inflow Depth = 1.14" for 2-yr event  
Inflow = 1.52 cfs @ 12.08 hrs, Volume= 9,980 cf  
Outflow = 1.52 cfs @ 12.08 hrs, Volume= 9,980 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.52 cfs @ 12.08 hrs, Volume= 9,980 cf  
Routed to Pond 2c : CB4

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 18.81' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.02'	<b>18.0" Round Culvert</b> L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.02' / 17.90' S= 0.0013 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=1.52 cfs @ 12.08 hrs HW=18.81' (Free Discharge)  
↑1=Culvert (Barrel Controls 1.52 cfs @ 2.35 fps)

**Summary for Pond 2c: CB4**

[57] Hint: Peaked at 18.98' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2b by 0.18' @ 12.07 hrs

Inflow Area = 119,772 sf, 57.67% Impervious, Inflow Depth = 1.44" for 2-yr event  
Inflow = 2.80 cfs @ 12.08 hrs, Volume= 14,325 cf  
Outflow = 2.80 cfs @ 12.08 hrs, Volume= 14,325 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.80 cfs @ 12.08 hrs, Volume= 14,325 cf  
Routed to Pond 2d : CB3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 18.98' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	<b>18.0" Round Culvert</b> L= 81.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 17.80' S= 0.0012 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=2.80 cfs @ 12.08 hrs HW=18.98' (Free Discharge)  
↑1=Culvert (Barrel Controls 2.80 cfs @ 2.87 fps)

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Type III 24-hr 2-yr Rainfall=3.70"

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**Summary for Pond 2d: CB3**

[57] Hint: Peaked at 18.83' (Flood elevation advised)

[79] Warning: Submerged Pond 2c Primary device # 1 INLET by 0.93'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 1.57" for 2-yr event  
 Inflow = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf  
 Outflow = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf  
 Routed to Pond 2e : DMH 3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 18.83' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.70'	<b>18.0" Round Culvert</b> L= 7.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.70' / 17.69' S= 0.0014 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=3.52 cfs @ 12.07 hrs HW=18.83' (Free Discharge)

↑1=Culvert (Barrel Controls 3.52 cfs @ 3.41 fps)

**Summary for Pond 2e: DMH 3**

[57] Hint: Peaked at 18.50' (Flood elevation advised)

[79] Warning: Submerged Pond 2d Primary device # 1 INLET by 0.80'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 1.57" for 2-yr event  
 Inflow = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf  
 Outflow = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf  
 Routed to Pond 2f : Jellyfish

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 18.50' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.44'	<b>24.0" Round Culvert</b> L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.44' / 17.41' S= 0.0008 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=3.52 cfs @ 12.07 hrs HW=18.50' (Free Discharge)

↑1=Culvert (Barrel Controls 3.52 cfs @ 3.03 fps)



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**Summary for Pond 2f: Jellyfish**

[57] Hint: Peaked at 18.35' (Flood elevation advised)

[79] Warning: Submerged Pond 2e Primary device # 1 INLET by 0.91'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 1.57" for 2-yr event  
 Inflow = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf  
 Outflow = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 3.52 cfs @ 12.07 hrs, Volume= 16,753 cf  
 Routed to Link DP2 : Drainage System #2 (CB1)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 18.35' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	<b>24.0" Round Culvert</b> L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.31' / 17.29' S= 0.0009 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=3.52 cfs @ 12.07 hrs HW=18.35' (Free Discharge)  
 ←1=Culvert (Barrel Controls 3.52 cfs @ 3.12 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 50,887 sf, 82.21% Impervious, Inflow Depth = 2.50" for 2-yr event  
 Inflow = 3.37 cfs @ 12.07 hrs, Volume= 10,588 cf  
 Primary = 3.37 cfs @ 12.07 hrs, Volume= 10,588 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2 (CB1)**

Inflow Area = 138,014 sf, 59.98% Impervious, Inflow Depth = 1.54" for 2-yr event  
 Inflow = 3.83 cfs @ 12.07 hrs, Volume= 17,731 cf  
 Primary = 3.83 cfs @ 12.07 hrs, Volume= 17,731 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=2.08" Flow Length=584' Tc=27.6 min CN=65 Runoff=2.53 cfs 13,820 cf
<b>Subcatchment P1a: PS1a</b>	Runoff Area=20,120 sf 64.85% Impervious Runoff Depth=3.15" Tc=5.0 min CN=77 Runoff=1.77 cfs 5,281 cf
<b>Subcatchment P1b: PS1b</b>	Runoff Area=26,173 sf 92.50% Impervious Runoff Depth=4.92" Tc=5.0 min CN=94 Runoff=3.31 cfs 10,732 cf
<b>Subcatchment P1c: PS1c</b>	Runoff Area=4,594 sf 99.65% Impervious Runoff Depth=5.38" Tc=5.0 min CN=98 Runoff=0.60 cfs 2,061 cf
<b>Subcatchment P2a: PS2a</b>	Runoff Area=8,300 sf 30.05% Impervious Runoff Depth=1.45" Tc=5.0 min CN=57 Runoff=0.30 cfs 1,003 cf
<b>Subcatchment P2b: PS2b</b>	Runoff Area=16,660 sf 89.99% Impervious Runoff Depth=4.70" Tc=5.0 min CN=92 Runoff=2.05 cfs 6,520 cf
<b>Subcatchment P2c: PS2c</b>	Runoff Area=15,044 sf 100.00% Impervious Runoff Depth=5.38" Tc=5.0 min CN=98 Runoff=1.97 cfs 6,748 cf
<b>Subcatchment P2d: PS2d</b>	Runoff Area=8,407 sf 100.00% Impervious Runoff Depth=5.38" Tc=5.0 min CN=98 Runoff=1.10 cfs 3,771 cf
<b>Subcatchment P3: PS3</b>	Runoff Area=9,835 sf 54.01% Impervious Runoff Depth=2.60" Tc=5.0 min CN=71 Runoff=0.71 cfs 2,127 cf
<b>Pond 1a: CB7</b>	Peak Elev=21.79' Inflow=1.77 cfs 5,281 cf 12.0" Round Culvert n=0.013 L=183.0' S=0.0167 '/' Outflow=1.77 cfs 5,281 cf
<b>Pond 1b: CB2</b>	Peak Elev=20.02' Inflow=5.08 cfs 16,013 cf 15.0" Round Culvert n=0.013 L=90.0' S=0.0016 '/' Outflow=5.08 cfs 16,013 cf
<b>Pond 2a: CB6</b>	Peak Elev=19.12' Inflow=2.65 cfs 14,823 cf 18.0" Round Culvert n=0.013 L=58.0' S=0.0012 '/' Outflow=2.65 cfs 14,823 cf
<b>Pond 2b: CB5</b>	Peak Elev=19.21' Inflow=3.27 cfs 21,343 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.0013 '/' Outflow=3.27 cfs 21,343 cf
<b>Pond 2c: CB4</b>	Peak Elev=19.47' Inflow=5.16 cfs 28,090 cf 18.0" Round Culvert n=0.013 L=81.0' S=0.0012 '/' Outflow=5.16 cfs 28,090 cf
<b>Pond 2d: CB3</b>	Peak Elev=19.32' Inflow=6.25 cfs 31,861 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0014 '/' Outflow=6.25 cfs 31,861 cf
<b>Pond 2e: DMH 3</b>	Peak Elev=18.88' Inflow=6.25 cfs 31,861 cf 24.0" Round Culvert n=0.013 L=36.0' S=0.0008 '/' Outflow=6.25 cfs 31,861 cf

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**Pond 2f: Jellyfish**

Peak Elev=18.72' Inflow=6.25 cfs 31,861 cf  
24.0" Round Culvert n=0.013 L=22.0' S=0.0009 '/ Outflow=6.25 cfs 31,861 cf

**Link DP1: Drainage System #1**

Inflow=5.68 cfs 18,073 cf  
Primary=5.68 cfs 18,073 cf

**Link DP2: Drainage System #2 (CB1)**

Inflow=6.96 cfs 33,989 cf  
Primary=6.96 cfs 33,989 cf

**Total Runoff Area = 188,901 sf Runoff Volume = 52,062 cf Average Runoff Depth = 3.31"**  
**34.03% Pervious = 64,280 sf 65.97% Impervious = 124,621 sf**

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**Summary for Subcatchment O1: Off-Site**

[47] Hint: Peak is 116% of capacity of segment #3

Runoff = 2.53 cfs @ 12.42 hrs, Volume= 13,820 cf, Depth= 2.08"  
 Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Subcatchment P1a: PS1a**

Runoff = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf, Depth= 3.15"  
 Routed to Pond 1a : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
8,481	98	Paved parking, HSG A
4,566	98	Roofs, HSG A
7,073	39	>75% Grass cover, Good, HSG A
20,120	77	Weighted Average
7,073		35.15% Pervious Area
13,047		64.85% Impervious Area

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

**Summary for Subcatchment P1b: PS1b**

Runoff = 3.31 cfs @ 12.07 hrs, Volume= 10,732 cf, Depth= 4.92"  
Routed to Pond 1b : CB2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
10,744	98	Paved parking, HSG A
13,465	98	Roofs, HSG A
1,964	39	>75% Grass cover, Good, HSG A
26,173	94	Weighted Average
1,964		7.50% Pervious Area
24,209		92.50% Impervious Area

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

**Summary for Subcatchment P1c: PS1c**

Runoff = 0.60 cfs @ 12.07 hrs, Volume= 2,061 cf, Depth= 5.38"  
Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
4,578	98	Paved parking, HSG A
16	39	>75% Grass cover, Good, HSG A
4,594	98	Weighted Average
16		0.35% Pervious Area
4,578		99.65% Impervious Area

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

**Summary for Subcatchment P2a: PS2a**

Runoff = 0.30 cfs @ 12.09 hrs, Volume= 1,003 cf, Depth= 1.45"  
Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

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Area (sf)	CN	Description
2,465	98	Paved parking, HSG A
29	98	Roofs, HSG A
5,806	39	>75% Grass cover, Good, HSG A
8,300	57	Weighted Average
5,806		69.95% Pervious Area
2,494		30.05% Impervious Area

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

**Summary for Subcatchment P2b: PS2b**

Runoff = 2.05 cfs @ 12.07 hrs, Volume= 6,520 cf, Depth= 4.70"  
Routed to Pond 2b : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
6,157	98	Paved parking, HSG A
8,836	98	Roofs, HSG A
1,667	39	>75% Grass cover, Good, HSG A
16,660	92	Weighted Average
1,667		10.01% Pervious Area
14,993		89.99% Impervious Area

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

**Summary for Subcatchment P2c: PS2c**

Runoff = 1.97 cfs @ 12.07 hrs, Volume= 6,748 cf, Depth= 5.38"  
Routed to Pond 2c : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
3,896	98	Paved parking, HSG A
11,148	98	Roofs, HSG A
15,044	98	Weighted Average
15,044		100.00% Impervious Area

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

**Summary for Subcatchment P2d: PS2d**

Runoff = 1.10 cfs @ 12.07 hrs, Volume= 3,771 cf, Depth= 5.38"  
Routed to Pond 2d : CB3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
2,897	98	Paved parking, HSG A
5,510	98	Roofs, HSG A
8,407	98	Weighted Average
8,407		100.00% Impervious Area

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

**Summary for Subcatchment P3: PS3**

Runoff = 0.71 cfs @ 12.08 hrs, Volume= 2,127 cf, Depth= 2.60"  
Routed to Link DP2 : Drainage System #2 (CB1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-yr Rainfall=5.62"

Area (sf)	CN	Description
5,312	98	Paved parking, HSG A
4,523	39	>75% Grass cover, Good, HSG A
9,835	71	Weighted Average
4,523		45.99% Pervious Area
5,312		54.01% Impervious Area

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

**Summary for Pond 1a: CB7**

[57] Hint: Peaked at 21.79' (Flood elevation advised)

Inflow Area = 20,120 sf, 64.85% Impervious, Inflow Depth = 3.15" for 10-yr event  
Inflow = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf  
Outflow = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.77 cfs @ 12.07 hrs, Volume= 5,281 cf  
Routed to Pond 1b : CB2

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 21.79' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	21.06'	<b>12.0" Round CMP_Round 12"</b> L= 183.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.06' / 18.00' S= 0.0167 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=1.76 cfs @ 12.07 hrs HW=21.78' (Free Discharge)

↑1=CMP\_Round 12" (Inlet Controls 1.76 cfs @ 2.90 fps)

**Summary for Pond 1b: CB2**

[57] Hint: Peaked at 20.02' (Flood elevation advised)

[79] Warning: Submerged Pond 1a Primary device # 1 OUTLET by 2.02'

Inflow Area = 46,293 sf, 80.48% Impervious, Inflow Depth = 4.15" for 10-yr event  
 Inflow = 5.08 cfs @ 12.07 hrs, Volume= 16,013 cf  
 Outflow = 5.08 cfs @ 12.07 hrs, Volume= 16,013 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 5.08 cfs @ 12.07 hrs, Volume= 16,013 cf  
 Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 20.02' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.95'	<b>15.0" Round CMP_Round 15"</b> L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.95' / 17.81' S= 0.0016 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

**Primary OutFlow** Max=5.07 cfs @ 12.07 hrs HW=20.01' (Free Discharge)

↑1=CMP\_Round 15" (Barrel Controls 5.07 cfs @ 4.13 fps)

**Summary for Pond 2a: CB6**

[57] Hint: Peaked at 19.12' (Flood elevation advised)

Inflow Area = 88,068 sf, 44.32% Impervious, Inflow Depth = 2.02" for 10-yr event  
 Inflow = 2.65 cfs @ 12.40 hrs, Volume= 14,823 cf  
 Outflow = 2.65 cfs @ 12.40 hrs, Volume= 14,823 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 2.65 cfs @ 12.40 hrs, Volume= 14,823 cf  
 Routed to Pond 2b : CB5

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 19.12' @ 12.40 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.09'	<b>18.0" Round Culvert</b>



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L= 58.0' CMP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 18.09' / 18.02' S= 0.0012 '/ Cc= 0.900  
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=2.65 cfs @ 12.40 hrs HW=19.12' (Free Discharge)  
↑1=Culvert (Barrel Controls 2.65 cfs @ 2.88 fps)

**Summary for Pond 2b: CB5**

[57] Hint: Peaked at 19.21' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2a by 0.44' @ 12.06 hrs

Inflow Area = 104,728 sf, 51.59% Impervious, Inflow Depth = 2.45" for 10-yr event  
Inflow = 3.27 cfs @ 12.36 hrs, Volume= 21,343 cf  
Outflow = 3.27 cfs @ 12.36 hrs, Volume= 21,343 cf, Atten= 0%, Lag= 0.0 min  
Primary = 3.27 cfs @ 12.36 hrs, Volume= 21,343 cf  
Routed to Pond 2c : CB4

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 19.21' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.02'	<b>18.0" Round Culvert</b> L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.02' / 17.90' S= 0.0013 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=3.27 cfs @ 12.36 hrs HW=19.21' (Free Discharge)  
↑1=Culvert (Barrel Controls 3.27 cfs @ 2.98 fps)

**Summary for Pond 2c: CB4**

[57] Hint: Peaked at 19.47' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2b by 0.28' @ 12.07 hrs

Inflow Area = 119,772 sf, 57.67% Impervious, Inflow Depth = 2.81" for 10-yr event  
Inflow = 5.16 cfs @ 12.08 hrs, Volume= 28,090 cf  
Outflow = 5.16 cfs @ 12.08 hrs, Volume= 28,090 cf, Atten= 0%, Lag= 0.0 min  
Primary = 5.16 cfs @ 12.08 hrs, Volume= 28,090 cf  
Routed to Pond 2d : CB3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 19.47' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	<b>18.0" Round Culvert</b> L= 81.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 17.80' S= 0.0012 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=5.15 cfs @ 12.08 hrs HW=19.47' (Free Discharge)  
↑1=Culvert (Barrel Controls 5.15 cfs @ 3.46 fps)

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**Summary for Pond 2d: CB3**

[57] Hint: Peaked at 19.32' (Flood elevation advised)

[79] Warning: Submerged Pond 2c Primary device # 1 INLET by 1.42'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 2.98" for 10-yr event  
 Inflow = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf  
 Outflow = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf  
 Routed to Pond 2e : DMH 3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.32' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.70'	<b>18.0" Round Culvert</b> L= 7.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.70' / 17.69' S= 0.0014 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=6.24 cfs @ 12.08 hrs HW=19.32' (Free Discharge)

↑**1=Culvert** (Barrel Controls 6.24 cfs @ 4.08 fps)

**Summary for Pond 2e: DMH 3**

[57] Hint: Peaked at 18.88' (Flood elevation advised)

[79] Warning: Submerged Pond 2d Primary device # 1 INLET by 1.18'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 2.98" for 10-yr event  
 Inflow = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf  
 Outflow = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf  
 Routed to Pond 2f : Jellyfish

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 18.88' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.44'	<b>24.0" Round Culvert</b> L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.44' / 17.41' S= 0.0008 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=6.24 cfs @ 12.08 hrs HW=18.88' (Free Discharge)

↑**1=Culvert** (Barrel Controls 6.24 cfs @ 3.61 fps)

**Summary for Pond 2f: Jellyfish**

[57] Hint: Peaked at 18.72' (Flood elevation advised)

[79] Warning: Submerged Pond 2e Primary device # 1 INLET by 1.28'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 2.98" for 10-yr event  
 Inflow = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf  
 Outflow = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 6.25 cfs @ 12.08 hrs, Volume= 31,861 cf  
 Routed to Link DP2 : Drainage System #2 (CB1)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 18.72' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	<b>24.0" Round Culvert</b> L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.31' / 17.29' S= 0.0009 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=6.24 cfs @ 12.08 hrs HW=18.72' (Free Discharge)

↑**1=Culvert** (Barrel Controls 6.24 cfs @ 3.69 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 50,887 sf, 82.21% Impervious, Inflow Depth = 4.26" for 10-yr event  
 Inflow = 5.68 cfs @ 12.07 hrs, Volume= 18,073 cf  
 Primary = 5.68 cfs @ 12.07 hrs, Volume= 18,073 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2 (CB1)**

Inflow Area = 138,014 sf, 59.98% Impervious, Inflow Depth = 2.96" for 10-yr event  
 Inflow = 6.96 cfs @ 12.08 hrs, Volume= 33,989 cf  
 Primary = 6.96 cfs @ 12.08 hrs, Volume= 33,989 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=3.20" Flow Length=584' Tc=27.6 min CN=65 Runoff=3.99 cfs 21,294 cf
<b>Subcatchment P1a: PS1a</b>	Runoff Area=20,120 sf 64.85% Impervious Runoff Depth=4.48" Tc=5.0 min CN=77 Runoff=2.51 cfs 7,516 cf
<b>Subcatchment P1b: PS1b</b>	Runoff Area=26,173 sf 92.50% Impervious Runoff Depth=6.42" Tc=5.0 min CN=94 Runoff=4.26 cfs 13,997 cf
<b>Subcatchment P1c: PS1c</b>	Runoff Area=4,594 sf 99.65% Impervious Runoff Depth=6.89" Tc=5.0 min CN=98 Runoff=0.76 cfs 2,638 cf
<b>Subcatchment P2a: PS2a</b>	Runoff Area=8,300 sf 30.05% Impervious Runoff Depth=2.40" Tc=5.0 min CN=57 Runoff=0.53 cfs 1,660 cf
<b>Subcatchment P2b: PS2b</b>	Runoff Area=16,660 sf 89.99% Impervious Runoff Depth=6.18" Tc=5.0 min CN=92 Runoff=2.66 cfs 8,584 cf
<b>Subcatchment P2c: PS2c</b>	Runoff Area=15,044 sf 100.00% Impervious Runoff Depth=6.89" Tc=5.0 min CN=98 Runoff=2.50 cfs 8,639 cf
<b>Subcatchment P2d: PS2d</b>	Runoff Area=8,407 sf 100.00% Impervious Runoff Depth=6.89" Tc=5.0 min CN=98 Runoff=1.40 cfs 4,828 cf
<b>Subcatchment P3: PS3</b>	Runoff Area=9,835 sf 54.01% Impervious Runoff Depth=3.83" Tc=5.0 min CN=71 Runoff=1.05 cfs 3,142 cf
<b>Pond 1a: CB7</b>	Peak Elev=21.99' Inflow=2.51 cfs 7,516 cf 12.0" Round Culvert n=0.013 L=183.0' S=0.0167 '/' Outflow=2.51 cfs 7,516 cf
<b>Pond 1b: CB2</b>	Peak Elev=20.76' Inflow=6.76 cfs 21,513 cf 15.0" Round Culvert n=0.013 L=90.0' S=0.0016 '/' Outflow=6.76 cfs 21,513 cf
<b>Pond 2a: CB6</b>	Peak Elev=19.43' Inflow=4.19 cfs 22,954 cf 18.0" Round Culvert n=0.013 L=58.0' S=0.0012 '/' Outflow=4.19 cfs 22,954 cf
<b>Pond 2b: CB5</b>	Peak Elev=19.58' Inflow=5.00 cfs 31,539 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.0013 '/' Outflow=5.00 cfs 31,539 cf
<b>Pond 2c: CB4</b>	Peak Elev=20.06' Inflow=7.18 cfs 40,177 cf 18.0" Round Culvert n=0.013 L=81.0' S=0.0012 '/' Outflow=7.18 cfs 40,177 cf
<b>Pond 2d: CB3</b>	Peak Elev=19.78' Inflow=8.57 cfs 45,005 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0014 '/' Outflow=8.57 cfs 45,005 cf
<b>Pond 2e: DMH 3</b>	Peak Elev=19.17' Inflow=8.57 cfs 45,005 cf 24.0" Round Culvert n=0.013 L=36.0' S=0.0008 '/' Outflow=8.57 cfs 45,005 cf

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**Pond 2f: Jellyfish**

Peak Elev=19.01' Inflow=8.57 cfs 45,005 cf  
24.0" Round Culvert n=0.013 L=22.0' S=0.0009 '/ Outflow=8.57 cfs 45,005 cf

**Link DP1: Drainage System #1**

Inflow=7.53 cfs 24,151 cf  
Primary=7.53 cfs 24,151 cf

**Link DP2: Drainage System #2 (CB1)**

Inflow=9.62 cfs 48,147 cf  
Primary=9.62 cfs 48,147 cf

**Total Runoff Area = 188,901 sf Runoff Volume = 72,298 cf Average Runoff Depth = 4.59"**  
**34.03% Pervious = 64,280 sf 65.97% Impervious = 124,621 sf**

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**Summary for Subcatchment O1: Off-Site**

[47] Hint: Peak is 183% of capacity of segment #3

Runoff = 3.99 cfs @ 12.39 hrs, Volume= 21,294 cf, Depth= 3.20"  
Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Subcatchment P1a: PS1a**

Runoff = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf, Depth= 4.48"  
Routed to Pond 1a : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
8,481	98	Paved parking, HSG A
4,566	98	Roofs, HSG A
7,073	39	>75% Grass cover, Good, HSG A
20,120	77	Weighted Average
7,073		35.15% Pervious Area
13,047		64.85% Impervious Area

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

**Summary for Subcatchment P1b: PS1b**

Runoff = 4.26 cfs @ 12.07 hrs, Volume= 13,997 cf, Depth= 6.42"  
Routed to Pond 1b : CB2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
10,744	98	Paved parking, HSG A
13,465	98	Roofs, HSG A
1,964	39	>75% Grass cover, Good, HSG A
26,173	94	Weighted Average
1,964		7.50% Pervious Area
24,209		92.50% Impervious Area

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

**Summary for Subcatchment P1c: PS1c**

Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,638 cf, Depth= 6.89"  
Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
4,578	98	Paved parking, HSG A
16	39	>75% Grass cover, Good, HSG A
4,594	98	Weighted Average
16		0.35% Pervious Area
4,578		99.65% Impervious Area

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

**Summary for Subcatchment P2a: PS2a**

Runoff = 0.53 cfs @ 12.08 hrs, Volume= 1,660 cf, Depth= 2.40"  
Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

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Area (sf)	CN	Description
2,465	98	Paved parking, HSG A
29	98	Roofs, HSG A
5,806	39	>75% Grass cover, Good, HSG A
8,300	57	Weighted Average
5,806		69.95% Pervious Area
2,494		30.05% Impervious Area

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

**Summary for Subcatchment P2b: PS2b**

Runoff = 2.66 cfs @ 12.07 hrs, Volume= 8,584 cf, Depth= 6.18"  
Routed to Pond 2b : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
6,157	98	Paved parking, HSG A
8,836	98	Roofs, HSG A
1,667	39	>75% Grass cover, Good, HSG A
16,660	92	Weighted Average
1,667		10.01% Pervious Area
14,993		89.99% Impervious Area

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

**Summary for Subcatchment P2c: PS2c**

Runoff = 2.50 cfs @ 12.07 hrs, Volume= 8,639 cf, Depth= 6.89"  
Routed to Pond 2c : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
3,896	98	Paved parking, HSG A
11,148	98	Roofs, HSG A
15,044	98	Weighted Average
15,044		100.00% Impervious Area



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Type III 24-hr 25-yr Rainfall=7.13"

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

**Summary for Subcatchment P2d: PS2d**

Runoff = 1.40 cfs @ 12.07 hrs, Volume= 4,828 cf, Depth= 6.89"  
Routed to Pond 2d : CB3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
2,897	98	Paved parking, HSG A
5,510	98	Roofs, HSG A
8,407	98	Weighted Average
8,407		100.00% Impervious Area

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

**Summary for Subcatchment P3: PS3**

Runoff = 1.05 cfs @ 12.08 hrs, Volume= 3,142 cf, Depth= 3.83"  
Routed to Link DP2 : Drainage System #2 (CB1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-yr Rainfall=7.13"

Area (sf)	CN	Description
5,312	98	Paved parking, HSG A
4,523	39	>75% Grass cover, Good, HSG A
9,835	71	Weighted Average
4,523		45.99% Pervious Area
5,312		54.01% Impervious Area

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

**Summary for Pond 1a: CB7**

[57] Hint: Peaked at 21.99' (Flood elevation advised)

Inflow Area = 20,120 sf, 64.85% Impervious, Inflow Depth = 4.48" for 25-yr event  
Inflow = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf  
Outflow = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.51 cfs @ 12.07 hrs, Volume= 7,516 cf  
Routed to Pond 1b : CB2

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Type III 24-hr 25-yr Rainfall=7.13"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 21.99' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	21.06'	<b>12.0" Round CMP_Round 12"</b> L= 183.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.06' / 18.00' S= 0.0167 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.50 cfs @ 12.07 hrs HW=21.99' (Free Discharge)

↳1=CMP\_Round 12" (Inlet Controls 2.50 cfs @ 3.28 fps)

### Summary for Pond 1b: CB2

[57] Hint: Peaked at 20.76' (Flood elevation advised)

[79] Warning: Submerged Pond 1a Primary device # 1 OUTLET by 2.76'

Inflow Area = 46,293 sf, 80.48% Impervious, Inflow Depth = 5.58" for 25-yr event  
Inflow = 6.76 cfs @ 12.07 hrs, Volume= 21,513 cf  
Outflow = 6.76 cfs @ 12.07 hrs, Volume= 21,513 cf, Atten= 0%, Lag= 0.0 min  
Primary = 6.76 cfs @ 12.07 hrs, Volume= 21,513 cf  
Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 20.76' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.95'	<b>15.0" Round CMP_Round 15"</b> L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.95' / 17.81' S= 0.0016 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

**Primary OutFlow** Max=6.76 cfs @ 12.07 hrs HW=20.75' (Free Discharge)

↳1=CMP\_Round 15" (Barrel Controls 6.76 cfs @ 5.51 fps)

### Summary for Pond 2a: CB6

[57] Hint: Peaked at 19.43' (Flood elevation advised)

Inflow Area = 88,068 sf, 44.32% Impervious, Inflow Depth = 3.13" for 25-yr event  
Inflow = 4.19 cfs @ 12.39 hrs, Volume= 22,954 cf  
Outflow = 4.19 cfs @ 12.39 hrs, Volume= 22,954 cf, Atten= 0%, Lag= 0.0 min  
Primary = 4.19 cfs @ 12.39 hrs, Volume= 22,954 cf  
Routed to Pond 2b : CB5

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 19.43' @ 12.39 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.09'	<b>18.0" Round Culvert</b>

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L= 58.0' CMP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 18.09' / 18.02' S= 0.0012 '/ Cc= 0.900  
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=4.19 cfs @ 12.39 hrs HW=19.43' (Free Discharge)  
↑1=Culvert (Barrel Controls 4.19 cfs @ 3.32 fps)

**Summary for Pond 2b: CB5**

[57] Hint: Peaked at 19.58' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2a by 0.53' @ 12.07 hrs

Inflow Area = 104,728 sf, 51.59% Impervious, Inflow Depth = 3.61" for 25-yr event  
Inflow = 5.00 cfs @ 12.36 hrs, Volume= 31,539 cf  
Outflow = 5.00 cfs @ 12.36 hrs, Volume= 31,539 cf, Atten= 0%, Lag= 0.0 min  
Primary = 5.00 cfs @ 12.36 hrs, Volume= 31,539 cf  
Routed to Pond 2c : CB4

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 19.58' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.02'	<b>18.0" Round Culvert</b> L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.02' / 17.90' S= 0.0013 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=5.00 cfs @ 12.36 hrs HW=19.58' (Free Discharge)  
↑1=Culvert (Barrel Controls 5.00 cfs @ 3.39 fps)

**Summary for Pond 2c: CB4**

[57] Hint: Peaked at 20.06' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2b by 0.56' @ 12.07 hrs

Inflow Area = 119,772 sf, 57.67% Impervious, Inflow Depth = 4.03" for 25-yr event  
Inflow = 7.18 cfs @ 12.08 hrs, Volume= 40,177 cf  
Outflow = 7.18 cfs @ 12.08 hrs, Volume= 40,177 cf, Atten= 0%, Lag= 0.0 min  
Primary = 7.18 cfs @ 12.08 hrs, Volume= 40,177 cf  
Routed to Pond 2d : CB3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 20.06' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	<b>18.0" Round Culvert</b> L= 81.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 17.80' S= 0.0012 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=7.17 cfs @ 12.08 hrs HW=20.06' (Free Discharge)  
↑1=Culvert (Barrel Controls 7.17 cfs @ 4.06 fps)

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Type III 24-hr 25-yr Rainfall=7.13"

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**Summary for Pond 2d: CB3**

[57] Hint: Peaked at 19.78' (Flood elevation advised)

[79] Warning: Submerged Pond 2c Primary device # 1 INLET by 1.88'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 4.21" for 25-yr event  
 Inflow = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf  
 Outflow = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf  
 Routed to Pond 2e : DMH 3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.78' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.70'	<b>18.0" Round Culvert</b> L= 7.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.70' / 17.69' S= 0.0014 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=8.56 cfs @ 12.08 hrs HW=19.78' (Free Discharge)

↑**1=Culvert** (Barrel Controls 8.56 cfs @ 4.84 fps)

**Summary for Pond 2e: DMH 3**

[57] Hint: Peaked at 19.17' (Flood elevation advised)

[79] Warning: Submerged Pond 2d Primary device # 1 INLET by 1.46'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 4.21" for 25-yr event  
 Inflow = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf  
 Outflow = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf  
 Routed to Pond 2f : Jellyfish

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.17' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.44'	<b>24.0" Round Culvert</b> L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.44' / 17.41' S= 0.0008 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=8.56 cfs @ 12.08 hrs HW=19.16' (Free Discharge)

↑**1=Culvert** (Barrel Controls 8.56 cfs @ 3.98 fps)

**Summary for Pond 2f: Jellyfish**

[57] Hint: Peaked at 19.01' (Flood elevation advised)

[79] Warning: Submerged Pond 2e Primary device # 1 INLET by 1.57'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 4.21" for 25-yr event  
 Inflow = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf  
 Outflow = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 8.57 cfs @ 12.08 hrs, Volume= 45,005 cf  
 Routed to Link DP2 : Drainage System #2 (CB1)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.01' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	<b>24.0" Round Culvert</b> L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.31' / 17.29' S= 0.0009 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=8.56 cfs @ 12.08 hrs HW=19.00' (Free Discharge)

↑1=Culvert (Barrel Controls 8.56 cfs @ 4.06 fps)

**Summary for Link DP1: Drainage System #1**

Inflow Area = 50,887 sf, 82.21% Impervious, Inflow Depth = 5.70" for 25-yr event  
 Inflow = 7.53 cfs @ 12.07 hrs, Volume= 24,151 cf  
 Primary = 7.53 cfs @ 12.07 hrs, Volume= 24,151 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**Summary for Link DP2: Drainage System #2 (CB1)**

Inflow Area = 138,014 sf, 59.98% Impervious, Inflow Depth = 4.19" for 25-yr event  
 Inflow = 9.62 cfs @ 12.08 hrs, Volume= 48,147 cf  
 Primary = 9.62 cfs @ 12.08 hrs, Volume= 48,147 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

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Type III 24-hr 50-yr Rainfall=8.53"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment O1: Off-Site</b>	Runoff Area=79,768 sf 45.80% Impervious Runoff Depth=4.33" Flow Length=584' Tc=27.6 min CN=65 Runoff=5.43 cfs 28,763 cf
<b>Subcatchment P1a: PS1a</b>	Runoff Area=20,120 sf 64.85% Impervious Runoff Depth=5.76" Tc=5.0 min CN=77 Runoff=3.20 cfs 9,662 cf
<b>Subcatchment P1b: PS1b</b>	Runoff Area=26,173 sf 92.50% Impervious Runoff Depth=7.81" Tc=5.0 min CN=94 Runoff=5.13 cfs 17,032 cf
<b>Subcatchment P1c: PS1c</b>	Runoff Area=4,594 sf 99.65% Impervious Runoff Depth=8.29" Tc=5.0 min CN=98 Runoff=0.92 cfs 3,174 cf
<b>Subcatchment P2a: PS2a</b>	Runoff Area=8,300 sf 30.05% Impervious Runoff Depth=3.38" Tc=5.0 min CN=57 Runoff=0.77 cfs 2,341 cf
<b>Subcatchment P2b: PS2b</b>	Runoff Area=16,660 sf 89.99% Impervious Runoff Depth=7.57" Tc=5.0 min CN=92 Runoff=3.22 cfs 10,508 cf
<b>Subcatchment P2c: PS2c</b>	Runoff Area=15,044 sf 100.00% Impervious Runoff Depth=8.29" Tc=5.0 min CN=98 Runoff=3.00 cfs 10,393 cf
<b>Subcatchment P2d: PS2d</b>	Runoff Area=8,407 sf 100.00% Impervious Runoff Depth=8.29" Tc=5.0 min CN=98 Runoff=1.67 cfs 5,808 cf
<b>Subcatchment P3: PS3</b>	Runoff Area=9,835 sf 54.01% Impervious Runoff Depth=5.04" Tc=5.0 min CN=71 Runoff=1.38 cfs 4,133 cf
<b>Pond 1a: CB7</b>	Peak Elev=22.28' Inflow=3.20 cfs 9,662 cf 12.0" Round Culvert n=0.013 L=183.0' S=0.0167 '/' Outflow=3.20 cfs 9,662 cf
<b>Pond 1b: CB2</b>	Peak Elev=21.63' Inflow=8.33 cfs 26,694 cf 15.0" Round Culvert n=0.013 L=90.0' S=0.0016 '/' Outflow=8.33 cfs 26,694 cf
<b>Pond 2a: CB6</b>	Peak Elev=19.74' Inflow=5.71 cfs 31,104 cf 18.0" Round Culvert n=0.013 L=58.0' S=0.0012 '/' Outflow=5.71 cfs 31,104 cf
<b>Pond 2b: CB5</b>	Peak Elev=20.13' Inflow=6.71 cfs 41,611 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.0013 '/' Outflow=6.71 cfs 41,611 cf
<b>Pond 2c: CB4</b>	Peak Elev=20.54' Inflow=9.13 cfs 52,004 cf 18.0" Round Culvert n=0.013 L=81.0' S=0.0012 '/' Outflow=9.13 cfs 52,004 cf
<b>Pond 2d: CB3</b>	Peak Elev=20.13' Inflow=10.79 cfs 57,812 cf 18.0" Round Culvert n=0.013 L=7.0' S=0.0014 '/' Outflow=10.79 cfs 57,812 cf
<b>Pond 2e: DMH 3</b>	Peak Elev=19.43' Inflow=10.79 cfs 57,812 cf 24.0" Round Culvert n=0.013 L=36.0' S=0.0008 '/' Outflow=10.79 cfs 57,812 cf

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**Pond 2f: Jellyfish**

Peak Elev=19.27' Inflow=10.79 cfs 57,812 cf  
24.0" Round Culvert n=0.013 L=22.0' S=0.0009 '/' Outflow=10.79 cfs 57,812 cf

**Link DP1: Drainage System #1**

Inflow=9.24 cfs 29,868 cf  
Primary=9.24 cfs 29,868 cf

**Link DP2: Drainage System #2 (CB1)**

Inflow=12.18 cfs 61,945 cf  
Primary=12.18 cfs 61,945 cf

**Total Runoff Area = 188,901 sf Runoff Volume = 91,813 cf Average Runoff Depth = 5.83"**  
**34.03% Pervious = 64,280 sf 65.97% Impervious = 124,621 sf**

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**Summary for Subcatchment O1: Off-Site**

[47] Hint: Peak is 249% of capacity of segment #3

Runoff = 5.43 cfs @ 12.39 hrs, Volume= 28,763 cf, Depth= 4.33"  
Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
2,453	98	Unconnected roofs, HSG A
34,084	98	Paved parking, HSG A
22,052	36	Woods, Fair, HSG A
21,179	39	>75% Grass cover, Good, HSG A
79,768	65	Weighted Average
43,231		54.20% Pervious Area
36,537		45.80% Impervious Area
2,453		6.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	100	0.0250	0.08		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.20"
7.3	374	0.0150	0.86		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.7	110	0.0050	2.78	2.18	<b>Pipe Channel, RCP_Round 12"</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.015 Concrete sewer w/manholes & inlets
27.6	584	Total			

**Summary for Subcatchment P1a: PS1a**

Runoff = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf, Depth= 5.76"  
Routed to Pond 1a : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
8,481	98	Paved parking, HSG A
4,566	98	Roofs, HSG A
7,073	39	>75% Grass cover, Good, HSG A
20,120	77	Weighted Average
7,073		35.15% Pervious Area
13,047		64.85% Impervious Area



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

**Summary for Subcatchment P1b: PS1b**

Runoff = 5.13 cfs @ 12.07 hrs, Volume= 17,032 cf, Depth= 7.81"  
 Routed to Pond 1b : CB2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
10,744	98	Paved parking, HSG A
13,465	98	Roofs, HSG A
1,964	39	>75% Grass cover, Good, HSG A
26,173	94	Weighted Average
1,964		7.50% Pervious Area
24,209		92.50% Impervious Area

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

**Summary for Subcatchment P1c: PS1c**

Runoff = 0.92 cfs @ 12.07 hrs, Volume= 3,174 cf, Depth= 8.29"  
 Routed to Link DP1 : Drainage System #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
4,578	98	Paved parking, HSG A
16	39	>75% Grass cover, Good, HSG A
4,594	98	Weighted Average
16		0.35% Pervious Area
4,578		99.65% Impervious Area

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

**Summary for Subcatchment P2a: PS2a**

Runoff = 0.77 cfs @ 12.08 hrs, Volume= 2,341 cf, Depth= 3.38"  
 Routed to Pond 2a : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

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Type III 24-hr 50-yr Rainfall=8.53"

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Area (sf)	CN	Description
2,465	98	Paved parking, HSG A
29	98	Roofs, HSG A
5,806	39	>75% Grass cover, Good, HSG A
8,300	57	Weighted Average
5,806		69.95% Pervious Area
2,494		30.05% Impervious Area

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

**Summary for Subcatchment P2b: PS2b**

Runoff = 3.22 cfs @ 12.07 hrs, Volume= 10,508 cf, Depth= 7.57"  
 Routed to Pond 2b : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
6,157	98	Paved parking, HSG A
8,836	98	Roofs, HSG A
1,667	39	>75% Grass cover, Good, HSG A
16,660	92	Weighted Average
1,667		10.01% Pervious Area
14,993		89.99% Impervious Area

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

**Summary for Subcatchment P2c: PS2c**

Runoff = 3.00 cfs @ 12.07 hrs, Volume= 10,393 cf, Depth= 8.29"  
 Routed to Pond 2c : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
3,896	98	Paved parking, HSG A
11,148	98	Roofs, HSG A
15,044	98	Weighted Average
15,044		100.00% Impervious Area

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Type III 24-hr 50-yr Rainfall=8.53"

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

**Summary for Subcatchment P2d: PS2d**

Runoff = 1.67 cfs @ 12.07 hrs, Volume= 5,808 cf, Depth= 8.29"  
Routed to Pond 2d : CB3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
2,897	98	Paved parking, HSG A
5,510	98	Roofs, HSG A
8,407	98	Weighted Average
8,407		100.00% Impervious Area

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

**Summary for Subcatchment P3: PS3**

Runoff = 1.38 cfs @ 12.07 hrs, Volume= 4,133 cf, Depth= 5.04"  
Routed to Link DP2 : Drainage System #2 (CB1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
5,312	98	Paved parking, HSG A
4,523	39	>75% Grass cover, Good, HSG A
9,835	71	Weighted Average
4,523		45.99% Pervious Area
5,312		54.01% Impervious Area

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

**Summary for Pond 1a: CB7**

[57] Hint: Peaked at 22.28' (Flood elevation advised)

Inflow Area = 20,120 sf, 64.85% Impervious, Inflow Depth = 5.76" for 50-yr event  
Inflow = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf  
Outflow = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf, Atten= 0%, Lag= 0.0 min  
Primary = 3.20 cfs @ 12.07 hrs, Volume= 9,662 cf  
Routed to Pond 1b : CB2

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Type III 24-hr 50-yr Rainfall=8.53"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 22.28' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	21.06'	<b>12.0" Round CMP_Round 12"</b> L= 183.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.06' / 18.00' S= 0.0167 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.19 cfs @ 12.07 hrs HW=22.27' (Free Discharge)  
↑1=CMP\_Round 12" (Inlet Controls 3.19 cfs @ 4.07 fps)

**Summary for Pond 1b: CB2**

[57] Hint: Peaked at 21.63' (Flood elevation advised)  
[79] Warning: Submerged Pond 1a Primary device # 1 INLET by 0.57'

Inflow Area = 46,293 sf, 80.48% Impervious, Inflow Depth = 6.92" for 50-yr event  
Inflow = 8.33 cfs @ 12.07 hrs, Volume= 26,694 cf  
Outflow = 8.33 cfs @ 12.07 hrs, Volume= 26,694 cf, Atten= 0%, Lag= 0.0 min  
Primary = 8.33 cfs @ 12.07 hrs, Volume= 26,694 cf  
Routed to Link DP1 : Drainage System #1

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 21.63' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.95'	<b>15.0" Round CMP_Round 15"</b> L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.95' / 17.81' S= 0.0016 1' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

**Primary OutFlow** Max=8.32 cfs @ 12.07 hrs HW=21.63' (Free Discharge)  
↑1=CMP\_Round 15" (Barrel Controls 8.32 cfs @ 6.78 fps)

**Summary for Pond 2a: CB6**

[57] Hint: Peaked at 19.74' (Flood elevation advised)

Inflow Area = 88,068 sf, 44.32% Impervious, Inflow Depth = 4.24" for 50-yr event  
Inflow = 5.71 cfs @ 12.37 hrs, Volume= 31,104 cf  
Outflow = 5.71 cfs @ 12.37 hrs, Volume= 31,104 cf, Atten= 0%, Lag= 0.0 min  
Primary = 5.71 cfs @ 12.37 hrs, Volume= 31,104 cf  
Routed to Pond 2b : CB5

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 19.74' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.09'	<b>18.0" Round Culvert</b>

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Type III 24-hr 50-yr Rainfall=8.53"

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L= 58.0' CMP, square edge headwall, Ke= 0.500  
Inlet / Outlet Invert= 18.09' / 18.02' S= 0.0012 '/ Cc= 0.900  
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=5.71 cfs @ 12.37 hrs HW=19.74' (Free Discharge)  
↑1=Culvert (Barrel Controls 5.71 cfs @ 3.66 fps)

**Summary for Pond 2b: CB5**

[57] Hint: Peaked at 20.13' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2a by 0.70' @ 12.08 hrs

Inflow Area = 104,728 sf, 51.59% Impervious, Inflow Depth = 4.77" for 50-yr event  
Inflow = 6.71 cfs @ 12.36 hrs, Volume= 41,611 cf  
Outflow = 6.71 cfs @ 12.36 hrs, Volume= 41,611 cf, Atten= 0%, Lag= 0.0 min  
Primary = 6.71 cfs @ 12.36 hrs, Volume= 41,611 cf  
Routed to Pond 2c : CB4

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 20.13' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.02'	<b>18.0" Round Culvert</b> L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.02' / 17.90' S= 0.0013 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=6.71 cfs @ 12.36 hrs HW=20.13' (Free Discharge)  
↑1=Culvert (Barrel Controls 6.71 cfs @ 3.80 fps)

**Summary for Pond 2c: CB4**

[57] Hint: Peaked at 20.54' (Flood elevation advised)  
[81] Warning: Exceeded Pond 2b by 0.67' @ 12.06 hrs

Inflow Area = 119,772 sf, 57.67% Impervious, Inflow Depth = 5.21" for 50-yr event  
Inflow = 9.13 cfs @ 12.08 hrs, Volume= 52,004 cf  
Outflow = 9.13 cfs @ 12.08 hrs, Volume= 52,004 cf, Atten= 0%, Lag= 0.0 min  
Primary = 9.13 cfs @ 12.08 hrs, Volume= 52,004 cf  
Routed to Pond 2d : CB3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Peak Elev= 20.54' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	<b>18.0" Round Culvert</b> L= 81.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 17.80' S= 0.0012 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=9.13 cfs @ 12.08 hrs HW=20.54' (Free Discharge)  
↑1=Culvert (Barrel Controls 9.13 cfs @ 5.17 fps)

**Proposed Conditions 2023-09-19**

Prepared by Haley Ward

HydroCAD® 10.20-3g s/n 00801 © 2023 HydroCAD Software Solutions LLC

Type III 24-hr 50-yr Rainfall=8.53"

Printed 11/17/2023

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**Summary for Pond 2d: CB3**

[57] Hint: Peaked at 20.13' (Flood elevation advised)

[79] Warning: Submerged Pond 2c Primary device # 1 INLET by 2.23'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 5.41" for 50-yr event  
 Inflow = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf  
 Outflow = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf  
 Routed to Pond 2e : DMH 3

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 20.13' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.70'	<b>18.0" Round Culvert</b> L= 7.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.70' / 17.69' S= 0.0014 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

**Primary OutFlow** Max=10.78 cfs @ 12.08 hrs HW=20.13' (Free Discharge)

↑**1=Culvert** (Barrel Controls 10.78 cfs @ 6.10 fps)

**Summary for Pond 2e: DMH 3**

[57] Hint: Peaked at 19.43' (Flood elevation advised)

[79] Warning: Submerged Pond 2d Primary device # 1 INLET by 1.73'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 5.41" for 50-yr event  
 Inflow = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf  
 Outflow = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf  
 Routed to Pond 2f : Jellyfish

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.43' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.44'	<b>24.0" Round Culvert</b> L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.44' / 17.41' S= 0.0008 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=10.78 cfs @ 12.08 hrs HW=19.43' (Free Discharge)

↑**1=Culvert** (Barrel Controls 10.78 cfs @ 4.29 fps)

### Summary for Pond 2f: Jellyfish

[57] Hint: Peaked at 19.27' (Flood elevation advised)

[79] Warning: Submerged Pond 2e Primary device # 1 INLET by 1.83'

Inflow Area = 128,179 sf, 60.44% Impervious, Inflow Depth = 5.41" for 50-yr event  
 Inflow = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf  
 Outflow = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 10.79 cfs @ 12.08 hrs, Volume= 57,812 cf  
 Routed to Link DP2 : Drainage System #2 (CB1)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 19.27' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.31'	<b>24.0" Round Culvert</b> L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.31' / 17.29' S= 0.0009 '/ Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

**Primary OutFlow** Max=10.78 cfs @ 12.08 hrs HW=19.26' (Free Discharge)

↑**1=Culvert** (Barrel Controls 10.78 cfs @ 4.37 fps)

### Summary for Link DP1: Drainage System #1

Inflow Area = 50,887 sf, 82.21% Impervious, Inflow Depth = 7.04" for 50-yr event  
 Inflow = 9.24 cfs @ 12.07 hrs, Volume= 29,868 cf  
 Primary = 9.24 cfs @ 12.07 hrs, Volume= 29,868 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

### Summary for Link DP2: Drainage System #2 (CB1)

Inflow Area = 138,014 sf, 59.98% Impervious, Inflow Depth = 5.39" for 50-yr event  
 Inflow = 12.18 cfs @ 12.08 hrs, Volume= 61,945 cf  
 Primary = 12.18 cfs @ 12.08 hrs, Volume= 61,945 cf, Atten= 0%, Lag= 0.0 min  
 Routed to nonexistent node 2R

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

**APPENDIX D**  
**SOIL SURVEY INFORMATION**





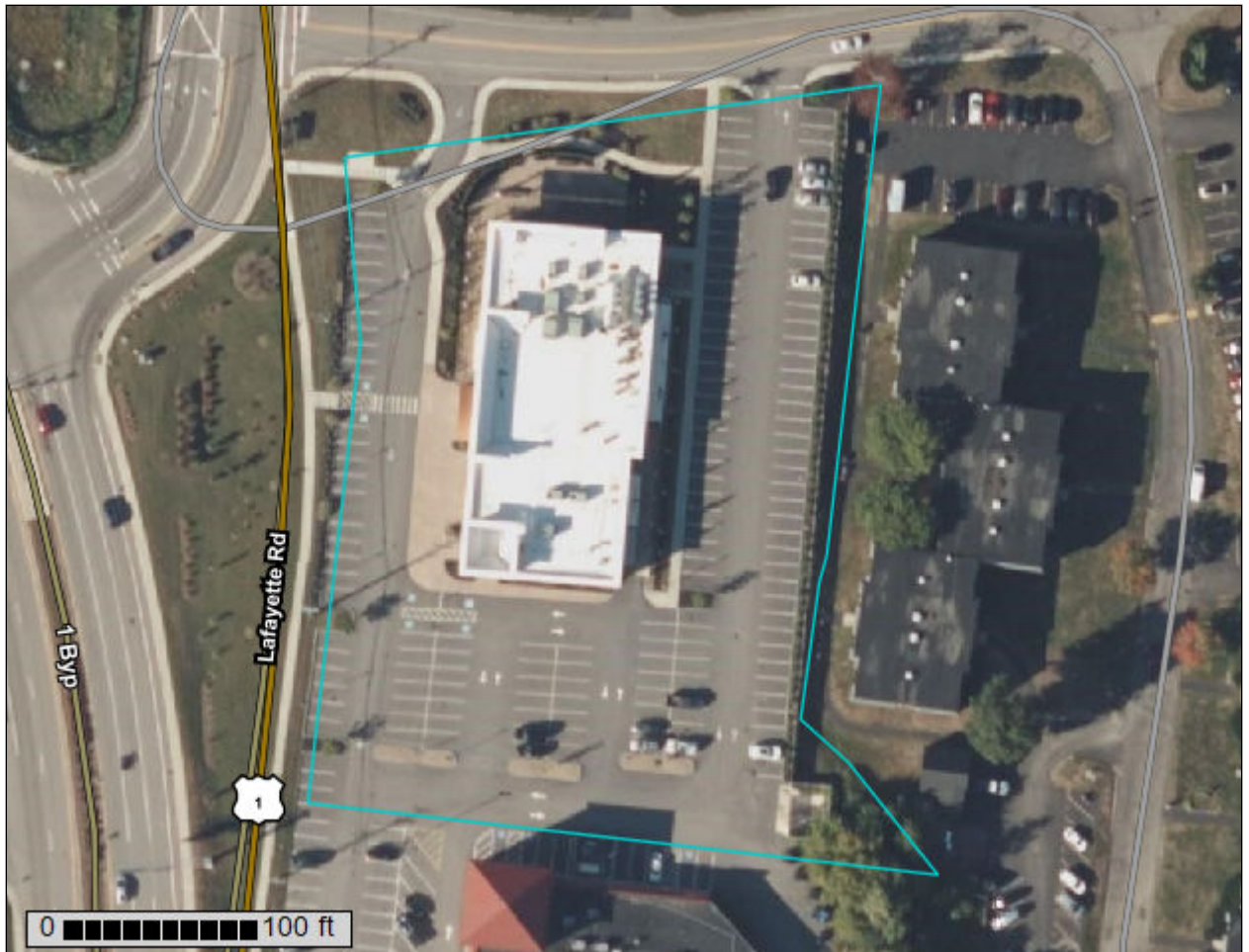
United States  
Department of  
Agriculture

**NRCS**

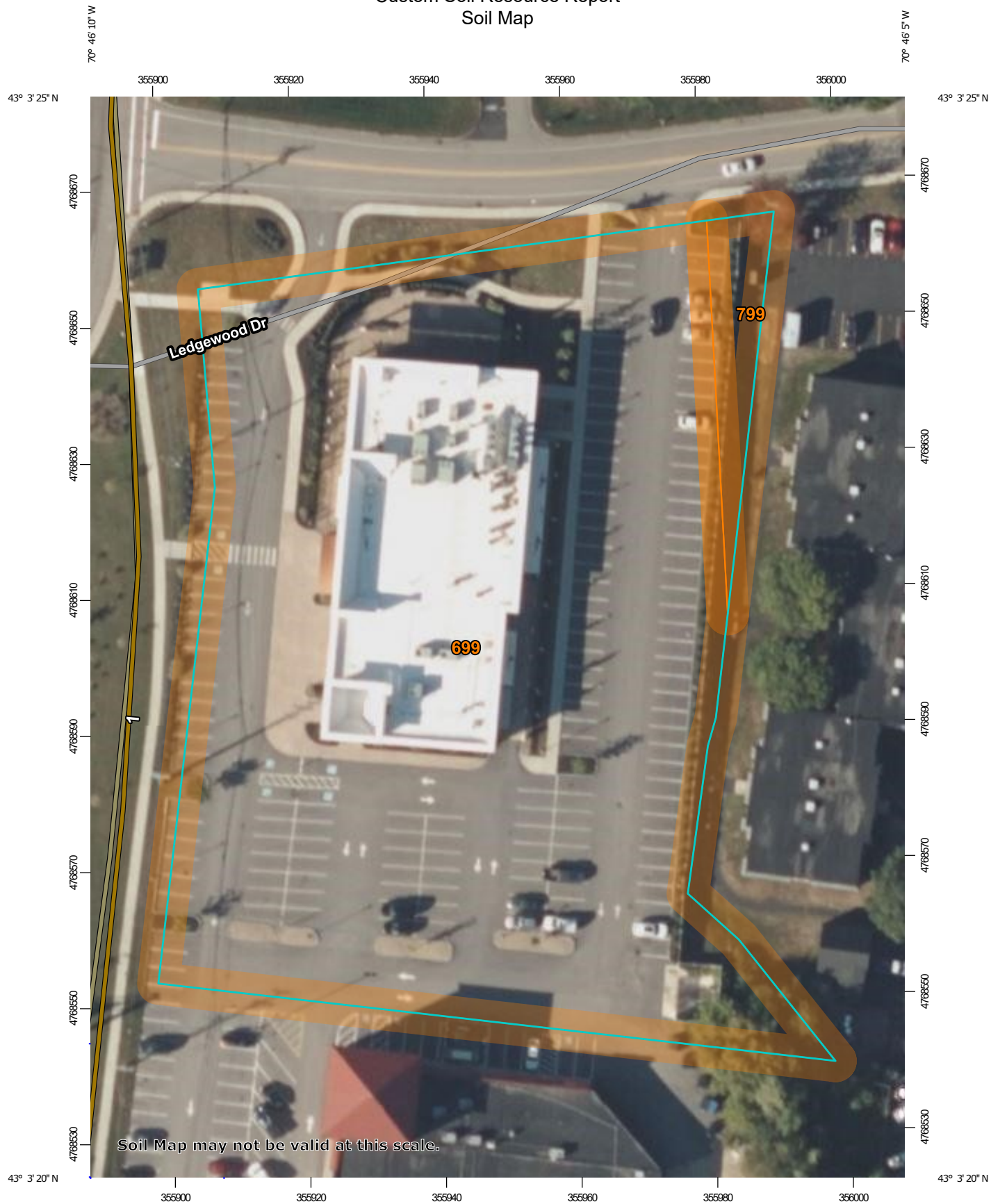
Natural  
Resources  
Conservation  
Service

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

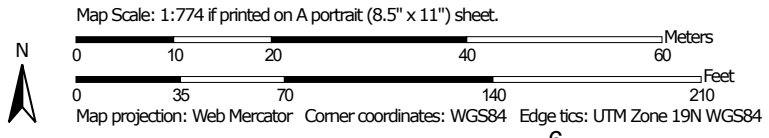
# Custom Soil Resource Report for Rockingham County, New Hampshire



# Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)


**Soils**


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

 Blowout

 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit


 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

**Water Features**

 Streams and Canals


**Transportation**

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire  
 Survey Area Data: Version 26, Aug 22, 2023

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
699	Urban land	2.2	96.8%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.1	3.2%
<b>Totals for Area of Interest</b>		<b>2.3</b>	<b>100.0%</b>

## 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,

## Custom Soil Resource Report

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

### 699—Urban land

#### Map Unit Composition

*Urban land:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Minor Components

##### Not named

*Percent of map unit:* 15 percent

*Hydric soil rating:* No

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

#### Map Unit Setting

*National map unit symbol:* 9cq0

*Elevation:* 0 to 1,000 feet

*Mean annual precipitation:* 42 to 46 inches

*Mean annual air temperature:* 45 to 48 degrees F

*Frost-free period:* 120 to 160 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Urban land:* 55 percent

*Canton and similar soils:* 20 percent

*Minor components:* 25 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Canton

##### Setting

*Parent material:* Till

##### Typical profile

*H1 - 0 to 5 inches:* gravelly fine sandy loam

*H2 - 5 to 21 inches:* gravelly fine sandy loam

*H3 - 21 to 60 inches:* loamy sand

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

## Custom Soil Resource Report

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* A

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### **Minor Components**

#### **Udorthents**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### **Boxford and eldridge**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### **Squamscott and scitico**

*Percent of map unit:* 4 percent

*Landform:* Marine terraces

*Hydric soil rating:* Yes

#### **Scituate and newfields**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### **Chatfield**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### **Walpole**

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

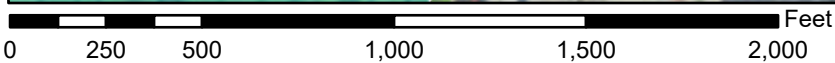
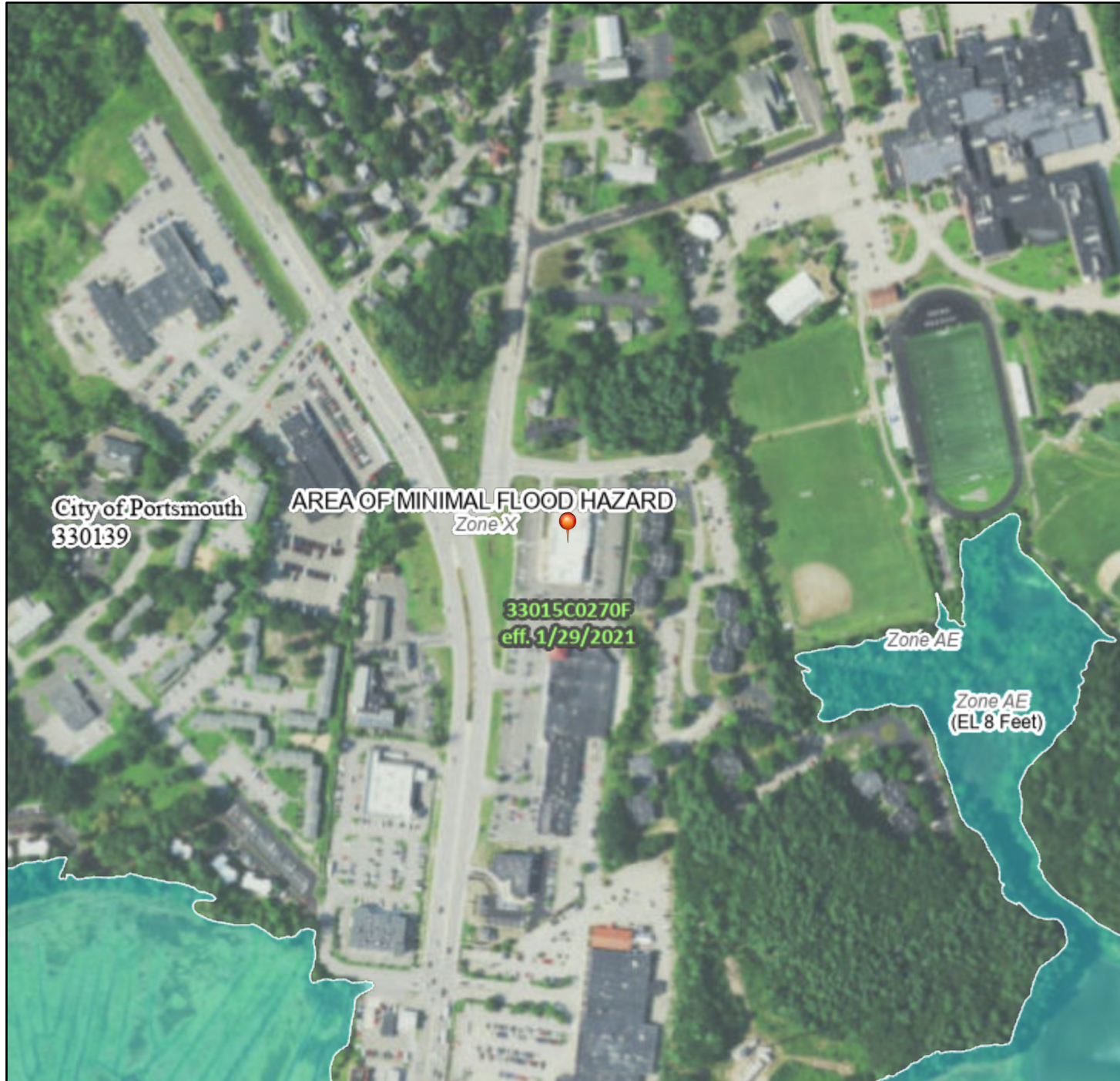
**APPENDIX E**  
**FEMA FIRM MAP**



# National Flood Hazard Layer FIRMette



70°46'27"W 43°3'37"N



1:6,000

70°45'50"W 43°3'11"N

Basemap Imagery Source: USGS National Map 2023

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		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 <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		8 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



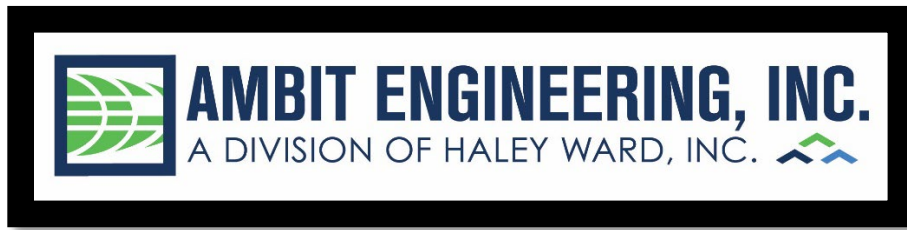
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 **9/19/2023 at 10:24 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**



***INSPECTION & LONG-TERM MAINTENANCE PLAN  
FOR  
COMMERCIAL DEVELOPMENT***

**581 LAFAYETTE ROAD  
PORTSMOUTH, NH**

**Introduction**

The intent of this plan is to provide the Atlas Commons, LLC (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. Specifically, the proposed Jellyfish® filter and associated drainage structures (collectively referred to as the “Stormwater Management System”). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help 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 DPW.

***Inspection & Maintenance Checklist/Log***

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

## Stormwater Management System Components

The Stormwater Management System is designed to mitigate the quality of site-generated stormwater runoff. As a result, the design includes the following elements:

### *Non-Structural BMPs*

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project may include but are not limited to:

- Dust control
- Sediment barriers
- Stabilized construction entrance
- Catch basin basket

### *Structural BMPs*

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Closed Drainage System
- Contech Jellyfish® Filter

## 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. **Closed Drainage System:** Monitor accumulation of debris in drainage structures monthly or after significant rain events. Remove sediments when they accumulate within the outlet pipe. During construction, maintain inlet protection until all areas have been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.
2. **Contech Jellyfish® Filter:** Refer to Manufacturer's instructions for procedure on maintenance of the unit.

## 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.

## CATCH BASIN BASKET CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
-Check for damage to basket -Remove sediment from basket	Within 24 hours of rainfall, Daily during extended rainfall	-Repair basket as necessary to prevent particles from reaching drainage system, or to prevent flooding. -Empty basket after every storm, or if clogged.

MAINTENANCE LOG	
<b>PROJECT NAME</b>	
<b>INSPECTOR NAME</b>	<b>INSPECTOR CONTACT INFO</b>
<b>DATE OF INSPECTION</b>	<b>REASON FOR INSPECTION</b> <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
<b>IS CORRECTIVE ACTION NEEDED?</b> <input type="checkbox"/> YES <input type="checkbox"/> NO	<b>DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE</b>
<b>DATE OF MAINTENANCE</b>	<b>PERFORMED BY</b>
<b>NOTES</b>	

## CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
-Outlet Control Structures -Drain Manholes -Catch Basins	Every other Month	<i>Check for erosion or short-circuiting Check for sediment accumulation Check for floatable contaminants</i>
-Drainage Pipes	1 time per 2 years	<i>Check for sediment accumulation/clogging, or soiled runoff. Check for erosion at outlets.</i>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE
DATE OF MAINTENANCE	PERFORMED BY
NOTES	

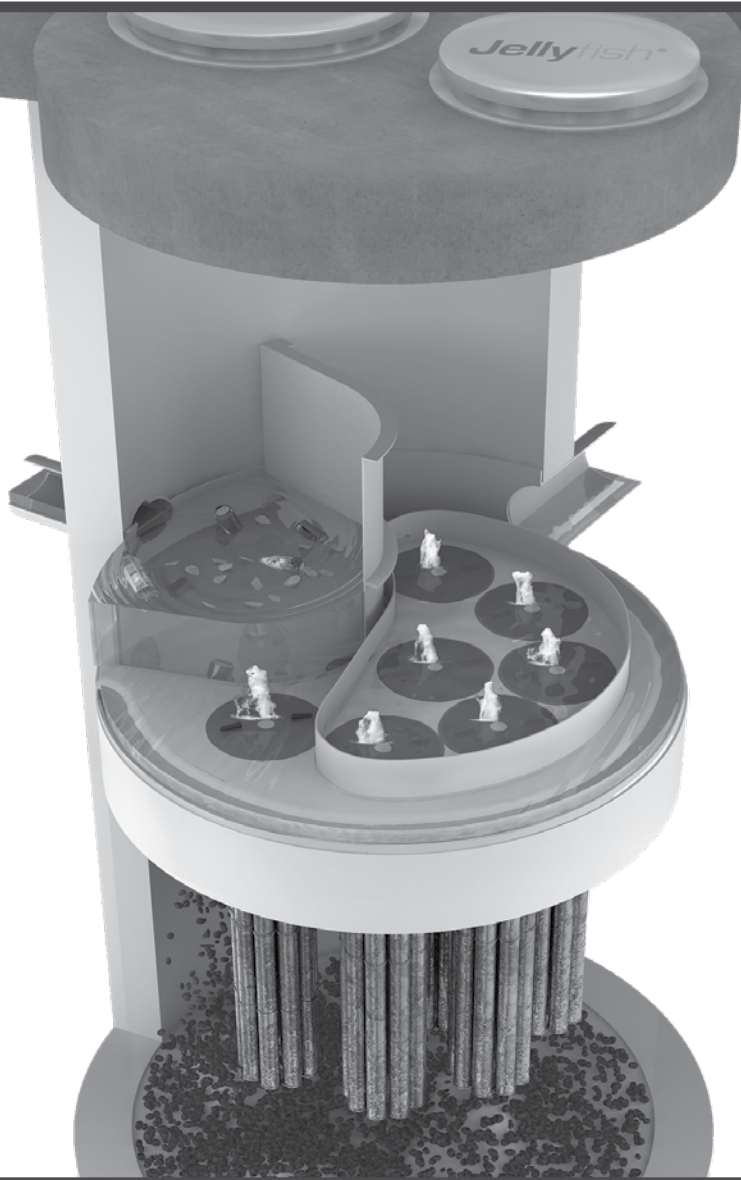
## STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
<b>ENTRANCE SURFACE</b> -Check for sediment accumulation/clogging of stone -Check Vegetative filter strips	After heavy rains, as necessary	-Top dress pad with new stone. -Replace stone completely if completely clogged. -Maintain vigorous stand of vegetation.
<b>WASHING FACILITIES</b> (if applicable) -Monitor Sediment Accumulation	As often as necessary	-Remove Sediments from traps.

MAINTENANCE LOG	
<b>PROJECT NAME</b>	
<b>INSPECTOR NAME</b>	<b>INSPECTOR CONTACT INFO</b>
<b>DATE OF INSPECTION</b>	<b>REASON FOR INSPECTION</b> <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
<b>IS CORRECTIVE ACTION NEEDED?</b> <input type="checkbox"/> YES <input type="checkbox"/> NO	<b>DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE</b>
<b>DATE OF MAINTENANCE</b>	<b>PERFORMED BY</b>
<b>NOTES</b>	



## Jellyfish<sup>®</sup> Filter Maintenance Guide





## **JELLYFISH® FILTER INSPECTION & MAINTENANCE GUIDE**

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

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

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

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## 1.0 Inspection and Maintenance Overview

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

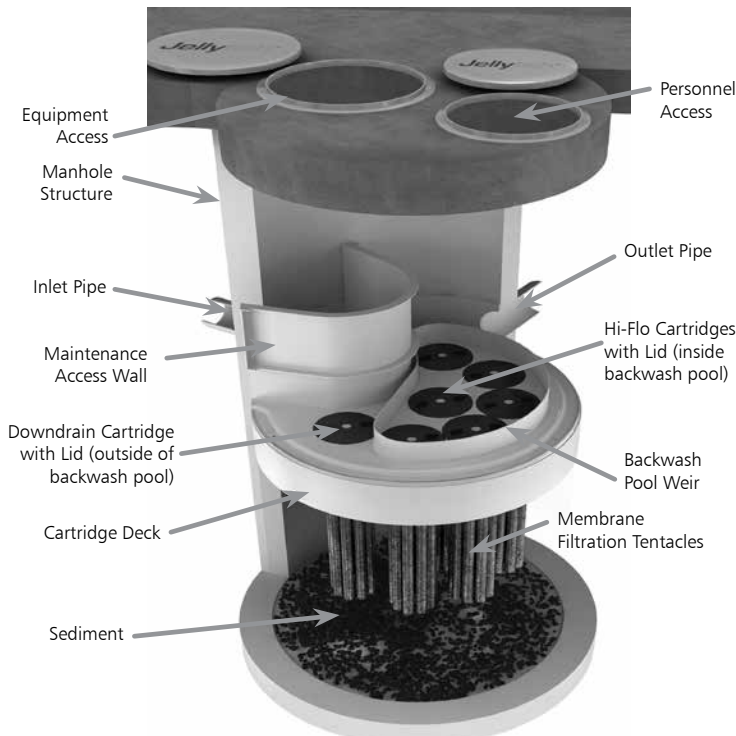
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion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

Inspection activities are typically conducted from surface observations and include:

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

Maintenance activities include:

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



Note: Separator Skirt not shown

## 2.0 Inspection Timing

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

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

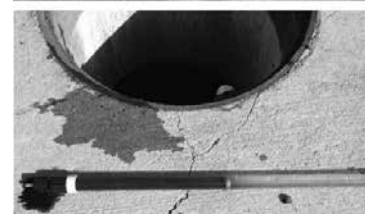
## 3.0 Inspection Procedure

The following procedure is recommended when performing inspections:

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

### 3.1 Dry weather inspections

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



Inspection Utilizing Sediment Probe

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

### 3.2 Wet weather inspections

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

## 4.0 Maintenance Requirements

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

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

## 5.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures.  
**Caution: Dropping objects onto the cartridge deck may cause damage.**

3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

### 5.1 Filter Cartridge Removal

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

### 5.2 Filter Cartridge Rinsing

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



Cartridge Removal & Lifting Device



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

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

### 5.3 Sediment and Floatables Extraction

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



Vacuuming Sump Through MAW

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



Vacuuming Sump Through MAW

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

### 5.4 Filter Cartridge Reinstallation and Replacement

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

### 5.5 Chemical Spills

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

### 5.6 Material Disposal

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

# Jellyfish Filter Components & Filter Cartridge Assembly and Installation

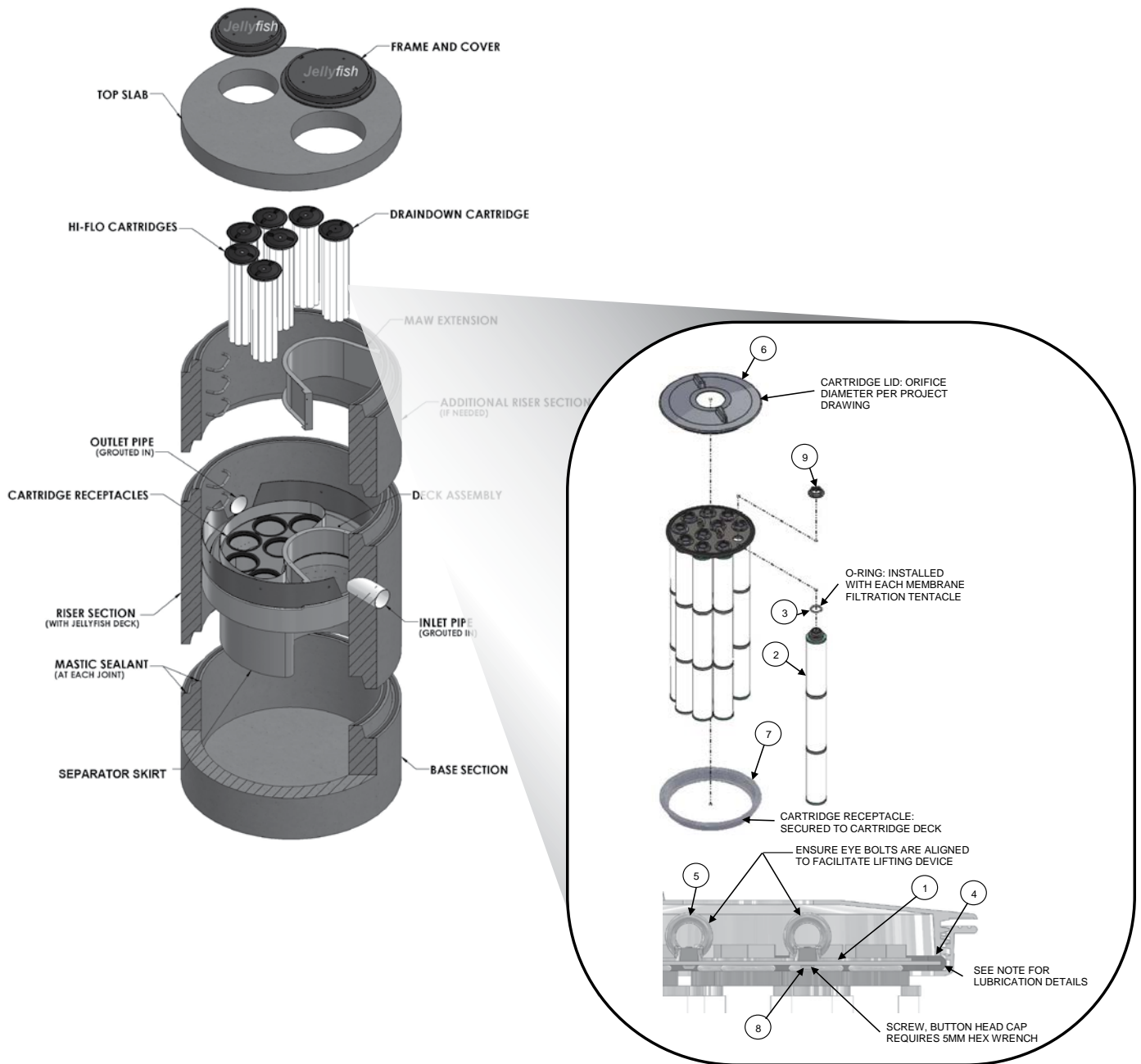


TABLE 1: BOM

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

TABLE 2: APPROVED GASKET LUBRICANTS

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

## NOTES:

### Head Plate Gasket Installation:

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

### Lid Assembly:

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

## Jellyfish Filter Inspection and Maintenance Log

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

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





#### Support

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

**Jellyfish**<sup>®</sup>

**CONTECH**<sup>®</sup>  
ENGINEERED SOLUTIONS

800.338.1122

[www.ContechES.com](http://www.ContechES.com)

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# Jellyfish Design Calculation

CONTECH Stormwater Solutions Inc. Engineer  
Date Prepared:

JBS  
11/20/2023

## Site Information

Project Name **581 Lafayette Road**  
Project State **NH**  
Project City **Portsmouth**

Total Drainage Area, Ad **2.94** ac  
Post Development Impervious Area, Ai **1.77** ac  
Pervious Area, Ap **1.18** ac  
% Impervious **60%**  
Runoff Coefficient, Rc **0.59**  
Upstream pretreatment credit **0%**

## Mass Loading Calculations

Mean Annual Rainfall, P **50.0** in  
Agency Required % Removal **80%**  
Percent Runoff Capture **90%**  
Mean Annual Runoff, Vt **283,494** ft<sup>3</sup>  
Event Mean Concentration of Pollutant, EMC **45** mg/l  
Annual Mass Load, M total **796** lbs

## Filter System

Filtration Brand **Jelly Fish**  
Cartridge Length **54** in

## Jelly Fish Sizing

Mass removed by pretreatment system **0** lbs  
Mass load to filters after pretreatment **796** lbs  
Mass to be Captured by System **637** lbs  
Water Quality Flow **0.82** cfs

## Method to Use

**FLOW BASED**

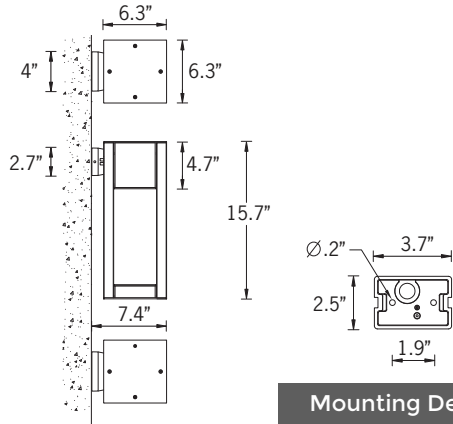
Summary			
Flow	Required Size	JFPD0806-5-1	54
	Treatment Flow Rate provided:		0.98 cfs

# UVA-30001

## Vancouver 24 Surface



8w COB 331 Lumens  
 IP65 • Suitable For Wet Locations  
 IK08 • Impact Resistant  
 Weight 13.6 lbs



Mounting Detail

### Construction

#### Aluminum

Less than 0.1% copper content - Marine Grade 6060 extruded & LM6 Aluminum High Pressure die casting provides excellent mechanical strength, clean detailed product lines and excellent heat dissipation.

#### Pre paint

8 step degrease and phosphate process that includes deoxidizing and etching as well as a zinc and nickel phosphate process before product painting.

#### Memory Retentive -Silicon Gasket

Provided with special injection molded "fit for purpose" long life high temperature memory retentive silicon gaskets. Maintains the gaskets exact profile and seal over years of use and compression.

#### Thermal management

LM6 Aluminum is used for its excellent mechanical strength and thermal dissipation properties in low and high ambient temperatures. The superior thermal heat sink design by Ligman used in conjunction with the driver, controls thermals below critical temperature range to ensure maximum luminous flux output, as well as providing long LED service life and ensuring less than 10% lumen depreciation at 50,000 hours.

#### Surge Suppression

Standard 10kv surge suppressor provided with all fixtures.

#### BUG Rating

Contact Factory

#### Finishing

All Ligman products go through an extensive finishing process that includes fettling to improve paint adherence.

#### Paint

UV Stabilized 4.9Mil thick powder coat paint and baked at 200 Deg C. This process ensures that Ligman products can withstand harsh environments. Rated for use in natatoriums.

#### Inspired by Nature Finishes

The Inspired by nature Finishing is a unique system of decorative powder coating. Our metal decoration process can easily transform the appearance of metal or aluminum product into a wood grain finish.

This patented technology enables the simulation of wood grain, and even marble or granite finish through the use of decorative powder coating.

The wood grain finish is so realistic that it's almost undistinguishable from real wood, even from a close visual inspection. The system of coating permeates the entire thickness of the coat and as a result, the coating cannot be removed by normal rubbing, chipping, or scratching.

#### The Coating Process

After pre-treatment the prepared parts are powder coated with a specially formulated polyurethane powder. This powder provides protection against wear, abrasion, impact and corrosion and acts as the relief base color for the finalized metal decoration.

The component is then wrapped with a sheet of non-porous film with the selected decoration pattern printed on it using special high temperature inks.

This printed film transfer is vacuum-sealed to the surface for a complete thermo print and then transferred into a customized oven. The oven transforms the ink into different forms within the paint layer before it becomes solid. Finally, the film is removed, and a vivid timber look on aluminum remains.

Wood grain coating can create beautiful wood-looking products of any sort. There are over 300 combinations of designs currently in use. Wood grains can be made with different colors, designs, etc.

Our powder coatings are certified for indoor and outdoor applications and are backed by a comprehensive warranty. These coatings rise to the highest conceivable standard of performance excellence and design innovation.

#### Added Benefits

- Resistance to salt-acid room, accelerated aging
- Boiling water, lime and condensed water resistant
- Anti-Graffiti, Anti-Slip, Anti-Microbial, Anti-Scratch
- Super durable (UV resistant)
- TGIC free (non-toxic)

#### Hardware

Provided Hardware is Marine grade 316 Stainless steel.

#### Anti Seize Screw Holes

Tapped holes are infused with a special anti seize compound designed to prevent seizure of threaded connections, due to electrolysis from heat, corrosive atmospheres and moisture.

#### Crystal Clear Low Iron Glass Lens

Provided with tempered, impact resistant crystal clear low iron glass ensuring no green glass tinge.

#### Optics & LED

Precise optic design provides exceptional light control and precise distribution of light.  
 LED CRI > 80

#### Lumen - Maintenance Life

L80 /B10 at 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

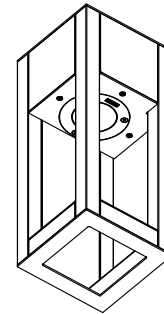
### Contemporary urban lighting furniture. Open-sided, three lattice pattern options or your bespoke design.

A stylish Dark Sky Compliant square high performance wall mounted luminaire with downward light distribution using LED lamps. This light column offers optimal visual comfort through glare control by utilizing a controlled optics designed by Ligman. These luminaires have a square design providing a unique wide light distribution, offering an architecturally appealing shadow pattern on the mounted surface. The internal sides of the supporting pillars are accented by light from the LED.

Color temperature 2700K, 3000K, 3500K and 4000K. The minimalistic shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian areas, precincts, building surrounds, shopping centers, squares and parks. The Vancouver comes standard with a unique waterproof internal driver housing compartment that is situated at the top of the pole to stop water and dust from entering the electrical components. This fixture is supplied completely wired with powercord and waterproof gland from the driver enclosure to the base of the column to ensure quick trouble-free installation.

Custom heights are available, please specify in options. Designed to complement the Vancouver Light Column and bollard.

### Additional Options (Consult Factory For Pricing)



OB  
 Open Bottom



# UVA-30001

Vancouver 24 Surface

<b>PROJECT</b>		<b>DATE</b>	
----------------	--	-------------	--

<b>QUANTITY</b>		<b>TYPE</b>		<b>NOTE</b>	
-----------------	--	-------------	--	-------------	--

ORDERING EXAMPLE || UVA - 30001 - 8w - W30 - 02 - 120/277v - Options

<b>UVA-30001</b>					
<b>LAMP</b>	<b>LED COLOR</b>	<b>FINISH COLOR</b>	<b>VOLTAGE</b>		
8w COB 331 Lumens	W27 - 2700K W30 - 3000K W35 - 3500K W40 - 4000K	01 - BLACK RAL 9011 02 - DARK GREY RAL 7043 03 - WHITE RAL 9003 04 - METALLIC SILVER RAL 9006 05 - MATTE SILVER RAL 9006 06 - LIGMAN BRONZE 07 - CUSTOM RAL	120/277v Other - Specify		

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## ADDITIONAL OPTIONS

- NAT - Natatorium Rated
- F - Frosted Lens
- OB - Open Bottom
- HGT - Custom Height [Specify]

**INSPIRED BY NATURE FINISHES**

- SW01 - OAK FINISH
- SW02 - WALNUT FINISH
- SW03 - PINE FINISH
- DF - DOUGLAS FIR FINISH
- CW - CHERRY WOOD FINISH
- NW - NATIONAL WALNUT FINISH
- SU01 - CONCRETE FINISH
- SU02 - SOFTSCAPE FINISH
- SU03 - STONE FINISH
- SU04 - CORTEN FINISH

THERE IS AN ADDITIONAL COST FOR THESE FINISHES

## More Custom Finishes Available Upon Request

Consult factory for pricing and lead times

Oak	Cherry	Beech	Carbon
Walnut	Chestnut	Bamboo	Galvanized
Pine	Mahogany	Birch	Steel

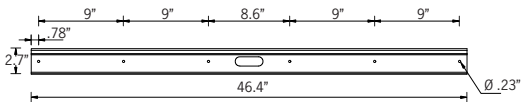


# UGN-30081

## Gini 1 Downlight



72w LED 4984 Lumens  
IP65 • Suitable For Wet Locations  
IK07 • Impact Resistant  
Weight 30.6 lbs



### Mounting Detail



### Construction

#### Aluminum

Less than 0.1% copper content – Marine Grade 6060 extruded & LM6 Aluminum High Pressure die casting provides excellent mechanical strength, clean detailed product lines and excellent heat dissipation.

#### Pre paint

8 step degrease and phosphate process that includes deoxidizing and etching as well as a zinc and nickel phosphate process before product painting.

#### Memory Retentive -Silicon Gasket

LM6 Aluminum is used for its excellent mechanical strength and thermal dissipation properties in low and high ambient temperatures. The superior thermal heat sink design by Ligman used in conjunction with the driver, controls thermals below critical temperature range to ensure maximum luminous flux output, as well as providing long LED service life and ensuring less than 10% lumen depreciation at 50,000 hours.

#### Thermal management

LM6 Aluminum is used for its excellent mechanical strength and thermal dissipation properties in low and high ambient temperatures. The superior thermal heat sink design by Ligman used in conjunction with the driver, controls thermals below critical temperature range to ensure maximum luminous flux output, as well as providing long LED service life and ensuring less than 10% lumen depreciation at 50,000 hours.

#### Surge Suppression

Standard 10kv surge suppressor provided with all fixtures.

#### BUG Rating

B2 - U1 - G1

#### Finishing

All Ligman products go through an extensive finishing process that includes fettling to improve paint adherence.

#### Paint

UV Stabilized 4.9mil thick powder coat paint and baked at 200 Deg C. This process ensures that Ligman products can withstand harsh environments. Rated for use in natatoriums.

#### Inspired by Nature Finishes

The Inspired by nature Finishing is a unique system of decorative powder coating. Our metal decoration process can easily transform the appearance of metal or aluminum product into a wood grain finish.

This patented technology enables the simulation of wood grain, and even marble or granite finish through the use of decorative powder coating.

The wood grain finish is so realistic that it's almost undistinguishable from real wood, even from a close visual inspection. The system of coating permeates the entire thickness of the coat and as a result, the coating cannot be removed by normal rubbing, chipping, or scratching.

#### The Coating Process

After pre-treatment the prepared parts are powder coated with a specially formulated polyurethane powder. This powder provides protection against wear, abrasion, impact and corrosion and acts as the relief base color for the finalized metal decoration.

The component is then wrapped with a sheet of non-porous film with the selected decoration pattern printed on it using special high temperature inks.

This printed film transfer is vacuum-sealed to the surface for a complete thermo print and then transferred into a customized oven. The oven transforms the ink into different forms within the paint layer before it becomes solid. Finally, the film is removed, and a vivid timber look on aluminum remains.

Wood grain coating can create beautiful wood-looking products of any sort. There are over 300 combinations of designs currently in use. Wood grains can be made with different colors, designs, etc.

Our powder coatings are certified for indoor and outdoor applications and are backed by a comprehensive warranty. These coatings rise to the highest conceivable standard of performance excellence and design innovation.

#### Added Benefits

- Resistance to salt-acid room, accelerated aging
- Boiling water, lime and condensed water resistant
- Anti-Graffiti, Anti-Slip, Anti-Microbial, Anti-Scratch
- Super durable (UV resistant)
- TGIC free (non-toxic)

#### Hardware

Provided Hardware is Marine grade 316 Stainless steel.

#### Anti Seize Screw Holes

Tapped holes are infused with a special anti seize compound designed to prevent seizure of threaded connections, due to electrolysis from heat, corrosive atmospheres and moisture.

#### Crystal Clear Low Iron Glass Lens

Provided with tempered, impact resistant crystal clear low iron glass ensuring no green glass tinge.

#### Optics & LED

Precise optic design provides exceptional light control and precise distribution of light. LED CRI > 80

#### Lumen - Maintenance Life

L80 /B10 at 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

**Slimline, surface wall-fixtures with up-down-light distribution. Clean, unique, minimalistic and flexible, the perfect tool for surface wall grazing. Frosted lens standard.**

A range of modular top quality decorative linear surface mount luminaires. This small profile decorative wall sconce with upward, downward or up/down light distributions is available in 4 sizes, namely 12", 23" 35" and 47" standard lengths. (Contact factory for longer runs)

This luminaire has a unique feature where the extruded aluminum mounting bracket is secured onto the wall and the luminaire are then attached to the mounting bracket.

This modular feature allows for extended lengths of extruded mounting bracket to be installed onto the wall and then multiple luminaires can be attached end-on-end to provide a continuous row of luminaires with even light distribution. The Gini has been designed with integral drivers and lightly frosted low glare tempered glass lenses. A single gang in wall junction box, horizontally mounted is to be provided by contractor to facilitate ease of installation.

This IP65 luminaire can be used for indoor, as well as outdoor applications. Ideally suited to illuminate wall surfaces and light accents.

To meet International Dark Sky criteria, 3000k or warmer LEDs must be selected and luminaire fix mounted (+/- 15° allowable to permit leveling).



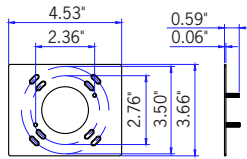
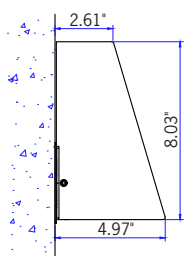
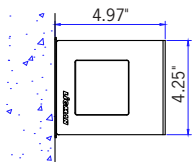


# ULEW-30001

## Leeds 1 Small Surface Wedge Downlight



5.5w LED 570 Lumens  
 IP65 • Suitable For Wet Locations  
 IK07 • Impact Resistant  
 Weight 5 lbs



Mounting Detail

### Construction

#### Aluminum

Less than 0.1% copper content - Marine Grade 6060 extruded & LM6 Aluminum High Pressure die casting provides excellent mechanical strength, clean detailed product lines and excellent heat dissipation.

#### Pre paint

8 step degrease and phosphate process that includes deoxidizing and etching as well as a zinc and nickel phosphate process before product painting.

#### Memory Retentive -Silicon Gasket

Provided with special injection molded "fit for purpose" long life high temperature memory retentive silicon gaskets. Maintains the gaskets exact profile and seal over years of use and compression.

#### Thermal management

LM6 Aluminum is used for its excellent mechanical strength and thermal dissipation properties in low and high ambient temperatures. The superior thermal heat sink design by Ligman used in conjunction with the driver, controls thermals below critical temperature range to ensure maximum luminous flux output, as well as providing long LED service life and ensuring less than 10% lumen depreciation at 50,000 hours.

#### Surge Suppression

Standard 10kv surge suppressor provided with all fixtures.

#### BUG Rating

Contact Factory

#### Finishing

All Ligman products go through an extensive finishing process that includes fettling to improve paint adherence.

#### Paint

UV Stabilized 4.9Mil thick powder coat paint and baked at 200 Deg C. This process ensures that Ligman products can withstand harsh environments. Rated for use in natatoriums.

#### Inspired by Nature Finishes

The Inspired by nature Finishing is a unique system of decorative powder coating. Our metal decoration process can easily transform the appearance of metal or aluminum product into a wood grain finish.

This patented technology enables the simulation of wood grain, and even marble or granite finish through the use of decorative powder coating.

The wood grain finish is so realistic that it's almost undistinguishable from real wood, even from a close visual inspection. The system of coating permeates the entire thickness of the coat and as a result, the coating cannot be removed by normal rubbing, chipping, or scratching.

#### The Coating Process

After pre-treatment the prepared parts are powder coated with a specially formulated polyurethane powder. This powder provides protection against wear, abrasion, impact and corrosion and acts as the relief base color for the finalized metal decoration.

The component is then wrapped with a sheet of non-porous film with the selected decoration pattern printed on it using special high temperature inks.

This printed film transfer is vacuum-sealed to the surface for a complete thermo print and then transferred into a customized oven. The oven transforms the ink into different forms within the paint layer before it becomes solid. Finally, the film is removed, and a vivid timber look on aluminum remains.

Wood grain coating can create beautiful wood-looking products of any sort. There are over 300 combinations of designs currently in use. Wood grains can be made with different colors, designs, etc.

Our powder coatings are certified for indoor and outdoor applications and are backed by a comprehensive warranty. These coatings rise to the highest conceivable standard of performance excellence and design innovation.

#### Added Benefits

- Resistance to salt-acid room, accelerated aging
- Boiling water, lime and condensed water resistant
- Anti-Graffiti, Anti-Slip, Anti-Microbial, Anti-Scratch
- Super durable (UV resistant)
- TGIC free (non-toxic)

#### Hardware

Provided Hardware is Marine grade 316 Stainless steel.

#### Anti Seize Screw Holes

Tapped holes are infused with a special anti seize compound designed to prevent seizure of threaded connections, due to electrolysis from heat, corrosive atmospheres and moisture.

#### Crystal Clear Low Iron Glass Lens

Provided with tempered, impact resistant crystal clear low iron glass ensuring no green glass tinge.

#### Optics & LED

Precise optic design provides exceptional light control and precise distribution of light. LED CRI > 80

#### Lumen - Maintenance Life

L80 /B10 at 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

Clean, beautiful, surface wall fixtures with class leading performance. Minimalist form, yet the most powerful and flexible lighting tool of its type, offering packages up to 2,400 lumens and microVos technology.

A range of small, square and rectangular, ADA compliant wall mounted luminaires with options of upward or downward light distributions. Ideally suited to illuminate the wall and surfaces in front of wall and for light accents on vertical surfaces using high efficiency LED's. The Leeds is suitable for indoor and outdoor applications and provides a clean, visually appealing solution for small, unobtrusive wall mounted luminaires.

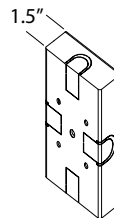
This luminaire is available in 3 different sizes and in combinations of down, up or up/down light distributions.

This fixture utilizes microVos technology, meaning the ability to do Type I,II,III,IV & V distributions as well as hybrid distributions to suit the designer's requirements.

Using the microVos optics allows for very wide spacing to mounting height ratios, while still providing perfect uniformity and code compliant light levels.

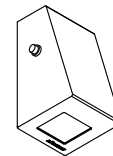
To meet International Dark Sky criteria, 3000k or warmer LEDs must be selected and luminaire fix mounted (+/- 15° allowable to permit leveling).

### Additional Options (Consult Factory For Pricing)



SCDT  
Surface Conduit Decorative Trim

NOTE: This decorative trim does not function as a junction box. Wire connections should be made inside the luminaire



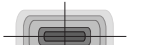
BPC  
Button Photocell



Ligman's micro Variable Optical System provides the ability to interchange, mix & rotate optics to provide specific light distributions for optimized spacing and uniformity.



Type I



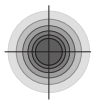
Type II



Type III



Type IV



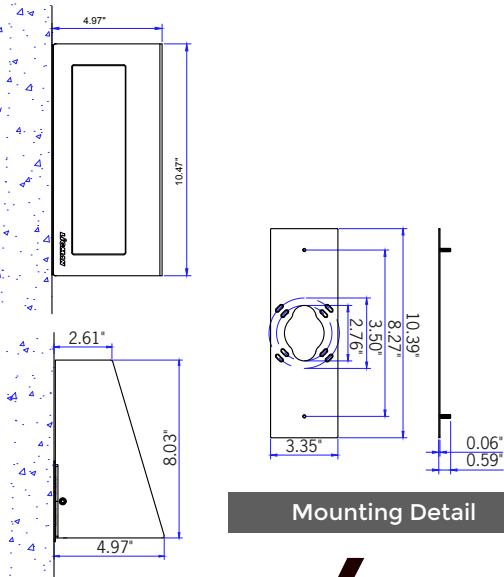
Type V

# ULEW-30021

## Leeds 3 Large Surface Wedge Downlight



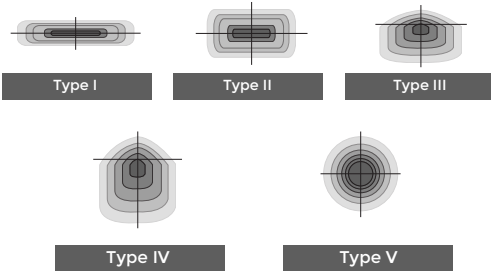
20w LED 2422 Lumens • 28w LED 3200 Lumens  
 IP65 • Suitable For Wet Locations  
 IK07 • Impact Resistant  
 Weight 18 lbs



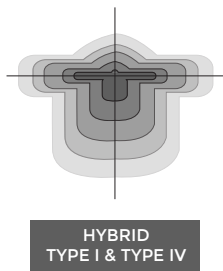
Mounting Detail



Ligman's micro Variable Optical System provides the ability to interchange, mix & rotate optics to provide specific light distributions for optimized spacing and uniformity.



The variable optic system allows for the designer to create hybrid distributions for precise lighting requirements.



HYBRID TYPE I & TYPE IV

### Construction

**Aluminum.**  
 Less than 0.1% copper content - Marine Grade 6060 extruded & LM6 Aluminum High Pressure die casting provides excellent mechanical strength, clean detailed product lines and excellent heat dissipation.

**Pre paint**  
 8 step degrease and phosphate process that includes deoxidizing and etching as well as a zinc and nickel phosphate process before product painting.

**Memory Retentive -Silicon Gasket**  
 Provided with special injection molded "fit for purpose" long life high temperature memory retentive silicon gaskets. Maintains the gaskets exact profile and seal over years of use and compression.

**Thermal management**  
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**BUG Rating**  
 B1 - U0 - G0

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 L80 /B10 at 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

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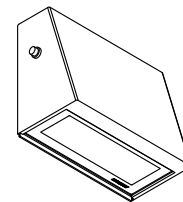
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To meet International Dark Sky criteria, 3000k or warmer LEDs must be selected and luminaire fix mounted (+/- 15° allowable to permit leveling).

### Additional Options (Consult Factory For Pricing)



BPC Button Photocell



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

20 December, 2023

Peter Stith, TAC Committee Chair  
City of Portsmouth  
1 Junkins Avenue  
Portsmouth, NH 03801

**RE: Response to Comments for Site Plan Approval at 581 Lafayette Road; Mixed Use Development; Tax Map 229 Lot 8B**

Dear Mr. Stith and TAC Members:

On behalf of Atlas Common, LLC (Owner) we are pleased to submit the attached plan set for **Site Plan Review** for the above-mentioned project and request that we be placed on the agenda for your **January 2, 2024**, Meeting. The project consists of the addition of residential units (including 20% Workforce) at 581 Lafayette Road with two new building additions with the associated and required site improvements. The site is currently developed with two restaurants. The re-development will include creating an additional car park below first floor building level.

The project is located at 581 Lafayette Road and are two proposed additions to an existing building. The building was renovated when the site was changed from a Cinema to the Tuscan Restaurant – Tuscan Marketplace in 2016. The site is at the corner of Lafayette Road and Ledgewood Drive, and is known as Tax Map 229, Lot 8B. The lot is a 98,124 square foot parcel with frontage on both streets. The existing conditions plan shows the current site features. The Tuscan Market moved to downtown Portsmouth, and that portion of the site was re-purposed to a restaurant with golf simulators, known as Tour. The Tuscan Marketplace closed, but recently the space was converted to another restaurant with some outside seating.

The property is located in the Gateway Neighborhood Mixed-Use District - G1. The purpose of the district is to support the goals of the cities Master Plan and Housing Policy. The aim of the policy is to encourage walkable, mixed-use development, and continued economic vitality in the cities primary gateway areas. The district seeks to ensure that new developments complement and enhance the surroundings and provide housing stock that is suitable for changing demographics and accommodate the housing needs of the city's current and future workforce. This plan works towards that standard by adding to the existing structure and creating 72 new dwelling units. The proposed uses; being restaurant use and dwelling units (multi-family residential) are both allowed uses in the district.

The project proposes additions that are set back 33 feet from Ledgewood Drive, 47 feet from Lafayette Road, 24 feet from the southerly abutting property line, and 39 feet from the easterly abutting property line. The proposed building additions maintain the ability for the free flow of traffic around the proposed additions, as required by deed restrictions and easements on the property. First floor parking spaces are accessed from driveways to the parking areas at first floor level, as shown on the site plan. Underground parking is accessed from a driveway ramp on the north side of the proposed structure off Ledgewood Drive. The property has deeded agreements with the abutting properties along Lafayette Road, wherein shared parking is a deeded right among the properties.

The submitted site plan shows the impervious surface calculations for the proposed development. When the site was redeveloped to the Tuscan Marketplace, the impervious surface coverage (increase) was allowed under a Variance, up to coverage which allowed a reduced open space to 16.2%. this plan proposes redevelopment with 16.7% open space. The building height is intended to comply with section 10.5 B 22.10 as allowed under the section. Regarding the special setback requirements on Lafayette Road, the project is in a location where there is a significant open space in front of the subject parcel. This open space was created when the Lafayette Road, Route 1 Bypass intersection was restructured around 2011. That relocation of the intersection created this large open space area in front of the lot, which in effect meets this special set back requirements inherent in the section regarding properties on Lafayette Road.

The presence of the car park in front of the building is as it has been for many years, when this property was used as a cinema, and additionally when it was repurposed into Tuscan Marketplace. A variance for front of building parking was granted. The proposal has gone to the Portsmouth Planning Board for Conceptual Review. During the review it was noted that some of the parking spaces in front of the building are partially located off the lot in the state highway right of way. Those spaces existed when the work was done to relocate the intersection, and they existed when the property was redeveloped into the Tuscan Marketplace and allowed to stay.

The existing drainage consists of some roof drain connections as well as some parking lot connections to the drainage network, which flow off-site. The property drainage is divided into two watersheds, one that flows to the south along the front of the adjacent mall and the other flows to the south along the back of the adjacent mall. The intent of this design is to maintain those flow directions and re-purpose the drainage in accordance with the proposed site addition roof drains that will replace some catch basins to direct the water in this manner. Additional treatment of the runoff is provided with the introduction of a Jellyfish filter.

It is our understanding that this development would most likely fall under Section 10.05 B 42.20, Mixed-Use Development, and the development standards of that section. The process for development in the Gateway Neighborhood Mixed-Use District requires application to the Planning Board for a Conditional Use Permit where development deviates from the strict standards, and proof that the development proposed meets, and is consistent with, the Portsmouth Master Plan. In the density section of the ordinance this development would be allowed up to 24 units per structure. This project proposes a Conditional Use Permit for a density bonus as allowed in section 10.5 B 72 for two buildings with 36 units in each building. This increased housing density is allowed with an incentive. In order to be eligible



for the bonus incentive the development shall include workforce housing. The intent of this development is to provide 20% of the dwelling units, or 15 units, as workforce units, as defined by the Portsmouth Ordinance. We believe that under section 10.5 B 74.30 the Planning Board is authorized to grant modifications to the standards of the section since, and as a result of, the developer providing workforce housing. We believe that the modifications to the strict ordinance interpretations are consistent with the purpose and intent set forth in the Gateway Neighborhood Mixed-Use District section. We therefore request open space to be allowed at 16.7%, which is allowed with the consent of the Planning Board in the approval process. We believe this minor variation does not compromise the intent of the ordinance as the 20% Workforce Housing is important to the community.

The project was reviewed at the November 8, 2023, TAC Meeting where the following comments, with response in **bold text**, were generated:

1. During review, staff found multiple errors and inconsistencies in the plans including but not limited to: plan sheets referenced in the checklist but not provided in the plan set (C102, C104, and photometric plan), floor plans referencing a 6-bedroom apartment, and inconsistencies in project presented in the cover letter and the plans provided. Please update and cleanup plans to present a clear and consistent proposal. **Plans and the submission have been updated. The Green Building Statement has been added, the photometric plan is still in process.**
2. Please provide a memo that outlines all of the requested modifications with Section references from Section 10.5B70. **We believe that the plan set addresses the requirements of the ordinance in this regard.**
3. Please provide an easement plan and open space plan to show how the project meets the density and bonus incentives. **The plan set includes Plans C7 – Open Space Plan, C8 Community Space Plan, and C9 Public Realm Plan. The design conforms to the Section requirements with the exception of the open space requirement, which the Planning Board will be asked to waive. The reduction is in keeping with a previously granted Variance for the site.**
4. The increase to 5 stories and 60 feet requires a second incentive under 10.5B72.30, which will require public realm improvements in addition to the workforce housing requirement. See Section 10.5B73.20 for Public Realm requirements. **See Sheet C9, Public Realm Plan.**
5. Sewer shown as 6” at a slope of 0.004 ft/ft. That is below minimum allowable slope. Please address. **The sewer pipe size has been revised to an 8-inch pipe.**
6. Upon further review, grease trap and sewer should not be installed under the building in the parking garage. There is not enough overhead height for cleaning, maintenance, or repairs. **The grease trap is now an exterior installation.**
7. Move jellyfish filter downstream of CB1. **The Jellyfish is located as far downstream as possible.**

8. Support columns are in parking spaces making multiple spaces unusable. **The support columns have been adjusted.**
9. State size of existing domestic water service. **The team is still researching this issue.**
10. Residents will utilize the green space abutting Lafayette Road. Landscaping maintenance of that area may be required. **The team will review landscaping records and report to the TAC Committee.**
11. Include list of previously received comments with responses or noted changes to the plans. **The previous comments are addressed herein.**

The development plan is summarized as follows and as shown on the Proposed Site Plans:

- Cover Sheet – Shows the Development Team, Zoning, Location, and Utility contacts.
- Sheet C1 – Existing Conditions Plan: The plan shows current site conditions.
- Sheet C2 – Demolition Plan: The plan shows required site demolition.
- Sheet C3 – Site Plan: This sheet shows the location of the proposed building additions, outdoor seating area, and associated site improvements.
- Sheet L1 and L2 – This plan shows the added site landscaping.
- Sheet C4 – Parking Plan: The plan shows the underground car park.
- Sheet C5 – Utility Plan: The plan shows proposed utility connections.
- Sheet C6 – Grading, Drainage, Erosion Control Plan: The plan shows the proposed drainage connections for the site.
- Sheet C7 – Open Space Plan - The plan shows proposed site open space.
- Sheet C8 – Community Space Plan - The plan shows proposed Community Space locations and types.
- Sheet C9 – Public Realm Plan: The plan shows proposed public realm off-site improvements.
- Sheet T1 & T2 – Turning Plans: The plans show fire truck and delivery truck turning movements.
- Sheets D1 to D5 – These sheets show the site construction details, including erosion control.
- Floor Plans - Elevations - Renderings - These are the Architectural site designs.

We look forward to TAC review of this submission and the Committees feedback on the proposed design. We hereby request that the project move forward to the Planning Board.

Sincerely,



John Chagnon, PE; Ambit Engineering – Haley Ward  
Submitted Online

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

2 January, 2024

Peter Stith, TAC Committee Chair  
City of Portsmouth  
1 Junkins Avenue  
Portsmouth, NH 03801

**RE: Response to Comments for Site Plan Approval at 581 Lafayette Road; Mixed Use Development; Tax Map 229 Lot 8B**

Dear Mr. Stith and TAC Members:

On behalf of Atlas Common, LLC (Owner) we submit this Response to Comments from the December 29, 2023, email for the above-mentioned project. The project consists of the addition of residential units (including 20% of the Units as Workforce Housing) at 581 Lafayette Road with two new building additions with the associated and required site improvements. The site is currently developed with two restaurants. The re-development will include creating an additional car park below first floor building level. The email comments are repeated below, with response in **bold text**:

1. Please reach out to the Trees & Greenery Committee for proposed trees within the City's ROW. **The Development Team will apply to the Trees and Greenery Committee for permission to place the proposed trees in the City Ledgewood Drive ROW.**
2. Irrigation details needed as part of the landscape plan. **Typically, detailed irrigation plans are prepared after site approval is obtained. Can this be done after Planning Board approval, prior to the issuance of a Building Permit, as a condition?**
3. Landscape plan does not include the 3<sup>rd</sup> landscaped island, as seen in site plan. **The revised (See Comment 4) island will be added to the Landscape Plan and some plantings detailed.**
4. All landscaped islands must be at least 9' wide. **The landscape island has been re-sized.**
5. Prior to Planning Board submission, information will need to be provided in accordance with 10.5B74.10 (covenant, details, etc.). **The information required by 10.5B74.10, including legal documents, will be refined in consultation with the Planning Department and prepared for presentation to the Planning Board along with the Conditional Use Permit application as a part of the Planning Board submission.**
6. Please provide a photometric plan. **A lighting plan will be added to the plan set.**

7. Please confirm that open space is the only modification being requested. **We believe that the other requirements of the Zoning have been met; we look for Planning Department concurrence.**
8. Please clean up inconsistency in open space between zoning table and cover letter. **The Cover Letter will be revised to match the plan Zoning Table prior to Planning Board submission.**
9. Visitor Parking requirement is 14.4 spaces not 14.04. **The calculation will be corrected. The resulting total goes from 80.61 to 80.99 spaces.**
10. Parking calculations need to be updated to reflect each use added together in whole numbers as this will alter the final total. **The calculations have been corrected and the resulting tables attached herewith.**
11. Please confirm open space plan meeting zoning 10.515.20. Calculation can include walks and terraces but cannot include space that is less than 5 ft in width. **When open space less than 5 feet wide is deducted, but walkways which will be porous are added, the proposed open space increases to 17.2 %.**
12. The landscape plan does not show the landscape island at the SW corner of the building. **See response Number 4.**
13. Are the proposed outdoor dining patios open to the public? **Yes, they are restaurants open to the public.** If not, they cannot be included in community space. If yes, will there be signage to let the public know they can access it? **The restaurants are listed in all media as public.**
14. Please provide documentation for the High School consenting to the offsite work. **This is ongoing with the School Department. We request this requirement be a TAC Condition of Approval and the project is advanced to the Planning Board with the Conditional Use Application for a decision on this incentive.**
15. Offsite work will require approval from the Trees and Greenery Committee. **The Development Team will apply to the Trees and Greenery Committee for permission to remove trees as needed on city property at the High School to construct the path.**
16. Please provide easement information on community space and public realm plans. **The required easement plans and documents will be prepared for the Conditional Use Permit application as a part of the Planning Board submission. Planning Department review of the proposed area(s) is requested.**
17. Floor plans are still incorrect. There are missing labels and missing square footage numbers for some units. Are the missing square footage labels indicative of information that is missing from parking calculations? **The floor plans have been updated and are attached.**
18. Irrigation details needed as part of the landscape plan. **See response to Comment Number 2.**
19. All landscaped islands must be at least 9' wide. **See response to Comment Number 4.**
20. Show detail for sewer service under building. Is it buried, hung from the wall, how is it mounted, etc. **The pipe will be attached to the wall. Details will be provided.**
21. Gravity sewer should have manhole or cleanout at bend. **Cleanout and bend details will be provided.**
22. Show detail on proposed pump station. **The Grease Trap and Pump Station detail have been added a Sheet D6.**

We look forward to TAC review of this submission and the Committees feedback on the proposed design. We hereby request that the project move forward to the Planning Board.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Chagnon', with a long horizontal flourish extending to the right.

John Chagnon, PE; Ambit Engineering – Haley Ward

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

6 February, 2024

Peter Stith, TAC Committee Chair  
City of Portsmouth  
1 Junkins Avenue  
Portsmouth, NH 03801

**RE: Response to Comments for Site Plan Approval at 581 Lafayette Road; Mixed Use Development; Tax Map 229 Lot 8B**

Dear Mr. Stith and TAC Members:

On behalf of Atlas Common, LLC (Owner) we submit this Response to Comments from the February 5, 2024, email for the above-mentioned project. The project consists of the addition of residential units (including 20% of the Units as Workforce Housing) at 581 Lafayette Road with two new building additions with the associated and required site improvements. The site is currently developed with two restaurants. The re-development will include creating an additional car park below first floor building level. The email comments are repeated below, with response in **bold text**:

1. Staff will require a document of support from the Superintendent to use the high school land for public realm improvements. **This will be provided prior to the Planning Board submission.**
2. Staff would like the project to be completed by the applicant rather than a monetary contribution. **Understood.**
3. Please connect the trail to existing infrastructure. **See Updated Public Realm Plans C9 and C10.**
4. Please correct plan callouts to be fully visible (See C7 lower right corner) **The label is “Proposed Pavement” which is shown on other plans and not a part of this plan.**
5. Space identified as “wide sidewalk: does not qualify as a wide sidewalk. **Understood.**
6. Community space needs to meet the definition of community space. **Understood. The plan has been revised to delineate conforming definitions.**
7. Is the courtyard space open to the public? **The Courtyard is an Outdoor Dining Café which will be open to the public by deed.**
8. Landscape plan and community space plan have different sidewalk designs. **The landscape plan will have a minor update to the current sidewalk.**
9. Please confirm that the ADA parking spaces in the covered parking meet the minimum width for ADA. **(Lower Level?) Support columns look like they may inhibit access. This is addressed in the submission.**

10. Please assign tandem parking spaces to units and confirm they conform to Section 10.1114.33. **The tandem spaces will be assigned to the units during the final building permit plan process. In the meantime, we added Note 10 on Sheet C3 and Note 5 on Sheet C4 to delineate this requirement.**
11. Please include all levels of parking (interior and exterior) in parking plan. **We created a C13 Parking Plan which will be added to the plan set.**
12. Please include designated ADA spaces in parking calculation table. **This is addressed in the submission.**
13. See Site Plan Regulation 7.6.5 (1): In the maintenance plan for stormwater devices, remove “if required”. An annual inspection and maintenance report is required. Please submit to the Department of Public Works. (only if DPW hasn’t already added this comment). **This will be updated in the Planning Board submission – see attached.**
14. Please move the proposed transformer from its current location in the landscaped island – this will interfere with the infiltration of stormwater into the landscaped island. **The transformer has been relocated into the adjacent parking space, maintaining the open space. See Sheet C5.**
15. According to 10.5A44.41 in the Zoning Ordinance: you must provide 1 landscaped island for every 10 parking spaces (A). A landscaped island must be at least 325 s.f. in area (C) and be at least 9-ft wide (Site Plan Regulation 6.6-3). Please demonstrate your compliance with these requirements. **There is no change to this existing parking, other than the reduction mentioned above.**
16. “No Right-Hand Turn” signs should be added to the detail sheet, and locations of signs shown on plan. **See Sheet C3 and Detail Z.**
17. Provide summary of accessible parking spaces required and provided. **This is addressed in the submission.**
18. Show how new buildings sewer will connect to the proposed sewer service. **See Attached photos.**
19. What is the proposed water demand and proposed flows to the sewer from the new development? **See Note 4 on Sheet C5.**
20. Provide profile of sewer service. **See Attached photos. This would be detailed in the building plumbing plans.**
21. How will the sewer service be protected from cars and pedestrians? **There would be bollards and shields – see Note on Sheet C4.**
22. Non buried sewer service subject to environmental conditions. May require expansion joints. **Pipe type and grout selection should address this issue.**
23. SDR 35 pipe may not be suitable for non buried applications. **See Attached photos.**
24. Need details on pipe hangers, cleanouts, and connections. **See Attached photos, this would be detailed in the building plumbing plans.**
25. What is the proposed flow rate of the pump station? **See Sheet D6.**
26. What are the float elevations in the proposed pump station? **See Sheet D6.**
27. Details on proposed pump station show 1 ½” discharge pipe and utility plan shows 2”. Confirm size and pipe materials. **See Sheet D6 – 2 inches.**
28. Sheet C4 shows sewer service size as 6” and utility plan shows 8”. Correct. **Plans updated to 8 inches.**



Sewer Connection Photographs:





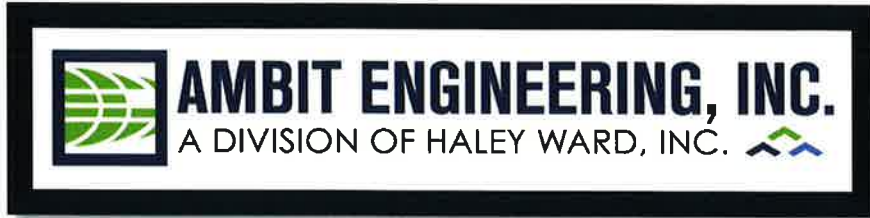


We look forward to TAC review of this submission and the Committees feedback on the proposed design. We hereby request that the project move forward to the Planning Board.

Sincerely,

John Chagnon, PE; Ambit Engineering – Haley Ward

P:\NH\5010156-McNabb\_Properties\1397.03-Lafayette Rd., Portsmouth-JRC\2023 Site Plan 1397.03\Applications\Portsmouth Site Plan\581 Lafayette TAC Response to Comments 2-6-24.doc



***INSPECTION & LONG-TERM MAINTENANCE PLAN  
FOR  
COMMERCIAL DEVELOPMENT***

**581 LAFAYETTE ROAD  
PORTSMOUTH, NH**

**Introduction**

The intent of this plan is to provide the Atlas Commons, LLC (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. Specifically, the proposed Jellyfish® filter and associated drainage structures (collectively referred to as the “Stormwater Management System”). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help 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 DPW, ~~if required.~~

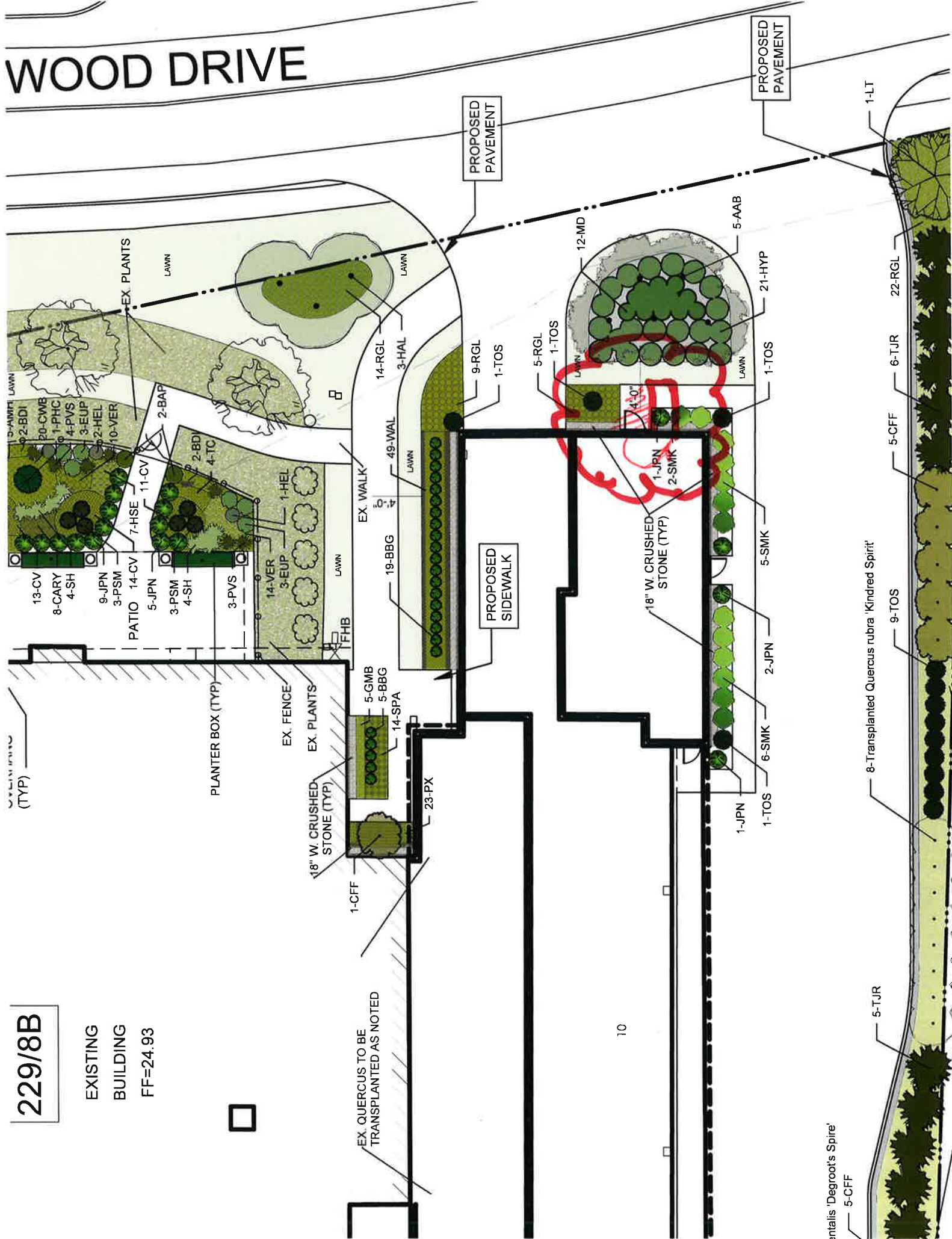
***Inspection & Maintenance Checklist/Log***

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

# WOOD DRIVE

229/8B

EXISTING  
BUILDING  
FF=24.93



EX. QUERCUS TO BE  
TRANSPLANTED AS NOTED

PROPOSED  
SIDEWALK

PROPOSED  
PAVEMENT

PROPOSED  
PAVEMENT

10

antialis 'Degroot's Spire'  
5-CFF

8-Transplanted Quercus rubra 'Kindred Spirit'

5-TJR

9-TOS

5-CFF

6-TJR

22-RGL

1-LT





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

5 March, 2024

Peter Stith, TAC Committee Chair  
City of Portsmouth  
1 Junkins Avenue  
Portsmouth, NH 03801

**RE: Response to Comments for Site Plan Approval at 581 Lafayette Road; Mixed Use Development; Tax Map 229 Lot 8B**

Dear Mr. Stith and TAC Members:

On behalf of Atlas Common, LLC (Owner) we submit this Response to Comments from the March 1, 2024, email for the above-mentioned project. The project consists of the addition of residential units (including 20% of the Units as Workforce Housing) at 581 Lafayette Road with two new building additions with the associated and required site improvements. The site is currently developed with two restaurants. The re-development will include creating an additional car park below first floor building level. The email comments are repeated below, with response in **bold text**:

1. Provide a list of previous comments and responses. **The previous Response to Comments letters have been uploaded to the online application.**
2. Support column shown on the sidewalk on Sheet C4 Level 1 Parking Plan. **Plan revised and sidewalk relocated.**
3. SDR 35 pipe material not appropriate for non-buried applications. **Plan Sheet C4 revised indicates Schedule 40 pipe type.**
4. Provide details on pipe hangers and cleanouts. **See detail BB on Sheet D6 for pipe shelf proposal.**
5. Verify bollards will protect sewer. **See detail on pipe shelf proposal.**
6. Provide sewer profile. **The final sewer pipe design is interior to the basement and will be detailed for the Building Permit application. The parking spaces have been pulled a foot away from the wall to allow a concrete shelf that will support the sewer pipe. We submit for the meeting a profile with elevations and references to the floor elevation.**
7. All piping leaving pump station must be gasketed pipe. No glued joints. Detail Y Sheet D6. **Detail Y on Sheet D6 has been revised.**
8. Catch basins should not be used as in-line stormwater structures. Install drain manholes and connect catch basins to the drain manholes. **Design alternative layout attached showing the addition of 3 (three) Drain Manholes. Also, a catch basin**

**has been relocated and a trench drain at the garage ramp entrance has been added.**

9. Show how vehicles in the angled parking spaces of basement level parking will exit. **Turning movement will be to pull forward to the building jog and then turn to the left, then back up and pull out.**

10. Handicap spaces require signs, so possibly reverse tandem spaces to place HP space against wall with sign. **Completed.** But this doesn't appear possible with space 55 on the first floor. **Building alignment has been adjusted to allow this change at that location.**

11. Delivery truck turning plan Sheet T2 appears to be different than current building plan, columns for overhang could be in the way. **Turning Movement Plan updated. The vehicle was shifted to align with the final building.**

12. Doors for enclosed bike parking should be sliders, rather than hinged, for easier access. **Sliders are shown; confirming fire rating in the final building design.**

13. Are vertical bike racks attached to a wall? **Yes.** No detail provided. **See Detail on Landscape Plan L3.**

14. A landscape license with adequate insurance will be required for maintenance on City property. **Agreed – area noted on Easement Plan DRAFT.**

15. Provide recordable easement plan. **Easement Plan DRAFT provided in plan set. Final easement documents and recordable plans to be provided after Planning Board approval.**

16. Include green building statement. **Updated Green Building Statement included.**

17. In addition to the modification of the community space, one will be required for the setback from Lafayette Rd. as the addition on the side is closer than 70 feet (Section 10.5B22.40). **The centerline of Lafayette Road is more than 90 feet from the lot property line (see attached exhibit). We will request a Waiver from the Ordinance provision for the Planning Board.**

We look forward to TAC review of this submission and the Committees feedback on the proposed design. We hereby request that the project move forward to the Planning Board.

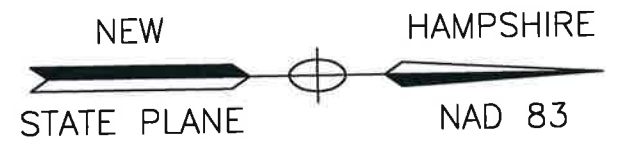
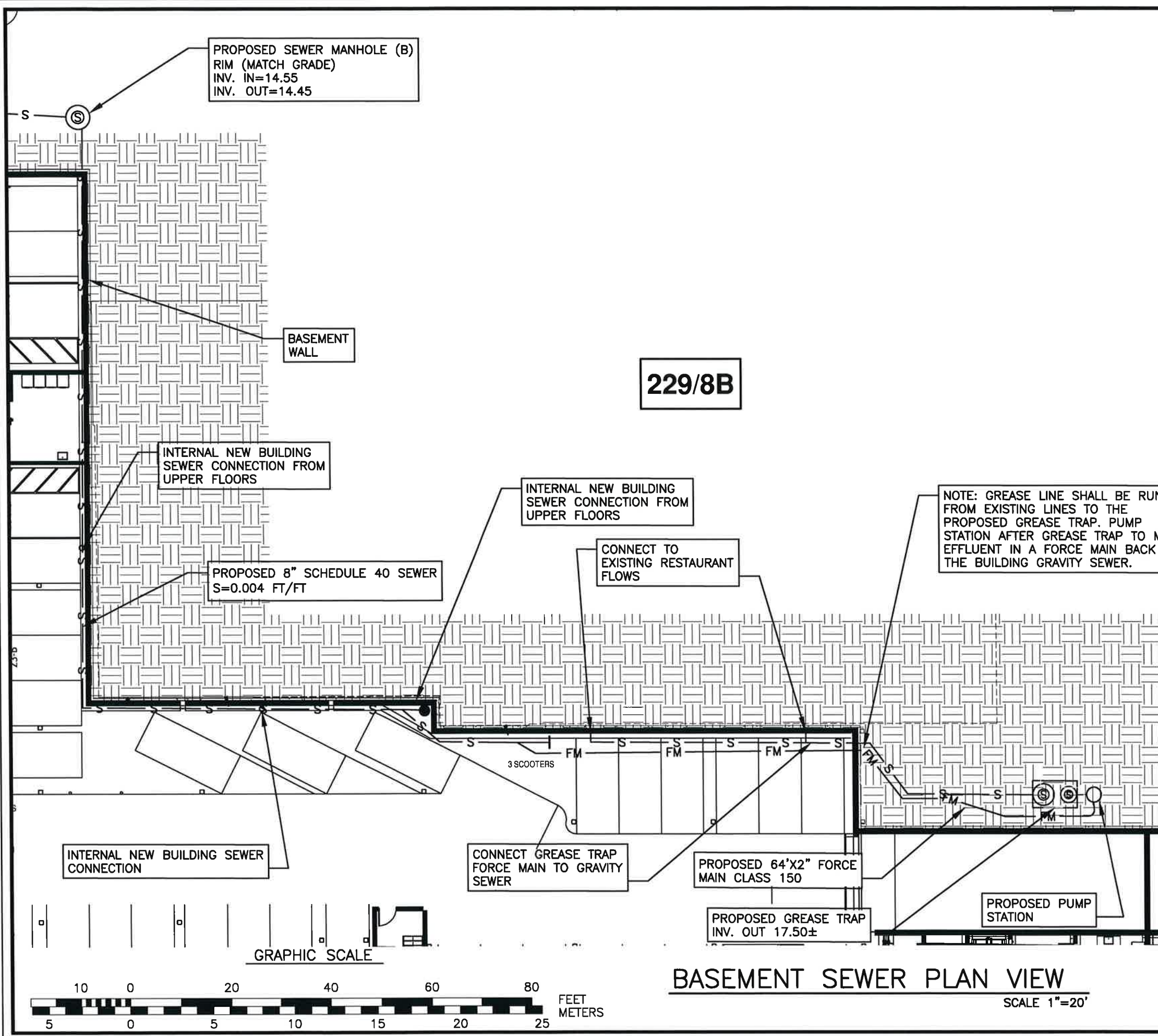
Sincerely,



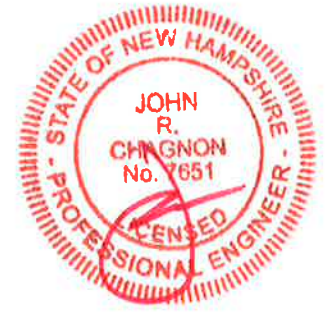
John Chagnon, PE; Ambit Engineering – Haley Ward

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P:\NH\5010156-McNabb\_Properties\1397.03-Lafayette Rd., Portsmouth-JRC\2023 Site Plan\3-27-24\11X17 BASEMENT SEWER PLAN 3-27-24.dwg, 3/27/2024 9:15:04 AM, 1\SVR\SM-F501\Portsmouth Copier-Canon



NOTES:  
1) SEWER LINE SHOWN SLIGHTLY OFFSET FOR CLARITY. SEWER IS LOCATED ON A SHELF OUTSIDE OF THE REQUIRED PARKING SPACE.  
2) THE FINAL SEWER PIPE DESIGN (BUILDING PERMIT PHASE) SHALL BE REVIEWED AND APPROVED BY PORTSMOUTH DPW.

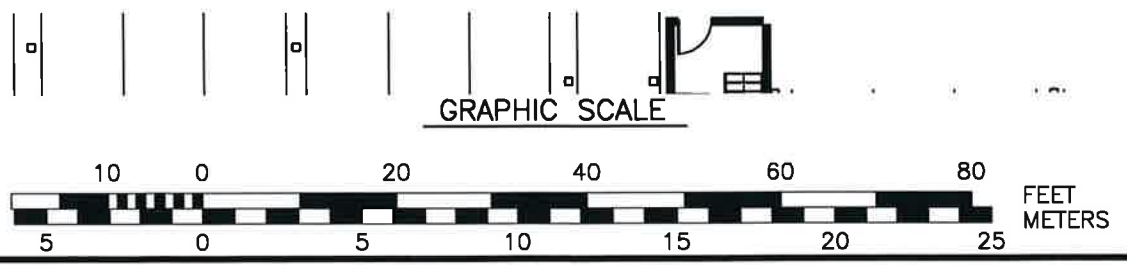


COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.



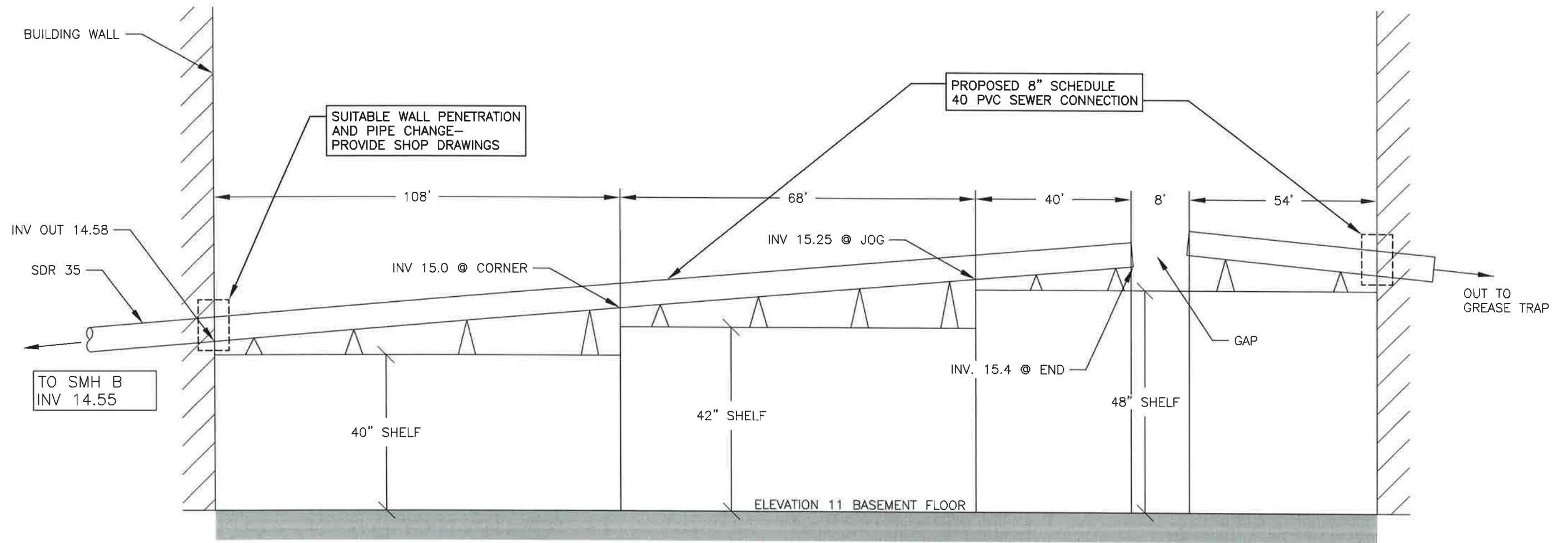
WWW.HALEYWARD.COM  
200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

BASEMENT SEWER PLAN VIEW  
SCALE 1"=20'





P:\NH\5010156-McNabb\_Properties\1397.03-Lafayette Rd., Portsmouth-JRC\2023 Site Plan\1397.03\Plans & Specs\Site\Final Set revised 3-27-24\11X17 SEWER PROFILE 3-27-24.dwg, 3/27/2024 12:49:07 PM, \\SVRPSM-F501\Portsmouth Copier Canon



### BASEMENT SEWER PROFILE

NTS



COMMERCIAL  
DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.



WWW.HALEYWARD.COM

200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282



# MIXED USE DEVELOPMENT

## 581 LAFAYETTE ROAD PORTSMOUTH, NEW HAMPSHIRE SITE PERMIT PLANS SUPPLEMENTAL SUBMISSION

### OWNER:

ATLAS COMMONS, LLC  
3 PLEASANT STREET  
SUITE #400  
PORTSMOUTH, NH 03801

### LAND SURVEYOR & CIVIL ENGINEER:

HALEY WARD, INC.  
200 GRIFFIN ROAD, UNIT 3  
PORTSMOUTH, N.H. 03801  
Tel. (603) 430-9282  
Fax (603) 436-2315

### ARCHITECT:

ARCOVE ARCHITECTS  
3 CONGRESS STREET, SUITE 1  
PORTSMOUTH, NH 03801  
TEL. (603) 988-0042

### LANDSCAPE ARCHITECT:

TERRA FIRMA LANDSCAPE  
ARCHITECTURE  
163A COURT STREET  
PORTSMOUTH, NH 03801  
TEL. (603) 430-8388

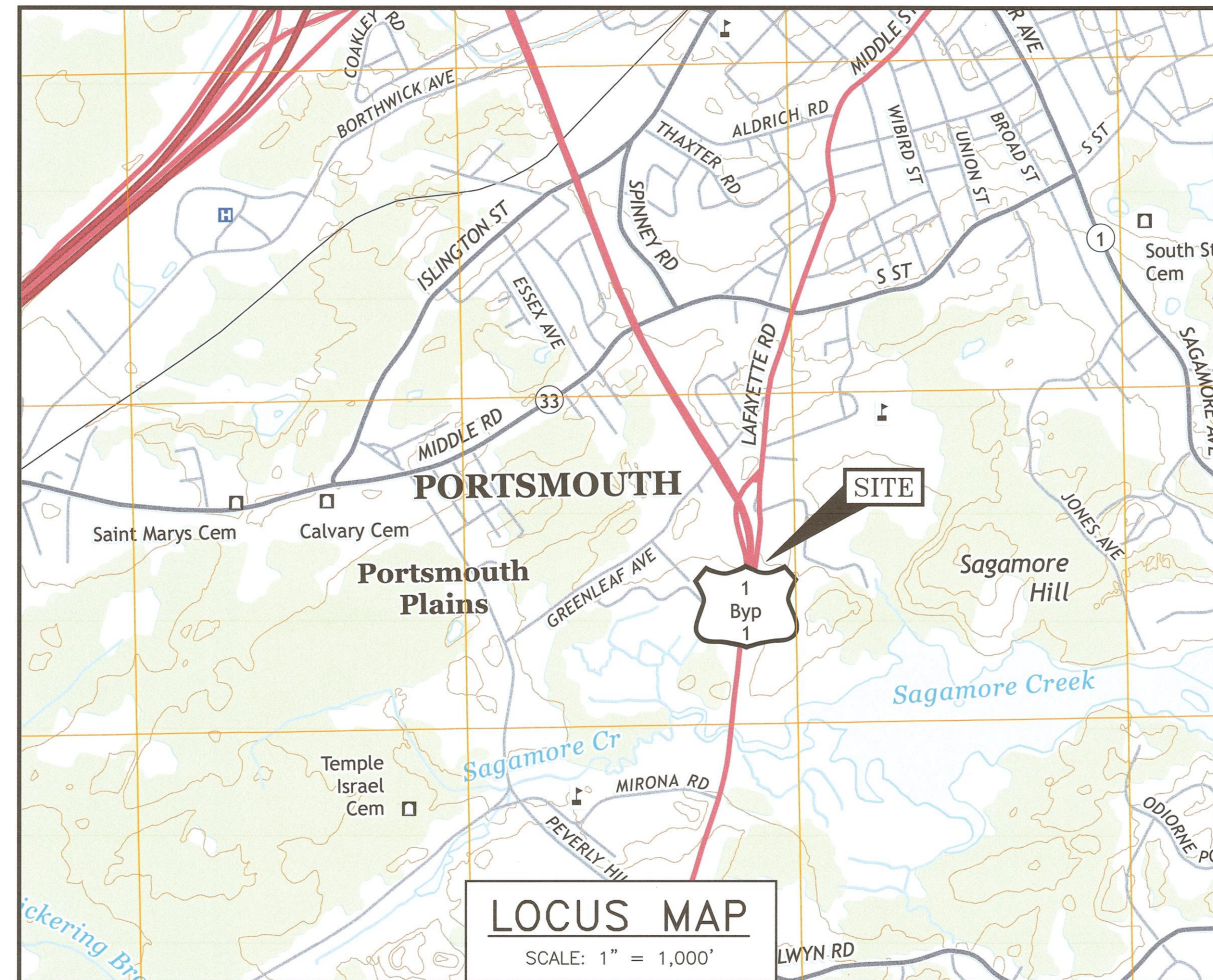
### PERMIT LIST:

NHDES SEWER DISCHARGE PERMIT: TO BE SUBMITTED  
PORTSMOUTH SITE PLAN APPROVAL: PENDING  
CITY COUNCIL APPROVAL: PENDING

### 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
100	100	EDGE OF PAVEMENT (EP)
97x3	98x0	CONTOUR
		SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
		SHUT OFFS (WATER/GAS)
		GATE VALVE
		HYDRANT
		CATCH BASIN
		SEWER MANHOLE
		DRAIN MANHOLE
		TELEPHONE MANHOLE
		PARKING SPACE COUNT
		PARKING METER
		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	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

Residential Districts	
R	Rural
SRA	Single Residence A
SRB	Single Residence B
GRA	General Residence A
GRB	General Residence B
GRC	General Residence C
GAMH	Garden Apartment/Mobile Home
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



### INDEX OF SHEETS

DWG No.	
C1	EXISTING CONDITIONS PLAN
C2	DEMOLITION PLAN
C3	SITE PLAN
C4	PARKING PLAN
C5	UTILITY PLAN
PB1.00-1.01	FLOOR PLANS

### 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

**SITE PLANS  
MIXED USE DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

**AMBIT ENGINEERING, INC.**  
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

WWW.HALEYWARD.COM

PLAN SET SUBMITTAL DATE: 1 MAY 2024

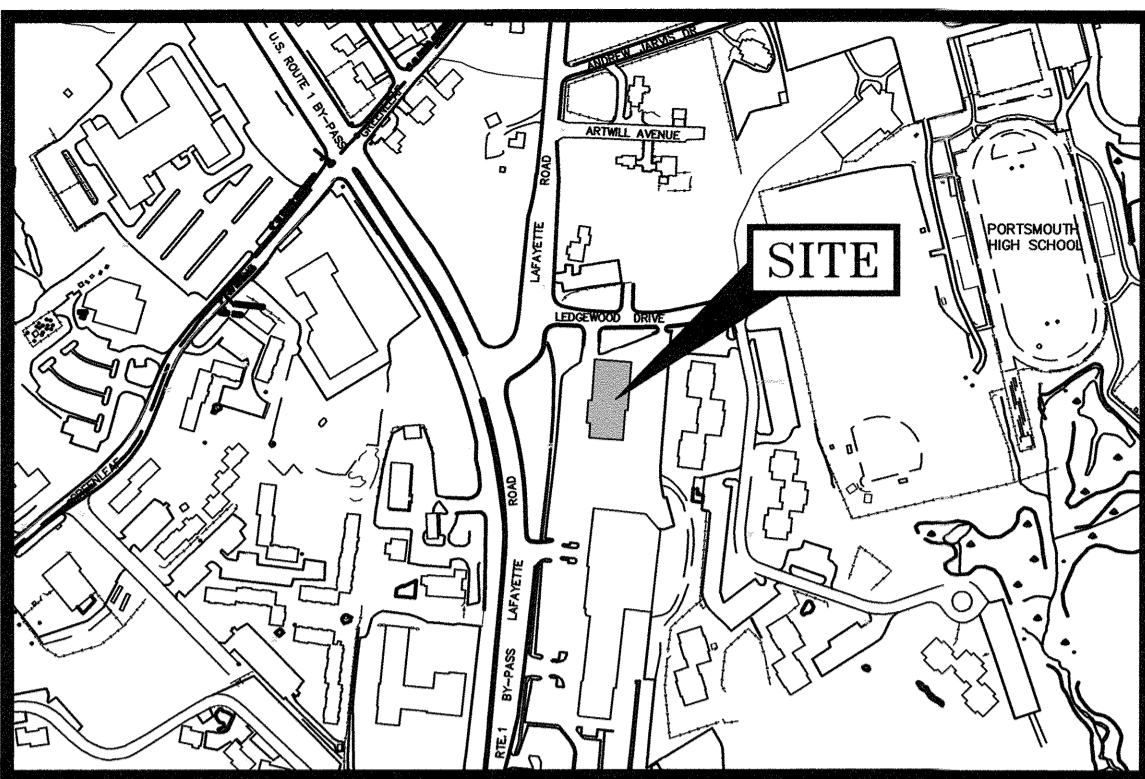
**PORTSMOUTH APPROVAL CONDITIONS NOTE:**  
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN

DATE





LOCATION MAP SCALE: 1" = 400'±

**LEGEND**

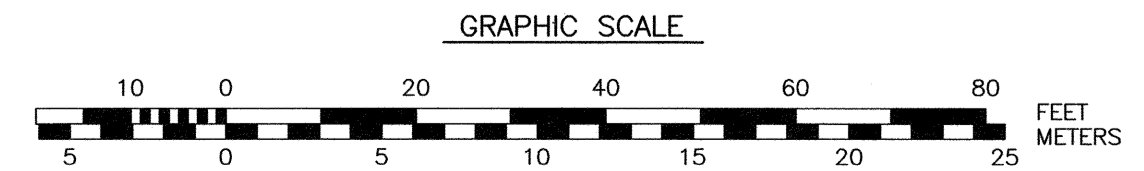
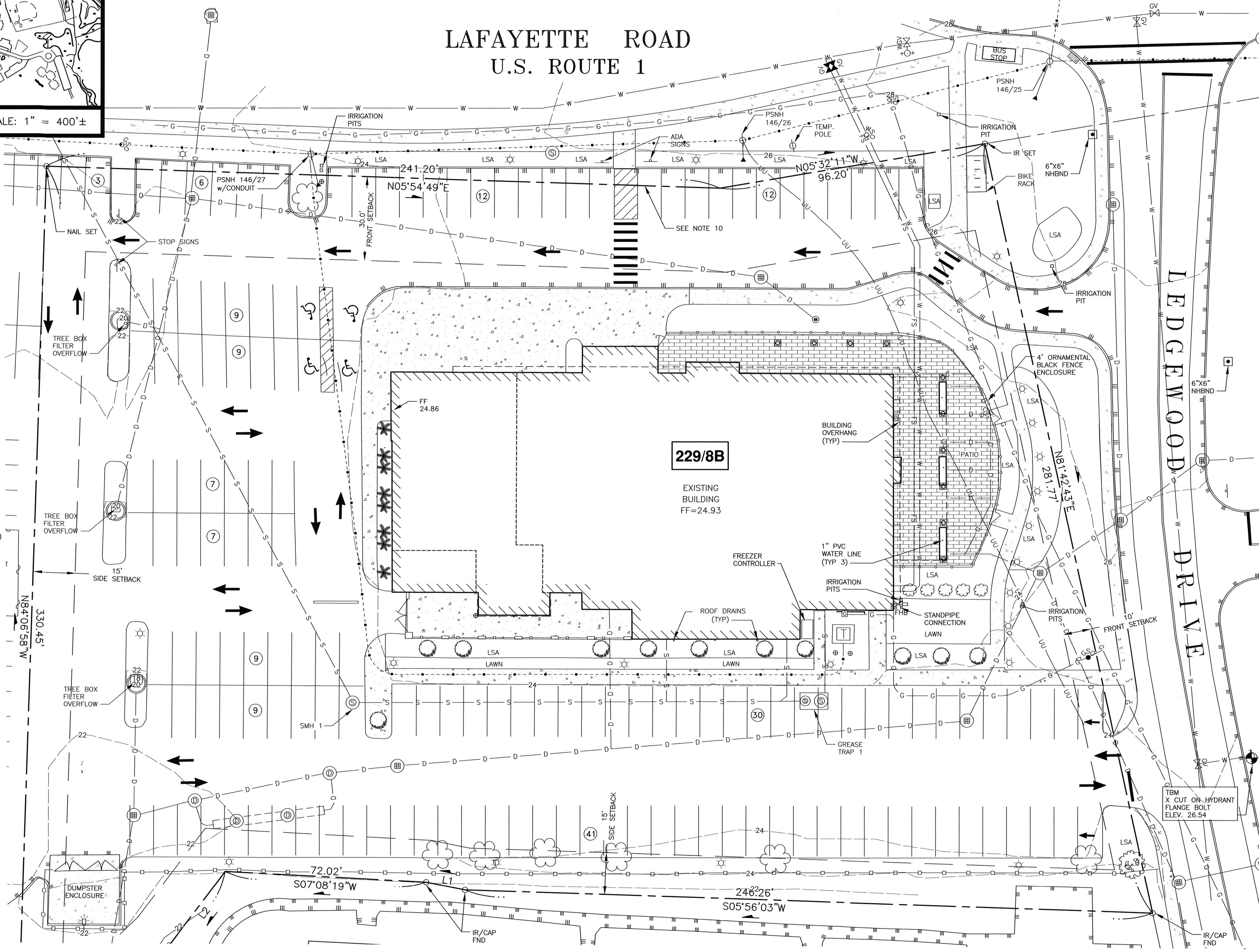
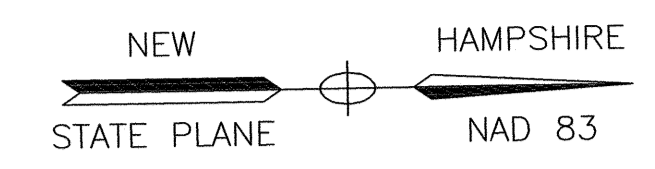
EXISTING	DESCRIPTION
MAP 124 / LOT 21	
N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
	BOUNDARY LINE
	SETBACK LINE
RR SPK FND	RAILROAD SPIKE FOUND
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
DH FND	DRILL HOLE FOUND
BND w/ DH	BOUND w/ DRILL HOLE
FM	FORCE MAIN
S	SEWER LINE
G	GAS LINE
D	STORM DRAIN
W	POTABLE WATER LINE
	UNDERGROUND ELECTRIC
	OVERHEAD WIRES
100	CONTOUR LINE
97x3	SPOT ELEVATION
	EDGE OF PAVEMENT
	WOODS / TREE LINE
	UTILITY POLE (w/ GUY) (w/ LIGHT)
	LIGHT POLE
	SHUTOFF/CURB STOP (WATER, GAS, SEWER)
	GATE VALVE
HYD.	HYDRANT
CB	CATCH BASIN
TMH	TELEPHONE MANHOLE
SMH	SEWER MANHOLE
DMH	DRAIN MANHOLE
FF	FINISHED FLOOR
INV.	INVERT
TBM	TEMPORARY BENCHMARK
TYP.	TYPICAL

**PROJECT ABUTTERS:**

TM/LOT	NAME
229/3	CITY OF PORTSMOUTH
229/7	RPL PROPERTIES, LLC
229/8	599 LAFAYETTE, LLC
231/8	STATE OF NEW HAMPSHIRE
243/1	155 GREENLEAF, LLC
243/2	OPERATION BLESSING
229/6	DOMER REALTY, LLC
229/6A	ST. NICHOLAS GREEK ORTHODOX CHURCH

**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	S15°17'27"W	14.20'
L2	S48°43'16"E	33.26'



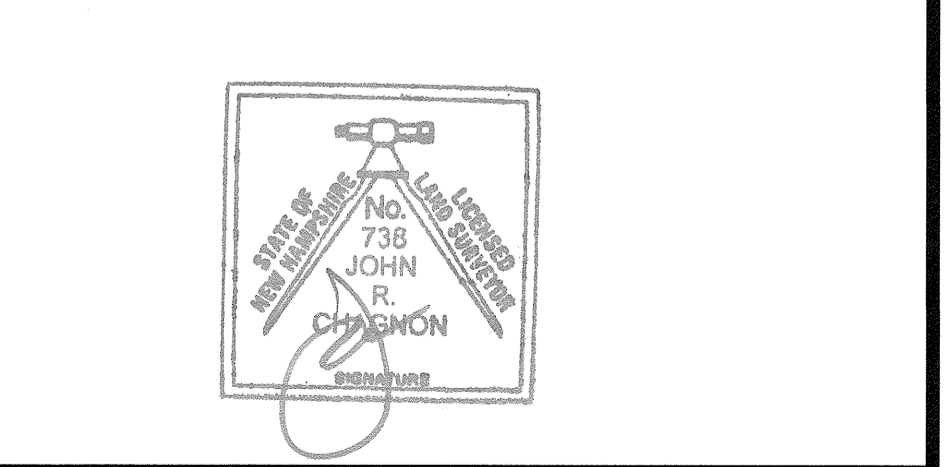
**NOTES:**

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 3301500270F, EFFECTIVE JANUARY 29, 2021.
- 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY (GW) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON TAX MAP 229 LOT 8B.
- 8) EASEMENTS & RESTRICTIONS:  
A) ROAD/UTILITY EASEMENT AREA: SEE C-3316 AND RCRD 2110/428 AND 2184/184. THIS EASEMENT WAS PARTIALLY TERMINATED ON 11/9/15; SEE RCRD 5669/0645.  
B) 30' RIGHT OF WAY: SEE D-8806 AND 5446/2589.  
C) MUTUAL PARKING AND ACCESS RIGHTS FOR LOTS 1-3 ON PLAN D-8806 ARE OF RECORD. RCRD 2343/128 AND 5446/2588.
- 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) THE 2011 NHDOT LAFAYETTE ROAD PROJECT IDENTIFIED THIS ENCROACHMENT.

**COMMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
3	ABUTTERS	3/24/24
2	CONTOURS, NOTE 6	1/24/24
1	ISSUED FOR APPROVAL	9/5/23
0	ISSUED FOR COMMENT	7/5/23

**REVISIONS**



SCALE: 1"=20' JULY 2023

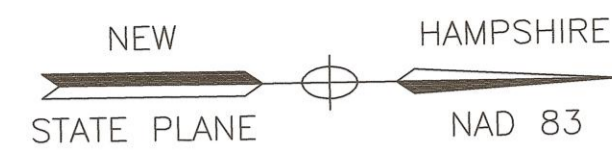
**EXISTING CONDITIONS PLAN**

**C1**

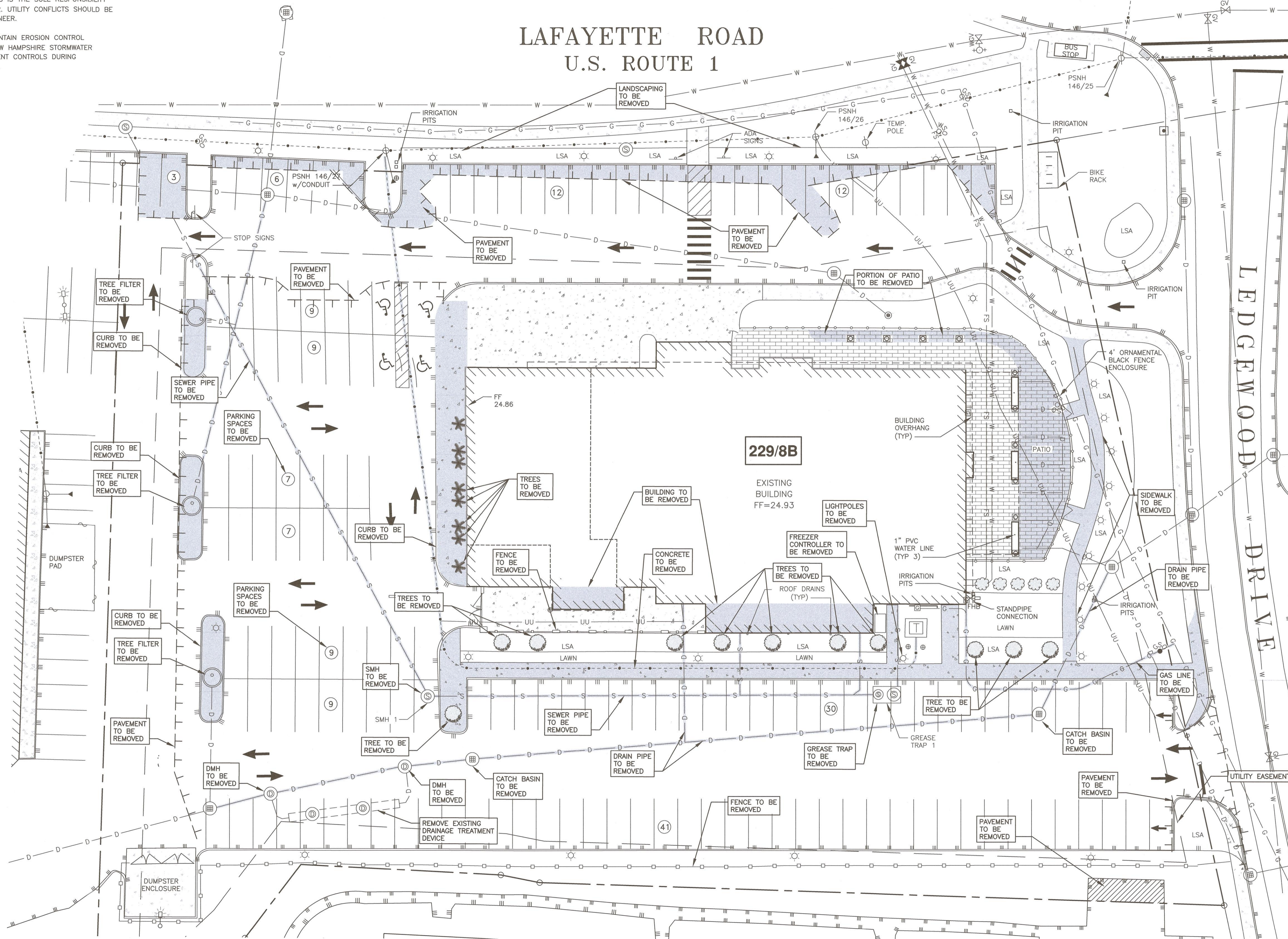


**GENERAL NOTES:**

- 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).



**LAFAYETTE ROAD  
U.S. ROUTE 1**



**AMBIT ENGINEERING, INC.**  
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

WWW.HALEYWARD.COM

- DEMOLITION NOTES**
- THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTOR'S 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.
  - 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.
  - 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.
  - 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.
  - SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT TRENCH IN AREAS WHERE PAVEMENT IS TO BE REMOVED.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.
  - 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.
  - 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.
  - 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 FINE 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.
  - 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.
  - 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.

**COMMERCIAL  
DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

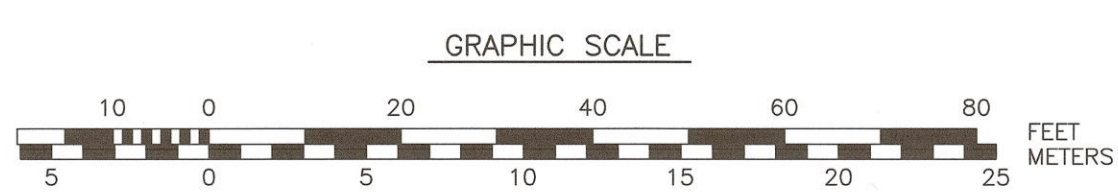
NO.	DESCRIPTION	DATE
3	PAVEMENT ENCROACHMENT REMOVAL	5/1/24
2	BUILDING & SIDEWALK DEMO	2/21/24
1	ISSUED FOR APPROVAL	9/5/23
0	ISSUED FOR COMMENT	7/5/23

SCALE: 1"=20'

JULY 2023

**DEMOLITION PLAN**

**C2**

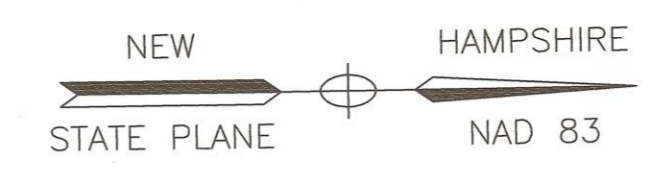




**IMPERVIOUS SURFACE AREAS**  
(TO PROPERTY LINE)

STRUCTURE	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	42434
SIDEWALK	4,604
PAVEMENT	30,890
CURB	266
RETAINING WALL	737
COBBLE BAND	551
<b>TOTAL</b>	<b>79482</b>
LOT SIZE	98,124
% IMPERVIOUS SURFACE	81.0%

**WAIVER REQUESTS:**  
SECTION 10.5B22.40 - SPECIAL SETBACK FROM LAFAYETTE ROAD  
SECTION 10.5B34.80 MIXED USE BUILDING: MAXIMUM DWELLING UNITS PER BUILDING  
SECTION - 10.5B41.80 - COMMUNITY SPACE COVERAGE  
SECTION 10.5B34.80 MIXED USE BUILDING: MAXIMUM BUILDING FOOTPRINT



**LAFAYETTE ROAD**  
**U.S. ROUTE 1**

**AMBIT ENGINEERING, INC.**  
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

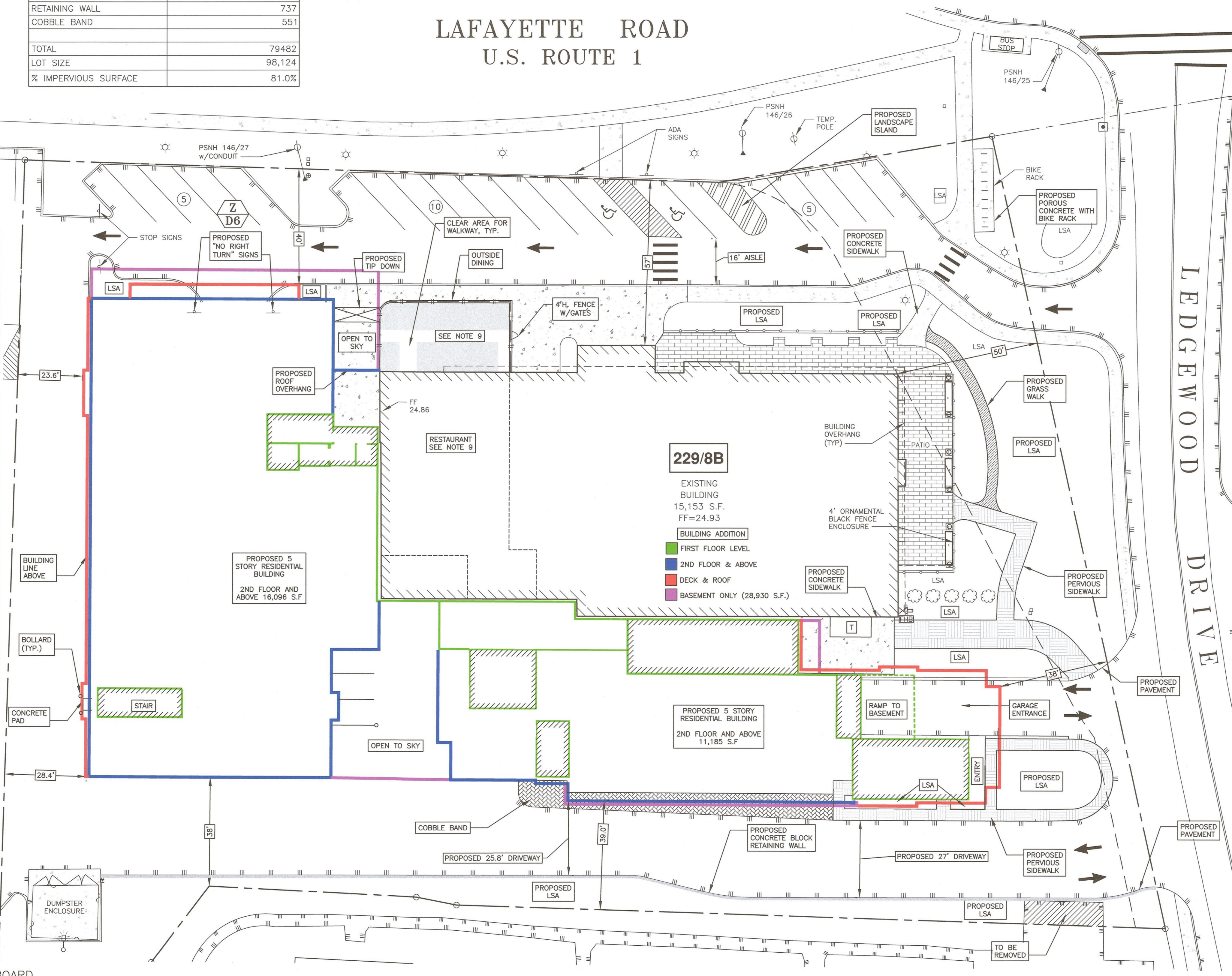
WWW.HALEYWARD.COM

- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
  - 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
  - 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 3301500270E, EFFECTIVE MAY 17, 2005
  - 4) EXISTING LOT AREA:  
98,124 S.F.  
2,2526 AC
  - 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
  - 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
  - 7) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED BUILDING ADDITION ON TAX MAP 229 LOT 8B.
  - 8) DESIGN BASED ON ARCHITECTURAL PLAN BY ARCOVE ARCHITECTS DATED 5/1/24.
  - 9) CONVERSION OF TUSCAN MARKETPLACE TO RESTAURANT (NORTHEASTERN THAI, LLC) APPROVED UNDER PERMIT: LU-22-254

**ZONING TABLE**

Zone	allowed	proposed
Zone	G1	
Height	5 stories or 60 ft. per Density Bonus 10.5B72.30; 4 stories or 50 ft. (+ density bonus 1 story or 10') 10.5B.22.20, at streets <60' row: 35' max <25' setback 45' max <50' setback 60' max <50' setback	<35/3 stories at street fronts <45/4 stories beyond <60/5 stories at center: Building A: 56'-9 13/16' +/- Building B: 57'-8 1/16' +/-
Penthouses	10' above allowed building height	n/a
Roof appurtenance	<10' above allowed height. Roof decks, roof gardens, and related structures and appurtenances shall not be counted in the building height limits.	<10' elevator & stair overruns
Facade Types	forecourt, recessed entry, dooryard, step, porch	recessed entry
Building Types	A Mixed-Use Building	A Mixed-Use Building
Setbacks (ft) *		
Front (principle)	70'-90' from cl of Lafayette Rd	Waiver for setback within public way
Front (secondary)	min 0' & max 50' from Lot Line at LedgeWood	38'
Side	Minimum side setback: 15 ft.	23.6'
Rear	20 ft min.	38.0'
Front lot line buildout commercial/mixed-use	75%	83.0%
Frontage, Lafayette	100 ft min	337.4'
Lot area (sf)	NR	
lot area per dwelling unit	Workforce Housing Incentive, 36 per acre = 81 units	72 units
Building Coverage, maximum	60%	43.0%
Footprint, max	24,000 sf	Waiver
ground floor area per use, max	NR	parking
Open space, minimum	20%	20.6'
permitted uses (G1)	multifamily, restaurant	multifamily
facade modulation length, max (ft)	100'	modulations < 100 ft
floor height above sidewalk, max	24'	8'
glazing, shopfront, min	50% ground floor	glazed and open > 50%
roof types(pitch)	ALL (flat roofs must have "parapet wall that acts as a structural expression of the building facade and its materials)	Flat & Sloped

- PORTSMOUTH APPROVAL CONDITIONS NOTES:**
- 1) 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.
  - 2) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
  - 3) ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.



**COMMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
8	REMOVE PARKING ENCROACHMENT	5/1/24
7	DRIVE RAMP	3/5/24
6	BUILDING REVISION, PARKING LAYOUT	2/21/24
5	SIGNAGE	2/6/24
4	TABLES & PARKING	1/24/24
3	LANDSCAPE AREA, IMPERVIOUS TABLE	1/2/24
2	IMPERVIOUS SURFACE TABLE	12/19/23
1	ISSUED FOR APPROVAL	11/20/23
0	ISSUED FOR COMMENT	8/31/23

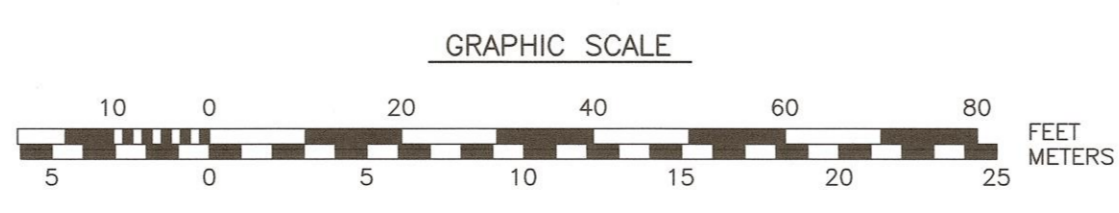
Professional Engineer Seal for John R. Chagnon, No. 738, State of New Hampshire.

Professional Engineer Seal for John R. Chagnon, No. 738, State of New Hampshire.

SCALE: 1"=20' JULY 2023

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



**SITE PLAN**

**C3**

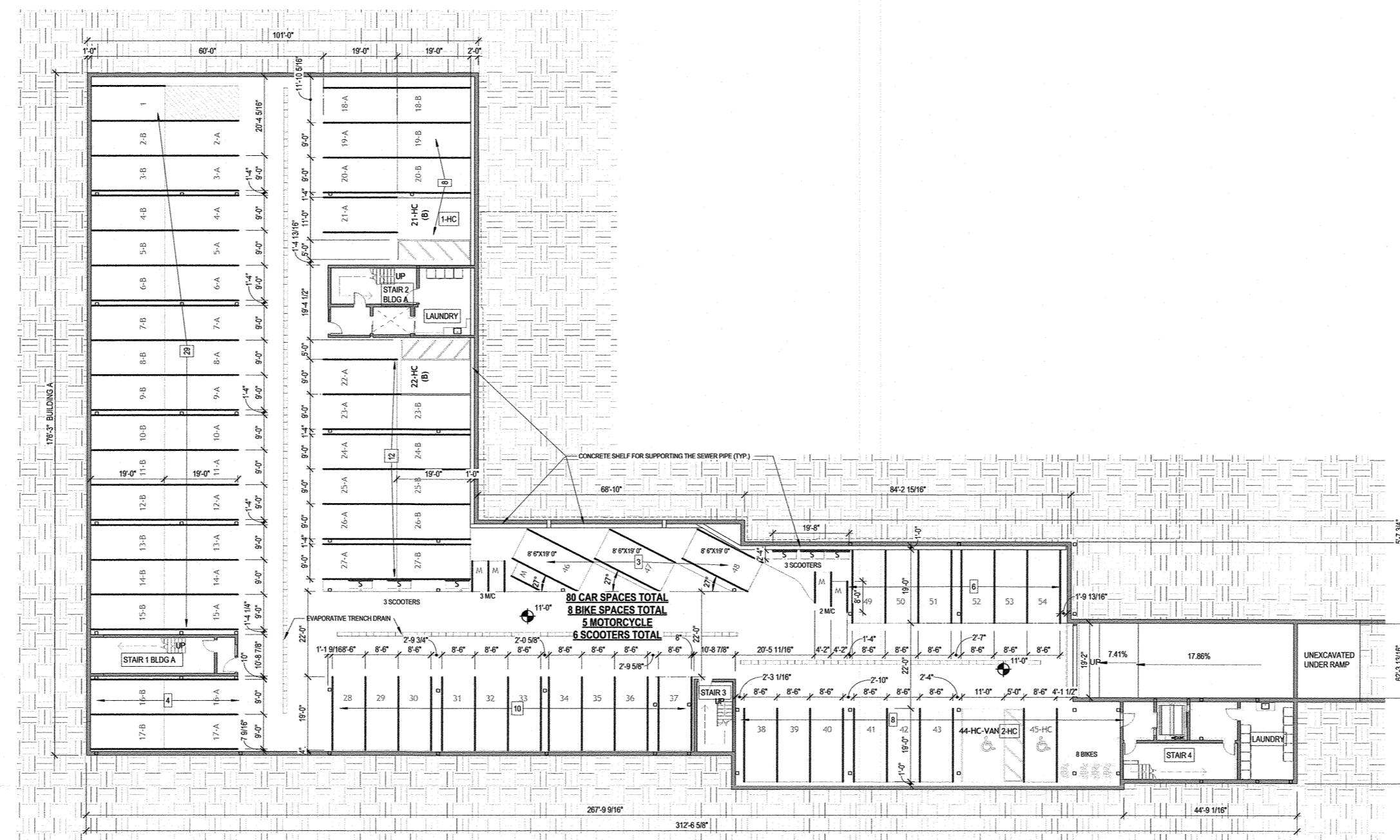
FB 259 PG 10 1397.04



**NOTES:**

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PURPOSE OF THIS PLAN IS TO SHOW PARKING IN GENERAL FOR THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 229 LOT 8B IN THE CITY OF PORTSMOUTH.
- 4) TANDEM SPACES SHALL BE ASSIGNED TO PARTICULAR UNITS TO CONFORM TO SECTION 10.1114.33
- 5) IF THE NHDOT REQUIRES THE PARKING ENCROACHMENT ON ROUTE 1 TO BE ELIMINATED AND THE PARKING NEEDS TO BE REVISED THEN THE ALTERNATIVE PARKING LAYOUT WILL BE CONSTRUCTED.
- 6) PARKING TALLY:  
ASSIGNED SPACES RESIDENTIAL: 86  
COMMERCIAL & NON-ASSIGNED SPACES: 87  
TOTAL SPACES: 173

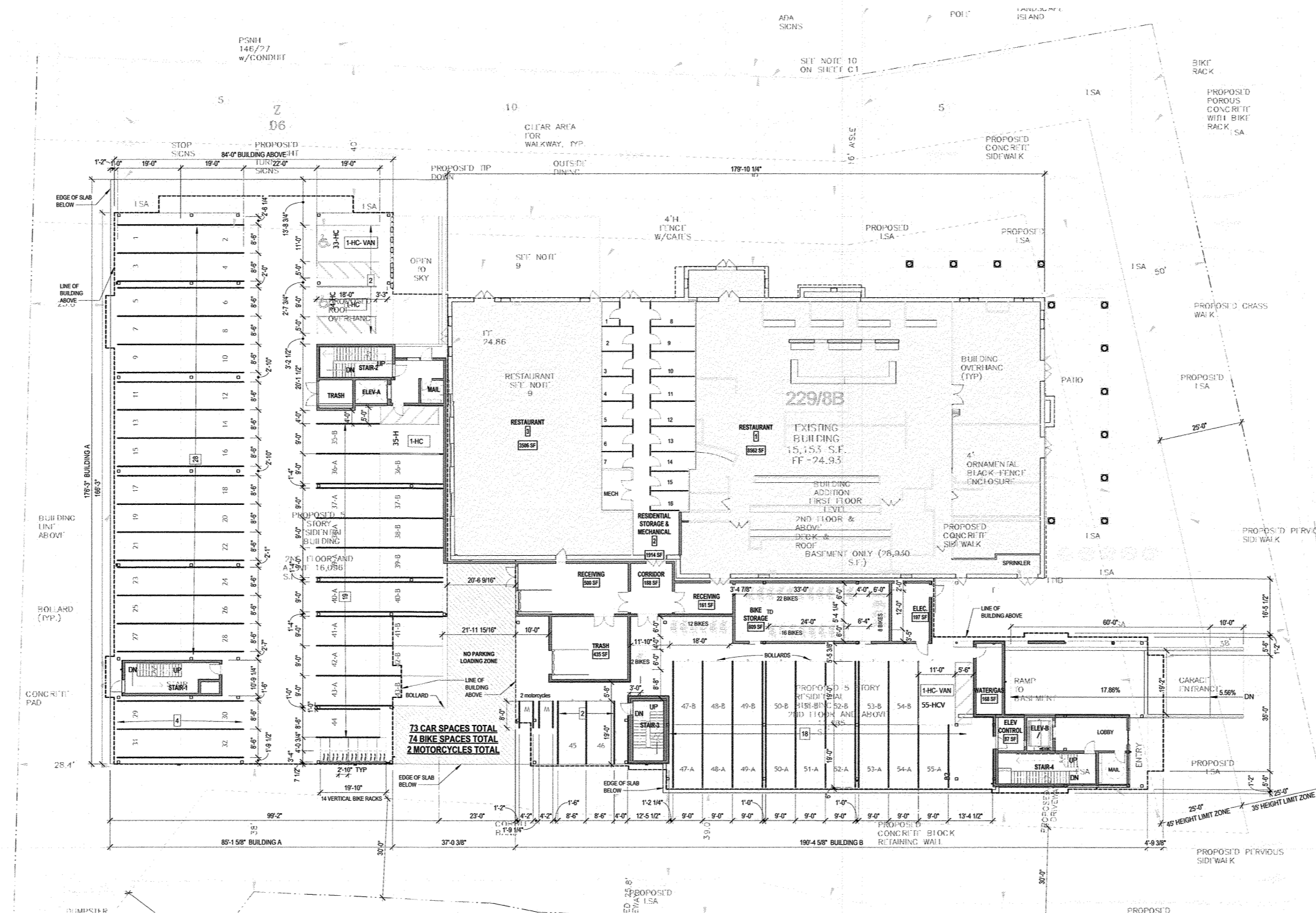
**PARKING ASSIGNMENT:**  
BASEMENT PARKING WILL BE ASSIGNED TO 54 RESIDENTIAL UNITS (26 STACKED/28 SINGLE).



**BASEMENT— 80 TOTAL SPACES NTS**

**PARKING ASSIGNMENT:**  
LEVEL 1 STACKED PARKING WILL BE ASSIGNED TO RESIDENTIAL UNITS— 3 STACKED, AND COMMERCIAL UNITS (EMPLOYEE & VALET) 15 STACKED.  
SINGLE SPACES ARE NOT ASSIGNED.

20 OUTDOOR SPACES ARE NOT ASSIGNED.



**LEVEL 1— 73 TOTAL SPACES NTS**

**COMMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

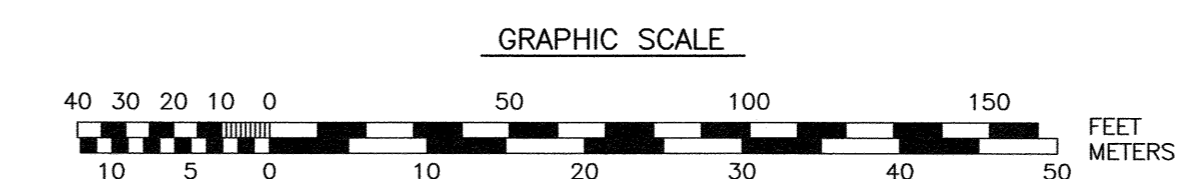
8	PARKING LAYOUTS	5/1/24
7	PARKING LAYOUTS	3/27/24
6	PARKING LAYOUTS	3/5/24
5	COMBINE PARKING PLANS, ALTERNATIVE	2/21/24
4	SEWER SIZE, NOTE 4	2/6/24
3	PARKING TABLES, PARKING LAYOUT	1/24/24
2	PARKING TABLES	12/19/23

NO.	DESCRIPTION	DATE
REVISIONS		

SCALE: , NTS JULY 2023

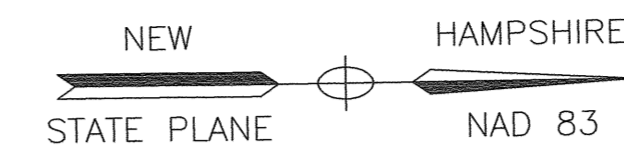
**PARKING PLAN**

**C4**

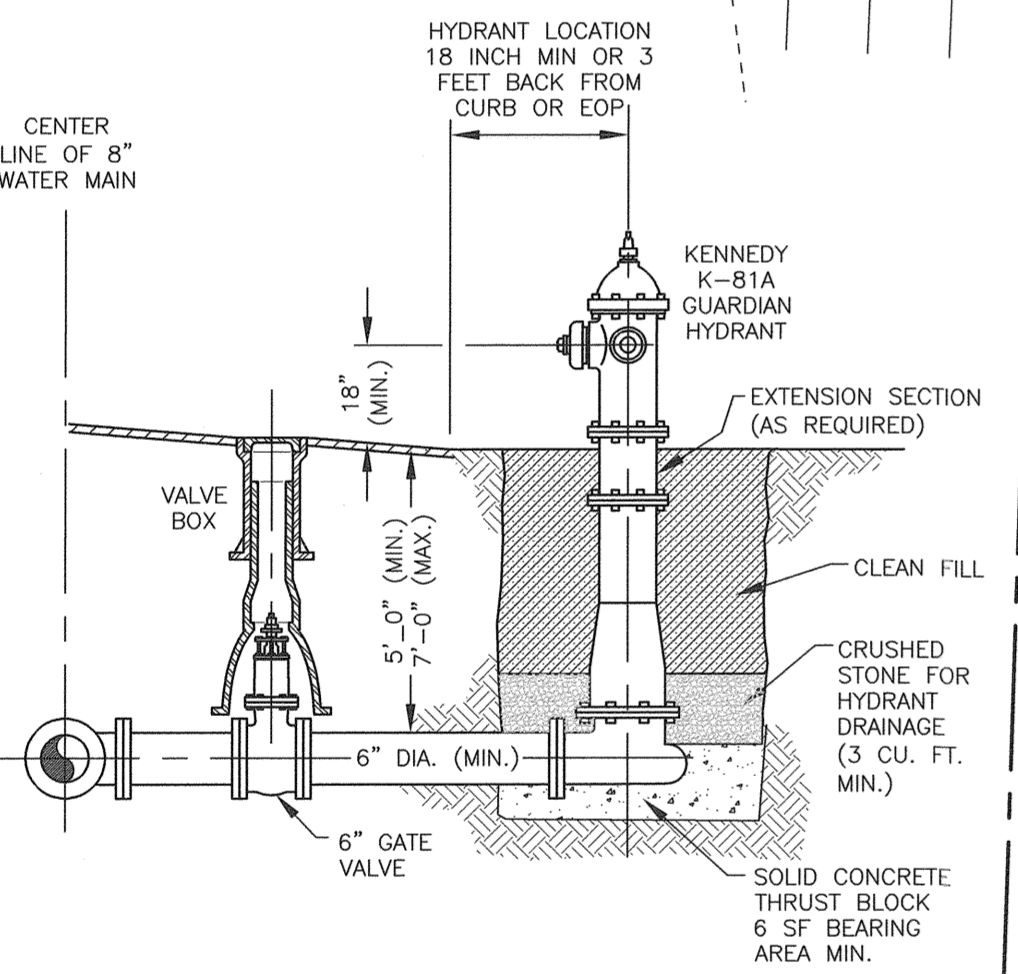
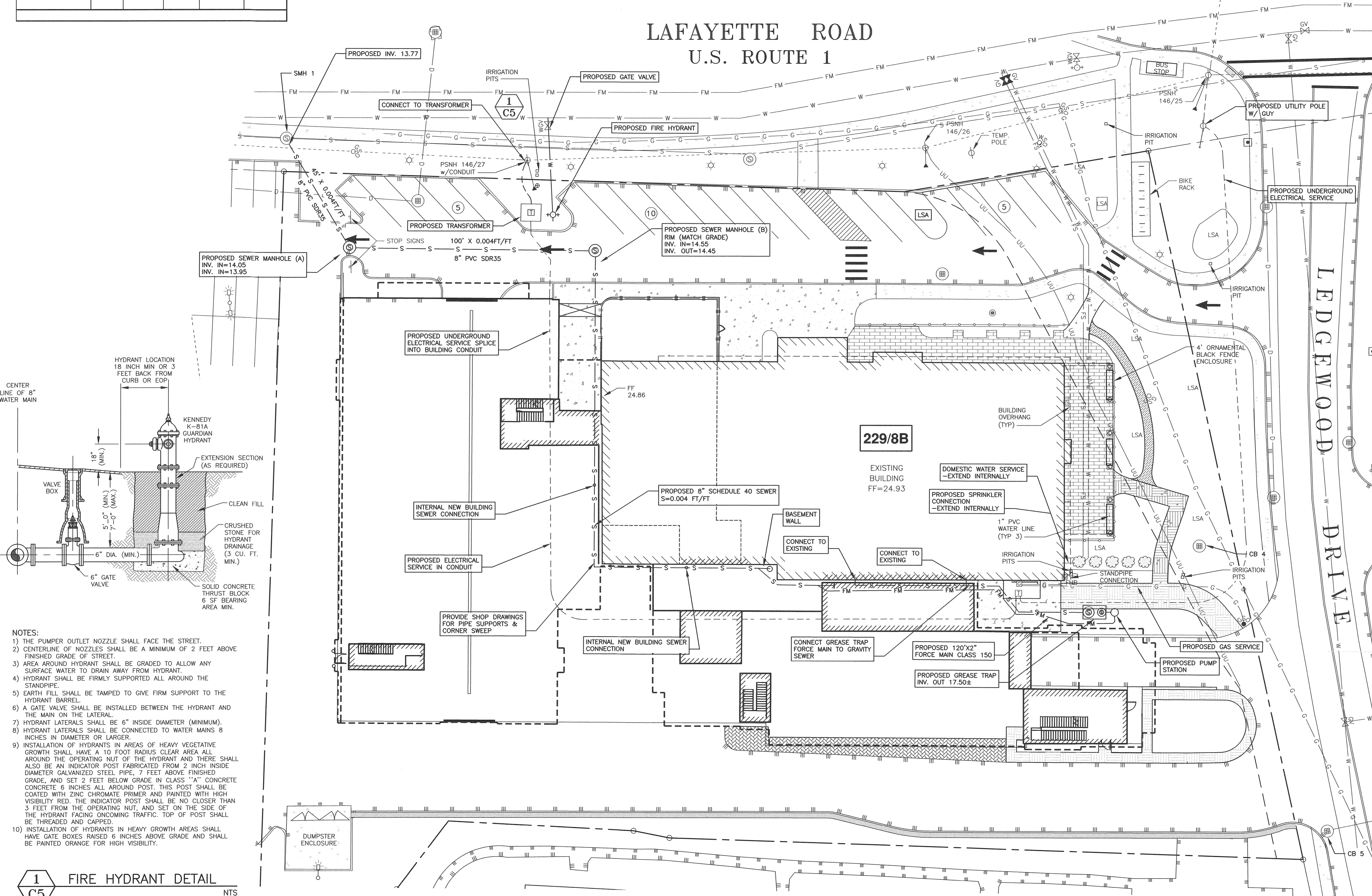




EXISTING SEWER STRUCTURE SCHEDULE					
STRUCTURE	PROP/EX	RIM	PIPE SIZE	INVERT	DIRECTION
SMH 1	EX	22.56	8" CI	13.26	IN
GREASE TRAP 1	EX	23.63		17.58	OUT
GREASE TRAP 1	EX	23.63		17.23	OUT



## LAFAYETTE ROAD U.S. ROUTE 1

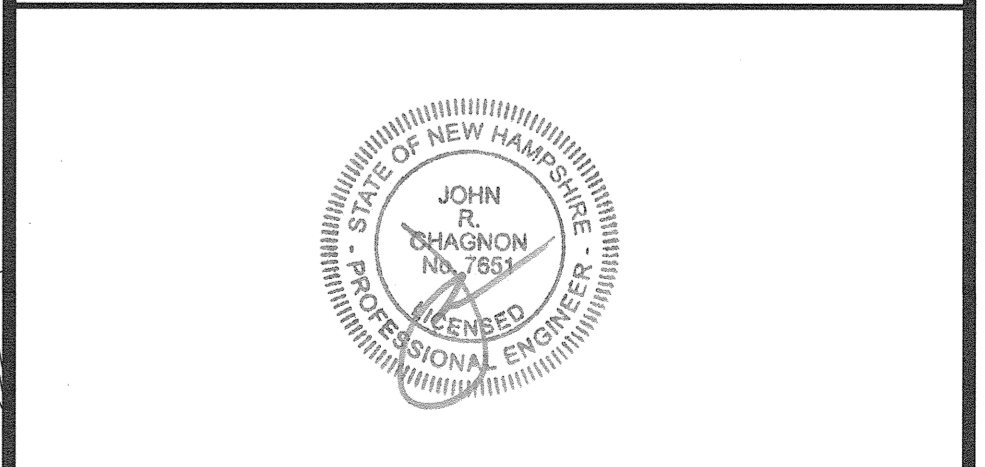


- NOTES:**
- 1) THE PUMPER OUTLET NOZZLE SHALL FACE THE STREET.
  - 2) CENTERLINE OF NOZZLES SHALL BE A MINIMUM OF 2 FEET ABOVE FINISHED GRADE OF STREET.
  - 3) AREA AROUND HYDRANT SHALL BE GRADED TO ALLOW ANY SURFACE WATER TO DRAIN AWAY FROM HYDRANT.
  - 4) HYDRANT SHALL BE FIRMLY SUPPORTED ALL AROUND THE STANDPIPE.
  - 5) EARTH FILL SHALL BE TAMPED TO GIVE FIRM SUPPORT TO THE HYDRANT BARREL.
  - 6) A GATE VALVE SHALL BE INSTALLED BETWEEN THE HYDRANT AND THE MAIN ON THE LATERAL.
  - 7) HYDRANT LATERALS SHALL BE 6" INSIDE DIAMETER (MINIMUM).
  - 8) HYDRANT LATERALS SHALL BE CONNECTED TO WATER MAINS 8 INCHES IN DIAMETER OR LARGER.
  - 9) INSTALLATION OF HYDRANTS IN AREAS OF HEAVY VEGETATIVE GROWTH SHALL HAVE A 10 FOOT RADIUS CLEAR AREA ALL AROUND THE OPERATING NUT OF THE HYDRANT AND THERE SHALL ALSO BE AN INDICATOR POST FABRICATED FROM 2 INCH INSIDE DIAMETER GALVANIZED STEEL PIPE, 7 FEET ABOVE FINISHED GRADE, AND SET 2 FEET BELOW GRADE IN CLASS "A" CONCRETE CONCRETE 6 INCHES ALL AROUND POST. THIS POST SHALL BE COATED WITH ZINC CHROMATE PRIMER AND PAINTED WITH HIGH VISIBILITY RED. THE INDICATOR POST SHALL BE NO CLOSER THAN 3 FEET FROM THE OPERATING NUT, AND SET ON THE SIDE OF THE HYDRANT FACING ONCOMING TRAFFIC. TOP OF POST SHALL BE THREADED AND CAPPED.
  - 10) INSTALLATION OF HYDRANTS IN HEAVY GROWTH AREAS SHALL HAVE GATE BOXES RAISED 6 INCHES ABOVE GRADE AND SHALL BE PAINTED ORANGE FOR HIGH VISIBILITY.

- 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) SEWER FLOW CALCULATION  
EXISTING RESTAURANTS(S)  
225 SEATS X 10 GPD/SEAT = 2,250 GPD  
  
PROPOSED RESIDENCES  
106 BEDROOMS X 80 GPD/BEDROOM = 8,480 GPD  
  
TOTAL FLOW = 10,730 GPD
  - 5) FINAL SEWER PIPE DESIGN (BUILDING PERMIT PHASE) SHALL BE REVIEWED AND APPROVED BY PORTSMOUTH DPW.
  - 6) FIRE HYDRANT WILL BE PRIVATE AND SUBJECT TO CITY OF PORTSMOUTH DPW REGULATIONS AND MAINTENANCE.

### COMMERCIAL DEVELOPMENT 581 LAFAYETTE ROAD PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
7	PARKING, TRANSFORMER, HYDRANT	5/1/24
6	NOTE 5, HYDRANT	3/27/24
5	BUILDING & SEWER	3/5/24
4	TRANSFORMER, NOTE 4	2/6/24
3	FORCE MAIN	1/24/24
2	GREASE TRAP	12/19/23
1	ISSUED FOR APPROVAL	11/20/23
0	ISSUED FOR COMMENT	5/8/23



SCALE: 1"=20' FEBRUARY 2023

UTILITY PLAN **C5**











# MIXED USE DEVELOPMENT

## 581 LAFAYETTE ROAD PORTSMOUTH, NEW HAMPSHIRE SITE PERMIT PLANS

**OWNER:**

ATLAS COMMONS, LLC  
3 PLEASANT STREET  
SUITE #400  
PORTSMOUTH, NH 03801

**LAND SURVEYOR & CIVIL ENGINEER:**

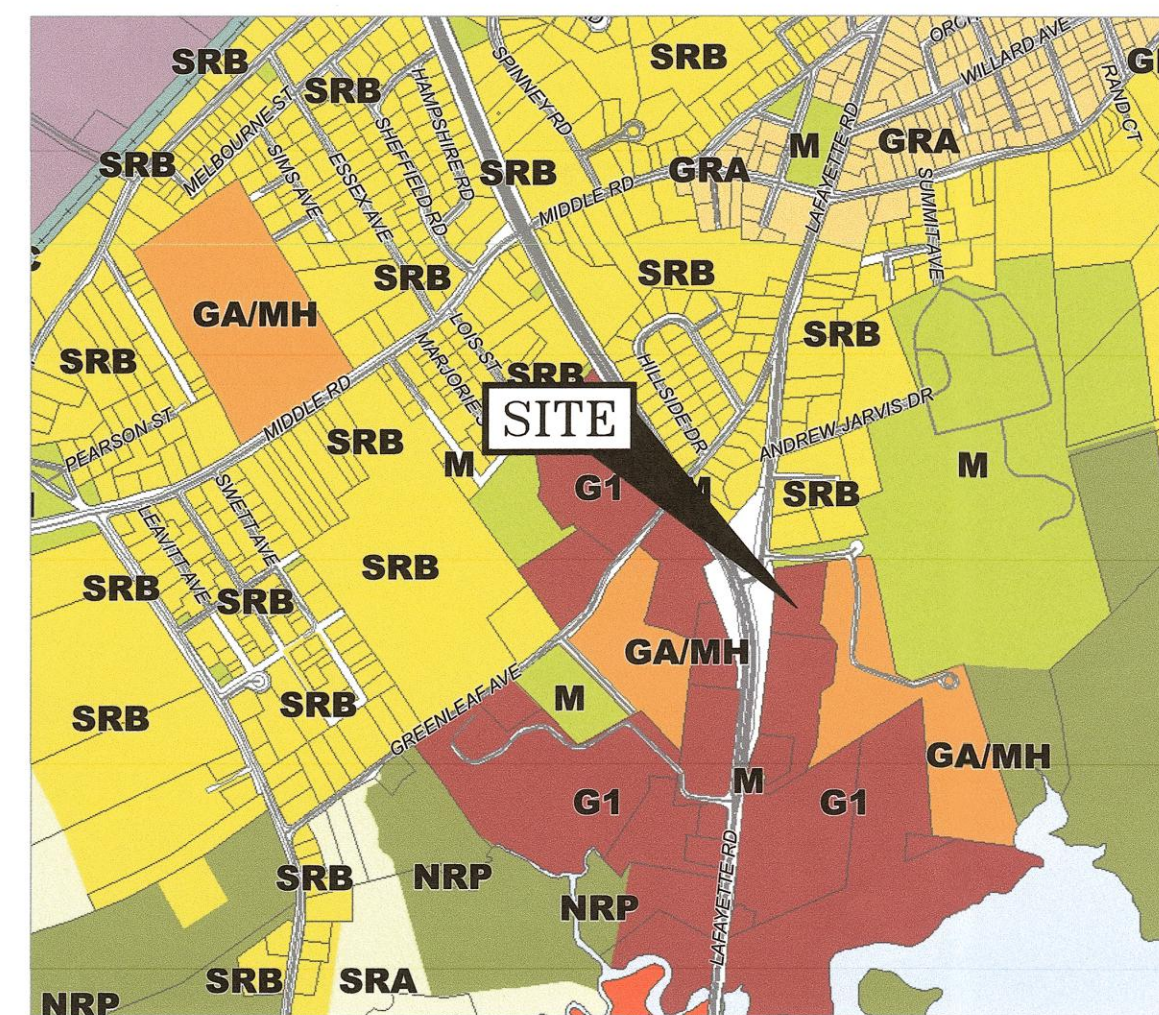
HALEY WARD, INC.  
200 GRIFFIN ROAD, UNIT 3  
PORTSMOUTH, N.H. 03801  
Tel. (603) 430-9282  
Fax (603) 436-2315

**ARCHITECT:**

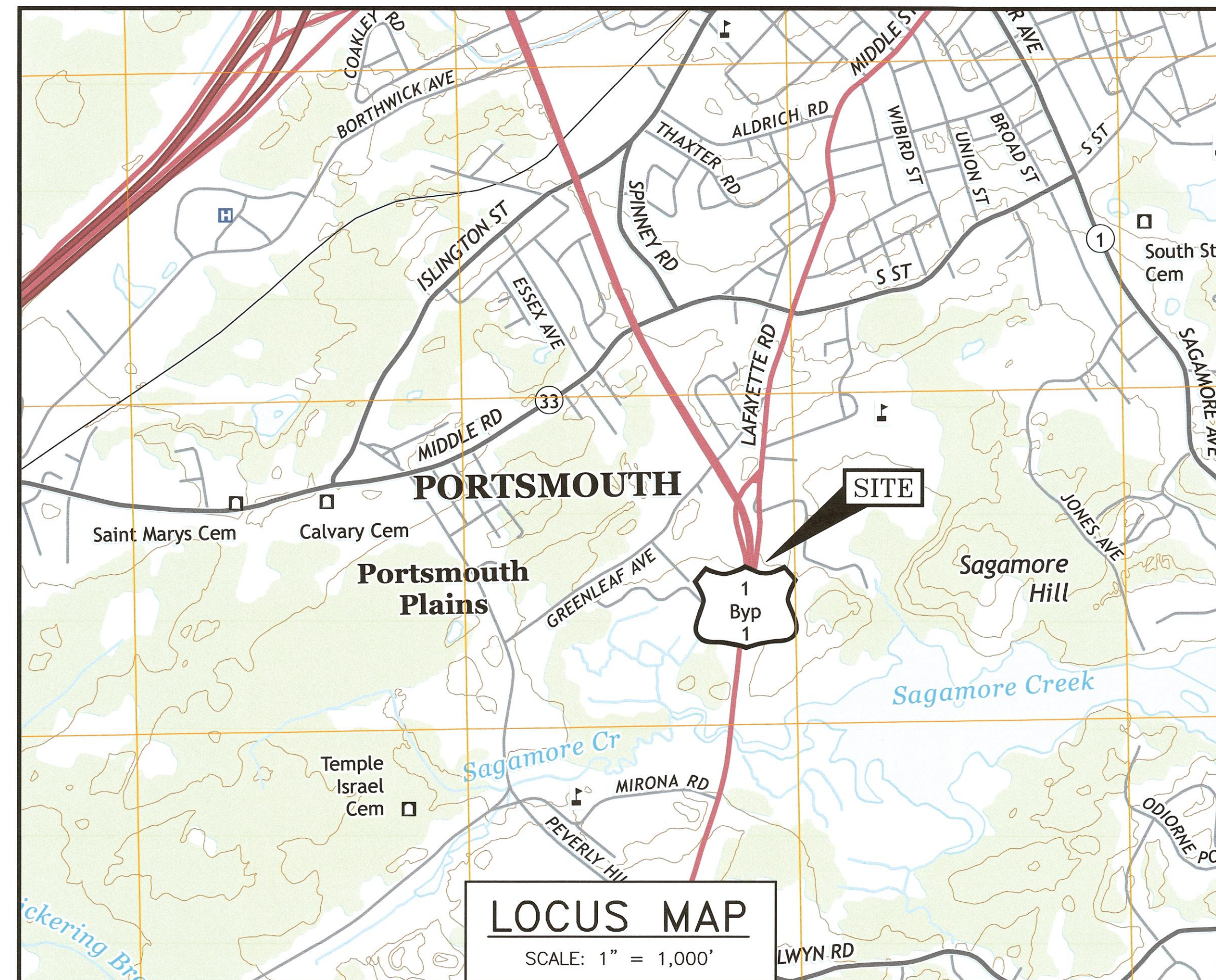
ARCOVE ARCHITECTS  
3 CONGRESS STREET, SUITE 1  
PORTSMOUTH, NH 03801  
TEL. (603) 988-0042

**LANDSCAPE ARCHITECT:**

TERRA FIRMA LANDSCAPE  
ARCHITECTURE  
163A COURT STREET  
PORTSMOUTH, NH 03801  
TEL. (603) 430-8388



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
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



**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
---	---	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)
⊕	⊕	GATE VALVE
⊕	⊕	HYDRANT
⊕	⊕	CATCH BASIN
⊕	⊕	SEWER MANHOLE
⊕	⊕	DRAIN MANHOLE
⊕	⊕	TELEPHONE MANHOLE
⊕	⊕	PARKING SPACE COUNT
⊕	⊕	PARKING METER
LSA	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	AC	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL	EL	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL



**INDEX OF SHEETS**

DWG No.	Description
-	COMMUNITY SPACE & EASEMENT PLAN
C1	EXISTING CONDITIONS PLAN
C2	DEMOLITION PLAN
C3	SITE PLAN
L1-L3	LANDSCAPE PLANS - ON SITE & OFF SITE
LT1	LIGHTING PLAN
C4	PARKING PLAN
C5	UTILITY PLAN
C6	GRADING, DRAINAGE, EROSION CONTROL PLAN
C7	OPEN SPACE PLAN
C8	ON-SITE COMMUNITY SPACE PLAN
C8.1	OFF-SITE LANDSCAPE MAINTENANCE AREA
C9	PUBLIC REALM PLAN
C10	PUBLIC REALM PLAN
T1 & T2	TURNING PLANS
D1 - D6	EROSION CONTROL NOTES AND DETAILS
PB1.00-1.06	FLOOR PLANS
PB2.00-2.02	ELEVATIONS
PB3.01	RENDERINGS

**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:**  
UNIL  
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 PLANS**  
**MIXED USE DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

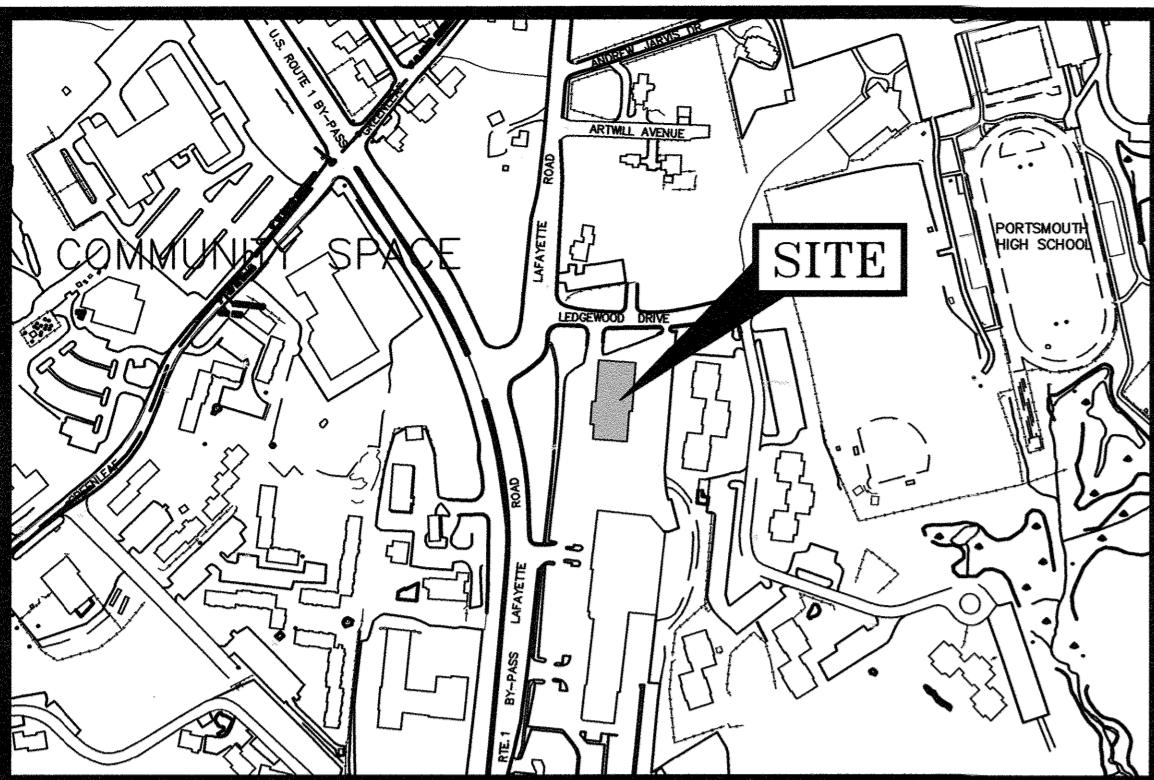


200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

WWW.HALEYWARD.COM

PLAN SET SUBMITTAL DATE: 27 MARCH 2024





LOCATION MAP SCALE: 1" = 400'±

**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	S15°17'27"W	14.20'
L2	S48°43'16"E	33.26'

**COMMUNITY SPACE**

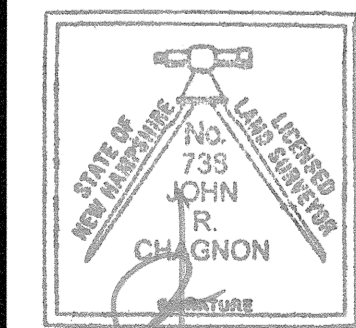
- 6,120 S.F. OF POCKET PARK
- 1,294 S.F. OF OUTDOOR DINING CAFE
- PROPOSED COMMUNITY SPACE 7,414 S.F.  
LOT AREA 98,124 S.F.
- COMMUNITY SPACE REQUIRED: 10%  
(PER SECTION 10.5B41.80.2)
- COMMUNITY SPACE PROVIDED: 7.6%
- COMMUNITY SPACE USES  
(PER SECTION 10.5B102)
- PROPOSED USES: OUTDOOR DINING CAFE  
POCKET PARK

**MAINTENANCE AREA**

9,351 S.F. OF AREA WHERE THE LANDSCAPING WILL BE MAINTAINED BY THE OWNER OF TAX MAP 229 LOT 8B.

**ABUTTERS**

- 229 8** N/F 599 LAFAYETTE LLC  
C/O BAKER PROPERTIES  
953 ISLINGTON STREET #230  
PORTSMOUTH, NH 03801  
5592/0456
- 229 3** CITY OF PORTSMOUTH  
SCHOOL  
PO BOX 628  
PORTSMOUTH, NH 03801  
1985/0379
- 231 8** STATE OF NEW HAMPSHIRE  
STATE HOUSE  
CONCORD, NH 03301  
2303/0042
- 243 1** N/F 155 GREENLEAF LLC  
549 US HIGHWAY 1 BYPASS  
PORTSMOUTH, NH 03801  
6127/1245
- 243 2** N/F OPERATION BLESSING MASTER CARD  
600 LAFAYETTE ROAD  
PORTSMOUTH, NH 03801
- 229 6** N/F DOMER REALTY LLC  
545 LAFAYETTE ROAD  
PORTSMOUTH, NH 03801  
4231/1881
- 229 6A** N/F ST. NICHOLAS GREEK ORTHODOX CHURCH  
40 ANDREW JARVIS DRIVE  
PORTSMOUTH, NH 03801  
2410/0505

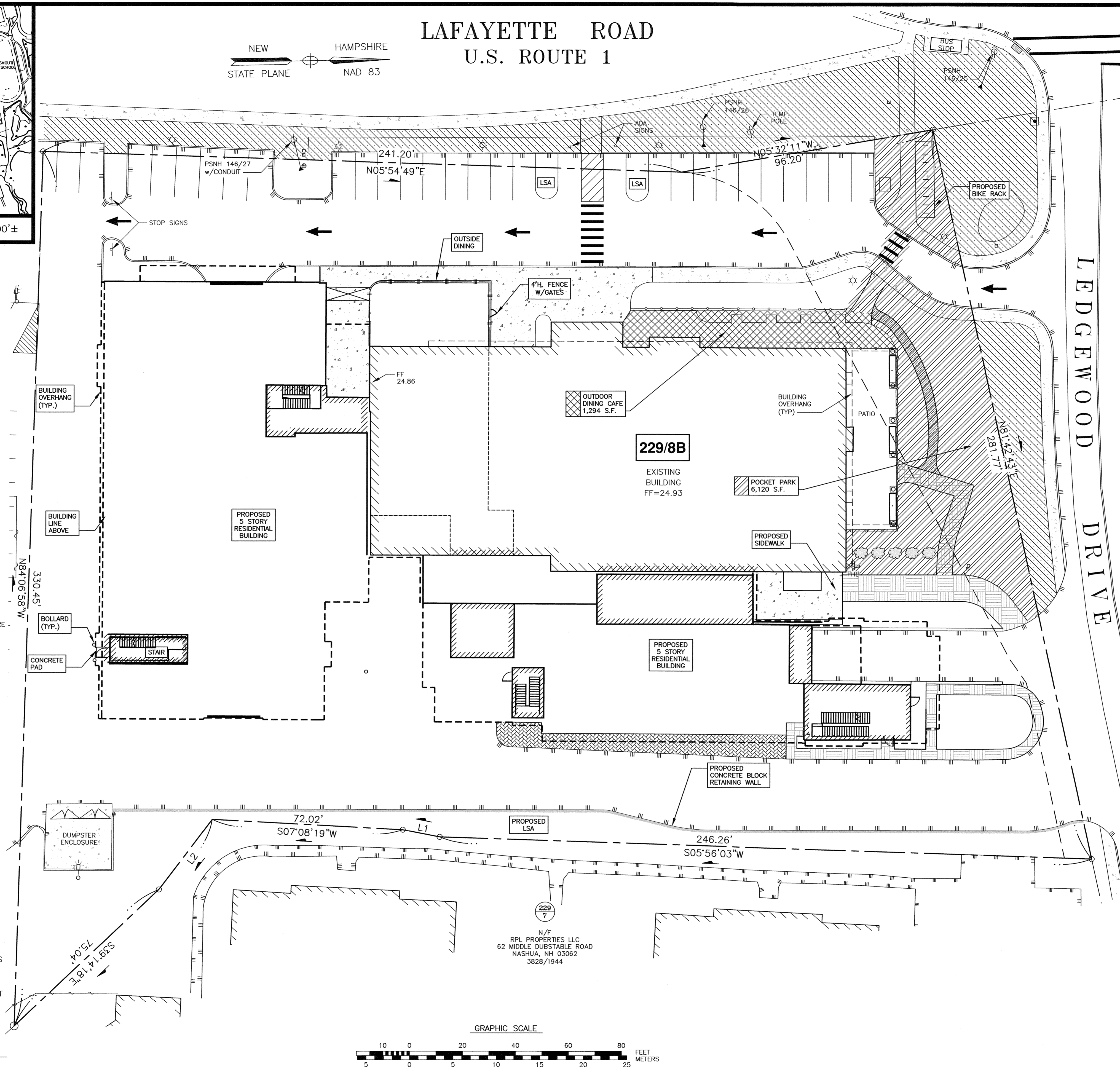
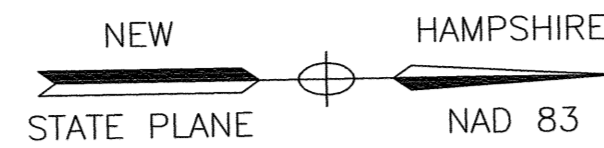


I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

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.

*JRC*  
JOHN R. CHAGNON, LLS 738  
DATE 3-24-24

LAFAYETTE ROAD  
U.S. ROUTE 1



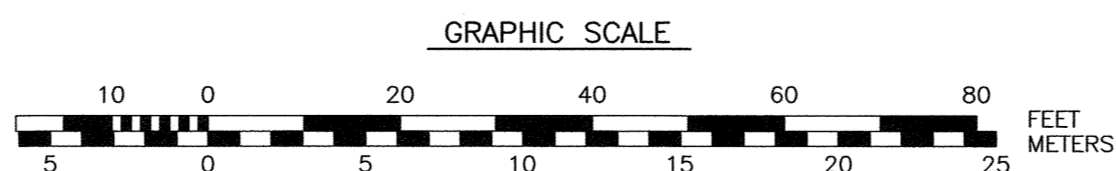
WWW.HALEYWARD.COM  
200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.436.2315

**NOTES:**

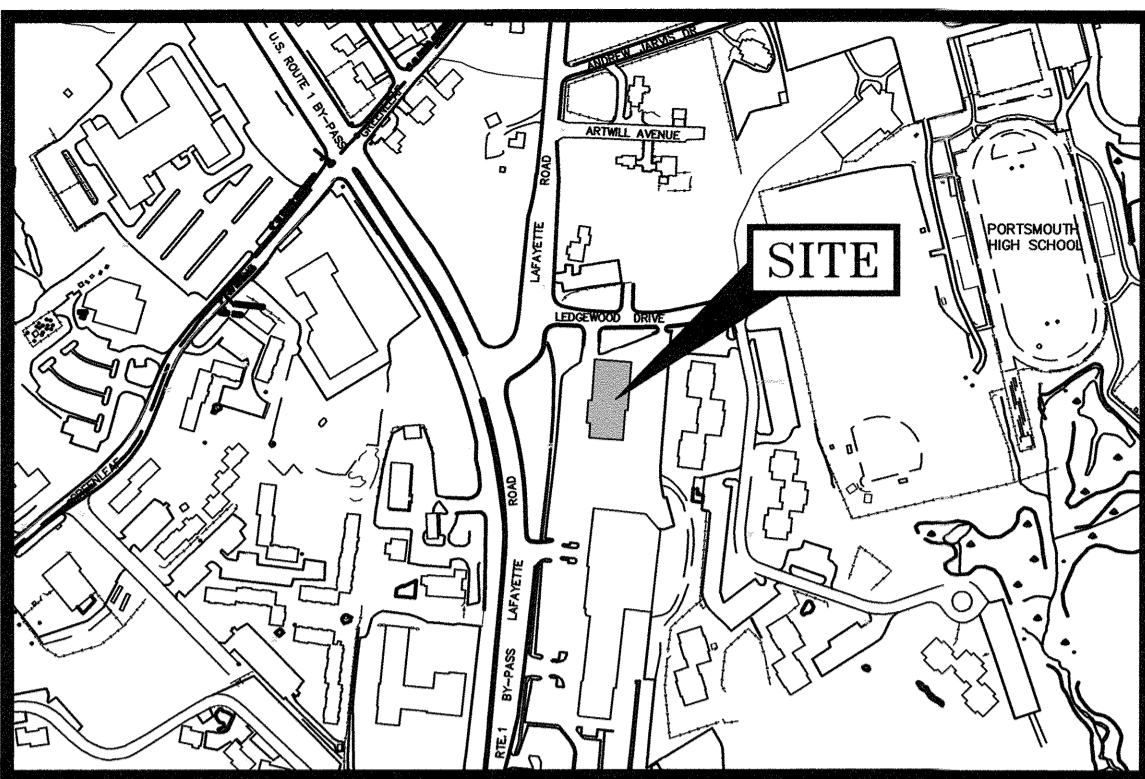
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270F, EFFECTIVE JANUARY 29, 2021
- 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE COMMUNITY SPACE EASEMENT ON TAX MAP 229 LOT 8B AND THE ADDITIONAL OFF-SITE AREA WHERE CITY LANDSCAPE MAINTENANCE WILL BE THE RESPONSIBILITY OF THE TAX MAP 229 LOT 8B PROPERTY OWNER.

NO.	DESCRIPTION	DATE
2	TITLE, ABUTTERS	3/24/24
1	EASEMENT LOCATIONS	2/21/24
0	ISSUED FOR COMMENT	1/24/24

**581 LAFAYETTE ROAD  
COMMUNITY SPACE &  
EASEMENT PLAN  
TAX MAP 229 - LOT 8B  
TO  
THE CITY OF PORTSMOUTH  
OWNER  
ATLAS COMMONS, LLC  
PROPERTY LOCATED AT  
581 LAFAYETTE ROAD  
CITY OF PORTSMOUTH  
COUNTY OF ROCKINGHAM  
STATE OF NEW HAMPSHIRE**







LOCATION MAP SCALE: 1" = 400'±

**LEGEND**

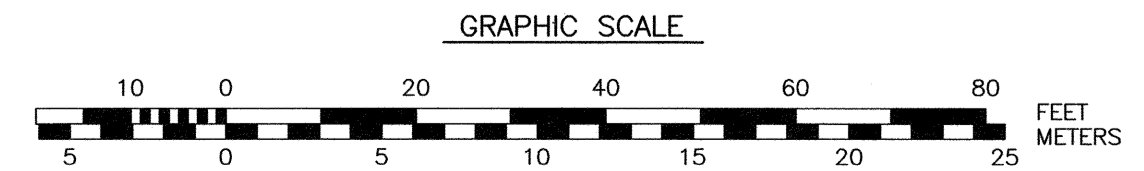
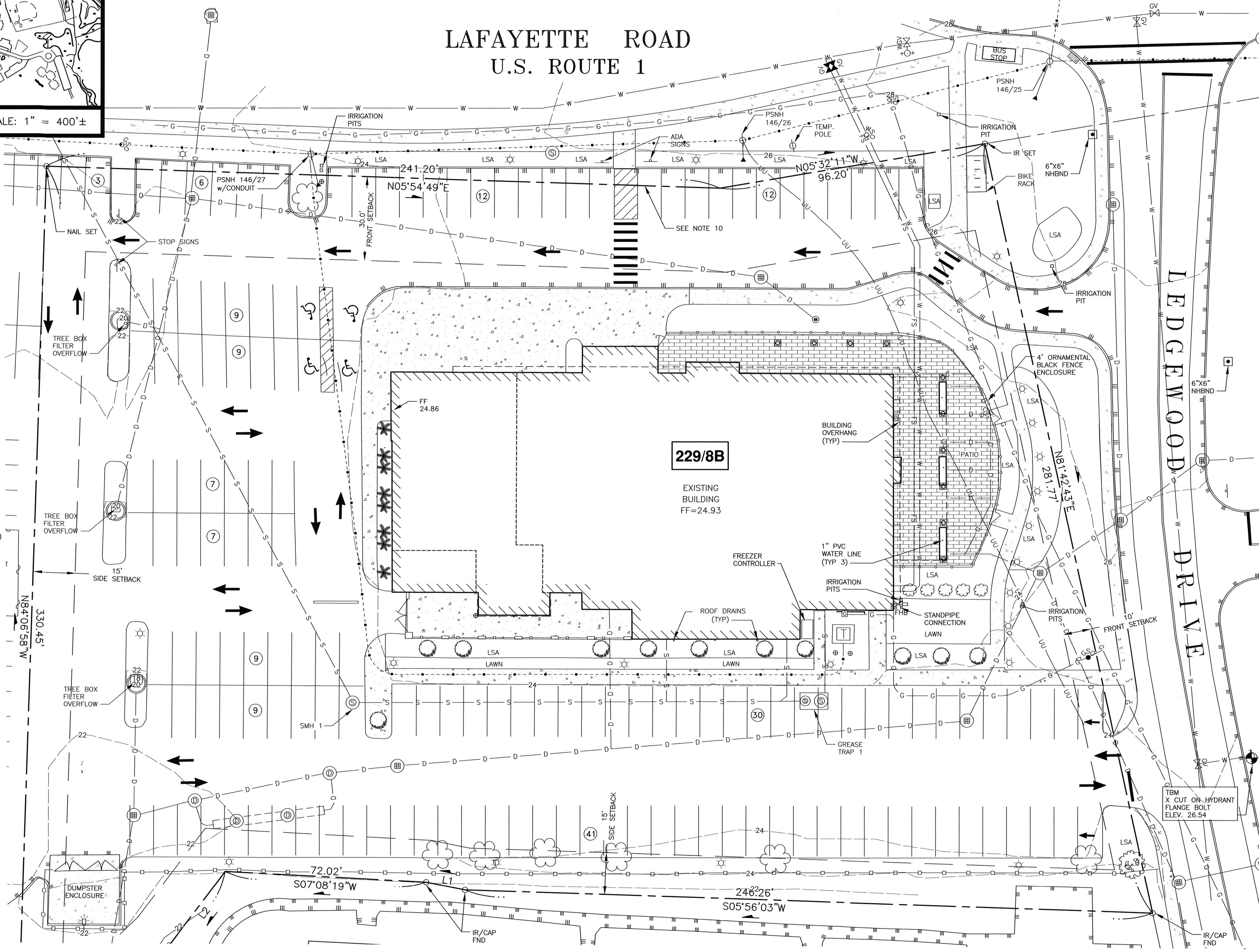
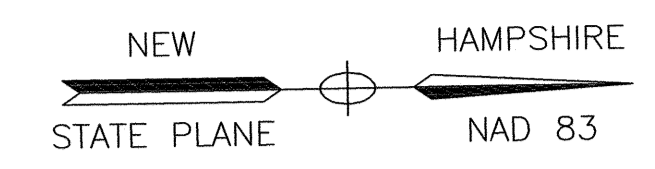
EXISTING	DESCRIPTION
MAP 124 / LOT 21	
N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
	BOUNDARY LINE
	SETBACK LINE
RR SPK FND	RAILROAD SPIKE FOUND
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
DH FND	DRILL HOLE FOUND
BND w/ DH	BOUND w/ DRILL HOLE
FM	FORCE MAIN
S	SEWER LINE
G	GAS LINE
D	STORM DRAIN
W	POTABLE WATER LINE
	UNDERGROUND ELECTRIC
	OVERHEAD WIRES
100	CONTOUR LINE
97x3	SPOT ELEVATION
	EDGE OF PAVEMENT
	WOODS / TREE LINE
	UTILITY POLE (w/ GUY) (w/ LIGHT)
	LIGHT POLE
	SHUTOFF/CURB STOP (WATER, GAS, SEWER)
	GATE VALVE
HYD.	HYDRANT
CB	CATCH BASIN
TMH	TELEPHONE MANHOLE
SMH	SEWER MANHOLE
DMH	DRAIN MANHOLE
FF	FINISHED FLOOR
INV.	INVERT
TBM	TEMPORARY BENCHMARK
TYP.	TYPICAL

**PROJECT ABUTTERS:**

TM/LOT	NAME
229/3	CITY OF PORTSMOUTH
229/7	RPL PROPERTIES, LLC
229/8	599 LAFAYETTE, LLC
231/8	STATE OF NEW HAMPSHIRE
243/1	155 GREENLEAF, LLC
243/2	OPERATION BLESSING
229/6	DOMER REALTY, LLC
229/6A	ST. NICHOLAS GREEK ORTHODOX CHURCH

**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	S15°17'27"W	14.20'
L2	S48°43'16"E	33.26'



**NOTES:**

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 3301500270F, EFFECTIVE JANUARY 29, 2021.
- 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY (GW) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON TAX MAP 229 LOT 8B.
- 8) EASEMENTS & RESTRICTIONS:  
A) ROAD/UTILITY EASEMENT AREA: SEE C-3316 AND RCRD 2110/428 AND 2184/184. THIS EASEMENT WAS PARTIALLY TERMINATED ON 11/9/15; SEE RCRD 5669/0645.  
B) 30' RIGHT OF WAY: SEE D-8806 AND 5446/2589.  
C) MUTUAL PARKING AND ACCESS RIGHTS FOR LOTS 1-3 ON PLAN D-8806 ARE OF RECORD. RCRD 2343/128 AND 5446/2588.
- 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) THE 2011 NHDOT LAFAYETTE ROAD PROJECT IDENTIFIED THIS ENCROACHMENT.

**COMMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
3	ABUTTERS	3/24/24
2	CONTOURS, NOTE 6	1/24/24
1	ISSUED FOR APPROVAL	9/5/23
0	ISSUED FOR COMMENT	7/5/23

REVISIONS

SCALE: 1"=20' JULY 2023

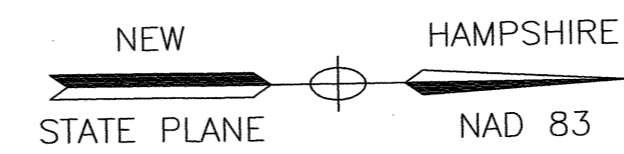
**EXISTING CONDITIONS PLAN**

**C1**

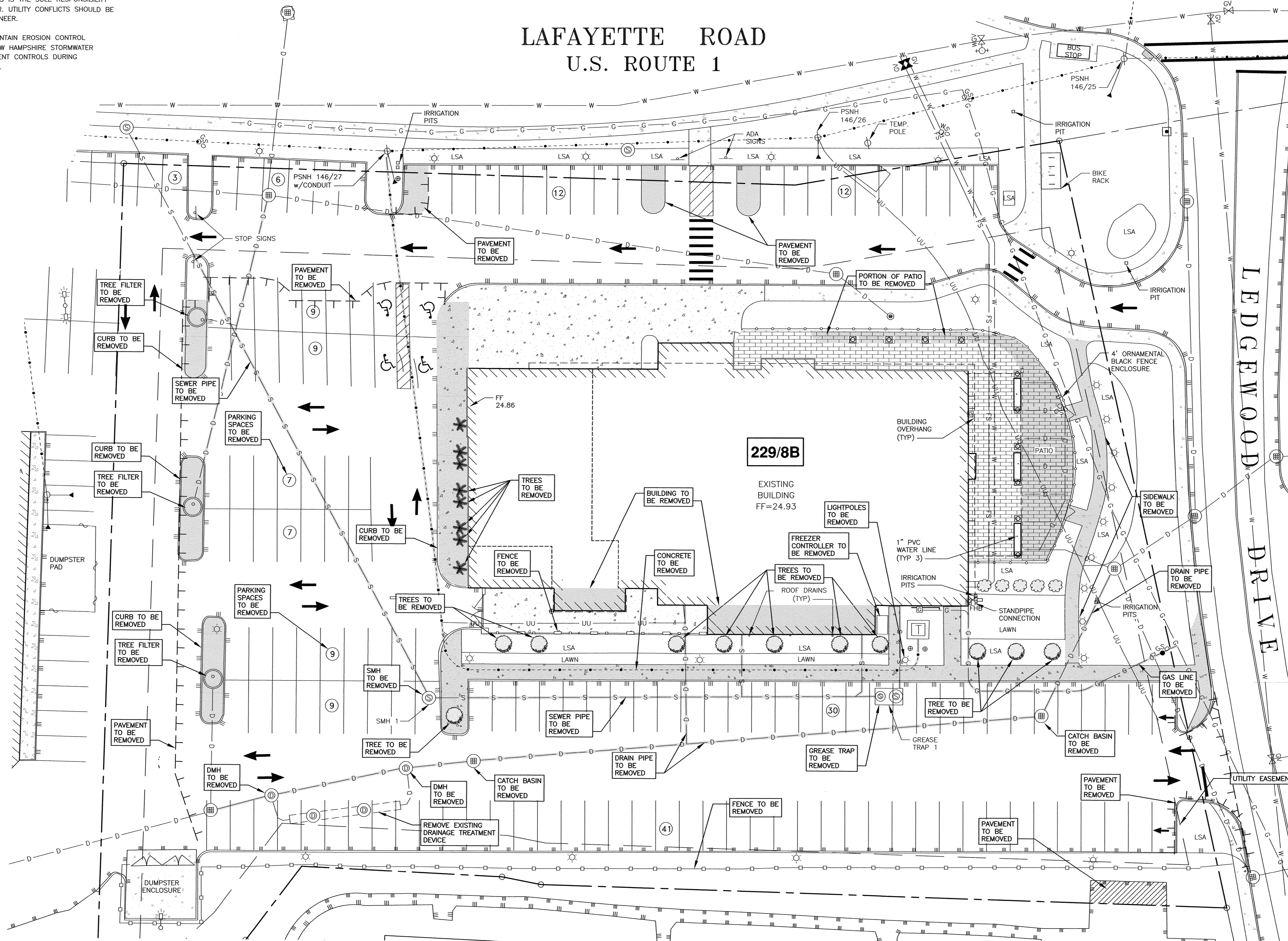


**GENERAL NOTES:**

- 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).



**LAFAYETTE ROAD  
U.S. ROUTE 1**

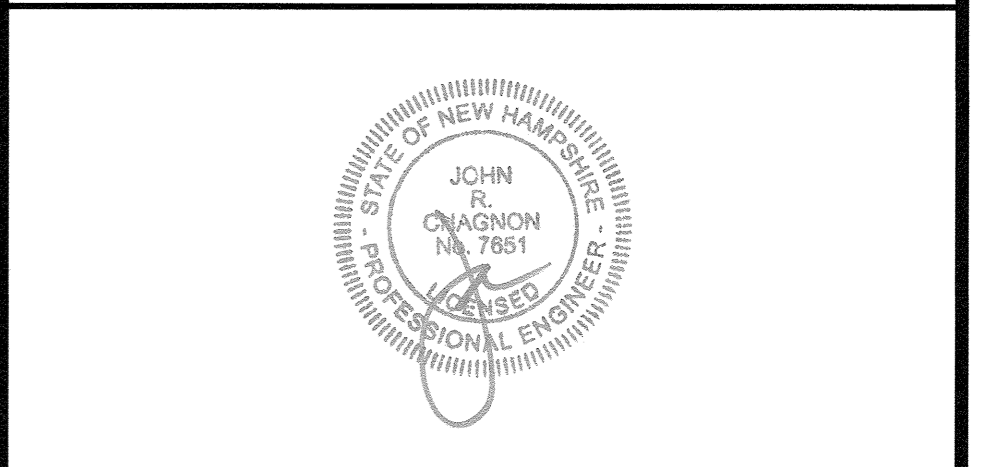


**DEMOLITION NOTES**

- 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 INTERRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPAIRED OR REPARDED 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/ DEMOLITION PERMITS 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) 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 SOCK 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.
- J) 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.
- K) 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.

**COMMERCIAL  
DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	BUILDING & SIDEWALK DEMO	2/21/24
1	ISSUED FOR APPROVAL	9/5/23
0	ISSUED FOR COMMENT	7/5/23



SCALE: 1"=20' JULY 2023

**DEMOLITION  
PLAN**

**C2**



ZONING TABLE

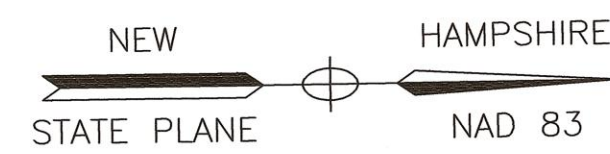
Zone	allowed	proposed
Height	5 stories or 60 ft. per Density Bonus 10.5B22.30: 4 stories or 50 ft. (+ density bonus 1 story or 10') 10.5B.22.30, at streets <100' wide: 35' max <25' setback 45' max <50' setback 60' max <50' setback.	<5 1/2 stories at street front <4 1/2 stories beyond <10 1/2 stories at center: Building A: 56'-9 1/2" +/- Building B: 57'-8 1/2" +/-
Permitted uses	10' above allowed building height	n/a
Roof appurtenance	<10' above allowed height. Roof decks, roof gardens, and related structures and appurtenances shall not be counted in the building height limits.	<10' elevator & stair overruns
Facade Types	forecourt, recessed entry, doorway, sign, porch	recessed entry
Building Types	A Mixed-Use Building	A Mixed-Use Building
Setbacks (ft) *	70'-90' from rd of Lafayette Rd min 0' & max 50' from Lot Line at Ledgerwood	Waiver for setback within public way
Side	Minimum side setback: 15 ft.	23.6'
Clear	20 ft min.	38.0'
Front lot line buildout commercial/mixed-use	75%	83.0%
Frontage, Lafayette	200 ft min	337.4'
Lot area (sq ft)	NR	NR
lot area per dwelling unit	Workforce Housing incentive, 36 per acre = 81 units	72 units
Building Coverage, maximum	60%	43.0%
Footprint, max	24,000 sq ft	Waiver
ground floor area per use, max	n/a	parking
Open space, minimum	20%	20.6'
permitted uses (G1)	multifamily, restaurant	multifamily
Facade modulation length, max (ft)	100'	modulations < 100 ft
floor height above sidewalk, max	34'	8'
glazing, shopfront, min	50% ground floor	glazed and open > 50%
roof types(patch)	All (flat roofs must have "parapet wall that acts as a structural expression of the building facade and its materials)	Flat & Sloped

IMPERVIOUS SURFACE AREAS (TO PROPERTY LINE)

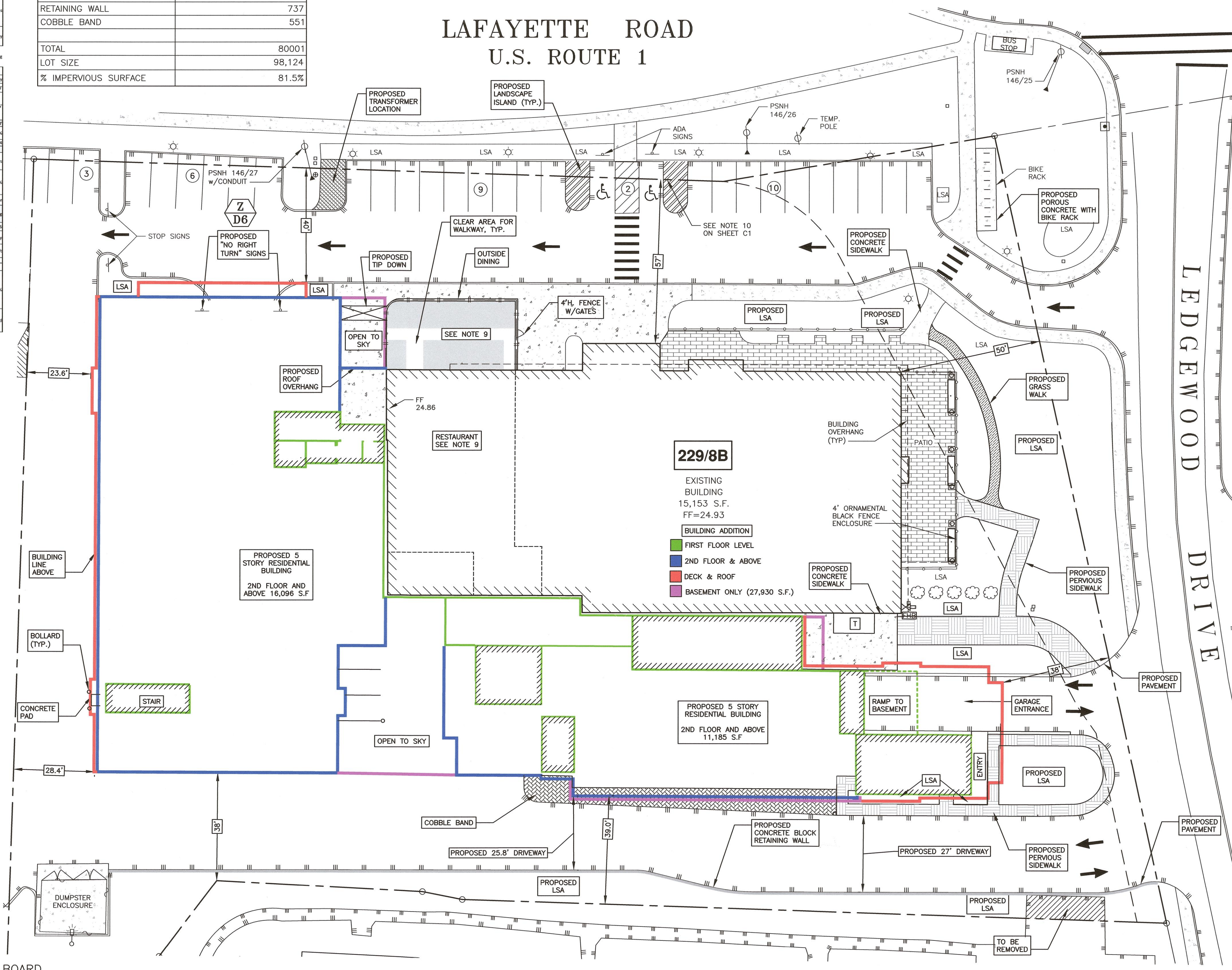
STRUCTURE	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	42434
SIDEWALK	4,604
PAVEMENT	31,409
CURB	266
RETAINING WALL	737
COBBLE BAND	551
TOTAL	80001
LOT SIZE	98,124
% IMPERVIOUS SURFACE	81.5%

WAIVER REQUESTS:

SECTION 10.5B22.40 - SPECIAL SETBACK FROM LAFAYETTE ROAD  
SECTION 10.5B34.80 MIXED USE BUILDING: MAXIMUM DWELLING UNITS PER BUILDING  
SECTION - 10.5B41.80 - COMMUNITY SPACE COVERAGE  
SECTION 10.5B34.80 MIXED USE BUILDING: MAXIMUM BUILDING FOOTPRINT



LAFAYETTE ROAD  
U.S. ROUTE 1

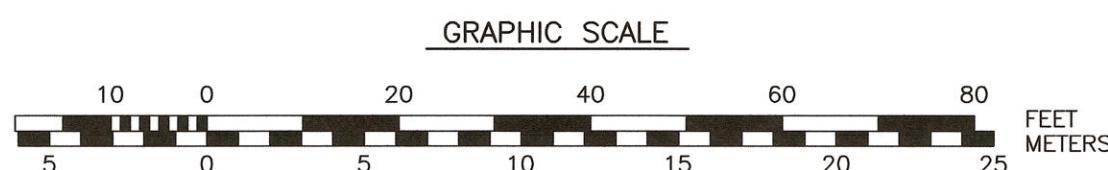


PORTSMOUTH APPROVAL CONDITIONS

- NOTES:
- 1) 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.
  - 2) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
  - 3) ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



200 Griffin Road, Unit 3  
Portsmouth, NH 03801  
603.430.9282

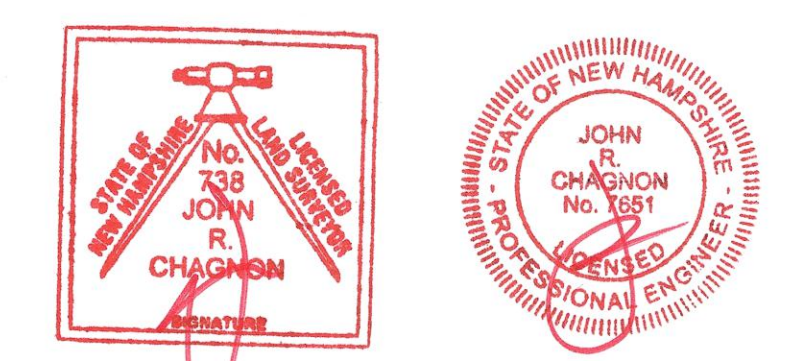
WWW.HALEYWARD.COM

NOTES:

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270E, EFFECTIVE MAY 17, 2005
- 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED BUILDING ADDITION ON TAX MAP 229 LOT 8B.
- 8) DESIGN BASED ON ARCHITECTURAL PLAN BY ARCOVE ARCHITECTS DATED 3/25/24.
- 9) CONVERSION OF TUSCAN MARKETPLACE TO RESTAURANT (NORTHEASTERN THAI, LLC) APPROVED UNDER PERMIT: LU-22-254

COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
7	DRIVE RAMP	3/5/24
6	BUILDING REVISION, PARKING LAYOUT	2/21/24
5	SIGNAGE	2/6/24
4	TABLES & PARKING	1/24/24
3	LANDSCAPE AREA, IMPERVIOUS TABLE	1/2/24
2	IMPERVIOUS SURFACE TABLE	12/19/23
1	ISSUED FOR APPROVAL	11/20/23
0	ISSUED FOR COMMENT	8/31/23



SCALE: 1"=20' JULY 2023

SITE PLAN

C3





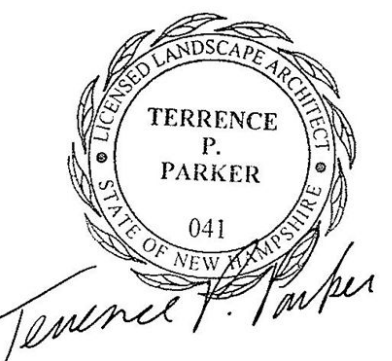


**Plant List - Off-Site Perennials**

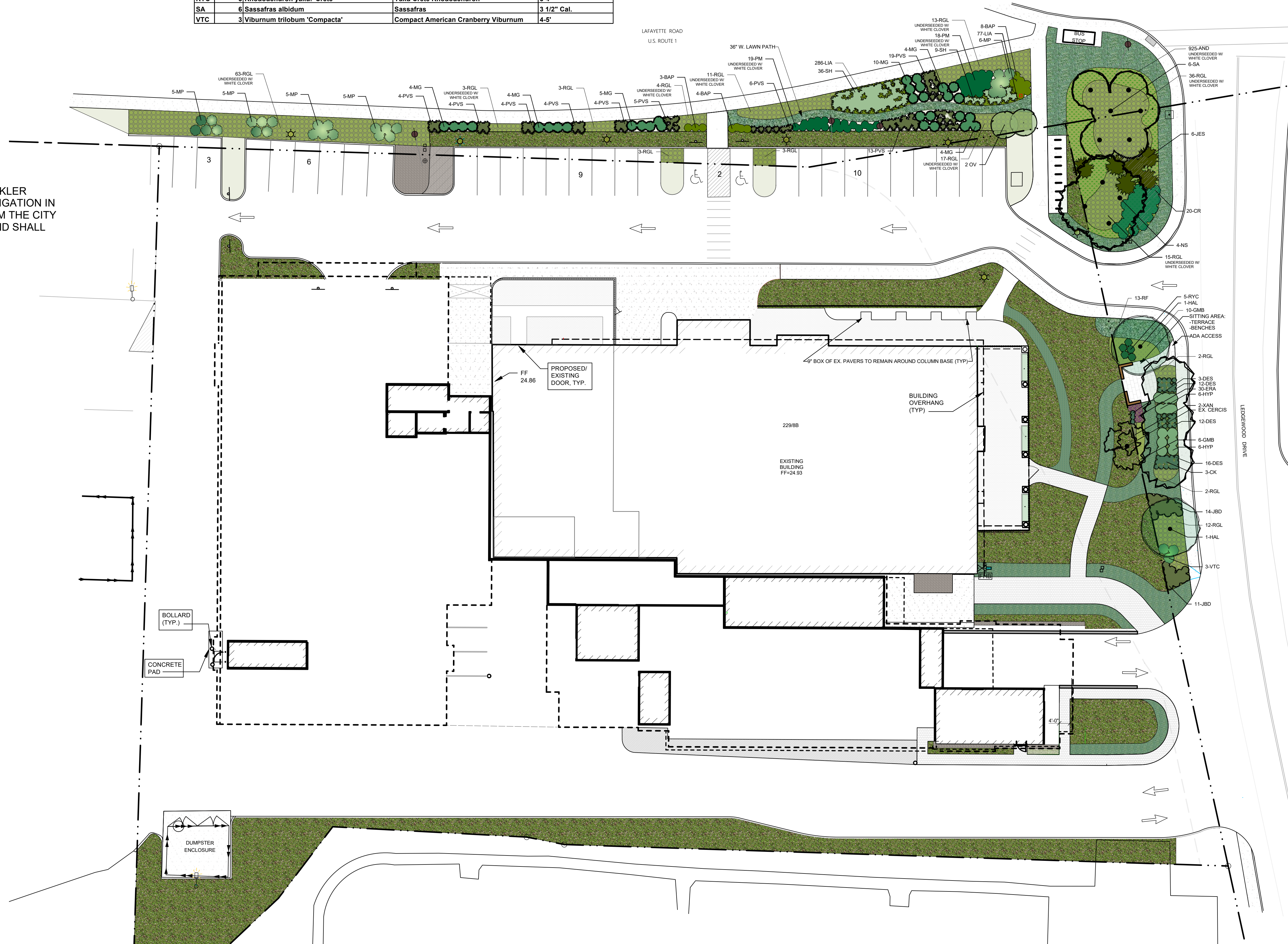
ID	Qty	Botanical Name	Common Name	Scheduled Size
AND	925	Andropogon ger. 'Blackhawks'	Big Bluestem	Plugs
BAP	15	Baptisia australis 'Screaming Yellow'	False Indigo	2 QT
DES	43	Deschampsia cespitosa	Tussock Grass	1 Gal.
ERA	30	Eragrostis spectabilis	Purple Lovegrass	2 QT
GMB	16	Geranium macrorrhizum 'Bevan's'	Cranesbill	2 QT
LIA	363	Liatris spicata	Gayfeather	2 QT
PVS	63	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	2 Gal.
RF	13	Rudbeckia fulgida 'Goldstrum'	Goldstrum Black-Eyed Susan	2 QT
SH	45	Sporobolus heterolepis	Prairie Dropseed	1 Gal.
XAN	2	Xanthorhiza simplicissima	Yellowroot	2 QT

**Plant List - Off-Site Trees + Shrubs**

ID	Qty	Botanical Name	Common Name	Scheduled Size
CK	3	Cladrasit kentukea	Yellowwood	2 1/2" Cal.
CR	20	Cornus racemosa	Grey Dogwood	5 Gal.
HAL	2	Halesia carolina 'Jersey Belle'	Jersey Belle Carolina Silverbelle	1 1/2" Cal.
HYP	12	Hypericum 'Hidcote'	St. Johnswort	5 Gal.
JBD	25	Juniperus communis depressa 'AmiDak'	Blueberry Delight Juniper	2 Gal.
JES	6	Juniperus virginiana 'Emerald Sentinel'	Emerald Sentinel Red Cedar	3" Cal.
MG	31	Myrica gale	Sweetgale	2 Gal.
MP	26	Myrica pensylvanica	Northern Bayberry	2 Gal.
NS	4	Nyssa sylvetica	Black Tupelo	3" Cal.
OV	2	Ostrya virginiana	American Hophornbeam	2-2.5" Cal.
RGL	187	Rhus aromatica 'Grow Low'	Grow Low Sumac	18" HT.
RYC	5	Rhododendron yaku. 'Crete'	Yaku Crete Rhododendron	3-4'
SA	6	Sassafras albidum	Sassafras	3 1/2" Cal.
VTC	3	Viburnum trilobum 'Compacta'	Compact American Cranberry Viburnum	4-5'



NOTE: IRRIGATION IN THE FORM OF SPRINKLER HEADS IN THE LAWN AREAS AND DRIP IRRIGATION IN PLANTING BEDS SHALL BE SOURCED FROM THE CITY OF PORTSMOUTH'S MUNICIPAL WATER, AND SHALL INCLUDE A BACK FLOW PREVENTION.



No.	Date	By	Revision Notes

G	3/26/2024	PLANNING SUBMISSION
F	3/4/2024	TAC SUBMISSION
E	2/21/2024	PLANNING SUBMISSION
D	2/14/2024	T+G COMMENTS (GATE REMOVAL)
C	2/12/2024	COMMUNITY SPACE DESIGN
B	1/10/2024	TREES + GREENERY COMMENTS
A	1/2/2024	TAC COMMENTS

No.	Date	Issue Notes

Design Firm  
**terra firma landscape architecture**  
163.a Court Street  
Portsmouth, NH

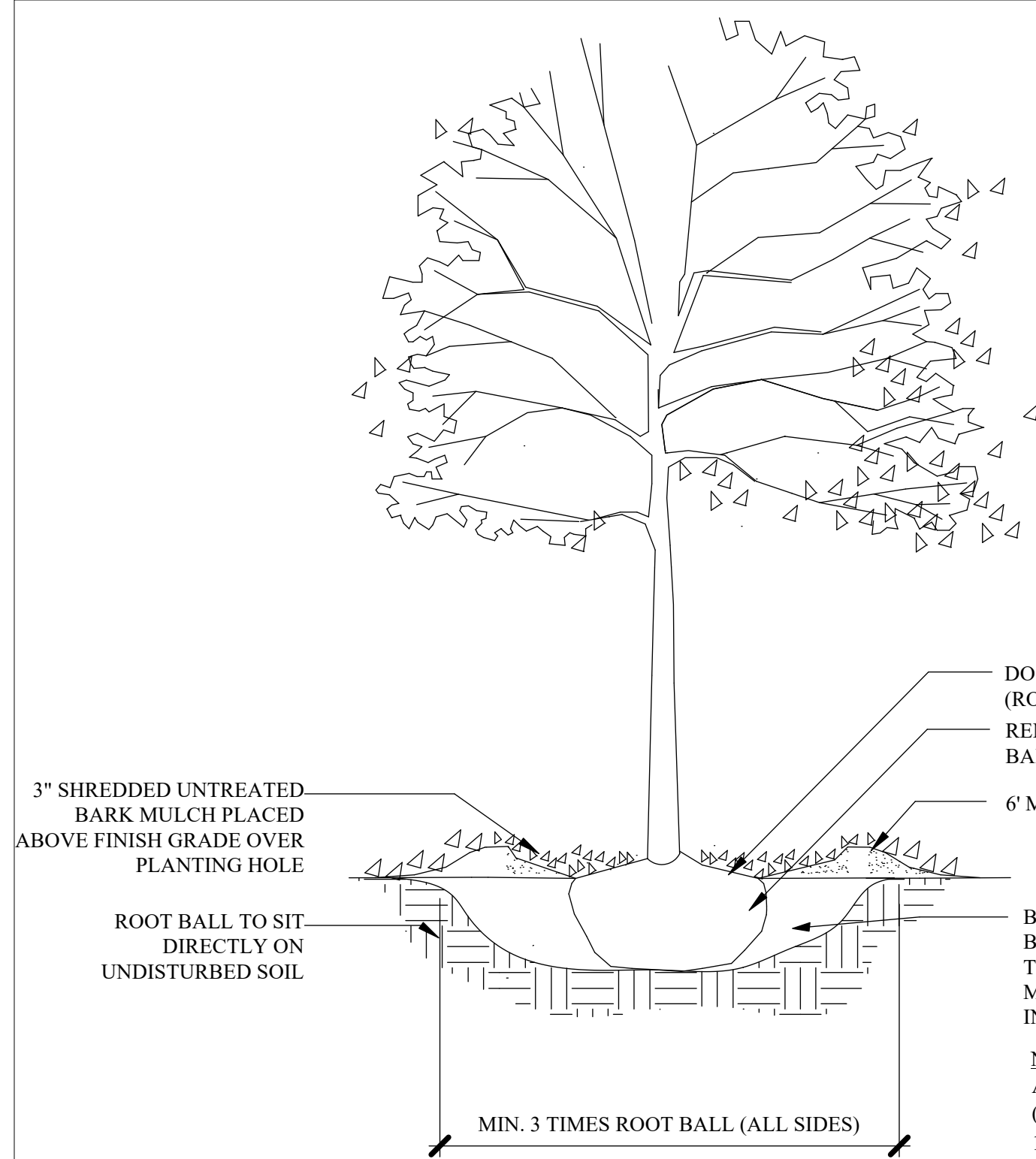
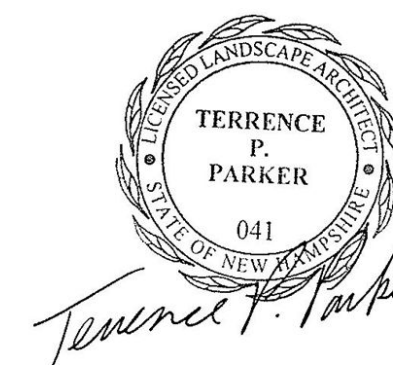
Consultant

Project Title  
**581 LAFAYETTE**

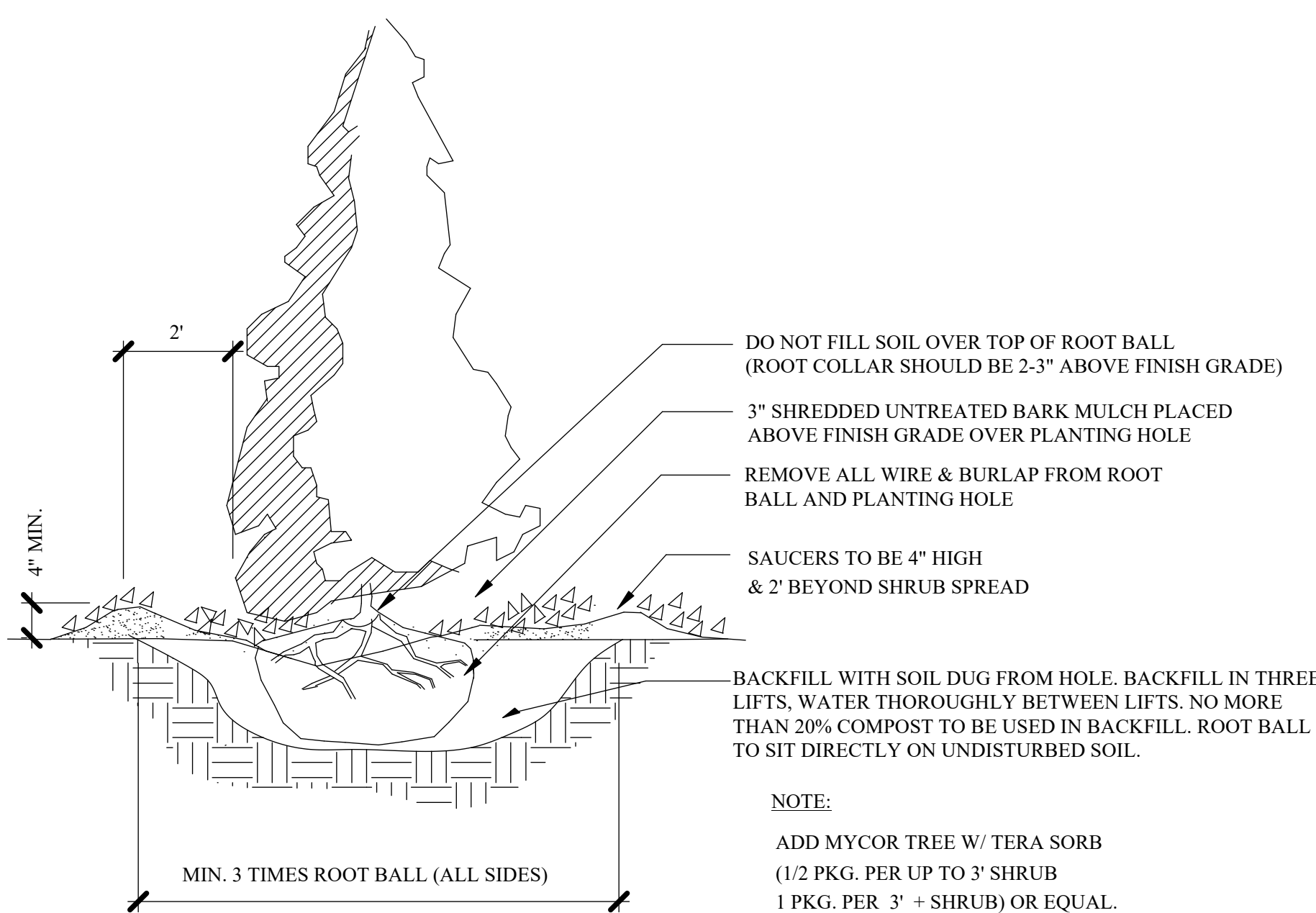
Sheet Title  
**Off-Site Community Space Landscape Plan**

Project Manager	Project ID	581 LAFAYETTE
Drawn By	Scale	1:240
Reviewed By	Sheet No.	<b>L-1B</b>
Date		of 2
CAD File Name		581LAFAYETTE32624.vwx

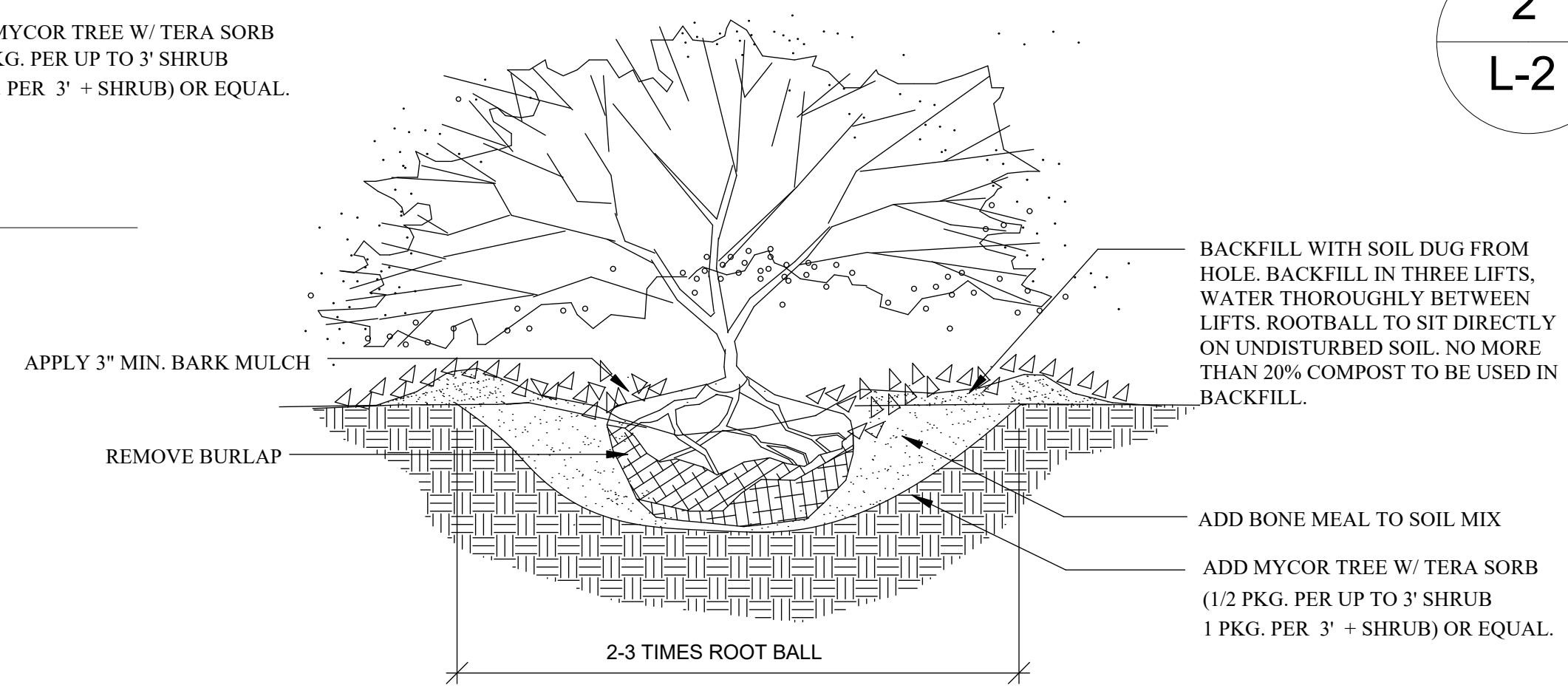




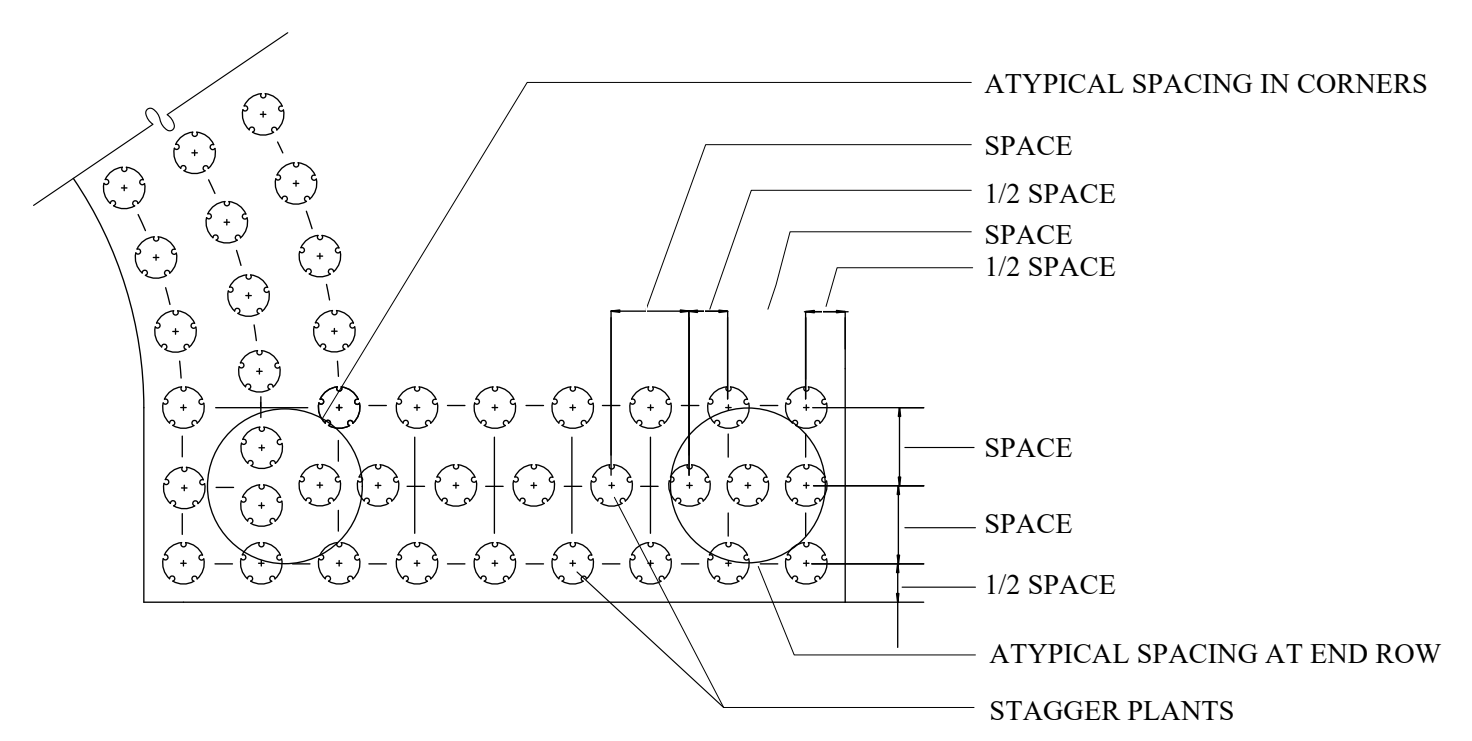
**1**  
**L-2**  
**TREE PLANTING - 2"+ CAL.**  
**SCALE: NTS**



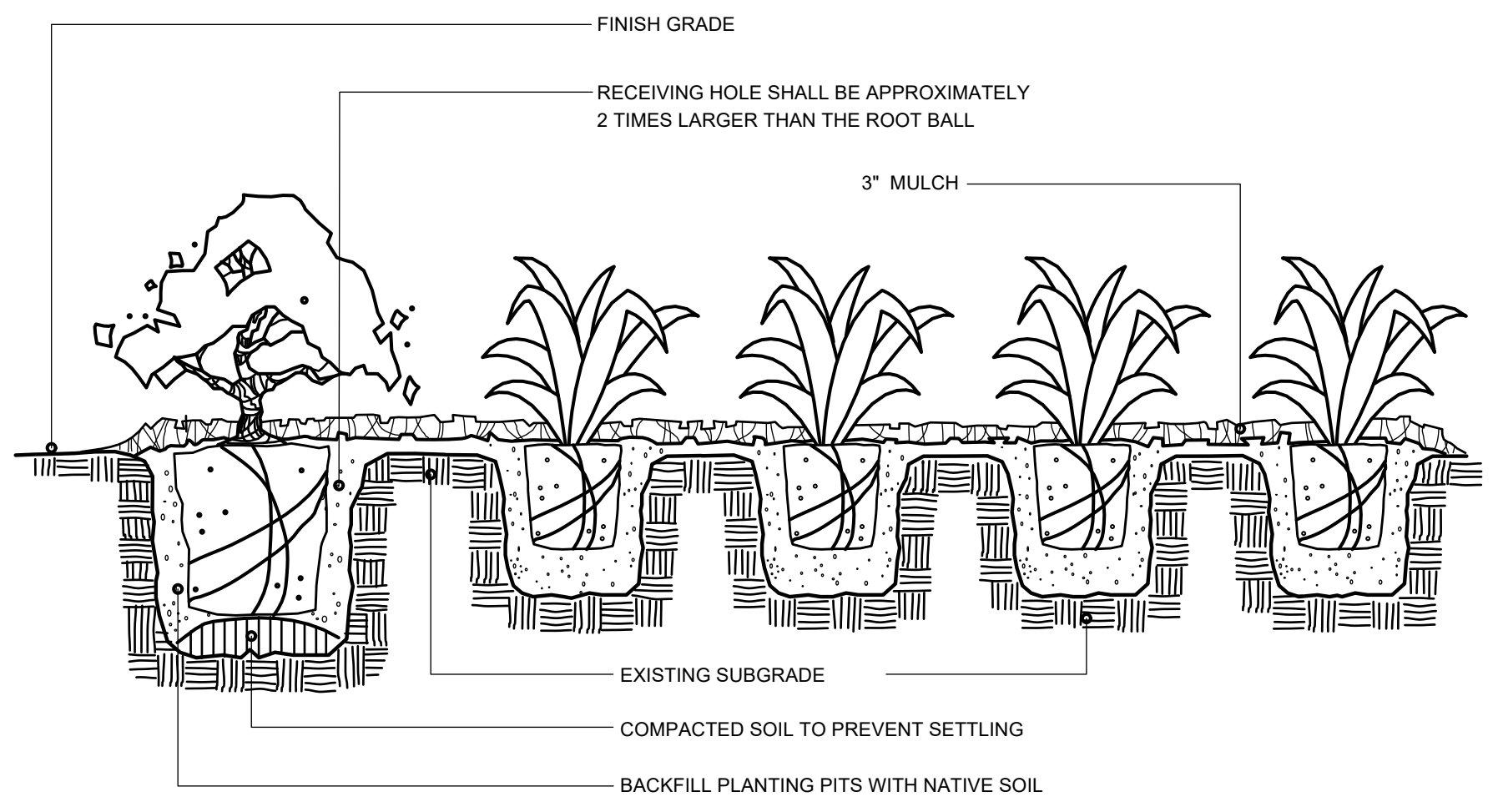
**2**  
**L-2**  
**PYRAMIDAL EVERGREEN TREE PLANTING**  
**SCALE: NTS**



**3**  
**L-2**  
**B&B SHRUB PLANTING**  
**SCALE: NTS**



**4**  
**L-2**  
**GROUND COVER SPACING DETAIL**  
**SCALE: NTS**



**5**  
**L-2**  
**SHRUB/GROUND COVER PLANTING DETAIL**  
**SCALE: NTS**

**LANDSCAPE NOTES:**

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2-3" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
21. ALL PLANTING HOLES TO BE HAND-DUG, EXCEPT IN NEW CONSTRUCTION WITH NEW PLANTING PITS, PLANTING NEAR CURBS, OR AREAS WHERE SILVA CELLS WILL BE USED. IF HOLES ARE MACHINE-DUG, BOTTOM OF HOLES NEED TO BE THE APPROPRIATE HEIGHT, AND FIRMED BY THE MACHINE TO CREATE STABILITY FOR THE PLANT MATERIAL.

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE.

No.	Date	By	Revision Notes
G	3/26/2024		PLANNING SUBMISSION
F	3/4/2024		TAC SUBMISSION
E	2/21/2024		PLANNING SUBMISSION
D	2/14/2024		T+G COMMENTS (GATE REMOVAL)
C	2/12/2024		COMMUNITY SPACE DESIGN
B	1/10/2024		TREES + GREENERY COMMENTS
A	1/2/2024		TAC COMMENTS

No.	Date	Issue Notes

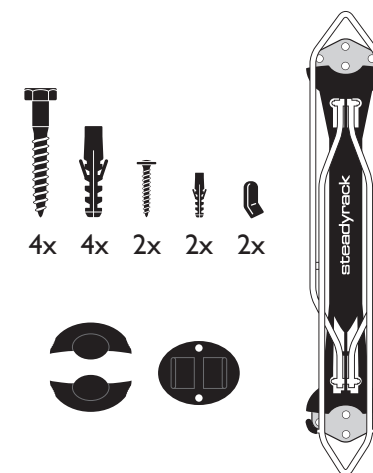
  

Design Firm	terra firma landscape architecture 163.a Court Street Portsmouth, NH
Consultant	
Project Title	581 LAFAYETTE
Sheet Title	Landscape Details
Project Manager	Project ID: 581 LAFAYETTE
Drawn By: TC	Scale: AS NOTED
Reviewed By: TP	Sheet No: L-2
Date: 11/20/2023	of 2
CAD File Name: 581LAFAYETTE32624.vwx	



**INCLUDED**

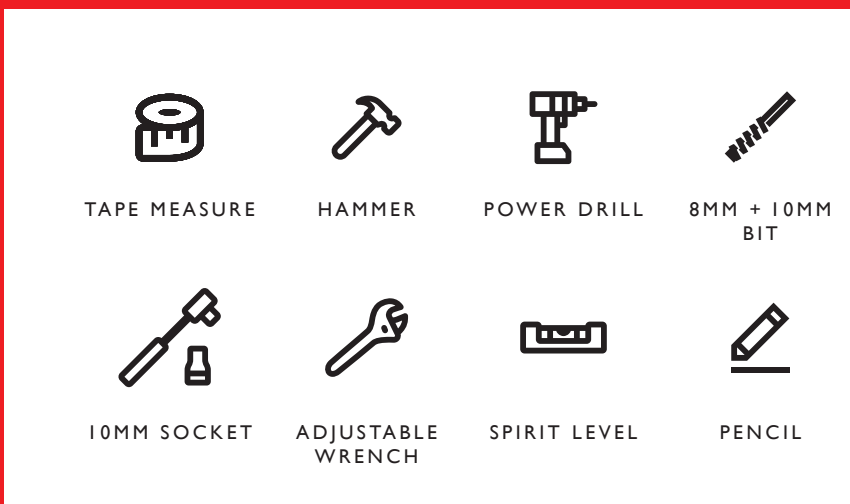
- 1 x Steadyrack
- 2 x End Caps
- 1 x Rear Tyre Rest
- 4 x Hex Bolts – for rack
- 4 x Masonry\* Wall Plugs – for rack
- 2 x Screws – for Rear Tyre Rest
- 2 x Masonry\* Wall Plugs – for Rear Tyre Rest
- 2 x Spare Rubber Tips



Fixings are for either Masonry (brick/concrete) or timber. If you're installing into a different type of wall structure, speak to your local hardware store for the correct fixings. Racks can be mounted to any vertical surface capable of supporting the rack + bike weight.

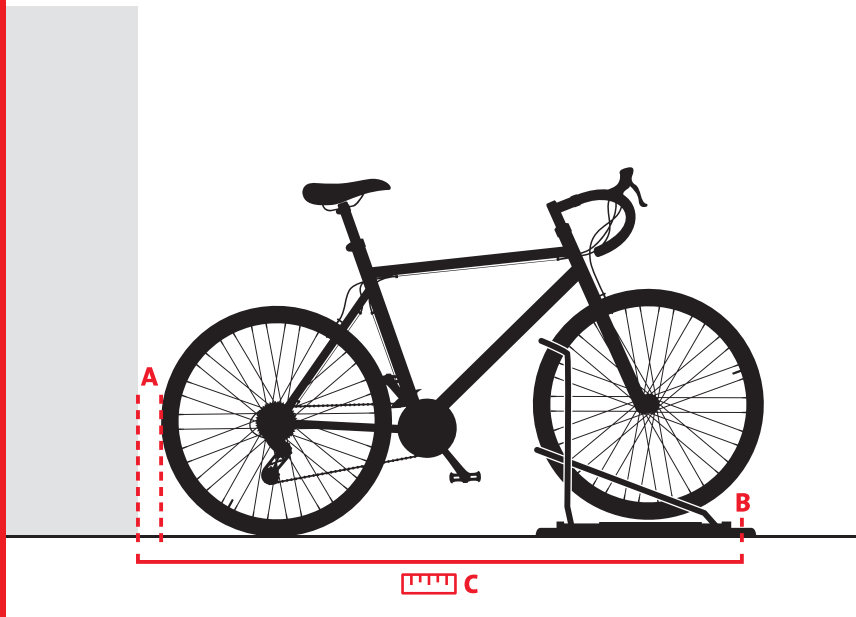
**WARNING**  
We do not recommend installing your Steadyrack into gypsum, plasterboard or drywall. Doing so will void your Steadyrack warranty. The provided wall plugs are for masonry use only.

**NEEDED**



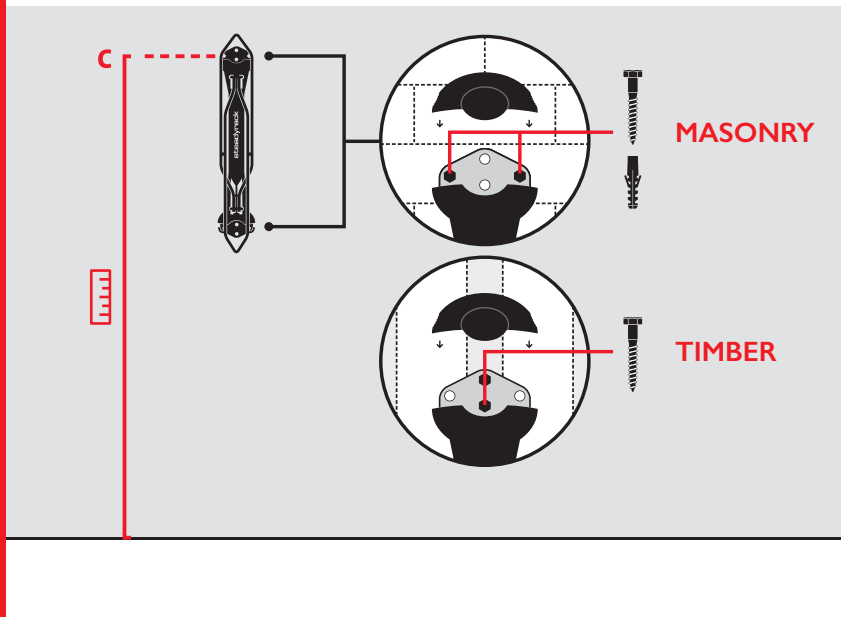
**1. MEASURE MOUNTING HEIGHT**

- Place the rack on the floor.
- Make sure your bike fits in the rack before drilling. If you have any concerns, get in touch with our Customer Support team.
- Place the bike in the rack, leaving a gap (around 50 – 75mm) between the back tyre and wall (A).
- The gap is the distance from the ground when the bike is in the rack.
- Pencil a mark on the floor in the top mounting hole (B).
- 2 x vertical holes for timber install.
- 2 x horizontal for masonry install.
- Measure the distance from the wall to the mark on floor (C).



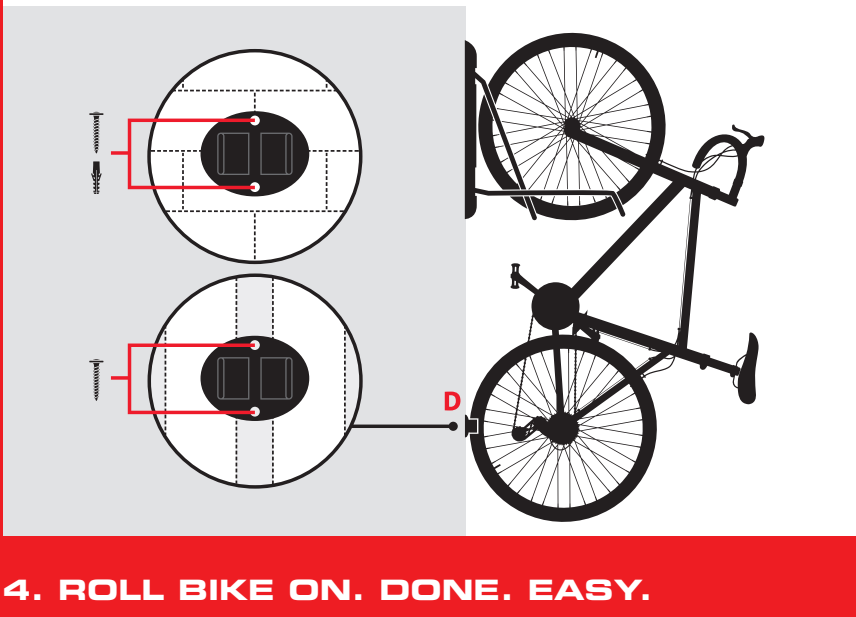
**2. MOUNT RACK (WALL OR FRAME)**

- Transfer the measurement to the wall (C). Drill the hole using the 10mm bit.
- Line up the rack and loosely install the single bolt.
- Place the spirit level against the plastic body – ensure it's level.
- Hold the rack in place and pencil mark the remaining holes.
- Remove the rack. Drill the remaining holes.
- If it's masonry, insert the supplied masonry wall plugs.
- Line the rack up over the holes. Insert 4 x hex bolts and firmly affix the rack. Click the End Caps in place.

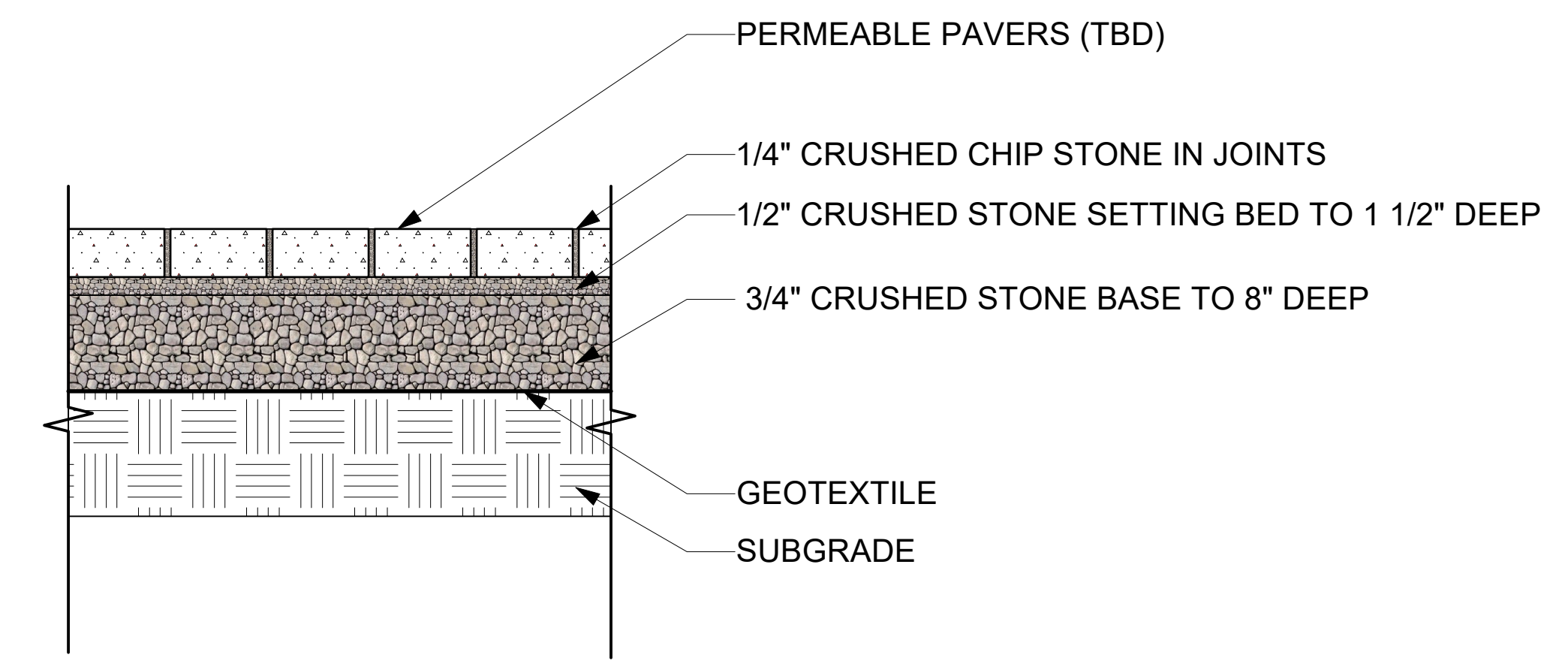
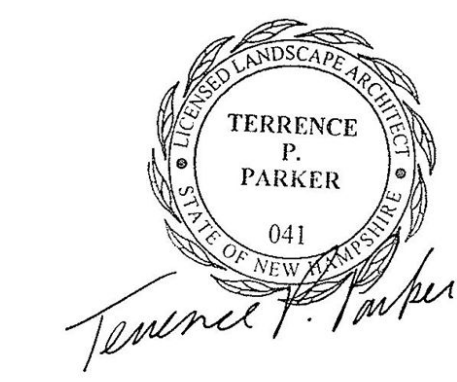


**3. INSTALL REAR TYRE REST**

- Hang the bike in the rack.
- Line the Rear Tyre Rest up with the rear axle (D).
- Pencil mark the top mounting hole.
- Remove the rest and bike.
- Place the spirit level in centre - ensure the rack and rest are aligned.
- Drill a hole using the 8mm bit on the pencil mark.
- Line up the rest – mark the second hole.
- Drill the second hole and, if installing in masonry, insert the wall plugs.
- Place the rest and affix with the screws.



**4. ROLL BIKE ON. DONE. EASY.**



**2**  
**L-3** POROUS SIDEWALK DETAIL  
SCALE: 1" = 1'-0"

No.	Date	By	Revision Notes

No.	Date	Issue Notes
G	3/26/2024	PLANNING SUBMISSION
F	3/4/2024	TAC SUBMISSION
E	2/21/2024	PLANNING SUBMISSION
D	2/14/2024	T+G COMMENTS (GATE REMOVAL)
C	2/12/2024	COMMUNITY SPACE DESIGN
B	1/10/2024	TREES + GREENERY COMMENTS
A	1/2/2024	TAC COMMENTS



**LET'S KEEP THIS EASY...**

**INSTRUCTIONS**

**steadyrack**  
STORE EASY

**MAINTAINING YOUR STEADYRACK**

To ensure your Steadyrack Bike Rack operates perfectly we recommend you perform the following basic maintenance and checks:

**Check and adjust tension on the nuts on Central Pivot Bar**  
The nuts that attach the central pivot bar to the top and bottom mounting brackets are pre-tensioned in the factory to a torque setting of 5Nm. This is to ensure there is enough resistance when you push your bike into the rack to stop the arms swinging out of the way.

Remove the two clip-in End Caps which cover the mounting brackets using a 13mm socket wrench or a suitable spanner. Adjust the nuts connecting the central spine to the top and bottom mounting brackets to the desired tension. Be sure to not overtighten or the rack won't pivot. Replace your End Caps and you are good to go.

**Check the nuts attaching the top and bottom arms to the Central Pivot Bar**  
The 2 arms are connected to the central pivot bar by tamper-proof bolts with dome nuts and black tips either side. Tamper-proof bolts have been used to provide added security against potential theft of your bike. These can work loose over time. Check them periodically and tighten using a Pin Torx 6 Lobe bit, which can be purchased from your local hardware store.

Check your mounting bolts from time to time to make sure they have not worked loose and tighten if necessary.

**Cleaning**  
Wipe the rack down with lukewarm soapy water using a soft sponge or microfibre cloth. Then wipe down with a clean, soft cloth to remove the cleaning solution and dry thoroughly. For more stubborn marks, mix one part vinegar with one part water and follow the above processes.

**Materials**  
Mild Steel Zinc or Chrome plated and ABS, PP, TPE and Nylon plastics.

**WARRANTY**

The boring but necessary legal stuff.

Steadyrack warrants that the Steadyrack Bike Rack is free from defects in workmanship and materials for a period of 12 months from the date of retail purchase. Any claim for breach of this warranty must be made on the following conditions:

- the defects have arisen solely from faulty materials or workmanship;
- the Steadyrack Bike Rack must not have been changed nor tampered with in any way;
- failure of the Steadyrack Bike Rack must not be due to misuse, improper installation or other maltreatment, interference or abuse including, but not limited to, use in a manner contrary to our specifications or instructions;
- the Steadyrack Bike Rack must be returned to the supplier;
- Steadyrack will not be responsible for damage or loss caused during or as a result of shipping;
- Steadyrack warranty is voided if racks are used to transport bicycles.

Subject to the above conditions of warranty, if the Steadyrack Bike Rack fails for any reason within the warranty period and the Steadyrack Bike Rack is returned to us, Steadyrack will at its discretion repair or replace, or cause to be repaired or replaced, the Steadyrack free of charge at its expense.

Except as expressly provided herein all express and implied warranties, guarantees and conditions under statute or general law as to merchantability, description, quality, suitability or fitness of the Steadyrack Bike Rack for any purpose or as to design, assembly, installation, materials or workmanship or otherwise are, to the extent permitted by law, hereby expressly excluded and Steadyrack shall not be liable for physical or financial injury loss or damage or for consequential loss or damage of any kind arising out of the supply, assembly, installation or use of the Steadyrack Bike Rack or arising in any other way whatsoever. Still awake? Right, now that's out of the way, let's install that Steadyrack!

TURN OVER FOR FULL INSTRUCTIONS

SCAN THE QR CODE TO WATCH THE INSTALLATION VIDEO ONLINE



**1**  
**L-3** BIKE RACK DETAIL  
SCALE: NTS



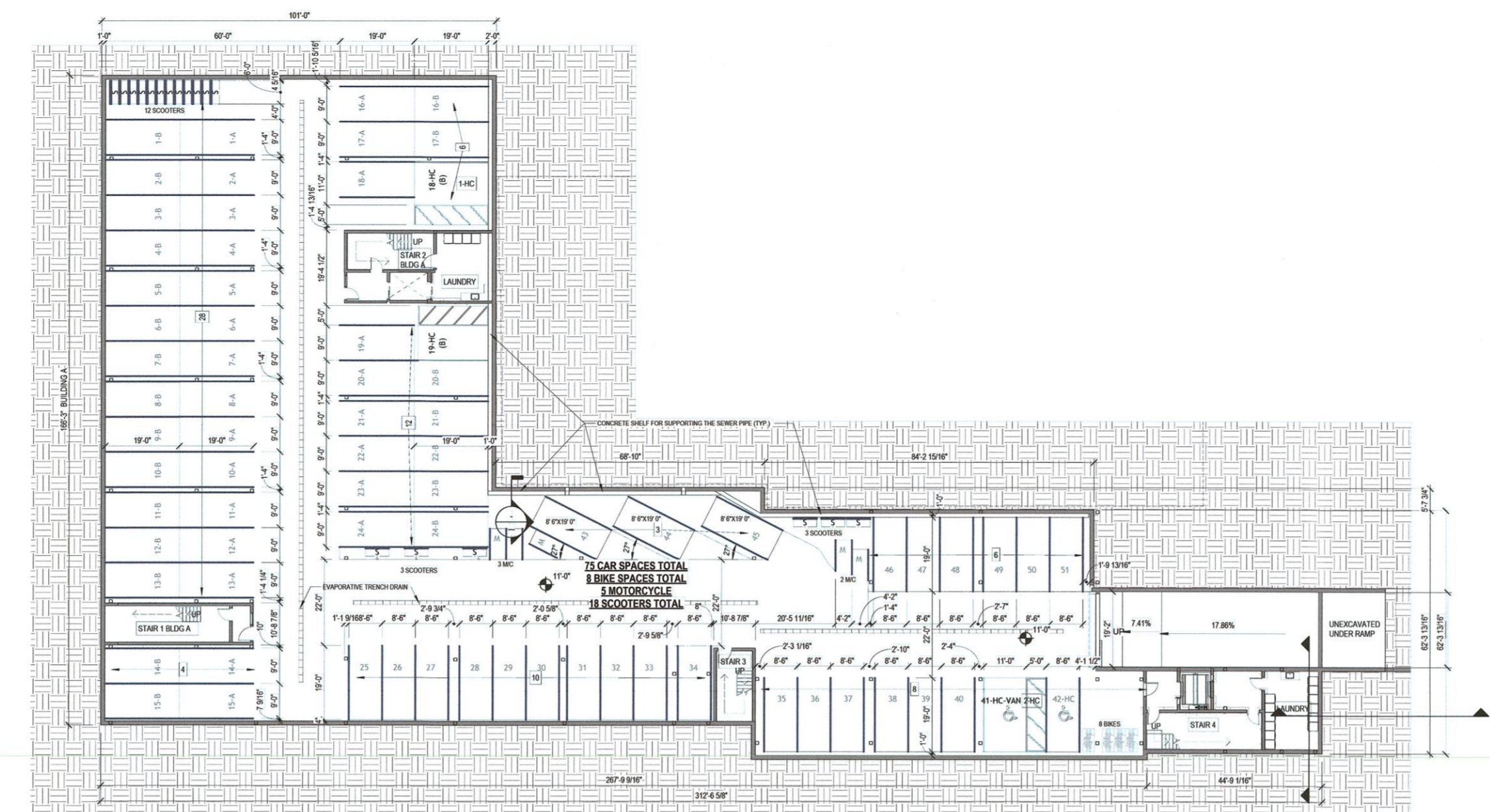




**NOTES:**

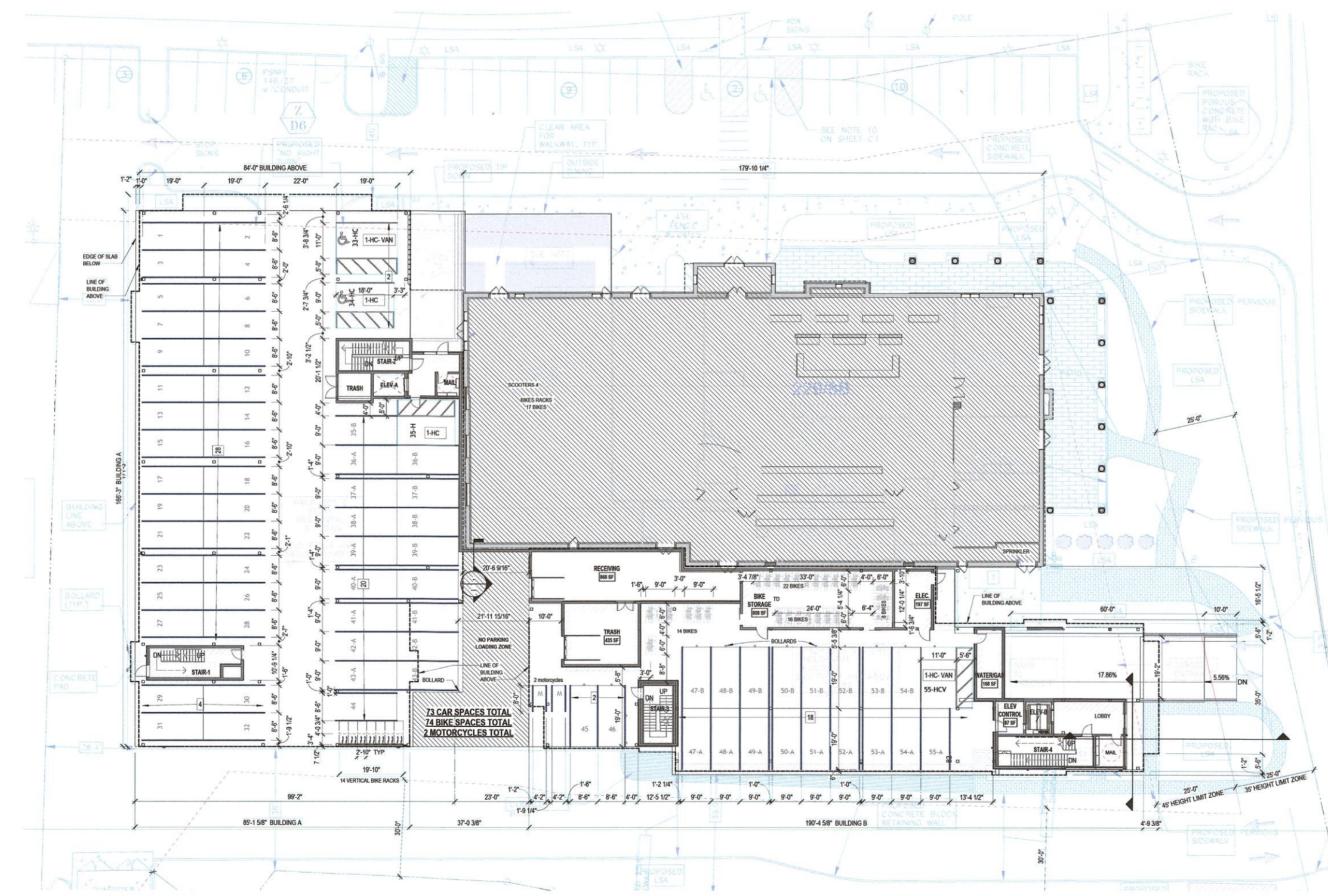
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PURPOSE OF THIS PLAN IS TO SHOW PARKING IN GENERAL FOR THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 229 LOT 8B IN THE CITY OF PORTSMOUTH.
- 4) TANDEM SPACES SHALL BE ASSIGNED TO PARTICULAR UNITS TO CONFORM TO SECTION 10.1114.33
- 5) IF THE NHDOT REQUIRES THE PARKING ENCROACHMENT ON ROUTE 1 TO BE ELIMINATED AND THE PARKING NEEDS TO BE REVISED THEN THE ALTERNATIVE PARKING LAYOUT WILL BE CONSTRUCTED.
- 6) PARKING TALLY:  
ASSIGNED SPACES RESIDENTIAL: 87  
COMMERCIAL & NON-ASSIGNED SPACES: 91  
TOTAL SPACES: 178

**PARKING ASSIGNMENT:**  
BASEMENT PARKING WILL BE ASSIGNED TO 51 RESIDENTIAL UNITS (24 STACKED/27 SINGLE).



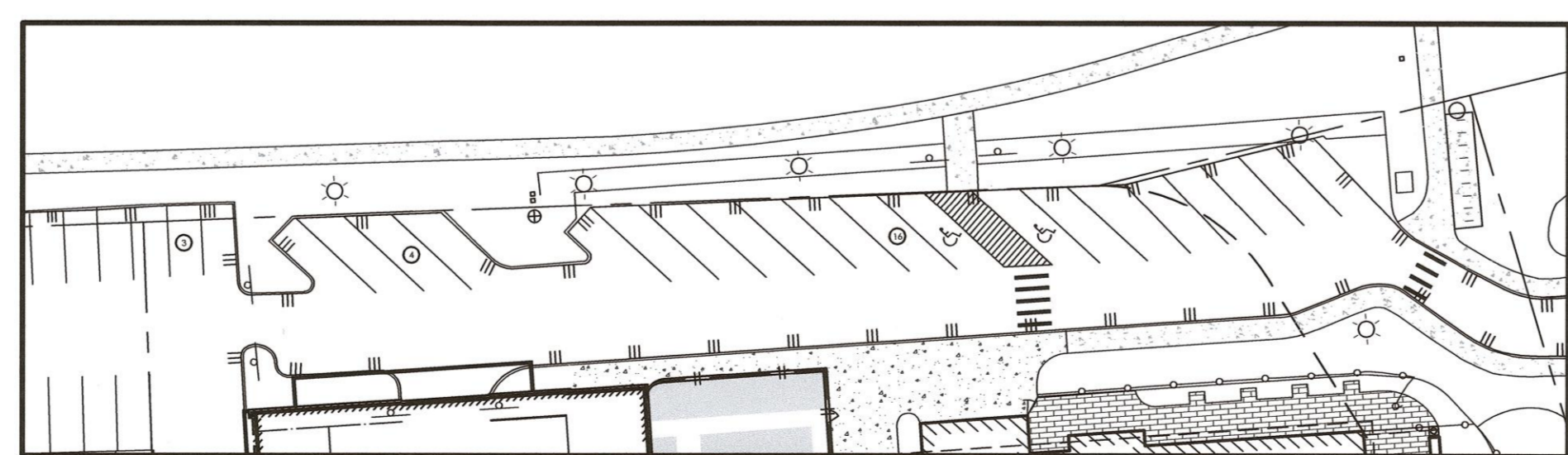
**BASEMENT— 75 TOTAL SPACES NTS**

**PARKING ASSIGNMENT:**  
LEVEL 1 STACKED PARKING WILL BE ASSIGNED TO RESIDENTIAL UNITS— 6 STACKED AND COMMERCIAL UNITS (EMPLOYEE VALET) 12 STACKED. SINGLE SPACES ARE NOT ASSIGNED.

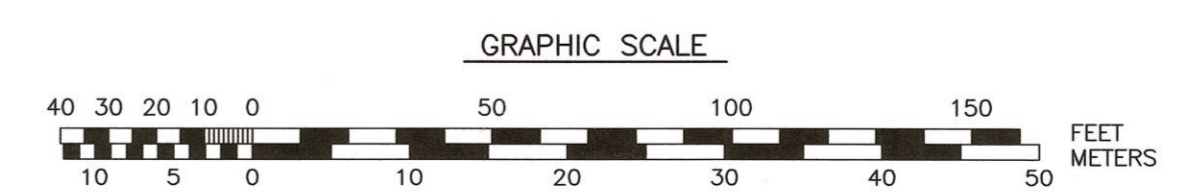


**LEVEL 1— 73 TOTAL SPACES NTS**

30 OUTDOOR SPACES ARE NOT ASSIGNED.



**ALTERNATE PARKING LAYOUT**  
NOTE: THE ALTERNATE PARKING LAYOUT REDUCES SITE PARKING 7 SPACES (30-23)



**COMMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

7	PARKING LAYOUTS	3/27/24
6	PARKING LAYOUTS	3/5/24
5	COMBINE PARKING PLANS, ALTERNATIVE	2/21/24
4	SEWER SIZE, NOTE 4	2/6/24
3	PARKING TABLES, PARKING LAYOUT	1/24/24
2	PARKING TABLES	12/19/23
NO.	DESCRIPTION	DATE

REVISIONS		

SCALE: 1"=40'/NTS JULY 2023

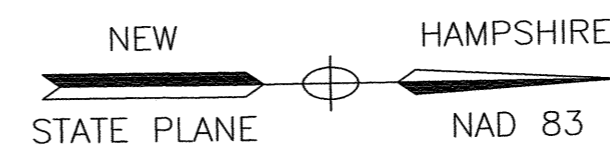
**PARKING PLAN**

**C4**

P:\NH\5010156-McNabb Properties\1397.03 Lafayette Rd., Portsmouth-RC\2023 Site Plan 1397.03\Plan & Specs\Site\Final Set revised 3-27-24.dwg, 3/27/2024 11:27:05 PM  
 \SVP\SM-F501\Portsmouth Pictor Canon T4300



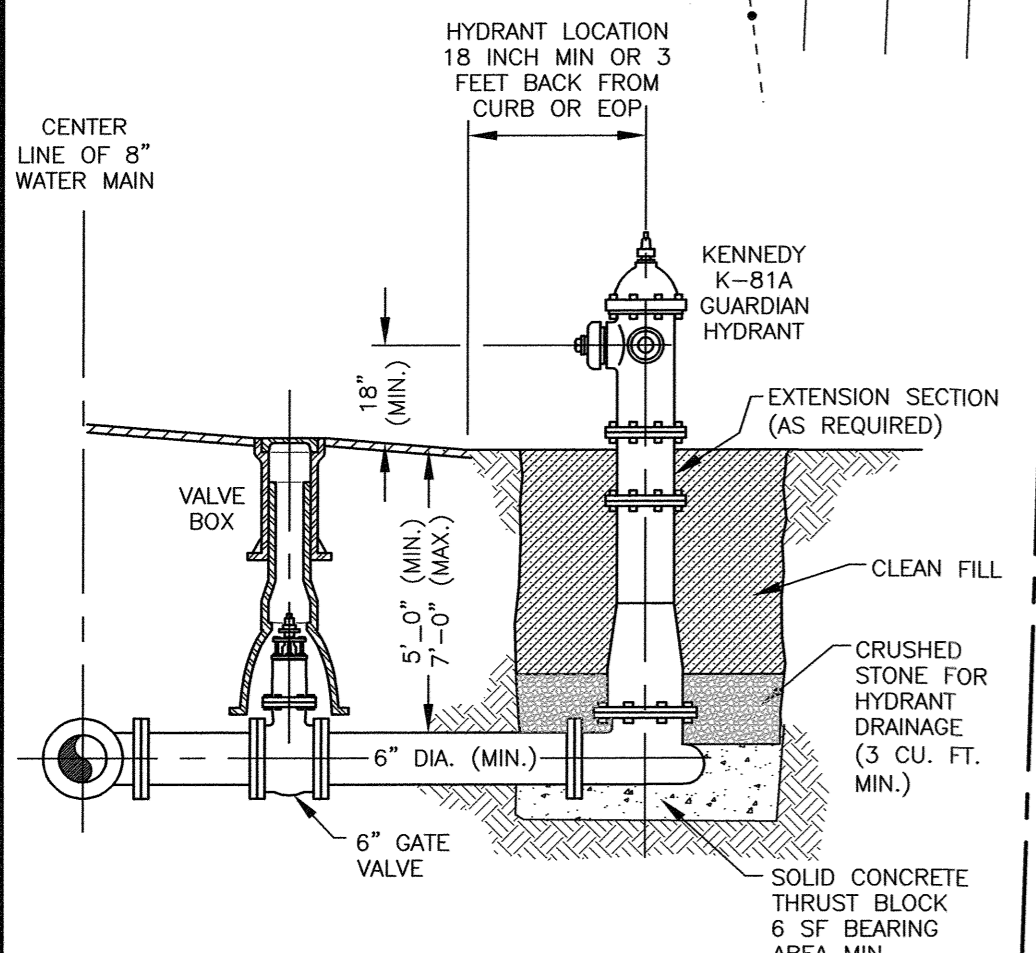
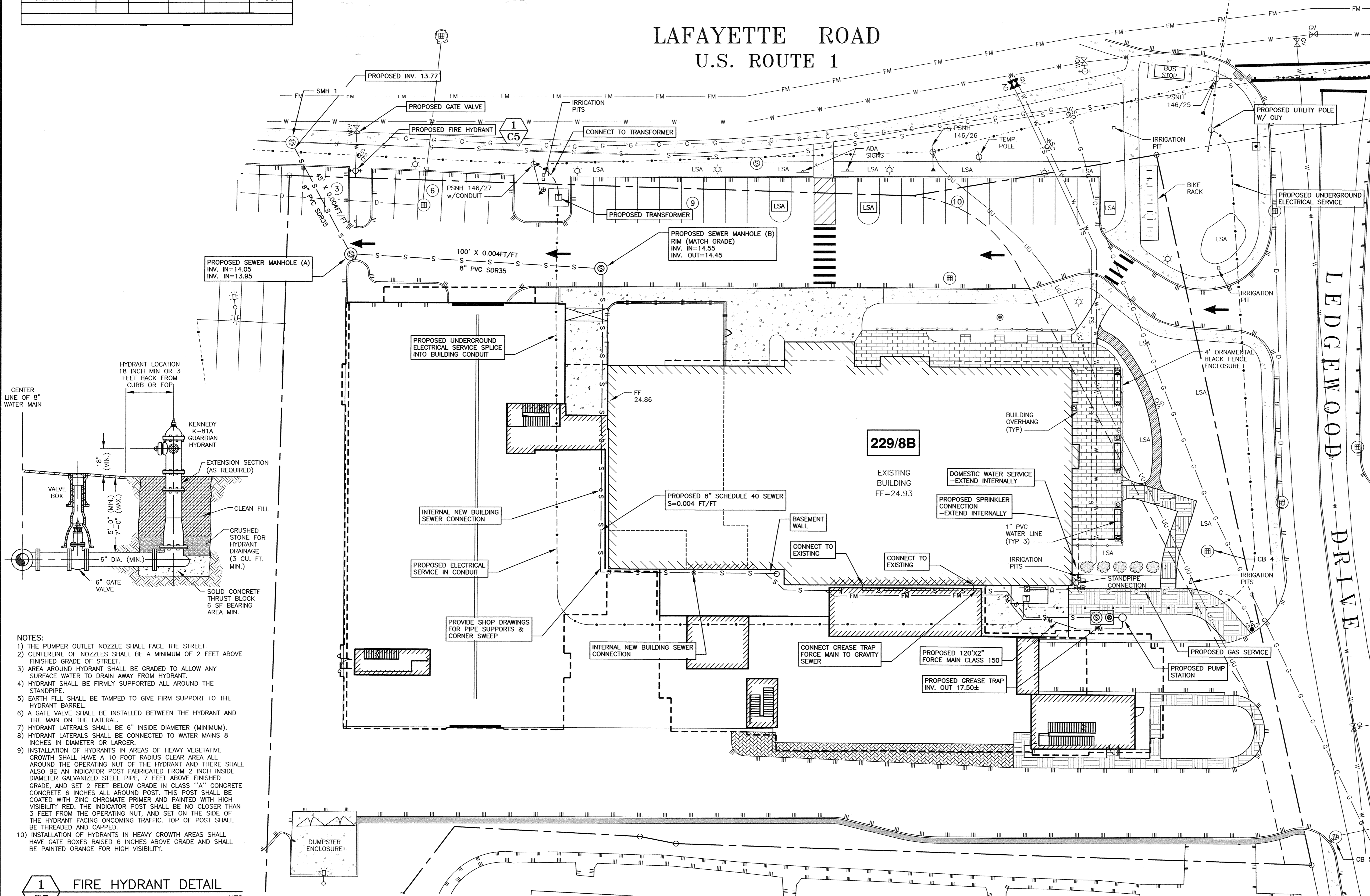
EXISTING SEWER STRUCTURE SCHEDULE					
STRUCTURE	PROP/EX	RIM	PIPE SIZE	INVERT	DIRECTION
SMH 1	EX	22.56	8" CI	13.26	IN
GREASE TRAP 1	EX	23.63	8" CI	17.58	OUT
GREASE TRAP 1	EX	23.63		17.23	OUT



**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) SEWER FLOW CALCULATION  
EXISTING RESTAURANTS(S)  
225 SEATS X 10 GPD/SEAT = 2,250 GPD  
PROPOSED RESIDENCES  
106 BEDROOMS X 80 GPD/BEDROOM = 8,480 GPD  
TOTAL FLOW = 10,730 GPD
- 5) FINAL SEWER PIPE DESIGN (BUILDING PERMIT PHASE) SHALL BE REVIEWED AND APPROVED BY PORTSMOUTH DPW.

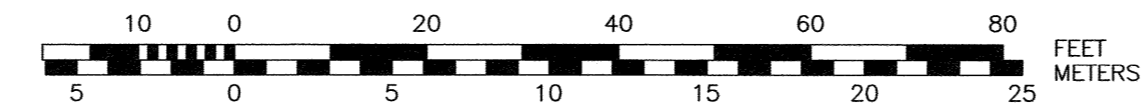
**LAFAYETTE ROAD  
U.S. ROUTE 1**



- NOTES:**
- 1) THE PUMPER OUTLET NOZZLE SHALL FACE THE STREET.
  - 2) CENTERLINE OF NOZZLES SHALL BE A MINIMUM OF 2 FEET ABOVE FINISHED GRADE OF STREET.
  - 3) AREA AROUND HYDRANT SHALL BE GRADED TO ALLOW ANY SURFACE WATER TO DRAIN AWAY FROM HYDRANT.
  - 4) HYDRANT SHALL BE FIRMLY SUPPORTED ALL AROUND THE STANDPIPE.
  - 5) EARTH FILL SHALL BE TAMPED TO GIVE FIRM SUPPORT TO THE HYDRANT BARREL.
  - 6) A GATE VALVE SHALL BE INSTALLED BETWEEN THE HYDRANT AND THE MAIN ON THE LATERAL.
  - 7) HYDRANT LATERALS SHALL BE 6" INSIDE DIAMETER (MINIMUM).
  - 8) HYDRANT LATERALS SHALL BE CONNECTED TO WATER MAINS 8 INCHES IN DIAMETER OR LARGER.
  - 9) INSTALLATION OF HYDRANTS IN AREAS OF HEAVY VEGETATIVE GROWTH SHALL HAVE A 10' FOOT RADIUS CLEAR AREA ALL AROUND THE OPERATING NUT OF THE HYDRANT AND THERE SHALL ALSO BE AN INDICATOR POST FABRICATED FROM 2 INCH INSIDE DIAMETER GALVANIZED STEEL PIPE, 7 FEET ABOVE FINISHED GRADE, AND SET 2 FEET BELOW GRADE IN CLASS "A" CONCRETE CONCRETE 6 INCHES ALL AROUND POST. THIS POST SHALL BE COATED WITH ZINC CHROMATE PRIMER AND PAINTED WITH HIGH VISIBILITY RED. THE INDICATOR POST SHALL BE NO CLOSER THAN 3 FEET FROM THE OPERATING NUT, AND SET ON THE SIDE OF THE HYDRANT FACING ONCOMING TRAFFIC. TOP OF POST SHALL BE THREADED AND CAPPED.
  - 10) INSTALLATION OF HYDRANTS IN HEAVY GROWTH AREAS SHALL HAVE GATE BOXES RAISED 6 INCHES ABOVE GRADE AND SHALL BE PAINTED ORANGE FOR HIGH VISIBILITY.

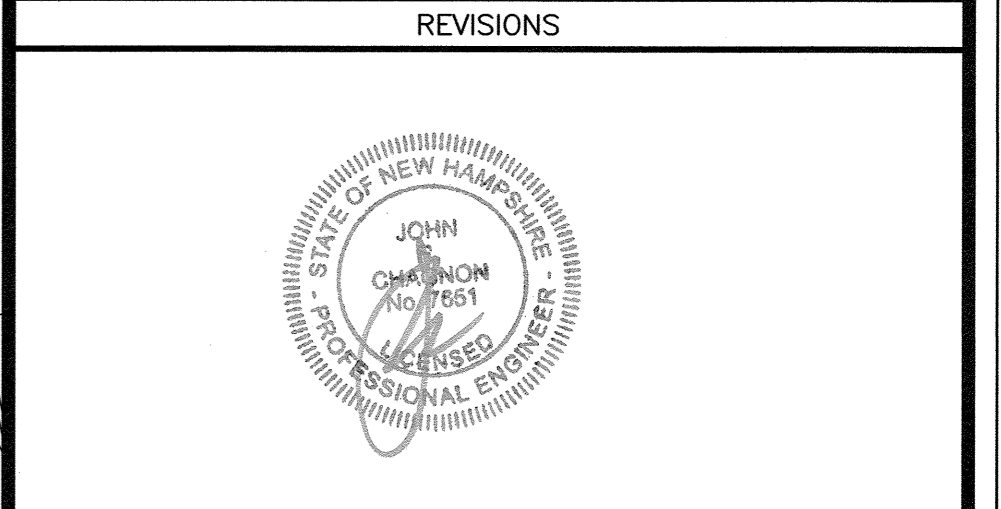
**1** FIRE HYDRANT DETAIL  
C5 NTS

GRAPHIC SCALE



**COMMERCIAL  
DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
6	NOTE 5, HYDRANT	3/27/24
5	BUILDING & SEWER	3/5/24
4	TRANSFORMER, NOTE 4	2/6/24
3	FORCE MAIN	1/24/24
2	GREASE TRAP	12/19/23
1	ISSUED FOR APPROVAL	11/20/23
0	ISSUED FOR COMMENT	5/8/23



SCALE: 1"=20' FEBRUARY 2023

UTILITY PLAN **C5**



**NOTES:**

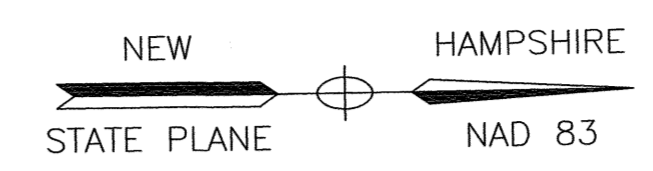
- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.
- 2) UNDERGROUND 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).

**DRAINAGE STRUCTURE SCHEDULE**

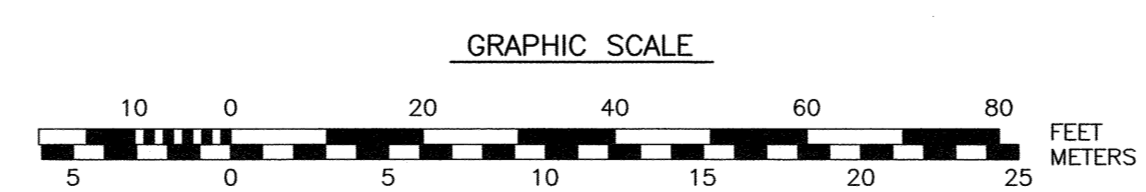
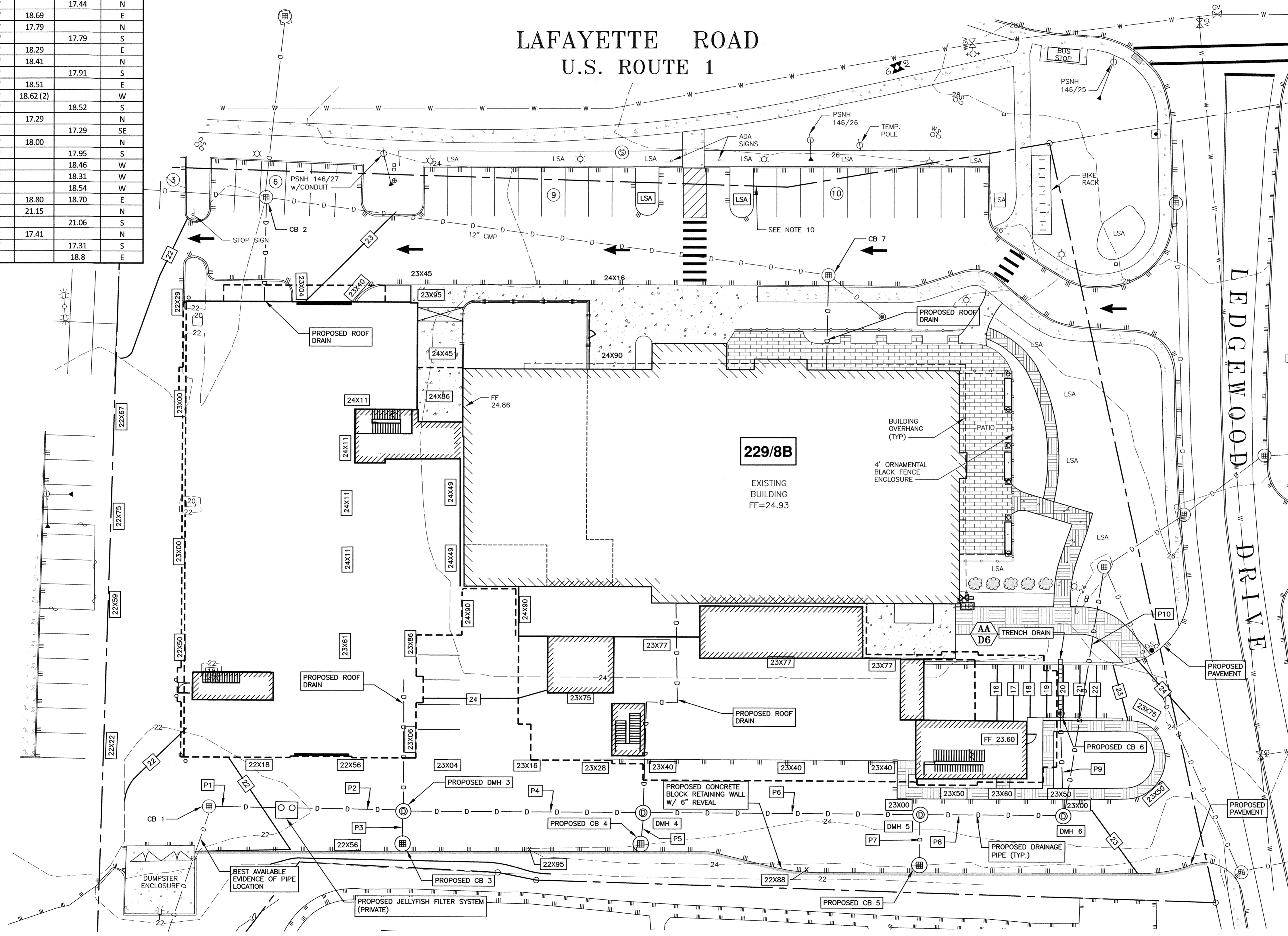
STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
DMH 1	EX	22.3	15"	17.60	17.40	W
DMH 2	EX	22.3	15"	17.40	17.40	W
DMH 3	PROP	22.4	24"	17.69	17.44	S
			18"	18.69	17.44	N
DMH 4	PROP	23.2	18"	17.79	17.79	E
			18"	18.29	17.79	S
DMH 5	PROP	23.0	12"	18.41	18.41	N
			18"	17.91	18.41	S
DMH 6	PROP	23.0	12"	18.51	18.51	E
			12"	18.62 (2)	18.51	W
			12"	18.52	18.52	S
CB 1	EX	21.46	24"	17.29	17.29	N
CB 2	EX	22.00	12"	18.00	17.95	SE
			15"	17.95	17.95	S
CB 3	PROP	22.16	12"	18.46	18.46	W
CB 4	PROP	22.45	12"	18.31	18.31	W
CB 5	PROP	22.60	12"	18.54	18.54	W
CB 6	PROP	20.05	12"	18.80	18.70	E
CB 7	EX	24.16	12"	21.15	21.06	N
			10"	21.06	21.06	S
JELLYFISH FILTER	PROP	23.05	24"	17.41	17.31	N
			24"	17.31	17.31	S
TRENCH DRAIN	PROP	20.05			18.8	E

**DRAINAGE PIPE SCHEDULE**

PIPE #	PIPE SIZE	LENGTH	SLOPE
P1	24"	22'	0.0008
P2	24"	36'	0.0008
P3	12"	7'	0.0022
P4	18"	82'	0.0012
P5	12"	6'	0.0022
P6	18"	95'	0.0012
P7	12"	13'	0.0022
P8	12"	47'	0.0022
P9	12"	33'	0.0022
P10	12"	88'	0.0022

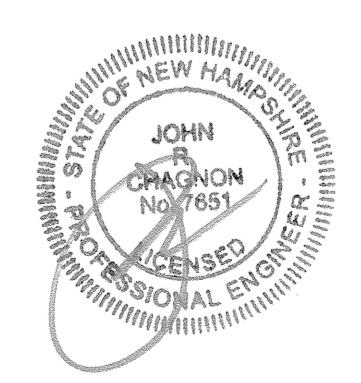


**LAFAYETTE ROAD  
U.S. ROUTE 1**



**COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
5	PIPE SCHEDULE	3/27/24
4	PIPE/DMH LAYOUT	3/5/24
3	BUILDING GRADES	2/21/24
2	GRADES	1/24/24
1	ISSUED FOR APPROVAL	11/20/23
0	ISSUED FOR COMMENT	2/7/23



SCALE: 1"=20' JULY 2023

**GRADING DRAINAGE  
EROSION CONTROL PLAN**

**C6**



ASTM D 448 GRADATION TABLE

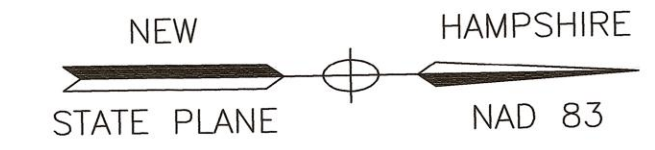
①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85-100	1" (25mm)	95-100	2.5" (63mm)	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) ALL FABRIC TO BE TENCATE MIRAFI 140N NONWOVEN GEOTEXTILE.

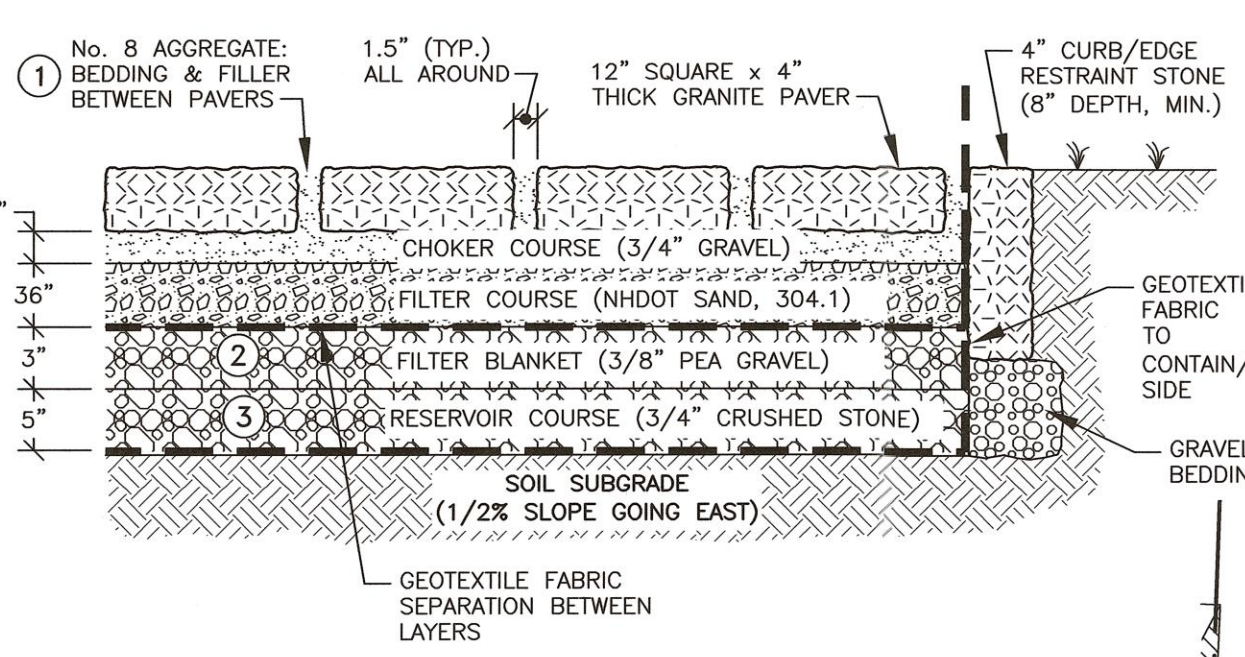
**OPEN SPACE CALCULATION**  
(TO PROPERTY LINE)

STRUCTURE	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	42343
SIDEWALK	2,888
PAVEMENT	31,409
CURB	266
RETAINING WALL	737
NON QUALIFYING	181
TOTAL	77824
LOT SIZE	98,124
% LOT COVERAGE	79.3%
% OPEN SPACE	20.6%

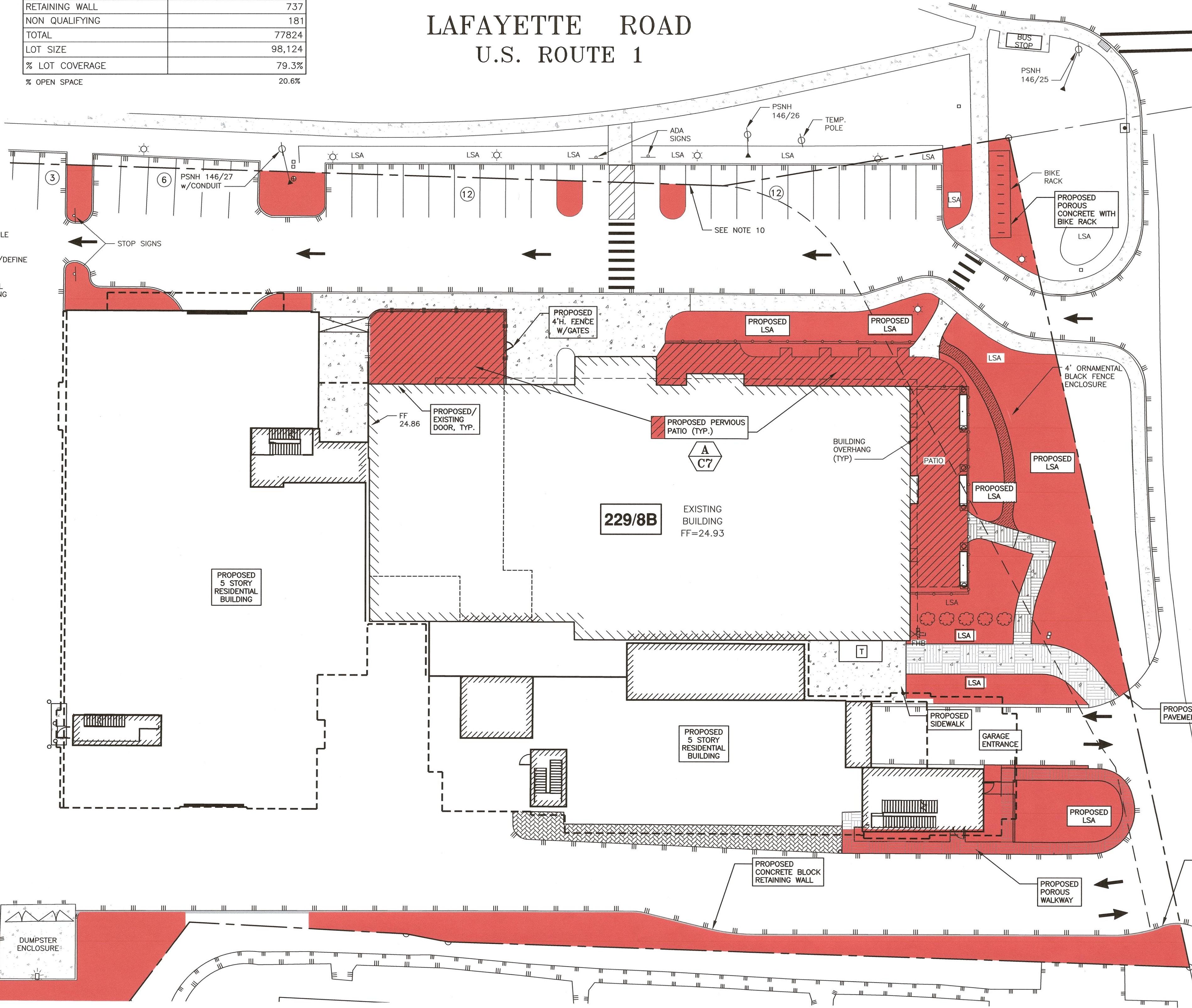
**SIDEWALK NOTES:**  
IMPERVIOUS WALKWAY= 4,604 S.F.  
POROUS WALKWAY= 1,716 S.F.  
REMAINING IMPERVIOUS= 4,604-1,716= 2,888 S.F.



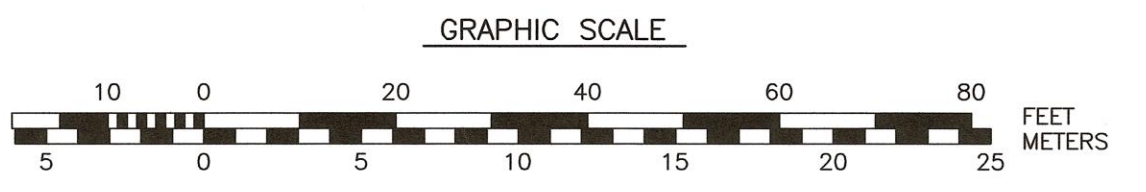
**LAFAYETTE ROAD**  
**U.S. ROUTE 1**



**A**  
**C7** **POROUS PATIO SECTION**  
12" SQUARE GRANITE PAVERS OR APPROVED EQUAL



■ OPEN SPACE



- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
  - 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
  - 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270E, EFFECTIVE MAY 17, 2005
  - 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
  - 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
  - 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
  - 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE OPEN SPACE ON TAX MAP 229 LOT 8B.

**COMMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	UPDATE	3/27/24
2	UPDATE	2/21/24
1	OPEN SPACE	1/2/24
0	ISSUED FOR COMMENT	12/19/23



SCALE: 1"=20' JULY 2023

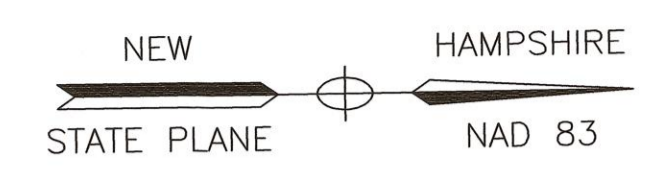
**OPEN SPACE PLAN**

**C7**

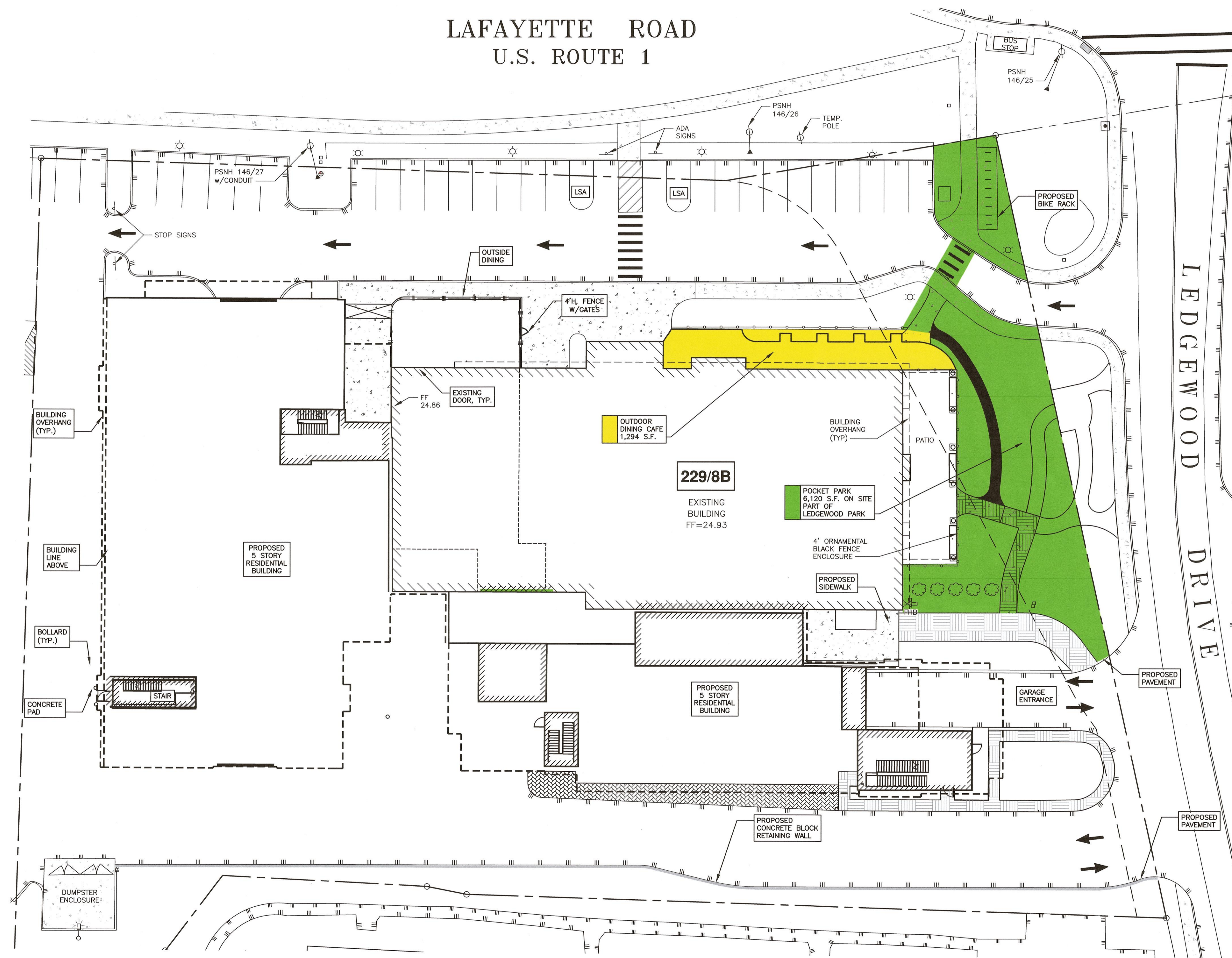
APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_





LAFAYETTE ROAD  
U.S. ROUTE 1



**COMMUNITY SPACE ON-SITE**

POCKET PARK = 6,120 S.F.  
OUTDOOR DINING CAFE = 1,294 S.F.

PROPOSED ON-SITE COMMUNITY SPACE 7,414 S.F.  
LOT AREA 98,124 S.F.

COMMUNITY SPACE REQUIRED: 10%  
(PER SECTION 10.5B41.80.2)  
ON-SITE COMMUNITY SPACE PROVIDED: 7.6%

COMMUNITY SPACE USES  
(PER SECTION 10.5B102)

PROPOSED USES: OUTDOOR DINING CAFE  
POCKET PARK

**NOTES:**

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ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270F, EFFECTIVE JANUARY 29, 2021
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98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE ON-SITE COMMUNITY SPACE ON TAX MAP 229 LOT 8B.

**COMMERCIAL DEVELOPMENT**  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.

4	BUILDING LAYOUT	3/27/24
3	AREAS/TYPES	2/21/24
2	COMMUNITY SPACE TYPES	2/6/24
1	AREAS/TYPES	1/24/24
0	ISSUED FOR COMMENT	12/19/23

NO.	DESCRIPTION	DATE
REVISIONS		



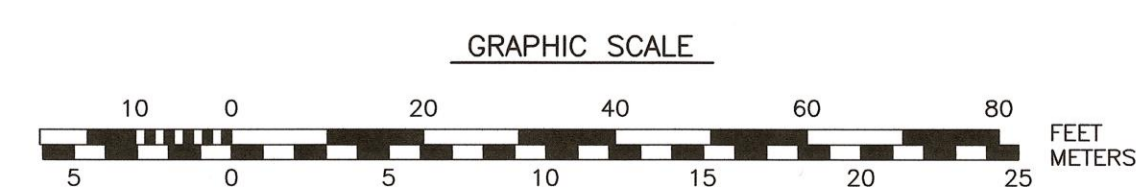
SCALE: 1"=20' JULY 2023

**ON-SITE COMMUNITY SPACE PLAN**

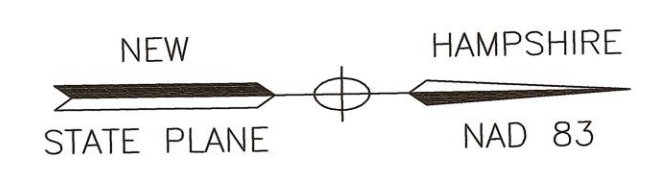
**C8**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

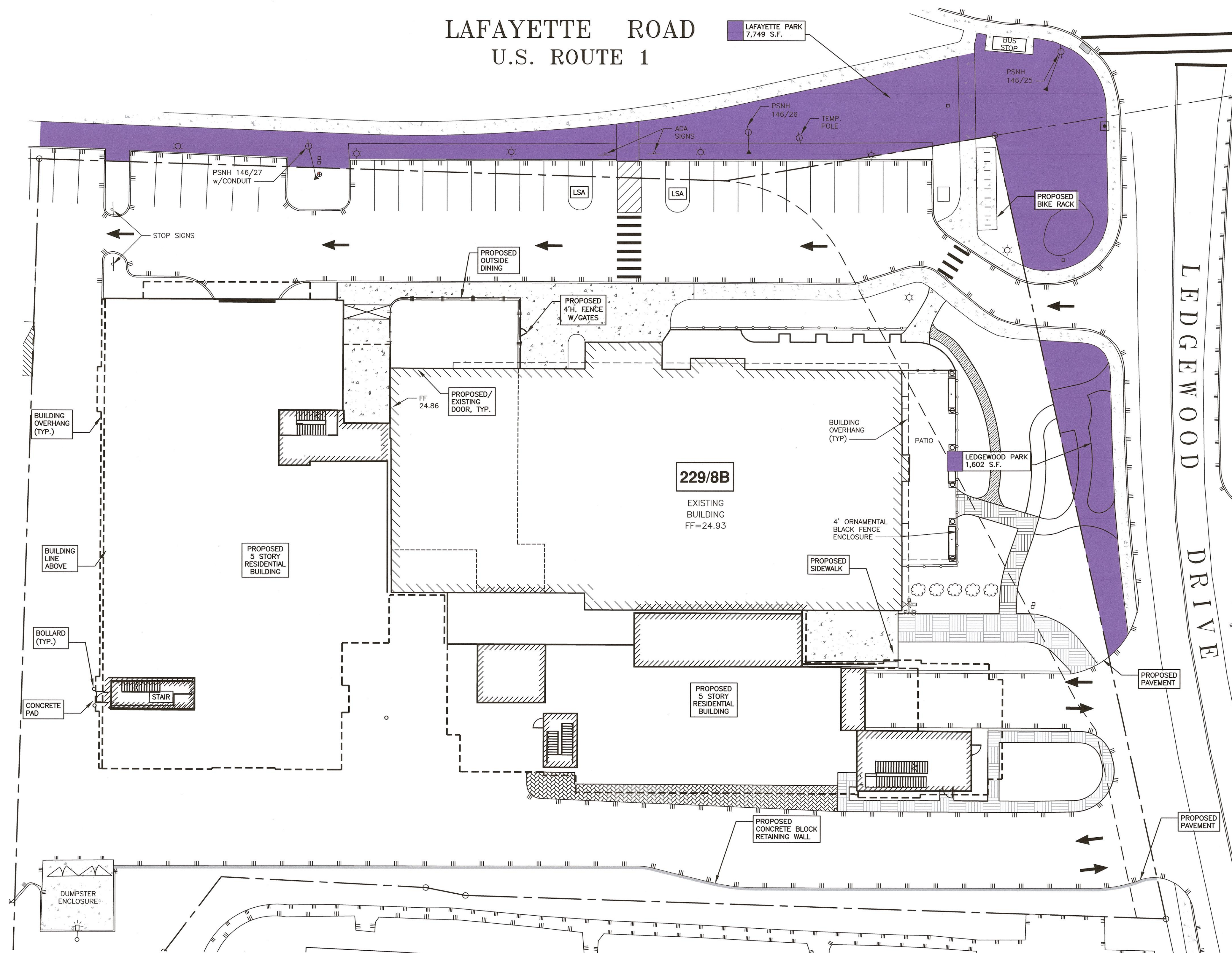
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_







LAFAYETTE ROAD  
U.S. ROUTE 1



OFF-SITE LANDSCAPE MAINTENANCE AREA  
LAFAYETTE PARK = 7,749 S.F.  
LEDGEWOOD PARK = 1,602 S.F.  
PROPOSED OFF-SITE MAINTENANCE AREA 9,351 S.F.

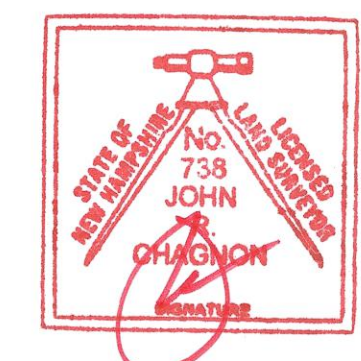
NOTES:

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
- 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
- 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270F, EFFECTIVE JANUARY 29, 2021
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98,124 S.F.  
2.2526 AC
- 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
- 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE OFF-SITE COMMUNITY SPACE TO BE MAINTAINED BY THE OWNER OF TAX MAP 229 LOT 8B.
- 8) SIGNAGE IDENTIFYING THE POCKET PARK AS PUBLIC SPACE TO BE PROVIDED.

COMMERCIAL DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.

2	BUILDING LAYOUT	3/27/24
1	TITLE	2/21/24
0	ISSUED FOR COMMENT	2/21/24

NO.	DESCRIPTION	DATE
REVISIONS		

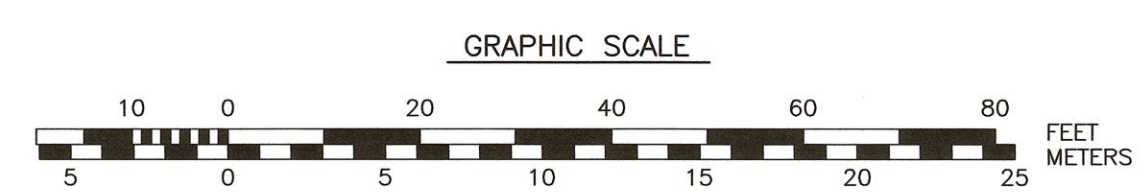


SCALE: 1"=20' JULY 2023

OFF-SITE LANDSCAPE MAINTENANCE AREA **C8.1**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

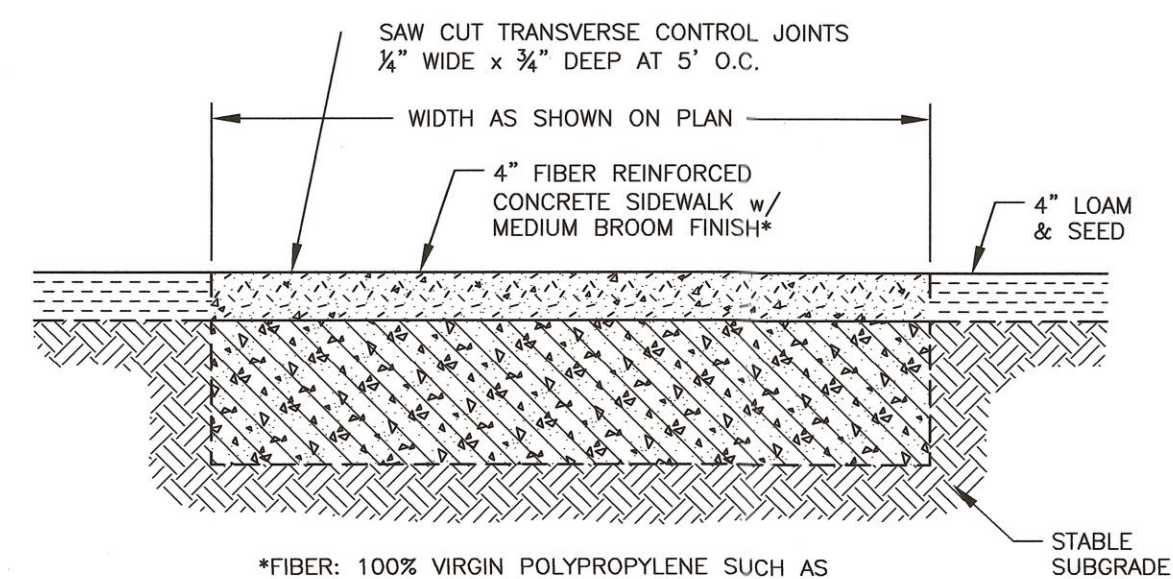
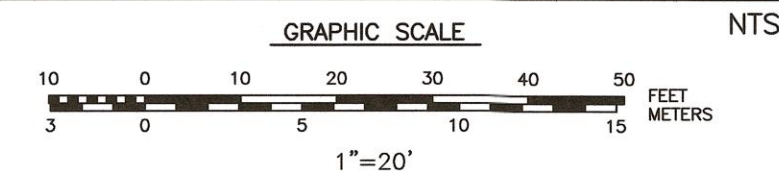
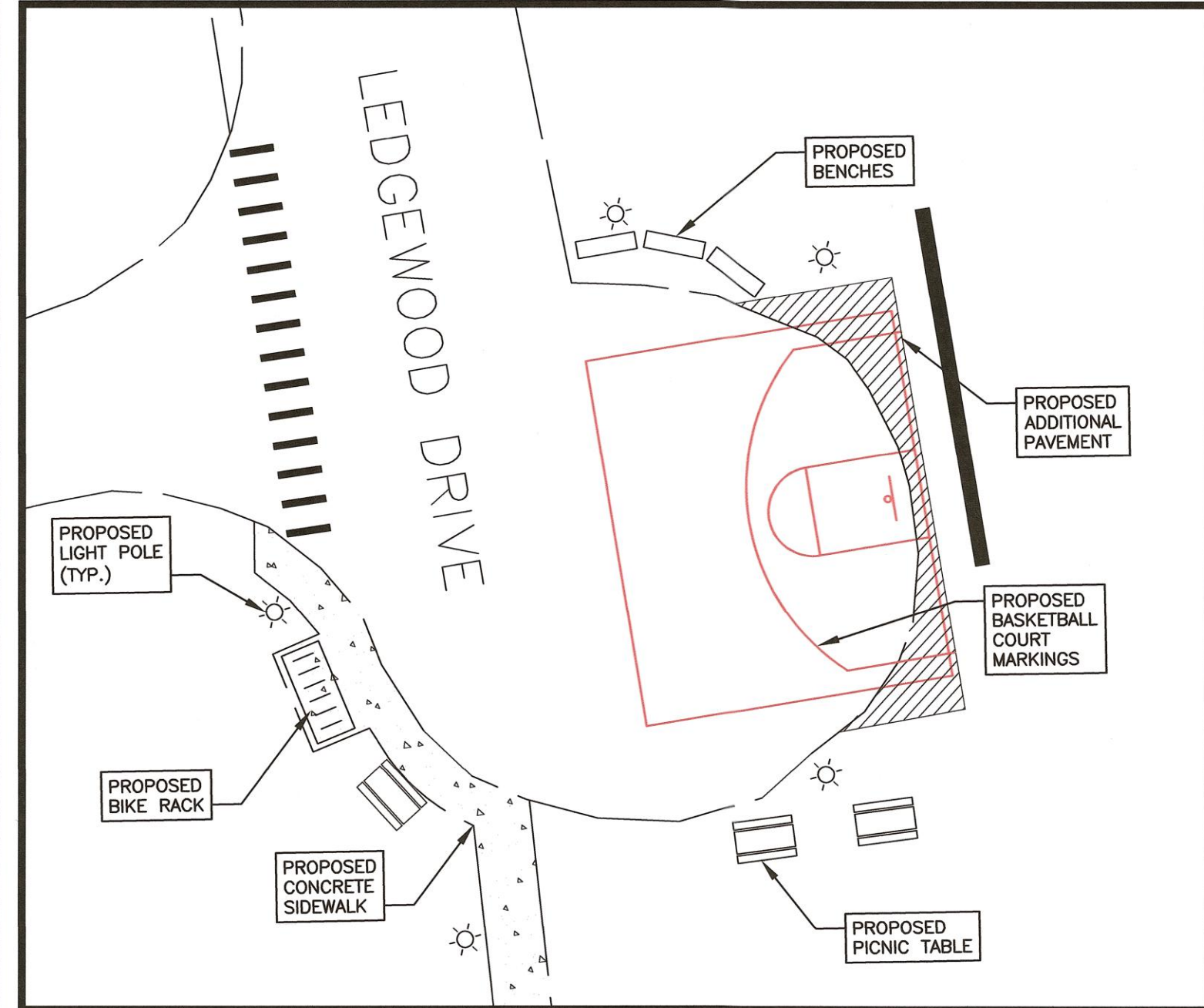
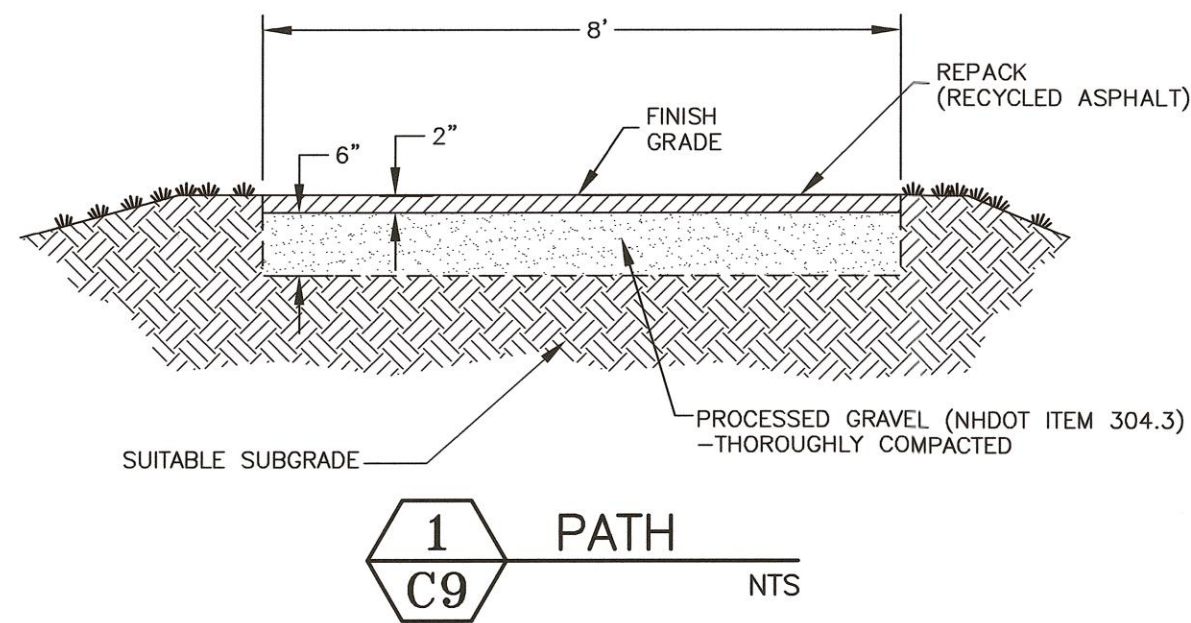




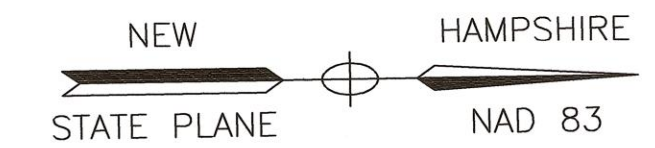
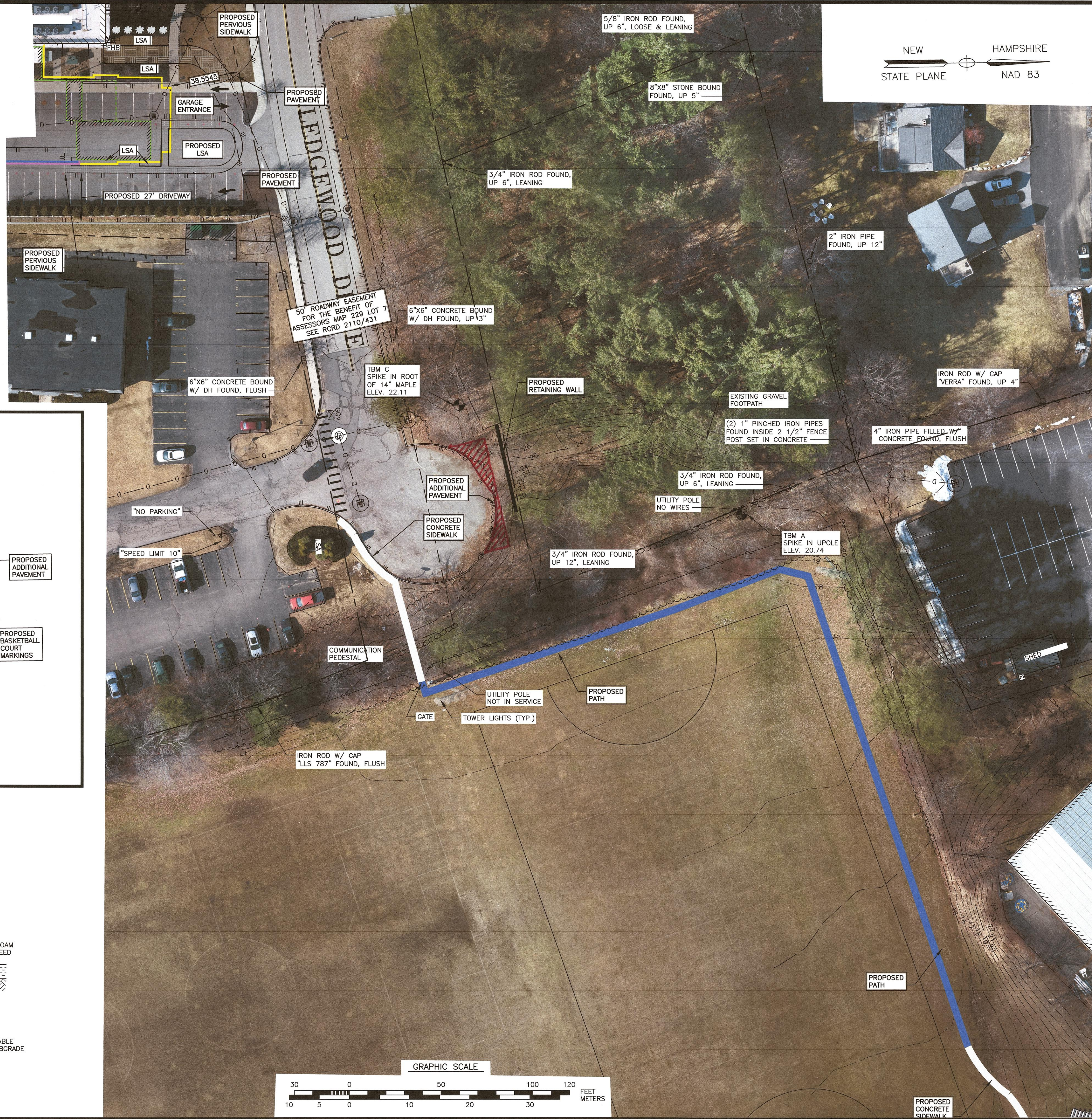
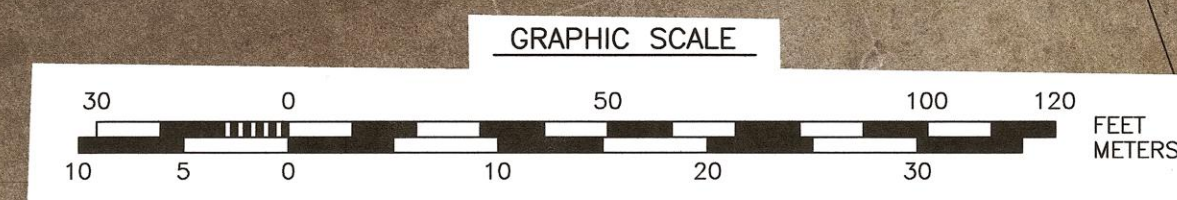
**PUBLIC REALM**

PUBLIC REALM IMPROVEMENT (PER SECTION 10.5B73.20.1)  
 LINEAR STREET FRONTAGE OF SITE: 619 FT  
 PROPOSED TRAIL NETWORK LENGTH: 707 FT

REQUIRED LENGTH: 619 FT  
 PROVIDED LENGTH: 707 FT



\*FIBER: 100% VIRGIN POLYPROPYLENE SUCH AS GRACE MICROFIBER, ASTM C116, TYPE 111, PAR.4.1.3. OR EQUAL APPLIED AT 1 LB. PER C.Y.

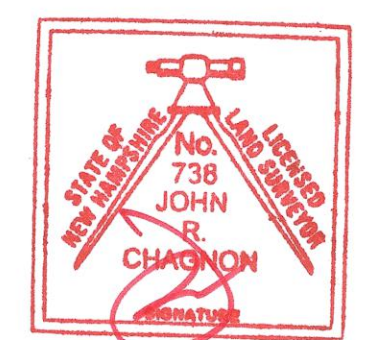


**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 229 AS LOT 8B.
  - 2) OWNERS OF RECORD:  
ATLAS COMMONS, LLC  
3 PLEASANT STREET, SUITE 400  
PORTSMOUTH, NH 03801  
6474/1538
  - 3) THE PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0270E, EFFECTIVE MAY 17, 2005
  - 4) EXISTING LOT AREA:  
98,124 S.F.  
2.2526 AC
  - 5) PARCEL IS LOCATED IN THE GATEWAY NEIGHBORHOOD CORRIDOR (G1) DISTRICT.
  - 6) DIMENSIONAL REQUIREMENTS:  
SEE ZONING ORDINANCE SECTION 10.5B22.10
  - 7) THE PURPOSE OF THIS PLAN IS TO SHOW PUBLIC REALM IN ACCORDANCE WITH SECTION 10.5B7320.1 ON TAX MAP 229 LOT 8B.
  - 8) PUBLIC REALM IMPROVEMENTS SHOWN HEREON ARE SUBJECT TO CITY OF PORTSMOUTH SCHOOL DEPARTMENT REVIEW AND APPROVAL. FINAL DESIGN & LOCATION TO BE DETERMINED.

**COMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	ORTHO PHOTO UPDATED, DETAIL 3	3/27/24
1	PUBLIC REALM TRAIL	2/6/24
0	ISSUED FOR COMMENT	1/4/24

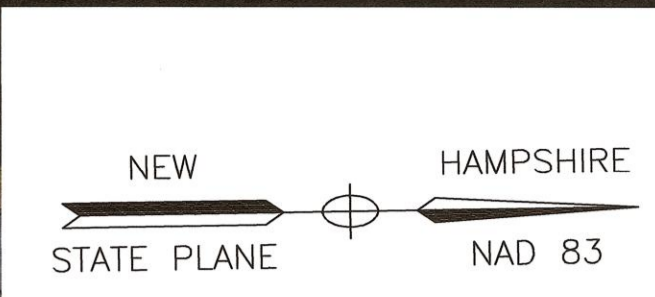


SCALE: 1"=30' JANUARY 2024

**PUBLIC REALM PLAN**

**C9**



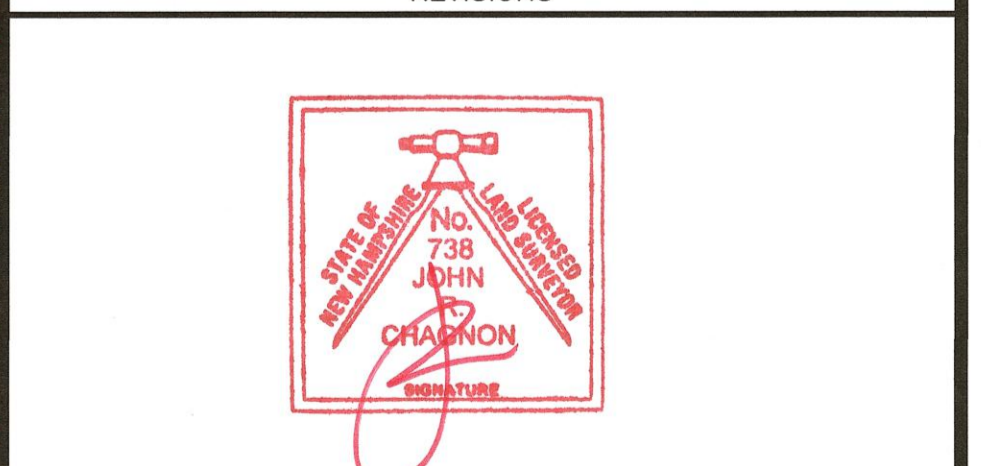


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 3 PLEASANT STREET, SUITE 400  
 PORTSMOUTH, NH 03801  
 6474/1538
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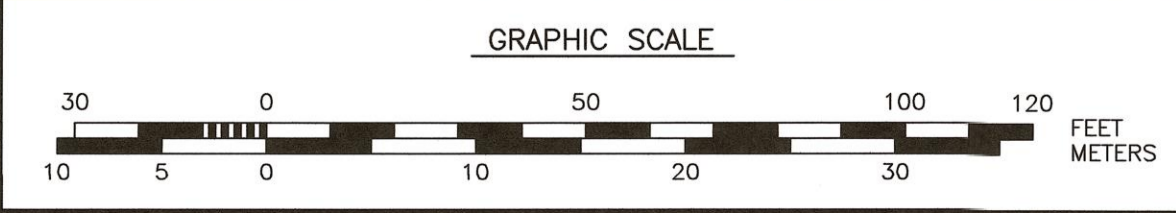
**COMERCIAL DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	ORTHO PHOTO UPDATED, SIDEWALK	3/27/24
1	PUBLIC REALM TRAIL	2/6/24
0	ISSUED FOR COMMENT	1/4/24



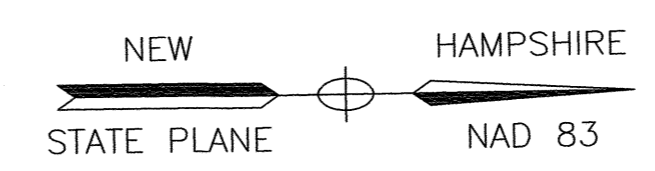
SCALE: 1"=30'      JANUARY 2024

**PUBLIC REALM PLAN**      **C10**

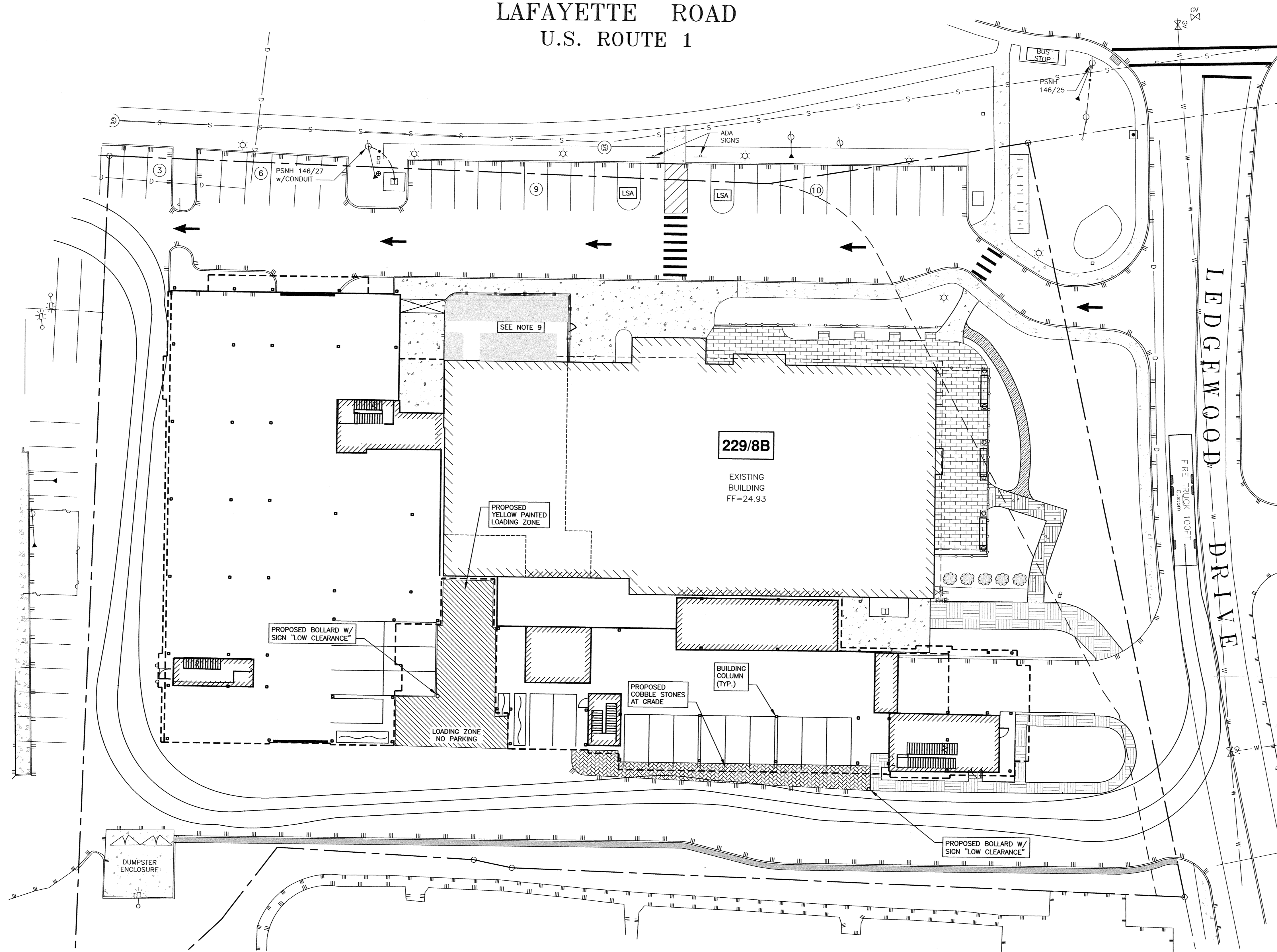


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**LAFAYETTE ROAD  
U.S. ROUTE 1**

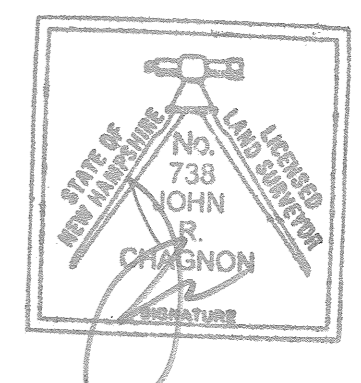


**NOTES:**

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SEE ZONING ORDINANCE SECTION 10.5B22.10
- 7) THE PURPOSE OF THIS PLAN IS TO SHOW GENERAL TURNING MOVEMENTS ON TAX MAP 229 LOT 8B.
- 8) DESIGN BASED ON ARCHITECTURAL PLAN BY ARCOVE ARCHITECTS DATED 8/22/23.
- 9) CONVERSION OF TUSCAN MARKETPLACE TO RESTAURANT (NORTHEASTERN THAI, LLC) APPROVED UNDER PERMIT: LU-22-254

**COMMERCIAL  
DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
3	BUILDING COLUMNS & BOLLARD	3/27/24
2	BUILDING	3/5/24
1	ISSUED FOR APPROVAL	9/29/23
0	ISSUED FOR COMMENT	8/31/23



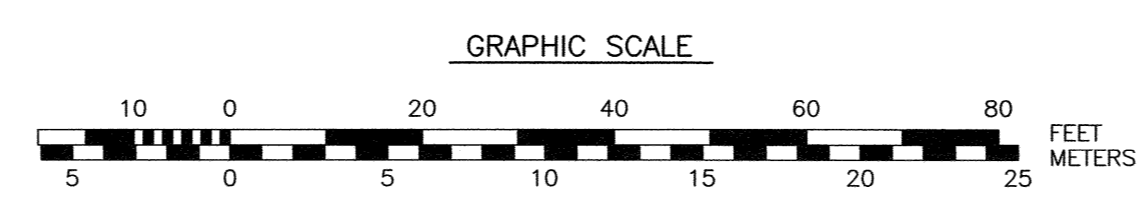
SCALE: 1"=20' JULY 2023

**FIRE TRUCK  
TURNING PLAN**

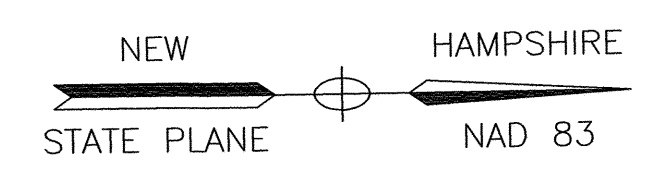
**T1**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

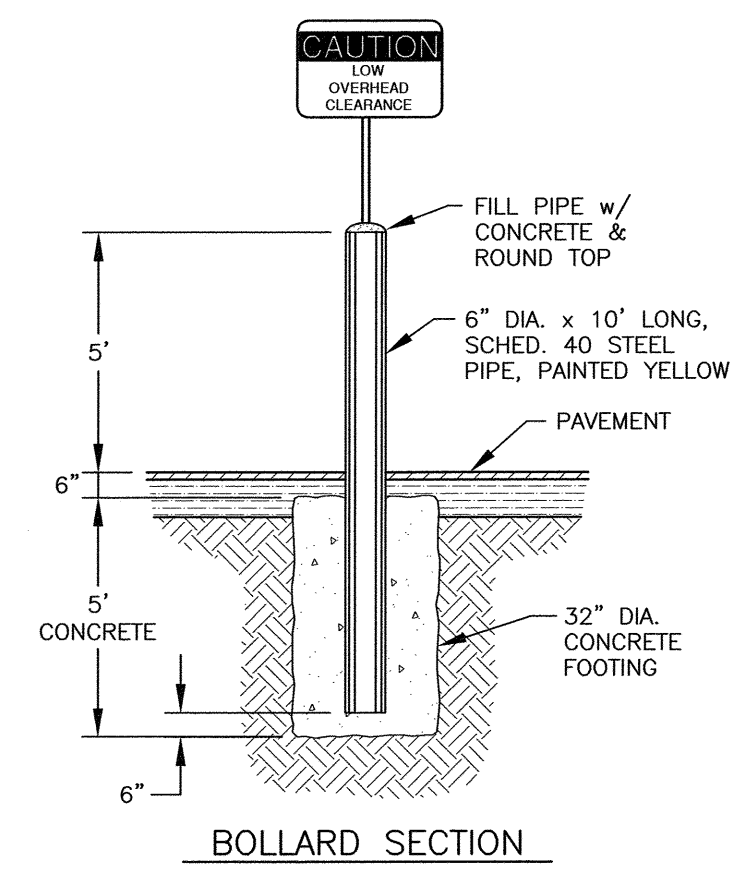
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



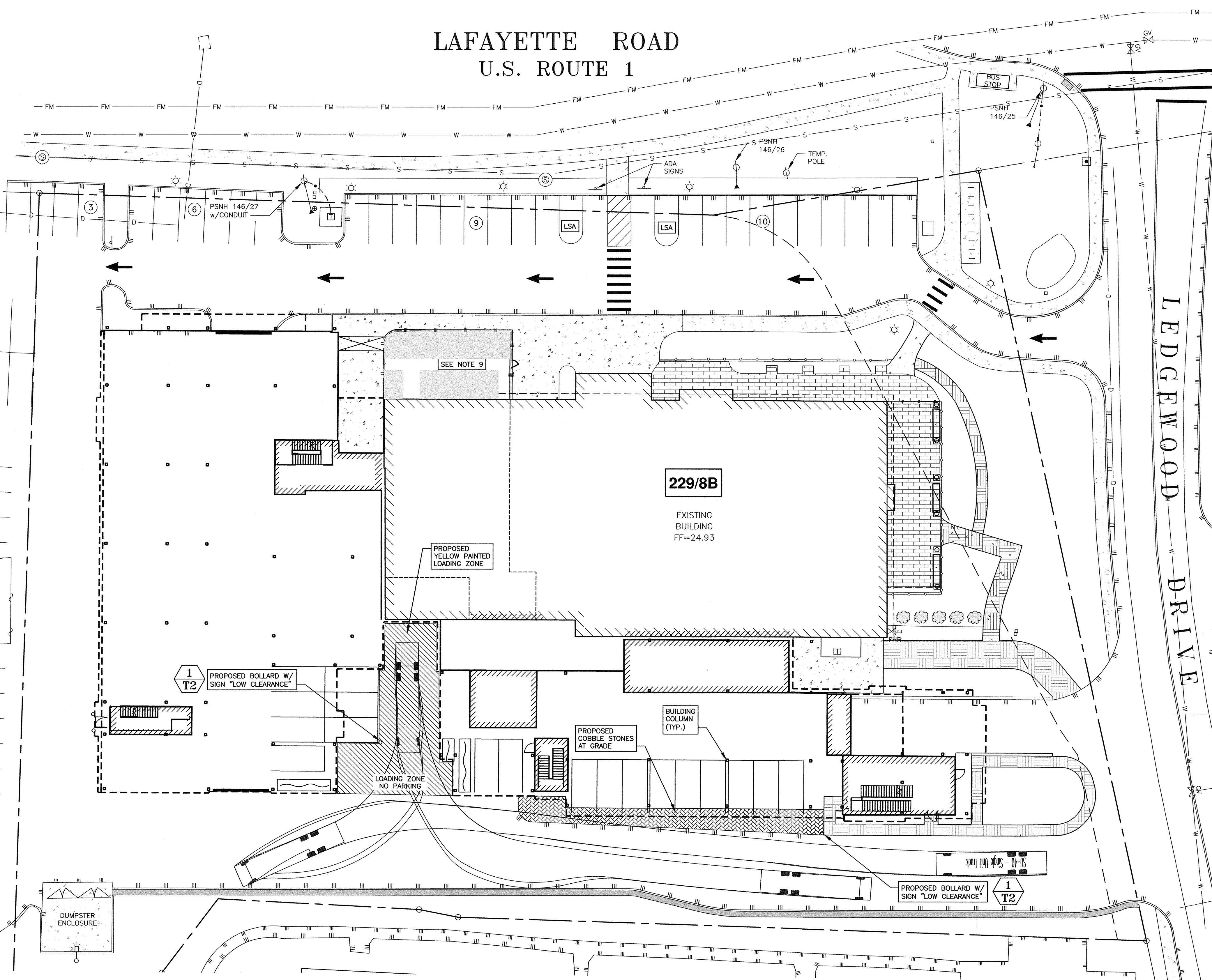




**LAFAYETTE ROAD  
U.S. ROUTE 1**



**1**  
**T2**  
BOLLARD W/ SIGN DETAIL  
NTS

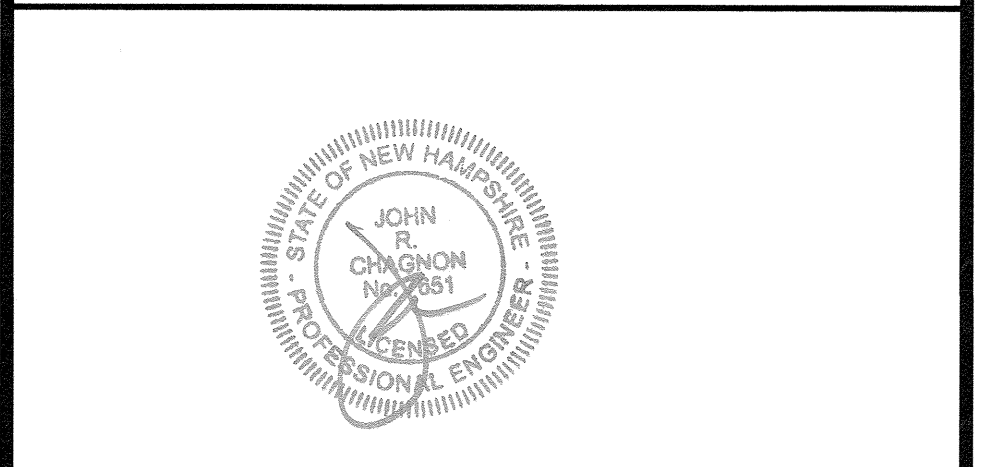


**NOTES:**

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**COMMERCIAL  
DEVELOPMENT  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
3	BUILDING COLUMNS & BOLLARD	3/27/24
2	BUILDING	3/5/24
1	ISSUED FOR APPROVAL	9/29/23
0	ISSUED FOR COMMENT	8/31/23

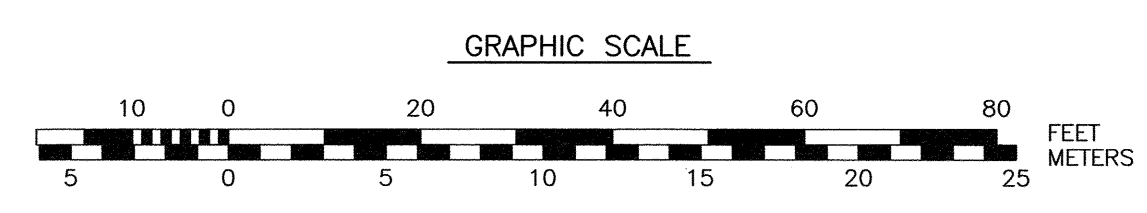


SCALE: 1"=20' JULY 2023

**DELIVERY TRUCK  
TURNING PLAN** **T2**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_





# EROSION CONTROL NOTES

## CONSTRUCTION SEQUENCE

- DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- THE CONTRACTOR SHALL OBTAIN AN NPDES PHASE II STORMWATER PERMIT 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., SILT/STORM SOX AROUND THE LIMITS OF DISTURBANCE AND CATCH BASIN BASKETS AS NEEDED BEFORE ANY EARTH MOVING OPERATIONS.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
- CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.
- DEMOLISH EXISTING WALKWAYS, PAVEMENT, AND UTILITIES AS INDICATED ON THE PLANS.
- REPLANT TREES OR MOVE TO STABLE LOCATION.
- BEGIN CONSTRUCTION OF ADDITIONS.
- LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.
- FINISH GRADE SITE, BACKFILL ROAD SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS.
- INSTALL RETAINING WALL.
- INSTALL DRAINAGE SYSTEM.
- PLACE BINDER LAYER OF PAVEMENT, THEN RAISE CATCH BASIN FRAMES TO FINAL GRADE. REINSTALL BASIN INLET PROTECTION.
- 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 ASPHALT WEARING COURSE.
- 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 AOR 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 SILT/STORM SOX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND SILT/STORM SOX 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 SILT/STORM SOX 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

## 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 RESEDED, 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
BIRDFOOT TREFLOIL	16%	

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

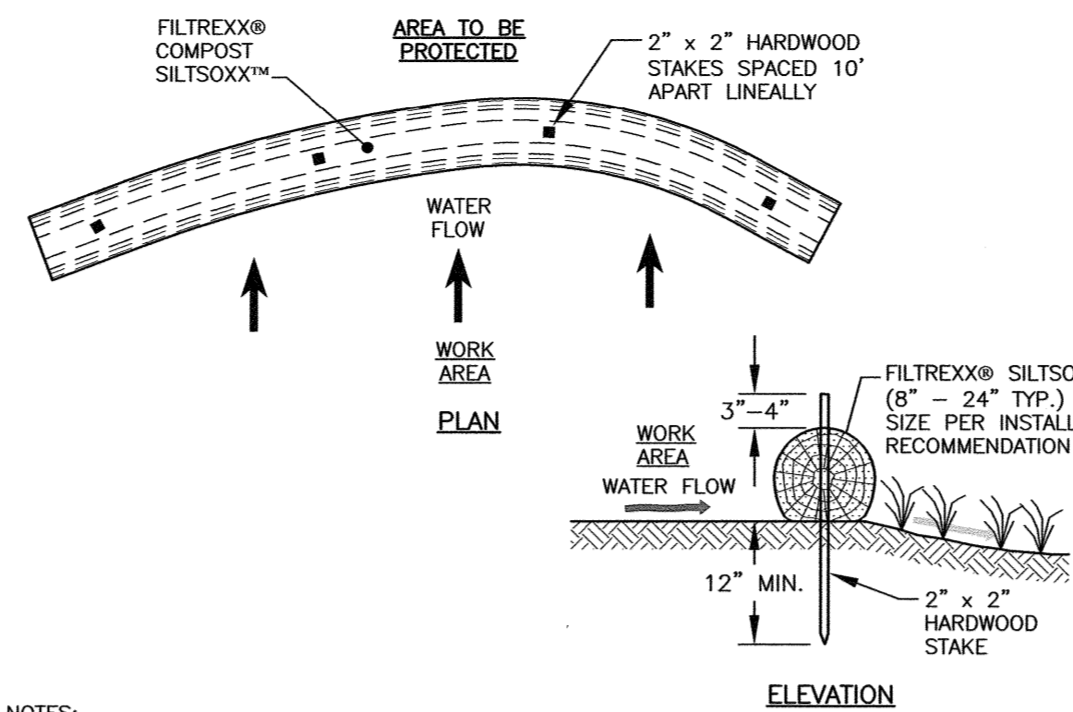
FOR TEMPORARY PROTECTION OF DISTURBED AREAS:  
 MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:  
 PERENNIAL RYE: 0.7 LBS/1,000 S.F.  
 MULCH: 1.5 TONS/ACRE

## 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 RESEDED 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 RESEDED 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 SILT/STORM SOX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- SILT FENCING AND SILT/STORM SOX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE AND SILT/STORM SOX REMOVAL SHALL BE PERMANENTLY SEEDED.

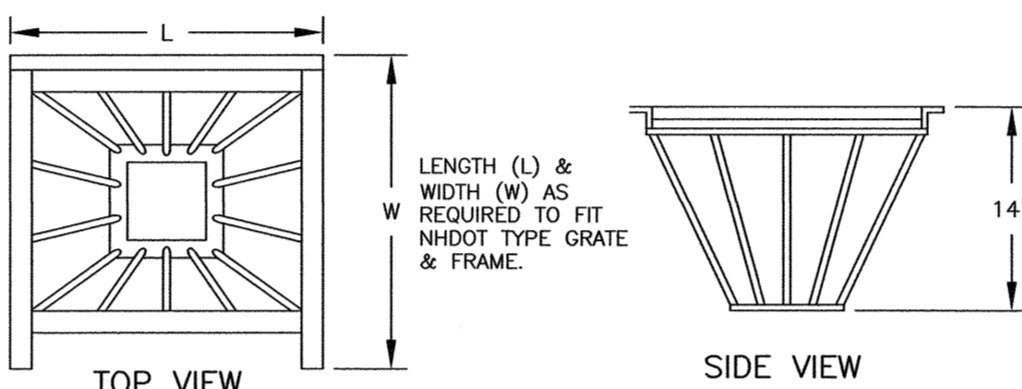
## WINTER NOTES

- 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.



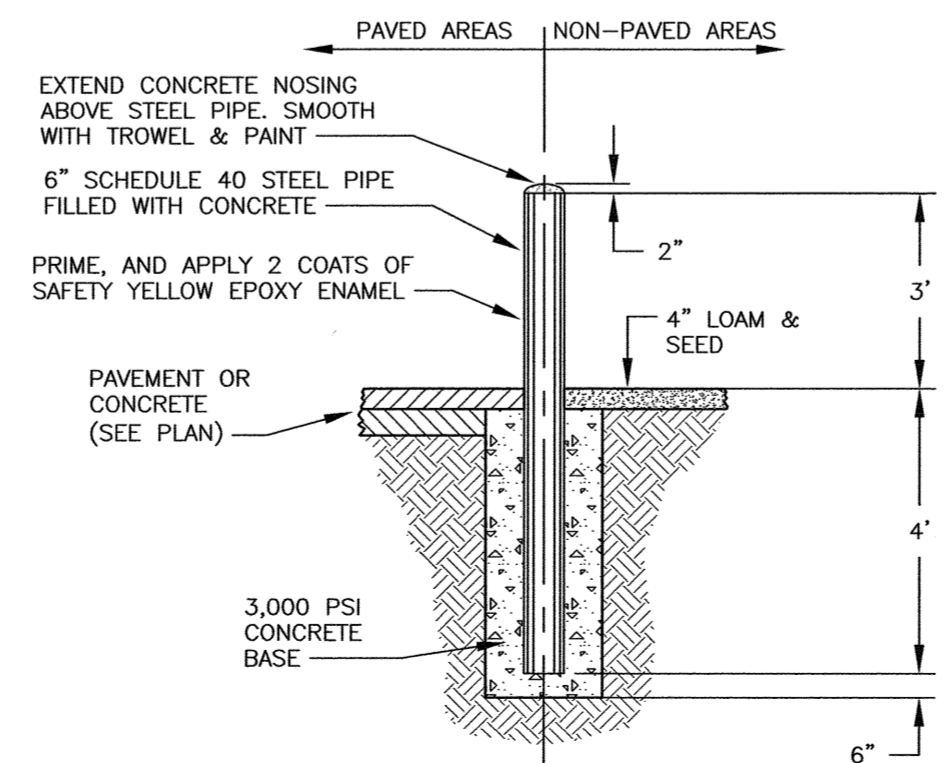
- NOTES:
- ALL MATERIAL TO MEET FILTRERX SPECIFICATIONS.
  - FILTRERX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTRERX INSTALLER.
  - THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
  - SILT/STORM SOX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
  - THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

## A FILTRERX@ SILT/STORM SOX™ FILTRATION SYSTEM NTS

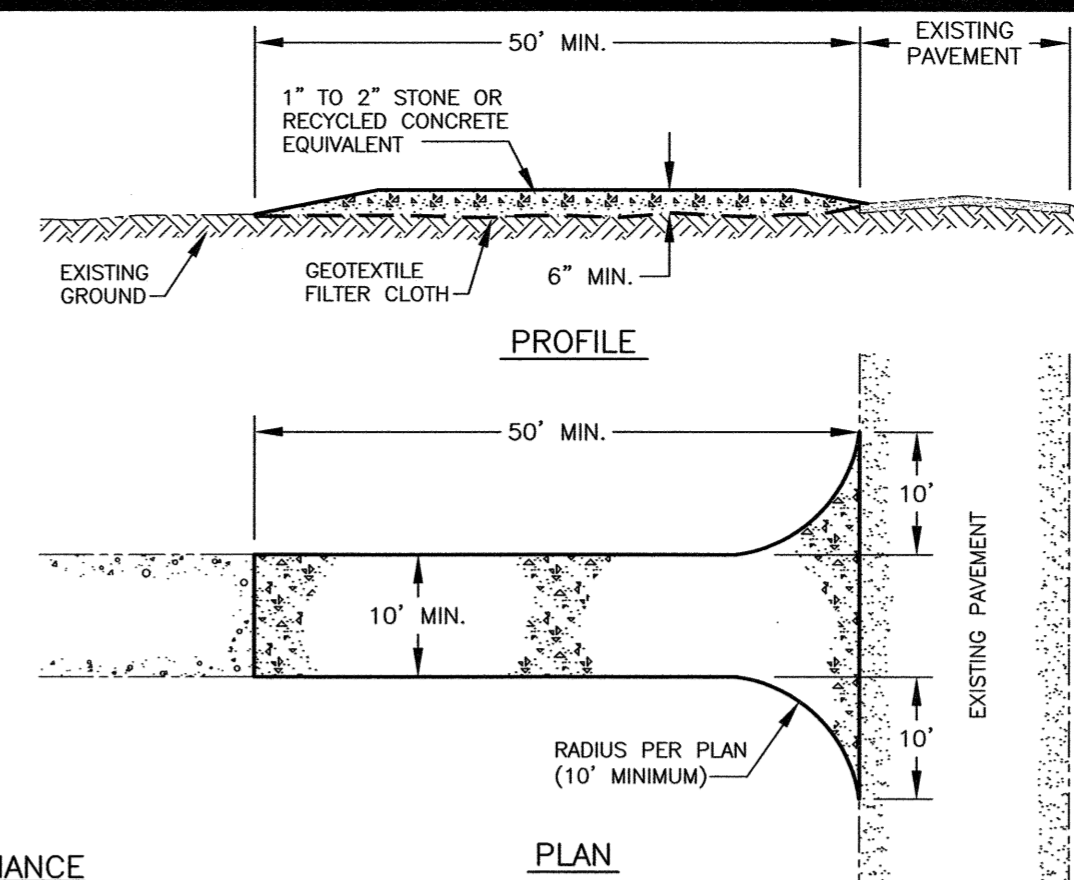


- INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.
- FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
- THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC, POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
  - RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
  - MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)
- THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/ft (MULTIPLY THE PERMEABILITY IN SEC.-1 FROM ASTM 54491-85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)
- THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.
- SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

## B CATCH BASIN INLET BASKET NTS



## E PIPE BOLLARD DETAIL NTS



## MAINTENANCE

- 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.
- 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

- STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- 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.
- THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- 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.
- 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.
- 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.
- 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 CLEANUP OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
- 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.

## C STABILIZED CONSTRUCTION ENTRANCE NTS

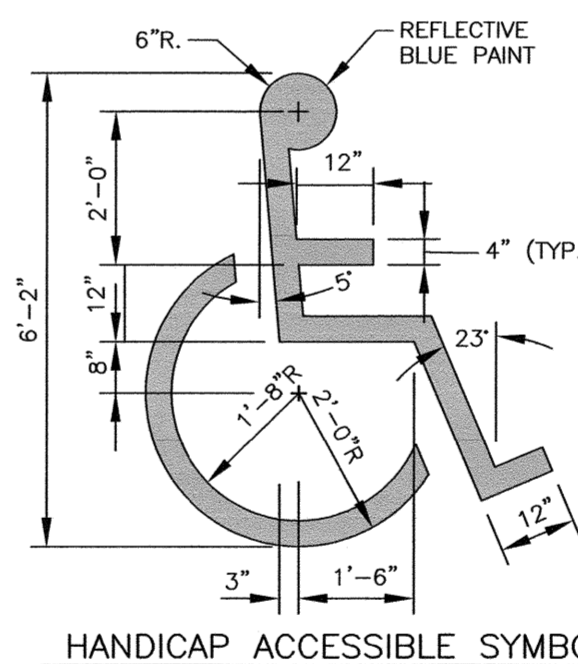


R7-8a  
12" x 18"  
SIGN ON POST

EACH SPACE SHALL HAVE THIS SIGN DISPLAYED PER ADA CODE

## SIGNAGE

LEGEND SYMBOL



## HANDICAP ACCESSIBLE SYMBOL



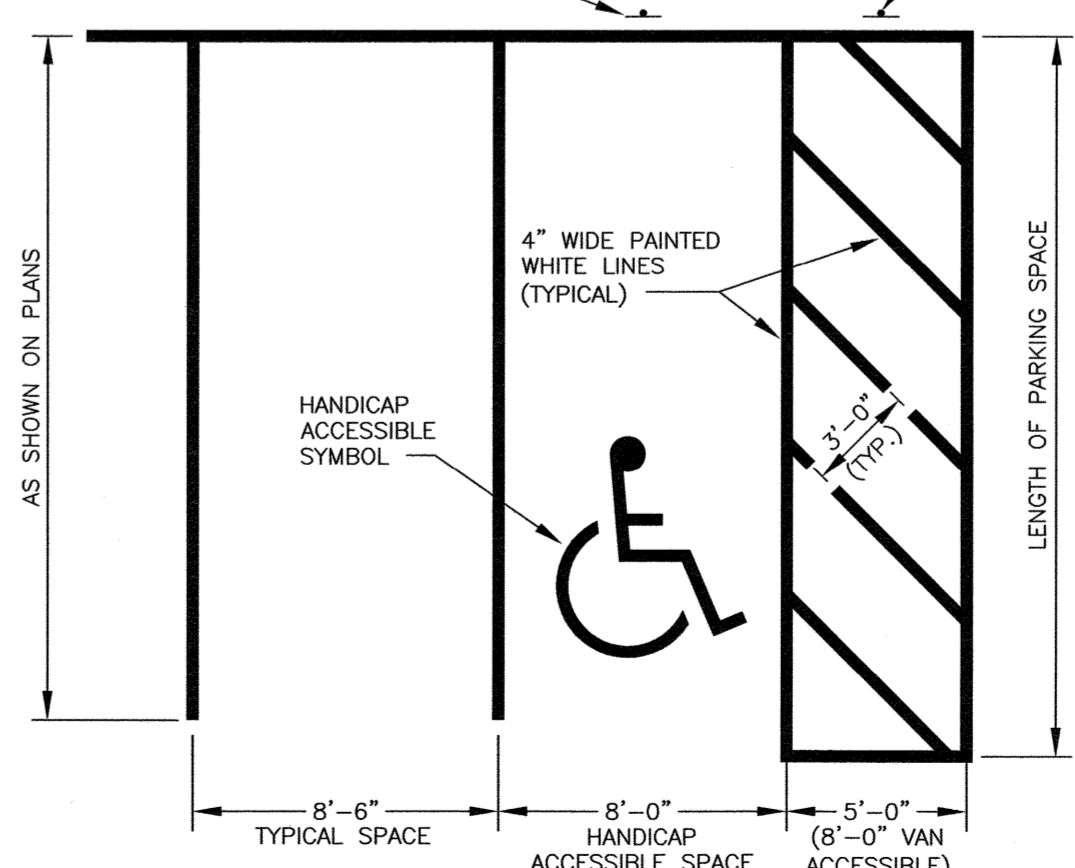
K-4438  
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SIGN ON POST

## SIGNAGE



PROVIDE SIGN (PER ADA CODE) AT EACH HANDICAP ACCESSIBLE SPACE

HANDICAP ACCESS AISLE NO PARKING SIGN



## EE HANDICAP PARKING DETAIL NTS

## NOTES:

- SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.
- SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).
- ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.

**AMBIT ENGINEERING, INC.**  
 A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3  
 Portsmouth, NH 03801  
 603.430.9282

WWW.HALEYWARD.COM

- NOTES:
- 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.
  - 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.
  - 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).

MIXED USE DEVELOPMENT  
 581 LAFAYETTE ROAD  
 PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
1	DETAIL EE	2/21/24
0	ISSUED FOR COMMENT	11/20/23

JOHN CHAMBERLAIN  
 PROFESSIONAL ENGINEER  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF NEW HAMPSHIRE  
 LICENSE NO. 10551

SCALE: AS NOTED NOVEMBER 2023

EROSION CONTROL NOTES & DETAILS **D1**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

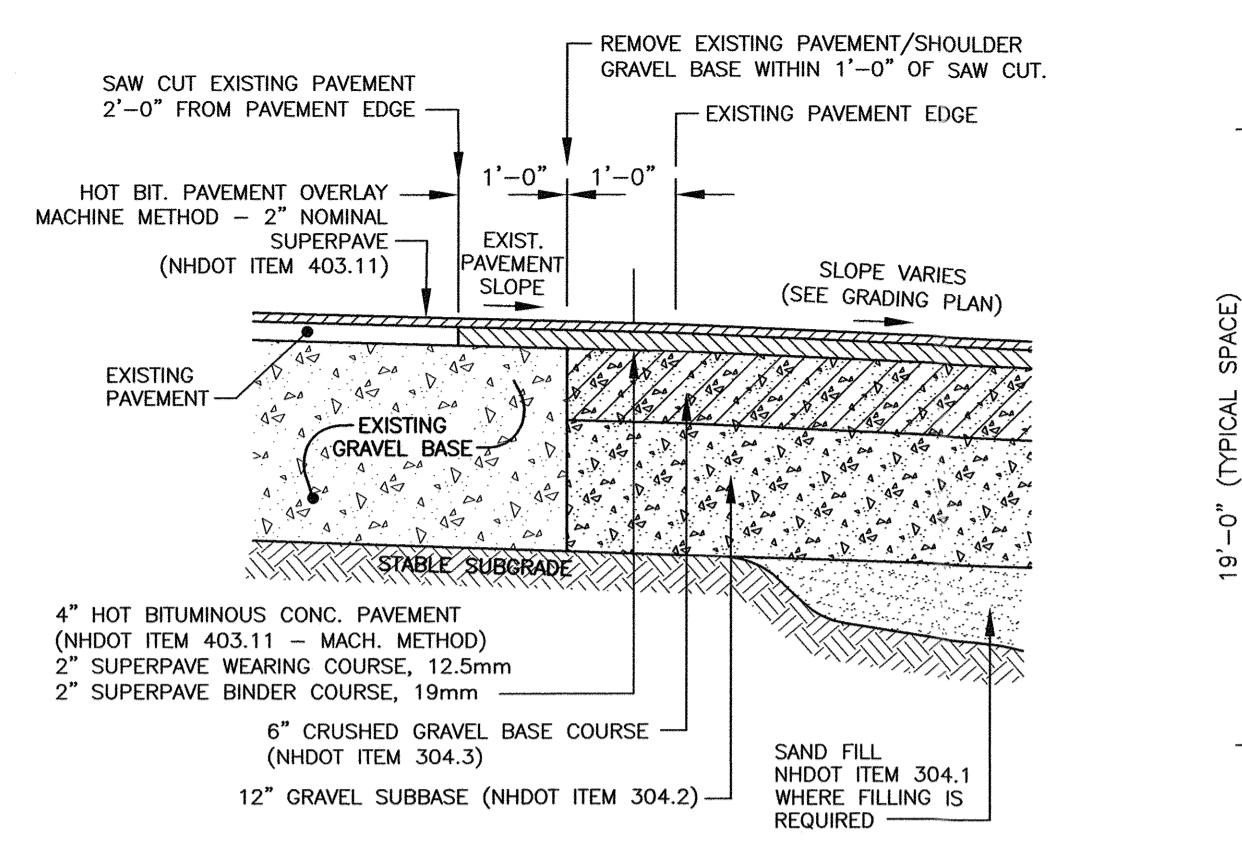
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



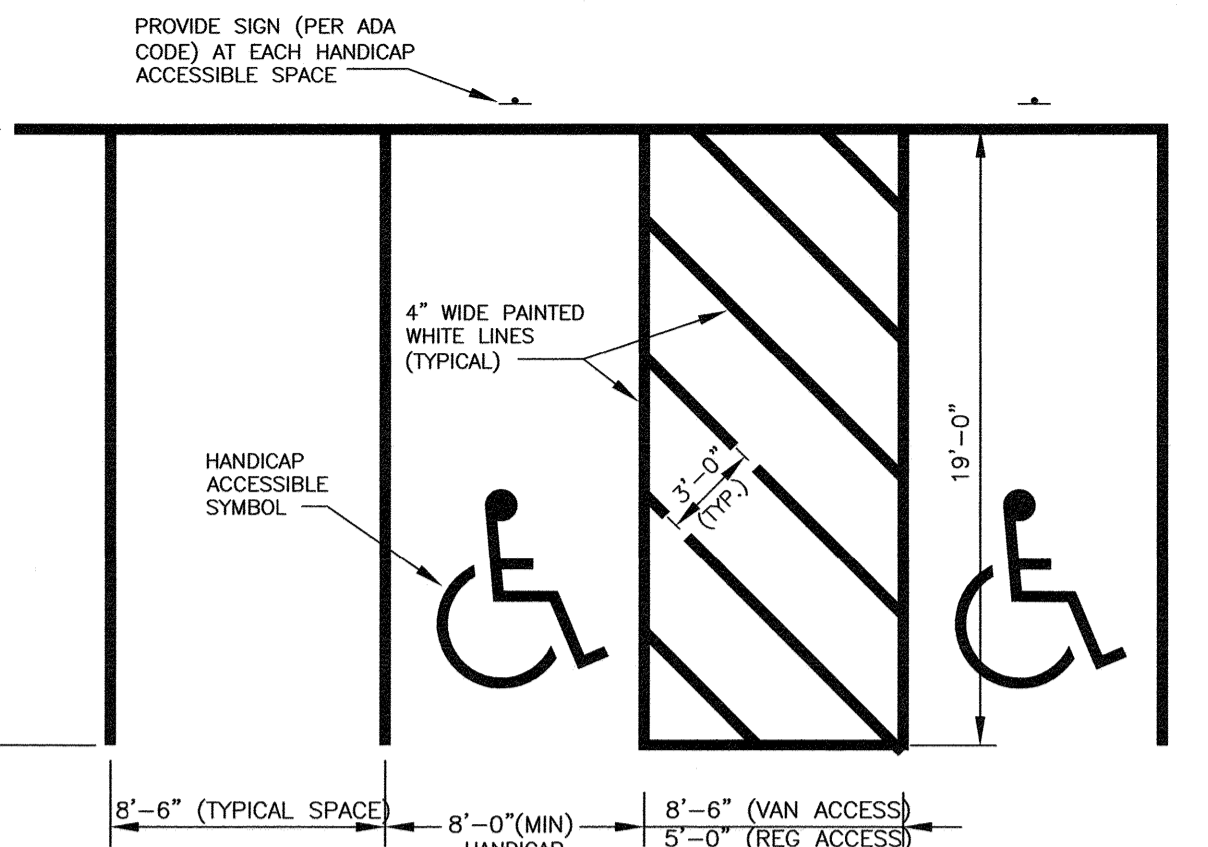
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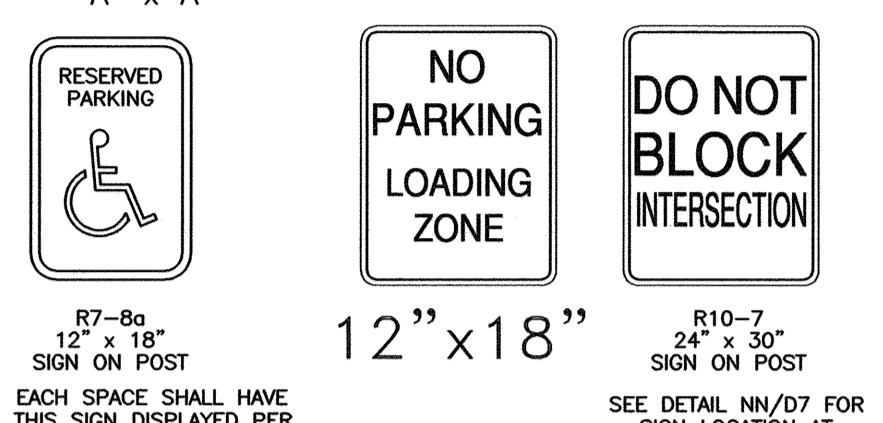
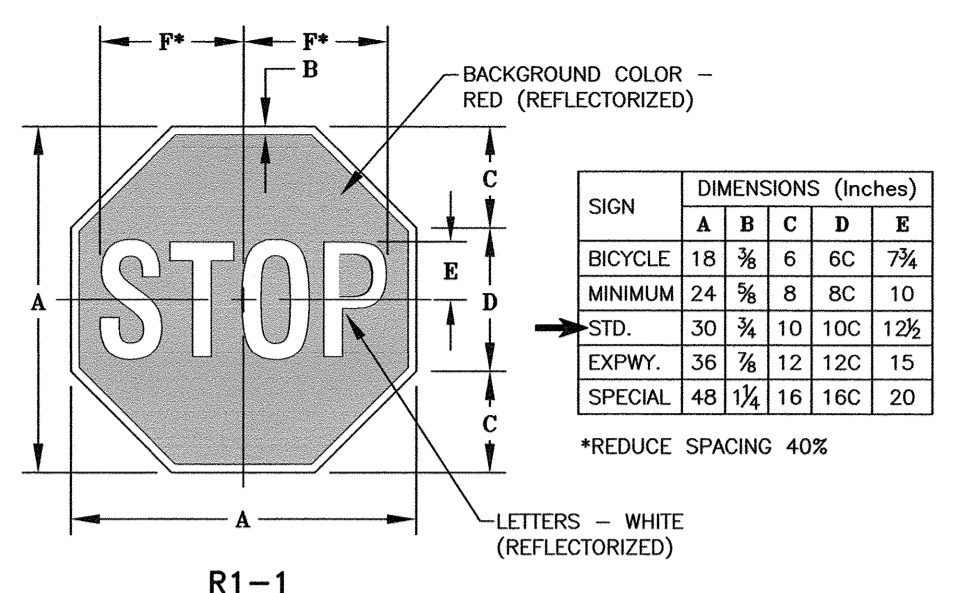
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**F**  
C3  
**FULL DEPTH PAVEMENT SECTION AND PAVEMENT JOINT DETAIL**  
NTS



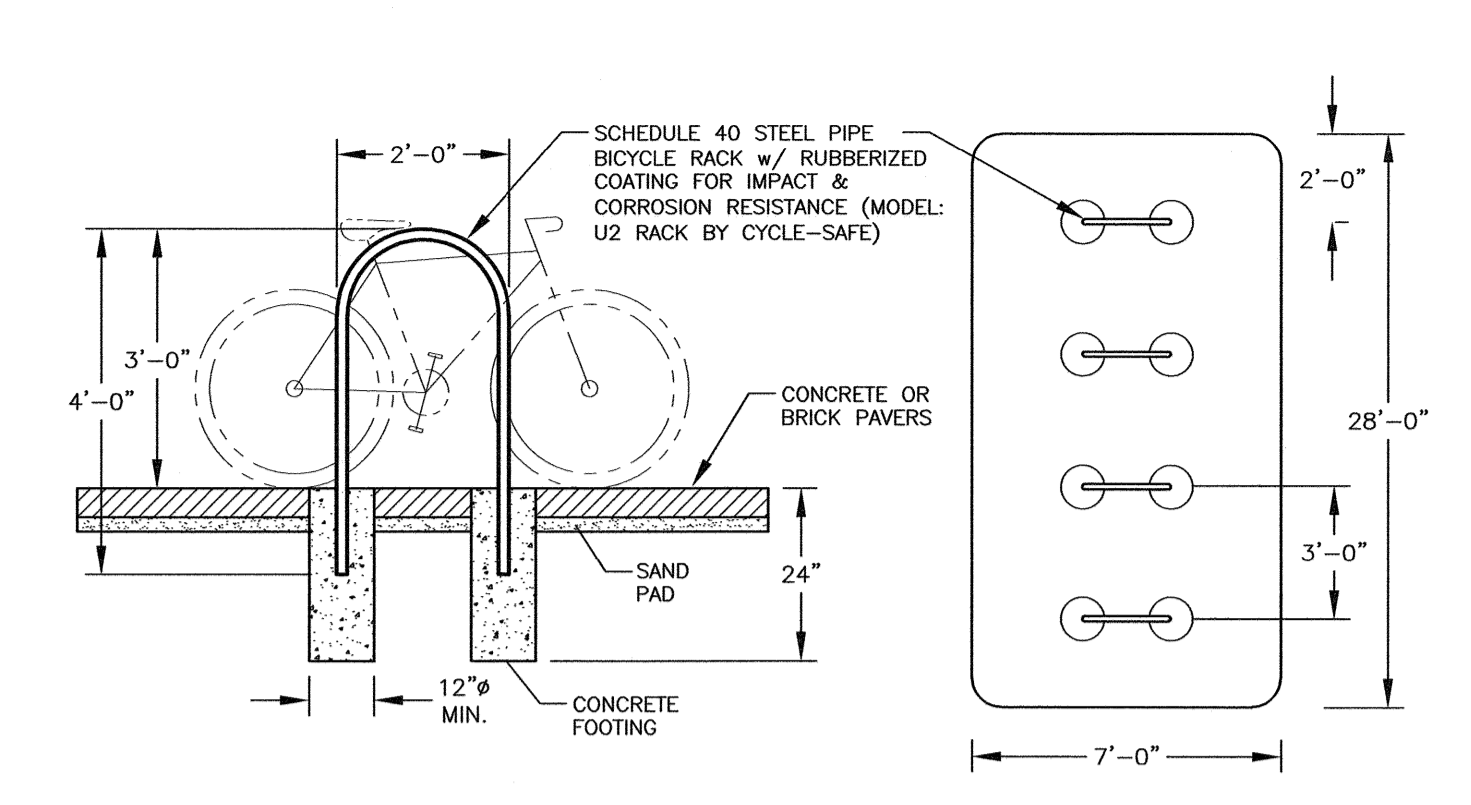
**J**  
C3  
**PARKING STALL DETAIL**  
NTS



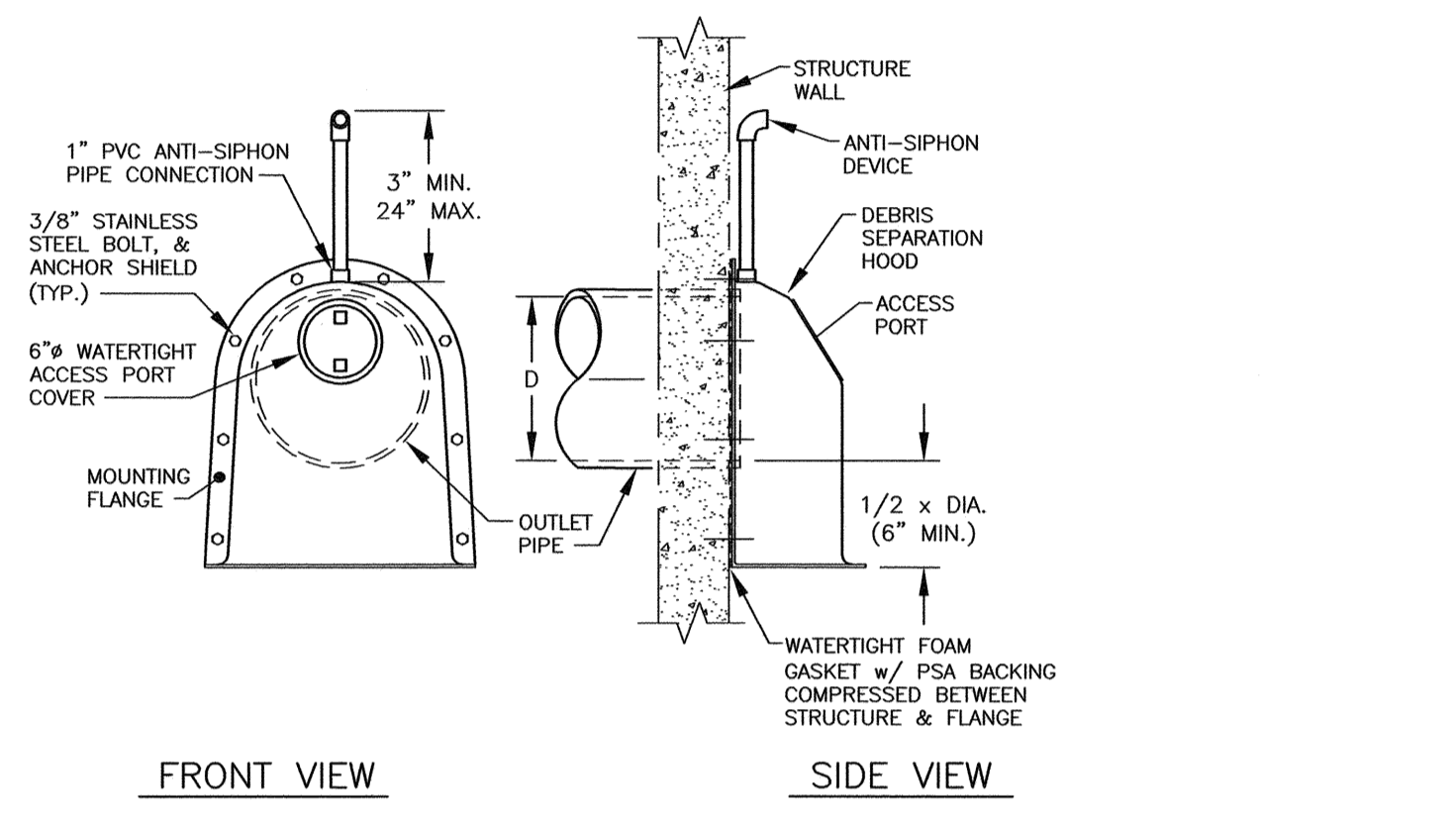
**R7-8a**  
12" x 18"  
SIGN ON POST  
EACH SPACE SHALL HAVE THIS SIGN DISPLAYED PER ADA CODE

**R10-7**  
24" x 30"  
SIGN ON POST  
SEE DETAIL NN/D7 FOR SIGN LOCATION AT INTERSECTION OF LEDGWOOD DRIVE AND LAFAYETTE ROAD

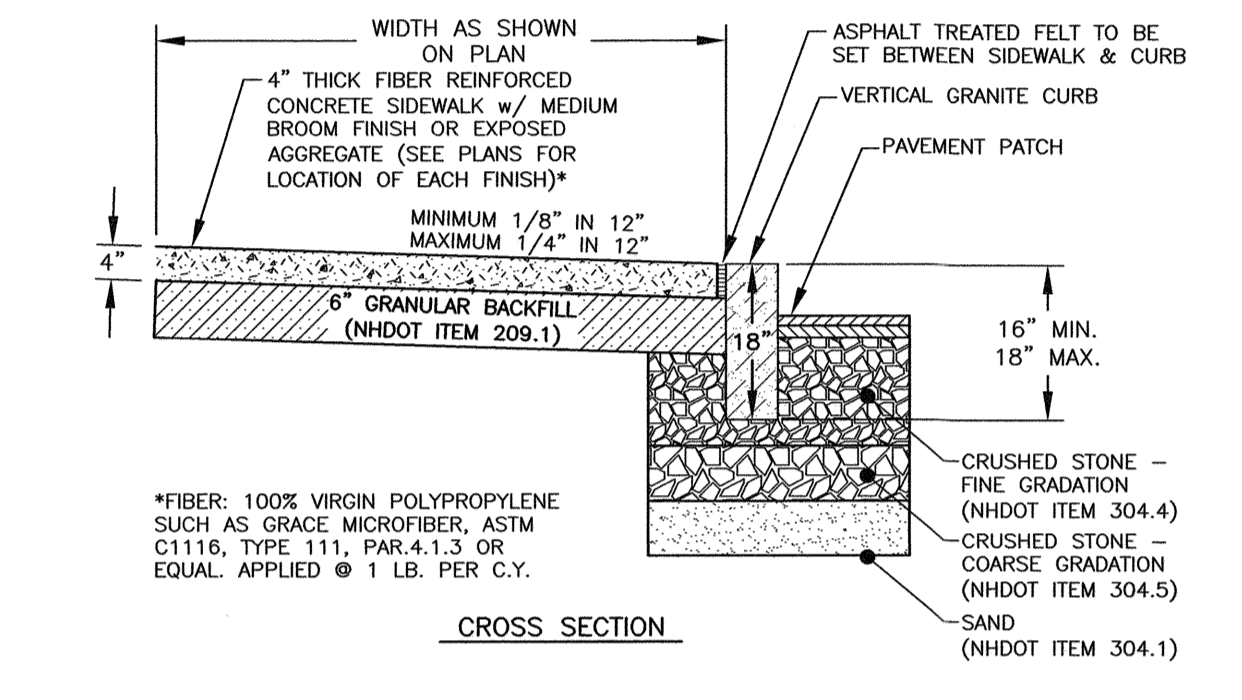
**R5-1**  
30" x 30"  
**SIGN DETAILS**  
NTS



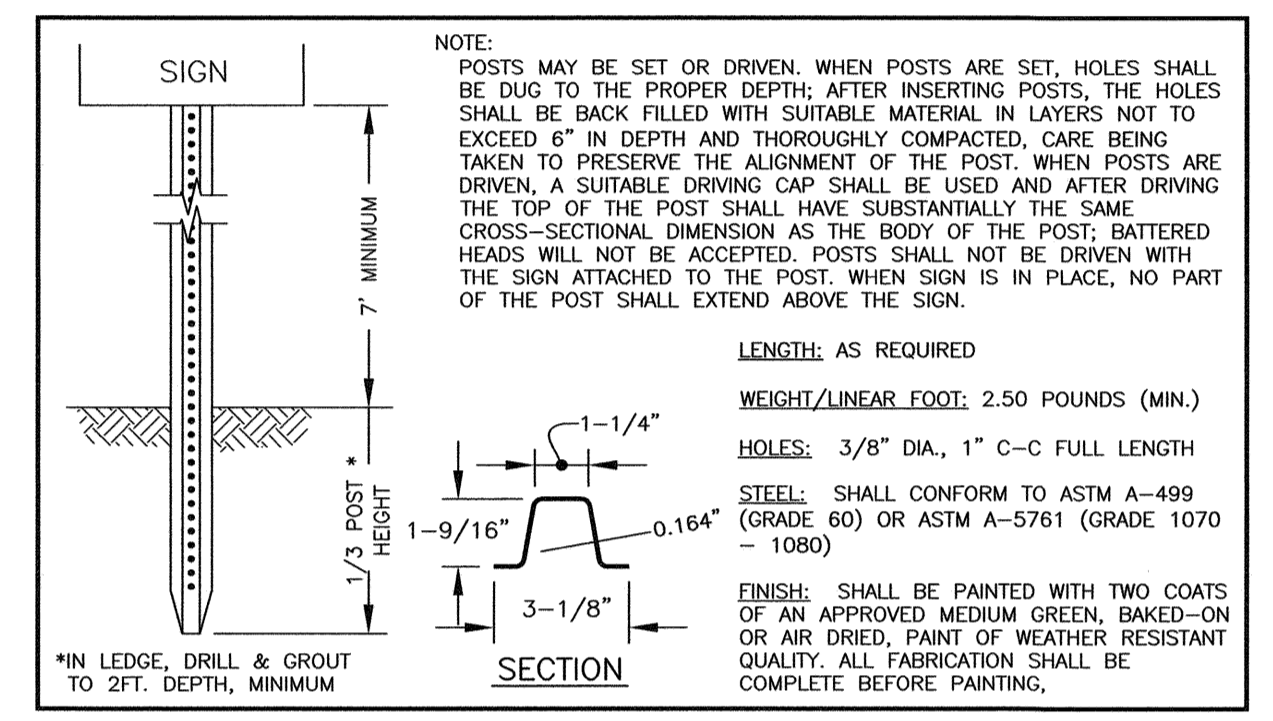
**N**  
C3  
**UPTURNED "U" BICYCLE RACK**  
NTS



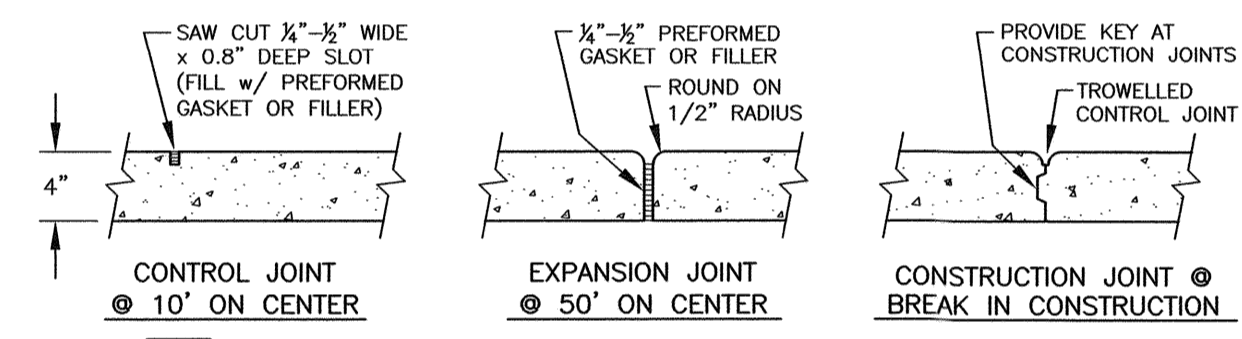
**O**  
C6  
**CATCH BASIN OUTLET HOOD DETAIL**  
NTS



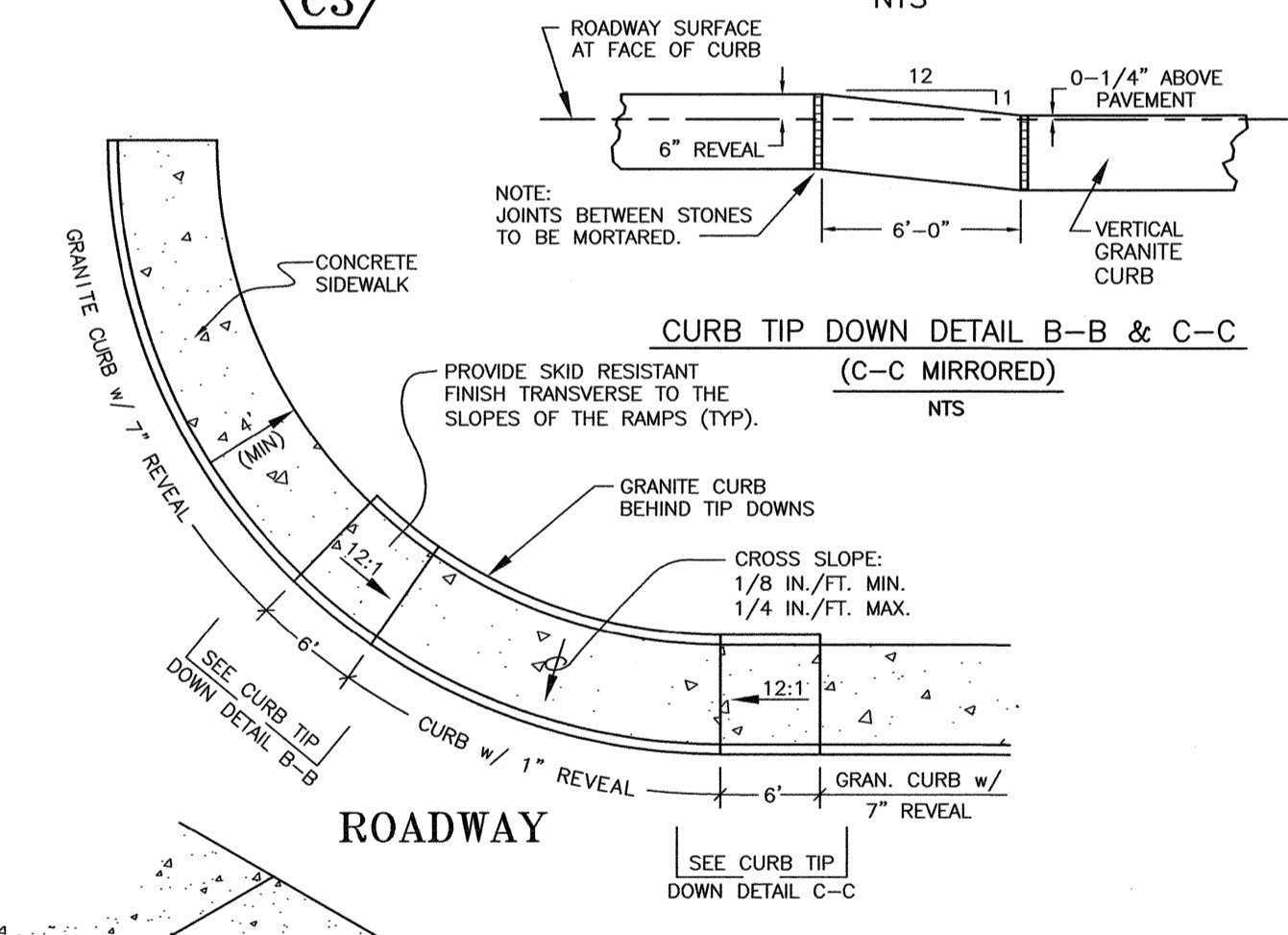
**G**  
C3  
**PORTLAND CEMENT CONCRETE SIDEWALK**  
NTS



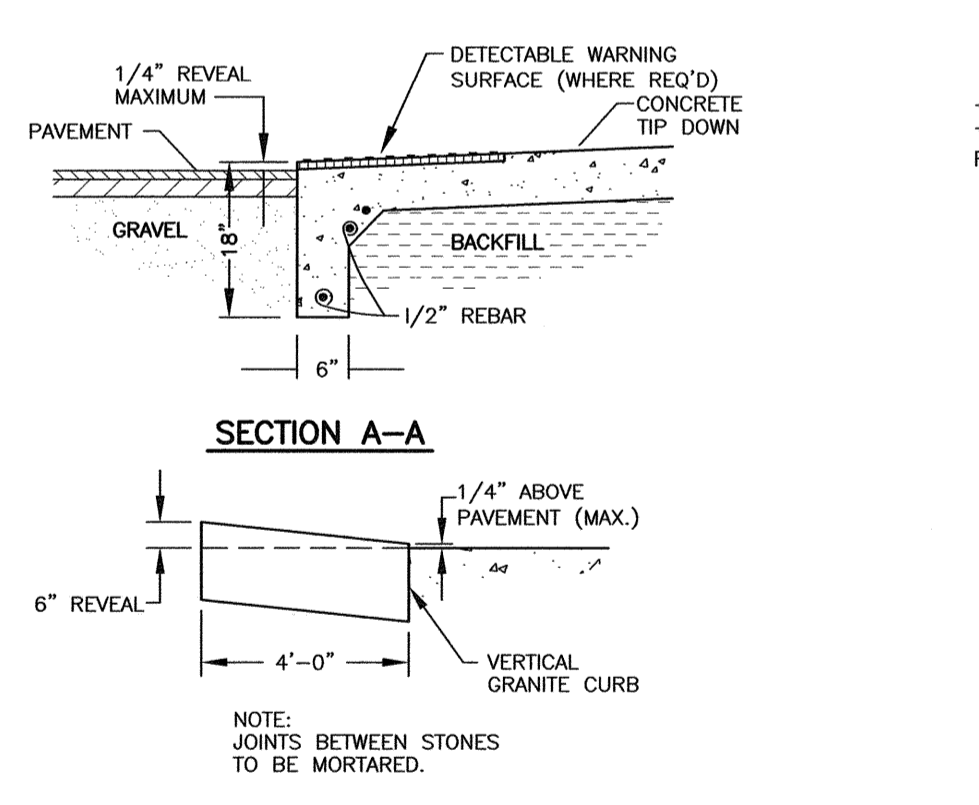
**K**  
C3  
**SIGN POST DETAIL**  
NTS



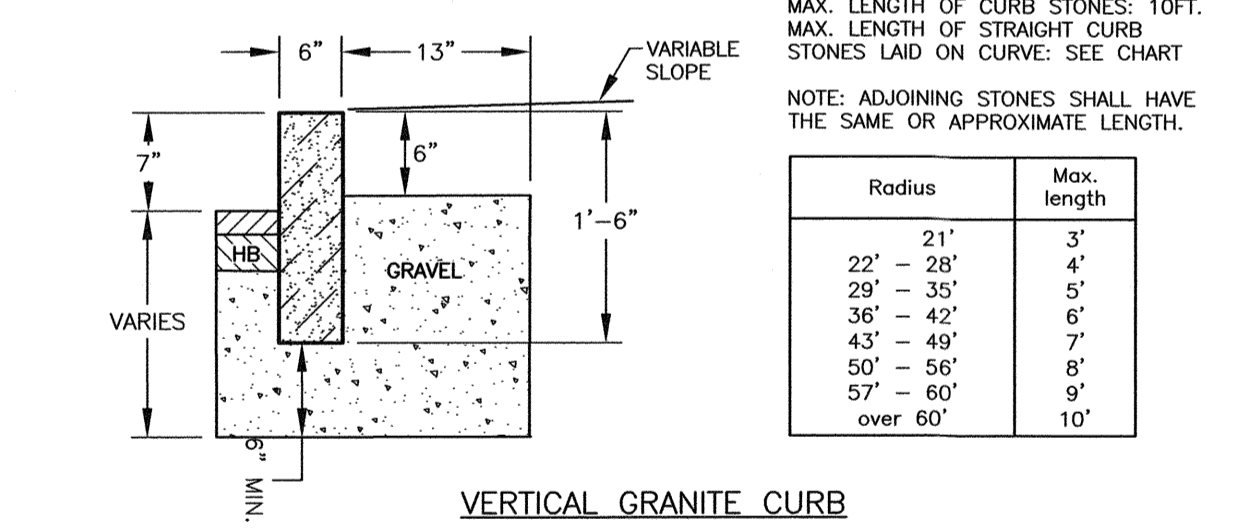
**H**  
C3  
**GRANITE CURBING DETAILS (CITY OF PORTSMOUTH)**  
NTS



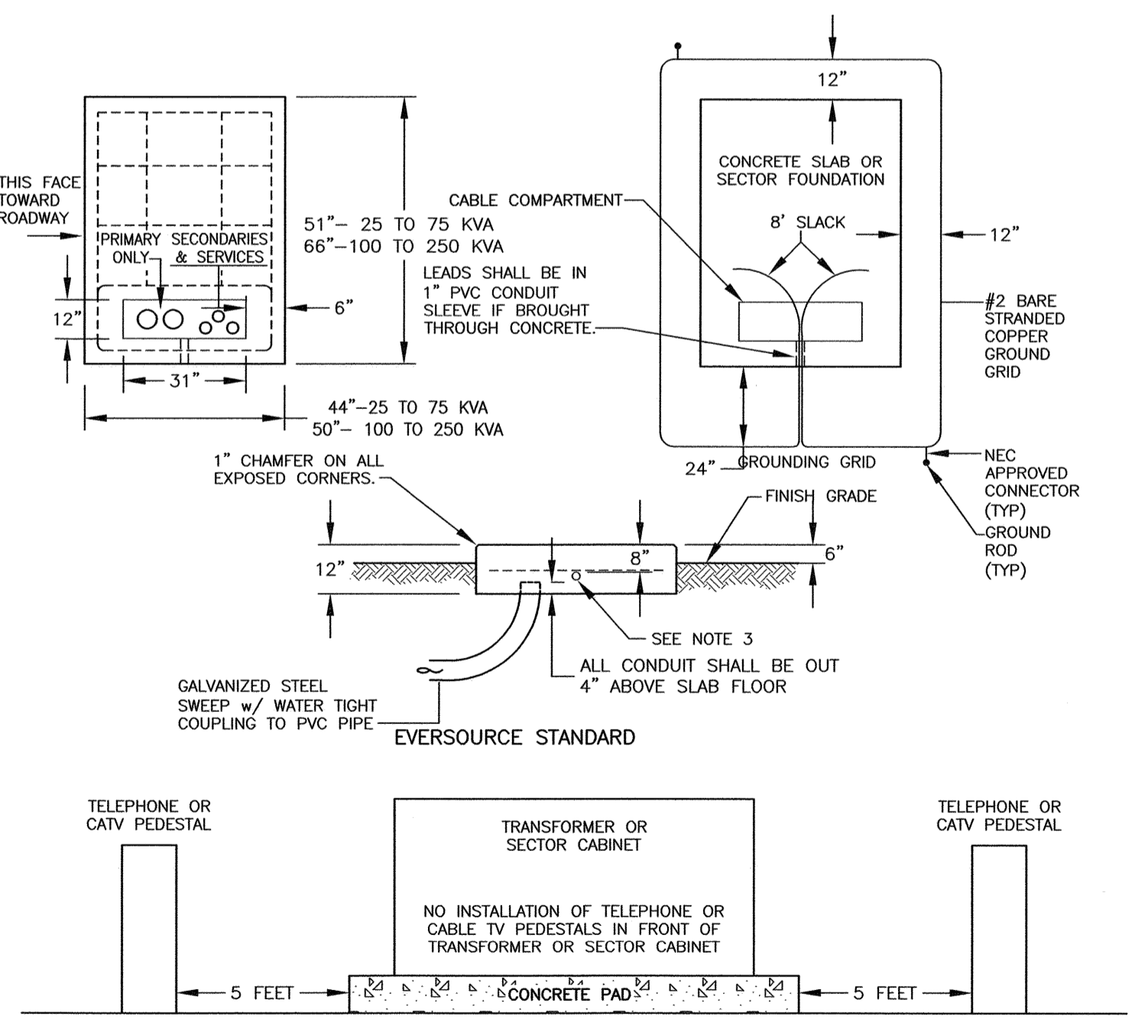
**L**  
C3  
**TIP DOWNS FOR CONCRETE SIDEWALK**  
NTS



**M**  
C3  
**GRANITE CURB END FOR VERTICAL GRANITE CURB**  
NTS



**I**  
C3  
**PAINTED CROSSWALK DETAIL**  
NTS



**P**  
C5  
**TRANSFORMER PAD**  
COORDINATE WITH EVERSOURCE  
NTS

**CONSTRUCTION SPECIFICATIONS:**  
1) SLOPE OF RAMP VARIES WITH SIDEWALK WIDTH & HEIGHT, WITH A MAXIMUM SLOPE OF 12 : 1 AND A MINIMUM SLOPE OF 16 : 1.  
2) A SKID RESISTANT FINISH TRANSVERSE TO THE SLOPE OF THE RAMP AND WARPED SIDEWALK, SHALL BE USED ON PORTLAND CEMENT CONCRETE RAMP.

**NOTES:**  
1. ALL REINFORCING TO BE #6 BARS.  
2. 1" PVC CONDUIT SLEEVE FOR GROUND LEADS.  
3. THE GROUND GRID SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR 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.  
4. NO SHRUBS, FENCES, OR PERMANENT STRUCTURES CAN BE PLACED WITHIN 10 FEET OF THE FRONT AND 5 FEET OF THE SIDES AND BACK OF PAD-MOUNTED EQUIPMENT. THE COMPANY HAS THE RIGHT TO REMOVE THESE OBJECTS WITHOUT NOTICE TO THE OWNER.

**MIXED USE DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	ISSUED FOR COMMENT	DESCRIPTION	DATE
0	ISSUED FOR COMMENT		11/20/23

**REVISIONS**

NO. DESCRIPTION DATE

SCALE: AS NOTED NOVEMBER 2023

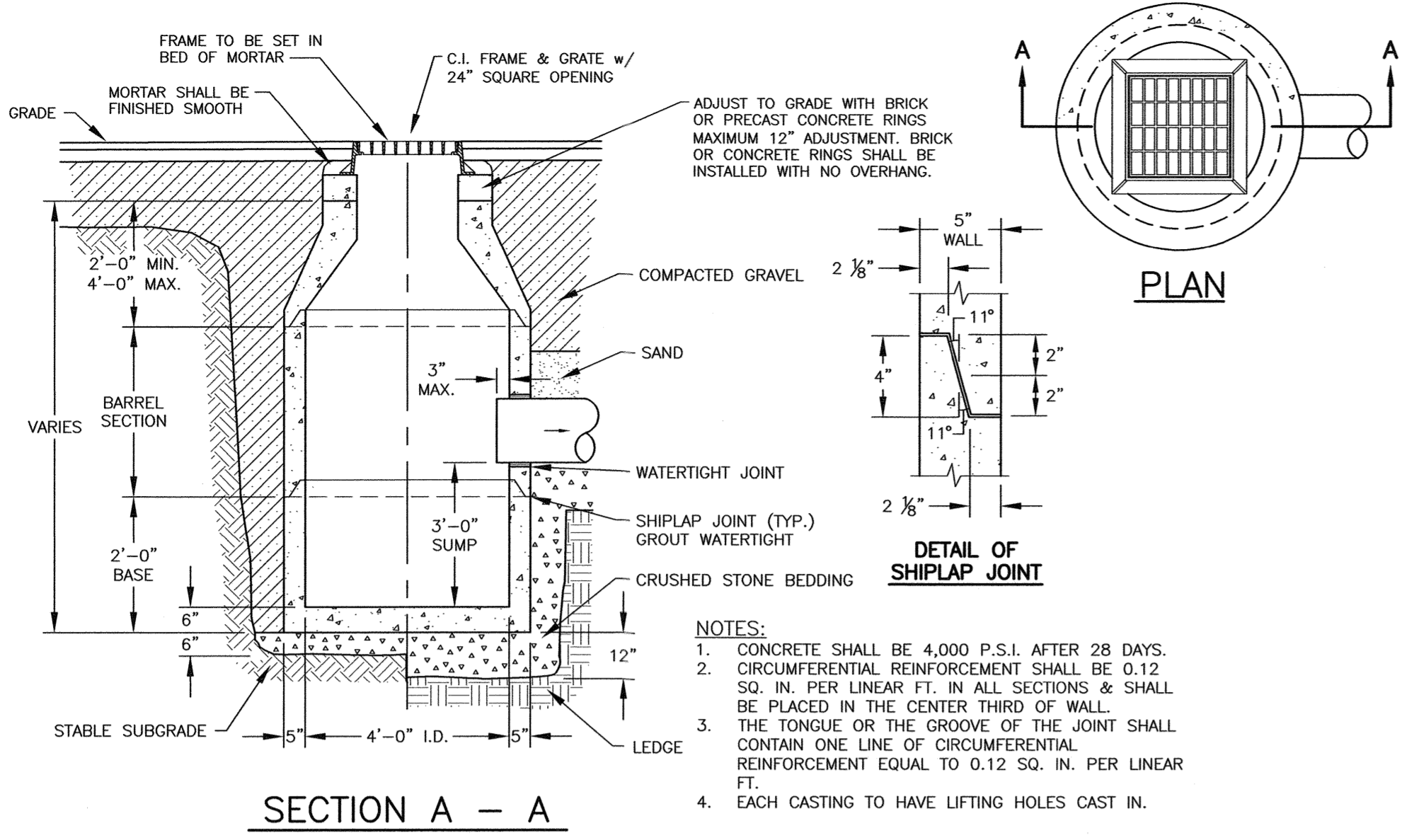
**DETAILS** **D2**



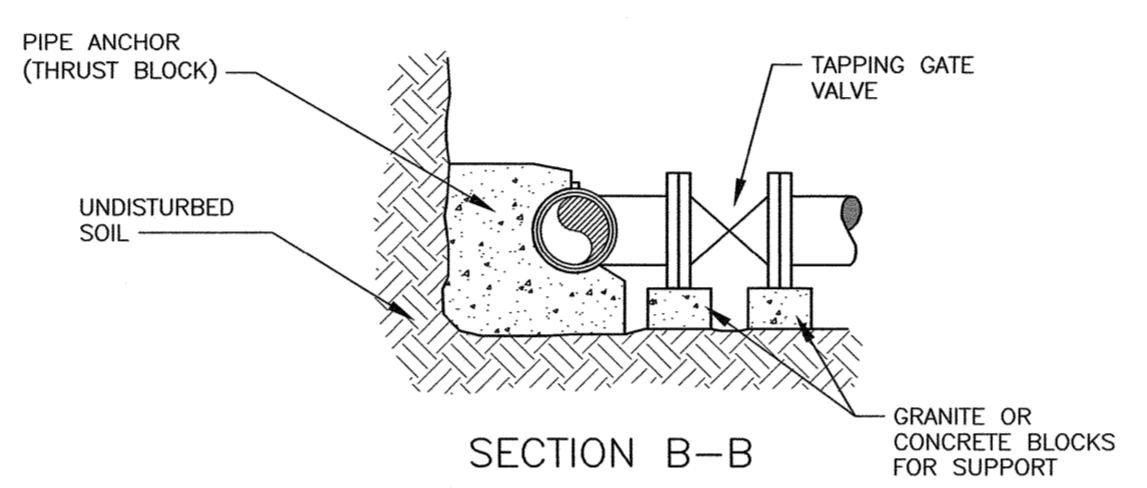
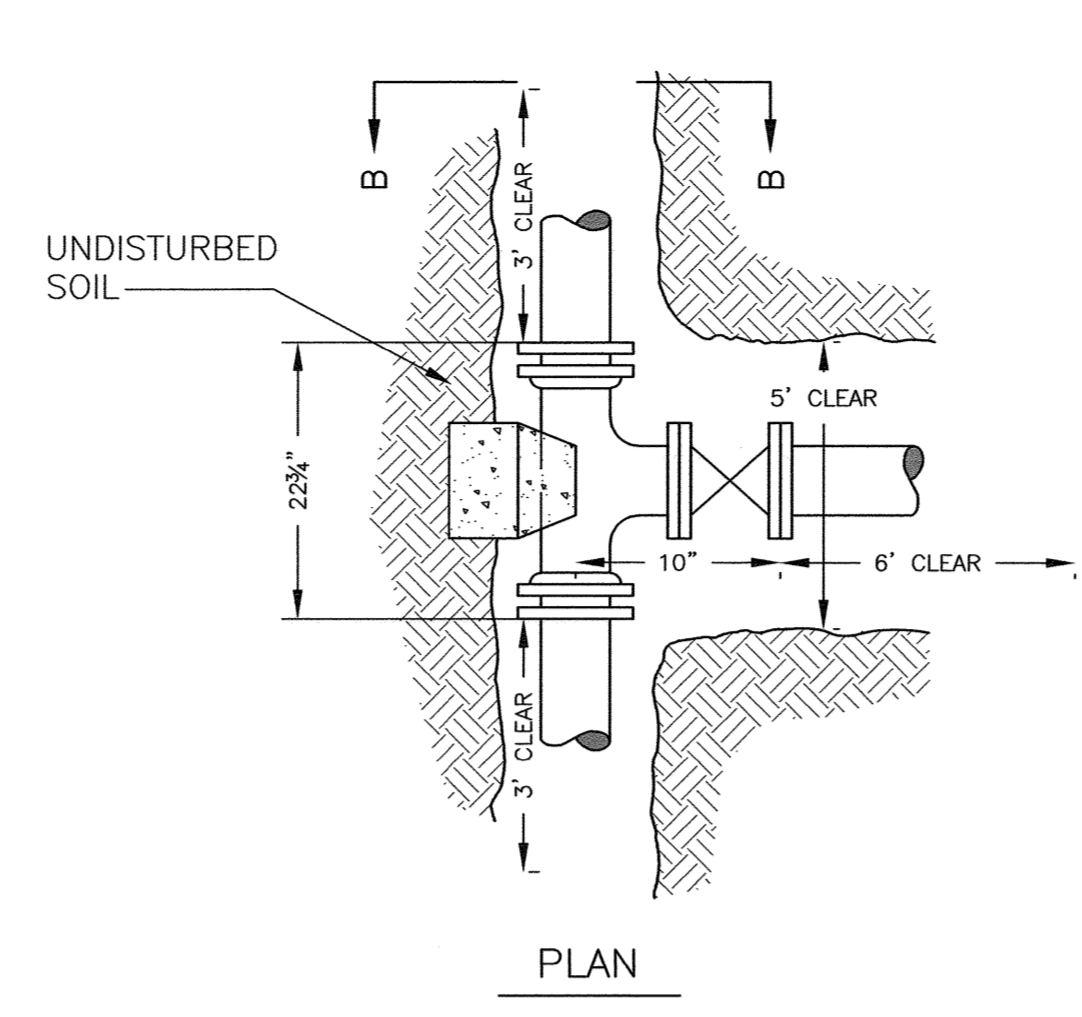
**NOTES:**  
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2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

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).

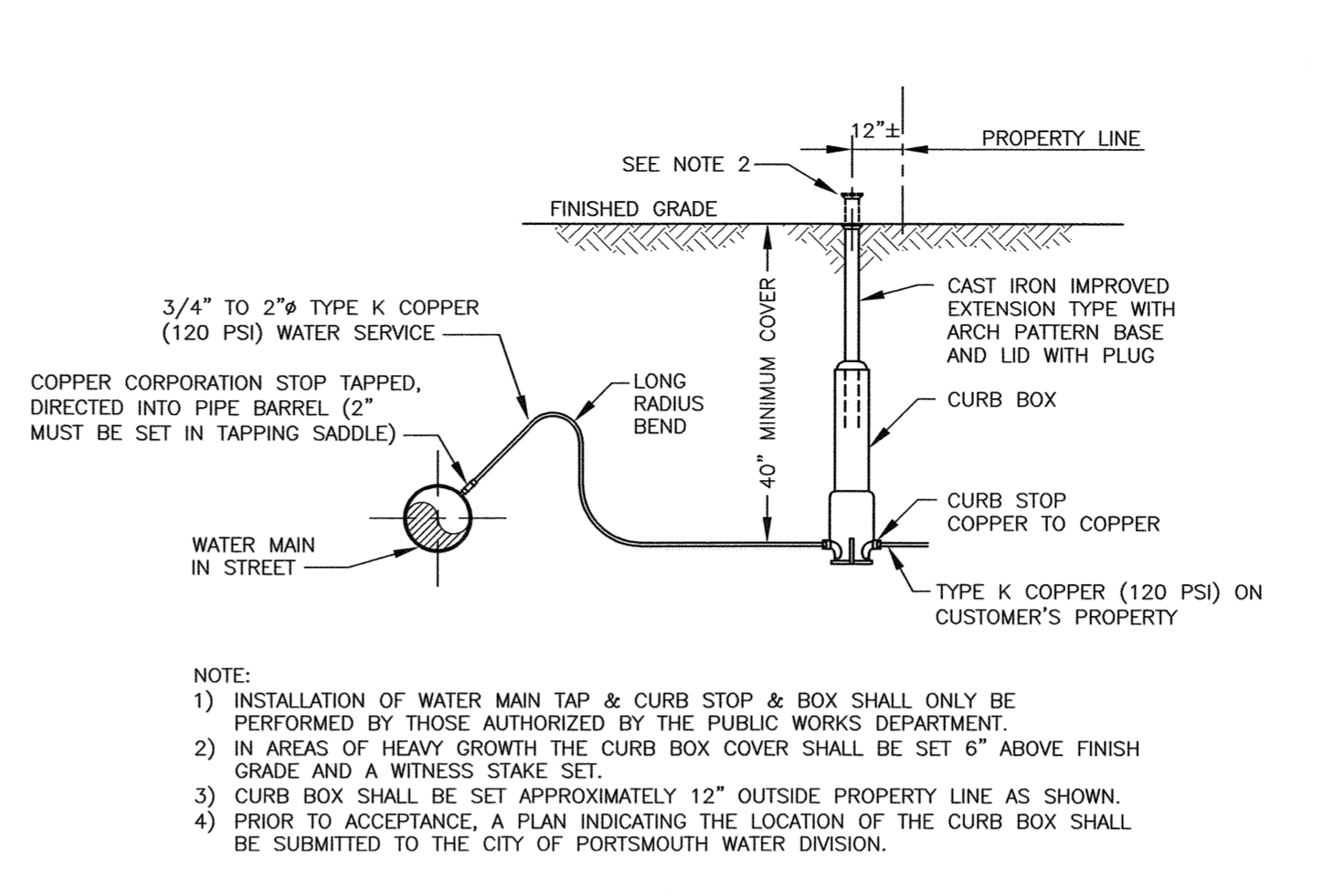


- NOTES:**  
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.  
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.  
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.  
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

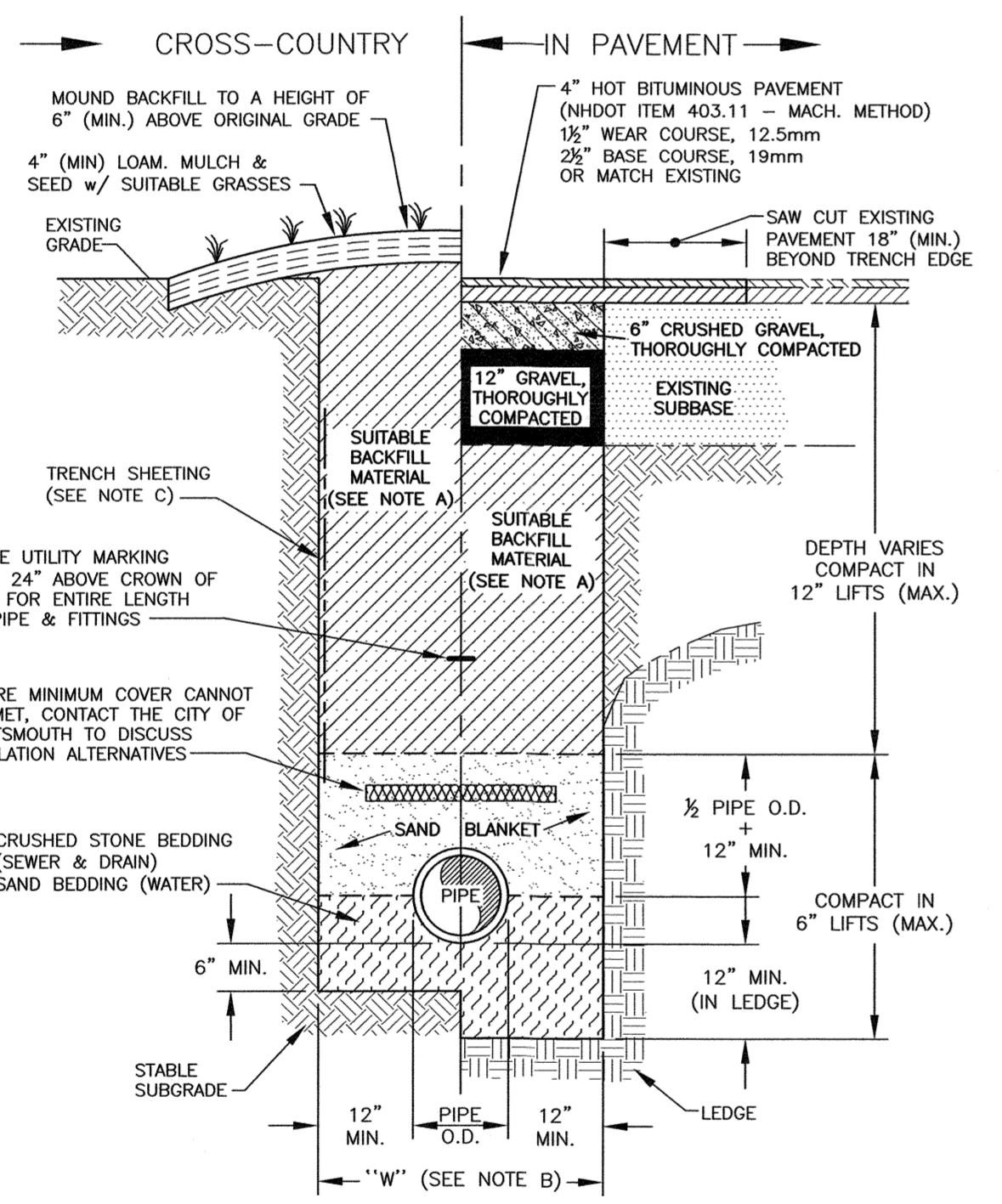


- NOTES:**  
1) ALL MATERIALS SHALL BE APPROVED BY THE PORTSMOUTH WATER DEPARTMENT PRIOR TO INSTALLATION AND USE.  
2) ALL JOINTS SHALL BE MECHANICAL.  
3) "CLEAR" DIMENSIONS SHOWN ARE REQUIRED FOR WORKSPACE. NO JOINTS ON PIPE BEING TAPPED WITHIN "CLEAR" AREA.  
4) FORD TYPE STAINLESS STEEL TAPPING SADDLES OR APPROVED EQUAL ARE ALSO ACCEPTABLE.

**T C4** TAPPING SLEEVE AND GATE  
INSTALL PER PORTSMOUTH REQUIREMENTS NTS

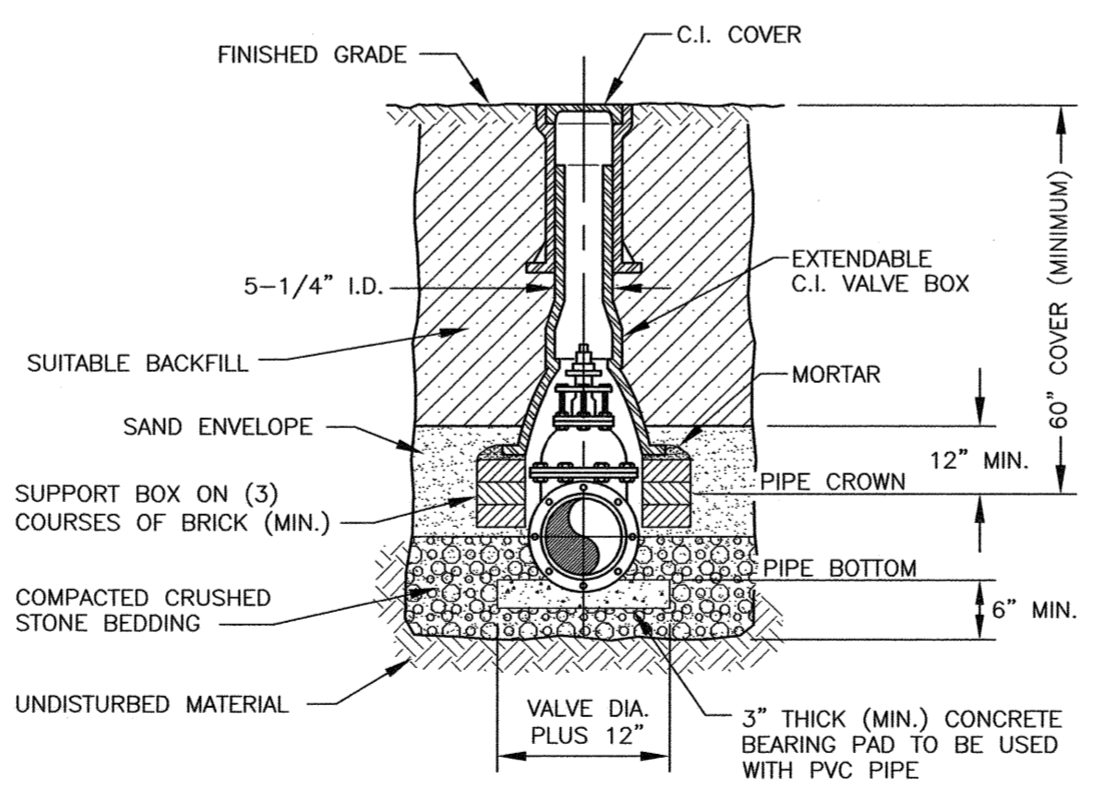


**V C4** WATER SERVICE CONNECTION  
INSTALL PER PORTSMOUTH REQUIREMENTS NTS

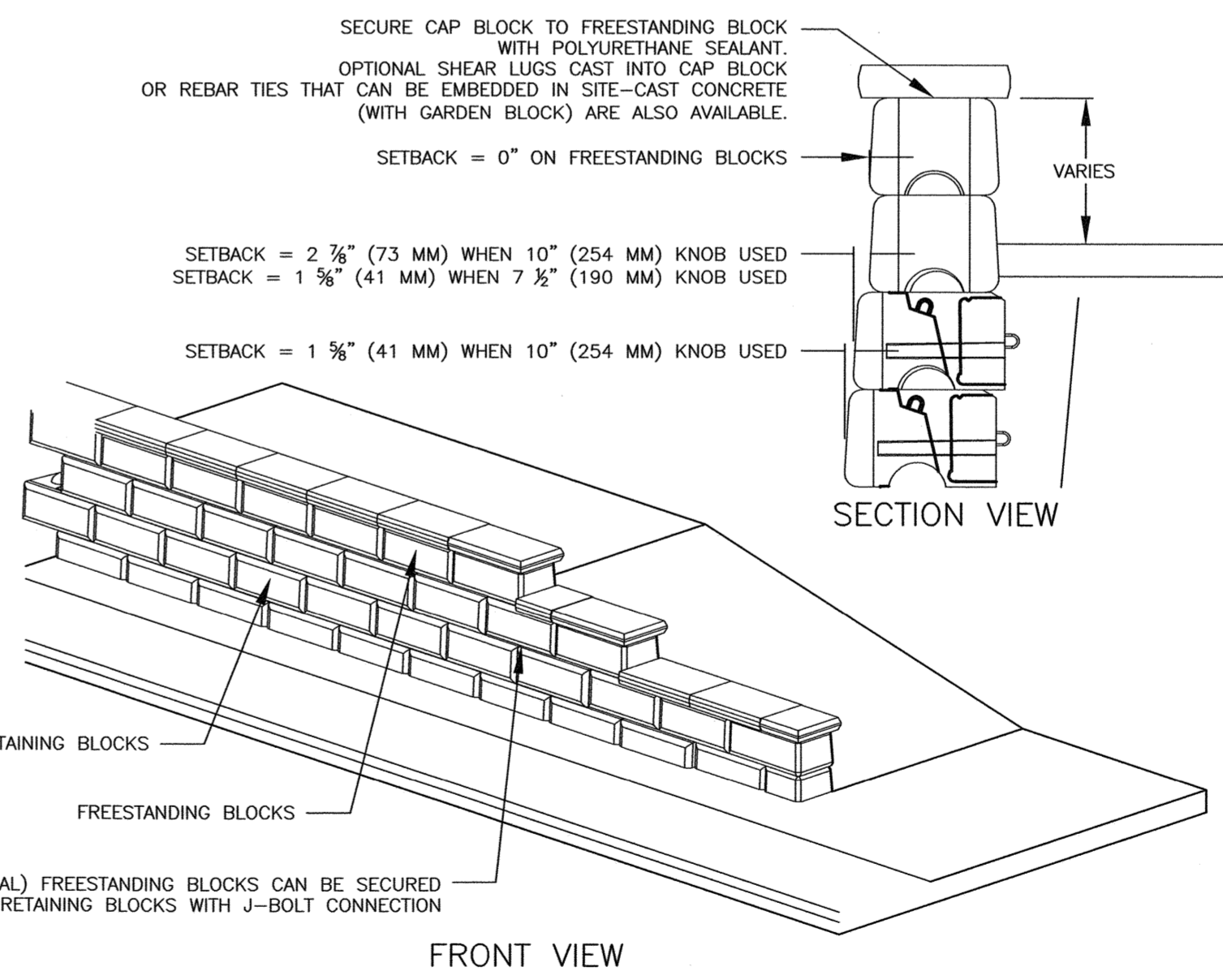


- TRENCH NOTES:**  
A) TRENCH BACKFILL:  
- IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND 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:  
IF REQUIRED, WHERE SHEETING 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 SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.  
D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):  
6" 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.

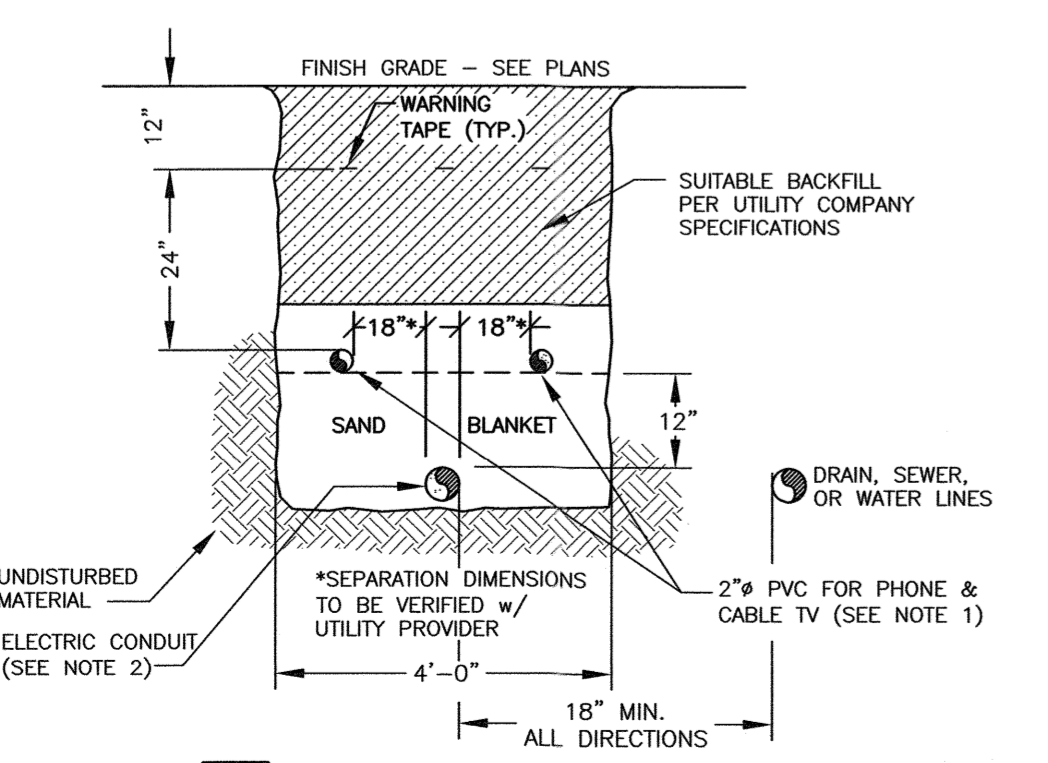
**R C4** TYPICAL PIPE TRENCH  
NTS



**U C4** TYPICAL VALVE BOX INSTALLATION  
INSTALL PER PORTSMOUTH REQUIREMENTS NTS



**W C3** SMALL BLOCK RETAINING WALL  
GENEST - BRUSSELS - UNILOCK WALL  
COORDINATE COLOR WITH OWNER NTS



- NOTES:**  
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 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 COMPANIES PRIOR TO ANY CONSTRUCTION.

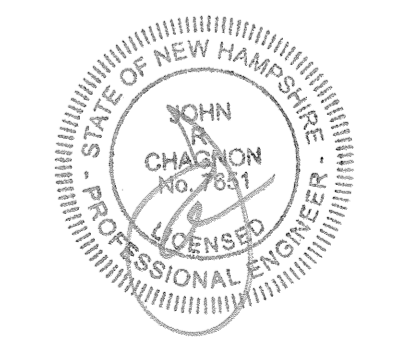
**S C4** UTILITY TRENCH ELECTRIC/COMMUNICATIONS  
NTS

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

**MIXED USE DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	11/20/23
REVISIONS		



SCALE: AS NOTED NOVEMBER 2023

**DETAILS** **D3**



### JELLYFISH DESIGN NOTES

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

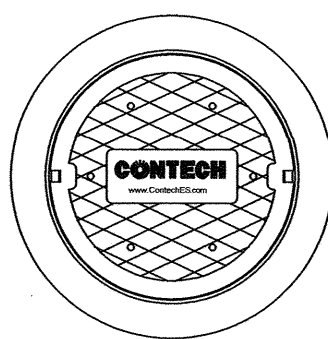
CARTRIDGE SELECTION	54"	40"	27"	15"
CARTRIDGE LENGTH	6'-4"	6'-4"	4'-3"	3'-3"
OUTLET INVERT TO STRUCTURE INVERT (A)	0.47'	0.47'	0.089'	0.049' / 0.025'
FLOW RATE HI-FLO / DRAINDOWN (CFS) PER CART	1.96	1.47	0.98	0.54
MAX. TREATMENT (CFS)	5.00	4.00	4.00	4.00
DECK TO INSIDE TOP (MIN) (B)				

- GENERAL NOTES:**
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
  - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. [www.conteches.com](http://www.conteches.com)
  - JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
  - STRUCTURE SHALL MEET ASHSTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10' AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET ASHSTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
  - STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-867, ASTM C-918, AND ASHSTO LOAD FACTOR DESIGN METHOD.
  - OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
  - THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
  - NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

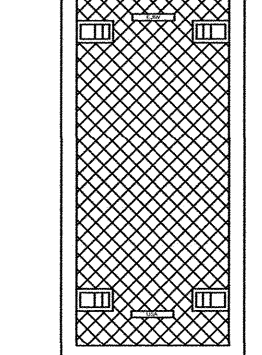
- INSTALLATION NOTES:**
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
  - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
  - CONTRACTOR WILL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

#### SITE SPECIFIC DATA REQUIREMENTS

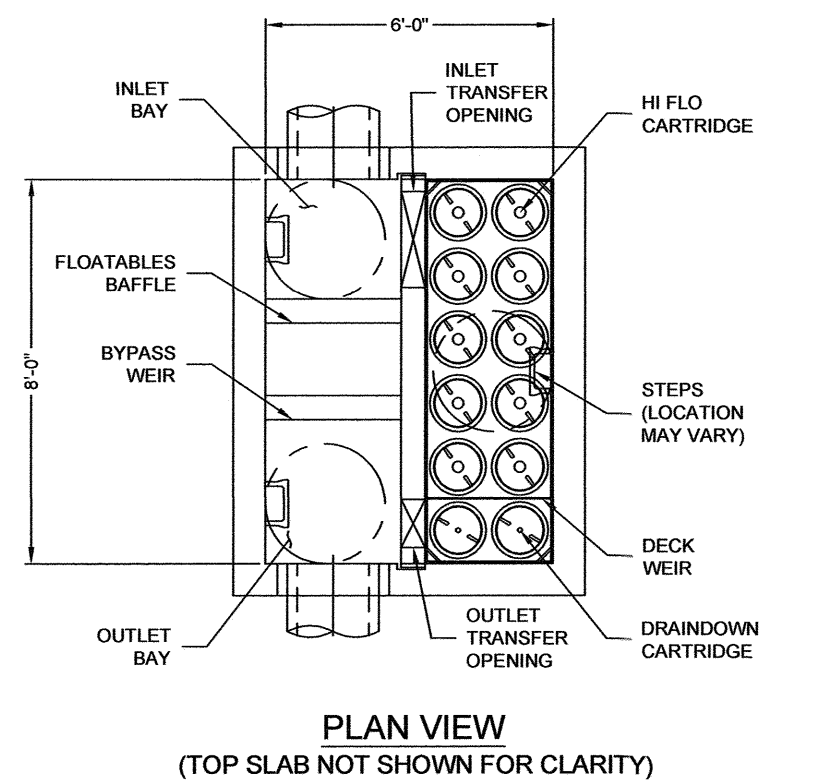
STRUCTURE ID	ID
WATER QUALITY FLOW RATE (cfs)	WQFLOW
PEAK FLOW RATE (cfs)	PEAK
RETURN PERIOD OF PEAK FLOW (yrs)	RETURN
# OF CARTRIDGES REQUIRED (HF / DD)	CART
CARTRIDGE LENGTH	SIZE
PIPE DATA: IE MATL DIA SLOPE % HGL	
INLET #1 ELEV MATL DIA SLOPE HGL	
INLET #2 ELEV MATL DIA SLOPE HGL	
OUTLET ELEV MATL DIA SLOPE HGL	
SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS	
RIM ELEVATION	RIM ELEV
ANTI-FLOTATION BALLAST	WIDTH HEIGHT
	WIDTH HEIGHT
NOTES/SPECIAL REQUIREMENTS:	
* PER ENGINEER OF RECORD	



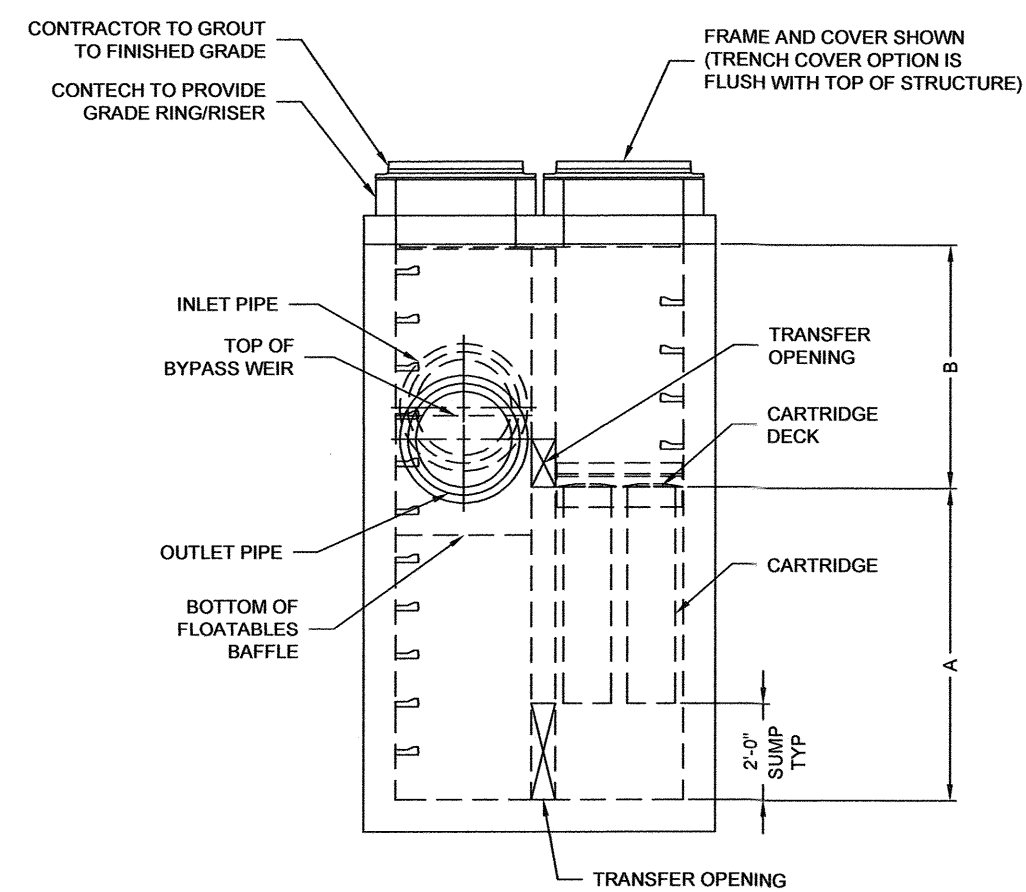
**FRAME AND COVER**  
(DIAMETER VARIES)  
N.T.S.



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



**PLAN VIEW**  
(TOP SLAB NOT SHOWN FOR CLARITY)



**ELEVATION VIEW**

### JELLYFISH FILTER DETAIL

N.T.S.

### 1.0 Inspection and Maintenance Overview

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

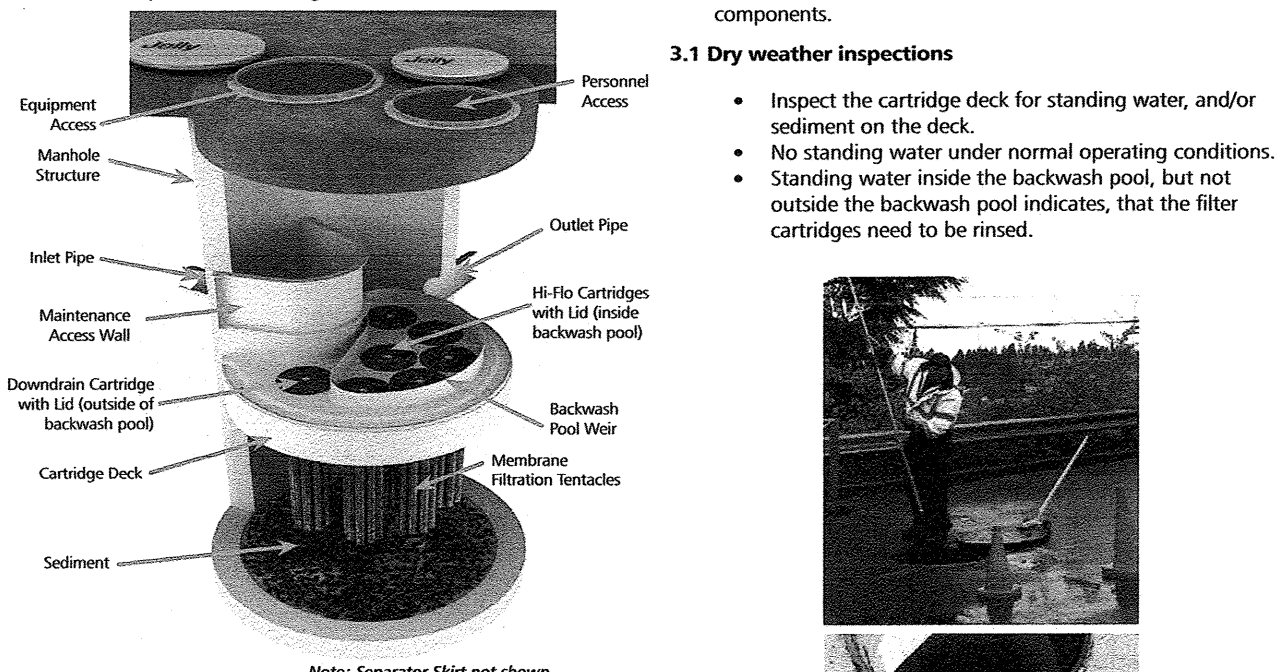
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion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

Inspection activities are typically conducted from surface observations and include:

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

Maintenance activities include:

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



Note: Separator Skirt not shown

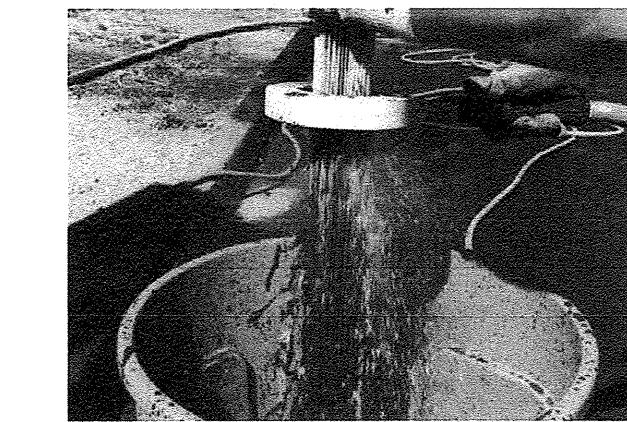
### 2.0 Inspection Timing

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

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

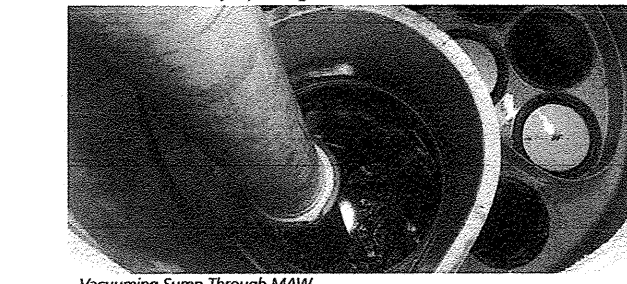
### 5.3 Sediment and Floatables Extraction

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



Vacuuming Sump Through MAW

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



Vacuuming Sump Through MAW

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

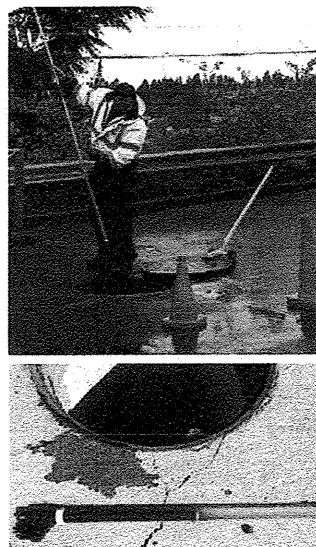
### 3.0 Inspection Procedure

The following procedure is recommended when performing inspections:

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

### 3.1 Dry weather inspections

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



Inspection Utilizing Sediment Probe

3

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

### 3.2 Wet weather inspections

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

### 4.0 Maintenance Requirements

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

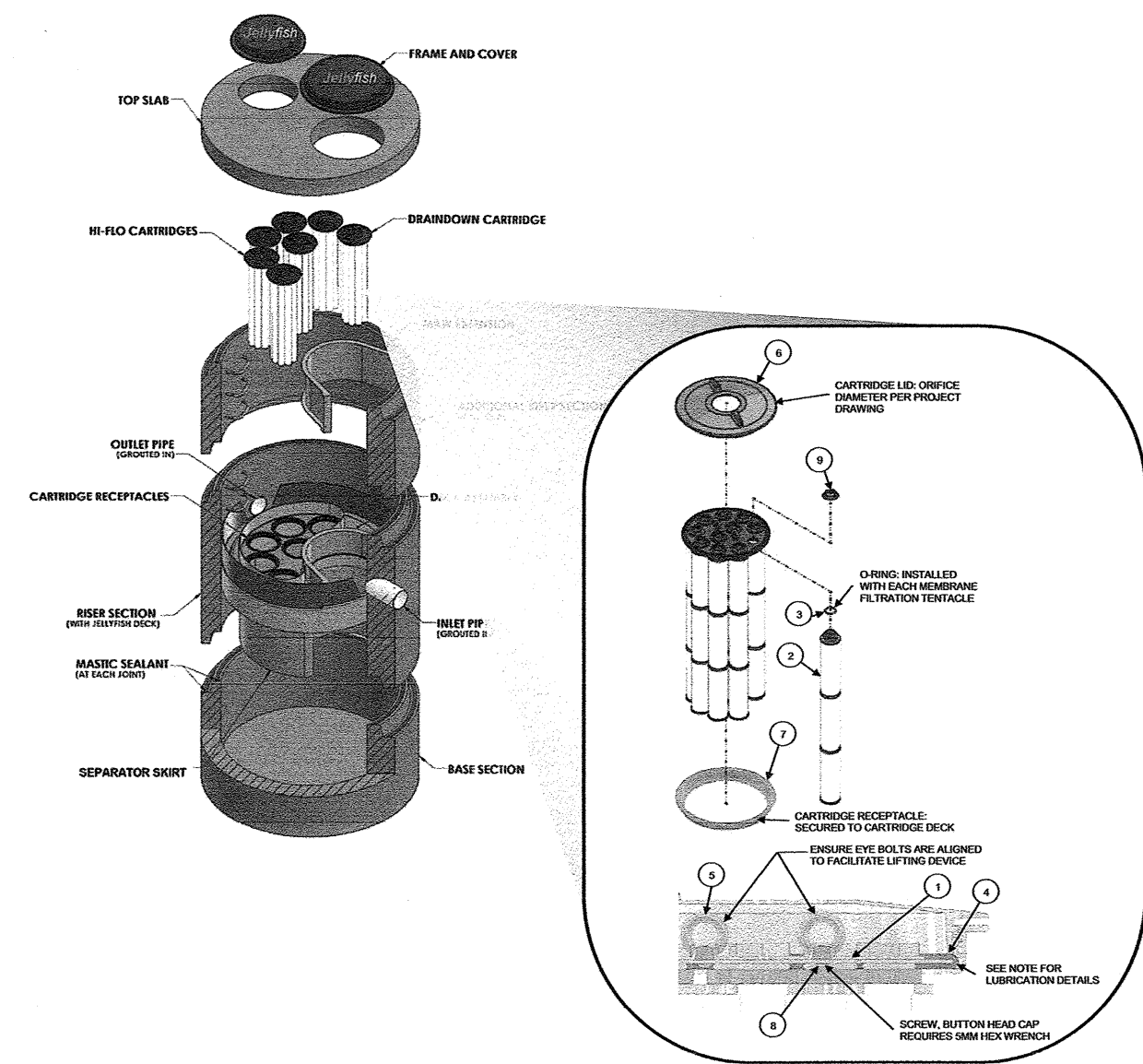
- Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
- Floatable trash, debris, and oil removal.
- Deck cleaned and free from sediment.
- Filter cartridges rinsed and re-installed as required by the most recent inspection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

### 5.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

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

### Jellyfish Filter Components & Filter Cartridge Assembly and Installation



**TABLE 1: BOM**

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 1/4" COVER
7	JF RECEPTACLE
8	BUITON HEAD CAP
9	JF CARTRIDGE NUT

**TABLE 2: APPROVED GASKET LUBRICANTS**

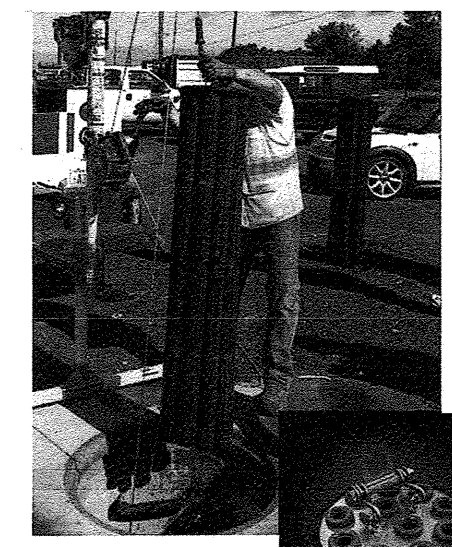
PART NO.	MFR.	DESCRIPTION
78713	LA-CO	LUBR-JOINT
40501	HERCULES	DOCK BUTTER
35600	QATEY	PIPE LUBRICANT
PROJUBO-10	PROJESLECT	PIPE JOINT LUBRICANT

**NOTES:**  
**Head Plate Gasket Installation:**  
 Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2. Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lid (Item 6). Follow Lubricant manufacturer's instructions.  
**Lid Assembly:**  
 Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clockwise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

6

### NOTES:

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- CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE EROSION AND SEDIMENT CONTROL BMP'S" PUBLISHED BY THE NEW HAMPSHIRE D.E.S. IN 2008.



Cartridge Removal & Lifting Device

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

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

**MIXED USE DEVELOPMENT**  
581 LAFAYETTE ROAD  
PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	11/20/23
REVISIONS		

SCALE: AS NOTED NOVEMBER 2023

JELLYFISH DETAILS

**D4**



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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).

**MANHOLE NOTES**

- 1) IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
- 2) BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE IF POURED AS A COMPLETE MANHOLE.
- 3) PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.
- 4) LEAKAGE TEST MAY NOT BE FEASIBLE, BUT SHALL CONFORM TO ENV-WQ 704.10(X) THROUGH ENV-WQ 704.10(Z).
- 5) INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE AND TANGENT TO THE CENTERLINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
- 6) FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A THREE INCH (MINIMUM HEIGHT) WORD "SEWER" FOR SEWERS AND "DRAIN" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER. CASTINGS SHALL CONFORM TO CLASS 30, ASTM A48.
- 7) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE, FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%- 55% PASSING	3/8 INCH SCREEN
0%- 10% PASSING	#4 SIEVE
0%- 5% PASSING	#8 SIEVE

WHEN ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.

8) FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:  
RCP & CI PIPE - ALL SIZES - 48"

9) SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.

10) HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET, IN 2 ROWS. APPROVED ELASTOMERIC SEALANTS ARE:

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
0%- 75% PASSING	3/8 INCH SCREEN
0%- 25% PASSING	#4 SIEVE
0%- 5% PASSING	#10 SIEVE

RAM-NEK  
KENT SEAL NO. 2  
EZ

11) PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATER TIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.

12) THE PURPOSE OF THIS PLAN IS TO SHOW STANDARDS FOR SEWER CONSTRUCTION.

13) ALL WORK SHALL BE IN COMPLIANCE WITH NHDES CODE OF ADMINISTRATIVE RULES PART ENV-WQ 704 DESIGN OF SEWERS.

14) BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE LARGEST INCOMING PIPE.

**GENERAL NOTES**

1) MINIMUM PIPE SIZE FOR HOUSE SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:

A. PLASTIC SEWER PIPE

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
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.

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND REFILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

6) THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: WHEN REQUIRED BY THE GOVERNING AUTHORITY, TESTING SHALL CONFORM TO ENV-WQ 704.07.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) HOUSE WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE, UNLESS IT IS ON A SHELF 12" HIGHER, AND 18" APART.

10) BEDDING: PROCESSED GRAVEL OR CRUSHED STONE, FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING THE FOLLOWING GRADATION (ALL STONE MUST HAVE AT LEAST 2 FRACTURED FACES):

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
0%- 75% PASSING	3/8 INCH SCREEN
0%- 25% PASSING	#4 SIEVE
0%- 5% PASSING	#10 SIEVE

WHEN ORDERED BY THE ENGINEER, OVEREXCAVATE UNSTABLE TRENCH BOTTOM AND BACKFILL WITH CRUSHED STONE.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.

12) CAST-IN-PLACE CONCRETE: SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS:

CEMENT:	6.0 BAGS PER CUBIC YARD
WATER:	5.75 GALLONS PER BAG OF CEMENT
MAXIMUM AGGREGATE SIZE:	3/4 INCH

13) BACKFILL UP TO SUBBASE GRAVEL SHALL BE WITH EXCAVATED SOIL FROM TRENCHING OPERATIONS. COMPACT IN 8" LIFTS WITH VIBRATORY PLATE COMPACTORS TO 90% OF MODIFIED PROCTOR DENSITY. IF FINE-GRAINED, COMPACT WITH POGO STICKS OR SHEEPSFOOT ROLLERS. PLACE NO LARGE ROCKS WITHIN 24" OF PIPE. TRENCHES THAT ARE NOT ADEQUATELY COMPACTED SHALL BE RE-EXCAVATED AND BACKFILLED UNDER THE SUPERVISION OF THE DESIGN ENGINEER OR GOVERNING BODY. UNSUITABLE BACKFILL MATERIAL INCLUDES CHUNKS OF PAVEMENT, TOPSOIL, ROCKS OVER 6" IN SIZE, MUCK, PEAT OR PIECES OF PAVEMENT.

14) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB-SITE SAFETY AND COMPLIANCE WITH GOVERNING REGULATIONS.

15) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL FOR TRENCH WIDTH SEE TRENCH DETAIL.

16) SAND BLANKET: CLEAN SAND, FREE FROM ORGANIC MATTER, SO GRADED THAT 90% - 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2 INCHES IS IN CONTACT WITH THE PIPE.

17) BASE COURSE GRAVEL, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE:

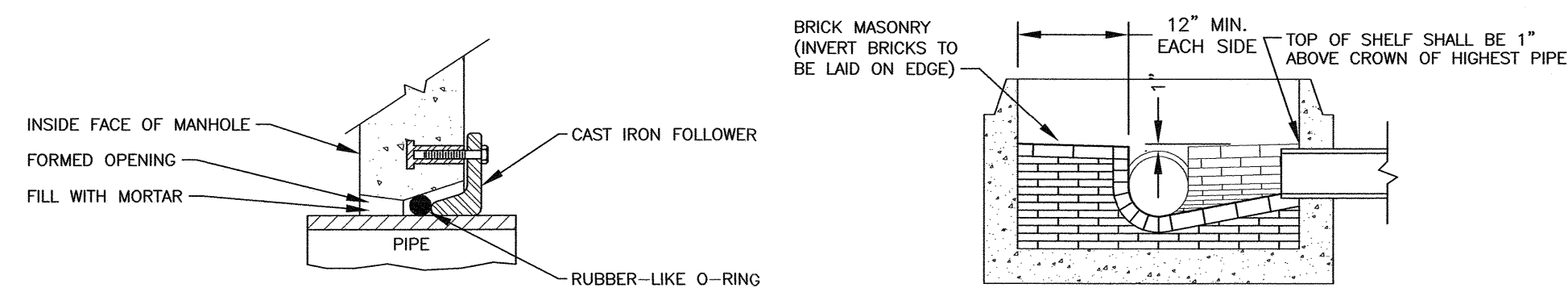
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION.

18) IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.

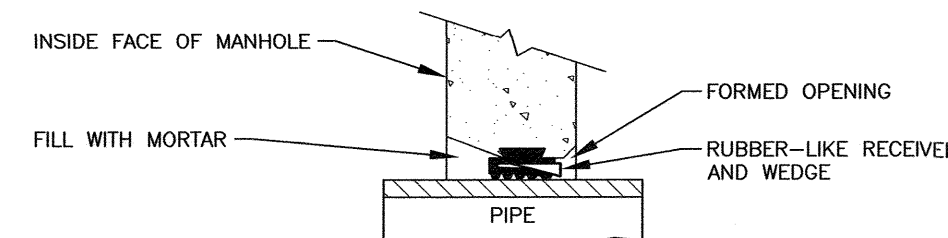
19) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION.

20) THE PURPOSE OF THIS PLAN IS TO SHOW STANDARDS FOR SEWER CONSTRUCTION.

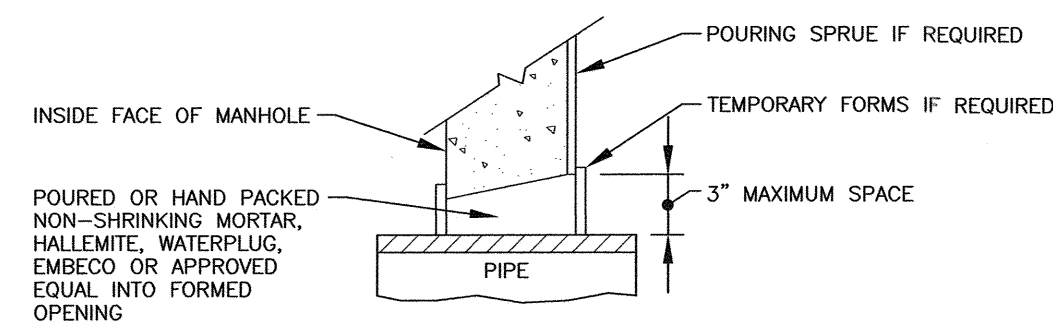
21) ALL WORK SHALL BE IN COMPLIANCE WITH NHDES CODE OF ADMINISTRATIVE RULES PART ENV-WQ 704 DESIGN OF SEWERS.



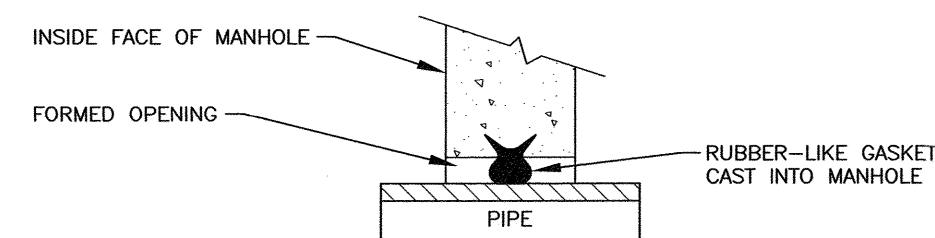
**RES-SEAL**  
(OR ACCEPTABLE SUBSTITUTE)



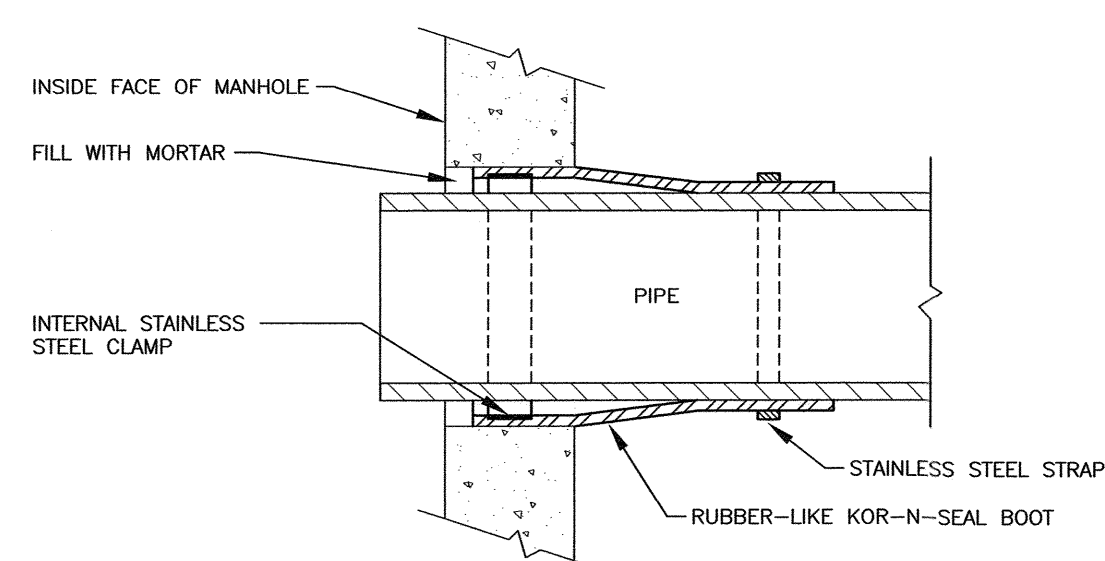
**PRESS-WEDGE II**  
(OR ACCEPTABLE SUBSTITUTE)



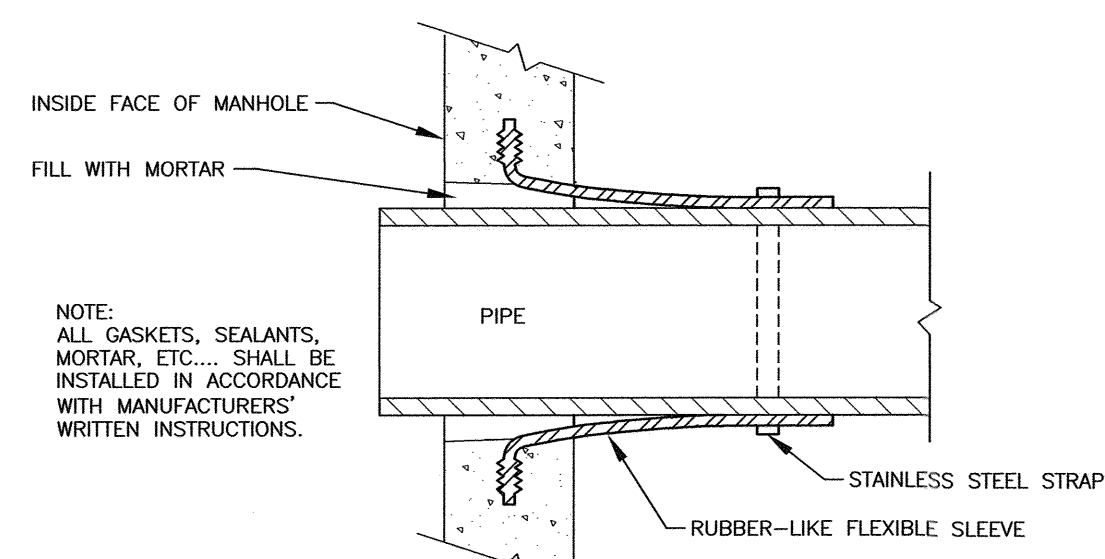
**NON-SHRINKING MORTAR**  
(OR ACCEPTABLE SUBSTITUTE)



**A-LOK**  
(OR ACCEPTABLE SUBSTITUTE)

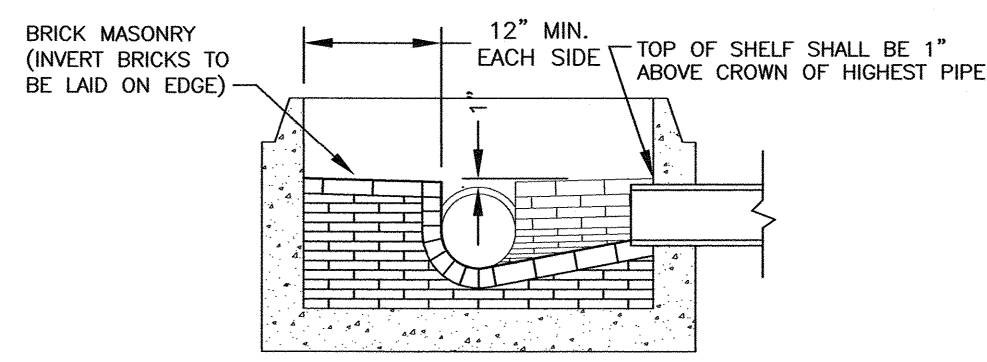


**KOR-N-SEAL JOINT SLEEVE**  
(OR ACCEPTABLE SUBSTITUTE)

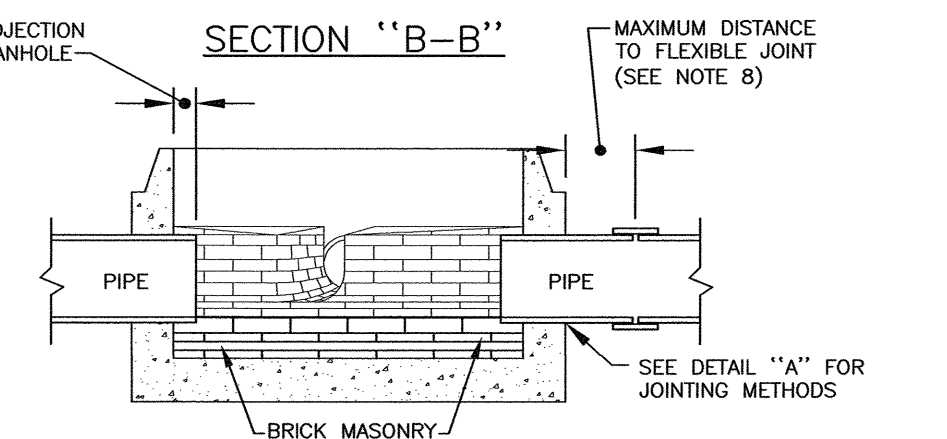


**LOCK-JOINT FLEXIBLE MANHOLE SLEEVE**  
(OR ACCEPTABLE SUBSTITUTE)

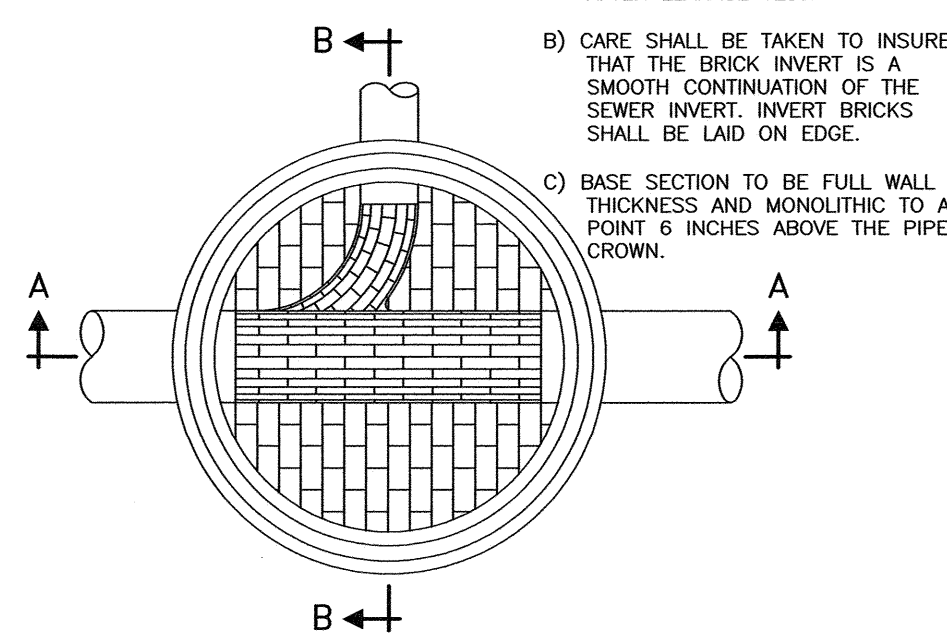
**DETAIL "A" - PIPE TO MANHOLE JOINTS**



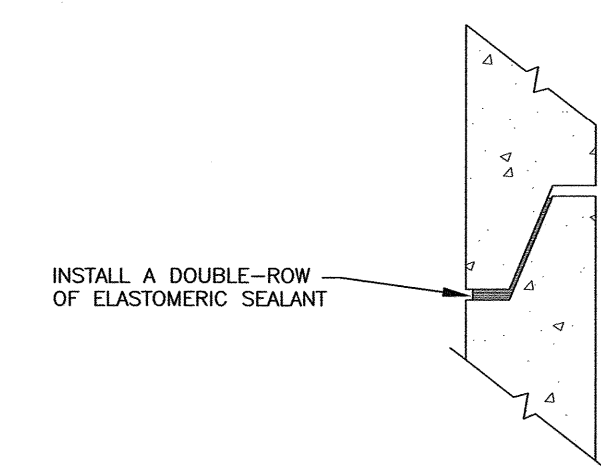
**SECTION "B-B"**



**SECTION "A-A"**



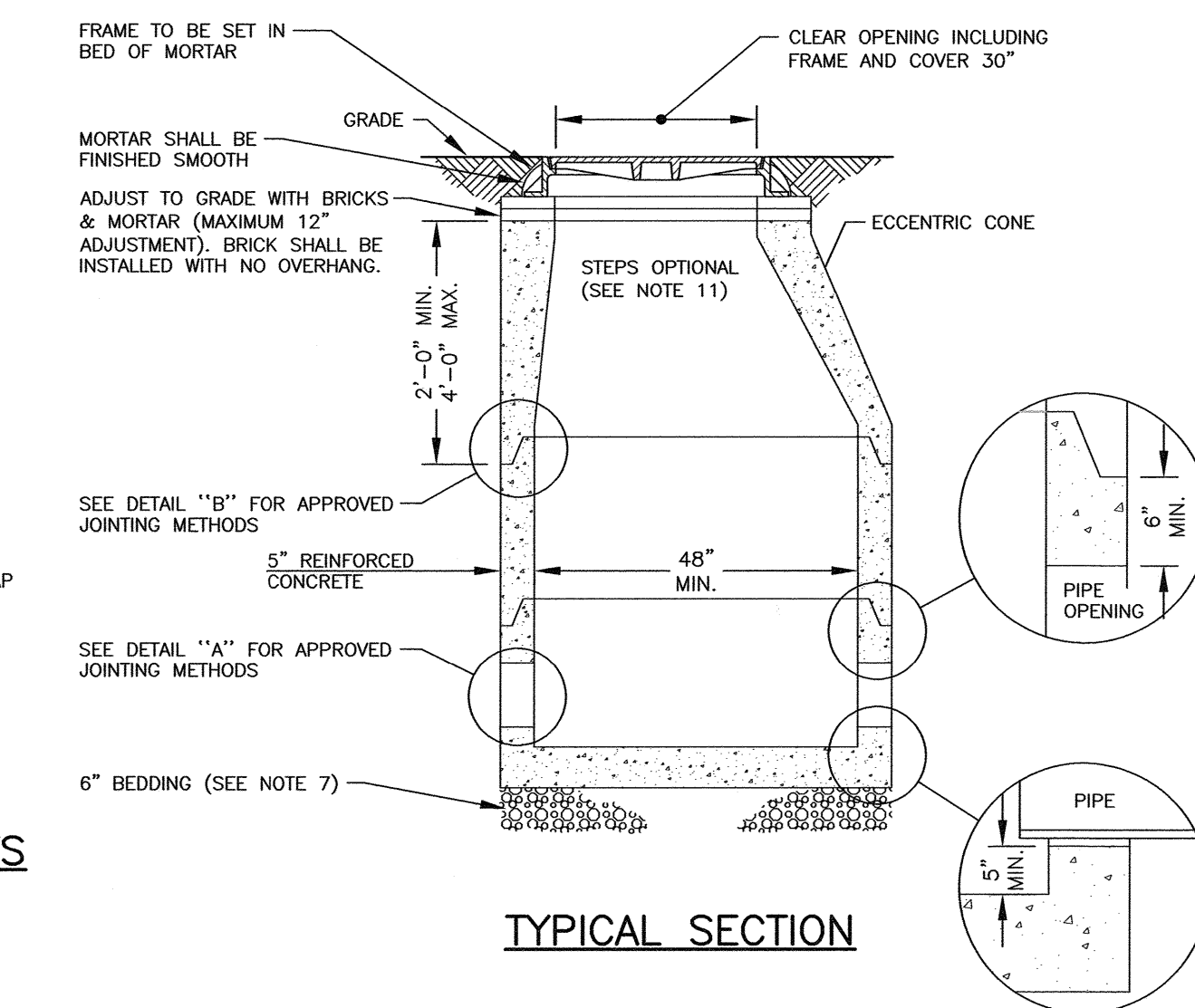
**TYPICAL MANHOLE - PLAN VIEW**



**ELASTOMERIC SEALANT**

NOTE: ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

**DETAIL "B" - HORIZONTAL JOINTS**



**TYPICAL SECTION**

APPROVED BY THE PORTSMOUTH PLANNING BOARD

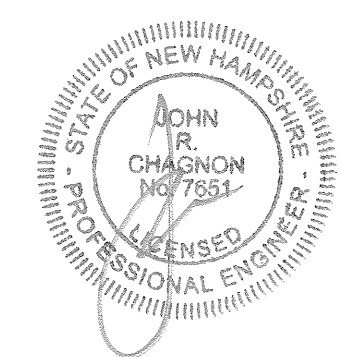
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

**SEWER MANHOLE DETAILS**

INSTALL PER PORTSMOUTH REQUIREMENTS NTS

**MIXED USE DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	11/20/23
REVISIONS		



SCALE: AS NOTED NOVEMBER 2023

**SEWER DETAILS**

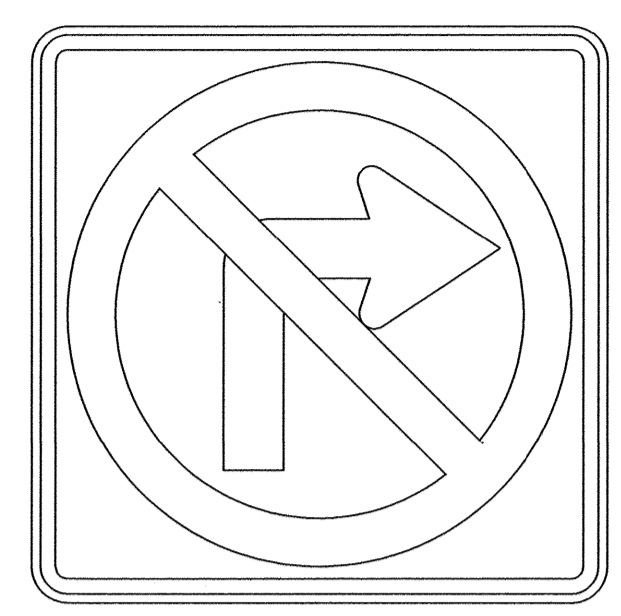
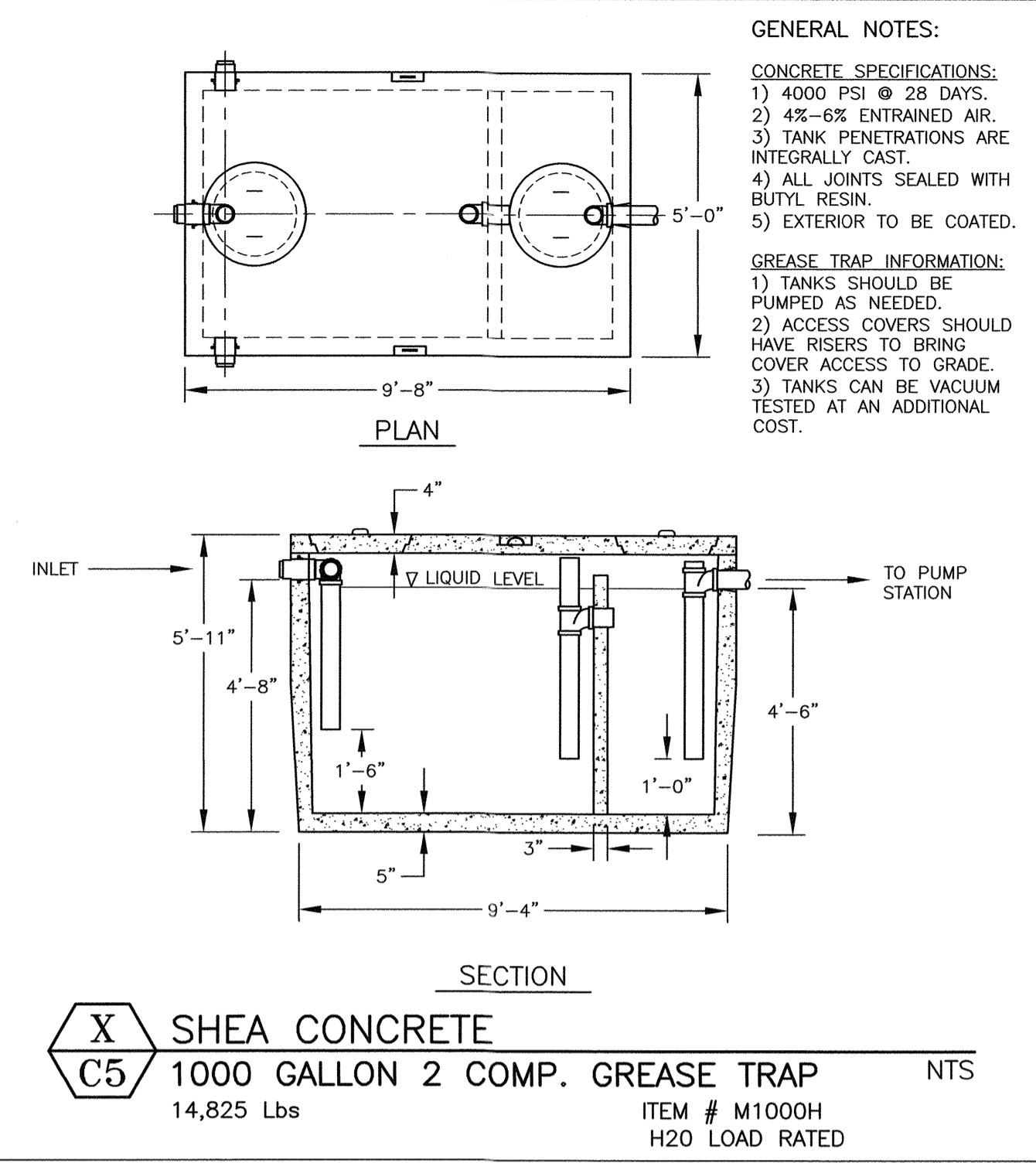
**D5**



**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.

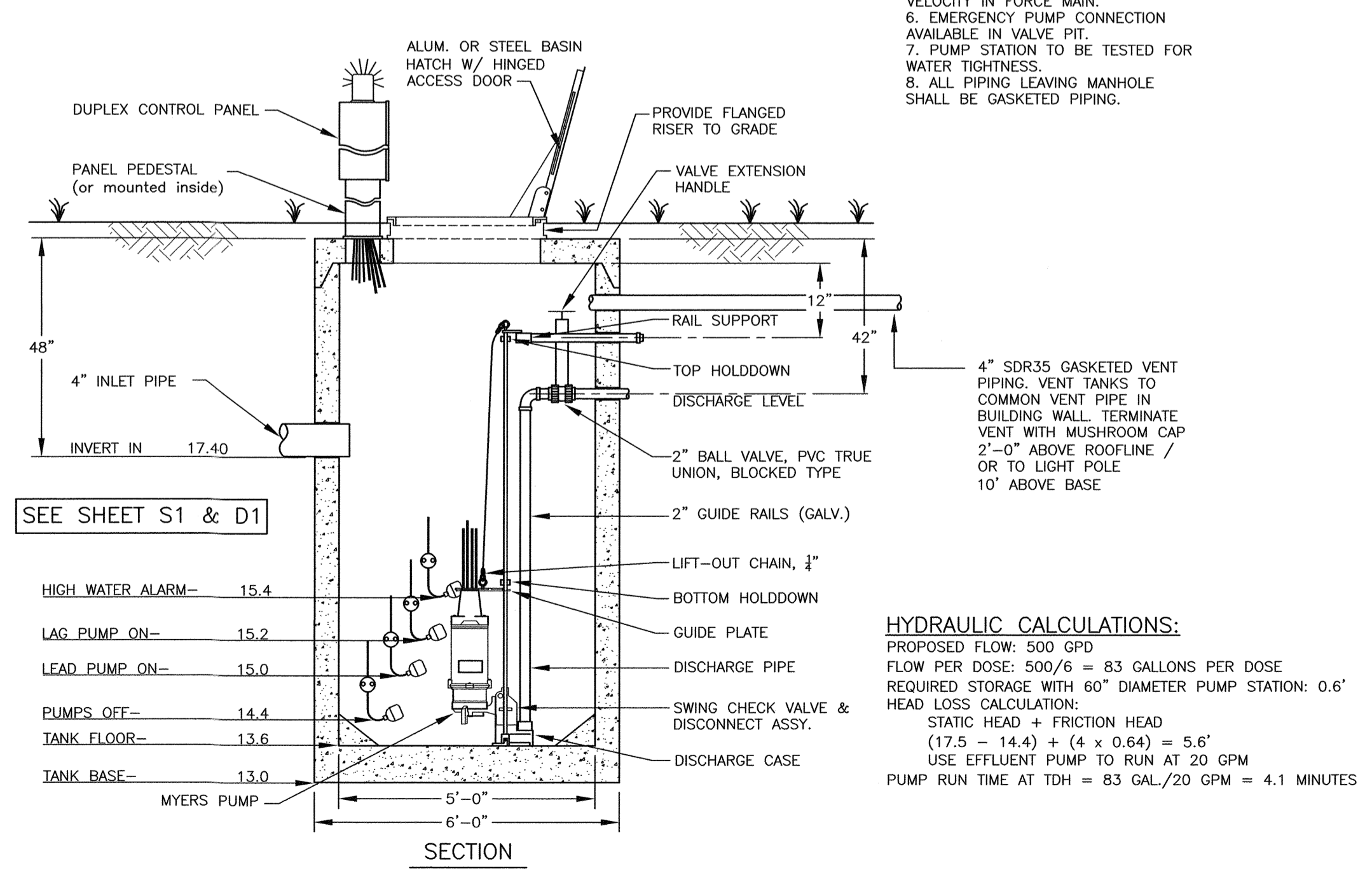
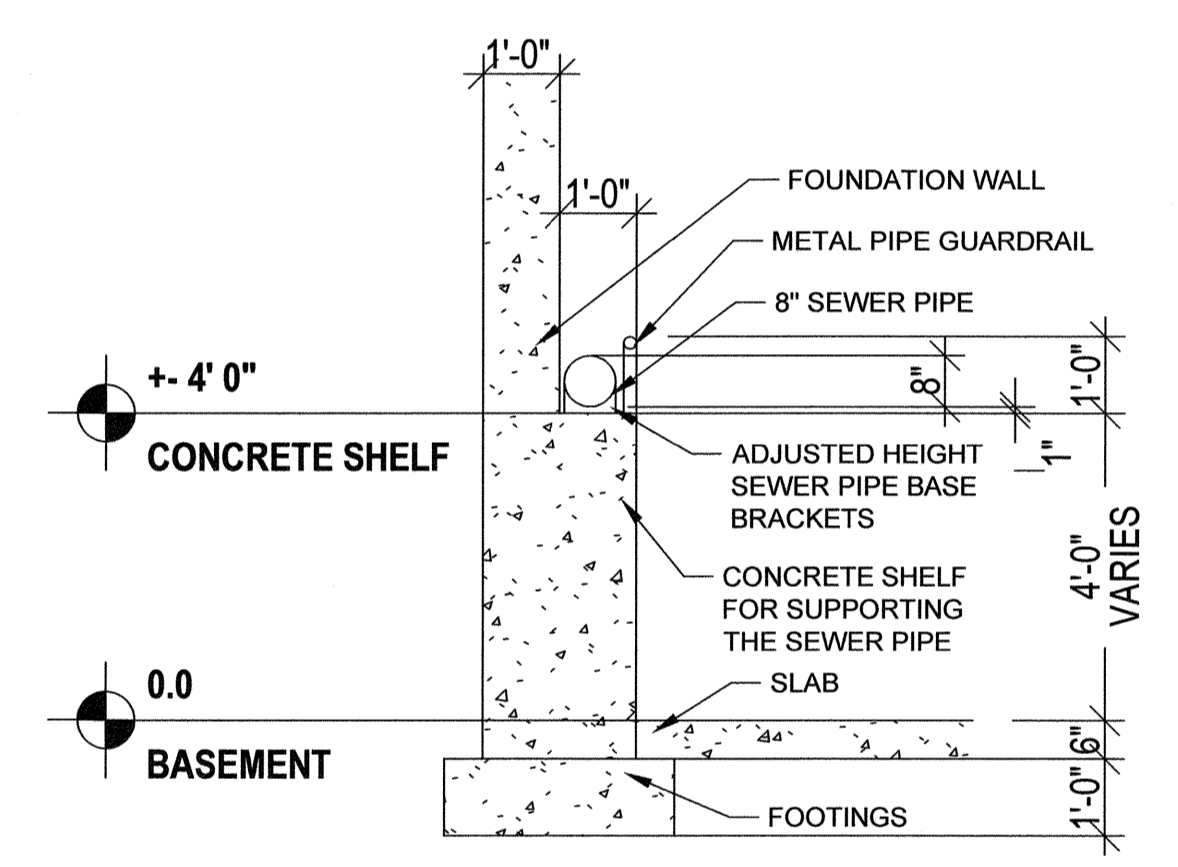
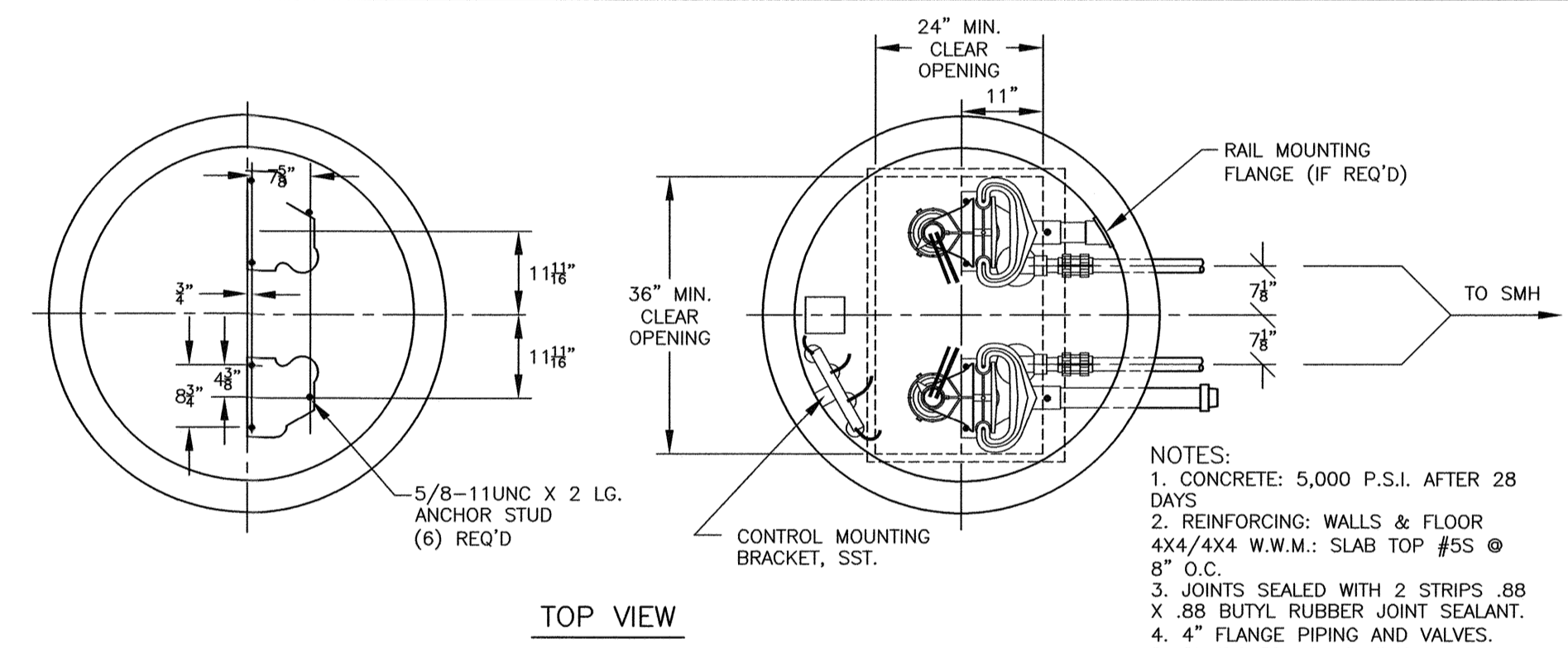
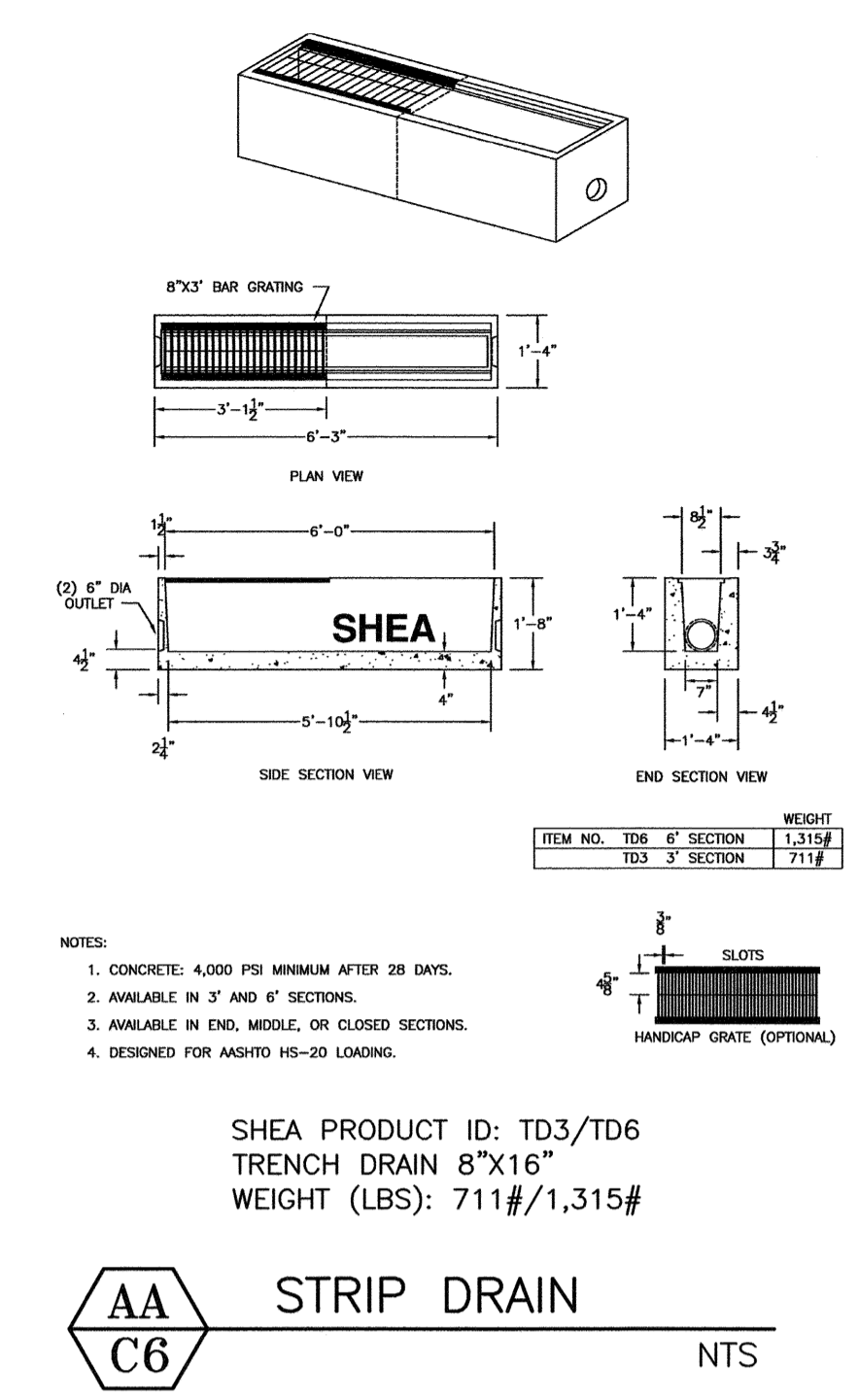
2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

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).



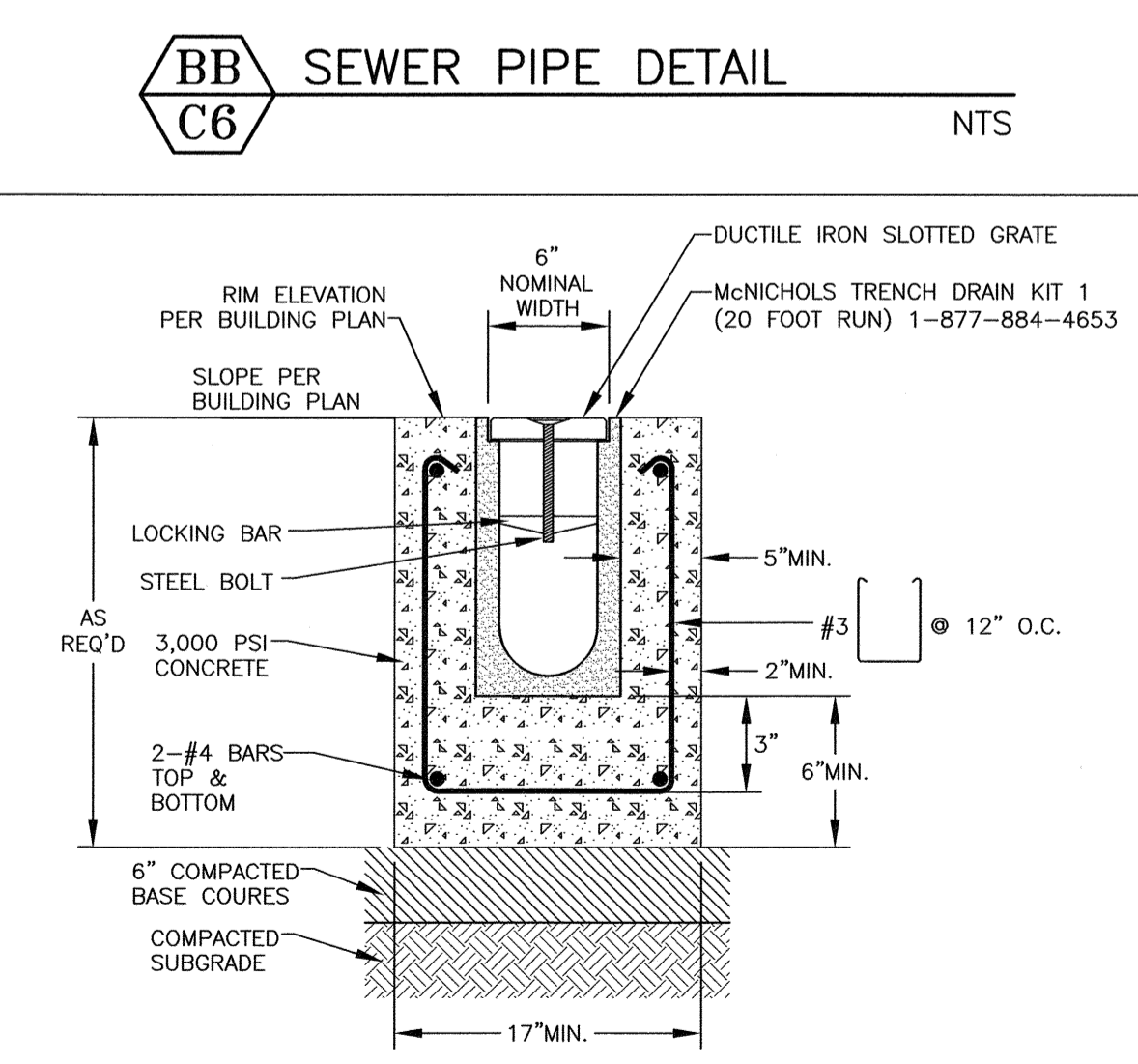
**Z** WALL MOUNTED NO RIGHT  
**C3** HAND TURN SIGN NTS

SIGN TO BE MOUNTED SO BOTTOM EDGE IS NO LESS THAN 7 FEET FROM GROUND SURFACE AND EDGE NEAREST STREET IS NO LESS THAN 2 FEET LATERALLY FROM EDGE OF PAVEMENT.



**Y** COMMERCIAL EFFLUENT PUMP STATION  
**C5** OR APPROVED EQUAL NTS

**HYDRAULIC CALCULATIONS:**  
PROPOSED FLOW: 500 GPD  
FLOW PER DOSE: 500/6 = 83 GALLONS PER DOSE  
REQUIRED STORAGE WITH 60" DIAMETER PUMP STATION: 0.6'  
HEAD LOSS CALCULATION:  
STATIC HEAD + FRICTION HEAD  
(17.5 - 14.4) + (4 x 0.64) = 5.6'  
USE EFFLUENT PUMP TO RUN AT 20 GPM  
PUMP RUN TIME AT TDH = 83 GAL./20 GPM = 4.1 MINUTES

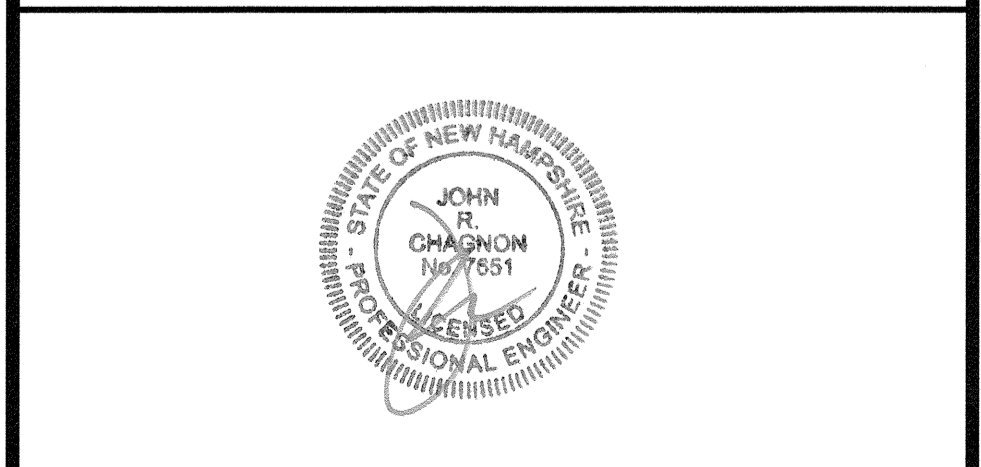


APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

**MIXED USE DEVELOPMENT**  
**581 LAFAYETTE ROAD**  
**PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
4	DETAIL 4	3/27/24
3	DETAIL Y, AA, BB, CC	3/5/24
2	DETAIL Z	2/21/24
1	DETAIL Y	2/6/24
0	ISSUED FOR COMMENT	1/2/24



SCALE: AS NOTED JANUARY 2024

**DETAILS** **D6**





3 CONGRESS ST., SUITE 1  
 PORTSMOUTH NH 03801  
 603.988.0042  
 www.ARCove.com

## 581 Lafayette Road Apartments

581 LAFAYETTE RD  
 PORTSMOUTH, NH, 03801

PROJECT NO: 1013

**OWNER**  
 ATLAS COMMONS, LLC  
 3 PLEASANT STREET, SUITE 400  
 PORTSMOUTH, NH 03801  
 603.427.0725

**CIVIL ENGINEERING**  
 AMBIT ENGINEERING, A DIVISION OF  
 HALEY WARD  
 200 GRIFFIN ROAD, UNIT 3  
 PORTSMOUTH, NH 03801  
 603.430.9282  
<https://www.ambitengineering.com/>



### SITE PLAN REVIEW

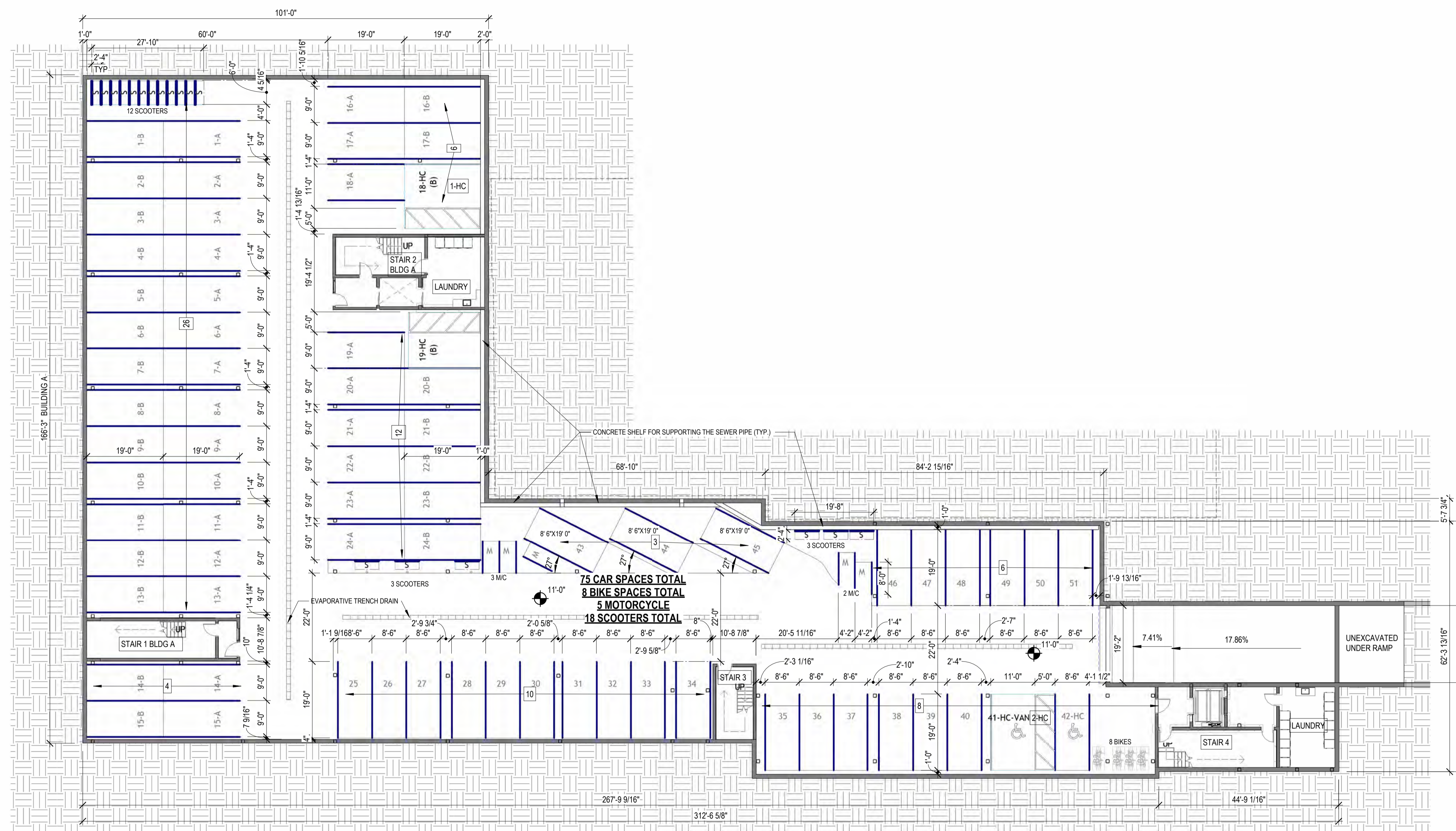
#### REVISIONS

NO.	DATE	DESCRIPTION

## BASEMENT DIMENSIONED PARKING PLAN

SCALE: 1/16" = 1'-0"  
 DATE: 3/27/2024  
 DRAWN: HA  
 CHECKED: TK

# PB1.00



1 **BASEMENT OVERALL PLAN - PB**  
 1/16" = 1'-0"









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#### SITE PLAN REVIEW

#### REVISIONS

NO.	DATE	DESCRIPTION

### LEVEL 2 FLOOR PLAN



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

DATE: 3/27/2024

DRAWN: TK/JSV

CHECKED: TK

# PB1.02



1 LEVEL 2 - OVERALL PLAN - PB  
 1/16" = 1'-0"





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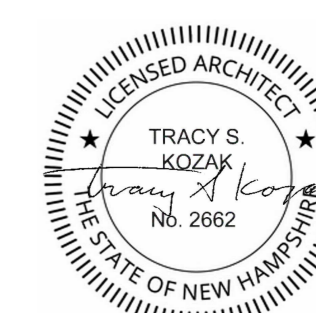
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 PORTSMOUTH, NH 03801

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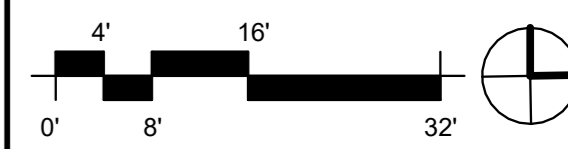


#### SITE PLAN REVIEW

#### REVISIONS

NO.	DATE	DESCRIPTION

### LEVEL 3 FLOOR PLAN



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

DATE: 3/27/2024

DRAWN: TK/STV

CHECKED: TK

# PB1.03



1 LEVEL 3 - OVERALL PLAN - PB  
 1/16" = 1'-0"







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### 581 Lafayette Road Apartments

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#### SITE PLAN REVIEW

#### REVISIONS

NO.	DATE	DESCRIPTION

### LEVEL 5 FLOOR PLAN



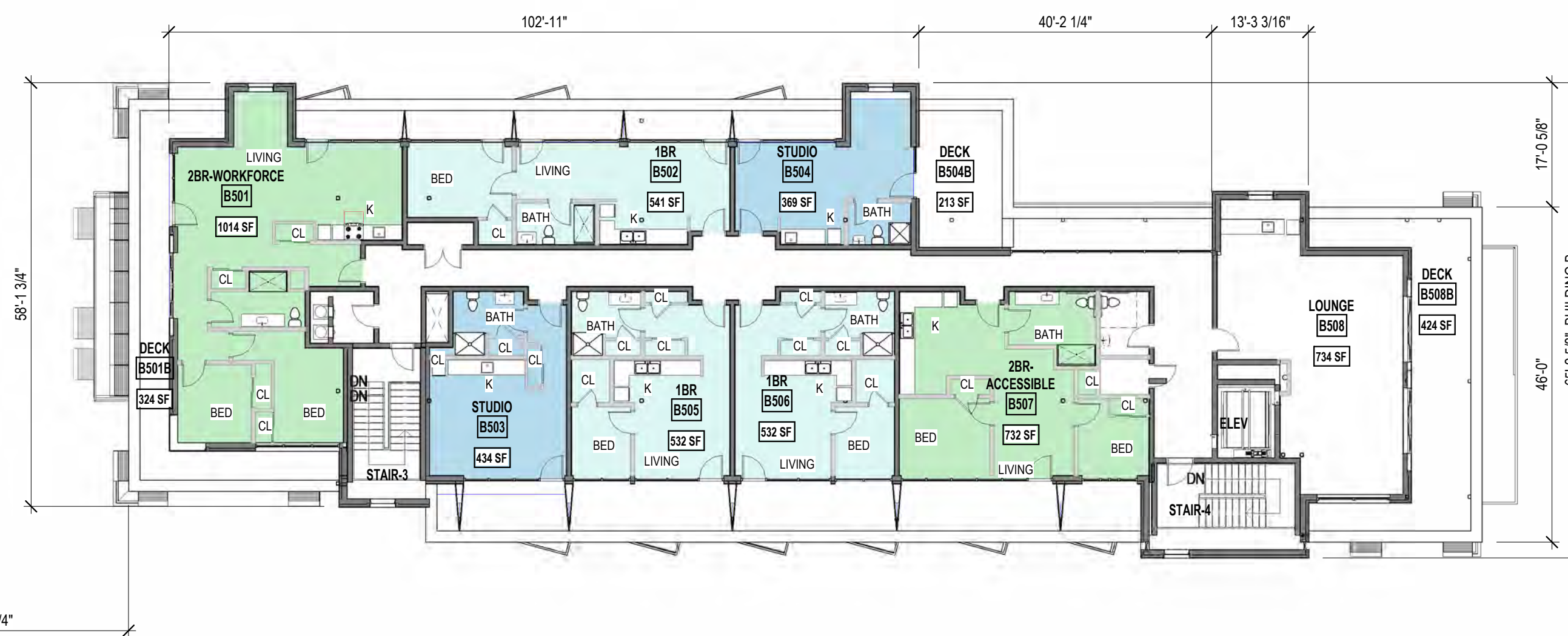
SCALE: 1/16" = 1'-0"

DATE: 3/27/2024  
 DRAWN: TK/JSV  
 CHECKED: TK

# PB1.05



- 1 BEDROOM
- 2 BEDROOM
- 3 BEDROOM
- STUDIO



1 LEVEL 5 - OVERALL PLAN - PB  
 1/16" = 1'-0"





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### 581 Lafayette Road Apartments

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#### SITE PLAN REVIEW

#### REVISIONS

NO.	DATE	DESCRIPTION

#### ROOF PLAN



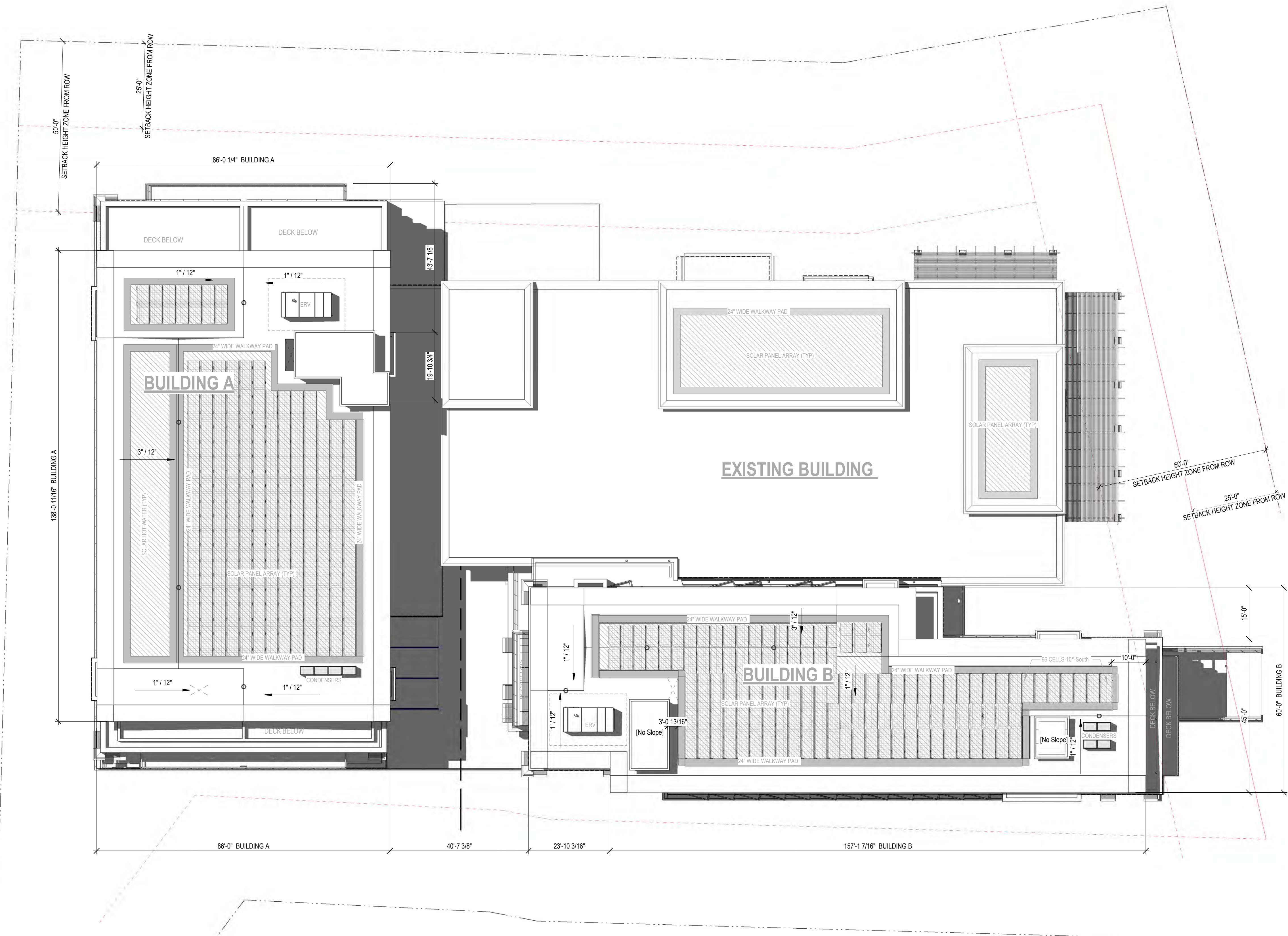
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DATE: 3/27/2024

DRAWN: Author

CHECKED: Checker

# PB1.06



1 ROOF - OVERALL PLAN - PB  
 1/16" = 1'-0"





3 CONGRESS ST., SUITE1  
 PORTSMOUTH NH 03801  
 603.988.0042  
 www.ARCOVE.com

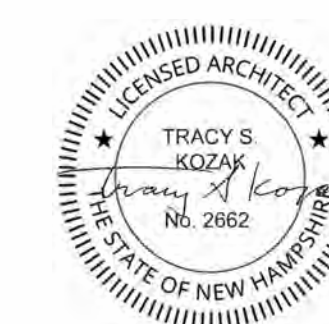
### 581 Lafayette Road Apartments

581 LAFAYETTE RD  
 PORTSMOUTH, NH, 03801

PROJECT NO: 1013

**OWNER**  
 ATLAS COMMONS, LLC  
 3 PLEASANT STREET, SUITE 400  
 PORTSMOUTH, NH 03801  
 603.427.0725

**CIVIL ENGINEERING**  
 AMBIT ENGINEERING, A DIVISION OF  
 HALEY WARD  
 200 GRIFFIN ROAD, UNIT 3  
 PORTSMOUTH, NH 03801  
 603.430.9282  
<https://www.ambitengineering.com/>



#### SITE PLAN REVIEW

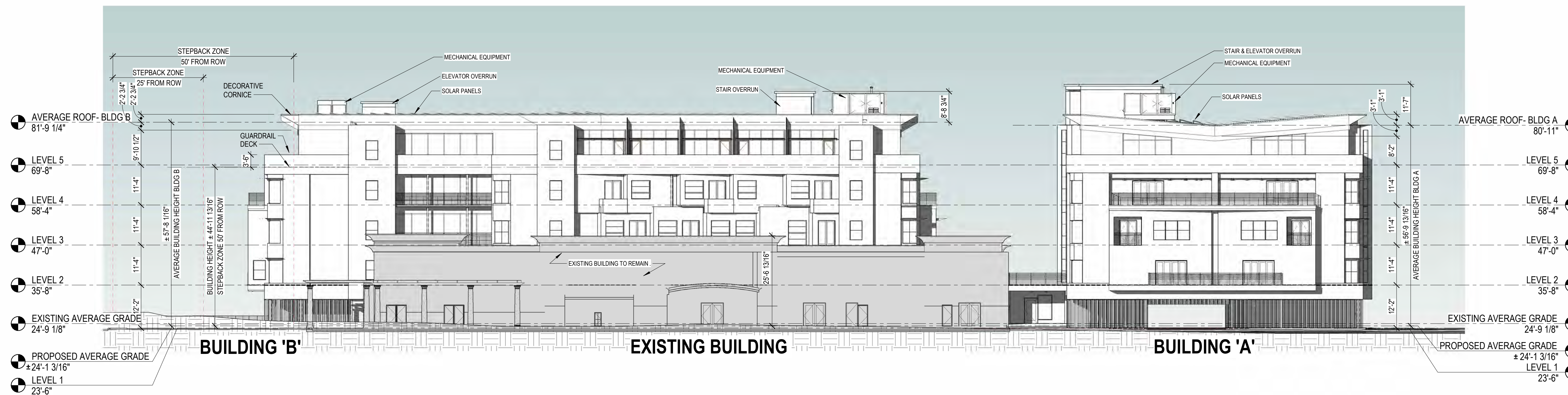
#### REVISIONS

NO.	DATE	DESCRIPTION

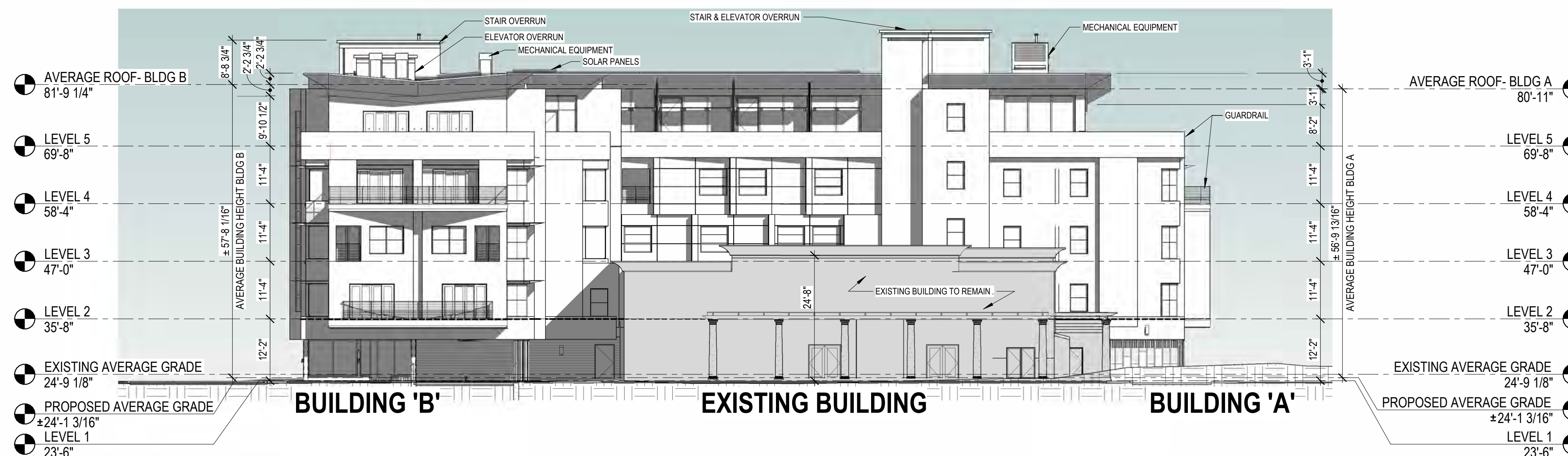
#### ELEVATIONS

SCALE: 1/16" = 1'-0"  
 DATE: 3/27/2024  
 DRAWN:  
 CHECKED:

# PB2.01



2 WEST ELEVATION PB  
 1/16" = 1'-0"



1 NORTH ELEVATION PB  
 1/16" = 1'-0"









3 CONGRESS ST., SUITE1  
 PORTSMOUTH NH 03801  
 603.988.0042  
 www.ARCove.com

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### SITE PLAN REVIEW

#### REVISIONS

NO.	DATE	DESCRIPTION

### RENDERING

SCALE: 3/4" = 1'-0"

DATE: 3/27/2024

DRAWN: Author

CHECKED: Checker

# PB3.01



PERSPECTIVE FROM NW



PERSPECTIVE FROM SE



PERSPECTIVE FROM SW







**APRIL 25, 2024 AMENDMENTS BY HDC/ PLANNING BOARD**  
**Scheduled for Planning Board Public Hearing on May 16, 2024**

**Article 6 Overlay District**

**Section 10.633 Scope of Review**

**10.633.10 Activities Requiring a Certificate of Approval**

A Certificate of Approval from the Commission is required for any construction, **demolition**, repair, renovation or **alteration** or a **building** or **structure** except as specifically exempted under Section 10.633.20.

**10.633.20 Exemptions from Certificate of Approval**

The following activities shall not require a Certificate from the Commission but require review and certification by the Code Official:

- (1) Ordinary maintenance and repair of any exterior architectural feature, which does not involve a change in design, materials or outer appearance thereof;
- (2) Painting or repainting **structures** without regard to color;
- (3) Maintenance and repair of exterior walls, chimney repairs, entryway repairs, or deck repairs provided these are of the same design and material (including the use of lime-based mortar for repointing historic brick);
- (4) Placement or replacement of shutters that are (1) constructed of wooden material, (2) one-half the width of the sash they are covering, (3) installed with hinges and dogs, and (4) louvered, paneled or constructed of boards as appropriate to the style of the building;
- (5) Replacement roofing on existing **structures** provided that (1) the roof plane and remains the same and the material remains the same regardless of color, or (2) asphalt roofing is replaced with slate, composite-slate, or wood shingles;
- (6) Replacement of an exterior door, window or storm window, provided that (1) the same design and materials are used, or (2) materials are used that restore the original architectural features, including but not limited to the number and arrangement of window lights; using true and non-removable divided lights; and ensuring that the size of the opening does not change;
- (7) Placement or replacement of roof-mounted mechanical or electrical equipment and ventilation terminators **and roof mounted solar energy systems** where the equipment (1) is not located on a roof surface that faces or is visible from a public way, (2) ~~does not exceed 27 cubic feet, and (3)~~ does not extend more than 3 feet above the roof plane **or (3) Are installed on a flat or low sloped roof with a parapet;**

- (8) Placement or replacement of wall-mounted mechanical or electrical equipment and ventilation terminators where the equipment (1) is painted a similar color to match or blend with the wall color, (2) does not extend more than six inches out from the wall plane, and (3) does not vent directly into a public way; and where (4) all duct work or equipment feeds enter the building's interior at ground level so as not to be visible;
- (9) Placement or replacement of ground-mounted mechanical or electrical equipment (including a generator) where (1) the equipment is located behind the **structure** and is not in public view, and (2) all duct work or equipment feeds are located in the building's interior or immediately adjacent to the equipment;
- (10) Placement or replacement of storm windows, storm doors, screen windows and screen doors, provided they are constructed with wood frames, with any metal or vinyl tracks concealed by the wood frames. Window guards provided they are constructed with bars or rods of wrought iron, or metal formed and painted to resemble wrought iron. Mesh guards are not exempt;
- (11) Placement or replacement of chimney caps or bishop pots that are constructed of masonry or bluestone, or of other material with a black, dark brown or copper finish;
- (12) Placement or replacement of gas and electric meters if mounted on an exterior wall, not facing or visible from a public way. **Landscaping** or fencing may be used as a visual screen;
- (13) Construction, **alteration** or **demolition** of any **structure** or element of a **structure** that the **Code Official** documents as being necessary to avoid an immediate health or safety emergency prior to the Commission convening a meeting to consider the matter. In such instance, the **Code Official** shall immediately provide written notification to the Commission of such action;
- (14) New **signs** and refacing of existing **signs**, except that new freestanding **signs** and **signs** requiring review and approval by the **Board** of Adjustment shall not be exempt;
- (15) Awning replacement if a canvas fabric is used and no **alterations** (including but not limited to the wall fittings and fastenings) are made to the **structure**;
- (16) Placement of a temporary toilet, trailer, tent or tensile **structure**;
- (17) Accessible ramp systems on **single-family** or **two-family dwellings** provided the ramp and rail system consists of black metal modular components;
- (18) The placement, removal or replacement of wood or metal fence (except for chain-link which may only be removed) provided the replacement fence is in substantially the same location with substantially the same height, material, and design;
- (19) The replacement of exterior lighting provided the replacement lighting is substantially in the same in location with substantially the same height, material, and design;
- (20) The replacement or restoration of wood siding (including removal of non-wood

materials) provided the replacement siding is the same exposure, material, and design;

- (21) Placement or replacement of terraces, walks, **driveways**, and **sidewalks** and in-ground swimming pools provided that any such element is substantially at the existing grade plane of the property;
- (22) Placement or replacement of building accessories and décor, such as window-mounted portable air conditioning units, play equipment, residential trash enclosures, snow guards, benches, trellises, non-commercial boat rack storage **structures**, window boxes, raised planters, mailboxes less than 18" in all dimensions, flags, hose reels, door bells and knockers, weathervanes, bells, wind chimes, birdfeeders, artwork, sculpture, and other similar exterior décor,
- (23) New or replacement piers, floats, docks or gangways for **single-family** and **two-family dwellings** provided any vertical handrail support systems are constructed with metal, wire, rope or wood;
- (24) Placement or replacement of wood, brick or granite steps or landings;
- (25) Placement or replacement of a commercial solid waste enclosure provided the enclosure: (1) is fully enclosed with the use of gates; (2) is constructed of wood or stone material; and (3) is no greater than 60" in height or 100 sq. ft. in area;
- (26) Placement or replacement of wood or copper gutters and downspouts.
- (27) Parking ticket kiosks, freestanding signs and other site elements related to public parking in private parking lots when authorized under a permit from the Department of Public Works.

### **10.633.30 Administrative Approval**

**10.633.31** The Code Official may grant administrative approval for minor modifications on work for which a Certificate of Approval has previously been issued, provided that the Code Official determines that the modifications do not alter the overall quality or character of the work which had been certified as appropriate by the Commission, and indicates this determination as a written addendum to an existing Certificate of Approval. Such approval shall be subject to Historic District Commission approval at the next meeting of the Historic District Commission. A list of the administrative approvals shall be submitted to the Historic District Commission prior to the meeting and the administrative approvals shall be automatically ratified unless rejected specifically by the Historic District Commission at that meeting.

**10.633.32** **Administrative Approval for Roof Mounted Solar Energy Systems**

A property owner or authorized representative may submit for administrative approval for the installation of **roof mounted solar energy systems**, associated support structures and conduit lines provided that the application meets or exceeds the following requirements:

- (1) The placement of **roof-mounted solar energy systems** shall be minimally visible from a public way (including side facing streets) and the manner of placement shall be regular with no disjointed arrays (example: symmetrically placed or evenly spaced rectilinear arrays);
- (2) The placement of solar panels, associated support structures and conduit lines shall not cause damage to or **alteration of character defining architectural features** of the **structure** (such as installation through slate or wood shingled roofs, and the removal of chimneys, dormers or altering existing roof lines);
- (3) **Roof-mounted solar energy systems** shall be flush mounted to the roof and remain within the plane of the roof;
- (4) **Roof-mounted solar energy systems** mounted on **flat roofs** shall be set back from the edge of the roof to minimize visibility.

#### **Definitions-**

**Minimally Visible:** Barely or partially visible or does not call attention to itself or detract from any Significant Architectural Features. Visibility is assessed through a commonly accessible public way. To determine visibility, one may consider the distance and angle at which the roof-mounted solar energy system becomes visible.

**Character Defining Architectural Features:** The overall shape of the building, its materials, craftsmanship, decorative details, as well as aspects of its site and environment.

**Not Visible From a Public Way:** Any portion of a historic resource that is not visible from the public street, sidewalk immediately adjacent to the property, ~~or a place to which the public has a right of access.~~



# Findings of Fact | Wetland Conditional Use Permit

## City of Portsmouth Planning Board

Date: May 16, 2023

Property Address: 0 Maplewood Ave.

Application #: LU-24-43

Decision: Approve Deny Approve with Conditions

### Findings of Fact:

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

In order to grant Wetland Conditional Use permit approval the Planning Board shall find the application satisfies criteria set forth in the Section 10.1017.60 (Criteria for Approval) of the Zoning Ordinance.

	<b>Zoning Ordinance Sector 10.1017.60 Criteria for Approval</b>	<b>Finding</b> (Meets Criteria for Approval)	<b>Supporting Information</b>
<b>1</b>	<i>1. The proposed project is in the public interest.</i>	<b>Meets</b>  <b>Does Not Meet</b>	This is part of an overall project to separate the existing combined sewer overflow systems in downtown Portsmouth and provide additional capacity for stormwater in the downtown. This separation is in the public interest as it will be separating stormwater principally originating from the Fleet, Congress and Vaughn Areas from entering the sewer lines, which will reduce the likelihood of sewer overflow into tidal waters during heavy precipitation and storm events. The term combined sewer system overflow means that when there is a large enough storm, the stormwater flow is too much for the combined system and the system overflows combined sewer and stormwater flow into the river and into the South Mill Pond. With separated systems, the likelihood of this combined overflow flowing into the tidal waters would now be much lower during heavy storm events. In addition, the additional capacity will provide protection from future heavy rainfall flooding events.

	<b>Zoning Ordinance Sector 10.1017.60 Criteria for Approval</b>	<b>Finding</b> (Meets Criteria for Approval)	<b>Supporting Information</b>
2	2.Design, construction, and maintenance methods will utilize best management practices to minimize any detrimental impact of such use upon the wetland and will include restoration of the site as nearly as possible to its original grade condition and vegetated state.	<p style="text-align: center;"><b>Meets</b></p> <p style="text-align: center;"><b>Does Not Meet</b></p>	The use of erosion control measures where excavation is proposed along with the use of silt booms within the pond will help to mitigate any sediment and debris entering the pond. The restoration of the bank through a living shoreline project including expanded saltmarsh areas will help restore the nearby marsh population while working to protect that shoreline. The long-term success of this restoration area is crucial to the safety of that bank and the historic graveyard just beyond it.
3	<i>3.No alternative feasible route exists which does not cross or alter a wetland or have a less detrimental impact on a wetland.</i>	<p style="text-align: center;"><b>Meets</b></p> <p style="text-align: center;"><b>Does Not Meet</b></p>	This overflow system has been in place since the 1970's and is directly connected to an existing system of properties and drain manholes that exist all over the downtown. The best placement for the addition 2 of an upgraded line is parallel to the existing line. The applicants are proposing to offset the permanent impacts to the wetland (outfall headwall and stone riprap) with the planting of salt marsh species to strengthen the bank.
4	<i>4.Alterations of natural vegetation or managed woodland will occur only to the extent necessary to achieve construction goals.</i>	<p style="text-align: center;"><b>Meets</b></p> <p style="text-align: center;"><b>Does Not Meet</b></p>	To construct the new line, existing pavement, lawn, dirt and marsh areas will be disturbed to dig the trench and construct the infrastructure. Maintenance and replacement of the line in the future will likely require that no trees or large vegetation be planted directly over the piping. If possible, all areas disturbed within the buffer that is not marsh should be replanted with a wetland buffer seed mix.
5	<b><u>Other Board Findings:</u></b>		

2542.12

April 22, 2024

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

**Re: *Conditional Use Permit Application Submittal – 0 Maplewood Avenue***  
Maplewood Avenue Drainage Improvements – North Mill Pond Outfall  
Portsmouth, NH

Dear Mr. Chellman:

On behalf of the City of Portsmouth, we are applying for a Conditional Use Permit (Wetland Impacts) for proposed improvements to the existing drainage outfall on North Mill Pond behind the cemeteries. This is work being undertaken by the Portsmouth Public Works Department and is required as part of the City's ongoing efforts to continue sewer separation in the Fleet Street Area of downtown.

- The proposed separation work in the Fleet Street Area will increase storm water flows and requires capacity upgrades at the existing outfall.
- Upgrades to the outfall include installation of an additional 48" drain pipe in parallel to the existing 48" drain pipe and replacement of the headwall.
- On site compensatory mitigation (marsh restoration) is proposed to offset permanent impacts to jurisdictional wetlands (tidal) resulting from the proposed work.
- The marsh restoration will also provide stabilization and revetement to the embankment behind the cemeteries which is currently being undercut by stormwater runoff from adjacent properties and tidal action.

Enclosed for consideration and the Board's use is one (1) hard copy of latest Construction Drawings submitted electronically as required. We understand this project is on the agenda to be discussed at the May 16<sup>th</sup> meeting.

The project was presented to the City's Conservation Commission at their April 10<sup>th</sup> meeting where the Commission recommended approval of the conditional use permit (wetlands impact). Their letter is attached for reference and included the following stipulations (with responses):

- Placement of wetlands markers in accordance with Section 10.1018.40 of the zoning ordinance.

*At this time we would like to request a waiver for this requirement. The markers would be placed in the cemetery where permanent posts cannot be installed. There is also limited vegetation (i.e. trees) at the 25' line where the markers can be affixed to.*

- An educational sign shall be installed near the restoration area.

*Note #15 has been added to Sheet #9 (DWG P-5) requiring a sign be provided identifying the restoration area.*

- Fencing should be used to keep disturbances out of the restoration area

*Note #14 has been added to Sheet #9 (DWG P-5) requiring the installation of temporary construction fencing around the perimeter of the restoration area.*

- Include a long term maintenance plan is to be included in the permit application.

*Underwood will work with a wetlands scientist to prepare and execute a long term monitoring plan which will be submitted to NHDES as part of their permitting process. Once the plan has been finalized we will submit the plan to the City Planning Department for records. The duration of the monitoring plan required by the State will be 5 years.*

- A note shall be added to the plans stating all soil and plant material excavated on site shall be removed and disposed of off-site.

*Note #10 was added to sheet #5 (DWG P-1) regarding the presence of invasive species and removal of said species and soils shall be in accordance to NHDOT Best Management Practices for Roadside Invasive Plants*

- A conservation seed mix or other appropriate native seed mix shall be used on impact areas disturbed within the wetlands buffer.

*Note #11 was added to Sheet #5 (DWG P-1) specifying conservation seed mix be used to revegetate existing vegetated areas within the 100' tidal buffer.*

- All necessary approvals from involved property owners will be acquired prior to the issuance of the City building permit.

*DPW is currently working with affected property owners to get proper easements and land rights to complete the proposed work. As noted by the Conservation Commission this is also required in order to obtain the permit from NHDES.*





In addition to above, we note the following updates that have been incorporated into the project drawings since the Conservation Committee Meeting.

- Construction drawings submitted to the Conservation Commission did not include all temporary impacts within the 100' tidal buffer zone. This was stated to the Commission when presenting the project. Limits of temporary impacts have been added to the updated set of drawings. An area up to 6,900 SF of temporary impact is identified for pipe installations, grading modifications, and restoration. The Wetland Impact Area Summary has been updated accordingly (Sheet #9, DWG P-5).
- A list of conditions were provided by NHFG as part of their project review for the American Eel. These conditions have been added to the General Notes Sheet #4 (DWG G-3). An education flier about the American Eel was also provided and has been added to this sheet.
- Note 8 on Sheet #9 (DWG P-5) has been updated to specify bare root seedlings in lieu of vegetation mats. That planting density was also updated to two (2) seedlings per sq. ft.
- Temporary erosion control details have been added to the Drawing Package. See sheets 16 and 17 (DWG D-7 and D-8). We also note that the contractor will be required to prepare and maintain a Stormwater Pollution Prevention Plan (SWPPP) as part of the Contract.
- Reference to tide elevations have been added to the plan view of the marsh restoration on Sheet #9 (DWG P-5).

We trust the information provided is sufficient for review by the Planning Board for discussion at the next meeting. If any information is missing or clarification is required please to not hesitate to contact me in advance of the meeting.

Very truly yours,

UNDERWOOD ENGINEERS, INC.



Daniel J Rochette, P.E (NH)  
Project Manager

Encl.

cc: Dave Desfosses, City of Portsmouth (via e-mail)





# CITY OF PORTSMOUTH

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

## CONSERVATION COMMISSION

April 12, 2024

Peter Rice  
City of Portsmouth  
680 Peaverly Hill Road  
Portsmouth, NH 03801

RE: Wetland Conditional Use Permit for property located at 0 Maplewood Avenue (LU-24-43)

Dear Owner:

The Conservation Commission, at its regularly scheduled meeting of **Wednesday, April 10, 2024**, considered your application for a Wetland Conditional Use permit for part of an overall project to separate the existing combined sewer overflow systems in downtown Portsmouth and provide additional capacity for stormwater in the downtown. This project involves the installment of new stormwater piping, additional catch basins and new treatment systems. The existing outfall in the North Mill Pond will be reconstructed and will be pulled further towards the shore to limit wetland impacts. The proposed tidal wetland impact for this project is approximately 500 SF for the installation of the new headwall, grading improvements, and restoration/stabilization efforts. As mitigation for the impacts relating to the outfall, the City is proposing to construct a marsh with a stabilized sill directly adjacent to the outfall location. The total area of marsh proposed is approximately 2,950 SF. Approximately 650 SF of tidal buffer area is also proposed.. Said property is shown on Assessor Map 124, Lot 2, Map 125 Lot 19, Map 157 Lot 2-1 and Map 164 Lot 4 and lies within the Office Research (OR) and Municipal (M). As a result of said consideration, the Commission voted to **approve** the Wetland Conditional Use Permit with the following stipulations.

1. In accordance with Section 10.1018.40 of the Zoning Ordinance, applicant shall install permanent wetland boundary markers. These markers shall be placed along the 25' vegetative buffer at intervals of every 50' along the City-owned property. These must be installed prior to the start of any construction. These can be purchased through the City of Portsmouth Planning and Sustainability Department. In addition to the wetland boundary markers, an educational sign describing the project shall be installed near the restoration area and fencing should be utilized to keep disturbances such as dogs and geese from the area.
2. A long-term maintenance schedule and plan be included in the permit application and submitted to the Planning & Sustainability Department that commits to long-term maintenance of the marsh restoration area and a commitment to ensuring a marsh migration pathway for marsh adaptation impacts from climate change on City-owned land.
3. A note will be added to the plans stating that all soil and plant material excavated on site shall be removed and disposed of off-site, as recommended by the TES Environmental Consultants LLC report.
4. All necessary approvals from involved property owners will be acquired prior to the issuance of a City building permit and prior to any associated approvals from the New Hampshire Department of Environmental Services.
5. A conservation seed mix or other appropriate native species seed mix and/or plantings shall be used for surface areas disturbed by the pipe installation within the wetland buffer.

This matter will be placed on the agenda for the Planning Board meeting scheduled for **Thursday, May 16, 2024**. One (1) hard copy of any revised plans and/or exhibits as well as an updated electronic file (in a PDF format) must be filed in the Planning & Sustainability Department and uploaded to the online permit system no later than Wednesday, April 24, 2024.

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

Very truly yours,



Samantha Collins, Chair  
Conservation Commission

cc: Daniel Rochette, Senior Project Engineer, Underwood Engineers

**CONSERVATION COMMISSION**

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Very truly yours,



Samantha Collins, Chair  
Conservation Commission

cc: Dave Desfosses, Construction Project Manager, City of Portsmouth



# City of Portsmouth, New Hampshire

## MAPLEWOOD AVENUE DRAINAGE IMPROVEMENTS

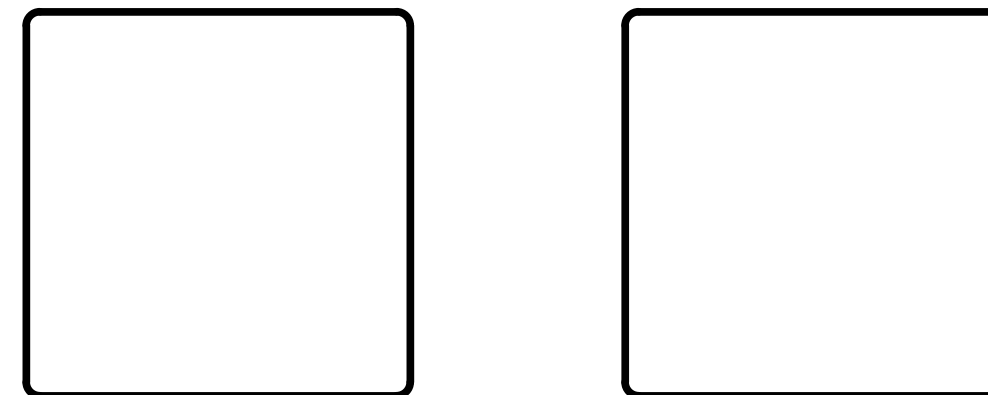


LOCATION PLAN

PROJECT AREA



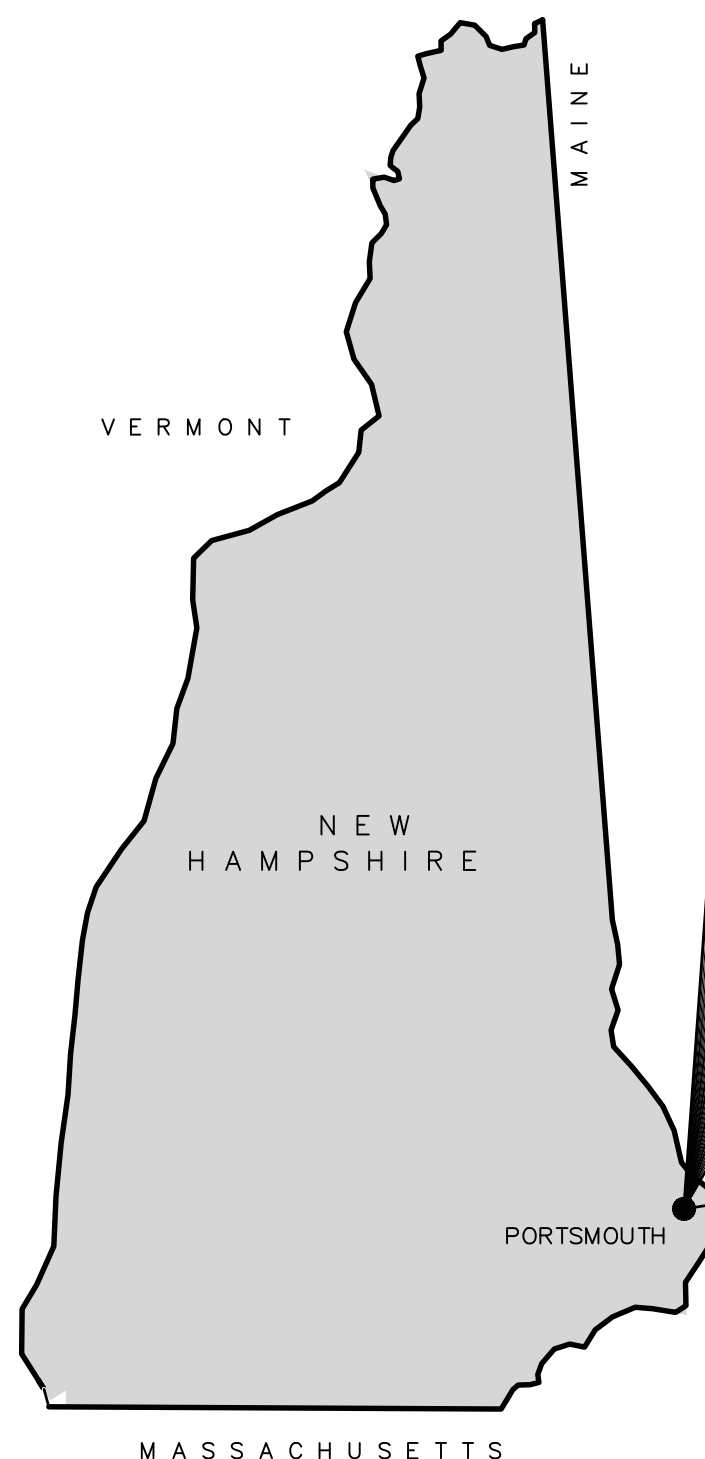
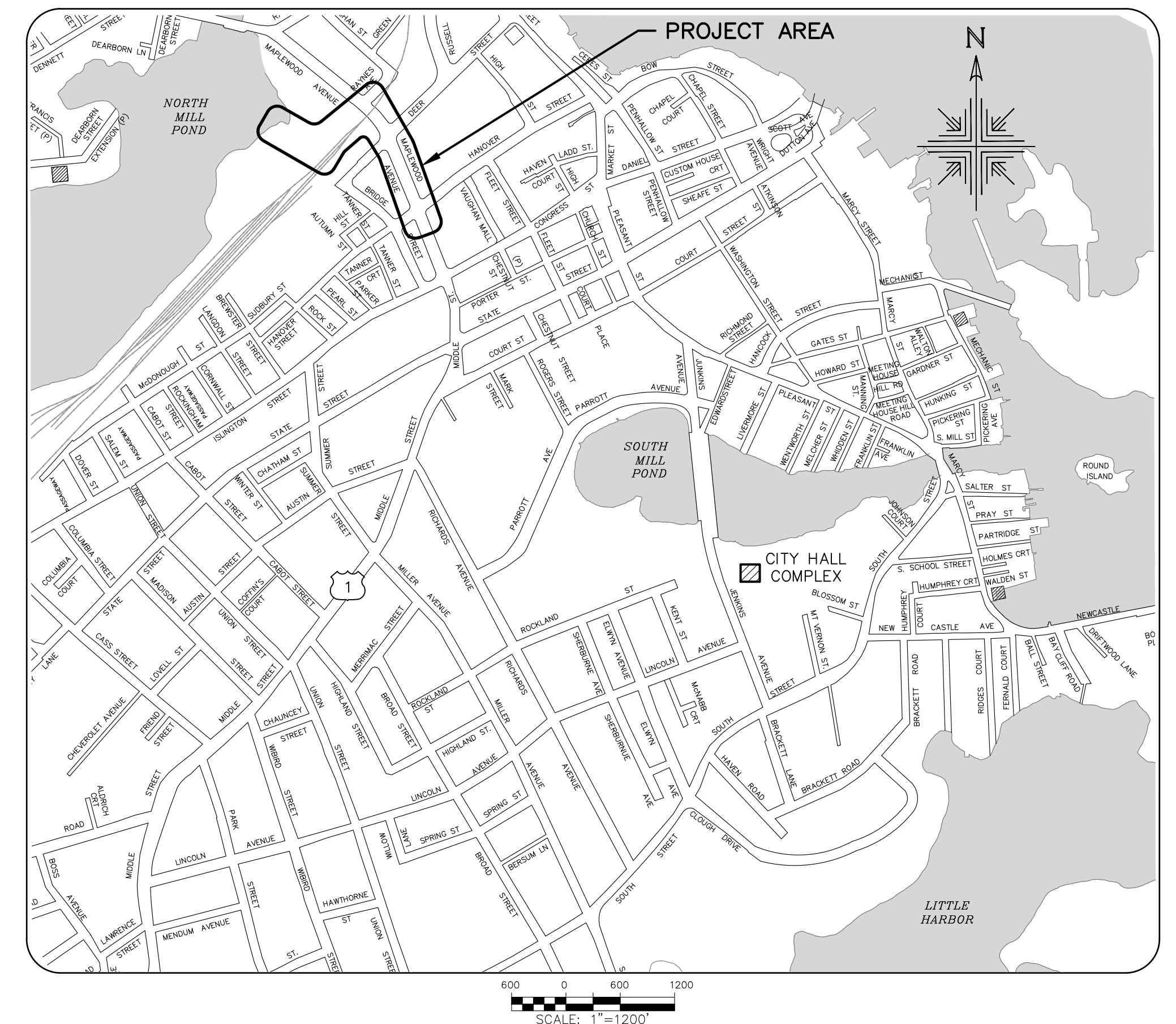
PREPARED BY  
 UNDERWOOD ENGINEERS, INC.  
 PORTSMOUTH, NEW HAMPSHIRE  
 APRIL 2024



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VICINITY MAP



UE #2542



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**GENERAL NOTES:**

1. THE LINE WORK REPRESENTING THE EXISTING UNDERGROUND STRUCTURES AND PIPES IS BASED ON A FIELD SURVEY, TIE SHEETS, AND OTHER INFORMATION AVAILABLE, INCLUDED IN THE PROJECT MANUAL APPENDIX. THE ENGINEER/SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ON THE PLANS OR THE PROJECT MANUAL APPENDIX COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER/SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. IN ADDITION, CONTRACTOR SHALL ANTICIPATE THAT EVERY BUILDING OR UNIT WITHIN THE PROJECT AREA HAS A LEAST ONE GAS, SEWER AND WATER SERVICE EXTENDING FROM THE MAIN IN THE STREET TO THE BUILDING. THEREFORE THE CONTRACTOR SHOULD CONSIDER CONFLICTS, HAND EXCAVATION AND POSSIBLE DELAYS IN CONSTRUCTION, WHEN PREPARING THEIR BID.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR (IF DAMAGED) OF ALL EXISTING UTILITY MAINS AND SERVICES. THE LOCATIONS OF KNOWN SEWER, WATER AND GAS, MAINS, SHOWN ON THESE DRAWINGS ARE APPROXIMATE. HOWEVER, WATER AND SEWER SERVICE LATERALS ARE NOT SHOWN AND THE CONTRACTOR IS TO ANTICIPATE THEIR EXISTENCE. TIE SHEETS FOR THE KNOWN UTILITIES (INCLUDING GAS AND WATER) ARE PROVIDED IN THE APPENDIX OF THE PROJECT MANUAL. VIDEO LOGS AND SANITARY SURVEYS FOR SEWER LATERALS ARE AVAILABLE FROM THE ENGINEER UPON REQUEST. NOTIFY DIG-SAFE PRIOR TO COMMENCING CONSTRUCTION (1-888-344-7233). CONTRACTOR SHALL GIVE ADEQUATE NOTICE TO THE ENGINEER OF CONFLICTS OF PROPOSED WORK WITH MARKED UTILITIES PRIOR TO CONSTRUCTING THE PROPOSED WORK.
3. ALL CONFLICTS WITH GAS LINES SHALL BE COORDINATED WITH UNITIL, SUBSIDIARY.
4. THE CONTRACTOR SHALL MAINTAIN SINGLE LANE TRAFFIC AND ACCESS TO BUSINESSES AND PROPERTIES AT ALL TIMES DURING WORKING HOURS. TRAFFIC CONTROL WARNING DEVICES SHALL BE IN ACCORDANCE WITH MUTCD (LATEST EDITION) REQUIREMENTS AND SECTION 01570 OF THE PROJECT MANUAL.
5. ALL STREET OPENINGS SHALL BE BACKFILLED AT THE END OF EACH DAYS OPERATIONS TO ENSURE SAFE VEHICULAR AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL MAINTAIN SAFE PASSAGE FOR 2-LANES OF TRAFFIC AT THE END OF EACH WORK DAY. DUST CONTROL OPERATIONS ARE TO BE CONTINUOUS THROUGHOUT CONSTRUCTION AND IS INCIDENTAL TO THE WORK.
6. THE USE OF PLATES TO COVER OPEN EXCAVATIONS IN LIEU OF BACKFILLING WILL NOT BE PERMITTED UNLESS PRIOR APPROVAL HAS BEEN GRANTED BY THE OWNER.
7. A NPDES PERMIT FOR CONSTRUCTION ACTIVITIES IS REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS REQUIRED TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND TO SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA TO FULFILL PROJECT REQUIREMENTS. THE SWPPP MUST BE PREPARED IN ACCORDANCE WITH THE EPA'S REQUIREMENTS. NO WORK IS TO PROCEED UNTIL THE SWPPP AND THE NOI IS SUBMITTED AND ACCEPTED BY THE OWNER. A COPY OF THE NOI, SWPPP REQUIREMENTS, AND EXAMPLE SWPPP ARE INCLUDED IN THE PROJECT MANUAL APPENDIX.
8. THIS SET OF PLANS HAS BEEN CREATED TO BE USED IN CONJUNCTION WITH A TECHNICAL SPECIFICATION ENTITLED "PROJECT MANUAL, MAPLEWOOD AVENUE – DRAINAGE INTERCEPT, PORTSMOUTH, NH".
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL SURPLUS EARTHEN MATERIALS, LEDGE, CURB, PIPE, AND SEWER OR DRAIN STRUCTURES EXCAVATED DURING CONSTRUCTION, UNLESS MATERIALS ARE CLAIMED BY THE OWNER OR OTHERWISE INDICATED IN THE PROJECT MANUAL OR THE DRAWINGS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY RESTORATION BOTH PUBLIC AND PRIVATE. UTILITIES DAMAGED AS A RESULT OF THE CONTRACTORS OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. PAVING REPAIRS SHALL MAINTAIN EXISTING LINE AND GRADE UNLESS OTHERWISE INDICATED OR DIRECTED.
12. OVERHEAD WIRES AND WIRE DROPS TO BUILDINGS ARE NOT SHOWN IN ENTIRETY. THE CONTRACTOR SHALL ANTICIPATE THEIR EXISTENCE IN ALL OPERATIONS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ROADWAY SIGNS. ANY SIGN DAMAGED DURING THE COMPLETION OF WORK SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
14. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
15. CONTRACTOR SHALL NOT USE ANY ADJACENT DRIVEWAYS OR PARKING LOTS WITHOUT WRITTEN PERMISSION FOR PROPERTY OWNER. DAMAGE RESULTING FROM CONSTRUCTION LOADS OUTSIDE PROPOSED LIMITS OF WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
16. EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A LICENSED LAND SURVEYOR (LLS), SUBSIDIARY.

**REFERENCE PLANS:**

1. PORTWALK SITE PLAN, PREPARED BY APPLIEDORE ENGINEERS INC., DATE/LAST REVISED 3/5/2010.
2. 195 HANOVER STREET AS BUILT, PREPARED BY S.U.R., DATE/LAST REVISED 7/21/2015.
3. PORTWALK AS BUILT, PREPARED BY MSC, DATE/LAST REVISED 9/15/2015.

**SURVEY NOTES:**

1. THIS PLAN IS BASED ON A FIELD SURVEY BY JAMES VERRA AND ASSOCIATES, INC. 12/2019-6/2022. ON SITE CONTROL ESTABLISHED USING SURVEY GRADE GPS UNITS. HORIZONTAL DATUM: NAD 1983 (1986 ADJUSTMENT) PRIMARY BM: NHDOT 379-0150 (PORTSMOUTH TRAFFIC CIRCLE) VERTICAL DATUM: NAVD 1988 PRIMARY BM: CITY CONTROL POINT "ALBA"
  2. CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE SETTING OR ESTABLISHMENT OF ANY GRADES/ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOC., INC.
  3. THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-888-DIG-SAFE.
- NOTE: VERY LITTLE UNDERGROUND UTILITY MARKING WAS COMPLETED PRIOR TO CONDUCTING THE FIELD SURVEY.

**SANITARY SEWER NOTES:**

1. ALL NEW SEWER SERVICE LATERALS SHALL BE 6" DIAMETER, UNLESS DIRECTED OTHERWISE. PRIOR TO CONSTRUCTION OF NEW SEWER MAINS IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT SEWER SERVICE LOCATIONS, SIZES, AND ELEVATIONS, BY VIDEO INSPECTION WITH TRANSMITTER AND LOCATOR, PAY ITEM 1.18. SEWER LATERALS SHALL BE INSTALLED TO THE PROPERTY LINE (UNLESS SHOWN OTHERWISE ON THE DRAWINGS). ANY SERVICE WORK EXTENDING PAST THE PROPERTY LINE SHALL BE APPROVED BY THE PROPERTY OWNER, THE CITY, AND THE ENGINEER PRIOR TO CONSTRUCTION. MIN. SLOPE OF SERVICE PIPE = SHALL BE 0.02 FT/FT.
2. WORK ON PRIVATE PROPERTY SHALL BE COORDINATED WITH THE CITY AND THE PROPERTY OWNER.
3. SEWER CONSTRUCTION SHALL PROCEED FROM THE LOWEST POINT UPWARD UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. SMH RIMS SHALL BE SET 1/8" TO 1/4" BELOW GRADE WHEN IN PAVEMENT OR GRAVEL ROADS (I.E., PLOWED AREAS). RIMS SHALL BE SET AT GRADE IN NON-PLOWED AREAS UNLESS OTHERWISE INDICATED.
5. ALL EXISTING SEWER STRUCTURES (PIPE AND MANHOLES) TO BE ABANDONED SHALL BE PREPARED AS FOLLOWS:  
 MANHOLES – SHALL BE REMOVED TO A MINIMUM DEPTH OF 4' BELOW GRADE. THE BASE OF STRUCTURES SHALL BE FILLED WITH FLOWFILL OR GRAVEL, COMPACTED IN 8" LIFTS, SUBSIDIARY, UNLESS OTHERWISE PAID FOR.  
 PIPE – ALL PIPE TO BE ABANDONED IN PLACE AND SHALL BE CUT & PLUGGED AT BOTH ENDS, SUBSIDIARY. PIPES EXCEEDING 12-INCH DIAMETER, TO BE ABANDONED, WILL BE FILLED WITH FLOWABLE FILL (WHERE DIRECTED BY ENGINEER) AND PAID FOR UNDER ITEM 1.11.
6. IN ORDER OF PREFERENCE SEWER SERVICE CLEANOUTS SHALL BE PLACED:  
 1) BEHIND CONCRETE SIDEWALKS.  
 2) IN BRICK STRIP.  
 3) IN CONCRETE SIDEWALKS.
7. ALL SEWER PIPE SHALL BE SDR 35 PVC UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

**DRAINAGE SYSTEM NOTES**

1. IN GENERAL, NEW CB'S WILL BE SET AT THE LOCATIONS SHOWN. EXISTING CB STRUCTURES ARE TO BE REMOVED. (SUBSIDIARY). ALL FRAMES AND GRATES SHALL BE DELIVERED TO THE PORTSMOUTH DPW (SUBSIDIARY). ALL NEW CATCH BASIN RIMS SHALL BE SET 1/2" BELOW FINISH GRADE ELEVATION. REMOVAL OF CB'S OUTSIDE NORMAL EXCAVATION LIMITS WILL BE PAID AS ITEM 202.5.
2. MANHOLE AND CATCH BASIN BASES, RISERS, CONE SECTIONS, AND SLAB TOPS SHALL BE DESIGNED SUCH THAT THERE EXISTS A MINIMUM 6" PERIPHERY OF MONOLITHIC SOLID WALL SEPARATION BETWEEN OPENINGS (CORINGS AND SECTIONS).
3. ALL CATCH BASINS, DRAIN MANHOLES, & DRAIN LINES SHALL BE CLEANED PRIOR TO ACCEPTANCE.
4. ALL REQUIRED STORM DRAIN SERVICES MAY NOT BE SHOWN ON THE PLANS, AND SHALL BE PROVIDED WHERE DIRECTED BY THE ENGINEER.
5. DMH RIMS SHALL BE SET 1/8" TO 1/4" BELOW GRADE WHEN IN PAVEMENT OR GRAVEL ROADS (I.E., PLOWED AREAS). RIMS SHALL BE SET AT GRADE IN NON-PLOWED AREAS UNLESS OTHERWISE INDICATED.
6. LOCATIONS OF NEW DRAIN SERVICES ARE BASED ON EXISTING ROOF LEADERS OBSERVED. ACTUAL LOCATION AND CONFIGURATION MAY CHANGE BASED ON FINAL REVIEW WITH PROPERTY OWNER DURING CONSTRUCTION.

**WATER DISTRIBUTION SYSTEM NOTES:**

1. THE CONTRACTOR SHALL MAINTAIN AND PROTECT THE EXISTING WATER SYSTEM AT ALL TIMES. LOCATE AND IDENTIFY ALL EXISTING MAINS AND SERVICE LOCATIONS IN ADVANCE.
2. WATER BOXES, OR OTHER CASTINGS, DISTURBED OR RELOCATED BY CONSTRUCTION ACTIVITIES SHALL BE ADJUSTED TO EXISTING LINE AND GRADE, UNLESS SHOWN OTHERWISE ON THESE PLANS OR AS DIRECTED BY THE ENGINEER (SUBSIDIARY).

**CONSTRUCTION SEQUENCE:**

- PERFORM WORK IN ACCORDANCE WITH APPROVED SCHEDULE, GENERALLY ACCEPTED INDUSTRY ORDER OF OPERATIONS UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER.
1. PRIOR TO THE START OF CONSTRUCTION PROVIDE A WRITTEN NARRATIVE OF THE CONSTRUCTION METHODS TO BE USED AND INCLUDE A PRELIMINARY SCHEDULE OF KEY MILESTONES, INCLUDING COORDINATION OF UTILITY PIPE INSTALLATIONS AND COORDINATION WITH GAS COMPANY, AND OTHER UTILITIES AS APPLICABLE.
  2. REFER TO SECTION 01010 (SUMMARY OF WORK) AND SECTION POW (PROSECUTION OF WORK) FOR ADDITIONAL SCHEDULE AND PROJECT REQUIREMENTS.
  3. INSTITUTE EXPLORATORY EXCAVATION PROGRAM WITH ENGINEER TO IDENTIFY POTENTIAL CONFLICTS AT UTILITY CROSSINGS. EXPLORATORY EXCAVATION COMPLETED WITHOUT PRIOR APPROVAL FROM THE ENGINEER WILL BE AT NO ADDITIONAL COST TO THE OWNER.
  4. INSTALL AND MAINTAIN TEMPORARY AND PERMANENT EROSION CONTROL DEVICES THROUGHOUT THE CONSTRUCTION PERIOD (INCLUDING WINTER SHUT DOWN PERIODS AS REQUIRED) AS SHOWN IN THE APPROVED SWPPP, ON THE DRAWINGS, OR AS APPROVED BY THE ENGINEER.
  5. PRE-DRAIN AND/OR DEWATER EXCAVATIONS BEFORE INSTALLING PIPE. INSTALL PIPE ON STABLE BEDDING (IN DRY CONDITIONS) TO THE ELEVATIONS SHOWN ON DRAWINGS.
  6. DISPOSE OF SURPLUS AND UNSUITABLE MATERIALS AS THE WORK PROGRESSES. STOCKPILE OF MATERIALS WILL ONLY BE PERMITTED IN AREAS APPROVED BY THE CITY OF PORTSMOUTH, DPW.
  7. INSTALL CRUSHED GRAVEL OR RECLAIMED BASE AS SHOWN ON DRAWINGS, IN TRENCH AT END OF EACH DAY. VISUAL INSPECTION, ALIGNMENT TESTS AND DEFLECTION TESTS OF PIPES SHALL BE COMPLETED NO LESS THAN THIRTY (30) DAYS FOLLOWING INSTALLATION. CONSTRUCT PAVEMENT REPAIRS AS SOON AS PRACTICAL, FOLLOWING UTILITY INSTALLATIONS AND TESTING.
  8. IMMEDIATELY STABILIZE DISTURBED AREAS AFTER PIPE INSTALLATION AND REESTABLISH TEMPORARY EROSION CONTROL DEVICES MOVED DURING CONSTRUCTION.
  9. FINISH GRADING, LOAM AND SEED DISTURBED AREAS AND BACK UP PAVEMENT WITH GRAVEL IMMEDIATELY FOLLOWING PAVEMENT REPAIRS.
  10. REMOVE ALL TEMPORARY EROSION CONTROL DEVICES AS SOON AS VEGETATION IS ESTABLISHED AND AREAS ARE STABILIZED.

**NEW HAMPSHIRE FISH AND GAME CONDITIONS::**

1. AMERICAN EEL (STATE SPECIES OF SPECIAL CONCERN) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. BASED ON THE DETAILS PROVIDED IN THE MATERIALS REVIEWED FOR THE PROPOSED PROJECT AND THE LOCATION OF THE PROJECT SITE, NHFG DOES NOT ANTICIPATE IMPACTS TO THESE SPECIES AT THIS TIME. HOWEVER, ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS FOR THE RARE EEL SPECIES THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE THE FLYER ON THIS SHEET.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT DURING THE CONSTRUCTION PHASE OF THE PROJECT. SEE THE FLYER ON THIS SHEET.
3. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES.
4. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE CONTAINING THE NHB DATACHECK TOOL RESULTS LETTER ASSIGNED NUMBER, THE PROJECT NAME, AND THE TERM WILDLIFE SPECIES OBSERVATION.
5. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
6. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
  - A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
7. NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

## American Eel

*(Anguilla rostrata)*  
**New Hampshire Species of Concern**








- Long, slender snake-like fish with thick, slimy skin
- Small mouth and tiny scales
- Has one continuous fin that runs the length of the eel's body and wraps around the tail
- Found in almost any freshwater habitat that can be accessed from the ocean

**Immediately report sightings to NH Fish and Game**  
**Melissa Winters (603-479-1129) or**  
**Josh Megyesy (978-578-0802)**  
*Please report promptly, noting specific location and date*  
**Photographs strongly encouraged**



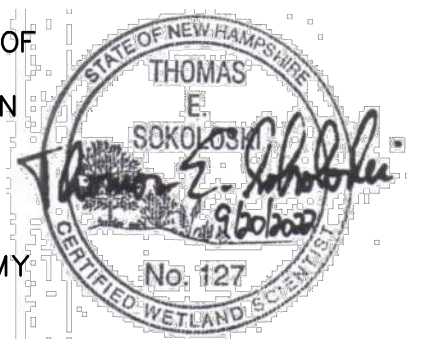

	ISSUE FOR BIDDING	By _____ Date _____	CONSTRUCTION	By _____ Date _____	RECORD DRAWING	By _____ Date _____
▽	▽	▽	▽	▽	▽	NO.
Drawn/Chk. _____ Designed _____ Checked _____ Approved _____ Date: APRIL 2024.	RMG _____ PDM _____	Book No. _____ Project No. 2542	Dwg. ID 2542_general_M	Scale _____	REVISIONS	APPD
 <span style="float: right; font-size: small;">25 Vaughan Mall, Portsmouth, N.H. 03801 Tel. 603-436-6192 Fax. 603-431-4733</span>						
<b>UTILITY PLAN NOTES</b> <b>MAPLEWOOD AVE DRAINAGE IMPROVEMENTS</b> <b>CITY OF PORTSMOUTH</b> <b>PORTSMOUTH, NEW HAMPSHIRE</b>						
DWG NO G3	SHEET 4 OF 17					

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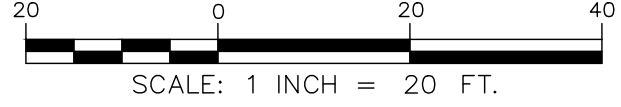
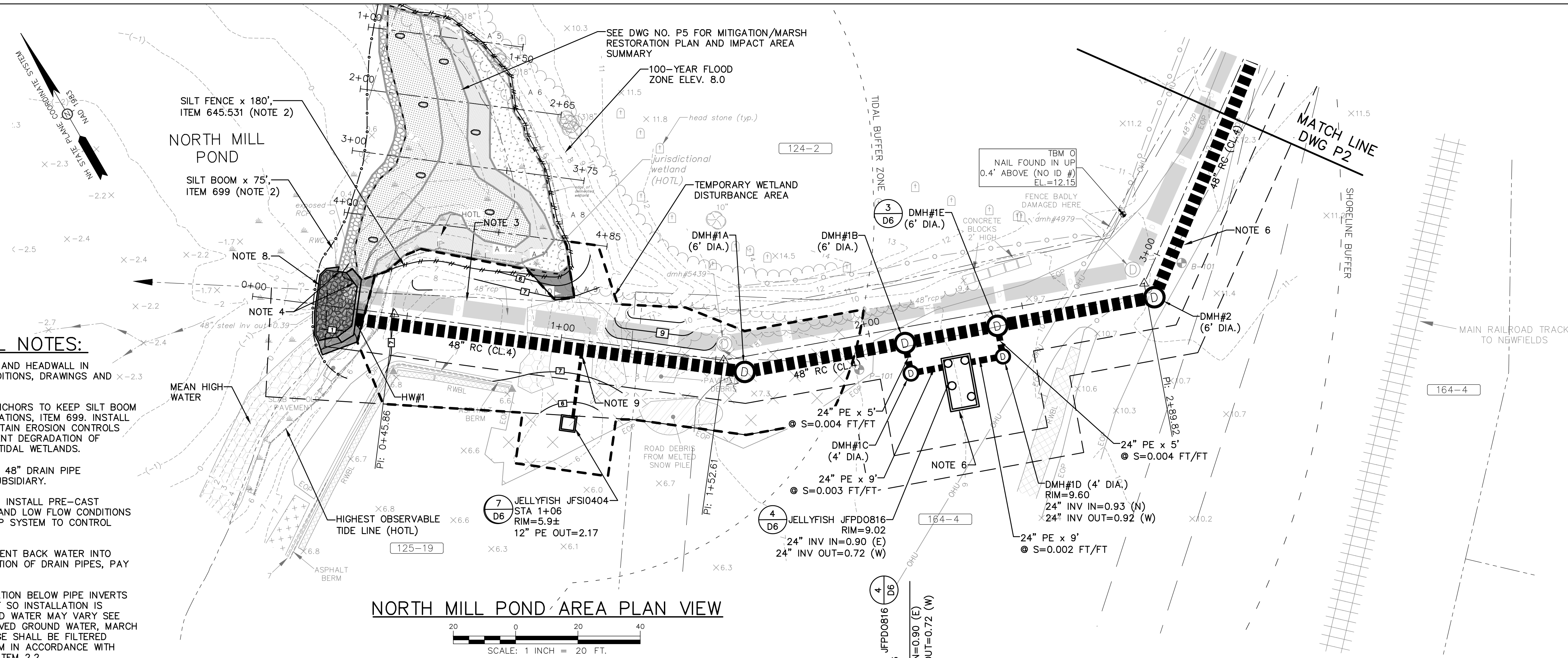


**DRAINAGE OUTFALL NOTES:**

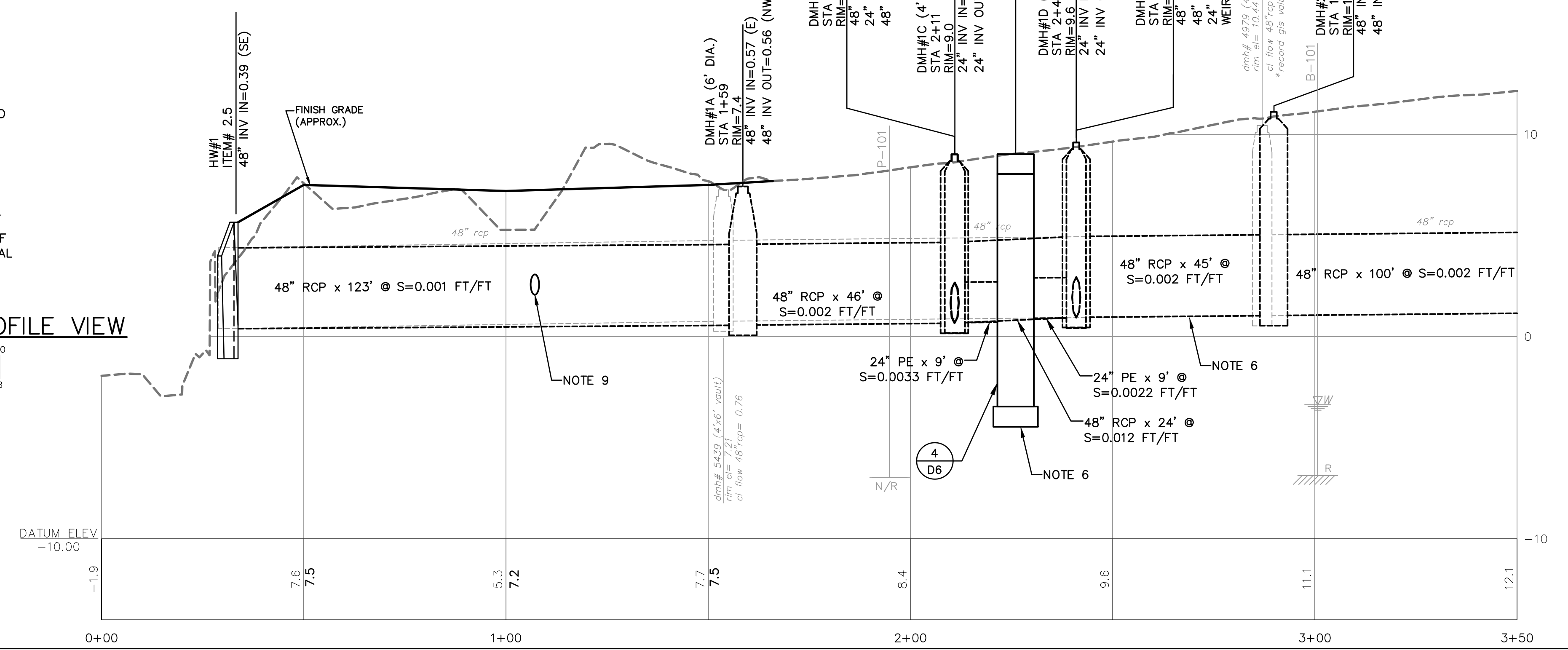
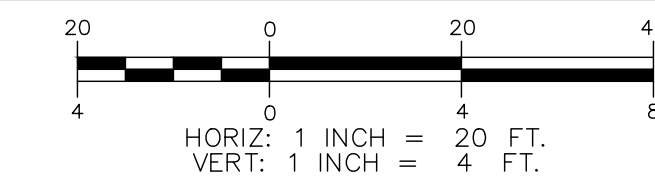
- CONSTRUCT DRAINAGE OUTFALL AND HEADWALL IN ACCORDANCE WITH PERMIT CONDITIONS, DRAWINGS AND SPECIFICATIONS.
- INSTALL SILT BOOM AND SET ANCHORS TO KEEP SILT BOOM IN PLACE DURING TIDAL FLUCTUATIONS, ITEM 699. INSTALL SILT FENCE, ITEM 645.531. MAINTAIN EROSION CONTROLS THROUGH CONSTRUCTION, PREVENT DEGRADATION OF DOWNSTREAM PROPERTIES AND TIDAL WETLANDS.
- MAINTAIN FLOW IN THE EXISTING 48" DRAIN PIPE THROUGHOUT CONSTRUCTION, SUBSIDIARY.
- REMOVE EXISTING HEADWALL AND INSTALL PRE-CAST HEADWALL DURING LOW WATER AND LOW FLOW CONDITIONS OR INSTALL SHEETING AND PUMP SYSTEM TO CONTROL BACK WATER, PAY AS ITEM 2.5.
- INSTALL TIDE VALVES AND PREVENT BACK WATER INTO DRAIN PIPES DURING CONSTRUCTION OF DRAIN PIPES, PAY AS ITEM 2.6.
- MAINTAIN GROUND WATER ELEVATION BELOW PIPE INVERTS AND BOTTOM OF JELLYFISH UNIT SO INSTALLATION IS COMPLETED IN THE DRY. GROUND WATER MAY VARY SEE B-101, APPENDIX A FOR OBSERVED GROUND WATER, MARCH 2022. GROUND WATER DISCHARGE SHALL BE FILTERED THROUGH A CONTROLLED SYSTEM IN ACCORDANCE WITH CONTRACTORS SWPPP, PAY AS ITEM 2.2.
- THOMAS SOKOLOSKI, CERTIFIED WETLAND SCIENTIST #127, OF TES ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH, PERFORMED THE WETLAND IDENTIFICATION AND DELINEATION ON JUNE 28, 2022 ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH-CENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.
- CONSTRUCT STABILIZED OUTLET. SEE DETAILS (DWG D6).
- CONNECT 12" PE TO 48" RCP WITH INSERT TEE TYPE CONNECTION. 12" PE INVERT=1.97, INCIDENTAL TO ITEM 603.82212.
- INVASIVE PLANT SPECIES ARE PRESENT IN THE AREA INCLUDING BUT ARE NOT LIMITED TO: ORIENTAL BITTERSWEET, GLOSSY BUCKTHORN, MULTIFLORA ROSE, AND BLACK SWALLOWWORT. ALL SOIL AND PLANT MATERIALS REMOVED FROM THE SITE SHALL NOT BE REUSED AND DISPOSED BY THE CONTRACTOR IN ACCORDANCE TO THE NHDOT BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE PLANTS (LATEST EDITION)
- CONSERVATION SEED MIX (HYDRAULIC APPLICATION) SHALL BE USED TO RE-VEGETATE DISTURBED AREAS OUTSIDE LIMITS OF EXISTING PAVEMENT AND OUTSIDE THE LIMITS OF THE PROPOSED MARSH RESTORATION WITHIN THE 100' TIDAL BUFFER ZONE.



**NORTH MILL POND AREA PLAN VIEW**



**NORTH MILL POND AREA PROFILE VIEW**



ISSUE FOR	By	Date	REVISIONS	APP'D
BIDDING				
CONSTRUCTION				
RECORD DRAWING				
NO.				
Drawn/Chk	RMG			
Designed	FDM			
Checked				
Approved		APRIL 2024		
Date				
Book No.				
Project No.	2542			
Dwg. ID	2542.phase_M			
Scale				

**UNDERWOOD**  
engineers

25 Vaughan Mall, Portsmouth, N.H. 03801  
Tel. 603-436-6192 Fax. 603-431-4733

**NORTH MILL POND DRAINAGE OUTFALL PIPE PLAN AND PROFILES**

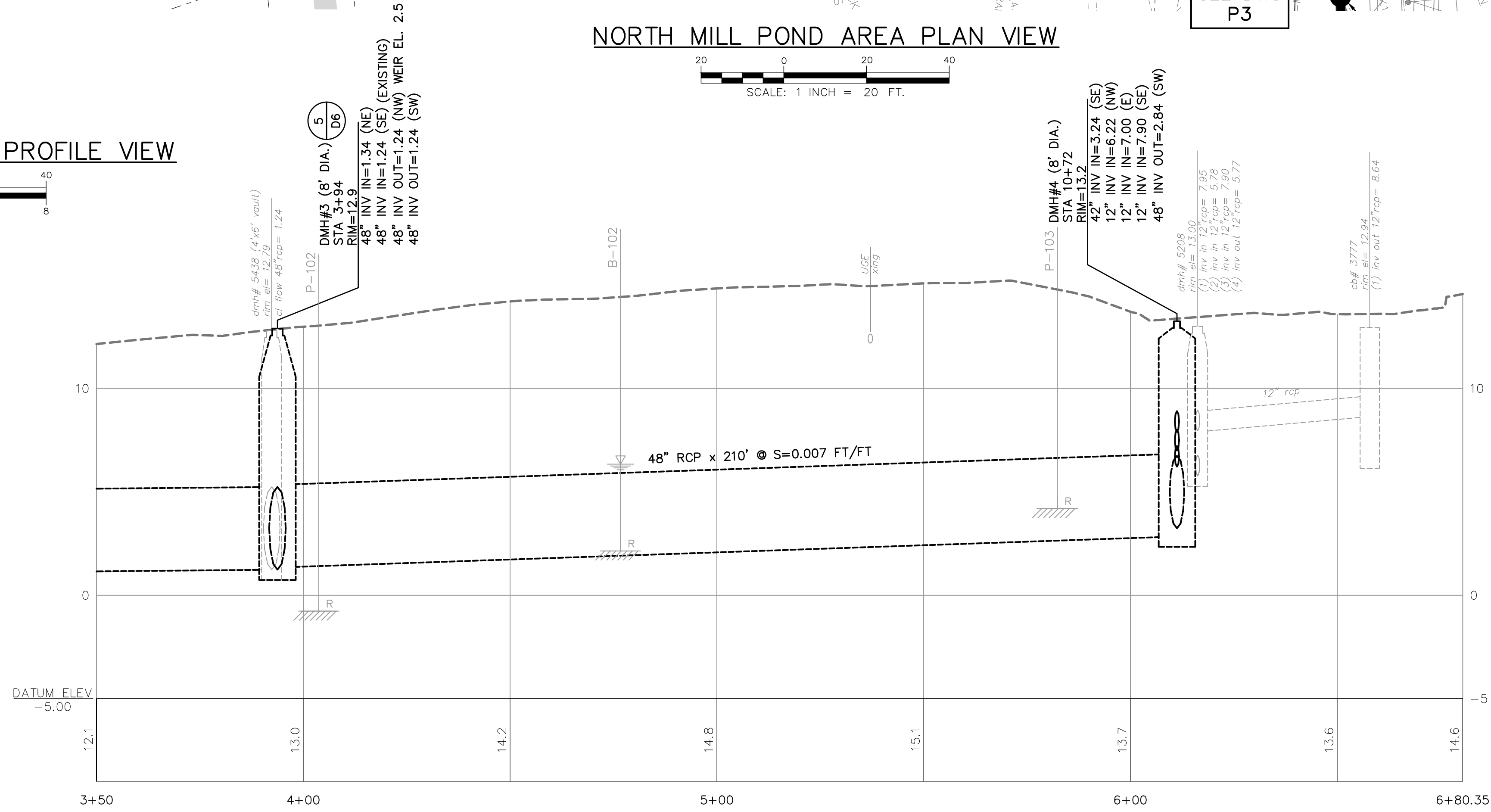
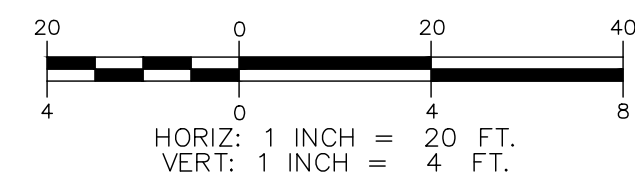
**MAPLEWOOD AVE DRAINAGE IMPROVEMENTS**

**CITY OF PORTSMOUTH**  
**PORTSMOUTH, NEW HAMPSHIRE**

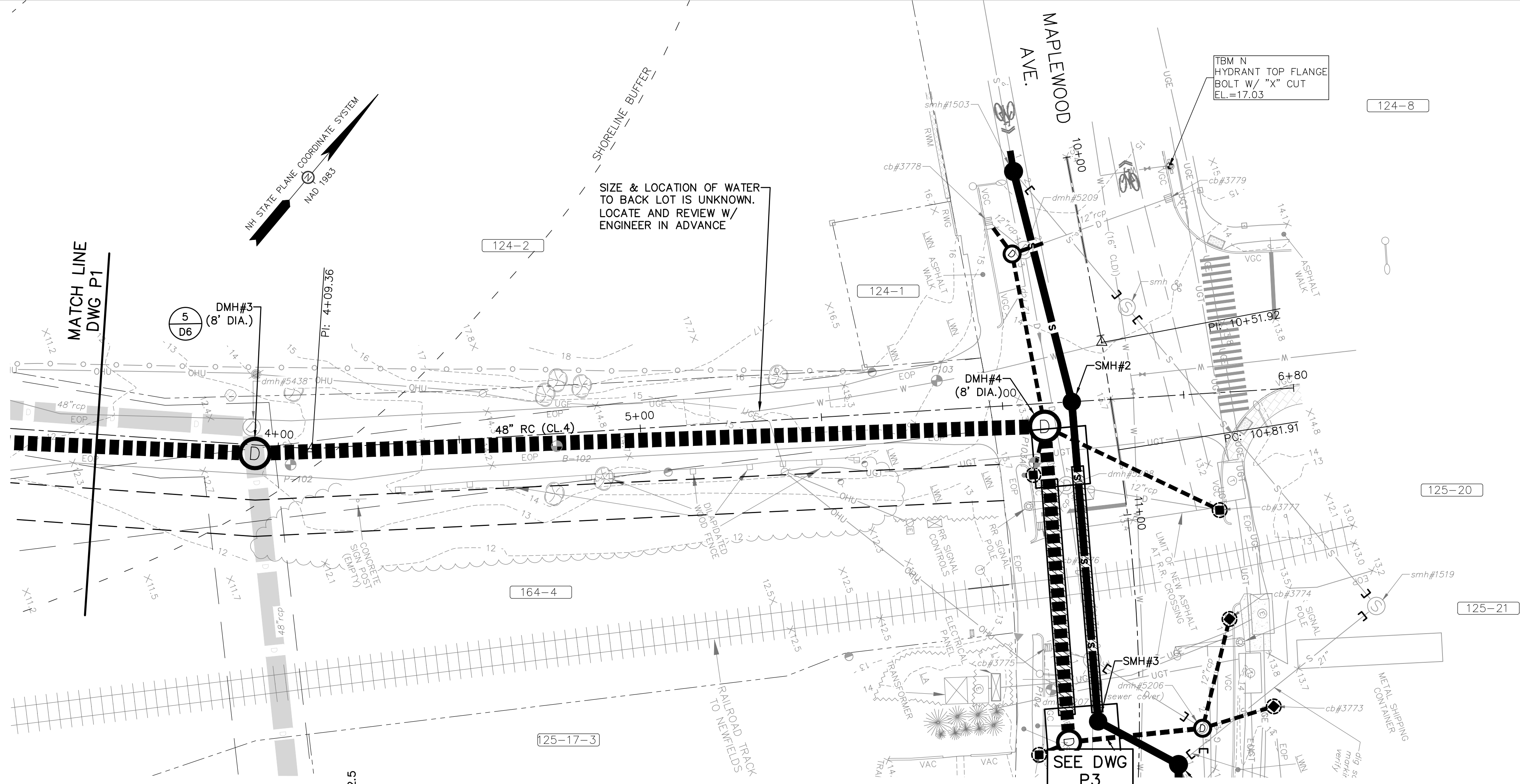
DWG NO P1 SHEET 5 OF 17



**NORTH MILL POND AREA PROFILE VIEW**



**NORTH MILL POND AREA PLAN VIEW**

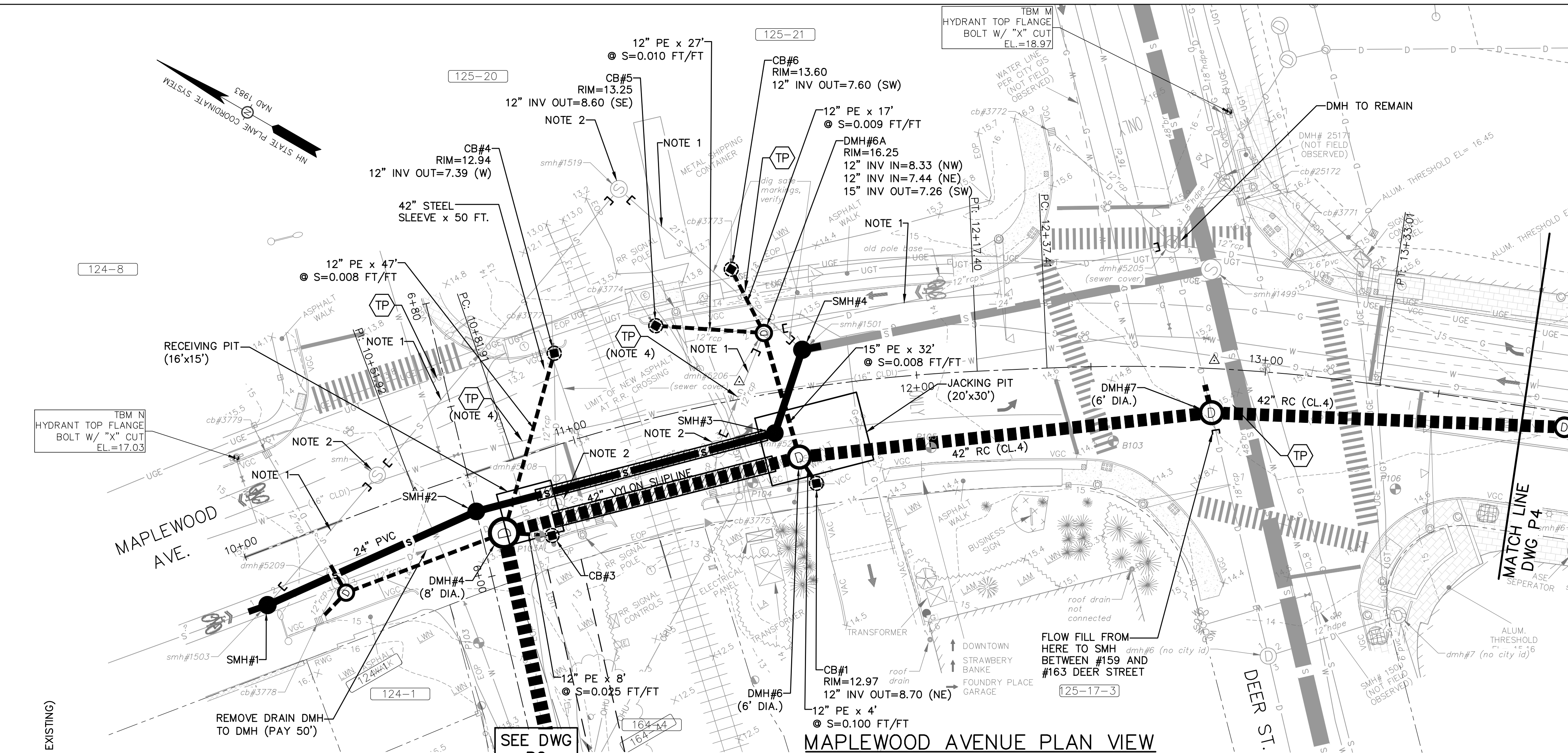


SIZE & LOCATION OF WATER TO BACK LOT IS UNKNOWN. LOCATE AND REVIEW W/ ENGINEER IN ADVANCE

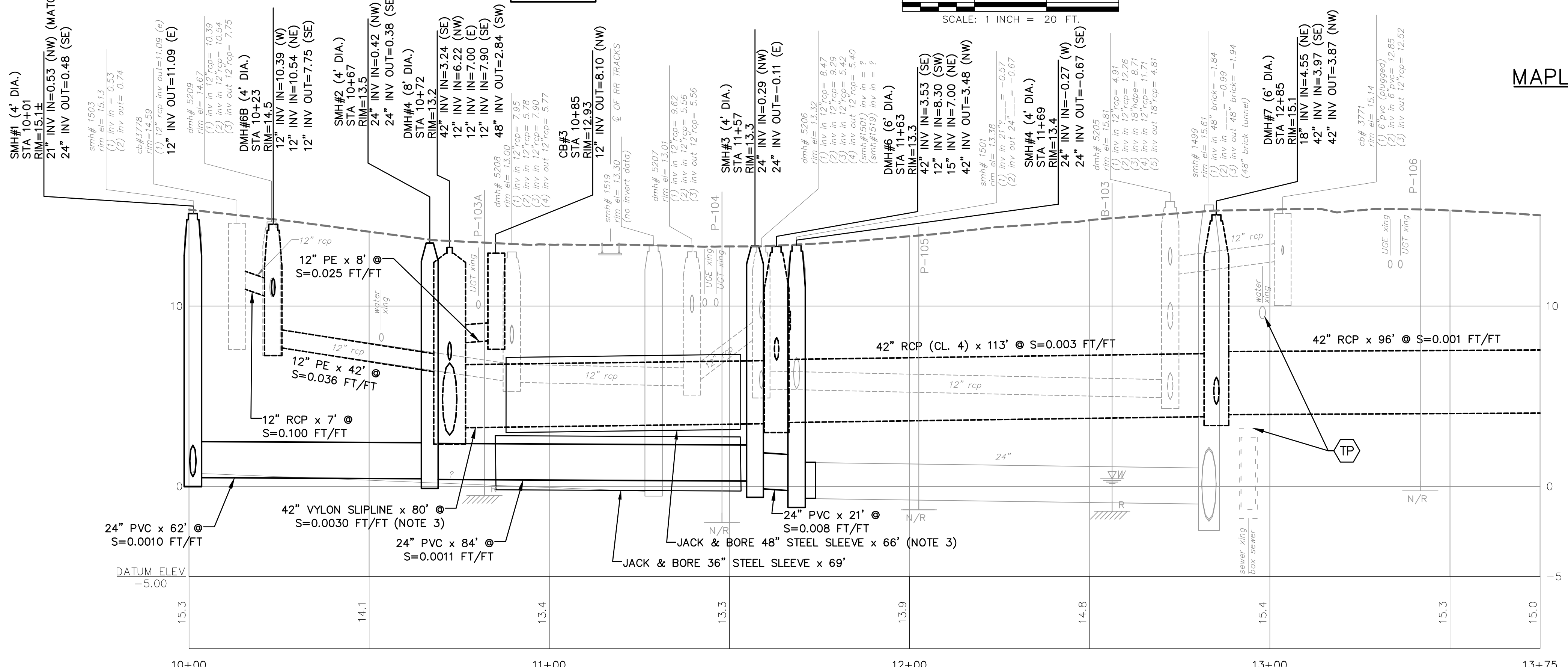
TBM N HYDRANT TOP FLANGE BOLT W/ "X" CUT EL=17.03

DWG NO P2		SHEET 6 OF 17	
<p><b>NORTH MILL POND AREA PIPE PLAN AND PROFILES</b></p> <p><b>MAPLEWOOD AVE DRAINAGE IMPROVEMENTS</b></p> <p><b>CITY OF PORTSMOUTH</b></p> <p><b>PORTSMOUTH, NEW HAMPSHIRE</b></p>			
<p><b>UNDERWOOD</b> engineers</p>		25 Vaughan Mall, Portsmouth, N.H. 03801 Tel. 603-436-6192 Fax. 603-431-4733	
Drawn/Chk	RMG	REVISIONS	APPD
Designed	FDM	NO.	
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Project No.	2542		
Dwg. ID	2542_p02s_m		
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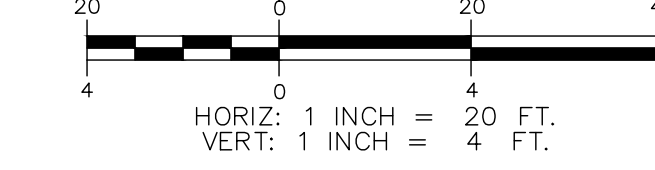
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**MAPLEWOOD AVENUE PLAN VIEW**



**MAPLEWOOD AVENUE PROFILE VIEW**



- NOTES:**
1. ABANDON EXISTING PIPES IN PLACE. PLUG AND CAP PIPE AT MANHOLES AND FILL WITH FLOWABLE FILL.
  2. REMOVE EXISTING MANHOLE FOLLOWING INSTALLATION OF NEW SEWER.
  3. DURING THE JACKING OPERATION THE FRONT OF THE CASING PIPE SHALL BE PROVIDED WITH MECHANICAL ARRANGEMENTS OR DEVICES THAT WILL POSITIVELY PREVENT THE AUGER FROM LEADING THE PIPE SO THAT NO UNSUPPORTED EXCAVATION IS AHEAD OF THE PIPE. CSXT PIPELINE SPECS. PAGE 23, ii, (c)
  4. CONTRACTOR TO PERFORM TEST PIT TO CONFIRM LOCATION OF WATER MAIN PRIOR TO JACKING AND RECEIVING PIT EXCAVATION.

ISSUE FOR		By		Date	
BIDDING					
CONSTRUCTION					
RECORD DRAWING					
REVISIONS		APPROVED		NO.	
Drawn/Chk	RMG	Checked	FDM	Approved	APRIL 2024
Project No.	2542	Book No.	2542	Dwg. ID	2542.phases_M
Scale					

MAPLEWOOD AVENUE PIPE PLAN AND PROFILES	
MAPLEWOOD AVE DRAINAGE IMPROVEMENTS	
CITY OF PORTSMOUTH PORTSMOUTH, NEW HAMPSHIRE	
DWG NO	P3
SHEET	7 OF 17

**UNDERWOOD**  
engineers

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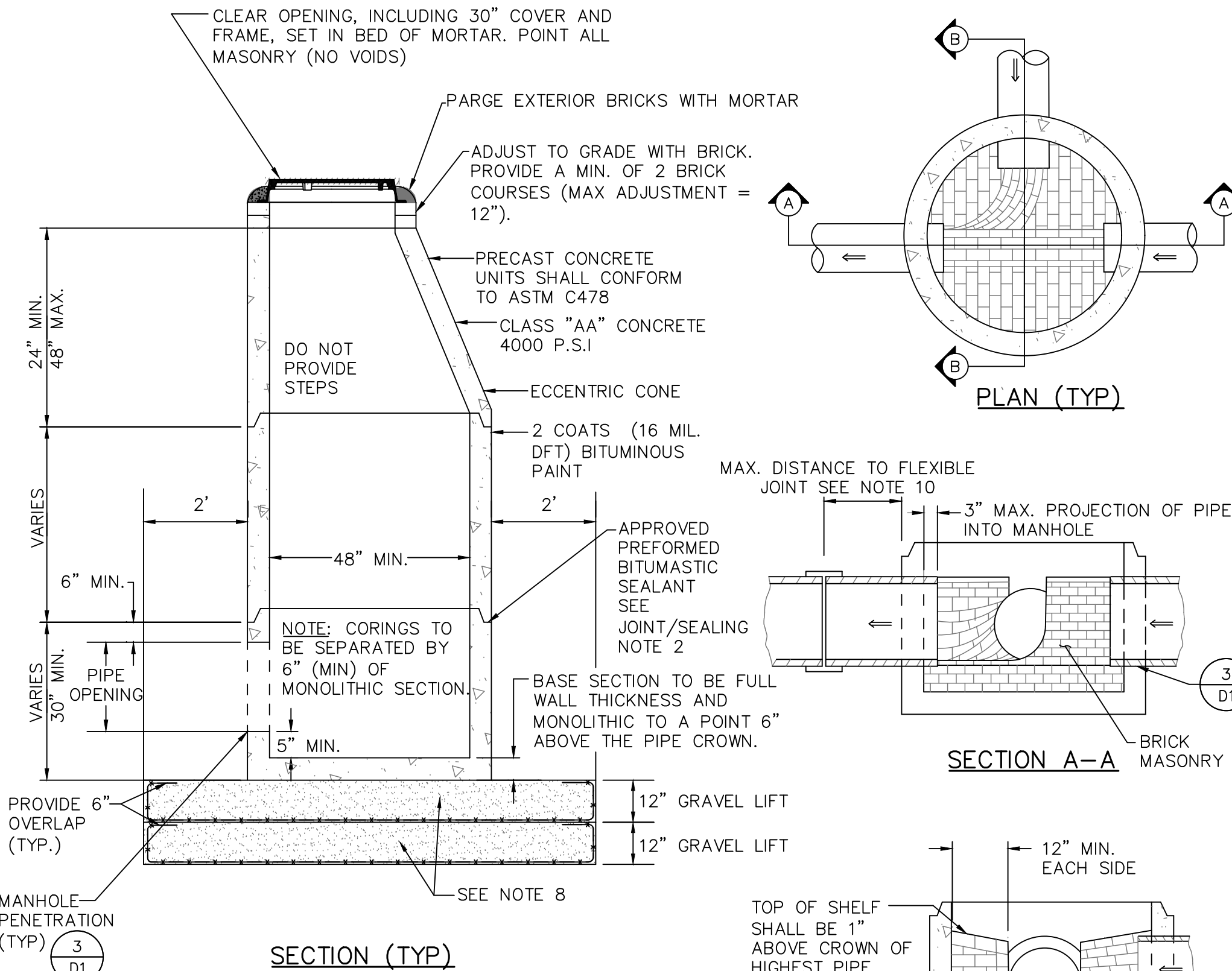




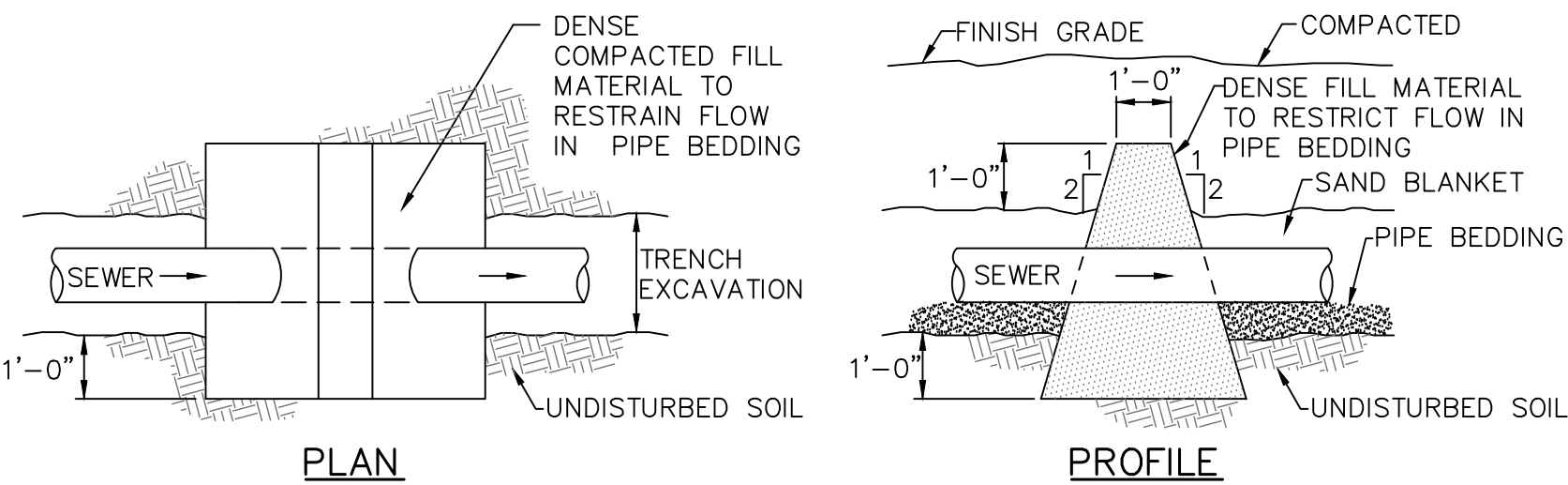


**STANDARD MANHOLE NOTES:**

- GENERAL:** SEWER MANHOLES, INCLUDING ALL COMPONENT PARTS, SHALL BE ASSEMBLED OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H2O LOADING) WITHOUT FAILURE, AND TO 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.
- BARRELS AND CONE SECTIONS:** SHALL BE PRECAST REINFORCED CONCRETE.
- PRECAST CONCRETE:** BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
- LEAKAGE TEST:** SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. INVERT AND SHELF TO BE PRIOR TO BACKFILL PLACED AFTER TESTING.
- INVERTS AND SHELVES:** MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1" ABOVE THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
- FRAMES AND COVERS:** MANHOLE FRAMES AND COVERS SHALL BE CITY OF PORTSMOUTH STANDARD AND SHALL BE PICKED UP BY THE CONTRACTOR AT PORTSMOUTH DPW.
- 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 THE MATERIAL BELOW MANHOLE STRUCTURE IS SOFT OR YIELDING, AND WHERE DIRECTED BY THE ENGINEER, INSTALL DOUBLE LAYER OF GEOGRID (TENSAR TX160 OR EQUAL). PAY AS ITEM 1.8B (Lfx2).
- SHALLOW MANHOLE:** IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H=20 LOADS MAY BE USED.
- FLEXIBLE JOINT:** A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:  
RCP AND CI PIPE - ALL SIZES - 48"  
AC AND VC PIPE - UP THROUGH 12" DIA. - 18"  
AC AND VC PIPE - LARGER THAN 12" DIA. - 36"  
DI PIPE - NONE REQUIRED  
PVC - UP THROUGH 15" DIA. - NONE REQUIRED  
PVC - LARGER THAN 15" DIA. - 48"/60"  
ABS (ASTM D2680) - ALL SIZES - SAME AS VC ABOVE.
- SPECIFICATIONS:** ADDITIONAL CONSTRUCTION SPECIFICATIONS ARE INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.



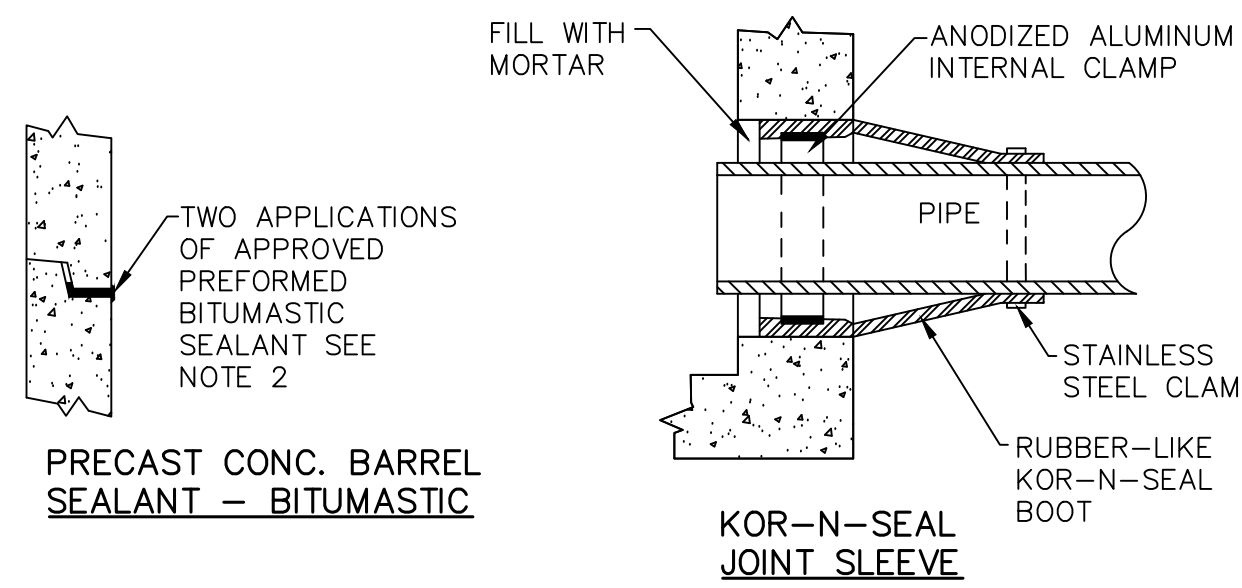
**1 SEWER MANHOLE**  
D1 NOT TO SCALE



**4 TRENCH DAM**  
D1 NOT TO SCALE

**JOINTING AND SEALING NOTES**

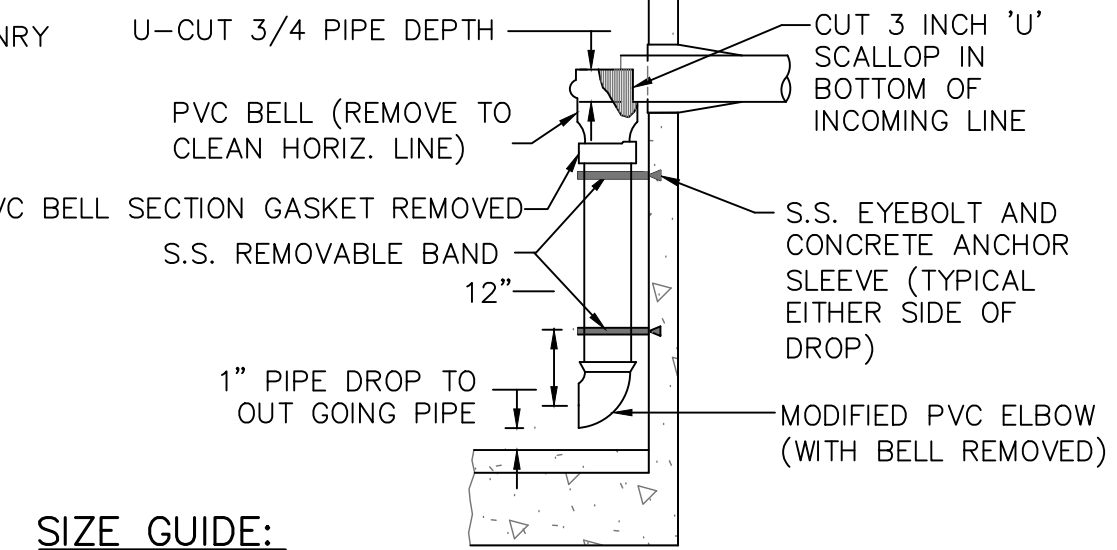
- PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND UPON AN ELASTOMERIC SEALANT FOR WATERTIGHTNESS.
- FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK E Z KENT SEAL NO.2
- ALL GASKETS, SEALANTS, MORTAR, ETC., SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.



**3 MANHOLE PENETRATIONS**  
D1 NOT TO SCALE

**GRAVITY SEWER TRENCH NOTES:**

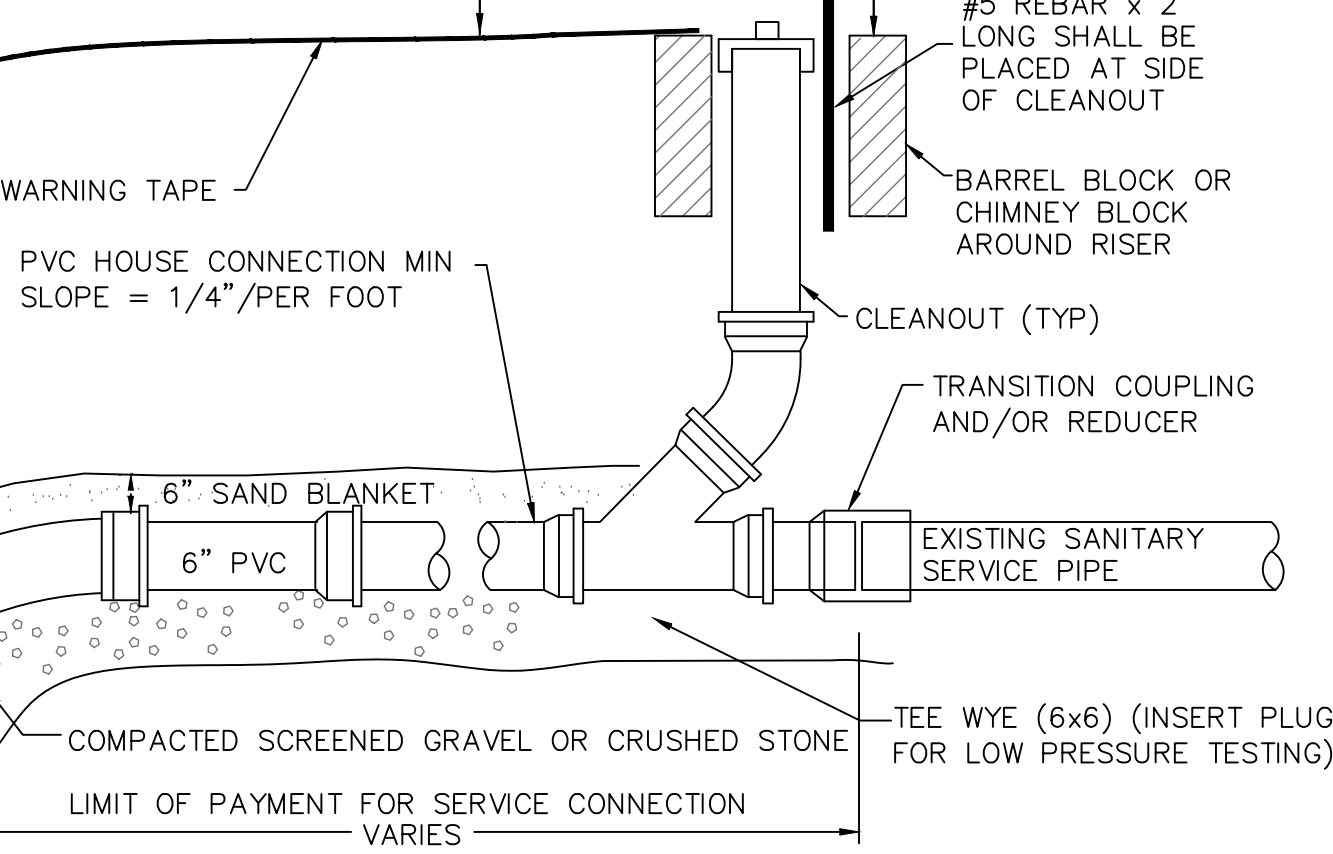
- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE:** BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
- BEDDING:** SEE NOTE 7 OF STANDARD MANHOLE NOTES. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH AND/OR THE USE OF GEOGRID FABRIC (ITEM 1.8B) MAY BE REQUIRED.
- 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 HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
- SUITABLE MATERIAL:** IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED 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; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR SOFT CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND 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 TOP SOIL, 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, WILL BE PRESERVED.
- BASE COURSE AND PAVEMENT** SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
- W = MAXIMUM ALLOWABLE TRENCH PAYMENT WIDTH** FOR ROCK EXCAVATION, FOR ORDERED EXCAVATION BELOW GRADE AND HANDLING OF EXCAVATED CONTAMINATED SOILS. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.).
- FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDING TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- WHERE TRENCH BOTTOM IS SOFT OR YIELDING, AND WHERE DIRECTED BY THE ENGINEER, INSTALL SINGLE LAYER OF GEOGRID (TX160 OR EQUAL) ACROSS THE ENTIRE WIDTH OF TRENCH BOTTOM. PAY AS ITEM 1.8A (L.F.).



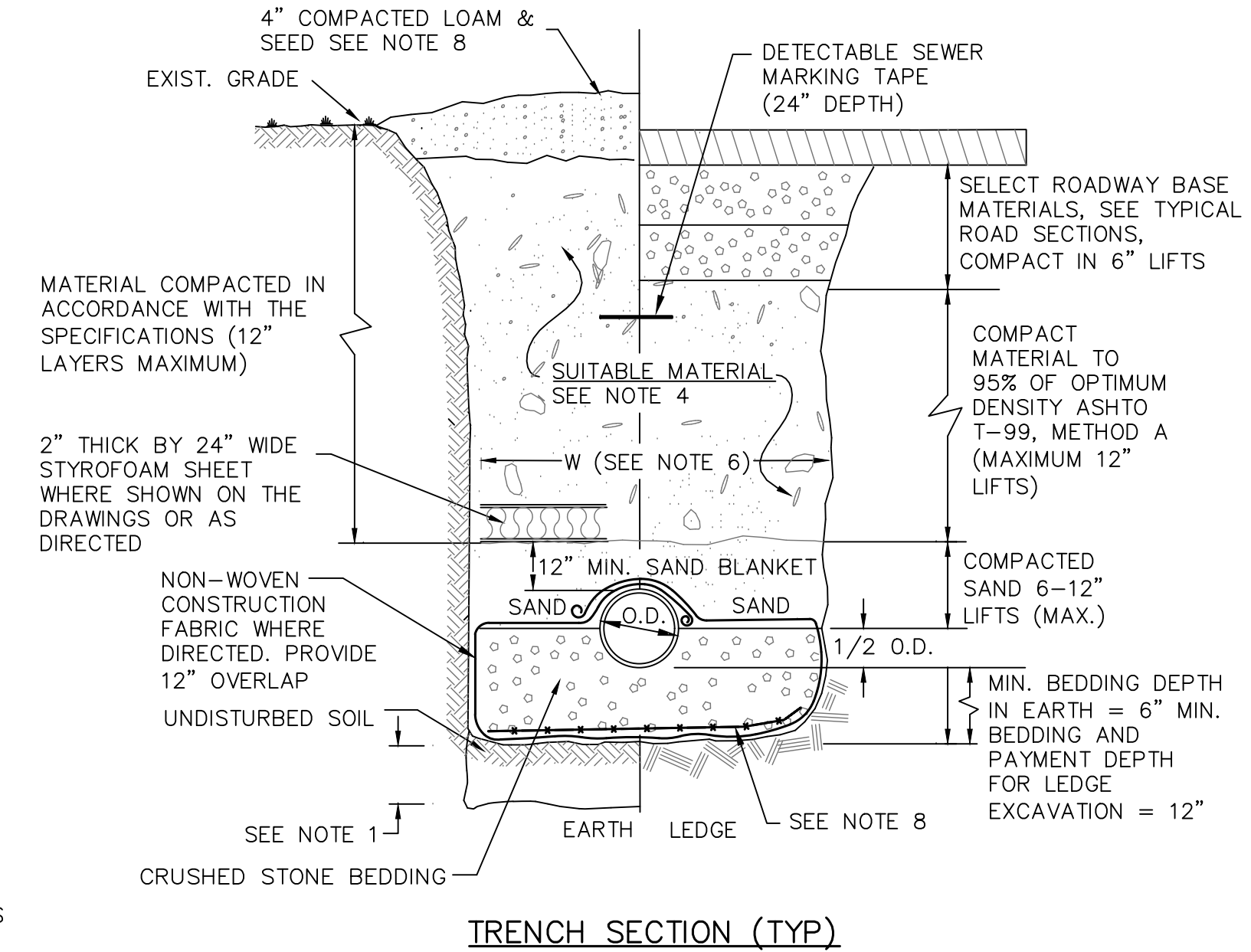
**5 DROP MANHOLE**  
D1 NOT TO SCALE

**SIZE GUIDE:**

- 1-8" OR 10" DROP: 4'-0" DIA. M.H.
- 2-8" OR 10" DROP: 5'-0" DIA. M.H.
- 1-12" DROP: 5'-0" DIA. M.H.
- 1-15" DROP: 5'-0" DIA. M.H.

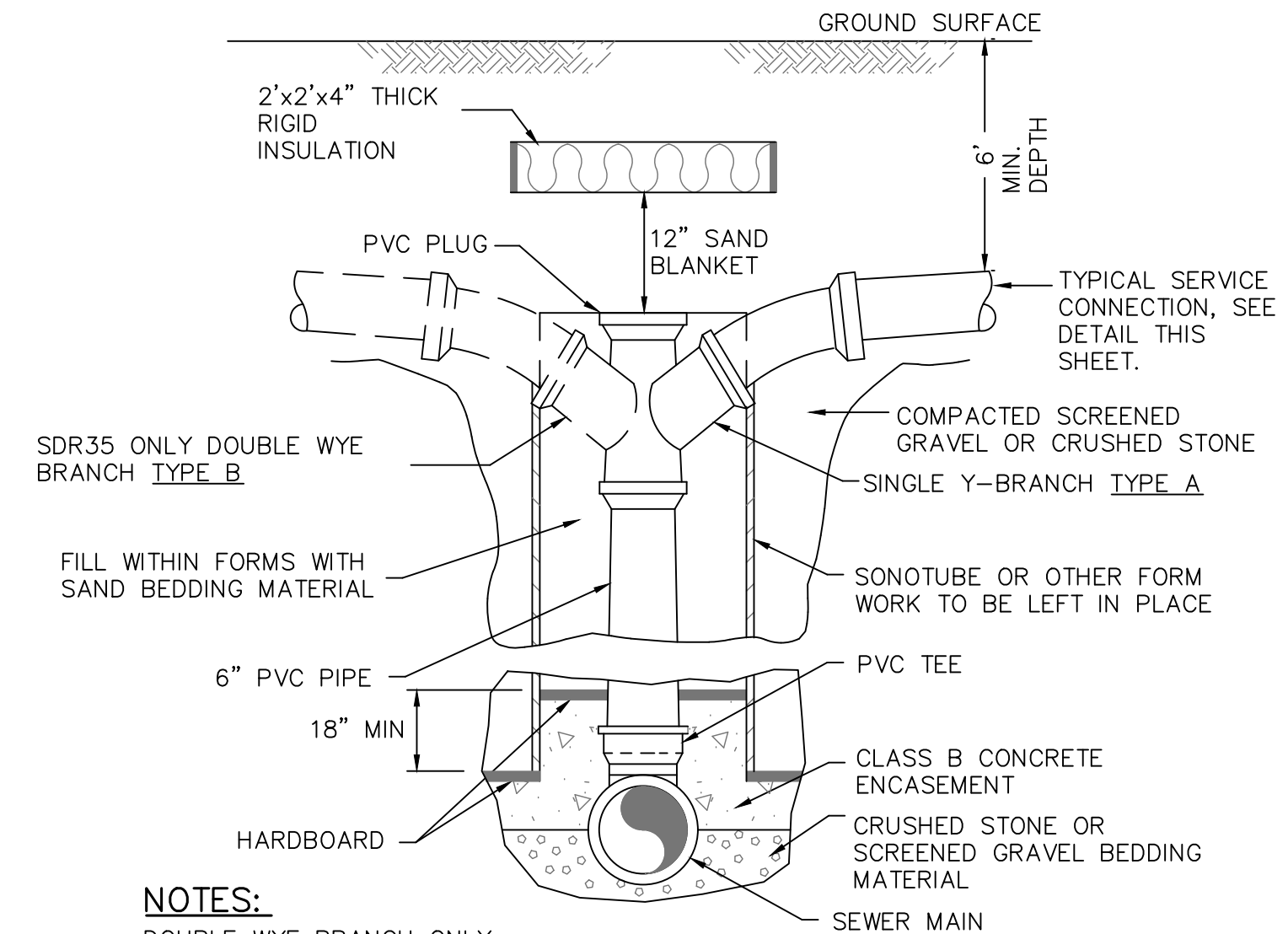


**6 SERVICE CONNECTION**  
D1 NOT TO SCALE



**TRENCH SECTION (TYP)**

**2 TRENCH - GRAVITY SEWER**  
D1 NOT TO SCALE



**7 PVC SEWER SERVICE CHIMNEY WITH WYE**  
D1 NOT TO SCALE

**NOTES:**  
DOUBLE WYE BRANCH ONLY TO BE USED WHERE APPROVED BY ENGINEER

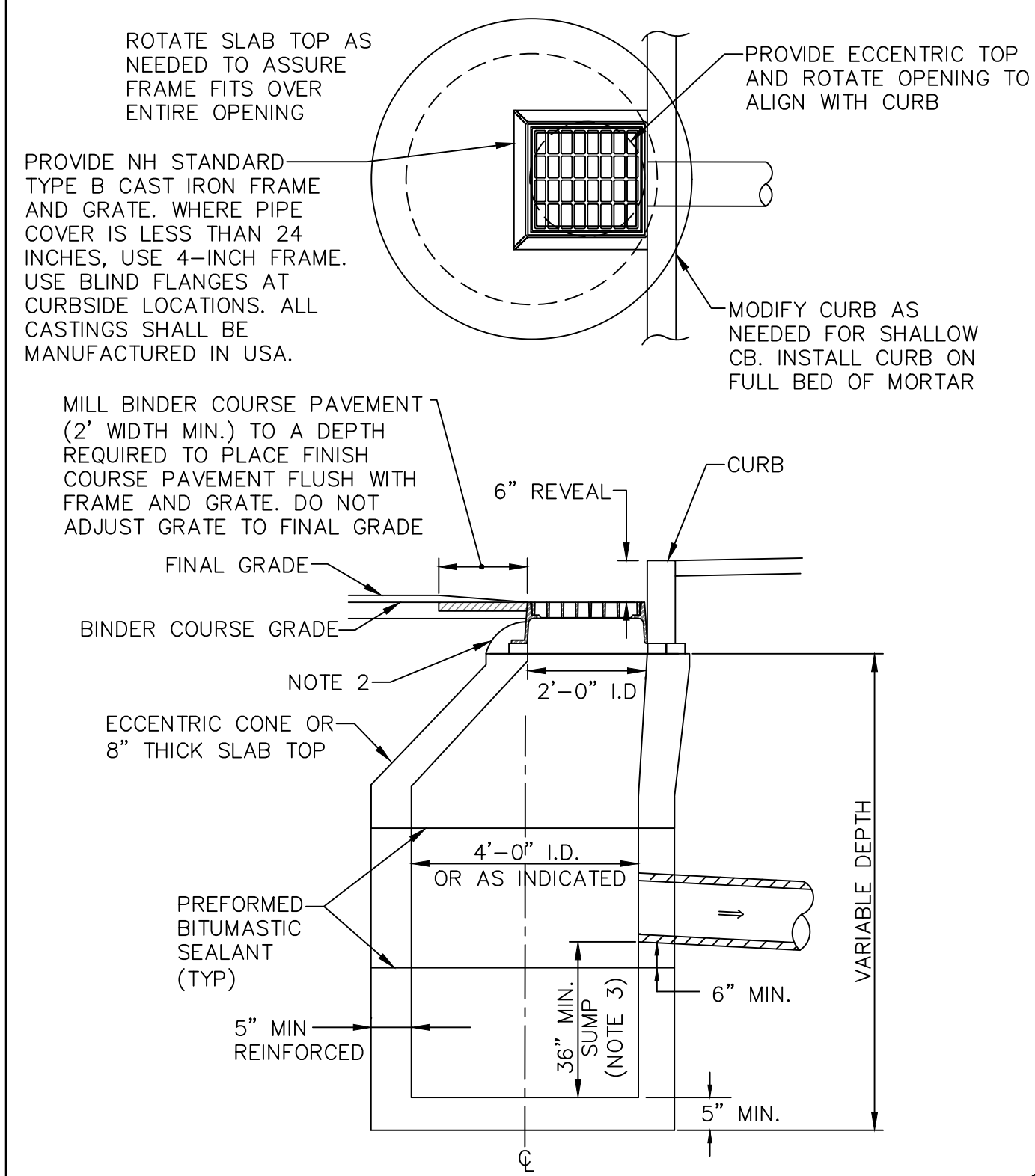
ISSUE FOR	By	Date	CONSTRUCTION	By	Date	RECORD DRAWING	By	Date
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Dwg. ID		2542.drls.m						
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**SEWER DETAILS**  
**MAPLEWOOD AVE DRAINAGE IMPROVEMENTS**  
**CITY OF PORTSMOUTH**  
**PORTSMOUTH, NEW HAMPSHIRE**

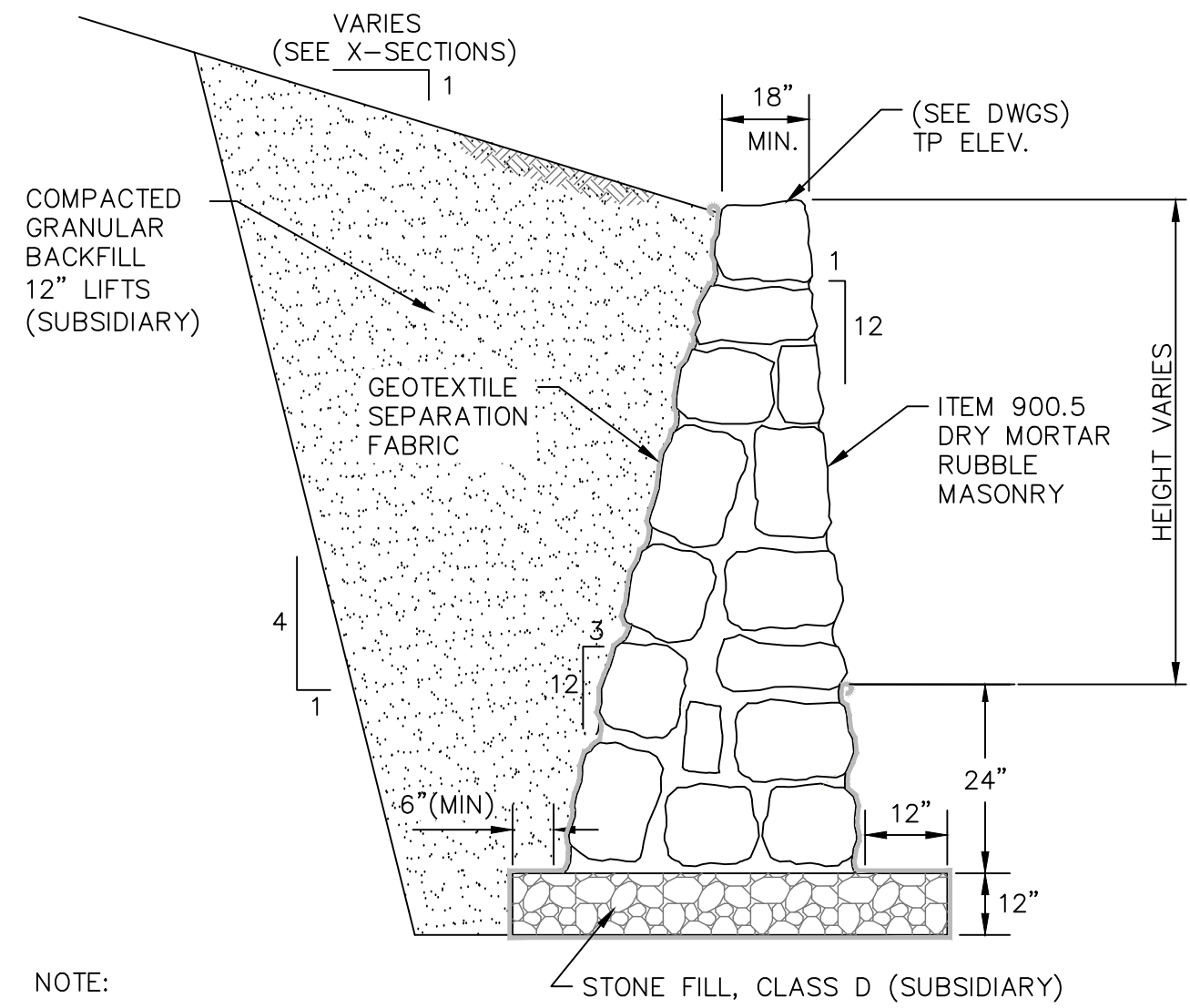




**1 CATCH BASIN DETAIL**  
D2 NOT TO SCALE

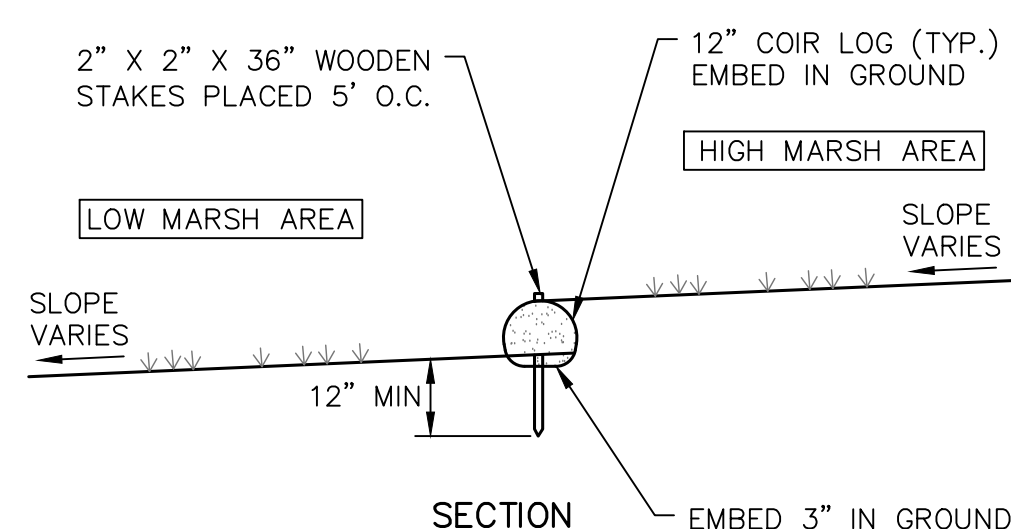
**CATCH BASIN NOTES:**

- ENTIRE STRUCTURE SHALL BE CAPABLE OF WITHSTANDING AN H - 20 LOAD DETAILS OF REINFORCEMENT TO BE FURNISHED BY MANUFACTURER.
- ADJUST FRAME AND GRATE TO BINDER COURSE ELEVATION, WITH BRICK SET IN A FULL BED OF MORTAR. POINT ALL MASONRY (NO VOIDS) AND PARGE EXTERIOR BRICK WITH MORTAR.
- WHERE SUMP IS OMITTED PROVIDE MASONRY INVERT PER DETAIL

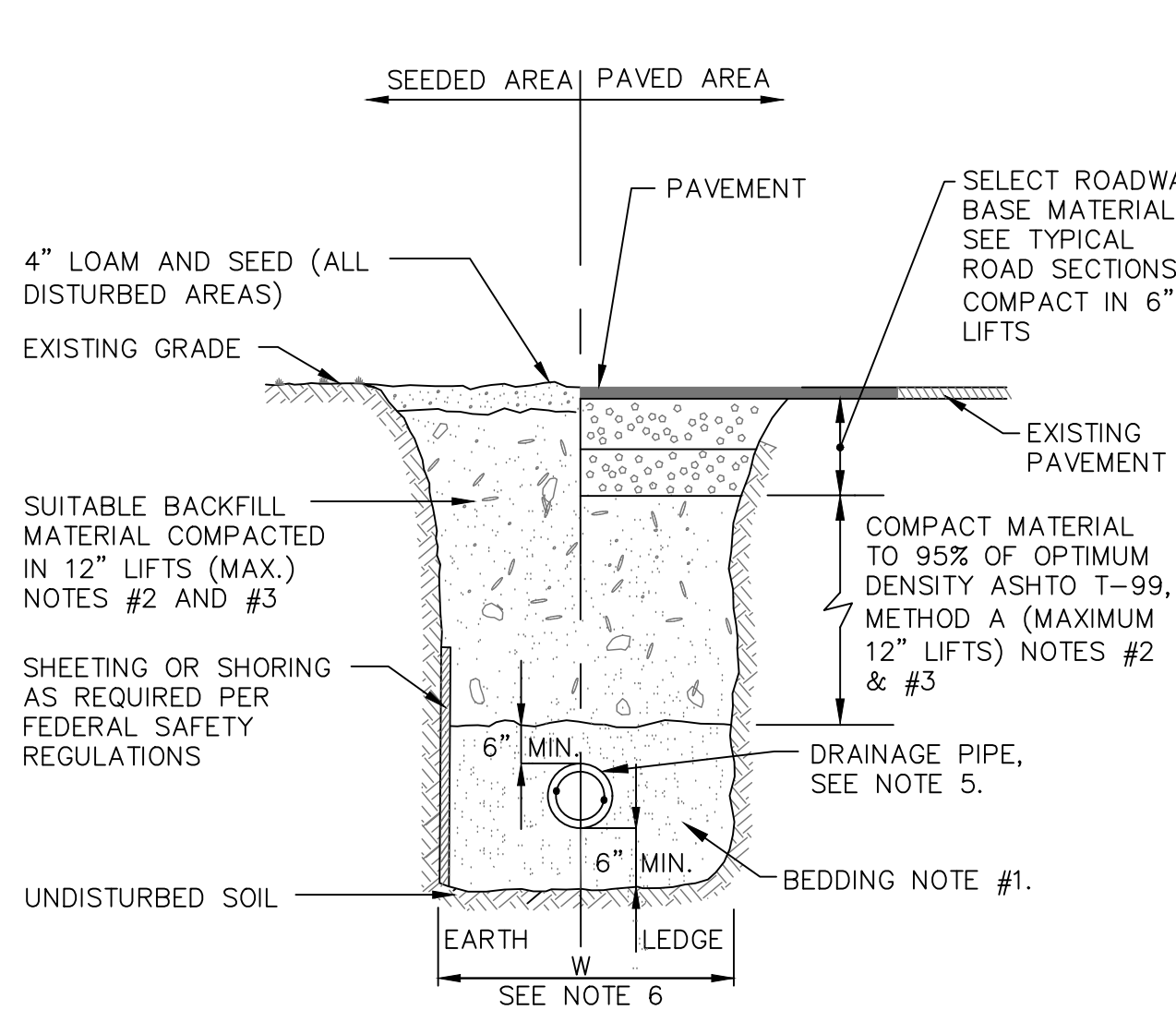


- NOTE:**
- THE CONTRACTOR MAY REUSE GRANITE FROM EXISTING HEAD WALL. RETAIN STABLE SECTIONS OF EXISTING HEADWALLS REVIEW RE-CONSTRUCTION LIMITS WITH THE ENGINEER BEFORE COMMENCING WITH THE WORK.
  - UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL.
  - IF GROUNDWATER IS ENCOUNTERED, DEWATERING MEASURES WILL BE NECESSARY TO PREVENT DISRUPTANCE OF THE BEARING SOILS. PUMPING EQUIPMENT AND SUMP AREAS SHOULD BE LOCATED OUTSIDE. PUMP DISCHARGE SHALL BE PROPERLY FILTERED TO PREVENT THE DISCHARGE OF SILT TO WETLANDS.
  - WALLS SHALL BLEND INTO EXISTING SLOPES.

**2 MORTAR RUBBLE MASONRY RETAINING DETAIL**  
D2 NOT TO SCALE



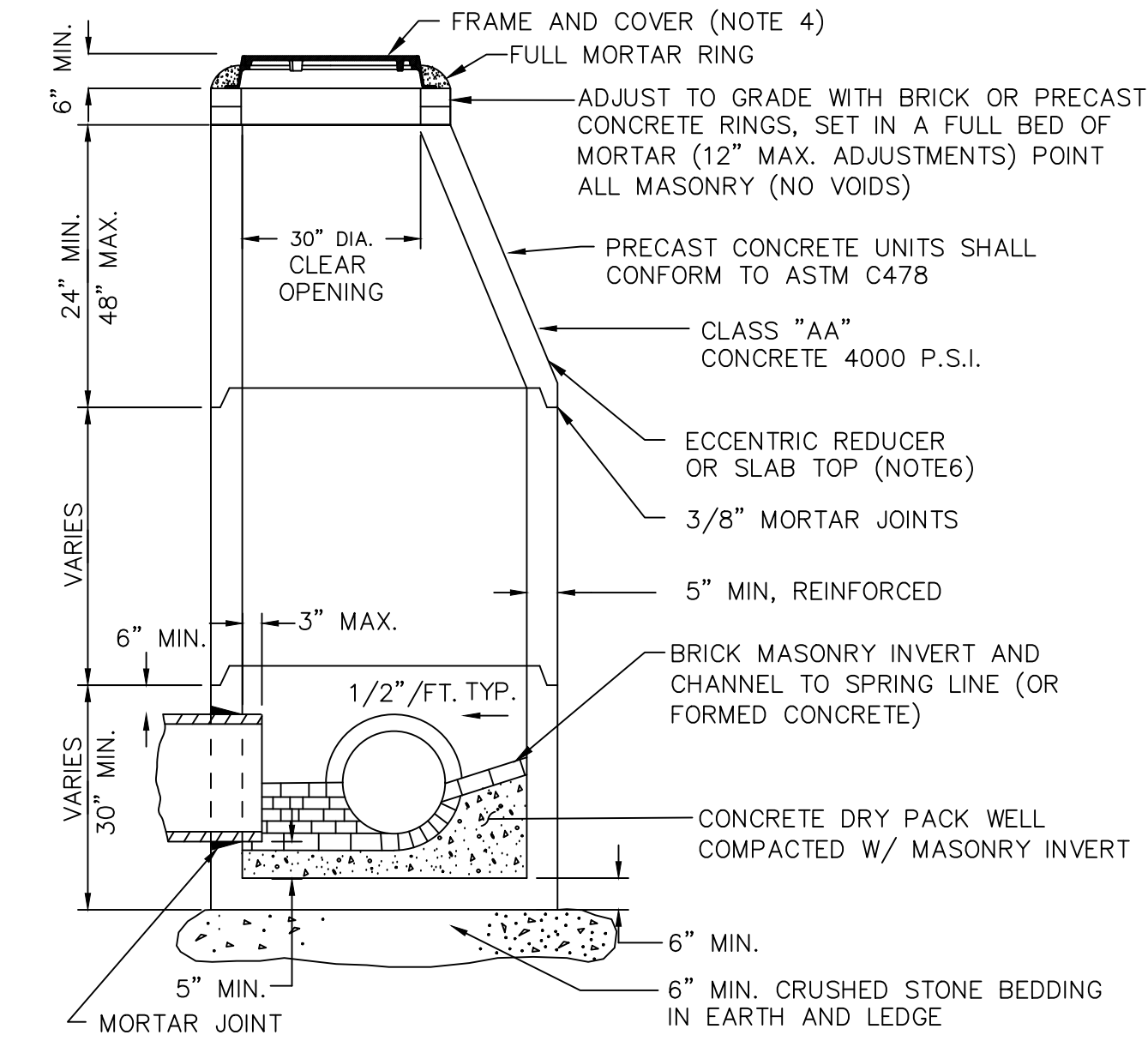
**7 COIR LOG DETAIL**  
D2 NOT TO SCALE



**3 TRENCH DETAIL - STORM DRAIN**  
D2 NOT TO SCALE

**TRENCH NOTES - STORM DRAIN**

- BEDDING:** BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED GRAVEL (NHDOT ITEM 304.3) OR CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS.
- COMPACTION:** ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF AASHTO T99, METHOD C.
- SUITABLE MATERIAL:** IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED 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; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6 INCHES IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN SEEDING AREAS, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, ROCKS UNDER 12", FROZEN EARTH OR CLAY, IF HE/SHE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE WILL BE PRESERVED.
- BASE COURSE AND PAVEMENT:** SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
- DRAINAGE PIPE:** PIPE MATERIALS SHALL BE EITHER PVC SDR 35 OR POLYETHYLENE (PE).
- W=MAXIMUM ALLOWABLE TRENCH WIDTH:** FOR ROCK EXCAVATION, FOR ORDERED EXCAVATION BELOW GRADE AND HANDLING OF EXCAVATED CONTAMINATED SOILS. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.)



**4 TYPICAL DRAINAGE MANHOLE**  
D2 NOT TO SCALE

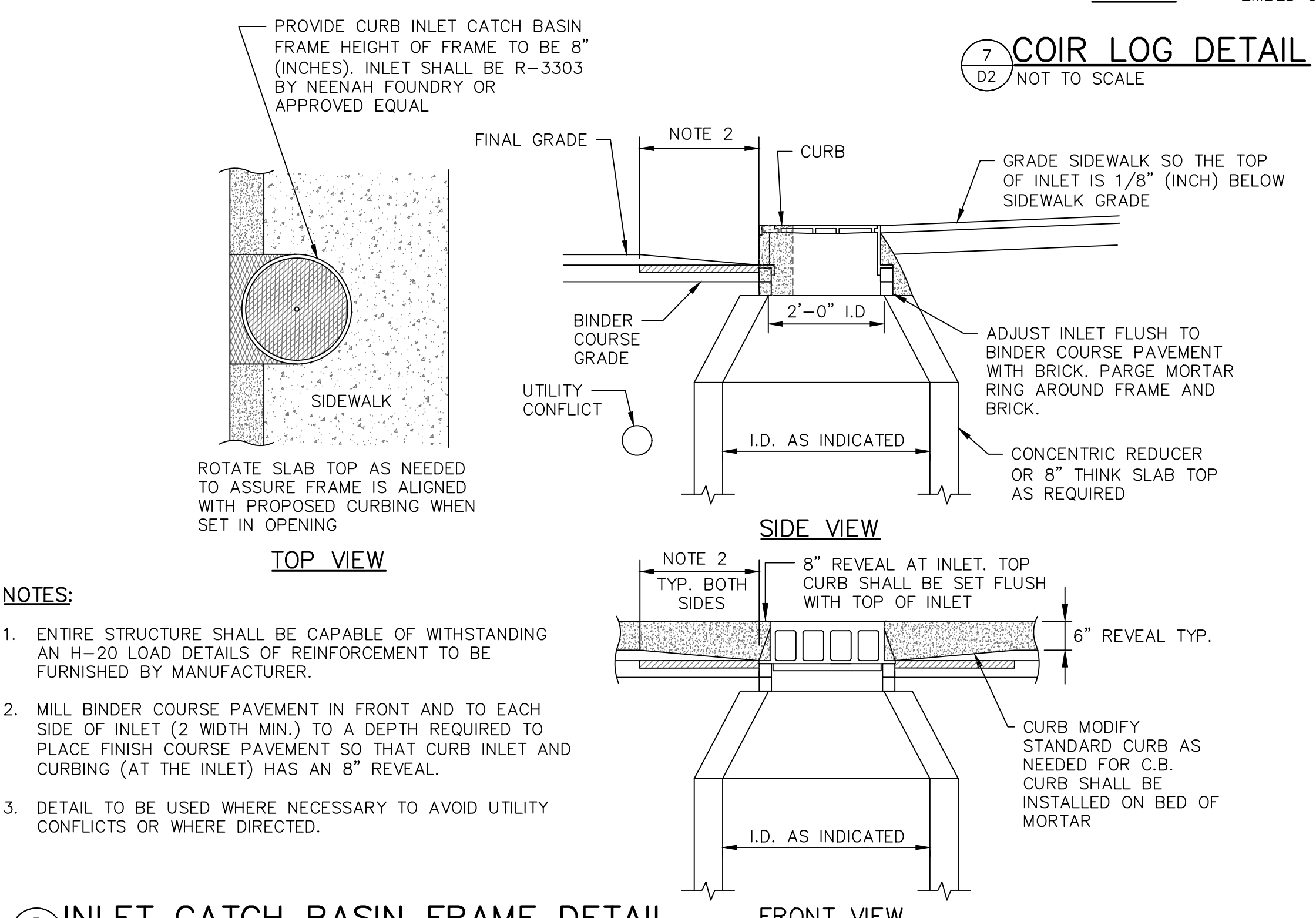
**DRAIN MANHOLE NOTES:**

- BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE.
- PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
- INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT (OR FORMED CONCRETE), CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1/2 THE PIPE DIA. AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.
- FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE HINGED, ERGO XL BY EAST JORDON IRON WORKS, AND PROVIDE A 30-INCH (MIN.) CLEAR OPENING. THE WORD "DRAIN" IN 3-INCH LETTERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
- 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 BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH OR USE OF GEOGRID FABRIC (ITEM 1.8B) MAY BE REQUIRED.

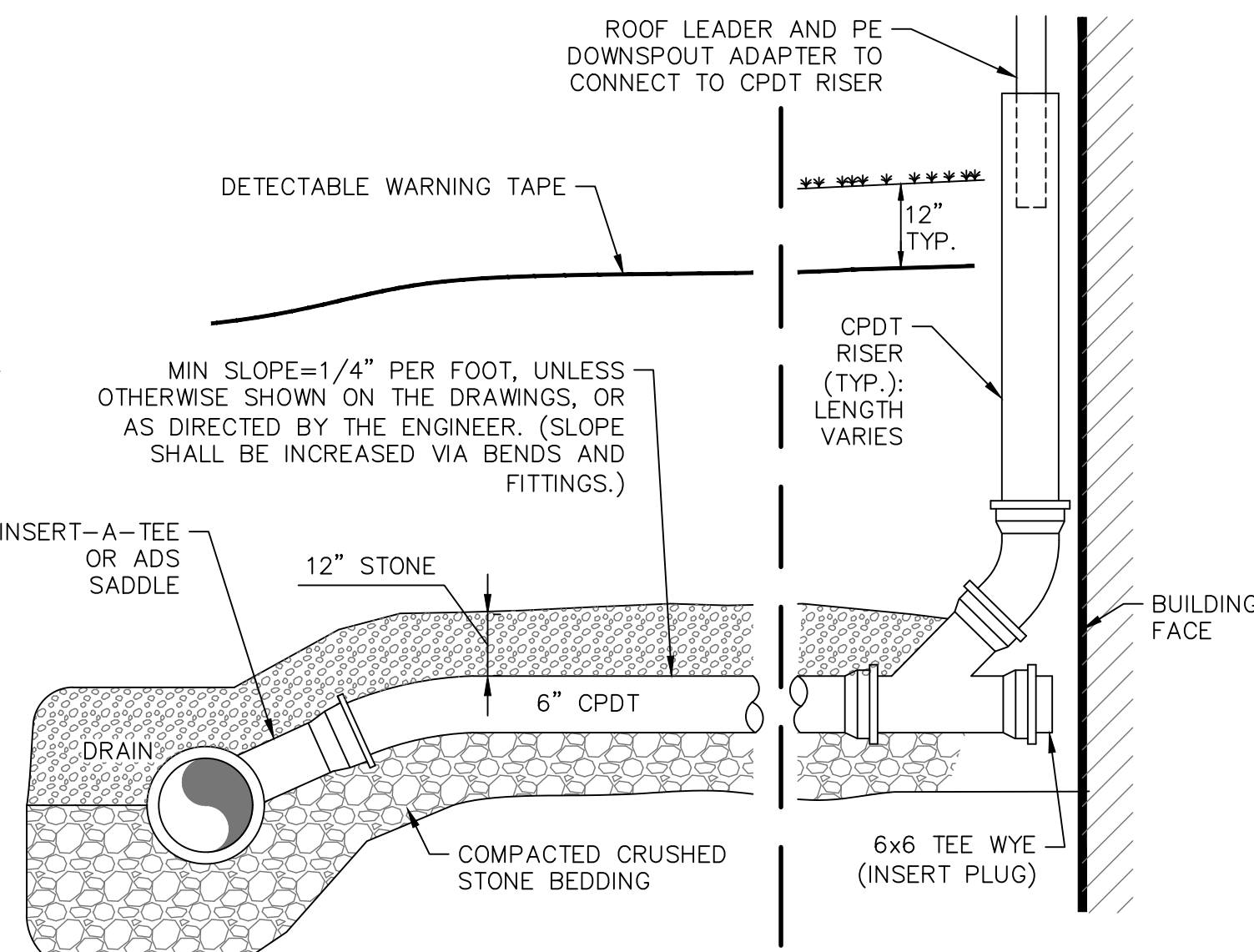
6. SLAB TOP COVERS: MAY BE APPROVED IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 5 FEET AND FOR LARGE DIAMETER MANHOLES. SLAB TOP COVERS SHALL BE REINFORCED CONCRETE HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H-20 LOADS.



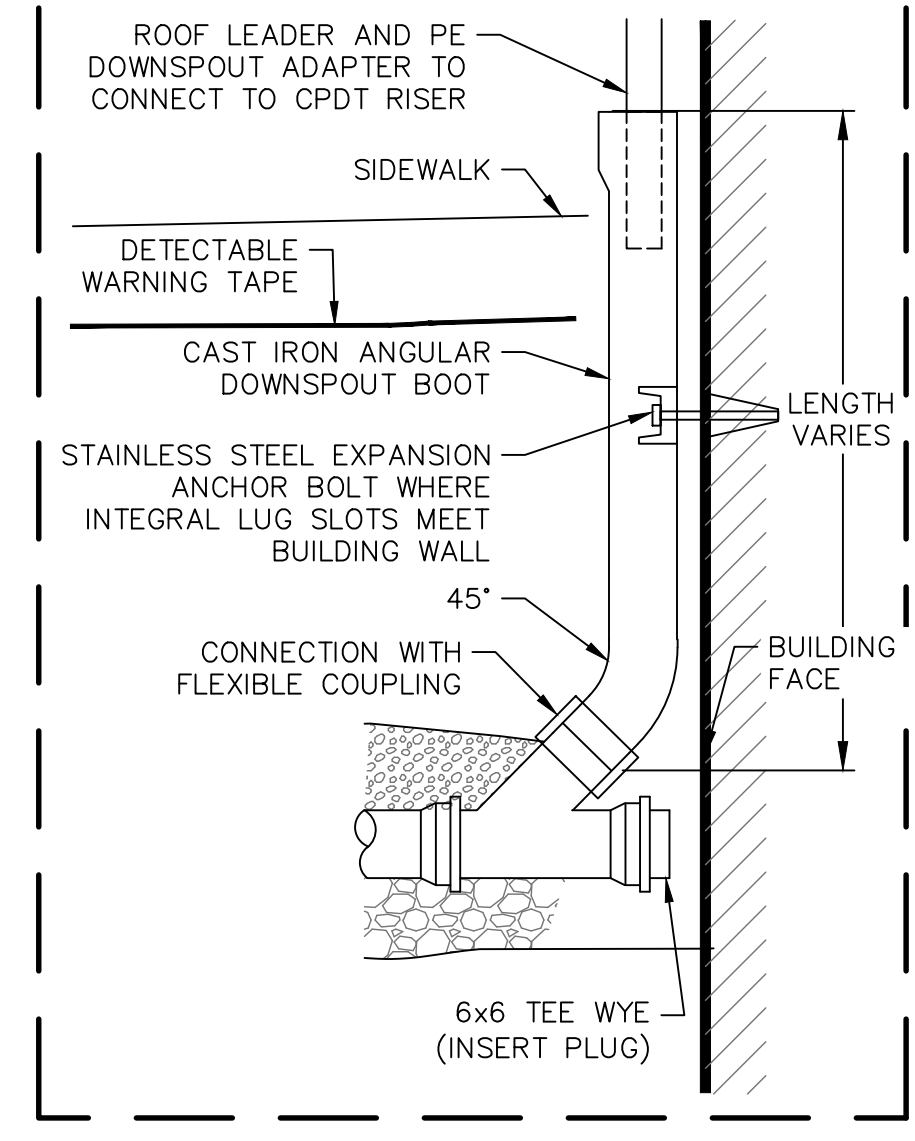
**5 INLET CATCH BASIN FRAME DETAIL**  
D2 NOT TO SCALE

**NOTES:**

- SERVICE LATERALS WILL BE PROVIDED AT EACH DOWNSPOUT AS WELL AS A SEPARATE CLEANOUT FOR EACH PROPERTY TO FACILITATE PRIVATE SUMP PUMP /DRAIN SERVICE CONNECTIONS. CLEANOUTS SHALL BE INSTALLED AT THE PROPERTY LINE FOR EACH SERVICE LATERAL.
- REBAR OR 2X4 SHALL BE PLACED AT SIDE OF CLEANOUT.
- CLEANOUT RISER PIPE AND FITTINGS ARE INCIDENTAL AND WILL NOT BE CONSIDERED FOR PAYMENT.
- SERVICES SHALL BE ORIENTED @ 10:30 OR 1:30 (TYP.) UNDER NO CIRCUMSTANCES SHALL SERVICES BE LOCATED BETWEEN 3:00 AND 9:00.
- LOCATE ROOF LEADER CONNECTIONS AT ADJACENT BUILDING CORNERS, TWO DOWNSPOUTS MAY BE CONNECTED TO ONE LATERAL USING APPROPRIATE WYE (AND OTHER) FITTING(S).



**6 DRAIN LATERAL & ROOF LEADER CONNECTION**  
D2 NOT TO SCALE



**DOWNSPOUT BOOT FOR ROOF LEADER AT BACK OF SIDEWALK OR PARKING LOT**

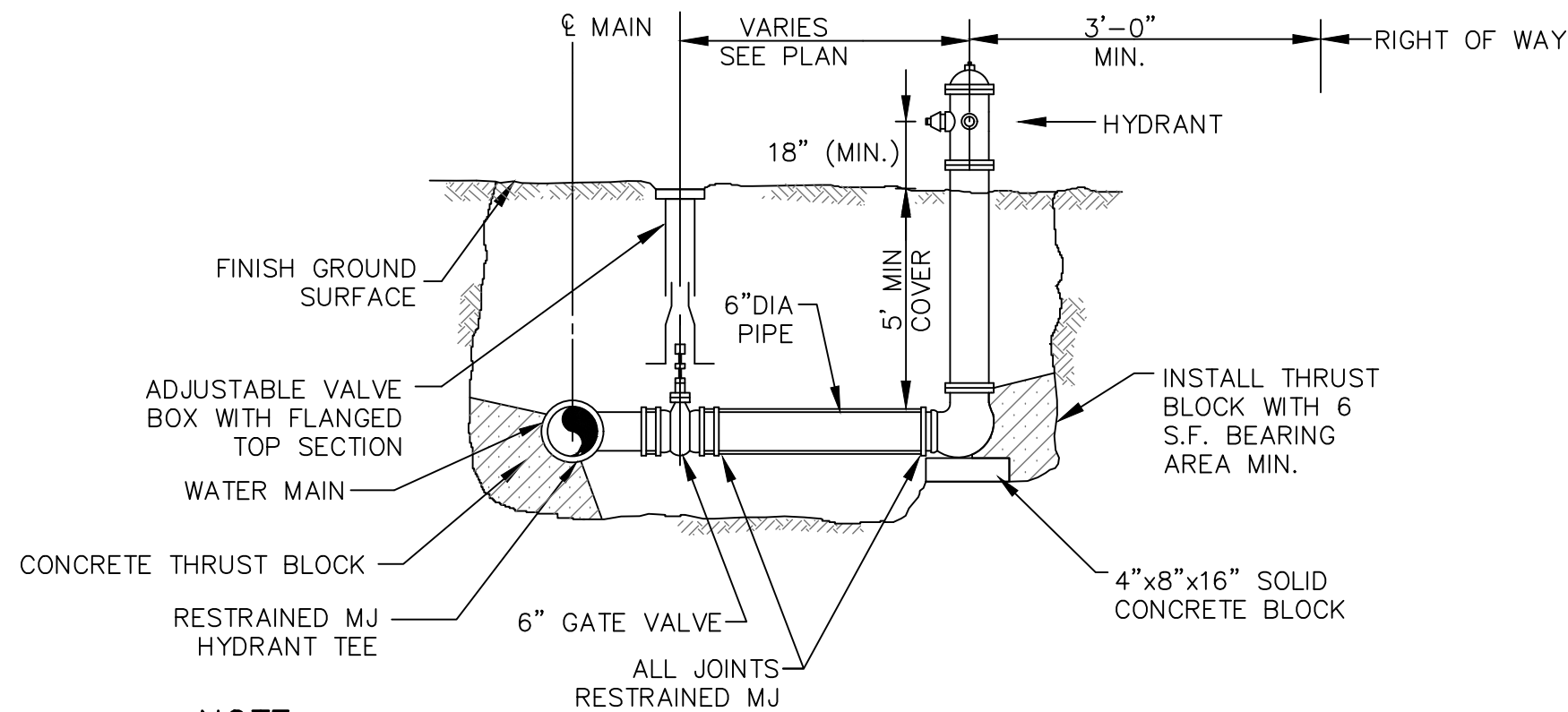
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**DRAINAGE DETAILS**  
**MAPLEWOOD AVE DRAINAGE IMPROVEMENTS**  
**CITY OF PORTSMOUTH**  
**PORTSMOUTH, NEW HAMPSHIRE**

DWG NO. D2 SHEET 11 OF 17



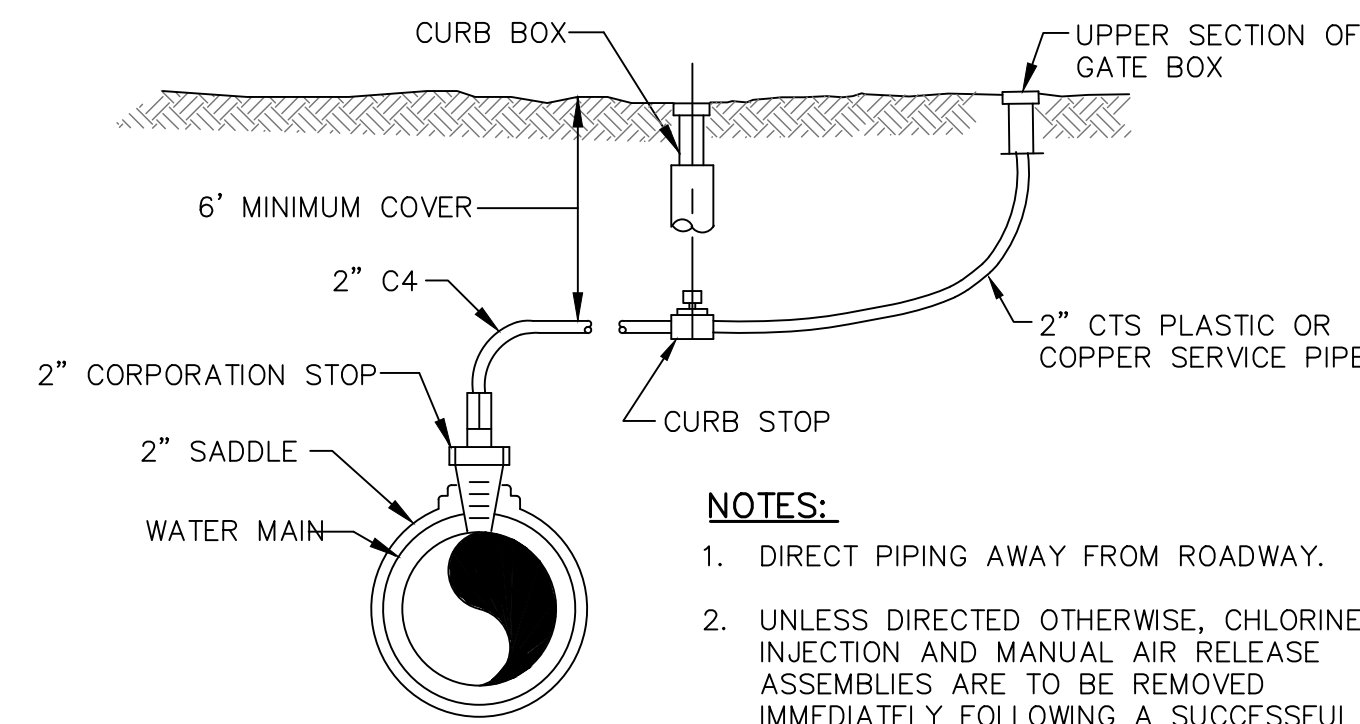


**NOTE:**

1. HYDRANTS SHALL BE DELIVERED FROM FACTORY W/O DRAIN HOLES.
2. HYDRANT ASSEMBLY INCLUDES MJ HYDRANT TEE.
3. HYDRANT SHALL BE KENNEDY K-81A GUARDIAN, PER CITY OF PORTSMOUTH STANDARDS.
4. LOCATE HYDRANTS A MINIMUM OF 18" BEHIND CURBING UNLESS OTHERWISE DIRECTED. REVIEW HYDRANT LOCATIONS WITH PROJECT REPRESENTATIVE PRIOR TO WATER MAIN INSTALLATIONS.

**1 TYPICAL HYDRANT ASSEMBLY SECTION**

D3 NOT TO SCALE

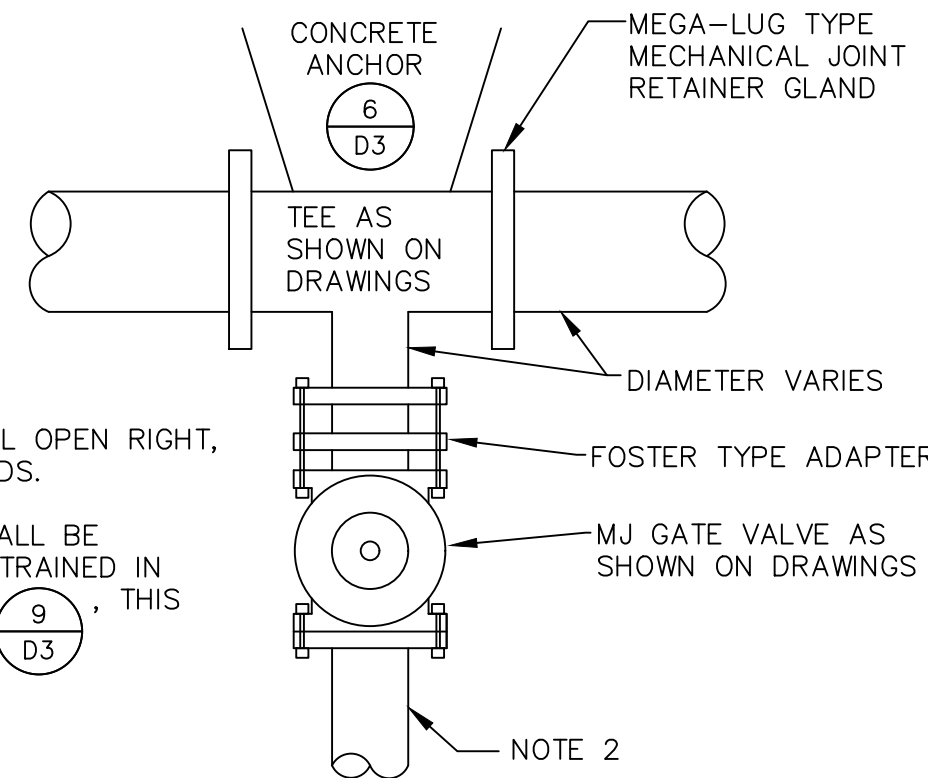


**NOTES:**

1. DIRECT PIPING AWAY FROM ROADWAY.
2. UNLESS DIRECTED OTHERWISE, CHLORINE INJECTION AND MANUAL AIR RELEASE ASSEMBLIES ARE TO BE REMOVED IMMEDIATELY FOLLOWING A SUCCESSFUL BACTERIA TEST. LEAVE THE CORPORATION STOP AND 12" LENGTH OF TUBING (WITH A CRIMPED END) IN PLACE.

**2 TEMPORARY BLOW-OFF TAP ASSEMBLY**

D3 NOT TO SCALE

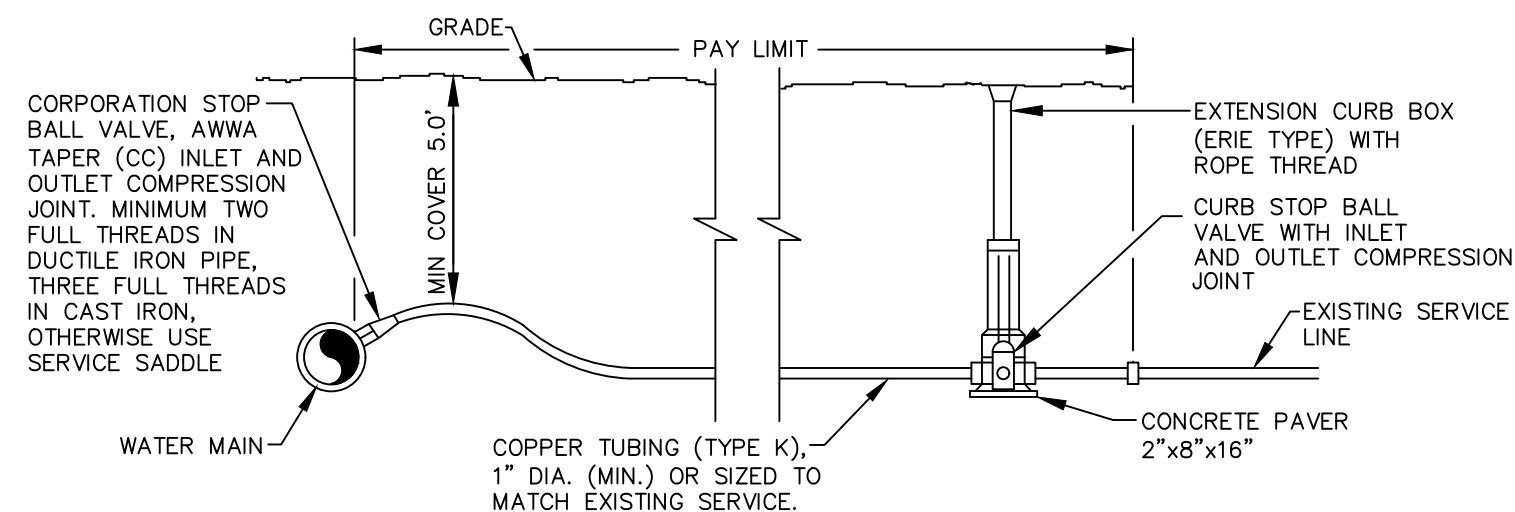


**NOTE:**

1. GATE VALVES SHALL OPEN RIGHT, PER CITY STANDARDS.
2. BRANCH PIPING SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH THIS SHEET

**5 TEE & GATE VALVE ASSEMBLY DETAIL (TYP.)**

D3 NOT TO SCALE

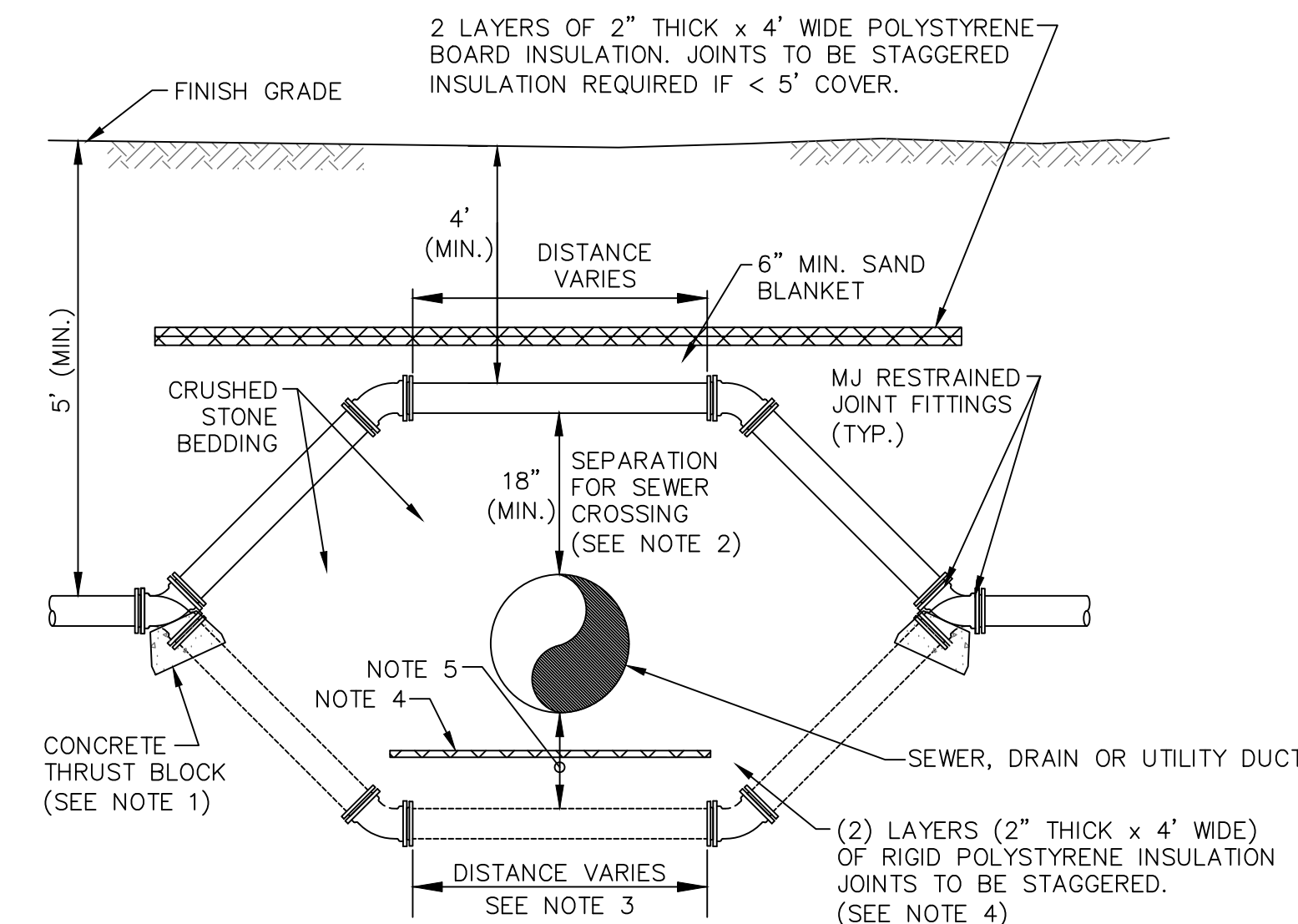


**NOTES:**

1. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF COPPER. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
2. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.
3. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
4. IF SERVICE IS INSTALLED WITH LESS THAN 5' COVER, INSULATE OVER LINE.
5. REMOVE EXISTING CURB STOP (SALVAGE AS IDENTIFIED IN SECT. 01611).
6. CONNECT CURB STOP TO EXISTING SERVICE LINE AT PROPERTY LINE OR AT LOCATION APPROVED BY THE ENGINEER (NO COUPLING WITHOUT APPROVAL OF ENGINEER) AFTER PRESSURE TESTING AND DISINFECTION.
7. SHUT OFF EXISTING CORPORATION AND REMOVE OR ABANDON EXISTING SERVICE LINE.
8. CURB BOX SHALL BE SET IN THE GRASS AREA BETWEEN CURB AND SIDEWALK UNLESS DIRECTED OTHERWISE.
9. 2" SERVICE CONNECTIONS SHALL USE A STAINLESS STEEL SERVICE SADDLE.
10. MAINTAIN 18" SEPARATION BETWEEN THE NEW WATER SERVICE AND THE NEW OR EXISTING SEWER MAIN (WATER SHALL BE OVER SEWER).

**4 TYPICAL SERVICE CONNECTION**

D3 NOT TO SCALE



**NOTE:**

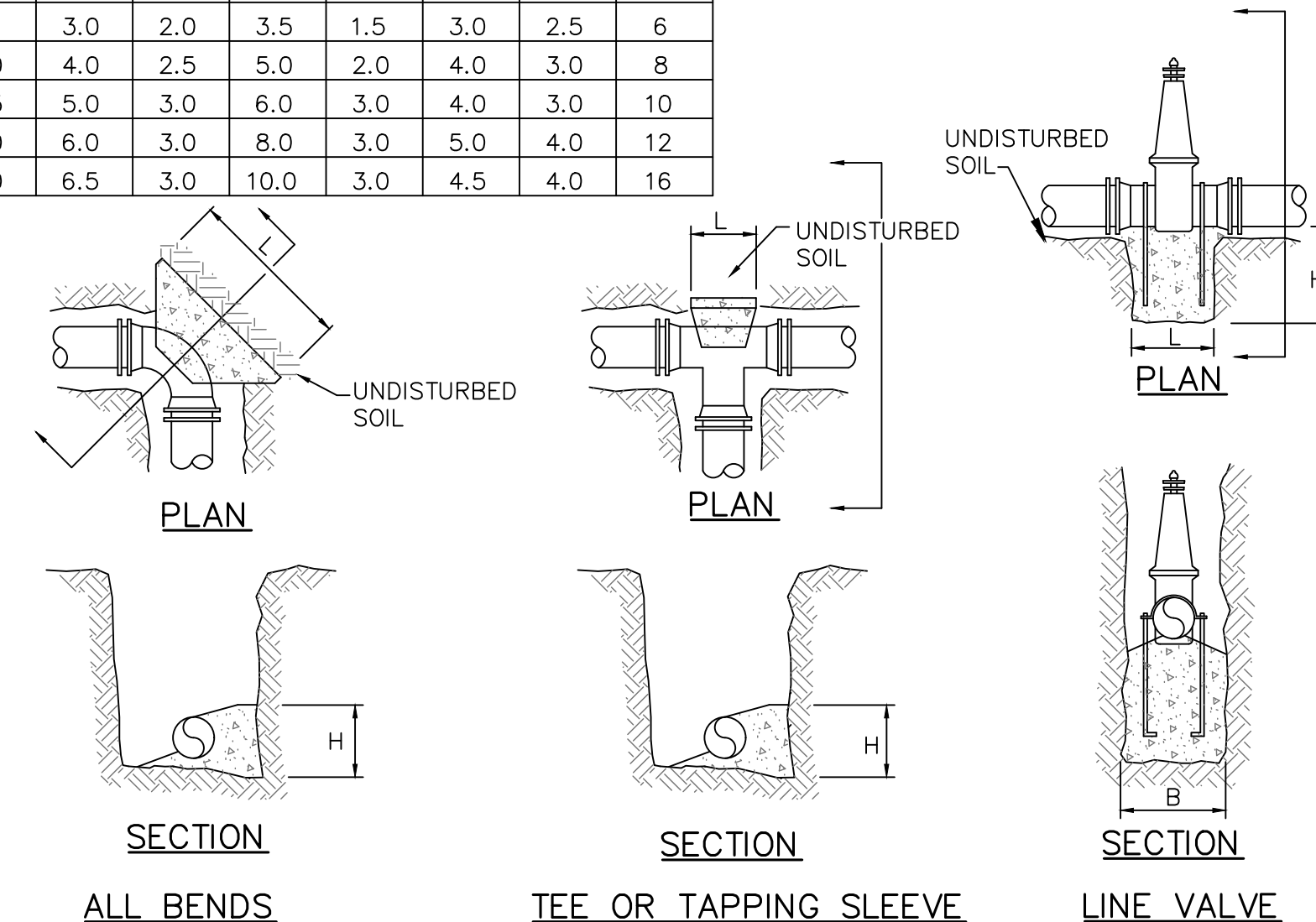
1. INSTALL (4) FOUR 45° MJ BENDS WITH RESTRAINED JOINT FITTINGS.
2. VERTICAL SEPARATION DEPTH BETWEEN WATER AND SEWER SHALL BE AT LEAST 18", WITH WATER ABOVE SEWER, PER NHDES ENV-Wq 704.12. VERTICAL SEPARATION OF LESS THAN 18" ALLOWED ONLY WITH WAIVER FROM NHDES. IF CONSTRUCTION OF WATER MAIN UNDER SEWER MAIN IS UNAVOIDABLE, SEWER MAIN SHALL BE CONSTRUCTED OF C900 PVC PIPE FROM MANHOLE TO MANHOLE.
3. CENTER CROSSING PIPE BETWEEN BELLS. SEWER PIPE JOINT SHALL BE A MINIMUM OF 6 FT. HORIZONTALLY FROM THE WATER MAIN.
4. PROVIDE INSULATION IF DRAIN CROSSES OVER WATER MAIN.
5. PROVIDE 8" TO 12" SEPARATION FOR DRAIN OR OTHER UTILITY CROSSINGS.

**7 WATER MAIN CONFLICT - CROSSING DETAIL**

D3 NOT TO SCALE

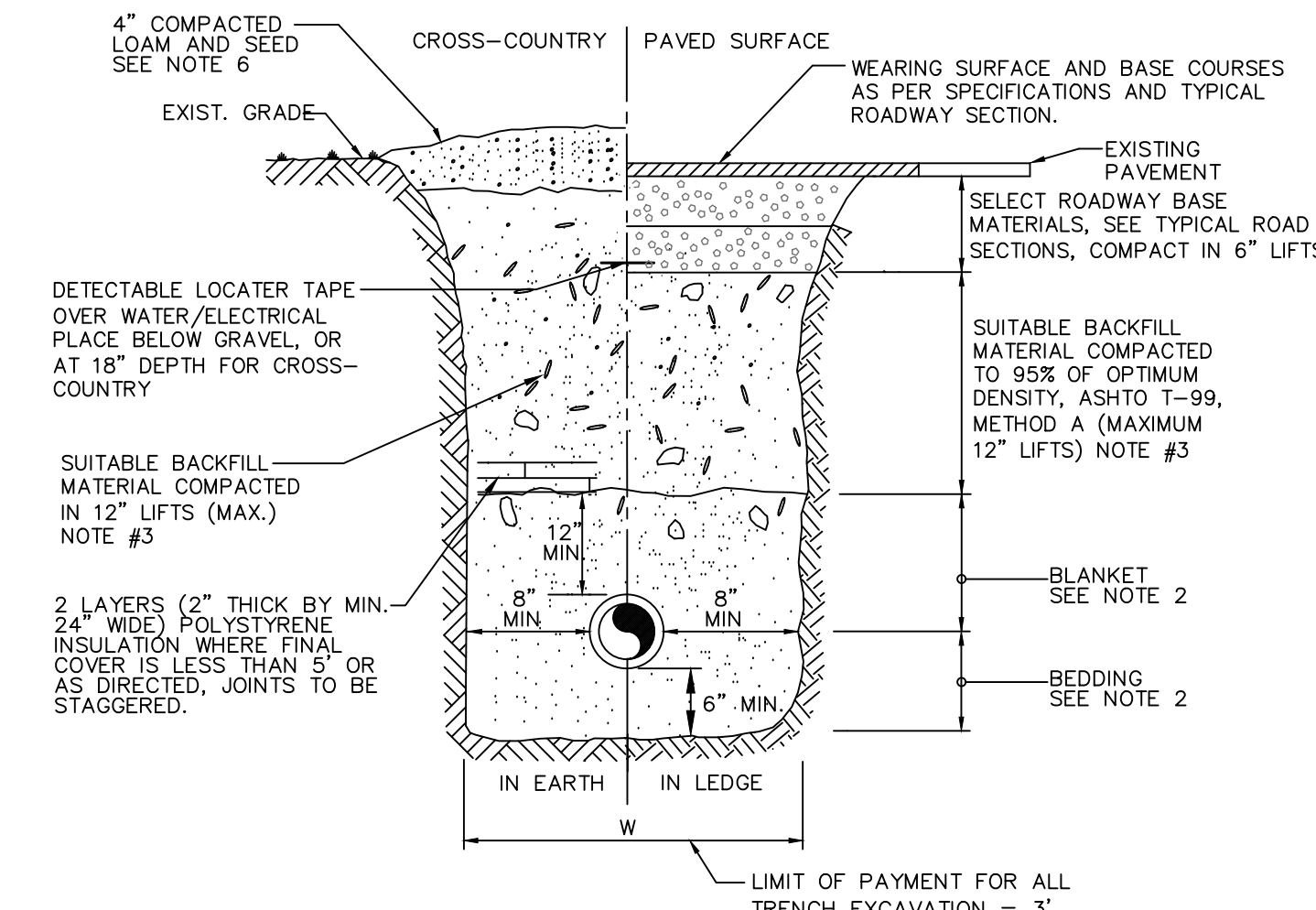
MINIMUM CONCRETE ANCHOR DIMENSIONS								
PIPE SIZE INCHES	TEE OR PLUG FT.		ALL BENDS FT.		ALL LINE VALVES FT.			PIPE SIZE INCHES
	H	L	H	L	H	L	B	
6	1.5	3.0	2.0	3.5	1.5	3.0	2.5	6
8	2.0	4.0	2.5	5.0	2.0	4.0	3.0	8
10	2.5	5.0	3.0	6.0	3.0	4.0	3.0	10
12	3.0	6.0	3.0	8.0	3.0	5.0	4.0	12
16	3.0	6.5	3.0	10.0	3.0	4.5	4.0	16

BASIS: SOIL BEARING CAPACITY OF 2000 PSF AND 5 FEET COVER IN GRANULAR SOIL. HEIGHT OF BLOCK MUST BE LESS THAN 1/2 DEPTH OF TRENCH. 6 MIL THICK POLYETHYLENE SHALL BE PLACED AROUND FITTINGS PRIOR TO CONCRETE PLACEMENT. USE FOR HORIZONTAL OR DOWNWARD THRUST ONLY.



**6 CONCRETE ANCHORS**

D3 NOT TO SCALE



**8 TYPICAL TRENCH DETAIL**

D3 NOT TO SCALE

**STANDARD TRENCH NOTES**

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
2. BEDDING AND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER (SECTION 02228). BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE, PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
3. BACKFILL MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED 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; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND 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 TOP SOIL, LOAM, MUCK, OR PEAT, IF ENGINEER IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE LINE, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.
4. MINIMUM COVER: NOT LESS THAN 5.5 FEET, 7 MAX, EXCEPT TO AVOID SUBSURFACE STRUCTURES.
6. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. DRIVEWAYS: CRUSHED GRAVEL IN DRIVEWAYS SHALL MATCH EXISTING WITH A MINIMUM OF 6" EXISTING GRAVEL SHALL BE REMOVED AND REPLACED AND SHALL NOT BE MEASURED FOR PAYMENT.

**HORIZONTAL BENDS:**

Nominal Pipe Diameter	Bend Angle			
	90°	45°	22.5°	11.25°
4"	6'	3'	2'	1'
6"	9'	4'	2'	2'
8"	11'	5'	3'	2'
10"	13'	6'	3'	2'
12"	16'	7'	3'	2'
16"	20'	9'	4'	2'

**TEES:**

Nominal Pipe	Nominal Branch Diameter (Note 5)			
	8"	10"	12"	16"
8"	6'	-	-	-
10"	8'	11'	-	-
12"	1'	7'	16'	-
16"	1'	1'	9'	25'

**NOTES:**

1. ALL FITTINGS SHALL HAVE MECHANICAL RETAINING GLANDS AT ALL ENDS AND A MINIMUM OF ONE JOINT SHALL BE RESTRAINED BEYOND EACH SIDE OF FITTING.
2. PIPE EXTENDING FROM ALL FITTINGS SHALL BE MECHANICALLY RESTRAINED TO THE MINIMUM LENGTHS SHOWN.
3. ALL MINIMUM LENGTHS SHOWN ABOVE WERE CALCULATED USING THE EBAA IRON RESTRAINT LENGTH CALCULATOR VERSION 6.3 USING THE FOLLOWING ASSUMPTIONS: DUCTILE IRON PIPE, TYPE 4 TRENCH, 5 FOOT DEPTH OF BURY, A TEST PRESSURE OF 150 PSI AND SOILS CONSISTING OF WELL GRADED SANDS AND GRAVELLY SANDS WITH LITTLE OR NO FINES.
4. ENGINEER RESERVES THE RIGHT TO MODIFY RESTRAINT LENGTHS REQUIRED BASED ON VARYING TRENCH CONDITIONS, DEPTH OF BURY OR PIPE MATERIALS.
5. FOR REDUCERS, RESTRAINT LENGTH SHOWN IS FOR THE LARGER PIPE.
6. MECHANICALLY RESTRAIN ONE JOINT ON EITHER SIDE OF THE NOMINAL PIPE OF TEE AT A MINIMUM DISTANCE OF 5'.

**REDUCERS:**

Nom. Diameter of Large Pipe	Nominal Diameter of Small Pipe (Note 4)			
	4"	6"	8"	10"
8"	17'	10'	-	-
10"	23'	17'	10'	-
12"	29'	24'	18'	10'
16"	39'	36'	31'	28'

**DEAD ENDS:**

Nom. Pipe Diameter	Restraint Length (ft)
4"	13'
6"	18'
8"	23'
10"	28'
12"	33'
16"	43'

**9 MECHANICAL JOINT RESTRAINT**

D3 NOT TO SCALE

UNDERWOOD engineers  
 25 Vaughan Mall, Portsmouth, N.H. 03801  
 Tel. 603-436-6192 Fax. 603-431-4733

WATER DETAILS  
 MAPLEWOOD AVE DRAINAGE IMPROVEMENTS  
 CITY OF PORTSMOUTH  
 PORTSMOUTH, NEW HAMPSHIRE

ISSUE FOR	By	Date
BIDDING		
CONSTRUCTION		
RECORD DRAWING		
REVISIONS	APP'D	NO.

DWG NO. D3 SHEET 12 OF 17

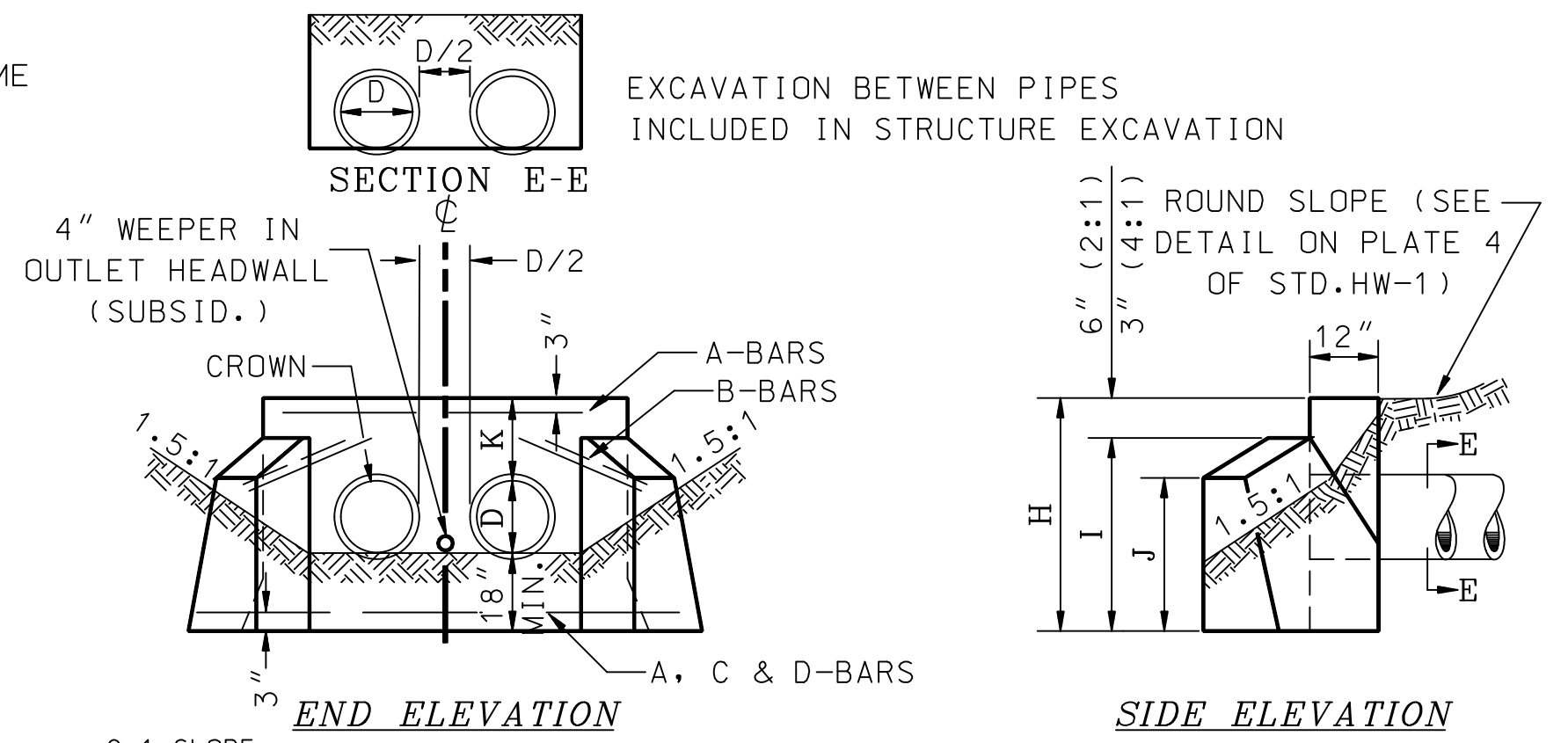
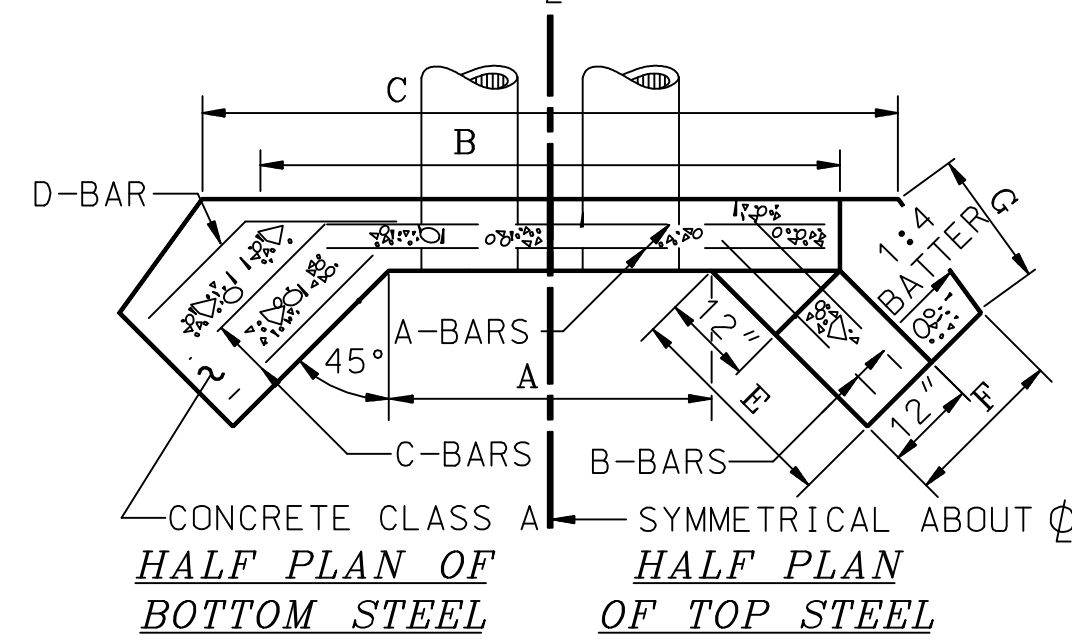








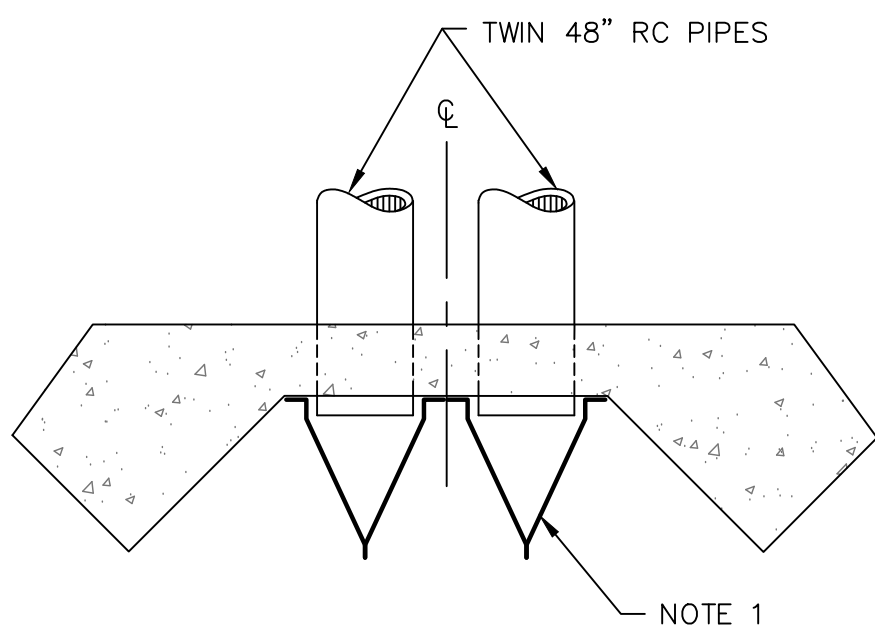
NOTE:  
ALL LIKE BARS IN EACH HEADWALL ARE THE SAME SIZE. EACH STD. HEADER HAS 4 A, B & C-BARS, AND 2 D-BARS.



DIA. D INCHES	QUANTITIES PER HEADER			DIMENSIONS											REINFORCING STEEL										
	CONC. CU. YD.	STEEL LB.	EXC. FOR 1' DEPTH CU. YD.	A	B	C	E	F	G	H	I	J	K	D/2	SIZE	LENGTH				D-BARS, D1					
24	2.44	46	1.96	6'-0"	8'-10"	10'-0"	3'-0"	1'-11"	2'-3"	5'-0"	4'-6"	3'-10"	1'-6"	1'-0"	#4	8'-6"	3'-2"	3'-0"	4'-8"	2'-5"	2'-3"				
30	3.18	53	2.28	7-5	10-3	11-9	3-7	2-0	2-9	5-6	5-0	4-1	1-6	1-3	#4	9-11	3-9	3-7	5-3	2-6	2-9				
36	3.99	61	2.69	8-10	11-8	13-7	4-2	2-1	3-3	6-0	5-6	4-4	1-6	1-6	#4	11-4	4-3	4-1	5-10	2-8	3-2				
42	5.43	161	3.22	10-3	13-1	15-6	5-1	2-2	4-0	6-9	6-3	4-10	1-9	1-9	#6	12-9	5-3	4-11	7-10	3-10	4-0				
48	6.53	180	3.64	11-8	14-6	17-3	5-9	2-3	4-6	7-3	6-9	5-1	1-9	2-0	#6	14-2	5-11	5-7	8-5	3-10	4-7				
54	7.76	197	4.00	13-1	15-11	19-1	6-4	2-4	5-0	7-9	7-3	5-4	1-9	2-3	#6	15-7	6-7	6-1	9-2	4-1	5-1				
60	9.10	214	4.45	14-6	17-4	20-10	6-11	2-5	5-6	8-3	7-9	5-8	1-9	2-6	#6	17-0	7-1	6-8	9-9	4-1	5-8				
66	10.56	232	4.84	15-11	18-9	22-5	7-6	2-6	6-0	8-9	8-3	5-11	1-9	2-9	#6	18-5	7-8	7-3	10-5	4-2	6-3				
72	12.28	249	5.25	17-4	20-2	24-2	8-2	2-7	6-6	9-3	8-9	6-3	1-9	3-0	#6	19-10	8-3	7-10	11-0	4-3	6-9				

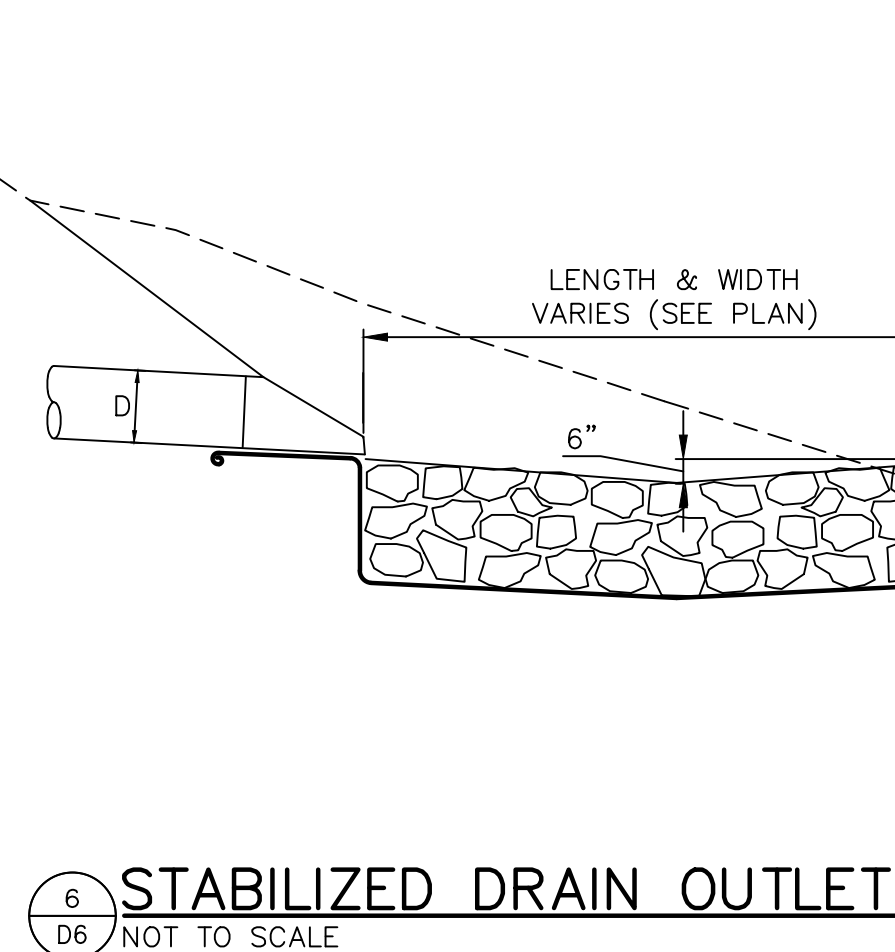
DIA. D INCHES	QUANTITIES PER HEADER			DIMENSIONS											REINFORCING STEEL										
	CONC. CU. YD.	STEEL LB.	EXC. FOR 1' DEPTH CU. YD.	A	B	C	E	F	G	H	I	J	K	D/2	SIZE	LENGTH				D-BARS, D1					
24	3.05	53	2.29	6'-0"	8'-10"	10'-0"	3'-11"	2'-1"	3'-2"	5'-0"	4'-9"	4'-3"	1'-6"	1'-0"	#4	8'-6"	4'-3"	4'-0"	5'-6"	2'-6"	3'-0"				
30	3.92	61	2.70	7-5	10-3	11-9	4-8	2-2	3-9	5-6	5-3	4-7	1-6	1-3	#4	9-11	5-0	4-8	6-3	2-8	3-7				
36	5.09	70	3.15	8-10	11-8	13-7	5-5	2-3	4-5	6-0	5-9	5-0	1-6	1-6	#4	11-4	5-9	5-4	7-1	2-10	4-3				
42	6.97	185	3.78	10-3	13-1	15-6	6-7	2-5	5-4	6-9	6-6	5-6	1-9	1-9	#6	12-9	6-11	6-5	9-3	4-0	5-3				
48	8.44	204	4.24	11-8	14-6	17-3	7-4	2-6	6-0	7-3	7-0	5-11	1-9	2-0	#6	14-2	7-8	7-1	10-1	4-2	5-11				
54	10.13	225	4.74	13-1	15-11	19-1	8-2	2-7	6-9	7-9	7-6	6-3	1-9	2-3	#6	15-7	8-6	7-10	10-11	4-3	6-8				
60	11.90	245	5.23	14-6	17-4	20-10	8-11	2-8	7-4	8-3	8-0	6-7	1-9	2-6	#6	17-0	9-3	8-8	11-9	4-4	7-5				
66	13.87	266	5.75	15-11	18-9	22-5	9-8	2-9	8-0	8-9	8-6	7-0	1-9	2-9	#6	18-5	10-0	9-5	12-8	4-7	8-1				
72	16.13	283	6.29	17-4	20-2	24-2	10-6	2-10	8-8	9-3	9-0	7-4	1-9	3-0	#6	19-10	10-10	9-9	13-5	4-8	8-9				

1 CONCRETE HEADWALLS WITH 45° WINGS FOR TWIN R.C. PIPE (48" DIA. W/4:1 SLOPE)  
D6 NOT TO SCALE



2 TIDE VALVE DETAIL  
D6 NOT TO SCALE

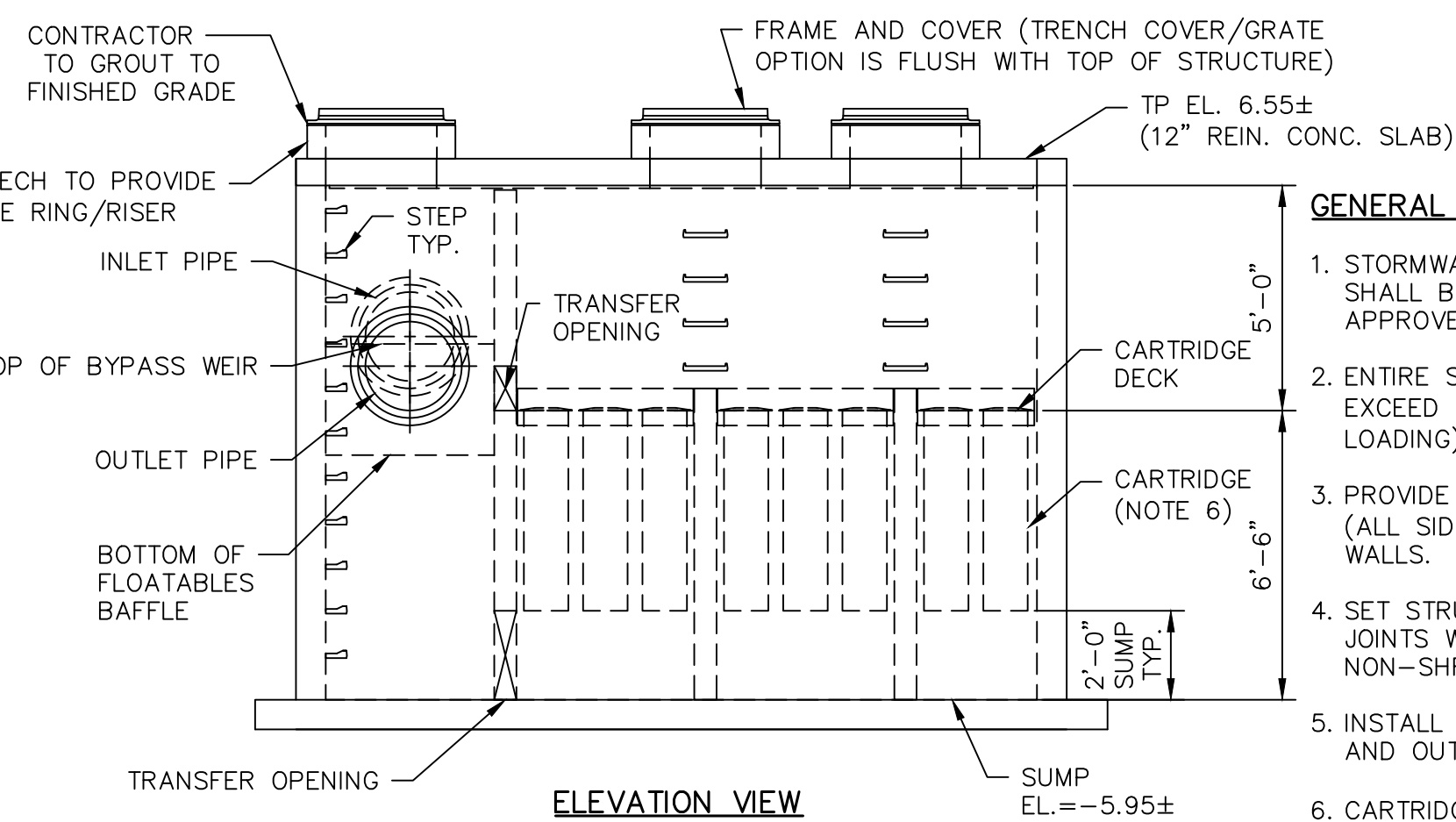
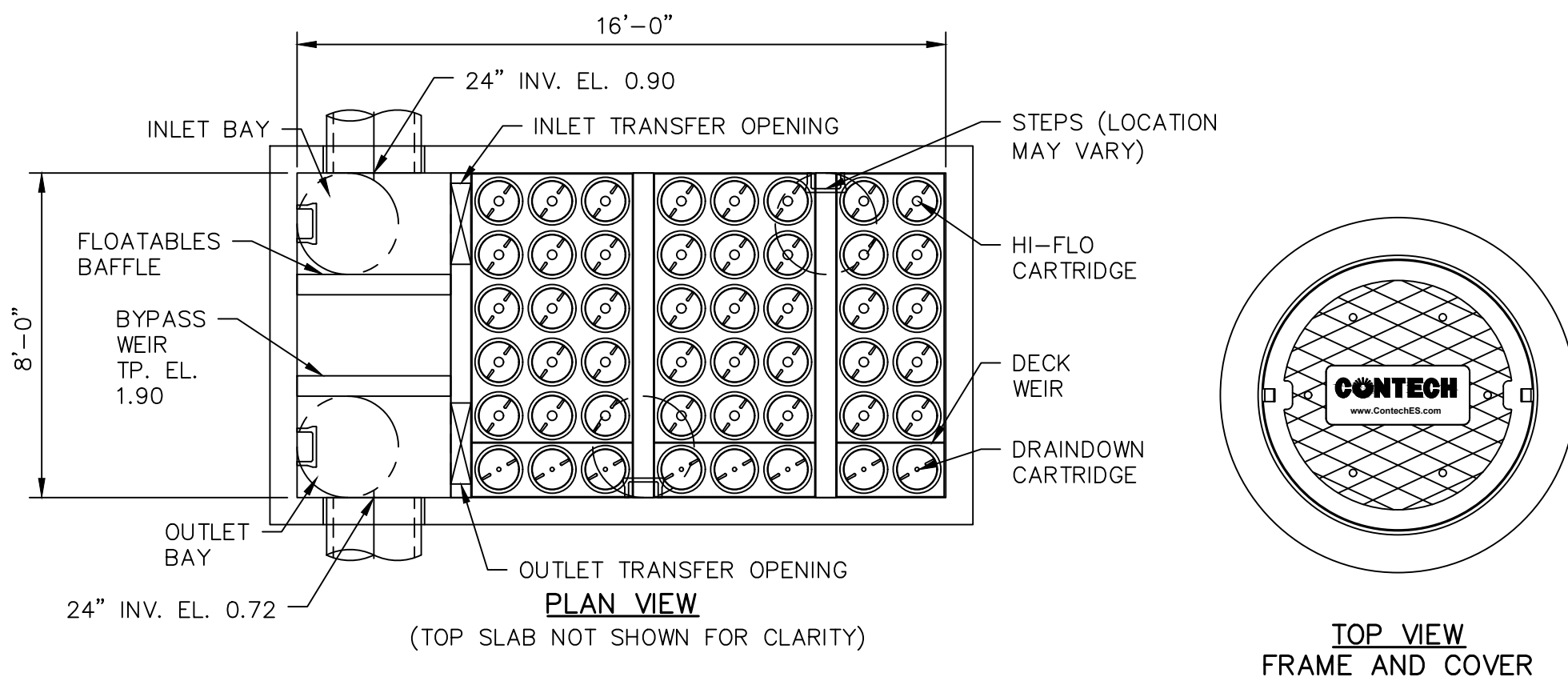
NOTES:  
1. TIDE VALVES SHALL BE TIDE FLEX TF-1 OR APPROVED EQUAL. ATTACH DIRECTLY TO HEADWALL USING THIMBLE PLATE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. PROVIDE THIMBLE PLATE INSTALLATION DETAILS OR RECOMMENDED ALTERNATIVE. THE TIDE VALVES WILL BE MOUNTED TO THE HEADWALL.



6 STABILIZED DRAIN OUTLET  
D6 NOT TO SCALE

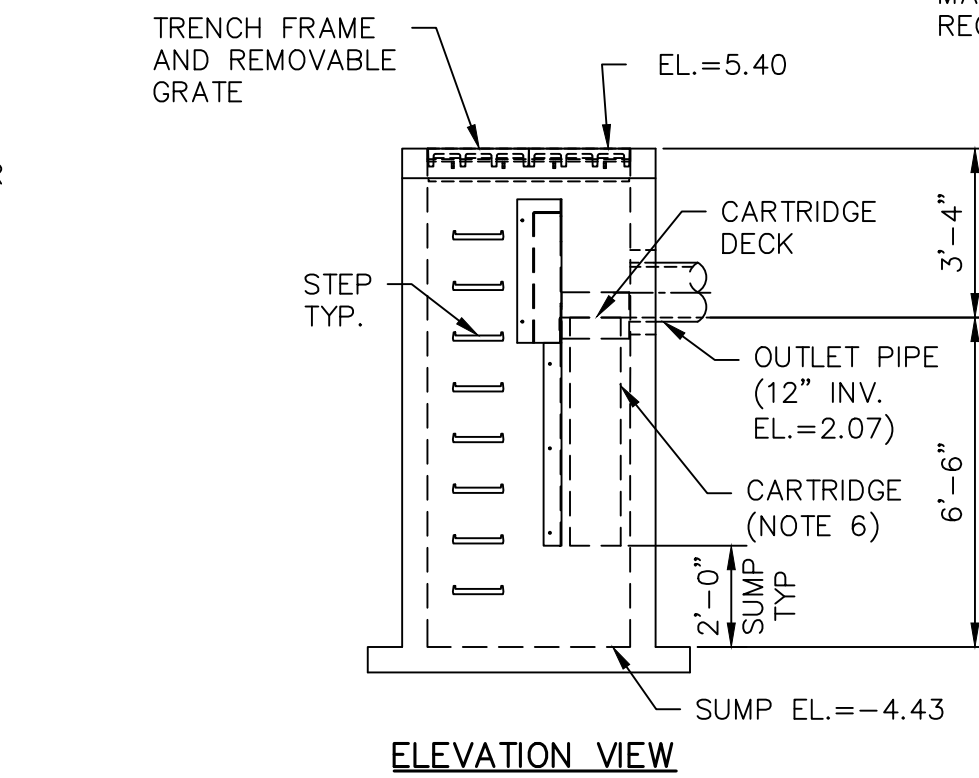
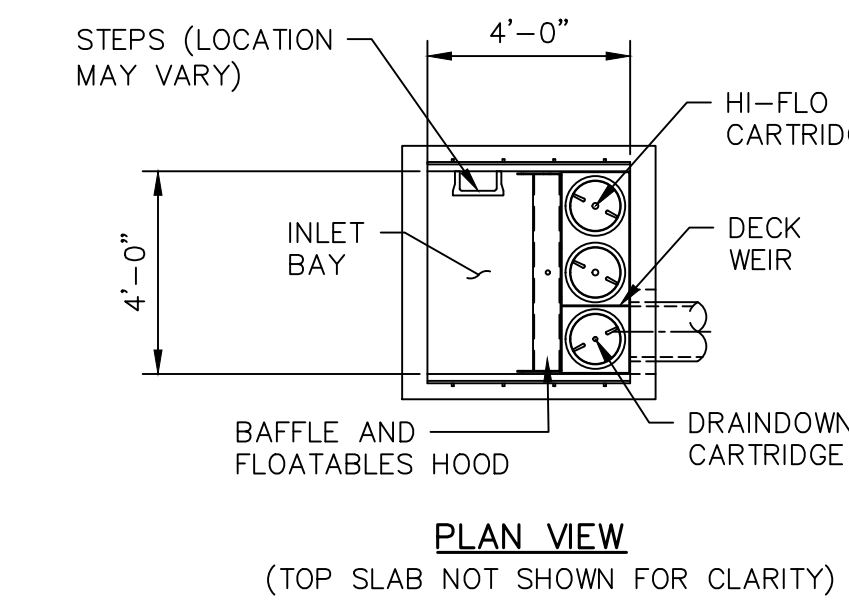
CONSTRUCTION SPECIFICATIONS:

- THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND STONE FILL SHALL BE PREPARED TO LINES AND GRADES SHOWN ON THE PLANS.
- GRADATION: CLASS B STONE CONFORMING TO 585.2.1.2 SHALL BE USED. DEPTH OF STONE SHALL BE 18".
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18 INCHES.
- THE RIPRAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
- CONSTRUCT FLARED END SECTIONS (OR HEADWALLS) AS SHOWN ON THE PLANS. MATERIALS AND SIZES SHALL BE CONSISTENT WITH NHDOT STANDARD DETAILS.

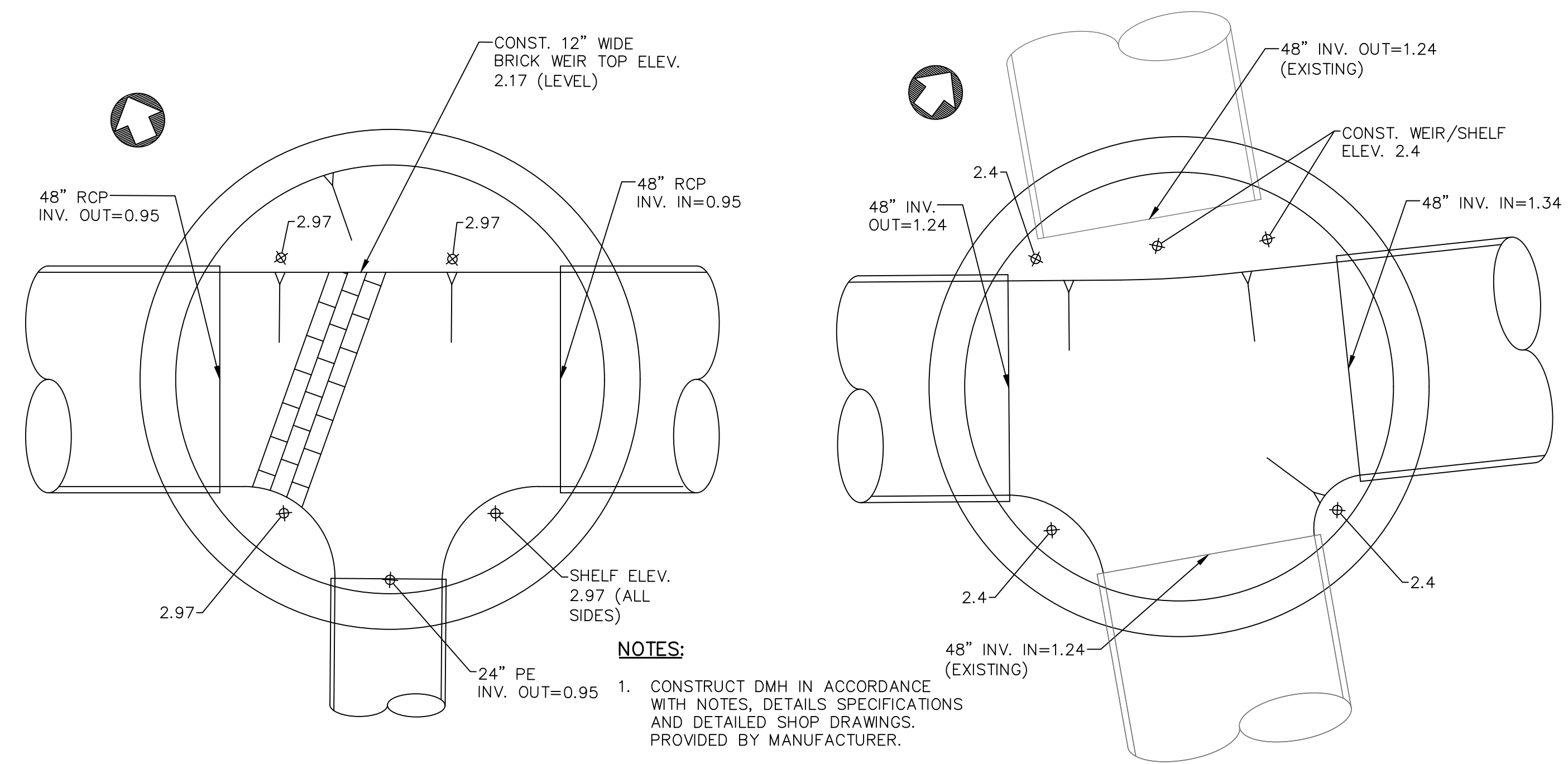


4 JELLYFISH (JFPD0816) DETAILS  
D6 NOT TO SCALE

- GENERAL NOTES:
- STORMWATER TREATMENT STRUCTURE SHALL BE PROVIDED BY CONTECH OR APPROVED EQUIVALENT.
  - ENTIRE STRUCTURE SHALL MEET OR EXCEED HS-20 RATING (HEAVY LOADING).
  - PROVIDE ANTI-FLOTATION COLLARS (ALL SIDES), TO EXTEND 12" BEYOND WALLS.
  - SET STRUCTURE LEVEL. SEAL ALL JOINTS WITH APPROVED SEALANT OR NON-SHRINK GROUT.
  - INSTALL FLEXIBLE BOOT AT INLET AND OUTLET.
  - CARTRIDGE LENGTH SHALL BE 54", INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



7 JELLYFISH (JFSI0404) DETAILS  
D6 NOT TO SCALE



- NOTES:
- CONSTRUCT DMH IN ACCORDANCE WITH NOTES, DETAILS SPECIFICATIONS AND DETAILED SHOP DRAWINGS. PROVIDED BY MANUFACTURER.
  - FORM BRICK CHANNEL TO SPRING LINE AND CONSTRUCT SHELF TO ELEVATIONS PROVIDED.
  - CONST. BRICK WEIR OR REMOVABLE PLATE WEIR TO ELEVATION PROVIDED.

3 DMH#1E  
D6 NOT TO SCALE

5 DMH#3  
D6 NOT TO SCALE

- GENERAL NOTES:
- STORMWATER TREATMENT STRUCTURE SHALL BE PROVIDED BY CONTECH OR APPROVED EQUIVALENT.
  - ENTIRE STRUCTURE SHALL MEET OR EXCEED HS-20 RATING (HEAVY LOADING).
  - PROVIDE ANTI-FLOTATION COLLARS (ALL SIDES), TO EXTEND 12" BEYOND WALLS.
  - SET STRUCTURE LEVEL. SEAL ALL JOINTS WITH APPROVED SEALANT OR NON-SHRINK GROUT.
  - INSTALL FLEXIBLE BOOT OUTLET.
  - CARTRIDGE LENGTH SHALL BE 54", INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

ISSUE FOR	By	Date	REVISIONS	APP'D
BIDDING				
CONSTRUCTION				
RECORD DRAWING				
Drawn/Chk.	RMG			
Designed	PDM			
Checked				
Approved				
Date	APRIL 2024			
Book No.				
Project No.	2552			
Dwg. ID	252.dwg			
Scale				

UNDERWOOD engineers  
25 Vaughan Mall, Portsmouth, N.H. 03801  
Tel. 603-436-6192 Fax. 603-431-4733

DRAINAGE OUTFALL DETAILS  
MAPLEWOOD AVE DRAINAGE IMPROVEMENTS  
CITY OF PORTSMOUTH  
PORTSMOUTH, NEW HAMPSHIRE

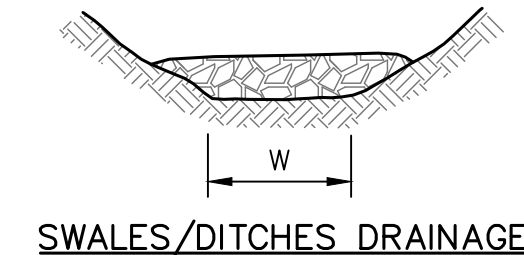
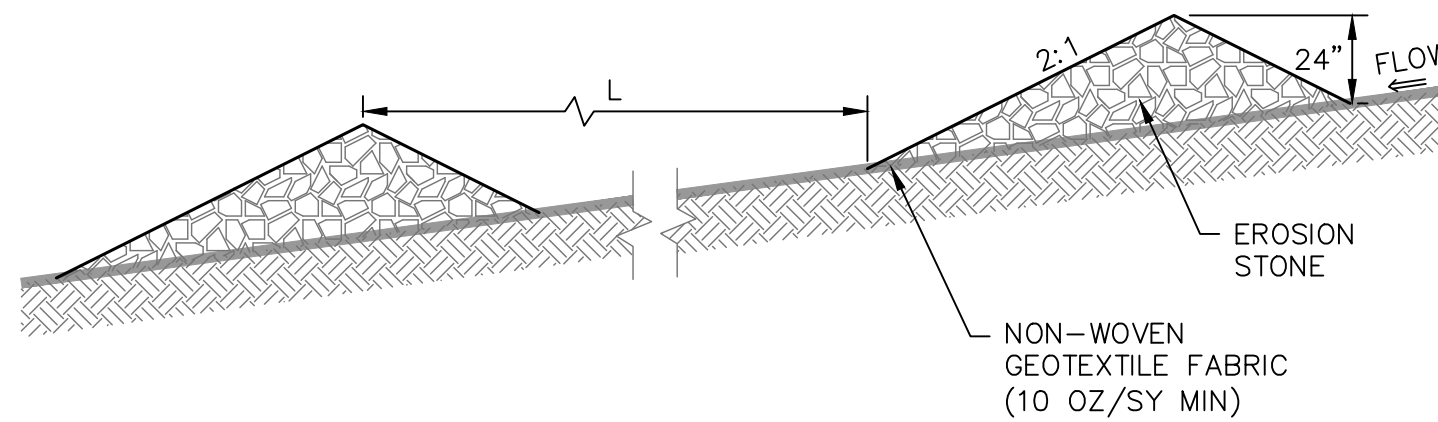
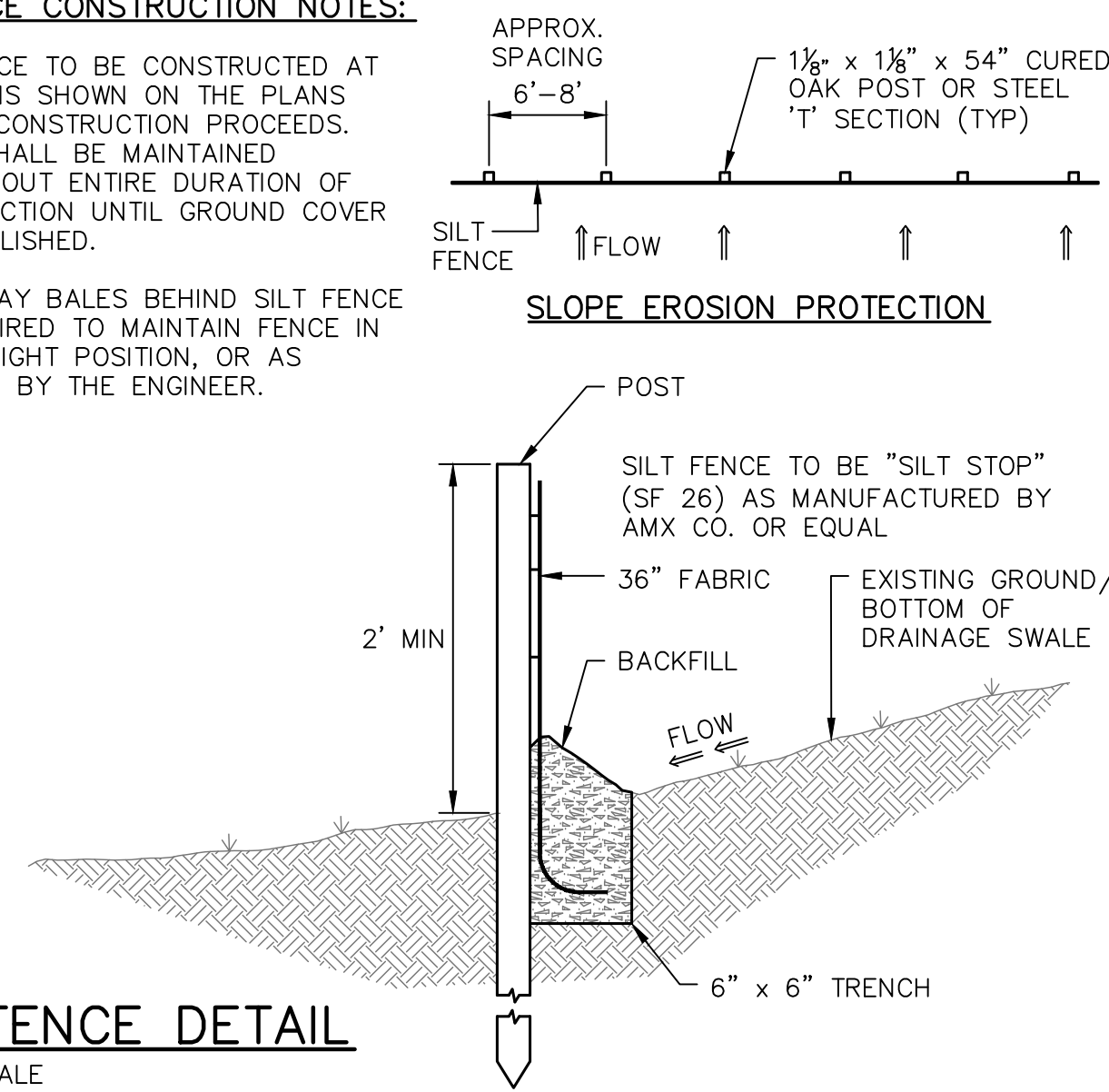
DWG NO	SHEET
D6	15 OF 17

**STORMWATER MANAGEMENT, EROSION & SEDIMENT CONTROL NOTES:**

- THE CONTRACTOR MUST SUBMIT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) TO THE OWNER AND A NOTICE OF INTENT (NOI) TO THE USEPA REGION ONE FOR CONSTRUCTION ACTIVITY IF GREATER THAN 1 ACRE IS DISTURBED AT ANY TIME. THE SWPPP IS TO BE PREPARED IN ACCORDANCE WITH USEPA REQUIREMENTS.
- THE CONTRACTOR SHALL SUBMIT, FOR REVIEW AND APPROVAL, A SCHEDULE TO INCLUDE ALL EARTHWORK ACTIVITIES.
- EXCAVATION AND EARTHWORK SHALL BE CONDUCTED IN A MANNER THAT WILL MINIMIZE EFFECTS OF EROSION THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR SHALL, TO THE EXTENT POSSIBLE, PHASE EARTHWORK ACTIVITIES SO THAT THE SMALLEST PRACTICAL LAND AREA IS EXPOSED AT ANY GIVEN TIME, FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
- THE CONTRACTOR SHALL LOAM, SEED, AND MULCH ALL CUT SLOPES IMMEDIATELY FOLLOWING FINAL GRADING. TEMPORARY SEEDING AND MULCH SHALL BE APPLIED AT ALL UNVEGETATED AREAS THAT WILL BE EXPOSED FOR A PERIOD EXCEEDING TWENTY (20) DAYS. AREAS TO BE SEEDDED SHALL BE ROUGH GRADED AND COVERED WITH LOAM 4 INCHES DEEP AFTER LIGHT ROLLING AND CONFORMING WITH EXISTING LINE AND GRADES.
- SHALLOW SLOPES (SHALLOWER THAN 3:1) NOT SHOWN TO BE OTHERWISE COVERED SHALL BE SEEDDED WITH PARK MIXTURE, SECTION 02935.
- STEEP SLOPES (STEEPER THAN 3:1) NOT SHOWN TO BE OTHERWISE COVERED SHALL BE EITHER SODDED OR SEEDDED WITH A SLOPE MIXTURE, SECTION 02935. AFTER SEEDING, STEEP SLOPES SHALL BE MULCHED WITH EXCELSIOR OR EQUAL AND A CHEMICAL TACKIFIER SHALL BE APPLIED TO ALL SIDE SLOPES STEEPER THAN 3:1. RATE OF APPLICATION SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
- HAY BALES, SILT FENCING, AND EROSION STONE SHALL BE INSTALLED WHERE NECESSARY TO MINIMIZE THE EFFECTS OF EROSION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANY ADDITIONAL MEASURES WHICH MAY BE REQUIRED WHERE NECESSARY TO OBTAIN THE OBJECTIVES DESCRIBED HEREIN. ALL WORK SHALL BE COMPLETED IN CONFORMANCE WITH THE LATEST EDITION OF "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". PREVENT THE DEGRADATION OF DOWNSTREAM PROPERTIES AND DRAINAGE.
- DRAINAGE SWALES SHALL BE MONITORED AND MAINTAINED THROUGHOUT CONSTRUCTION. SILT SHALL BE PERIODICALLY REMOVED FROM SWALES AS NECESSARY TO PREVENT MIGRATION.
- HAY BALE BARRIERS SHALL BE INSTALLED ALONG SWALES AT 100 FOOT INTERVALS, AROUND CATCH BASINS, AND AT ALL AREAS WHERE STORMWATER OR TRENCHWATER IS CONCENTRATED.
- HAY BALE BARRIERS AND SEDIMENT TRAPS ARE TO BE MAINTAINED AND KEPT CLEAN UNTIL ALL EXPOSED AREAS HAVE A HEALTHY STAND OF GROUND COVER, AT WHICH TIME TEMPORARY MEASURES ARE TO BE REMOVED. CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF TEMPORARY MATERIALS REMOVED AND SILT.
- DISTURBED AREAS SHALL BE LOAMED AND SEEDDED. MINIMUM DEPTH OF LOAM SHALL BE FOUR (4) INCHES.
- PROVIDE SEED (PARK MIXTURE), LIME, FERTILIZER, AND MULCH PER SECTION 644 OF THE SPECIFICATIONS.

**SILT FENCE CONSTRUCTION NOTES:**

- SILT FENCE TO BE CONSTRUCTED AT LOCATIONS SHOWN ON THE PLANS BEFORE CONSTRUCTION PROCEEDS. FENCE SHALL BE MAINTAINED THROUGHOUT ENTIRE DURATION OF CONSTRUCTION UNTIL GROUND COVER IS ESTABLISHED.
- PLACE HAY BALES BEHIND SILT FENCE AS REQUIRED TO MAINTAIN FENCE IN AND UPRIGHT POSITION, OR AS DIRECTED BY THE ENGINEER.



- NOTES:**
- INSTALL TEMPORARY STONE CHECK DAMS IN UNSTABILIZED DITCHES AND SWALES.
  - SPACE CHECK DAMS SUCH THAT LENGTH (L) SPANS THE DISTANCE FOR WHICH THE BASE (TOE) UPSTREAM DAM IS EQUAL TO THE PEAK ELEVATION OF THE DOWN STREAM DAM OR A MINIMUM OF 50'.

**TEMPORARY STONE CHECK DAM**

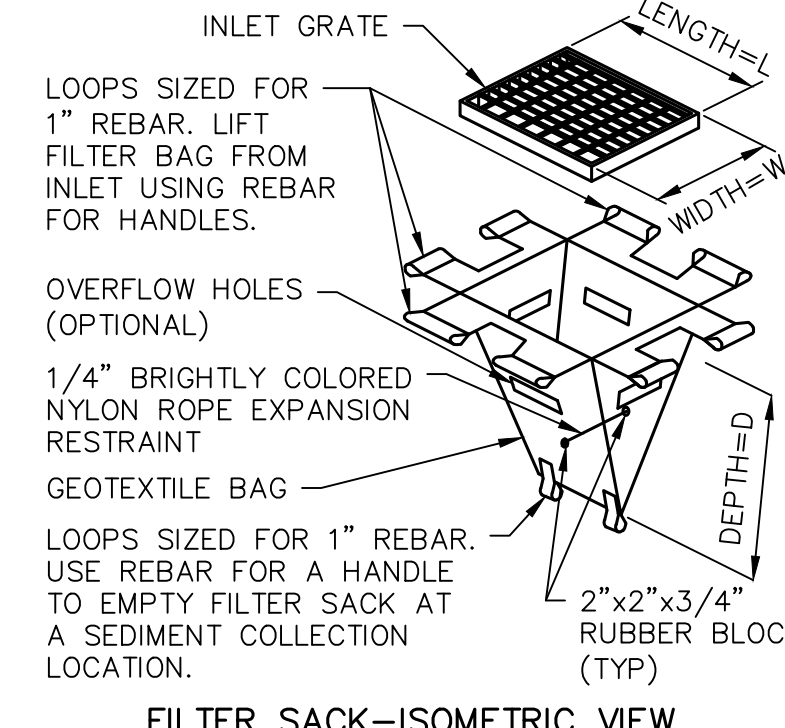
NOT TO SCALE

**SILT FENCE DETAIL**

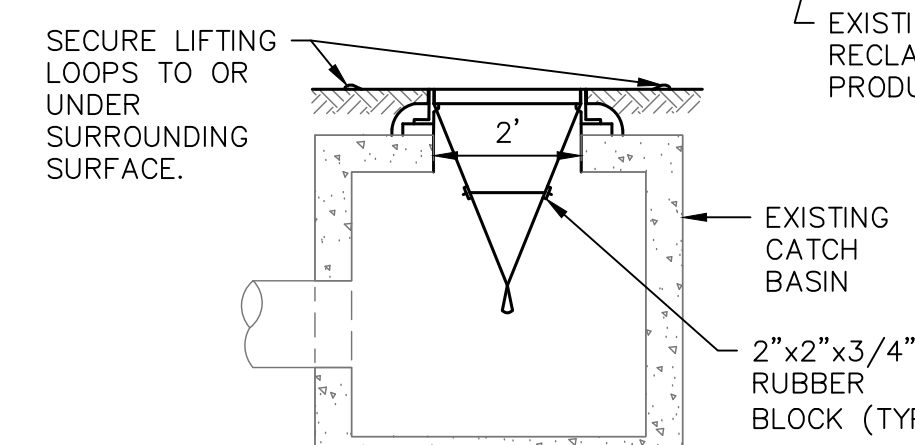
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**NOTES:**

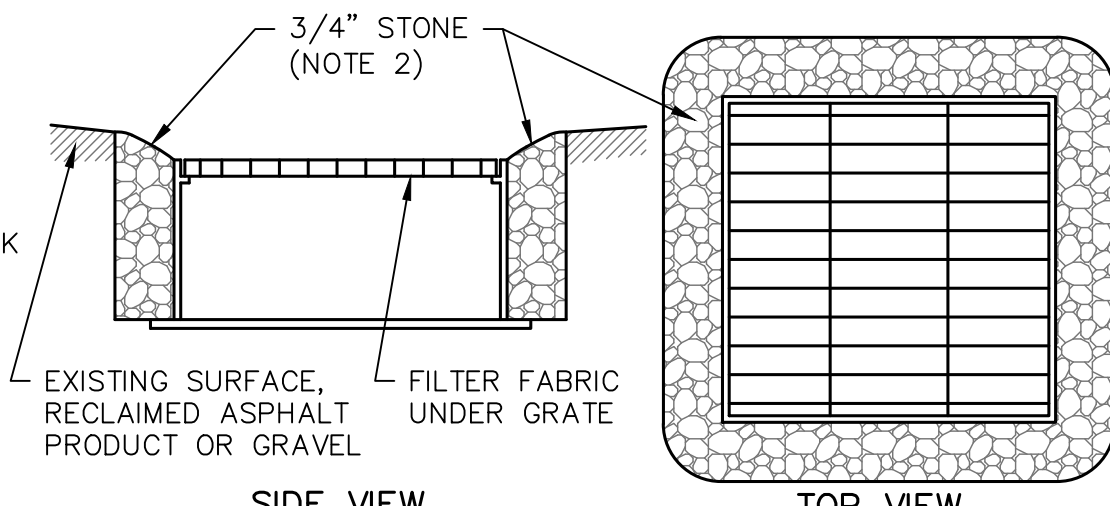
- ACCEPTED MANUFACTURERS:
  - "SILT SACK" INLET SEDIMENT CONTROL DEVICE BY "ACF ENVIRONMENTAL, INC" 2831 CARDWELL RD., RICHMOND VA 23234, (800)448-3636
  - "DANDY SACK" BY "DANDY PRODUCTS, INC.", P.O. BOX 1980, WESTERVILLE, OH 43086, (800) 591-2284.
- ALTERNATIVE CATCH BASIN INLET PROTECTION MEASURES MAY INCLUDE THE NHDES "BLOCK AND GRAVEL METHOD" PER THE NH STORMWATER MANUAL (VOL. 3).
- EMPTY FILTER SACK WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
- GEOTEXTILE WILL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
- AN OIL ADSORBENT PAD OR PILLOW CAN BE USED WHEN OIL SPILLS ARE A CONCERN.
- INSPECT PER REGULATORY REQUIREMENTS.
- THE WIDTH, "W", OF THE FILTER SACK WILL MATCH THE INSIDE WIDTH OF THE CATCH BASIN FRAME.
- THE DEPTH, "D", OF THE FILTER SACK WILL BE BETWEEN 18 INCHES AND 36 INCHES.
- THE LENGTH, "L", OF THE FILTER SACK WILL MATCH THE INSIDE LENGTH OF THE CATCH BASIN FRAME.



**INSTALL-CROSS-SECTION VIEW**



TYPE HF MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE SIZE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC - 1



**CATCH BASIN PROTECTION DETAIL**

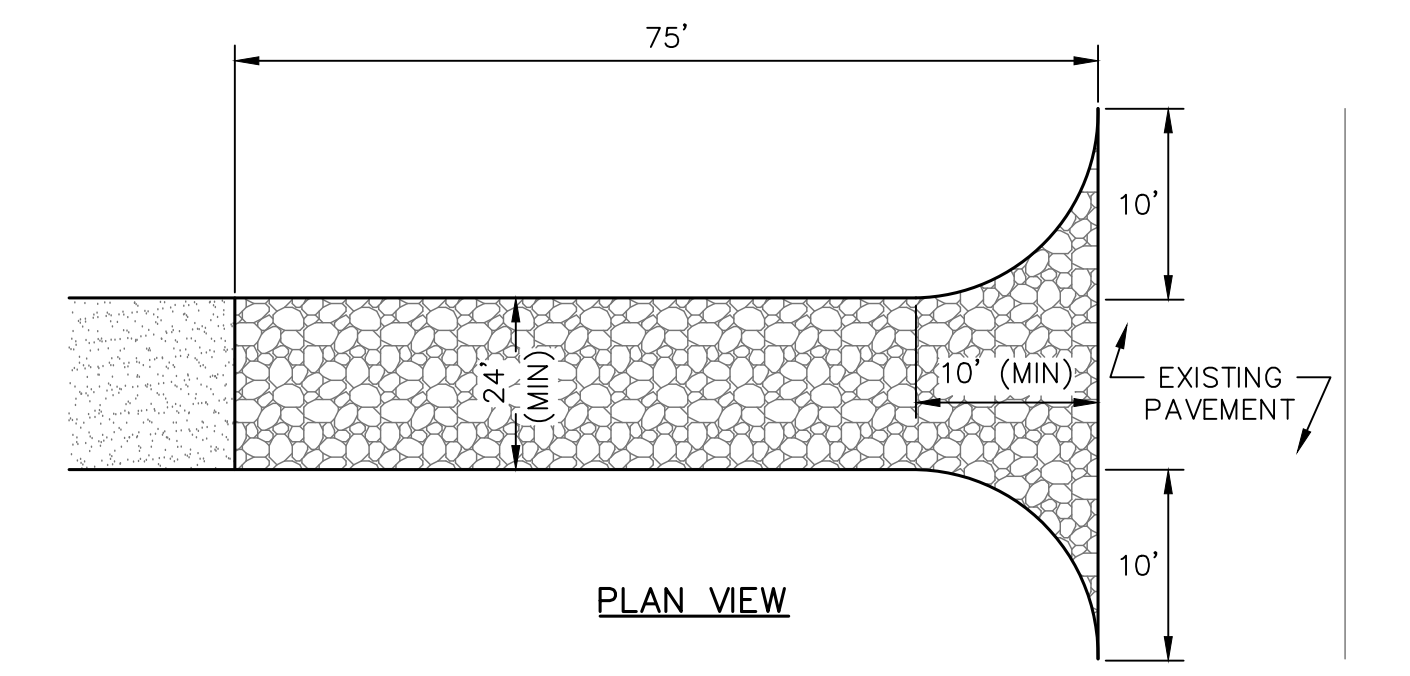
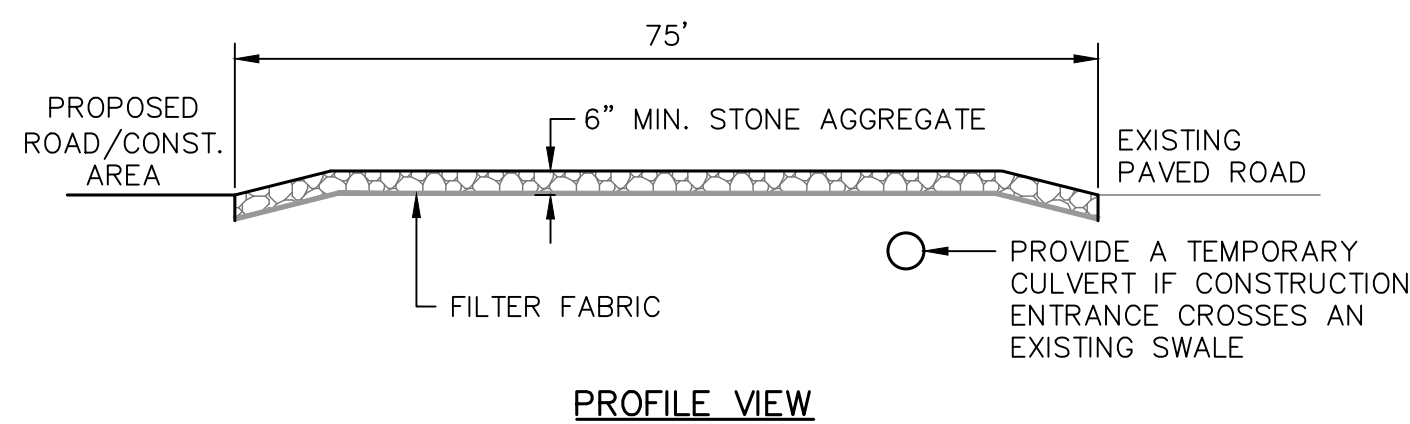
- NOTES:**
- INSPECT AND MAINTAIN STONE & FILTER FABRIC AFTER 1/2" RAIN EVENT OR WEEKLY
  - WHEN EXISTING CATCH BASIN IS NOT BEING MODIFIED (RAISED, LOWERED, ETC.), CONSTRUCT 4" HIGH x 6" WIDE STONE BERM AROUND PERIMETER OF GRATE.

**CATCH BASIN INLET FILTER**

NOT TO SCALE

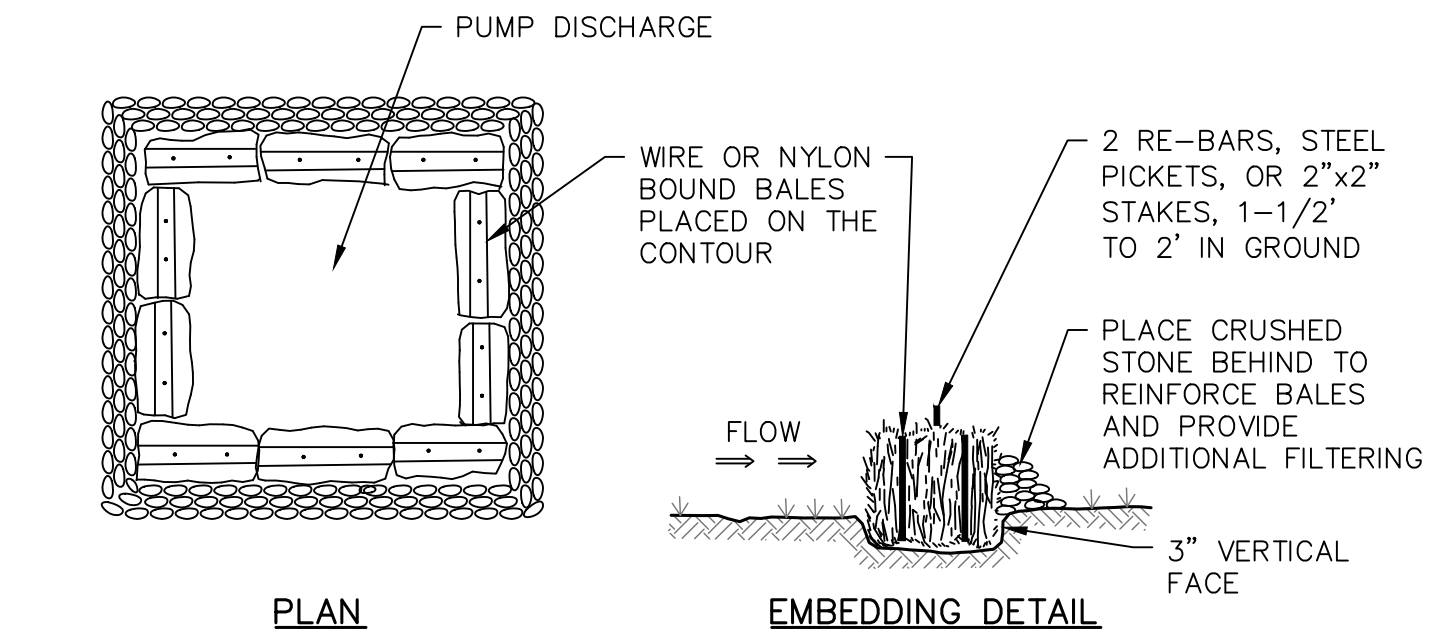
**STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS:**

- THE TEMPORARY STABILIZED CONSTRUCTION ENTRANCE SHALL CONSIST OF PLACING 1"-2" STONE, RECLAIMED STONE OR RECYCLED CONCRETE EQUIVALENT, AT THE LOCATION WHERE CONSTRUCTION VEHICLES EXIT THE SITE IN ORDER TO MINIMIZE MIGRATION OF DIRT ONTO THE ADJOINING PAVED ROADS.
- STONE SHALL BE 1" TO 2" FRACTURED ROCK.
- STONE SHALL BE PLACED OVER GEOTEXTILE FABRIC.
- THE MINIMUM STONE DEPTH SHALL BE 6 INCHES.
- THE MIN. DIMENSIONS OF THE STABILIZED ENTRANCE SHALL BE 24 FEET WIDE BY 75 FEET LONG.
- SURFACE WATER RUNOFF FROM THE PAVED ROAD SHALL NOT BE PERMITTED TO COME IN CONTACT WITH THE STONE ENTRANCE. USE A CROSS CULVERT UNDER THE NEW ENTRANCE OR CONSTRUCT A BERM ALONG THE EDGE OF EXISTING PAVEMENT TO DIVERT WATER AWAY FROM THE STONE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC ROADWAYS. TOP DRESS OR REPLACE STONE AS NEEDED. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS SHALL BE IMMEDIATELY REMOVED.
- THE ENTRANCE SHALL BE MAINTAINED UNTIL THE SITE CONDITIONS WARRANT ITS REMOVAL.



**STABILIZED CONSTRUCTION ENTRANCE**

NOT TO SCALE

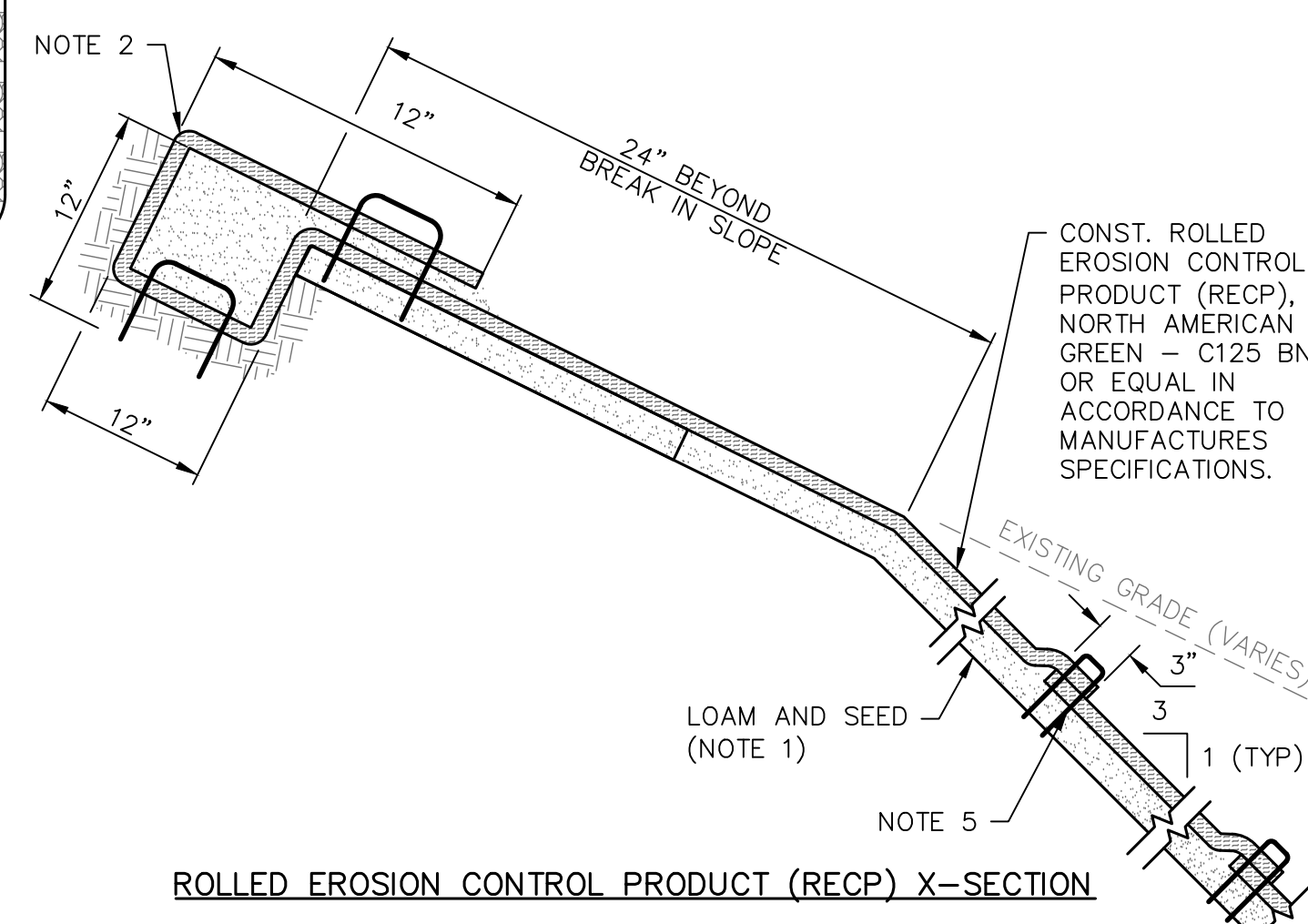
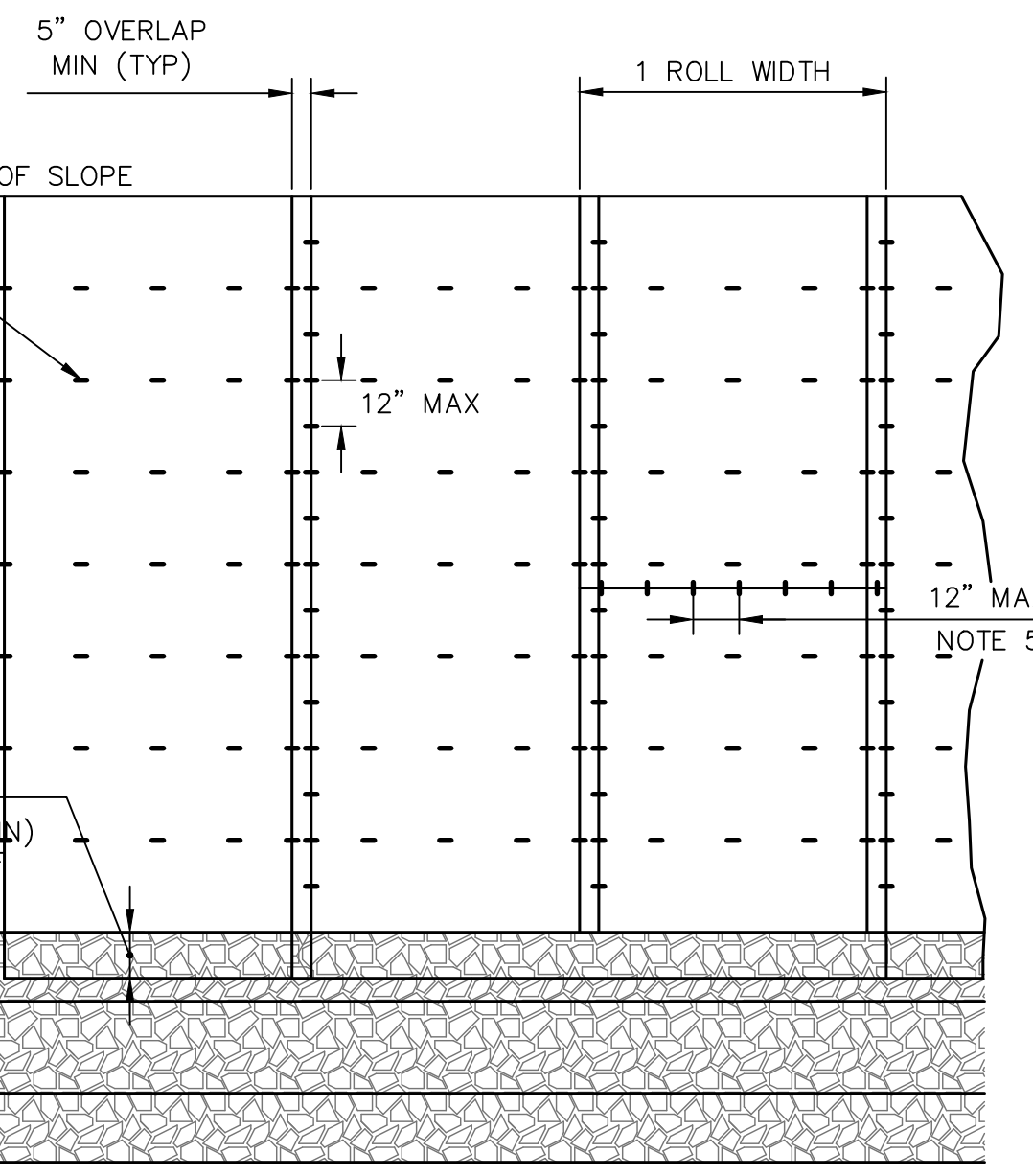
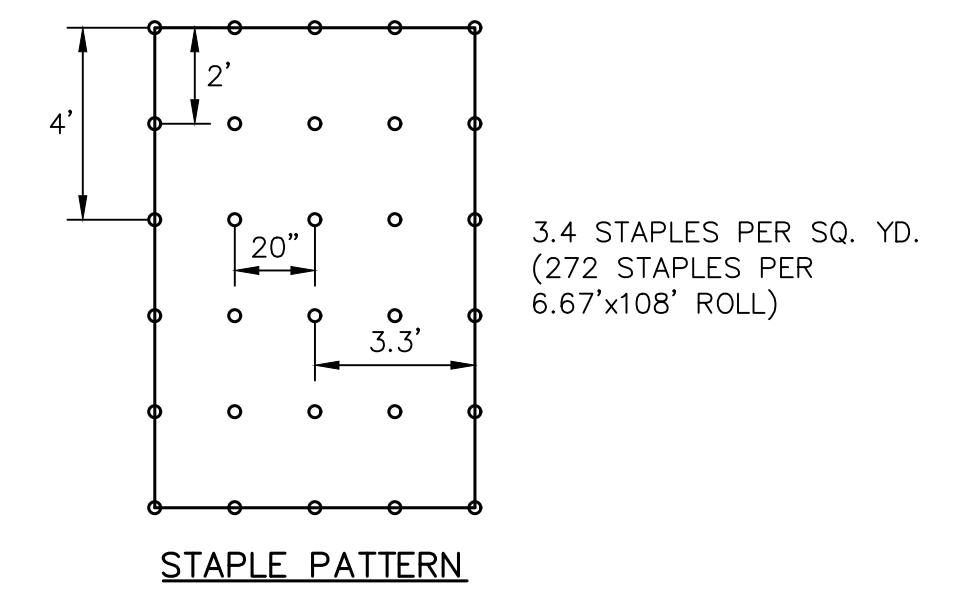


**HAY BALE BARRIER CONSTRUCTION SPECIFICATIONS:**

- BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY BUTTED.
- EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 3".
- BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
- INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

**PUMP DISCHARGE SEDIMENT TRAP**

NOT TO SCALE



**INSTALLATION NOTES:**

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6" DEEP x 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPs EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECPs BACK OVER SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPs.
- ROLL THE RECPs DOWN OR HORIZONTALLY ACROSS THE SLOPE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN DIAGRAM.
- THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH APPROXIMATELY 5" OVERLAP.
- CONSECUTIVE RECPs SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPs WIDTH.
- INSTALL RECPs WHERE FINISH GRADE EXCEEDS 3 HORIZONTAL:1 VERTICAL.

**SLOPE STABILIZATION DETAIL**

NOT TO SCALE

ISSUE FOR	By	Date	REVISIONS
BIDDING			
CONSTRUCTION			
RECORD DRAWING			
			APP'D
Drawn/Chk.	RMG		
Designed	PDM		
Checked			
Approved		APRIL 2024	
Book No.	2552		
Project No.	2552		
Dwg. ID	252.detailed		
Scale			
25 Vaughan Mall, Portsmouth, N.H. 03801 Tel. 603-436-6192 Fax. 603-431-4733			
<b>EROSION &amp; SEDIMENT CONTROL DETAILS</b>			
<b>MAPLEWOOD AVE DRAINAGE IMPROVEMENTS</b>			
<b>CITY OF PORTSMOUTH</b>			
<b>PORTSMOUTH, NEW HAMPSHIRE</b>			
DWG NO	D7	SHEET	16 OF 17







# Findings of Fact | Site Plan Review

## City of Portsmouth Planning Board

Date: 5-8-2024

Property Address: 15 Middle St

Application #: LU-24-35

Decision:  Approve     Deny     Approve with Conditions

### Findings of Fact:

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

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

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
1	Compliance with all City Ordinances and Codes and these regulations. <u>Applicable standards:</u>	Meets  Does Not Meet	<u>Applicable standards:</u> Site Plan Review Regulations.
2	Provision for the safe development, change or expansion of use of the site.	Meets  Does Not Meet	The site is fully developed, and all improvements to the subject mixed-use building have been completed except for the finishing of three (3) apartment units on the 3 <sup>rd</sup> floor. The 3 <sup>rd</sup> Floor of the subject building is partially complete according to an agreement entered into with the City prior to construction. Site plan review is required for the completion of the three (3) apartment units. Site plan review is not required for the rest of the site.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>3</b>	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	<b>Meets</b> <b>Does Not Meet</b>	N/A. No site work is proposed.
<b>4</b>	Adequate protection for the quality of groundwater.	<b>Meets</b> <b>Does Not Meet</b>	N/A. No site work is proposed.
<b>5</b>	Adequate and reliable water supply sources.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed. The site is serviced by public water.
<b>6</b>	Adequate and reliable sewage disposal facilities, lines, and connections.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed. The site is serviced by public sewer.
<b>7</b>	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	<b>Meets</b> <b>Does Not Meet</b>	N/A. No site work is proposed. The site was previously developed and all construction in the building is complete, except for the finishing of the 3 <sup>rd</sup> floor apartment units.
<b>8</b>	Adequate provision for fire safety, prevention and control.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed. A sprinkler line exists connecting the City water line and the building.
<b>9</b>	Adequate protection of natural features such as, but not limited to, wetlands.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed. There are no sensitive natural resources in the vicinity of the site.
<b>10</b>	Adequate protection of historical features on the site.	<b>Meets</b> <b>Does Not Meet</b>	The only work to be performed is the finishing of three (3) separate apartment units on the 3 <sup>rd</sup> floor of the subject building.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>11</b>	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed.
<b>12</b>	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed.
<b>13</b>	Adequate insulation from external noise sources.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed.
<b>14</b>	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed.
<b>15</b>	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed. The site is a densely developed lot with no usable "open space" or opportunity for recreational facilities.
<b>16</b>	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	<b>Meets</b> <b>Does Not Meet</b>	N/A. No site work is proposed.
<b>17</b>	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	<b>Meets</b> <b>Does Not Meet</b>	N/A. No site work is proposed.



	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>18</b>	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	<b>Meets</b> <b>Does Not Meet</b>	No site work is proposed. The site is densely developed and has no usable open space.
<b>19</b>	Compliance with applicable City approved design standards.	<b>Meets</b> <b>Does Not Meet</b>	The site has been designed in compliance with City design standards. Site plan review is only required as a formality, as all site improvements are complete and have been inspected except for the finish work pertaining to the three (3) 3 <sup>rd</sup> floor apartment units.
	<b>Other Board Findings:</b>		

DRAFT

**Ross Engineering, LLC**  
**Civil / Structural Engineering**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

**15 Middle Street**  
**Project Description**



We are requesting site plan approval for the proposed third floor apartments at 15 Middle Street.

This structure was built in 1865 as a church, and was The Salvation Army since 1966. It has recently been renovated to house The Hotel Thaxter, and the restaurant Nichinan. As part of the city agreement of 2020, site review approval is required for the final phase of this project to allow third floor apartments. We have attended a TAC work-session and meeting, and have included the three items listed on TAC's conditions of approval. No site improvements are proposed.

Thank you. Sincerely,

Alex Ross, P.E.

**15 Middle St**  
**Description of Sustainable Green Practices**  
**For the final phase (interior fit out of (3) Attic Apartments) of the adaptive re-use of the Historic Building (Church)**

- The most significant “sustainable” practice associated with this project is it’s preservation and adaptive re-use of the underutilized 1865 Church Building to a (15) Room Inn, Restaurant and Apartments (this phase). The elements of this approach are already in place as part of the first phase of this remodel/restoration.
- The highest standard of insulation has been employed to maximize energy efficiency and minimize the energy requirements, while preserving and structurally supporting the original elements of the building. This has been achieved using closed cell polyurethane foam within the wall and roof cavities. The quality of the Thermal Enclosure will be assured through the use of High-Performance Windows (Green Mountain Windows, Milestone Series), Quality Installed Insulation (Closed Cell spray foam), Fully-Aligned Air Barriers (spray foam) and Air Sealing (spray foam and thorough caulking).
- HVAC efficiencies will be achieved using Air Source Heat Pumps (Mitsubishi Multizone Ductless Hyper Heat Pumps). Heat Recovery Ventilation systems will be installed to each unit.
- LED energy efficient lighting will be used throughout.
- Water saving appliances will be used where possible, i.e., Front Loading Washers.



## **AGREEMENT**

**15 Middle Street Real Estate Holding Company, LLC**, a Limited Liability organized under the laws of the State of New Hampshire, with a principal place of business of 1 Middle Street, STE 1, Portsmouth, New Hampshire 03801 (“Grantor”) and the **City of Portsmouth**, a municipal corporation organized under the laws of New Hampshire, having a place of business at 1 Junkins Avenue, Portsmouth, New Hampshire 03801 (“Grantee”), hereby enter into the following agreement pertaining to certain real property located at 15 Middle Street, City of Portsmouth, County of Rockingham, and State of New Hampshire.

WHEREAS, Grantor is the owner of real property located at 15 Middle Street, Portsmouth, New Hampshire 03801 (the “Property”), by Warranty Deed of the Salvation Army, dated March 3, 2020, and recorded in the Rockingham County Registry of Deeds at Book 6090, Page 920; and

WHEREAS, Grantor is renovating the existing building on the Property to include a fifteen (15) room inn with restaurant space on the first and second floors of the building; and

WHEREAS, the third floor of the building is currently unused attic space; and

WHEREAS, Grantor desires to partially finish the third floor attic space for the purpose of adding dormers, a sprinkler system and insulation so that it may accommodate up to three (3) dwelling units in the future; and

WHEREAS, the Grantor does not intend to finish off or use the third floor attic space; and

WHEREAS, the third floor attic space will remain accessory to the inn/restaurant use of the building on the Property and not be used as living space unless and until all appropriate approvals have been granted by the City of Portsmouth; and

WHEREAS, pursuant to Section 1.2.2(a) of the Portsmouth Site Plan Review Regulations, adopted on December 17, 2009, as amended on September 15, 2016, so long as “there is no increase in building height or gross floor area”, the renovation work proposed by the Grantor is exempt from Site Plan review by the Portsmouth Planning Board; and

WHEREAS, the term “gross floor area” is defined by Section 10.5130 of the Portsmouth

Zoning Ordinance, adopted on December 21, 2009, as amended on December 16, 2019, as follows: "the sum of the areas of the several floors of a building or buildings as measured by the exterior faces of the walls, but excluding the areas of fire escapes, unroofed porches or terraces, and areas such as basements and attics exclusively devoted to uses accessory to the operation of the building. If the exterior walls are greater than 6 inches thick, then the gross floor area shall be adjusted to a maximum of a 6-inch thick wall"; and

WHEREAS, Grantor acknowledges and understands that it must obtain Site Plan approval from the Portsmouth Planning Board before the third floor attic space is finished off and occupied for any purpose that is not accessory to the primary use of the building as an inn/restaurant space, failing which the Grantor will be in violation of the City's Site Plan Review Regulations and subject to enforcement action, including revocation of the Grantor's occupancy permit and/or restoration of any improvements made to the building in derogation of the City's ordinances in addition to potential civil penalties, costs and attorney fees; and

WHEREAS, the City of Portsmouth is relying on the Grantor's representations above in allowing it to proceed with its current renovation plans without Site Plan Review from the Portsmouth Planning Board; and

WHEREAS, said renovation plans are contained in a Plan Set prepared by JSN Associates LLC on file with the City of Portsmouth Planning Department entitled, "Conversion of Salvation Army Building to 15 Room Inn 5 Middle Street, Portsmouth, NH, dated 8/26/2020

NOW THEREFORE, in consideration for the mutual covenants contained herein, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. The representations made by the Grantor above are hereby incorporated by reference as if fully stated herein.

2. The Grantor may proceed with its renovation plans for the third floor of the building on the Property so long as it does not allow said space to be utilized for any purpose that would *not* be considered accessory to the primary use of the remainder of the building as inn/restaurant space in the absence of having obtained the required approvals, failing which the Grantor shall be in violation of the Portsmouth Site Plan Review Regulations.

3. This Agreement shall be binding upon and inure to the benefit of the Grantor and Grantee and their heirs, successors and assigns.

Executed this 6<sup>th</sup> day of November 2020.

15 Middle Street Real Estate Holding Company, LLC

By:

  
Name: James McSharry, Member

Duly Authorized

COUNTY OF ROCKINGHAM

The above-named James McSharry, personally appeared before me this 6<sup>th</sup> day of November 2020 in his capacity as a member of 15 Middle Street Real Estate Holding Company, LLC, duly authorized to execute this instrument, and acknowledged the foregoing to be his free act and deed in his said capacity and the free act and deed of 15 Middle Street Real Estate Holding Company LLC.



*[Handwritten Signature]*

Notary Public/Justice of the Peace: \_\_\_\_\_

My Commission Expires: 5/20/25

Executed this 6<sup>th</sup> day of November     2020.

City of Portsmouth

By: *[Handwritten Signature]*  
Name: Juliet Walker, Planning Director

Duly Authorized

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

The above-named Juliet Walker, personally appeared before me this 6<sup>th</sup> day of November 2020 in her capacity as Planning Director of the City of Portsmouth, duly authorized to execute this instrument, and acknowledged the foregoing to be her free act and deed in her said capacity and the free act and deed of the City of Portsmouth.

\_\_\_\_\_  
Notary Public/Justice of the Peace: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_



**Ross Engineering**  
**Civil/Structural Engineering & Surveying**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

April 23, 2024

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

**Waiver Request Letter**

Re: 15 Middle St  
Tax Map 126, Lot 12  
Portsmouth, NH

Dear chairman and Board Members:

We are requesting waivers to the Site Plan Review Regulations listed below, due to the fact that there is no proposed site work in this application.

**1) 2.5.3.1B Green Building Components:**

There is no proposed site work or proposed building. 3<sup>rd</sup> Floor apartments have been started, and as per agreement with the city, this request is to finish construction of the apartments and to get a certificate of occupancy.

**2) 2.5.4.3 (J-M)**

There is no site work proposed in this application. Lighting, landscaping, elevations, and open space will remain the same.

**3) 2.12 Site Plan Review Agreement**

A waiver is requested for site review agreement and associated surety. There is no site work proposed in this application.

**4) 3.2.1-1 Traffic Impact Study:**

There is no site work proposed in this application.

**5) 7.1 Low Impact Development Design:**

There is no site work proposed in this application.

**6) 7.4 Stormwater Management and Erosion Control Plan:**

There is no site work proposed in this application.

**7) 7.6. Post-Construction Stormwater Management Design Standards:**

There is no site work proposed in this application.

**8) 10.1 Dark Sky Outdoor Lighting:**

There is no site work proposed in this application.

Thank you for your consideration of this matter.

Sincerely,  
Alex Ross, P.E., LLS

March 4, 2024

City of Portsmouth  
Attn: Peter Stith, Planner  
Planning Board  
1 Junkins Avenue  
Portsmouth, NH 03801

**RE: 3 Proposed Apartment Units (Third Floor)**  
**Owner: 15 Middle Street Real Estate Holding Co., LLC**  
**Property: 15 Middle Street, Portsmouth, Tax Map 126, Lot 12**

Dear Peter,

This office represents 15 Middle Street Real Estate Holding Co., LLC, owner of the property located at 15 Middle Street, Portsmouth (the “Property”). This letter is meant to accompany the site plan review application and plan set being submitted by Ross Engineering, Inc. for the Property. Given the unique circumstances surrounding the property, I thought it would be helpful to provide a background behind the current request for site plan approval.

A portion of the first floor and the entire second floor consist of Hotel Thaxter, a 15-room Inn. The other portion of the first floor that is not occupied by Hotel Thaxter is occupied by the Restaurant, Nichinan. The third floor of the building is not presently utilized but is partially finished. In 2020, the determination was made by the City Planning Department that the construction of the Inn and Restaurant on the first two floors of the building was exempt from site plan review under Section 1.2.2 of the Site Plan Review Regulations because there was no increase in building height or gross floor area proposed. In addition, because the Property is located within the Downtown Overlay District, the Inn and Restaurant uses were exempt from the parking standards set forth in Section 10.1115.21 of the Zoning Ordinance.

A building permit (BLDG-20-184) was issued for the build-out of the first two floors of the building, and to allow for the partial finishing of the third floor so that it could be used for accessory purposes to the Restaurant and Inn. **Exhibit A**. Subsequent occupancy permits were issued by the City thereafter. **Exhibits B and C**. It was acknowledged at the time that all relevant permits were applied for the initial construction that the intent was to finish off and construct three (3) separate dwelling units on the third floor of the building. However, due to the structure of the construction financing, and for other reasons, the owner was unable to construct the 3 apartments at the same time as the Inn and Restaurant. As a result, an agreement was entered into between the City and the Owner of the property acknowledging that the future construction of the apartments would trigger site plan review. Accordingly, the Owner is submitting the foregoing site plan review application to approve the 3-unit use of the third floor.

The building on the Property has already been fully renovated, inspected and approved by the City. The framing, electrical, insulation and related improvements to the third floor are complete. However, the third-floor apartments cannot be finished and used as living space until the City grants site plan approval and those units are inspected in compliance therewith, hence the request for approval. Per Section 10.1112.311 of the Zoning Ordinance, 3.9 parking spaces are required for the apartment units since they are all under 1,500 square feet. This is offset, however, by the 4 parking space credit that applies in the Downtown Overlay District under Section 10.1115.23 of the Ordinance. Therefore, no parking spaces are required for the proposed use of the third floor.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Derek R. Durbin". The signature is fluid and cursive, with a large initial "D" and "R".

Derek R. Durbin, Esq.  
[derek@durbinlawoffices.com](mailto:derek@durbinlawoffices.com)



# Site Review

## 15 Middle Street

### Portsmouth, New Hampshire

#### LIST OF PROJECT PLANS AND DOCUMENTS:

##### SITE PLAN SET

Site Plan 1"=20'  
Site Plan 1"=10'

PREPARED BY:

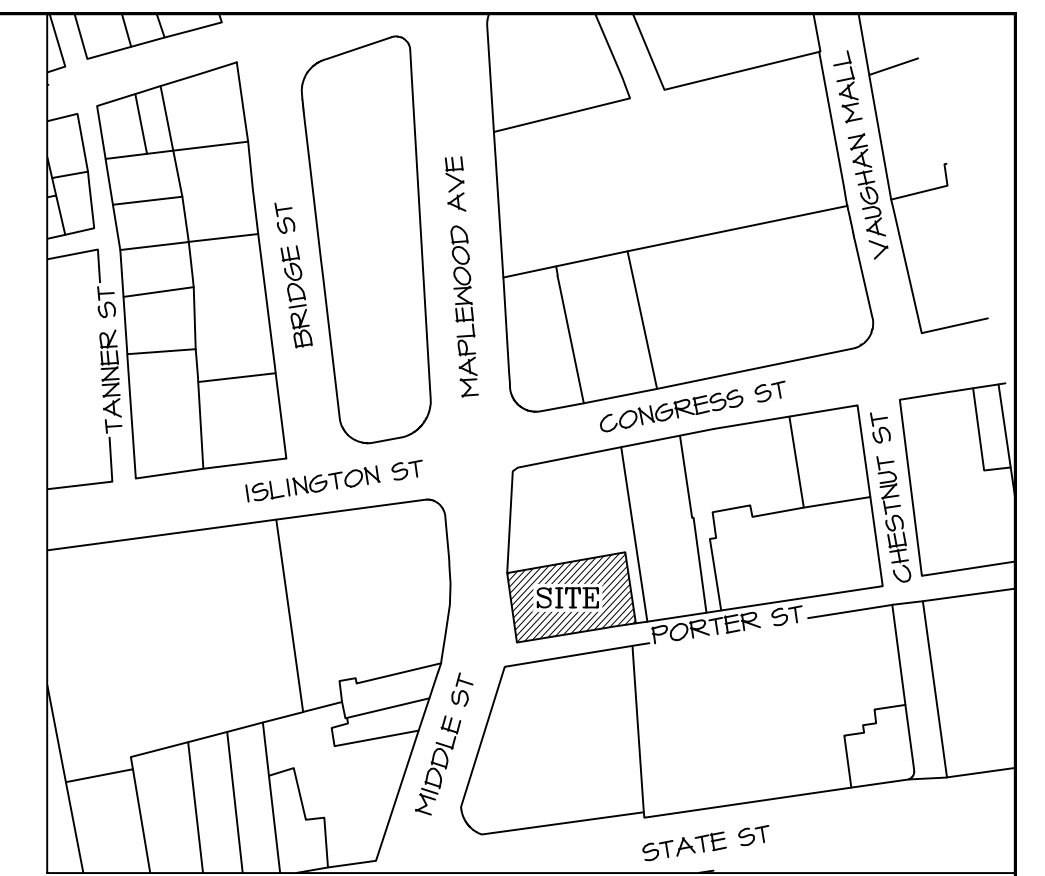
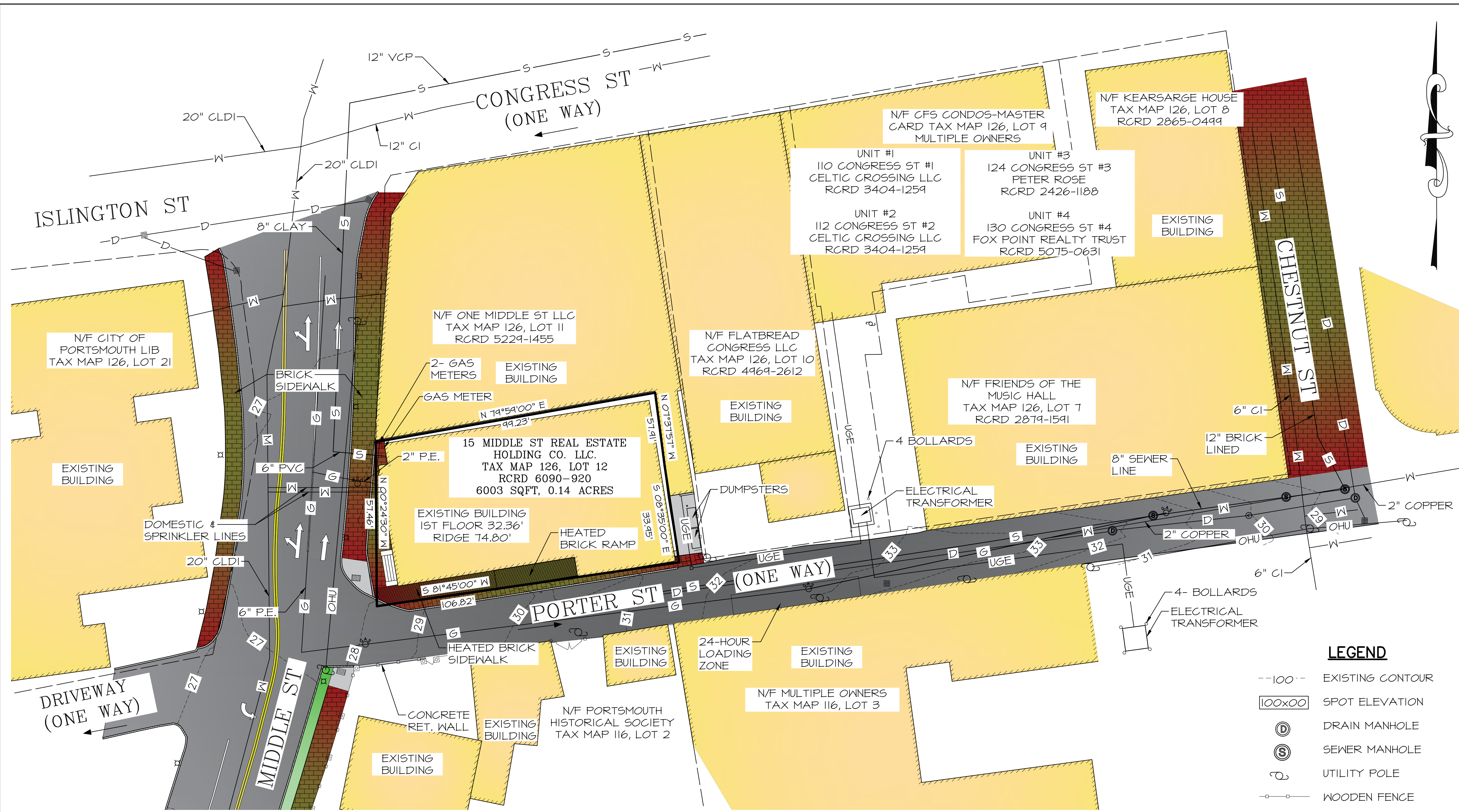
#### ROSS ENGINEERING

Civil/Structural Engineering  
& Surveying

909 Islington St.  
Portsmouth, NH 03801  
(603) 433-7560

April 23, 2024





**LOCUS PLAN  
N.T.S.**

**REFERENCE PLANS**

- 1) "PLAN OF LOT, PORTSMOUTH, N.H. FOR THE SALVATION ARMY" BY JOHN D. DURGIN - CIVIL ENGINEERS. DATED JUNE 1966. NOT RECORDED
- 2) "PLAN OF LAND WILLIAM H. COPELAND & HELEN D. FLYNN" BY FREDERICK E. DREW ASSOCIATES. DATED JULY, 1978. RCRD B-8311
- 3) "SITE PLAN WILLIAM H. COPELAND, HELEN D. FLYNN, HOWARD W. SIBSON" BY FREDERICK E. DREW ASSOCIATES. DATED MAY, 1980 RCRD B-9125.
- 4) "UTILITY EASEMENT PLAN FOR ONE MIDDLE ST, L.L.C. & 15 MIDDLE ST REAL ESTATE HOLDING COMPANY, LLC - 150 CONGRESS ST & 15 MIDDLE ST" BY ROSS ENGINEERING. DATED DECEMBER 26, 2022. RCRD D-43709

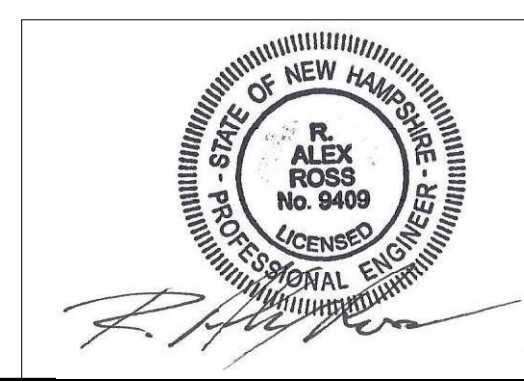
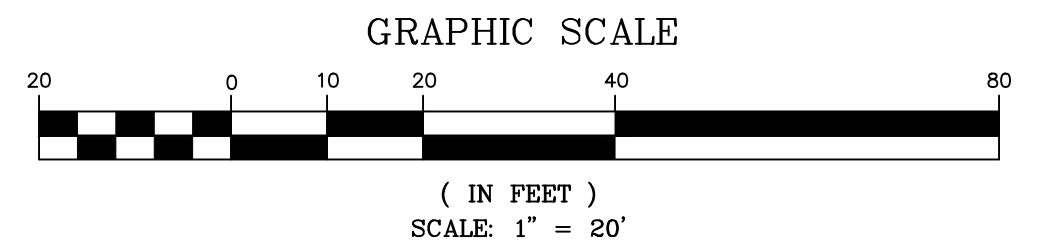
**LEGEND**

- 100-- EXISTING CONTOUR
- 100x00 SPOT ELEVATION
- ⊙ DRAIN MANHOLE
- ⊙ SEWER MANHOLE
- ⊙ UTILITY POLE
- WOODEN FENCE
- VERTICAL GRANITE CURB
- CATCH BASIN
- ⊕ WATER SHUT-OFF
- ⊕ GAS VALVE
- ⊙ LAMP POST
- ⊙ CLEANOUT

**NOTES**

- 1) OWNER OF RECORD:  
15 MIDDLE ST REAL ESTATE HOLDING CO LLC  
TAX MAP 126, LOT 12  
ONE MIDDLE ST SUITE 1  
PORTSMOUTH, NH 03801  
RCRD: 6090-920  
AREA: 6,003 SF, 0.14 ACRES
- 2) BASIS OF BEARING HELD FROM PLAN REFERENCE #2.
- 3) PARCEL IS IN CIVIC CHARACTER DISTRICT 4 (CD4), DOWNTOWN OVERLAY DISTRICT AND HISTORIC DISTRICT:  
SETBACKS:  
FRONT.....0 FT  
SIDE.....0 FT  
REAR.....0 FT
- 4) THE PARCEL IS NOT WITHIN A FEMA FLOOD ZONE, AS PER FLOOD INSURANCE RATE MAP #33015C0259F, PANEL 251 OF 681, DATED JANUARY 29, 2021.
- 5) A DETERMINATION WAS MADE IN 2020 BY THE CITY PLANNING DEPARTMENT THAT THE CONSTRUCTION OF THE INN AND RESTAURANT ON THE FIRST TWO FLOORS WAS EXEMPT FROM SITE PLAN REVIEW UNDER SECTION 10.115.21 OF THE ZONING REGULATIONS DUE TO THERE BEING NO INCREASE IN BUILDING HEIGHT OR GROSS FLOOR AREA PROPOSED. THE PROPERTY IS LOCATED IN THE DOWNTOWN OVERLAY DISTRICT AND IT WAS ALSO DETERMINED THAT THE INN AND RESTAURANT WERE EXEMPT FROM PARKING REQUIREMENTS IN THE SECTION 10.115.21 OF THE ZONING ORDINANCE.
- 6) APARTMENTS ON THE 3RD FLOOR WERE PARTIALLY COMPLETED DURING THE CONSTRUCTION OF THE FIRST TWO FLOORS. AN AGREEMENT WAS ENTERED INTO BETWEEN THE CITY AND THE OWNER ACKNOWLEDGING THAT FUTURE CONSTRUCTION OF THE APARTMENTS ON THE 3RD FLOOR WOULD REQUIRE SITE PLAN REVIEW. THIS SITE PLAN REVIEW IS A RESULT OF THAT AGREEMENT. APPROVAL TO FINISH THE CONSTRUCTION OF THE APARTMENTS AND USE THEM AS LIVING SPACE IS REQUESTED.

- 7) PARKING REQUIREMENTS  
PZO 10.112.311 - DWELLING UNIT FLOOR AREA OVER 750 SF = 1.3 PARKING SPACES PER UNIT  
  
1ST & 2ND FLOOR ARE EXEMPT FROM PARKING REQUIREMENTS AS PER SITE PLAN REVIEW IN 2020  
3RD FLOOR APARTMENTS = 3 UNITS  
  
3 UNITS x 1.3 SPACES PER UNIT = 3.9 SPACES REQUIRED  
  
AS PER SECTION 10.115.23 OF THE PORTSMOUTH ZONING ORDINANCE, ANY LOT IN THE DOWNTOWN OVERLAY DISTRICT THAT WOULD BE REQUIRED TO PROVIDE 4 OR FEWER OFF-STREET PARKING SPACES SHALL NOT BE REQUIRED TO PROVIDE ANY SPACES.
- 8) ALL NECESSARY BUILDING PERMITS MUST BE OBTAINED PRIOR TO THE COMPLETION OF THE 3RD FLOOR APARTMENTS.



3	4/23/2024	PB SUBMITTAL	
2	3/18/2024	TAC SUBMITTAL	
1	3/5/2024	TAC WS SUBMITTAL	
ISS.	DATE	DESCRIPTION OF ISSUE	
SCALE 1" = 20'			
CHECKED A.ROSS			
DRAWN D.D.D.			
CHECKED			
<b>ROSS ENGINEERING</b> Civil/Structural Engineering & Surveying 909 Islington St Portsmouth, NH 03801 (603) 433-7560			
CLIENT JAMES MCSHARRY 58 PLEASANT POINT RD PORTSMOUTH, NH 03801			
<b>SITE PLAN</b>			
15 MIDDLE ST PORTSMOUTH, NH 03801 TAX MAP 126, LOT 12			
JOB NUMBER	DWG. NO.	ISSUE	
19-001	1 OF 2	3	

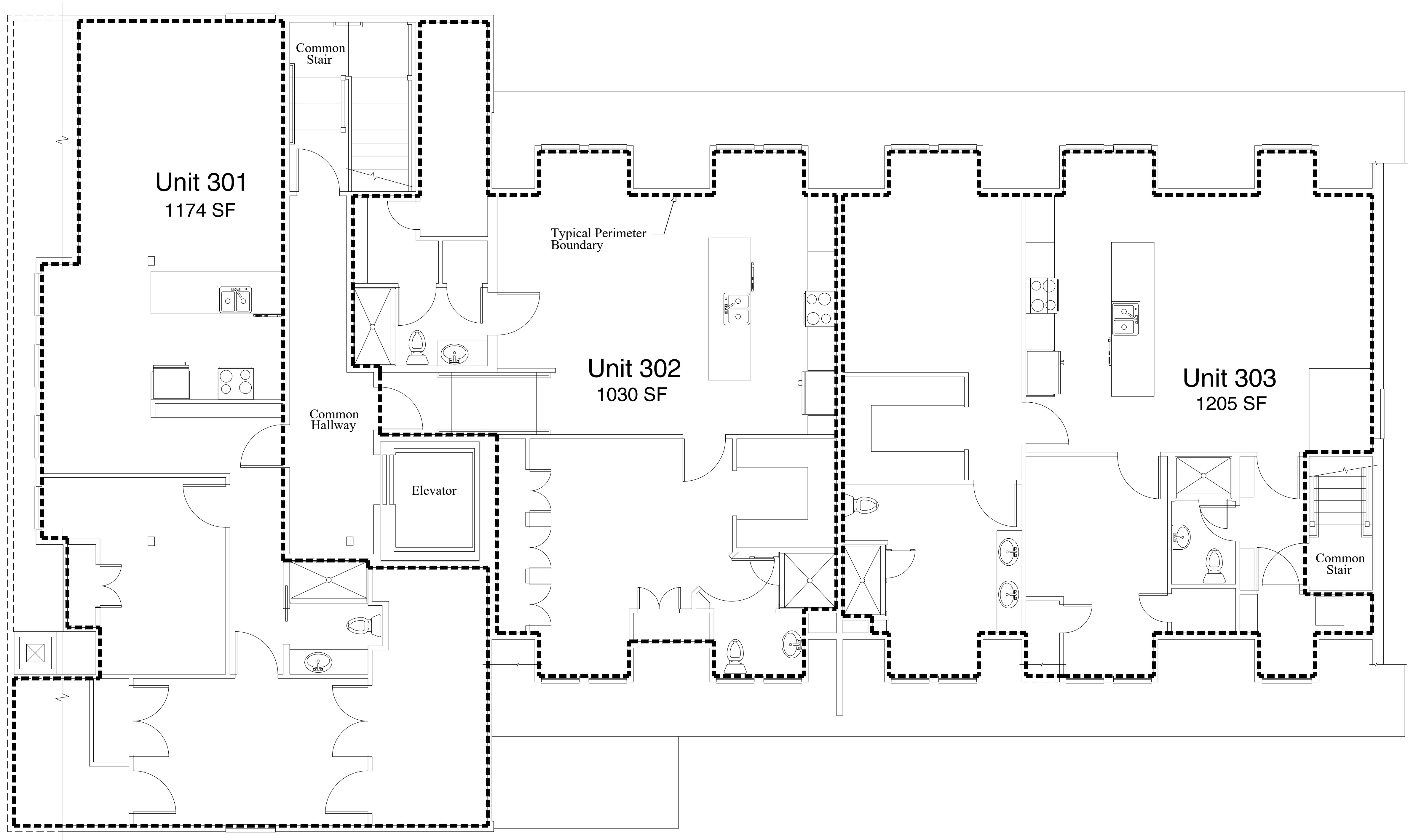






Client:  
 Jay McSharry

**Hotel Thaxter**  
 15 Middle Street  
 Portsmouth, NH



**Attic Floor Plan**

No scale

Note: The perimeter of each unit is taken at inside face of exterior wall stud or demising wall stud, discounting exterior wall thickness, demising wall thickness and common areas such as stairways and hallways.

Date: 12-01-2023  
 Scale: As Noted  
 Design By: RB  
 Approved By: -

Revisions

**Attic Floor Plan**

# Findings of Fact | Site Plan Review

## City of Portsmouth Planning Board

Date: 5-6-2024

Property Address: 822 US Route 1 Bypass

Application #: LU-23-209

Decision:  Approve     Deny     Approve with Conditions

### Findings of Fact:

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

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

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
1	Compliance with all City Ordinances and Codes and these regulations. <u>Applicable standards:</u>	Meets  Does Not Meet	<u>Applicable standards:</u> Site Plan Review Regulations and Zoning Ordinance  Zoning Ordinance Variances granted for parking.
2	Provision for the safe development, change or expansion of use of the site.	Meets  Does Not Meet	The site is a vacant gas station (tanks removed) which attracts illicit activity. Cessation of gas station use and a new active retail use improves safety. The Site Plan Set provides for safe development.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	Meets  Does Not Meet	The site is a previously developed lot off the Route 1 Bypass. The redevelopment includes a grading and drainage plan as well as an Erosion Control Plan. Both plans incorporate maintenance requirements to ensure the systems function as designed. The proposed redevelopment will also decrease impervious coverage and incorporate landscaping.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>4</b>	Adequate protection for the quality of groundwater.	<b>Meets</b> <b>Does Not Meet</b>	Site is fully developed. Impervious coverage is proposed to be reduced. Redevelopment includes an Erosion Control Plan and a Stormwater Management Plan. Proposed Jellyfish filter will provide treatment that does not exist currently.
<b>5</b>	Adequate and reliable water supply sources.	<b>Meets</b> <b>Does Not Meet</b>	Water supplied from existing water line in Dennett St. Applicant to coordinate with Portsmouth DPW to ensure proper connections. A Utility Plan is included in the application.
<b>6</b>	Adequate and reliable sewage disposal facilities, lines, and connections.	<b>Meets</b> <b>Does Not Meet</b>	A sewer line is proposed to connect to an existing sewer manhole. Applicant to coordinate with Portsmouth DPW to ensure proper connections. A Utility Plan is included in the application.
<b>7</b>	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	<b>Meets</b> <b>Does Not Meet</b>	Erosion Control provided and shown in erosion control plan. Drainage, Sewer, Water, Gas, and Electrical to be installed as per Utility Plan so as not to discharge into the environment or adjacent properties.
<b>8</b>	Adequate provision for fire safety, prevention and control.	<b>Meets</b> <b>Does Not Meet</b>	A sprinkler line is proposed to connect to the existing water line in Dennett St. Applicant to coordinate with Portsmouth DPW to ensure proper connections. A Utility Plan is included in the application.
<b>9</b>	Adequate protection of natural features such as, but not limited to, wetlands.	<b>Meets</b> <b>Does Not Meet</b>	Natural features such as wetlands do not exist in close proximity to site. Total impervious coverage is decreased, treatment is provided, and new landscaping is added, benefiting surrounding sites.
<b>10</b>	Adequate protection of historical features on the site.	<b>Meets</b> <b>Does Not Meet</b>	No historical features on the site.



	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>11</b>	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	<b>Meets</b> <b>Does Not Meet</b>	Site was previously a gas station for many years. The new use does not cause a significant change in traffic flow from the site. A waiver has been requested for Section 3.2.1-2 "Traffic Impact Analysis".
<b>12</b>	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	<b>Meets</b> <b>Does Not Meet</b>	New signage proposed that will provide better direction to customers entering and exiting the site. A Utility plan is included in the application depicting the signage.
<b>13</b>	Adequate insulation from external noise sources.	<b>Meets</b> <b>Does Not Meet</b>	Proposed use is retail. This use does not result in adverse noise to surrounding properties.
<b>14</b>	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	<b>Meets</b> <b>Does Not Meet</b>	Dumpster location is shown on the provided Utility Plan to depict solid waste disposal. No new demands for police, emergency medical, or other municipal services is proposed.
<b>15</b>	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	<b>Meets</b> <b>Does Not Meet</b>	New landscape beds are proposed and are depicted on a Landscape Plan provided in this application. No recreational facilities can reasonably be provided on the site.
<b>16</b>	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	<b>Meets</b> <b>Does Not Meet</b>	All access ways are existing. Curbing, paving, signage, and paint markings are proposed which will improve the existing access ways.
<b>17</b>	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	<b>Meets</b> <b>Does Not Meet</b>	Site is fully developed. Building can be constructed without danger to health.
<b>18</b>	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	<b>Meets</b> <b>Does Not Meet</b>	New landscape beds are proposed and are depicted on a Landscape Plan provided in this application.

	<b>Site Plan Review Regulations Section 2.9 Evaluation Criteria</b>	<b>Finding (Meets Standard/Criteria)</b>	<b>Supporting Information</b>
<b>19</b>	Compliance with applicable City approved design standards.	<p style="text-align: center;"><b>Meets</b></p> <p style="text-align: center;"><b>Does Not Meet</b></p>	Application complies with the Site Plan Review Regulations. Waivers are requested for sections of the site plan review regulations not deemed necessary.
	<b>Other Board Findings:</b>		

DRAFT

# ROSS ENGINEERING LLC

Civil/Structural Engineering  
& Surveying

909 Islington St.  
Portsmouth, NH 03801  
(603) 433-7560

DATE: 4-24-24

JOB #: 23-010

## DOCUMENT TRANSMITTAL

TO: City of Portsmouth  
ATTN: Planning Department  
1 Junkins Ave  
Portsmouth, NH 03801

VIA: By Hand

ATTACHED  SENT SEPERATELY  
 COPIES  PRINTS  REPRODUCIBLES  DIGITAL  
EACH OF:  
 DRAWINGS  SPECIFICATIONS  
 DOCUMENTS

### STATUS:

FINAL  
 PRELIMINARY  
 NO COMMENT  
 COMMENTS AS NOTED

APPROVED  
 APPROVED AS NOTED  
 UNACCEPTABLE

### PLEASE NOTE:

REVISIONS  OMISSIONS  
 ADDITIONS  CORRECTIONS  
 COMMENTS

### SENT FOR YOUR:

APPROVAL  COMMENTS  
 USE  INFORMATION  
 FILES

### RE:

Project Location: 822 US Route 1 Bypass  
Portsmouth, NH 03801  
Tax Map 160, Lot 29

Owner: Rigz Enterprises LLC  
18 Dixon Lane  
Derry, NH 03038

Attached please find the following:

1. Project Description
2. TAC Response Letter
3. Tax Map
4. Site Photos
5. Signed Application Checklist
6. Waiver Request Letter
7. Abutter's List
8. Civil Plan set dated 4-24-24 (full size to scale + 11x17 not to scale)
9. Low Impact Design & Green Building Description
10. Stormwater Management Operations & Maintenance Plan
11. Architectural Plan Set
12. Draft Easements

Please call (603-433-7560) if you have any questions.

Thank you,

Alex Ross



**Ross Engineering, LLC**  
**Civil / Structural Engineering**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

**822 US Route 1 Bypass**  
**Project Description**

April 24, 2024

This site review application is for improvements to an existing fully developed site. Tax Map 160, Lot 29 is a 0.68 Acre parcel with access from Burkitt Street, and the northbound side of the Route 1 by-pass. The existing lot includes a vacant gas station building. Per the town files, the existing building was built in 1969. Just this past summer the gas pumps, and tanks were properly removed. The gas pump island roof has been removed, and the building will be removed in the near future.

We were recently before TAC for this site and have added all of their recommendations. The existing City Tobacco store is limited to the small building on Lot 43, so the owner would like to build a larger building on Lot 29, and move the City Tobacco store to the larger building. The owner has a successful chain of stores in many locations, including, Seabrook, Portsmouth, Rochester, Plaistow, and Sanford, Maine. A new 6,010 sf retail building is planned for a “City Tobacco and Beverage” store. A new 6’ wide sidewalk will be installed at the front of the building. Adequate parking will be provided on site. A portion of the existing asphalt driveway will be replaced with landscaping. As a result, there is a decrease in impervious surface. A storm drainage filtration jellyfish will be installed as well to improve water runoff quality.

The storm drainage catch basins and lines are located in an odd configuration with piping going directly under both buildings. We have been working closely with DPW to locate the existing lines and come up with the best solution to install new lines. A utility plan has been prepared to ensure that proper drainage, sewer, water, and electrical connections will be installed. The end result of all the improvements will be a code compliant site that will provide an upgrade to the site utilities including storm drainage/water/sewer/gas/electrical, while also improving landscaping, stormwater runoff, parking, and traffic safety.

Sincerely,

Alex Ross, P.E.

**Ross Engineering**  
**Civil/Structural Engineering & Surveying**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

April 24, 2024

Peter Britz,  
Planning and Sustainability Director  
1 Junkins Ave  
Portsmouth, NH 03801

**RE:** TAC Letter of Decision  
822 US Route 1 Bypass  
Portsmouth, NH 03801  
Tax Map 160, Lot 29

This letter is in response to a letter of decision dated April 9, 2024 with TAC comments for the items to be addressed prior to submission to the Planning Board submission for site plan review at 822 US Route Bypass. The TAC comments are italicized with our comments below in bold.

- 1. All permanent drainage to be installed will need drainage easements from the lots connected.*

**An easement plan has been prepared and submitted, see drawing 6 in the plan set.**

- 2. Meet with DPW to determine hookup fees.*

**The contractor has met with DPW to discuss the hookup fees.**

- 3. Provide an easement plan.*

**An easement plan has been prepared and submitted depicting the access easement across Lot 29 to the benefit of Lot 43 (shown as Easement A) and the Right of Way and Drainage Easements across Lot 29 (shown as Easements B & C).**

- 4. Proposed utilities must be installed in Burkitt Street, not in grass strip.*

**The proposed gas line has been relocated under the pavement in Burkitt St. Sewer and Drainage lines shown under the grass strip are existing utilities. No work is proposed for these lines.**

- 5. Change 6" fire service into a 6" main with flushing hydrant at the end. Connect fire services and domestic services to the new 6" main. Connect 2" service for adjacent property to the 6" main, cut and cap all old services for both properties as necessary at water main on Dennett.*

**A 6" water main has been shown from the Dennett St water main along Burkitt St. A flushing hydrant is proposed to connect to this 6" main through a 6" line. A 1" domestic line and a 6" sprinkler line have been proposed to connect to the #822 building from the new 6" water main.**

**Ross Engineering**  
**Civil/Structural Engineering & Surveying**

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Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

6. *Need for third party oversight of work in City right of way to be determined by Department of Public Works.*

**MAC construction will be doing the work and has done work with the city in the past. Necessary City inspections will be performed, but we do not feel it is necessary to incur the additional cost of third party oversight in this case.**

7. *Burkitt Street shall be milled & overlaid after the conclusion of utility work.*

**Note 6 has been added to General Notes on sheet 4 “Utility Plan” stating the Burkitt Street will be milled & overlaid after conclusion of utility work.**

8. *Dumpsters must be moved 10’ further toward the back of building for sight distance. No manholes shall be covered by the dumpsters.*

**The dumpsters have been moved back towards the back of the building.**

9. *Outline of the roof overhanging the front sidewalk must be shown on plans.*

**The width of the overhang is the same as the width of the sidewalk. The line of the roof overhang is in the same location as the edge of the sidewalk, so the two lines overlap. This is shown on section 2 of drawing 12 “Sidewalk Details”.**

10. *The light pole, LP1, shall be moved closer to the building, away from the stormwater main, and out of DOT right of way.*

**LP1 has been moved out of the DOT right of way and closer to the building to the island next to parking space #12. Lighting fixtures have been revised. LP1 is now called out as 2S4.**

11. *The light pole 2 must be moved closer to parking lot entrance and Route 1 Bypass.*

**LP2 has been shifted closer to the parking lot entrance. Lighting fixtures have been revised. LP2 is now called out as S4.**

12. *A light pole shall be added to the west entrance of parking lot out of DOT right of way.*

**There is an existing light pole located on Tax Map 161, Lot 43 that is at the west entrance of the parking lot. This has been shown on the plan view of sheet 4 “Utility Plan” as Light Pole to be removed. A new light pole is proposed and shown as S4.**

13. *All drain manholes must have inverts.*

**Typical drain manhole detail shown on sheet 10 “Details” has been revised to show a concrete invert.**



**Ross Engineering**  
**Civil/Structural Engineering & Surveying**

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alexross@comcast.net

14. *The Stormwater Management Operations and Maintenance Manual shall include language detailing that an annual report on maintenance operations shall be submitted to the City of Portsmouth Department of Public Works.*

**Item C has been revised in the stormwater management operations and maintenance manual stating that an annual report will be submitted to the City of Portsmouth Department of Public Works.**

15. *Please provide documentation from NHDOT for work to be completed in the NHDOT right of way.*

**Landscaping in the DOT roadway has been removed. A meeting with NHDOT was held, and they would like the catch basin CB3 to be replaced, and the frame and grate of CB5 replaced. NHDOT will be supplying the materials for this. Notes have been added to the Utility Plan calling out these revisions. NHDOT approval is expected soon.**

16. *Site plan amendment for 806 Rt 1 bypass property to show new drain line.*

**A site plan amendment for 806 Rt 1 bypass property will be completed showing the new drain line and lighting.**

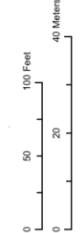
17. *Utility plans need to be updated to show utilities in pavement area of Burkitt St.*

**The proposed gas line has been relocated under the pavement in Burkitt St.**

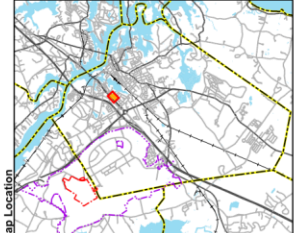
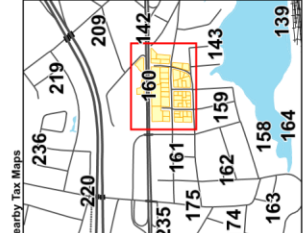
Sincerely,

Alex Ross, P.E.

**Partial Legend**  
 See the cover sheet for the complete legend.  
**Z-5A** Lot or lot/parcel number  
 2.56 ac Parcel area in acres (less or square feet (sf))  
 25 Address number  
 201-17 Parcel number from a neighboring map  
 150' 0" Dimension  
**SIBBS AVE** Street name  
 Parcel/Parcel boundary  
 Parcel/RCM boundary  
 Water boundary  
 Structure (1994 data)  
 Parcel covered by this map  
 Parcel from a neighboring map  
 (see other map for current status)

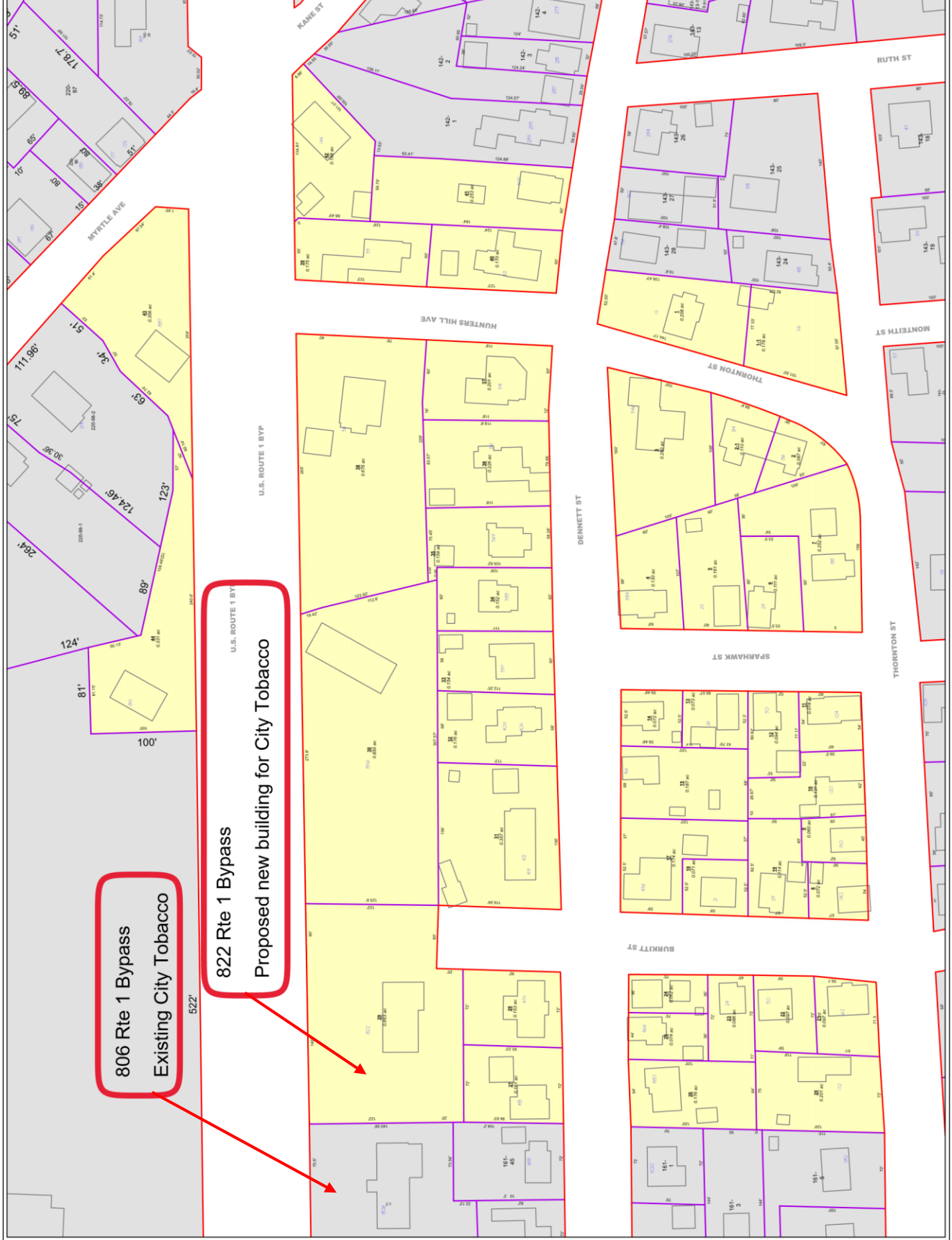


This map is for assessment purposes only. It is not intended for legal description or conveyance. Parcels are mapped as of April 1. Building footprints are 2006 data and may not be current. Streets appearing on this map may be paper (unbuilt) streets. All footprints take precedence over address numbers. Dimensions shown on this map may not represent posted or legal addresses.



Portsmouth, New Hampshire  
 2020

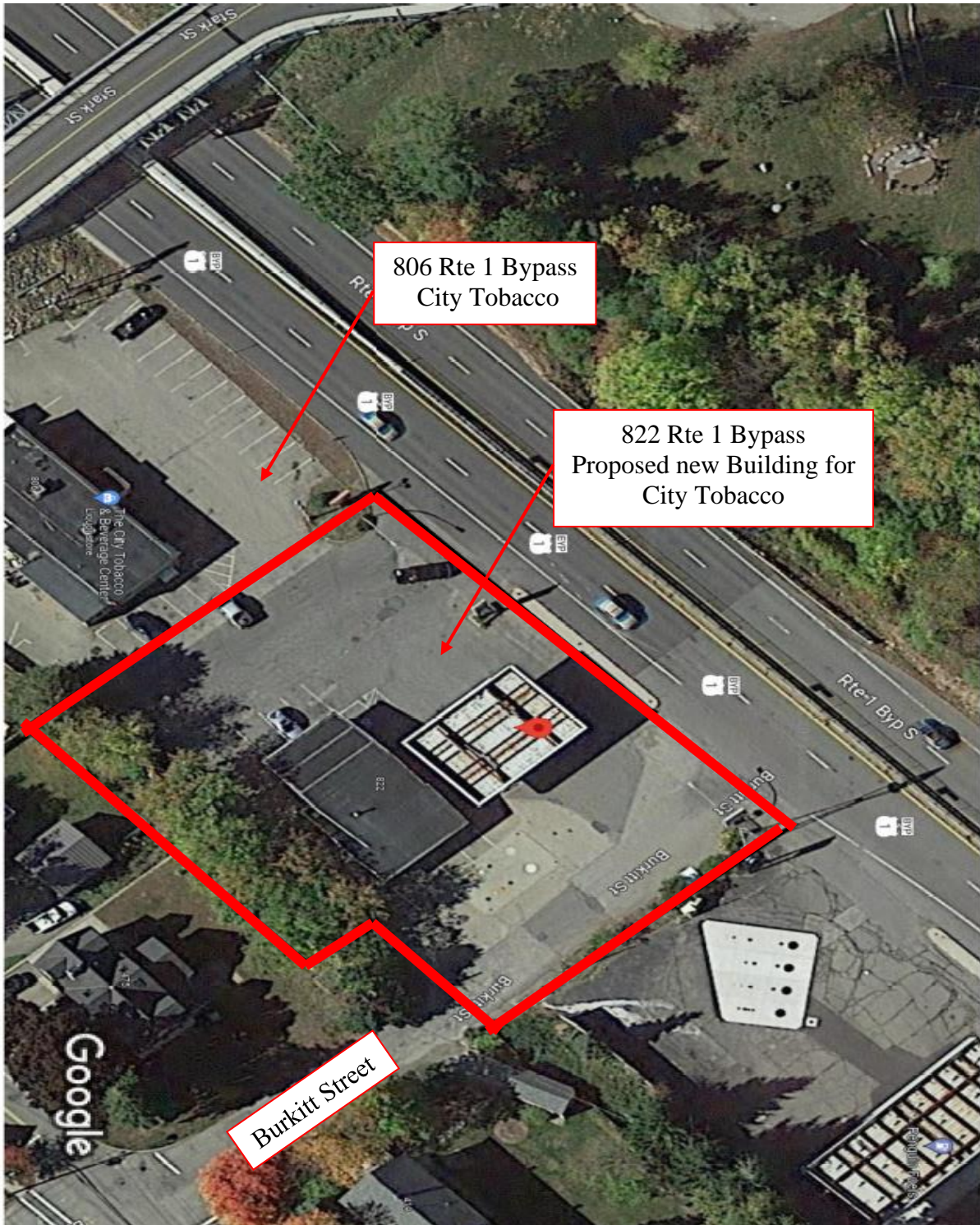
# Tax Map 160



**Ross Engineering, LLC**  
**Civil / Structural Engineering**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net



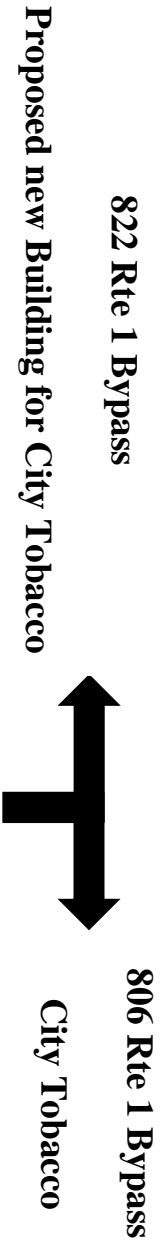
**Photo 1: Google Aerial**



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**Photo 2: Front view 822 & 806 Rte 1 Bypass**

**Ross Engineering, LLC**  
**Civil / Structural Engineering**

**909 Islington Street**  
**Portsmouth, NH 03801**

**603-433-7560**  
**alexross@comcast.net**



**Photo 3: View of site from Rte 1 Bypass looking to the southeast**



**Photo 4: View lot looking to the southwest**



**Ross Engineering, LLC**  
**Civil / Structural Engineering**

**909 Islington Street**  
**Portsmouth, NH 03801**

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**Photo 5: Site view from Burkitt St.**



**Photo 6: View from Rte 1 Bypass**





# 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: Alex Ross Date Submitted: 2/16/2024

Application # (in City's online permitting): LU-23-209

Site Address: 822 Route 1 Bypass Map: 160 Lot: 29

Application Requirements			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Complete <a href="#">application</a> form submitted via the City's web-based permitting program (2.5.2.1(2.5.2.3A))	LU-23-209	N/A
<input checked="" type="checkbox"/>	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)	Online Application in Viewpoint	N/A

Site Plan Review Application Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Statement that lists and describes "green" building components and systems. (2.5.3.1B)	Low Impact Design & Green Building Description	
<input checked="" type="checkbox"/>	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 Plan Set	N/A
<input checked="" type="checkbox"/>	Tax map and lot number, and current zoning of all parcels under Site Plan Review. (2.5.3.1D)	Sheet 1 "Existing Conditions" - Notes 1 & 3	N/A

<b>Site Plan Review Application Required Information</b>			
<input checked="" type="checkbox"/>	<b>Required Items for Submittal</b>	<b>Item Location (e.g. Page/line or Plan Sheet/Note #)</b>	<b>Waiver Requested</b>
<input checked="" type="checkbox"/>	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. <b>(2.5.3.1E)</b>	Rigz Enterprises LLC 18 Dixon Ln Dey, NH 030838	N/A
<input checked="" type="checkbox"/>	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. <b>(2.5.3.1F)</b>	See Abutter list	N/A
<input checked="" type="checkbox"/>	Names, addresses and telephone numbers of all professionals involved in the site plan design. <b>(2.5.3.1G)</b>	See Abutter list	N/A
<input checked="" type="checkbox"/>	List of reference plans. <b>(2.5.3.1H)</b>	Sheet 1 "Existing Conditions"	N/A
<input checked="" type="checkbox"/>	List of names and contact information of all public or private utilities servicing the site. <b>(2.5.3.1I)</b>	Sheet 4 "Utility Plan"	N/A

<b>Site Plan Specifications</b>			
<input checked="" type="checkbox"/>	<b>Required Items for Submittal</b>	<b>Item Location (e.g. Page/line or Plan Sheet/Note #)</b>	<b>Waiver Requested</b>
<input checked="" type="checkbox"/>	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. <b>(2.5.4.1A)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. <b>(2.5.4.1B)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. <b>(2.5.4.1C)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. <b>(2.5.4.1D)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. <b>(2.5.4.1E)</b>	No wetlands on site	N/A
<input checked="" type="checkbox"/>	Title (name of development project), north point, scale, legend. <b>(2.5.4.2A)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Date plans first submitted, date and explanation of revisions. <b>(2.5.4.2B)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Individual plan sheet title that clearly describes the information that is displayed. <b>(2.5.4.2C)</b>	Required on all plan sheets	N/A
<input checked="" type="checkbox"/>	Source and date of data displayed on the plan. <b>(2.5.4.2D)</b>	Required on all plan sheets	N/A



**Site Plan Specifications – Required Exhibits and Data**

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	<b>1. Existing Conditions: (2.5.4.3A)</b> <ul style="list-style-type: none"> <li>• Surveyed plan of site showing existing natural and built features;</li> <li>• Existing building footprints and gross floor area;</li> <li>• Existing parking areas and number of parking spaces provided;</li> <li>• Zoning district boundaries;</li> <li>• Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre;</li> <li>• Existing impervious and disturbed areas;</li> <li>• Limits and type of existing vegetation;</li> <li>• Wetland delineation, wetland function and value assessment (including vernal pools);</li> <li>• SFHA, 100-year flood elevation line and BFE data, as required.</li> </ul>	Sheet 1 "Existing Conditions"	
<input checked="" type="checkbox"/>	<b>2. Buildings and Structures: (2.5.4.3B)</b> <ul style="list-style-type: none"> <li>• Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;</li> <li>• Elevations: Height, massing, placement, materials, lighting, façade treatments;</li> <li>• Total Floor Area;</li> <li>• Number of Usable Floors;</li> <li>• Gross floor area by floor and use.</li> </ul>	See Architectural & Sheet 2 "Site Plan"	
<input checked="" type="checkbox"/>	<b>3. Access and Circulation: (2.5.4.3C)</b> <ul style="list-style-type: none"> <li>• Location/width of access ways within site;</li> <li>• Location of curbing, right of ways, edge of pavement and sidewalks;</li> <li>• Location, type, size and design of traffic signing (pavement markings);</li> <li>• Names/layout of existing abutting streets;</li> <li>• Driveway curb cuts for abutting prop. and public roads;</li> <li>• If subdivision; Names of all roads, right of way lines and easements noted;</li> <li>• AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).</li> </ul>	Sheet 2 "Site Plan"	
<input checked="" type="checkbox"/>	<b>4. Parking and Loading: (2.5.4.3D)</b> <ul style="list-style-type: none"> <li>• Location of off street parking/loading areas, landscaped areas/buffers;</li> <li>• Parking Calculations (# required and the # provided).</li> </ul>	Sheet 2 "Site Plan"	
<input checked="" type="checkbox"/>	<b>5. Water Infrastructure: (2.5.4.3E)</b> <ul style="list-style-type: none"> <li>• Size, type and location of water mains, shut-offs, hydrants &amp; Engineering data;</li> <li>• Location of wells and monitoring wells (include protective radii).</li> </ul>	Sheet 4 "Utility Plan"	
<input checked="" type="checkbox"/>	<b>6. Sewer Infrastructure: (2.5.4.3F)</b> <ul style="list-style-type: none"> <li>• Size, type and location of sanitary sewage facilities &amp; Engineering data, including any onsite temporary facilities during construction period.</li> </ul>	Sheet 4 "Utility Plan"	



<input checked="" type="checkbox"/>	<b>7. Utilities: (2.5.4.3G)</b> <ul style="list-style-type: none"> <li>The size, type and location of all above &amp; below ground utilities;</li> <li>Size type and location of generator pads, transformers and other fixtures.</li> </ul>	Sheet 4 "Utility Plan"	
<input checked="" type="checkbox"/>	<b>8. Solid Waste Facilities: (2.5.4.3H)</b> <ul style="list-style-type: none"> <li>The size, type and location of solid waste facilities.</li> </ul>	Sheet 2 "Site Plan"	
<input checked="" type="checkbox"/>	<b>9. Storm water Management: (2.5.4.3I)</b> <ul style="list-style-type: none"> <li>The location, elevation and layout of all storm-water drainage.</li> <li>The location of onsite snow storage areas and/or proposed off-site snow removal provisions.</li> <li>Location and containment measures for any salt storage facilities</li> <li>Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures.</li> </ul>	Sheet 4 "Utility Plan"	
<input checked="" type="checkbox"/>	<b>10. Outdoor Lighting: (2.5.4.3J)</b> <ul style="list-style-type: none"> <li>Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan.</li> </ul>	See Lighting Plan	
<input checked="" type="checkbox"/>	<b>11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)</b>	See Lighting Plan	
<input checked="" type="checkbox"/>	<b>12. Landscaping: (2.5.4.3K)</b> <ul style="list-style-type: none"> <li>Identify all undisturbed area, existing vegetation and that which is to be retained;</li> <li>Location of any irrigation system and water source.</li> </ul>	Sheet 3 "Landscape Plan"	
<input checked="" type="checkbox"/>	<b>13. Contours and Elevation: (2.5.4.3L)</b> <ul style="list-style-type: none"> <li>Existing/Proposed contours (2 foot minimum) and finished grade elevations.</li> </ul>	Sheet 1 "Existing Conditions" & 2 "Site Plan"	
<input checked="" type="checkbox"/>	<b>14. Open Space: (2.5.4.3M)</b> <ul style="list-style-type: none"> <li>Type, extent and location of all existing/proposed open space.</li> </ul>	Sheet 1 "Existing Conditions" & Sheet 2 "Site Plan"	
<input checked="" type="checkbox"/>	<b>15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)</b>	Sheet 1 "Existing Conditions"	
<input checked="" type="checkbox"/>	<b>16. Character/Civic District (All following information shall be included): (2.5.4.3P)</b> <ul style="list-style-type: none"> <li>Applicable Building Height (10.5A21.20 &amp; 10.5A43.30);</li> <li>Applicable Special Requirements (10.5A21.30);</li> <li>Proposed building form/type (10.5A43);</li> <li>Proposed community space (10.5A46).</li> </ul>	N/A - Not in Character/Civil District	
<input checked="" type="checkbox"/>	<b>17. Special Flood Hazard Areas (2.5.4.3Q)</b> <ul style="list-style-type: none"> <li>The proposed development is consistent with the need to minimize flood damage;</li> <li>All public utilities and facilities are located and construction to minimize or eliminate flood damage;</li> <li>Adequate drainage is provided so as to reduce exposure to flood hazards.</li> </ul>	N/A - Site not located within special flood area	


Other Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. (3.2.1-2)		✓
<input checked="" type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)	Sheet 2 "Site Plan"	
<input checked="" type="checkbox"/>	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 - Not located within well head or aquifer protection area	
<input checked="" type="checkbox"/>	Stormwater Management and Erosion Control Plan. (7.4)		✓
<input checked="" type="checkbox"/>	Inspection and Maintenance Plan (7.6.5)	Sheet 11	

Final Site Plan Approval Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	All local approvals, permits, easements and licenses required, including but not limited to: <ul style="list-style-type: none"> <li>• Waivers;</li> <li>• Driveway permits;</li> <li>• Special exceptions;</li> <li>• Variances granted;</li> <li>• Easements;</li> <li>• Licenses.</li> </ul> (2.5.3.2A)	See Waiver request form	
<input checked="" type="checkbox"/>	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: <ul style="list-style-type: none"> <li>• Calculations relating to stormwater runoff;</li> <li>• Information on composition and quantity of water demand and wastewater generated;</li> <li>• Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls;</li> <li>• Estimates of traffic generation and counts pre- and post-construction;</li> <li>• Estimates of noise generation;</li> <li>• A Stormwater Management and Erosion Control Plan;</li> <li>• Endangered species and archaeological / historical studies;</li> <li>• Wetland and water body (coastal and inland) delineations;</li> <li>• Environmental impact studies.</li> </ul> (2.5.3.2B)		✓
<input checked="" type="checkbox"/>	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**

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/>	A list of any required state and federal permit applications required for the project and the status of same. <b>(2.5.3.2E)</b>	N/A - No State or Federal Permits Required	
<input checked="" type="checkbox"/>	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." <b>(2.5.4.2E)</b>	Sheet 2 "Site Plan"	N/A
<input checked="" type="checkbox"/>	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. <b>(2.5.4.2F)</b>	N/A - Site not located in a SFHA	
<input checked="" type="checkbox"/>	Plan sheets submitted for recording shall include the following notes: <ul style="list-style-type: none"> <li>a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds."</li> <li>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."</li> </ul> <b>(2.13.3)</b>	Sheet 2 "Site Plan"	N/A

Applicant's Signature:  Date: 2/16/24



**Ross Engineering**  
**Civil/Structural Engineering & Surveying**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

February 16, 2024

Planning Department  
City of Portsmouth  
1 Junkins Ave  
Portsmouth, NH 03801  
Waiver Request Letter

Re: Waiver Request Letter  
822 US Route 1 Bypass  
Portsmouth, NH 03801  
Tax Map 160, Lot 29

Technical Advisor Committee Members, we are requesting waivers from the following regulations:

- *Section 3.2.1-2 “A traffic impact analysis shall be prepared by a professional engineer licensed in New Hampshire and experienced and qualified in traffic engineering”*

**The existing site was previously a gas station for many years. The existing site does not have adequate parking or signage. The proposed site will provide adequate parking and signage that will provide a safer site than existing. The existing access roads will not be impacted and there is no need for a traffic analysis.**

- *Section 7.4 “The applicant shall submit a Stormwater Management and Erosion Control Plan”*  
**This site is fully developed and does not meet open space requirements. The proposed plan will include landscaping beds that will reduce the impervious surface. A Jellyfish filter will be added into to the end of the drainage network, treating runoff.**
- *Section 2.5.3.2B “Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to.....”*  
**This site has been fully developed for many decades. Adequate parking will be provided as per the City Zoning Ordinance, signage will be installed that will provide safe travel, landscaping will be added reducing the impervious surface on site improving stormwater runoff, and a jellyfish filter will be installed treating runoff that is currently untreated.**

Sincerely,

Alex Ross, P.E.

**Ross Engineering  
Civil / Structural Engineering**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

**List of Abutters**

April 22, 2024

Applicant & Land Owner's Name:

Rigz Enterprises LLC  
18 Dixon Ln  
Derry, NH 03038

Location of Land:  
822 Route 1 Bypass  
Portsmouth, NH 03801  
Tax Map 160, Lot 29

Abutters:

Peter & Judi Paradis  
481 Dennett St  
Portsmouth, NH 03801  
Tax Map 160, Lot 27  
Zone: GRA

Solano Group LLC  
34 Hemlock Shore Dr  
Atkinson, NH 03811  
Tax Map 160, Lot 31  
Zone: GRA

Penguin Portsmouth, LLC  
856 US Route 1 BYP  
Portsmouth, NH 03801  
Tax Map 160, Lot 30  
Zone: B

Matthew Landry  
419 Dennett St  
Portsmouth, NH 03801  
Tax Map 160, Lot 31-2  
Zone: GRA

Yoko & Junichi Fukuda  
421 Dennett St  
Portsmouth, NH 03801  
Tax Map 160, Lot 31-1  
Zone: GRA

Lindsay Floryan & Brian Collier  
493 Dennett St  
Portsmouth, NH 03801-3691  
Tax Map 161, Lot 45  
Zone: GRA

Rigz Enterprises, LLC  
18 Dixon Ln  
Derry, NH 03038  
Tax Map 161, Lot 43  
Zone: B

City of Portsmouth  
New Franklin School  
PO Box 628  
Portsmouth, NH 03802  
Tax Map 220, Lot 2  
Zone: M

David B. Platt Revocable Trust &  
Tuyen Lang Revocable Trust  
475 Dennett St  
Portsmouth, NH 03801  
Tax Map 160, Lot 28  
Zone: GRA

**Civil Engineer & Surveyor**

Alex Ross  
Ross Engineering  
Certified Professional Engineer  
Licensed Land Surveyor  
909 Islington Street  
Portsmouth, NH 03801

# Site Plan Review

## 822 Route 1 Bypass

### Portsmouth, New Hampshire

PREPARED FOR:

RIGZ ENTERPRISES LLC

PREPARED BY:

ROSS ENGINEERING, LLC

Civil/Structural Engineering  
& Surveying

909 Islington St.  
Portsmouth, NH 03801  
(603) 433-7560

April 24, 2024

LIST OF PROJECT PLANS:

**SITE PLAN SET**

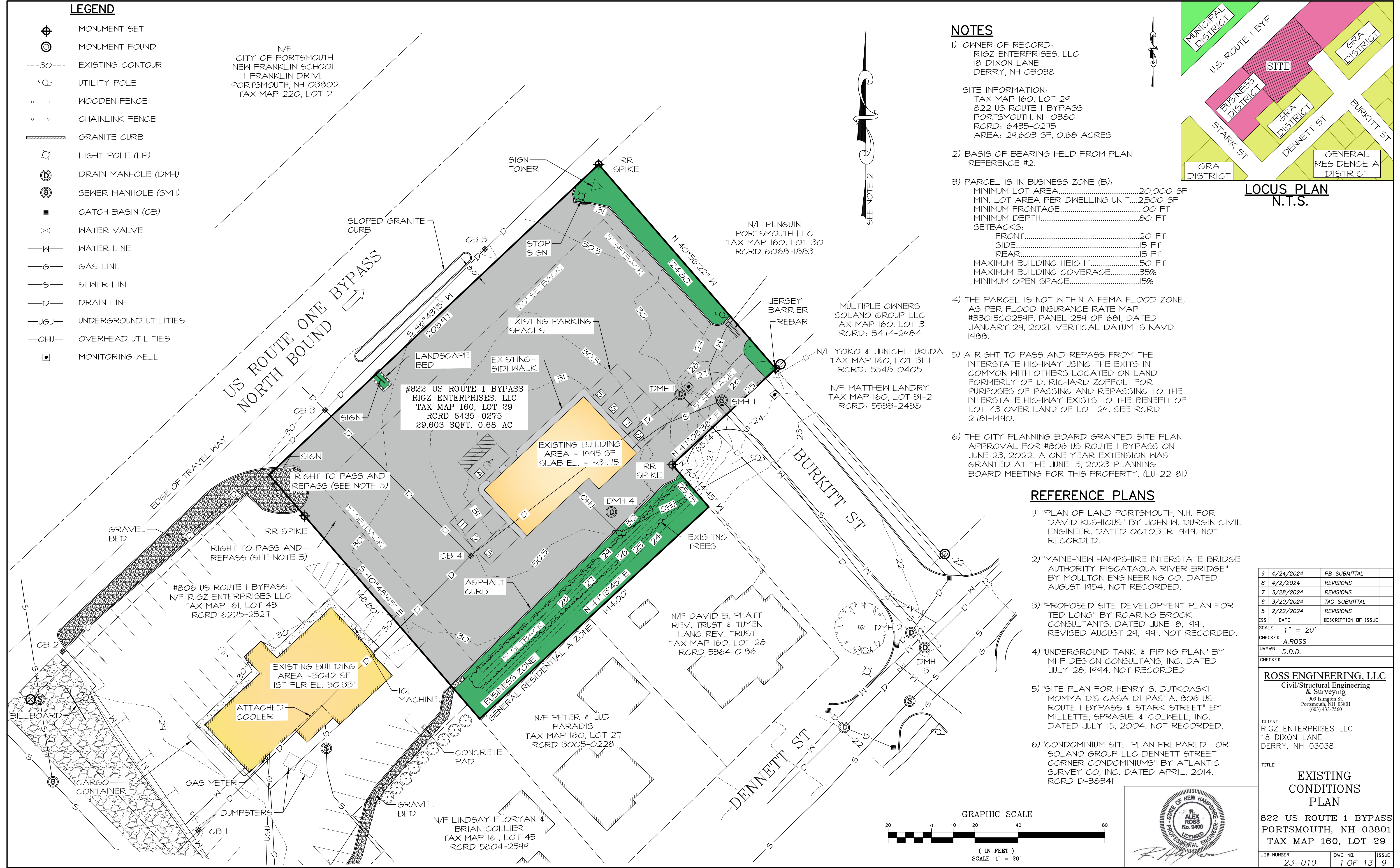
- 1 - Existing Conditions Plan
- 2 - Site Plan
- 3 - Landscape Plan
- 4 - Utility Plan
- 5 - Grading & Drainage Plan
- 6 - Easement Plan
- 7 - Existing Drain Profile
- 8 - Proposed Drain Profile
- 9 - Sewer Profile
- 10 - Sewer Details
- 11 - Details
- 12 - Sidewalk Details
- 13 - Erosion Control Plan  
Lighting Plan



**LEGEND**

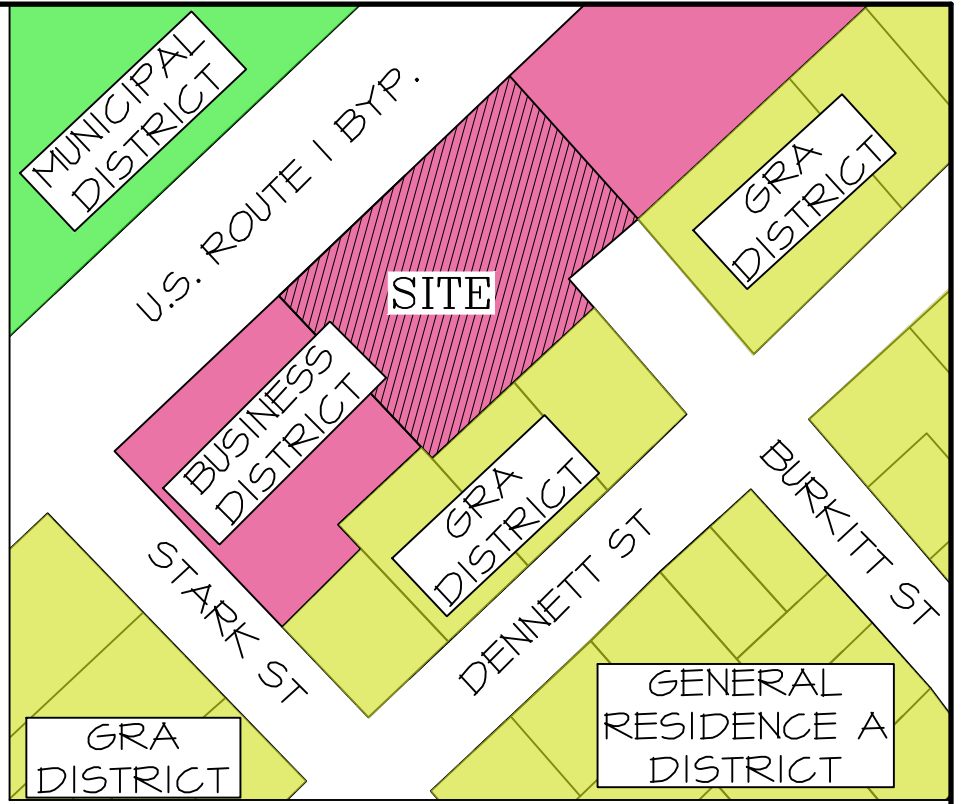
- ⊕ MONUMENT SET
- ⊙ MONUMENT FOUND
- - - 30 - - - EXISTING CONTOUR
- ⊕ UTILITY POLE
- WOODEN FENCE
- CHAINLINK FENCE
- GRANITE CURB
- ⊕ LIGHT POLE (LP)
- ⊕ DRAIN MANHOLE (DMH)
- ⊕ SEWER MANHOLE (SMH)
- CATCH BASIN (CB)
- ⊕ WATER VALVE
- W — WATER LINE
- G — GAS LINE
- S — SEWER LINE
- D — DRAIN LINE
- UGU — UNDERGROUND UTILITIES
- OHU — OVERHEAD UTILITIES
- ⊕ MONITORING WELL

N/F  
CITY OF PORTSMOUTH  
NEW FRANKLIN SCHOOL  
1 FRANKLIN DRIVE  
PORTSMOUTH, NH 03802  
TAX MAP 220, LOT 2



**NOTES**

- 1) OWNER OF RECORD:  
RIGZ ENTERPRISES, LLC  
18 DIXON LANE  
DERRY, NH 03038
- SITE INFORMATION:  
TAX MAP 160, LOT 29  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
RCRD: 6435-0275  
AREA: 29,603 SF, 0.68 ACRES
- 2) BASIS OF BEARING HELD FROM PLAN REFERENCE #2.
- 3) PARCEL IS IN BUSINESS ZONE (B):  
MINIMUM LOT AREA.....20,000 SF  
MIN. LOT AREA PER DWELLING UNIT.....2,500 SF  
MINIMUM FRONTAGE.....100 FT  
MINIMUM DEPTH.....80 FT  
SETBACKS:  
FRONT.....20 FT  
SIDE.....15 FT  
REAR.....15 FT  
MAXIMUM BUILDING HEIGHT.....50 FT  
MAXIMUM BUILDING COVERAGE.....35%  
MINIMUM OPEN SPACE.....15%
- 4) THE PARCEL IS NOT WITHIN A FEMA FLOOD ZONE, AS PER FLOOD INSURANCE RATE MAP #33015C0259F, PANEL 259 OF 681, DATED JANUARY 29, 2021. VERTICAL DATUM IS NAVD 1988.
- 5) A RIGHT TO PASS AND REPASS FROM THE INTERSTATE HIGHWAY USING THE EXITS IN COMMON WITH OTHERS LOCATED ON LAND FORMERLY OF D. RICHARD ZOFFOLI FOR PURPOSES OF PASSING AND REPASSING TO THE INTERSTATE HIGHWAY EXISTS TO THE BENEFIT OF LOT 43 OVER LAND OF LOT 29. SEE RCRD 2781-1490.
- 6) THE CITY PLANNING BOARD GRANTED SITE PLAN APPROVAL FOR #806 US ROUTE 1 BYPASS ON JUNE 23, 2022. A ONE YEAR EXTENSION WAS GRANTED AT THE JUNE 15, 2023 PLANNING BOARD MEETING FOR THIS PROPERTY. (LU-22-81)



**LOCUS PLAN  
N.T.S.**

**REFERENCE PLANS**

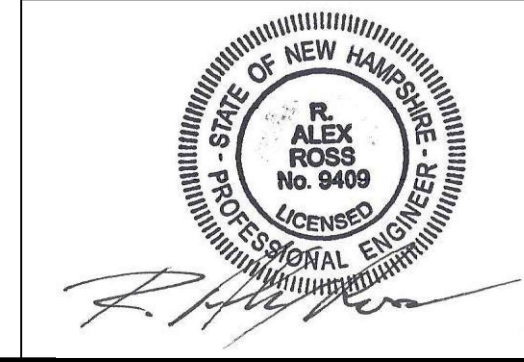
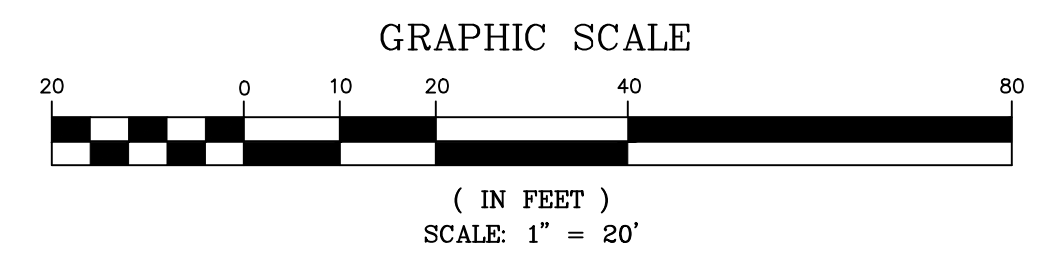
- 1) "PLAN OF LAND PORTSMOUTH, N.H. FOR DAVID KUSHIOUS" BY JOHN W. DURGIN CIVIL ENGINEER. DATED OCTOBER 1949. NOT RECORDED.
- 2) "MAINE-NEW HAMPSHIRE INTERSTATE BRIDGE AUTHORITY PISCATAQUA RIVER BRIDGE" BY MOULTON ENGINEERING CO. DATED AUGUST 1954. NOT RECORDED.
- 3) "PROPOSED SITE DEVELOPMENT PLAN FOR TED LONG" BY ROARING BROOK CONSULTANTS. DATED JUNE 18, 1991, REVISED AUGUST 29, 1991. NOT RECORDED.
- 4) "UNDERGROUND TANK & PIPING PLAN" BY MHF DESIGN CONSULTANTS, INC. DATED JULY 28, 1994. NOT RECORDED.
- 5) "SITE PLAN FOR HENRY S. DUTKOWSKI MONMA D'S CASA DI PASTA, 806 US ROUTE 1 BYPASS & STARK STREET" BY MILLETTE, SPRAGUE & COLWELL, INC. DATED JULY 15, 2004. NOT RECORDED.
- 6) "CONDOMINIUM SITE PLAN PREPARED FOR SOLANO GROUP LLC DENNETT STREET CORNER CONDOMINIUMS" BY ATLANTIC SURVEY CO, INC. DATED APRIL, 2014. RCRD D-38341

9	4/24/2024	PB SUBMITTAL
8	4/2/2024	REVISIONS
7	3/28/2024	REVISIONS
6	3/20/2024	TAC SUBMITTAL
5	2/22/2024	REVISIONS
ISS.	DATE	DESCRIPTION OF ISSUE
SCALE 1" = 20'		
CHECKED	A.ROSS	
DRAWN	D.D.D.	
CHECKED		

**ROSS ENGINEERING, LLC**  
Civil/Structural Engineering & Surveying  
909 Islington St.  
Portsmouth, NH 03801  
(603) 433-7560

CLIENT  
RIGZ ENTERPRISES LLC  
18 DIXON LANE  
DERRY, NH 03038

TITLE		
<b>EXISTING CONDITIONS PLAN</b>		
822 US ROUTE 1 BYPASS PORTSMOUTH, NH 03801 TAX MAP 160, LOT 29		
JOB NUMBER	DWG. NO.	ISSUE
23-010	1 OF 13	9





**LEGEND**

- ⊕ MONUMENT SET
- ⊙ MONUMENT FOUND
- ⊕ UTILITY POLE
- WOODEN FENCE
- CHAIN LINK FENCE
- CURB
- ⊕ LIGHT POLE (LP)
- ⊕ DRAIN MANHOLE (DMH)
- ⊕ SEWER MANHOLE (SMH)
- CATCH BASIN (CB)
- ⊕ WATER VALVE
- ⊕ MONITORING WELL

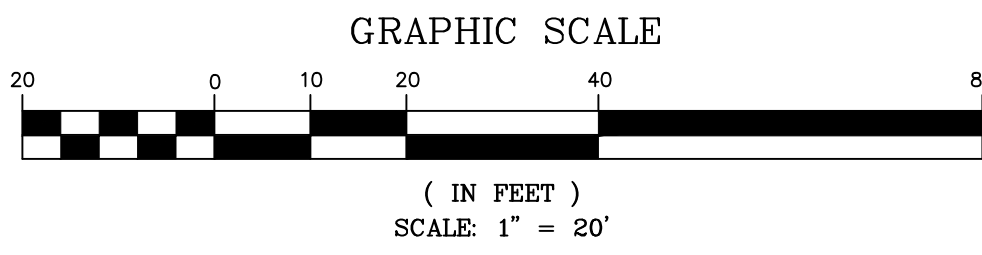
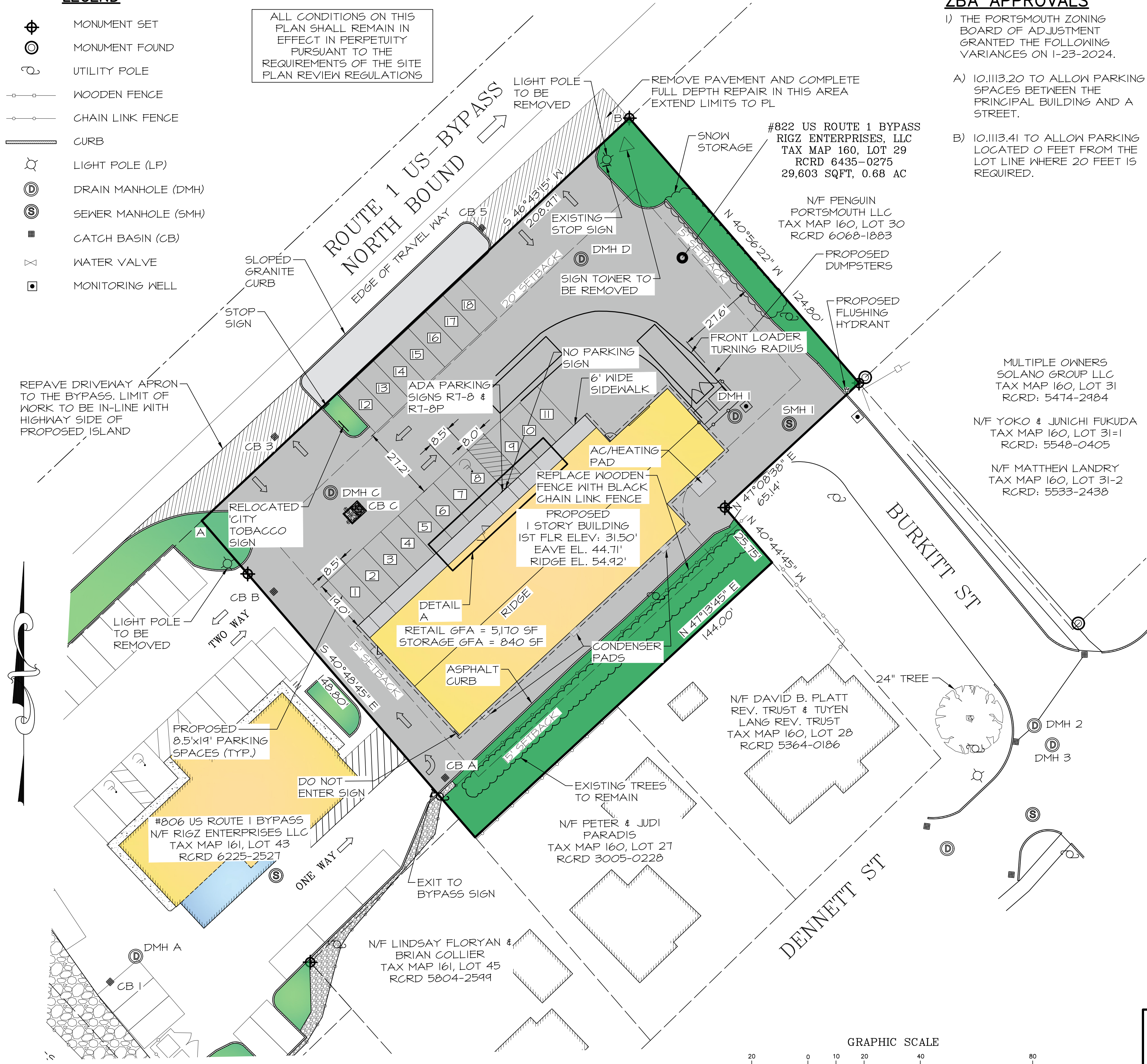
ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS

**ZBA APPROVALS**

- 1) THE PORTSMOUTH ZONING BOARD OF ADJUSTMENT GRANTED THE FOLLOWING VARIANCES ON 1-23-2024.
  - A) 10.1113.20 TO ALLOW PARKING SPACES BETWEEN THE PRINCIPAL BUILDING AND A STREET.
  - B) 10.1113.41 TO ALLOW PARKING LOCATED 0 FEET FROM THE LOT LINE WHERE 20 FEET IS REQUIRED.

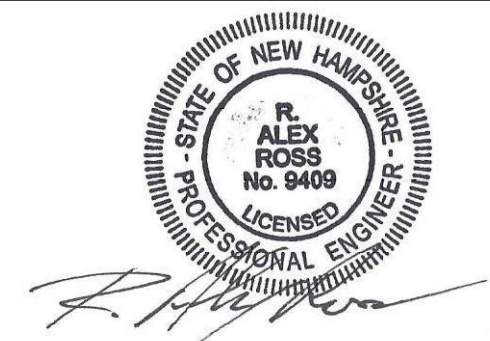
**NOTES**

- 1) OWNER OF RECORD: RIGZ ENTERPRISES, LLC 18 DIXON LANE DERRY, NH 03038  
 SITE INFORMATION:  
 TAX MAP 160, LOT 29  
 PORTSMOUTH, NH 03801  
 RCRD: 6435-0275  
 AREA: 29,603 SF, 0.68 ACRES
- 2) COVERAGES:  
 BUILDING COVERAGE  
 EXISTING BUILDING COVERAGE  
 BUILDING 1995 SF  
 EXISTING STRUCTURE 1995 SF  
 BUILDING COVERAGE 1,995 / 29,603 = 6.7%  
 PROPOSED BUILDING COVERAGE  
 BUILDING 6010 SF  
 PROPOSED STRUCTURE 6010 SF  
 BUILDING COVERAGE 6010 / 29,603 = 20.3%  
 OPEN SPACE  
 EXISTING OPEN SPACE  
 BUILDING COVERAGE 1,995 SF  
 ASPHALT 22,871 SF  
 SIDEWALK 336 SF  
 RETAINING WALL 21 SF  
 CURB 132 SF  
 TOTAL LOT COVERAGE 25,355 SF  
 EXISTING OPEN SPACE = 29,603 - 25,355 = 4,248 SF  
 EXISTING OPEN SPACE = 4,248 / 29,603 = 14.3%  
 PROPOSED OPEN SPACE  
 BUILDING COVERAGE 6,010 SF  
 ASPHALT DRIVEWAY 18,041 SF  
 SIDEWALK 660 SF  
 CONCRETE PAD 78 SF  
 CURB 214 SF  
 TOTAL LOT COVERAGE 25,003 SF  
 PROPOSED OPEN SPACE = 29,603 - 25,003 = 4,600 SF  
 PROPOSED OPEN SPACE = 4,600 / 29,603 = 15.5% > 15%
- 3) PARKING REQUIREMENTS  
 PARKING SPACES  
 AS PER PORTSMOUTH ZONING ORDINANCE 10.1112.321, PARKING SPACES FOR RETAIL USE SHALL BE 1 SPACE PER 300 SF OF GROSS FLOOR AREA.  
 5,170 SF GFA x 1 SPACE/300 GFA = 17.2 = 18 SPACES  
 18 SPACES REQUIRED  
 18 SPACES PROVIDED
- 4) GIS COORDINATES OF TWO LOT CORNERS  
 NORTHING EASTING  
 A - NW CORNER 211426.738 1222436.796  
 B - NE CORNER 211571.344 1222587.647
- 5) BUILDING HEIGHT:  
 AS PER THE PORTSMOUTH ZONING ORDINANCE THE GRADE PLANE SHALL BE THE FINISHED GROUND LEVEL ADJOINING THE BUILDING AT ALL EXTERIOR WALLS. WHEN THE FINISHED GROUND LEVEL SLOPES AWAY FROM EXTERIOR WALLS, THE REFERENCE PLANE 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. THE GRADE PLANE WAS FOUND TO BE 29.90'  
 BUILDING HEIGHT FOR A PITCHED, HIP, OR GAMBREL ROOF IS CALCULATED AS THE VERTICAL MEASUREMENT FROM THE GRADE PLANE TO THE MIDWAY POINT BETWEEN THE LEVEL OF THE EAVES AND THE HIGHEST POINT ON THE ROOF RIDGE AS PER PORTSMOUTH ZONING ORDINANCE. THE LEVEL OF THE PROPOSED EAVES IS 44.71'. THE HIGHEST PROPOSED RIDGE IS 54.92'. THE PROPOSED MIDPOINT IS 49.82'.  
 THE BUILDING HEIGHT WAS DETERMINED TO BE 19.92' USING A MIDPOINT HEIGHT OF 49.82' AND A GRADE PLANE OF 29.90'.
- 6) SIGNAGE:  
 THE CITY TOBACCO SIGN LOCATED AT THE NORTH EAST CORNER OF #806 ROUTE 1 BYPASS (TAX MAP 161, LOT 43), WHICH WAS RECENTLY SUBMITTED AND APPROVED BY THE PORTSMOUTH PLANNING BOARD WILL BE RELOCATED TO #822 US ROUTE 1 BYPASS AS SHOWN ON THE PLAN.
- 7) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
- 8) 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.
- 9) ALL NECESSARY NHDOT PERMITS MUST BE OBTAINED.



I ALEX ROSS, HEREBY CERTIFY:  
 A) THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION.  
 B) THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY DDD, & SRO DURING MAY OF 2023. THE ERROR OF CLOSURE IS BETTER THAN 1/15,000. SURVEY PER NHLSA STANDARDS; CATEGORY 1, CONDITION 1.  
 C) I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUB-DIVISION 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."

CITY OF PORTSMOUTH PLANNING BOARD  
 CHAIRPERSON \_\_\_\_\_ DATE \_\_\_\_\_



ISS.	DATE	DESCRIPTION OF ISSUE
9	4/24/2024	PB SUBMITTAL
8	4/2/2024	REVISIONS
7	3/28/2024	REVISIONS
6	3/20/2024	TAC SUBMITTAL
5	2/22/2024	REVISIONS

SCALE 1" = 20'  
 CHECKED A. ROSS  
 DRAWN D.D.D.  
 CHECKED

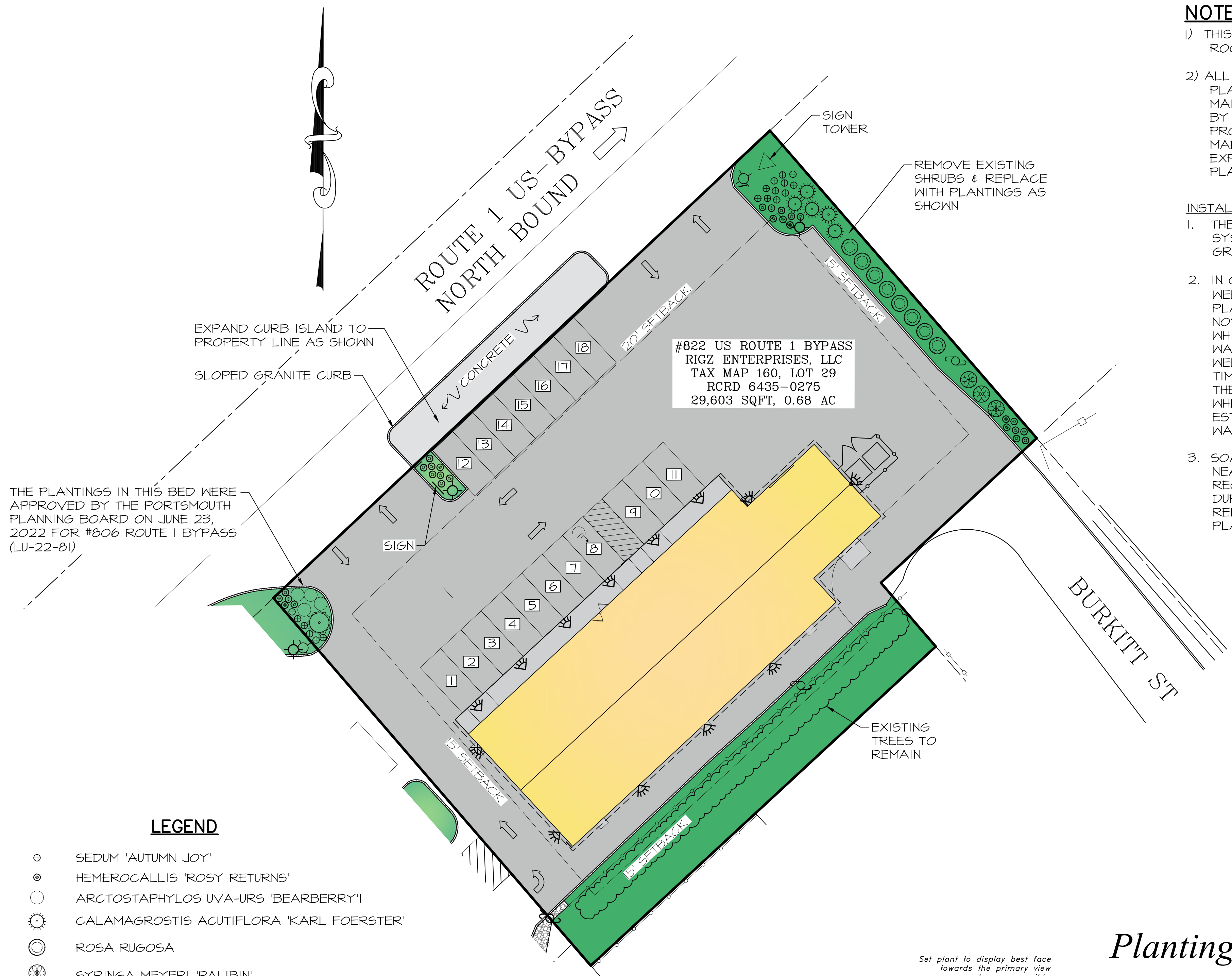
**ROSS ENGINEERING, LLC**  
 Civil/Structural Engineering & Surveying  
 909 Islington St  
 Portsmouth, NH 03801  
 (603) 433-7560

CLIENT  
 RIGZ ENTERPRISES LLC  
 18 DIXON LANE  
 DERRY, NH 03038

TITLE  
**SITE PLAN**  
 822 US ROUTE 1 BYPASS  
 PORTSMOUTH, NH 03801  
 TAX MAP 160, LOT 29

JOB NUMBER 23-010 DWG. NO. 2 OF 13 ISSUE 9





**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.

**INSTALLATION REQUIREMENTS:**

1. THE INSTALLATION OF A DRIP IRRIGATION SYSTEM IS RECOMMENDED TO ASSURE WELL GROWN PLANTS.
2. IN CASE OF DROUGHT (DEFINED AS TWO WEEK PERIOD WITHOUT RAIN) ALL NEW PLANTS SHALL BE WATERED THROUGH NOVEMBER 1ST DURING THE FIRST SEASON IN WHICH THE ARE INSTALLED. THEY SHALL BE WATERED ONE TIME PER DAY FOR THE FIRST WEEK AFTER INSTALLATION AND THREE TIMES PER WEEK FOR THE REMAINDER OF THE SEASON. AFTER THE FIRST SEASON WHEN THE ROOTS OF THE PLANTS ARE ESTABLISHED THEY WILL NOT REQUIRE WATERING.
3. SOAKER HOSES WOUND THROUGH THE BED NEAR THE BASE OF EACH PLANT ARE THE RECOMMENDED METHOD OF WATERING DURING THE FIRST SEASON. THESE CAN BE REMOVED AFTER NOVEMBER 30TH WHEN THE PLANTS ARE ESTABLISHED.

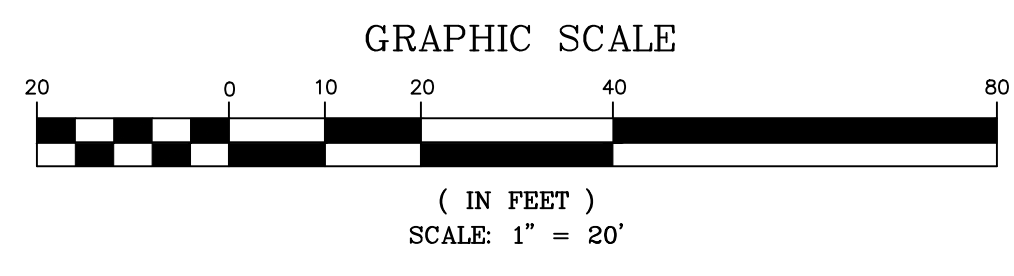
**PLANTING NOTES**

1. ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK.
2. ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR ONE YEAR BY THE LANDSCAPE CONTRACTOR.
3. AFTER PLANTING, ALL PLANTS SHALL BE FLOODED AT THE BASE WITH WATER FROM A SLOW-RUNNING HOSE FOR 5 MINUTES EACH.
4. ALL PLANTS SHALL BE INSTALLED BEFORE ANY GRASS IS SEEDED.
5. ALL SHRUBS AND PLANTING BEDS SHALL BE MULCHED WITH 3" OF DARK BROWN AGED BARK MULCH AS A FINAL STEP. MULCH MUST BE KEPT 2" AWAY FROM BASE OF EACH PLANT.
6. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR, AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
7. 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.
8. 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.
9. MULCH USED WILL BE NON-COMBUSTIBLE OR APPROVED BY THE PORTSMOUTH FIRE DEPARTMENT.

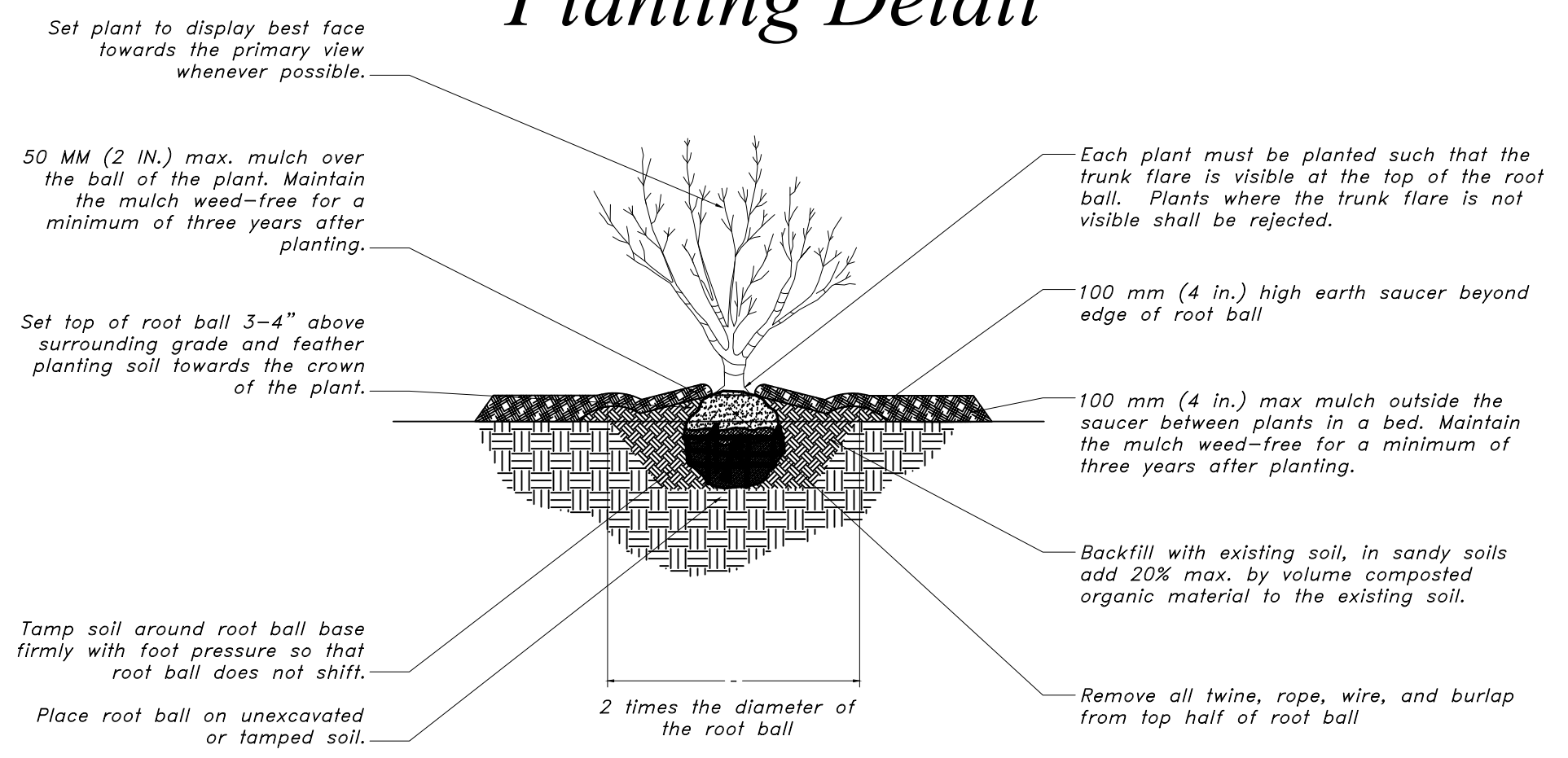
**LEGEND**

- ⊙ SEDUM 'AUTUMN JOY'
- ⊙ HEMEROCALLIS 'ROSY RETURNS'
- ARCTOSTAPHYLOS UVA-URS 'BEARBERRY'
- ☼ CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'
- ⊙ ROSA RUGOSA
- ⊙ SYRINGA MEYERI 'PALIBIN'
- ⊙ JUNIPERUS HORIZONTALIS 'BAR HARBOR'

BOTANICAL NAME	COMMON NAME	SIZE	QTY:
SEDUM 'AUTUMN JOY'	STONECROP	1 QT	17
HEMEROCALLIS 'ROSY RETURNS'	REBLOOMING DAYLILY	1 QT	28
ARCTOSTAPHYLOS UVA-URS 'BEARBERRY'	BEAR BERRY	1 GAL	4
CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	1 GAL	5
ROSA RUGOSA	SALT SPRAY ROSE	1 GAL	8
SYRINGA MEYERI 'PALIBIN'	DWARF KOREAN LILAC	2 GAL	3
JUNIPERUS HORIZONTALIS 'BAR HARBOR'	'BAR HARBOR' GROUND-COVER JUNIPER	1 GAL	1



**Planting Detail**



ISS.	DATE	DESCRIPTION OF ISSUE
9	4/24/2024	PB SUBMITTAL
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SCALE 1" = 20'

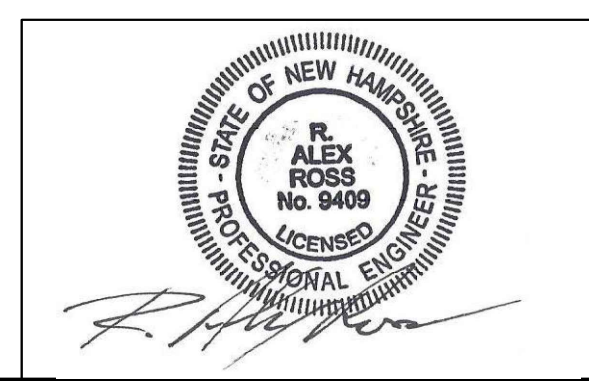
CHECKED: A.ROSS  
DRAWN: D.D.D.  
CHECKED:

**ROSS ENGINEERING, LLC**  
Civil/Structural Engineering & Surveying  
909 Islington St  
Portsmouth, NH 03801  
(603) 433-7560

CLIENT  
RIGZ ENTERPRISES LLC  
18 DIXON LANE  
DERRY, NH 03038

TITLE  
**LANDSCAPE PLAN**  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
TAX MAP 160, LOT 29

JOB NUMBER: 23-010  
DWG. NO.: 3 OF 13  
ISSUE: 9





**EXISTING STRUCTURES**

**CATCH BASIN**

CB 1  
RIM EL. 27.93  
INV. IN 21.61 (±20" PIPE) SW  
INV. OUT 20.58 (±20" PIPE) NE

CB 2  
RIM EL. 29.46  
INV. OUT 25.81 (12" CMP) SE

CB 3  
RIM EL. 29.19  
INV. IN 22.84 (12" CMP) SW  
INV. IN 22.74 (12" CMP) NE  
INV. IN 22.83 (24" RCP) NW  
INV. OUT 22.66 (24" RCP) SE

CB 4  
RIM EL. 30.48  
INV. IN 18.20 (±20") SW  
INV. IN 18.20 (24" RCP) NW  
INV. OUT 18.15 (24") NE

CB 5  
RIM EL. 29.94  
INV. IN 26.15 (12" CMP) NE  
INV. OUT 26.10 (12" CMP) SW

**DRAIN MANHOLE**

DMH 1  
RIM EL. 23.77  
INV. IN 17.60 (24" PIPE) SW  
INV. OUT 17.27 (24" PIPE) SE

DMH 2  
RIM EL. 21.92

DMH 3  
RIM EL. 22.05

DMH 4  
RIM EL. 30.55

**SEWER MANHOLE**

SMH 1  
RIM EL. 25.74  
INV. IN 19.49 (6" AC)  
INV. OUT 19.44 (6" AC)

**LEGEND**

- ⊕ MONUMENT SET
- ⊙ MONUMENT FOUND
- ⊕ UTILITY POLE
- FENCE
- CURB
- ⊙ LIGHT POLE (LP)
- ⊙ DRAIN MANHOLE (DMH)
- ⊙ SEWER MANHOLE (SMH)
- CATCH BASIN (CB)
- ⊕ WATER VALVE
- ⊕ FLUSHING HYDRANT
- W — WATER LINE
- G — GAS LINE
- S — SEWER LINE
- D — DRAIN LINE
- PW — PROPOSED WATER LINE
- SPK — SPRINKLER LINE
- PS — PROPOSED SEWER LINE
- UGE — UNDERGROUND ELECTRIC
- CMP CORRUGATED METAL PIPE
- PE POLYETHYLENE PIPE
- DI DUCTILE IRON PIPE
- RCP REINFORCED CONCRETE PIPE

**PROPOSED STRUCTURES**

**CATCH BASIN**

CB 1  
RIM EL. 27.93  
INV. IN 21.61 (±20" PIPE) SW  
INV. OUT 21.50 (24" PE) NE - PROPOSED LINE

CB A  
RIM EL. 29.75  
INV. OUT 26.75 (12" PE) NW  
STRUCTURE: 5' Ø CONCRETE BASIN

CB B  
RIM EL. 29.67  
INV. IN 25.83 (12" PE) SE  
INV. OUT 25.75 (12" PE) NE  
STRUCTURE: 5' Ø CONCRETE BASIN

CB C  
RIM EL. 30.17  
INV. IN 25.33 (12" PE) SW  
INV. OUT 25.25 (12" PE) NW  
STRUCTURE: JFPDO406 JELLYFISH FILTER

**DRAIN MANHOLE**

DMH A  
RIM EL. 28.50  
INV. IN 21.44 (24" PE) SW  
INV. OUT 21.40 (24" PE) NW  
STRUCTURE: 5' Ø CONCRETE BASIN

DMH B  
RIM EL. 29.17  
INV. IN 21.00 (24" PE) SE  
INV. OUT 20.96 (24" PE) NE  
STRUCTURE: 5' Ø CONCRETE BASIN

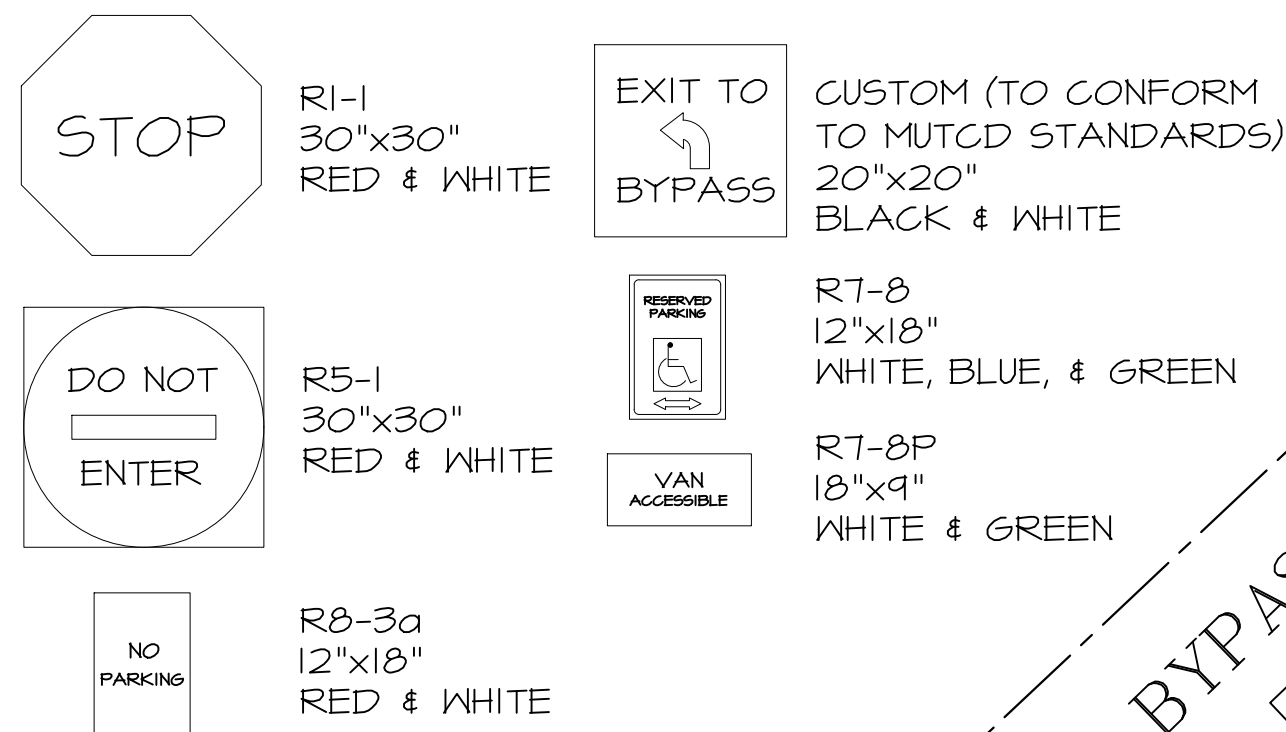
DMH C  
RIM EL. 29.83  
INV. IN 20.15 (24" PE) SW  
INV. IN 21.44 (24" RCP) NW  
INV. IN 25.00 (12" PE) SE  
INV. OUT 20.10 (24" PIPE) NE  
STRUCTURE: 5' Ø CONCRETE BASIN

DMH D  
RIM EL. 30.50  
INV. IN 18.90 (24" PE) SW  
INV. OUT 18.86 (24" PE) SE  
STRUCTURE: 5' Ø CONCRETE BASIN

DMH I  
RIM EL. 29.50 (COORDINATE WITH DPW)  
INV. IN 17.33 (24" PE) NW - PROPOSED LINE  
INV. OUT 17.27 (24" PIPE) SE

**SEWER MANHOLE**

SMH 1  
RIM EL. 25.74  
INV. IN 23.50 (6" PVC) - PROPOSED LINE  
INV. OUT 19.44 (6" AC)



**PROPOSED LIGHTING**

DESCRIPTION	CATALOG NUMBER	QTY
LIGHT POLE (254)	LITHONIA LIGHTING - DSXO LED P4 30K 80CRI TFTM MVOLT SPA DDBXC WITH 555 18 4C DM29AS DDBXD	1
DOWNLIGHT (D)	LITHONIA LIGHTING - LDN4 30/10 L04AR LD	3
LIGHT POLE (54)	LITHONIA LIGHTING - DSXO LED P4 30K 80CRI TFTM MVOLT SPA DDBXD WITH 555 18 4C DM19AS DDBXD	6
WALL PACK (W1)	LITHONIA LIGHTING - WDGEE LED P1 30K 80CRI VM MVOLT SRM DDBXD	12
WALL PACK (W2)	LITHONIA LIGHTING - WDGEE LED P1 30K 80CRI RFT 30K MVOLT SRM DDBXD	1

**UTILITIES:**

**CONTACT LIST:**  
 GAS: UNITIL: SUSAN L. DUPLISEA.....603-294-5147  
 WATER: PORTSMOUTH DPW: .....603-427-1530  
 SEWER: PORTSMOUTH DPW: .....603-427-1530  
 STORMWATER: PORTSMOUTH DPW: .....603-427-1530  
 ELECTRIC: EVERSOURCE: CASEY McDONALD.....603-436-7708 EXT 5641

**PROPOSED UTILITIES:**

**GAS:**  
 - PROPOSED GAS LINE TO BE INSTALLED FROM GAS MAIN IN DENNETT ST TO SERVICE PROPOSED BUILDING.

**SEWER:**  
 - OUTLET OF SMH 1 IS DIRECTED TOWARDS DENNETT ST. SEWER LINE WAS SCOPED BY PORTSMOUTH DPW ON FEBRUARY 7, 2024. A BRICK WAS FOUND BLOCKING THE OUTLET. THIS BRICK WAS REMOVED BY CONTRACTOR, AND THE LINE WAS RE-SCOPED BY DPW ON FEBRUARY 16, 2024. THE LINE IS IN GOOD CONDITION.  
 - A 6" SEWER LINE FROM BUILDING TO SEWER MANHOLE #1 WILL BE INSTALLED. OUTLET FROM SEWER MANHOLE #1 IS NOT PROPOSED TO BE ALTERED. CONTRACTOR TO WORK WITH DPW TO ENSURE PROPER FUNCTION OF SEWER OUTLET.

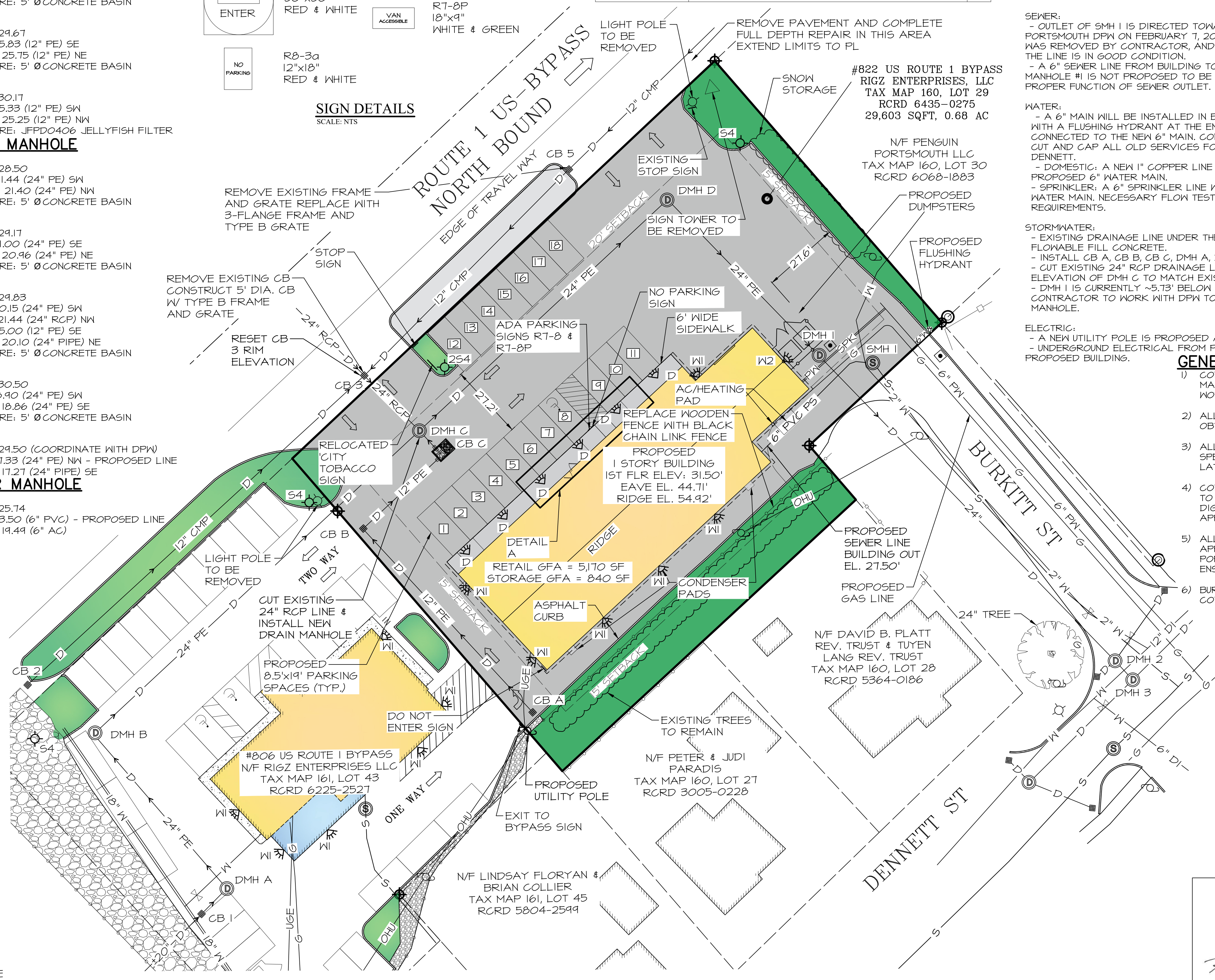
**WATER:**  
 - A 6" MAIN WILL BE INSTALLED IN BURKITT STREET CONNECTED TO THE WATER MAIN IN DENNETT ST WITH A FLUSHING HYDRANT AT THE END. FIRE SERVICES AND DOMESTIC SERVICES WILL BE CONNECTED TO THE NEW 6" MAIN. CONNECT 2" SERVICE FOR ADJACENT PROPERTY TO THE 6" MAIN, CUT AND CAP ALL OLD SERVICES FOR BOTH PROPERTIES AS NECESSARY AT WATER MAIN ON DENNETT.  
 - DOMESTIC: A NEW 1" COPPER LINE WILL BE INSTALLED TO THE BUILDING FROM THE PROPOSED 6" WATER MAIN.  
 - SPRINKLER: A 6" SPRINKLER LINE WILL BE INSTALLED TO THE BUILDING FROM THE PROPOSED 6" WATER MAIN. NECESSARY FLOW TEST CONNECTIONS AND SPECIFICATIONS AS PER CITY REQUIREMENTS.

**STORMWATER:**  
 - EXISTING DRAINAGE LINE UNDER THE BUILDING TO BE TAKEN OUT OF SERVICE AND FILLED WITH FLOWABLE FILL CONCRETE.  
 - INSTALL CB A, CB B, CB C, DMH A, DMH B, DMH C, DMH D  
 - CUT EXISTING 24" RCP DRAINAGE LINE BETWEEN CB 3 & CB 4 AT LOCATION OF DMH C. INLET ELEVATION OF DMH C TO MATCH EXISTING ELEVATION OF 24" RCP DRAINAGE PIPE.  
 - DMH 1 IS CURRENTLY ~5.73' BELOW GRADE. DMH 1 RIM TO BE RAISED UP TO MEET EXISTING GRADE. CONTRACTOR TO WORK WITH DPW TO ENSURE PROPER SUPPORT AND REINFORCING OF THE DRAIN MANHOLE.

**ELECTRIC:**  
 - A NEW UTILITY POLE IS PROPOSED AT THE SW CORNER OF LOT 29.  
 - UNDERGROUND ELECTRICAL FROM PROPOSED UTILITY POLE TO BE INSTALLED CONNECTING TO PROPOSED BUILDING.

**GENERAL NOTES**

- 1) CONTRACTOR TO REVIEW ALL SURFACING TYPES, AND MATERIAL SPECIFICATIONS WITH COMMISSIONER OF PUBLIC WORKS.
- 2) ALL NECESSARY NHDOT, NHDES & TOWN PERMITS MUST BE OBTAINED.
- 3) ALL CONSTRUCTION SHALL BE PER NH-DOT, STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION. LATEST REVISION.
- 4) CONTRACTOR SHALL MEET STATE AND TOWN REQUIREMENTS. TO ASSURE TYPE, SEPARATION, COVER, ETC. ALWAYS CALL DIGSAFE PRIOR TO DIGGING. UTILITIES SHOWN ARE APPROXIMATE AND MUST BE VERIFIED.
- 5) ALL PIPE MATERIALS, SIZES, AND ELEVATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY IN FIELD AND WITH PORTSMOUTH DPW PRIOR TO STARTING CONSTRUCTION TO ENSURE PROPER INSTALLATION OF ALL UTILITIES.
- 6) BURKITT STREET TO BE MILLED & OVERLAID AFTER THE CONCLUSION OF UTILITY WORK.



ISS.	DATE	DESCRIPTION OF ISSUE
9	4/24/2024	PB SUBMITTAL
8	4/2/2024	REVISIONS
7	3/28/2024	REVISIONS
6	3/20/2024	TAC SUBMITTAL
5	2/22/2024	REVISIONS

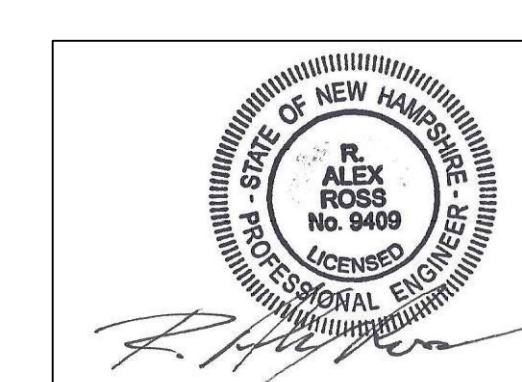
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 18 DIXON LANE  
 DERRY, NH 03038

TITLE  
**UTILITY PLAN**  
 822 US ROUTE 1 BYPASS  
 PORTSMOUTH, NH 03801  
 TAX MAP 160, LOT 29

JOB NUMBER 23-010    DWG. NO. 4 OF 13    ISSUE 9



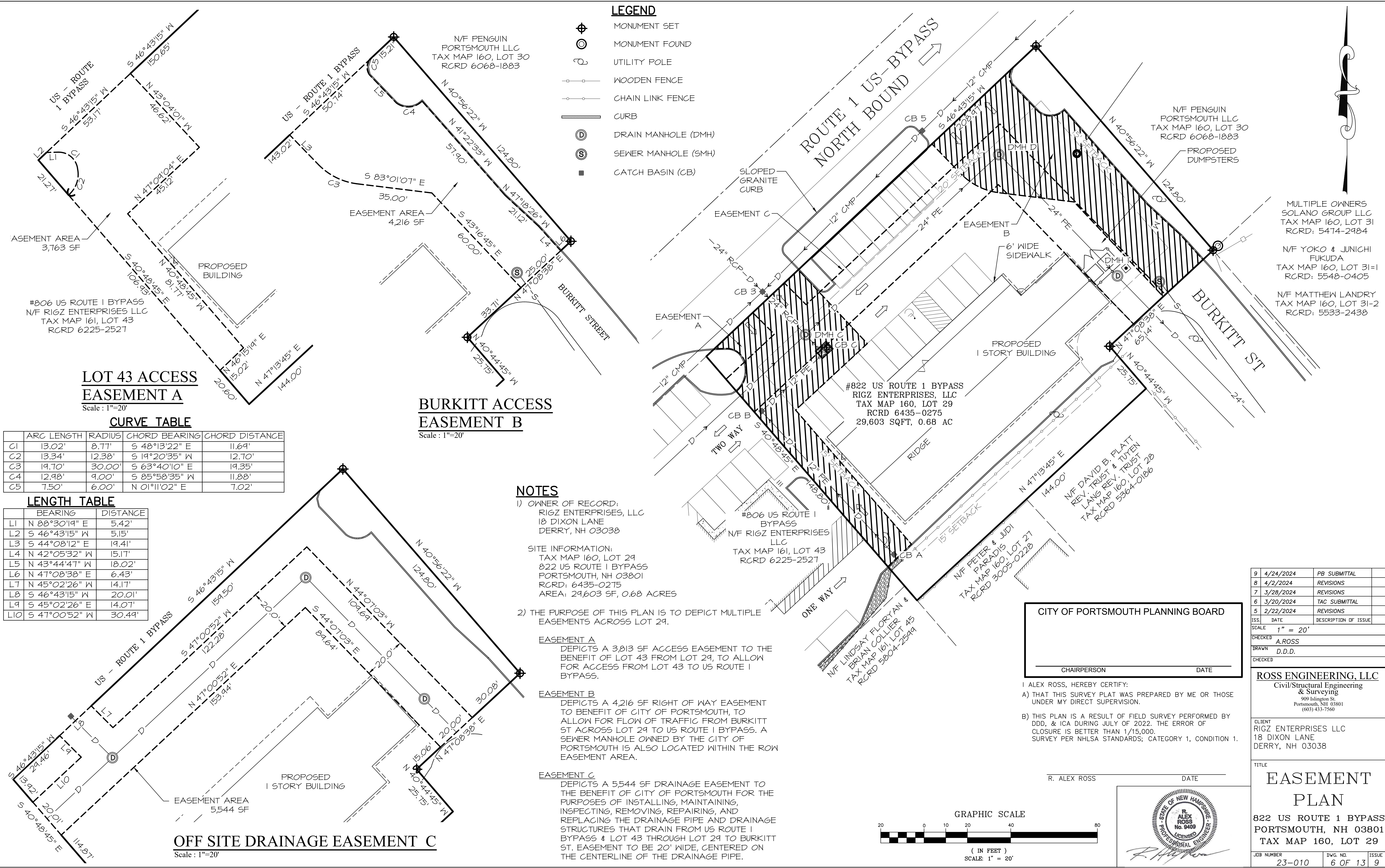






**LEGEND**

- ⊕ MONUMENT SET
- ⊙ MONUMENT FOUND
- ⊕ UTILITY POLE
- WOODEN FENCE
- CHAIN LINK FENCE
- CURB
- ⊙ DRAIN MANHOLE (DMH)
- ⊙ SEWER MANHOLE (SMH)
- CATCH BASIN (CB)



**LOT 43 ACCESS EASEMENT A**  
Scale: 1"=20'

**CURVE TABLE**

ARC LENGTH	RADIUS	CHORD BEARING	CHORD DISTANCE	
C1	13.02'	8.77'	S 48°13'22" E	11.69'
C2	13.34'	12.38'	S 19°20'35" W	12.70'
C3	19.70'	30.00'	S 63°40'10" E	19.35'
C4	12.98'	9.00'	S 85°58'35" W	11.88'
C5	7.50'	6.00'	N 01°11'02" E	7.02'

**LENGTH TABLE**

BEARING	DISTANCE
L1	N 88°30'19" E 5.42'
L2	S 46°43'15" W 5.15'
L3	S 44°08'12" E 19.41'
L4	N 42°05'32" W 15.17'
L5	N 43°44'47" W 18.02'
L6	N 47°08'38" E 6.43'
L7	N 45°02'26" W 14.17'
L8	S 46°43'15" W 20.01'
L9	S 45°02'26" E 14.07'
L10	S 47°00'52" W 30.49'

**BURKITT ACCESS EASEMENT B**  
Scale: 1"=20'

**NOTES**

1) OWNER OF RECORD:  
RIGZ ENTERPRISES, LLC  
18 DIXON LANE  
DERRY, NH 03038

SITE INFORMATION:  
TAX MAP 160, LOT 29  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
RCRD: 6435-0275  
AREA: 29,603 SF, 0.68 ACRES

2) THE PURPOSE OF THIS PLAN IS TO DEPICT MULTIPLE EASEMENTS ACROSS LOT 29.

**EASEMENT A**  
DEPICTS A 3,813 SF ACCESS EASEMENT TO THE BENEFIT OF CITY OF PORTSMOUTH, TO ALLOW FOR ACCESS FROM LOT 43 TO US ROUTE 1 BYPASS.

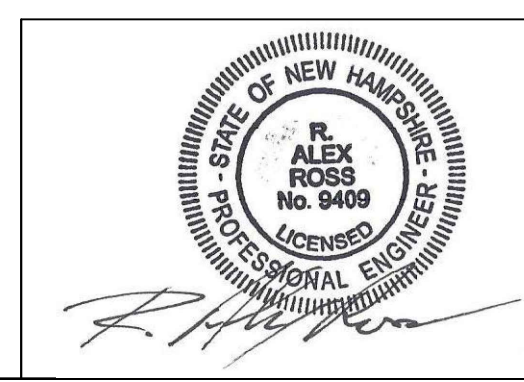
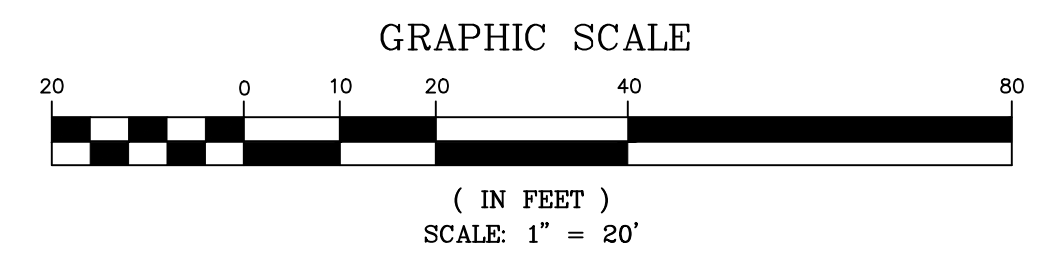
**EASEMENT B**  
DEPICTS A 4,216 SF RIGHT OF WAY EASEMENT TO BENEFIT OF CITY OF PORTSMOUTH, TO ALLOW FOR FLOW OF TRAFFIC FROM BURKITT ST ACROSS LOT 29 TO US ROUTE 1 BYPASS. A SEWER MANHOLE OWNED BY THE CITY OF PORTSMOUTH IS ALSO LOCATED WITHIN THE ROW EASEMENT AREA.

**EASEMENT C**  
DEPICTS A 5,544 SF DRAINAGE EASEMENT TO THE BENEFIT OF CITY OF PORTSMOUTH FOR THE PURPOSES OF INSTALLING, MAINTAINING, INSPECTING, REMOVING, REPAIRING, AND REPLACING THE DRAINAGE PIPE AND DRAINAGE STRUCTURES THAT DRAIN FROM US ROUTE 1 BYPASS & LOT 43 THROUGH LOT 29 TO BURKITT ST. EASEMENT TO BE 20' WIDE, CENTERED ON THE CENTERLINE OF THE DRAINAGE PIPE.

**OFF SITE DRAINAGE EASEMENT C**  
Scale: 1"=20'

**CITY OF PORTSMOUTH PLANNING BOARD**  
CHAIRPERSON \_\_\_\_\_ DATE \_\_\_\_\_

I, ALEX ROSS, HEREBY CERTIFY:  
A) THAT THIS SURVEY PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION.  
B) THIS PLAN IS A RESULT OF FIELD SURVEY PERFORMED BY DDD, & ICA DURING JULY OF 2022. THE ERROR OF CLOSURE IS BETTER THAN 1/15,000. SURVEY PER NHLSA STANDARDS; CATEGORY 1, CONDITION 1.



ISS. DATE	DESCRIPTION OF ISSUE
9/4/2024	PB SUBMITTAL
8/4/2024	REVISIONS
7/3/2024	REVISIONS
6/3/2024	TAC SUBMITTAL
5/2/2024	REVISIONS

CHECKED: A.ROSS  
DRAWN: D.D.D.  
CHECKED:

**ROSS ENGINEERING, LLC**  
Civil/Structural Engineering & Surveying  
909 Islington St.  
Portsmouth, NH 03801  
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CLIENT: RIGZ ENTERPRISES LLC  
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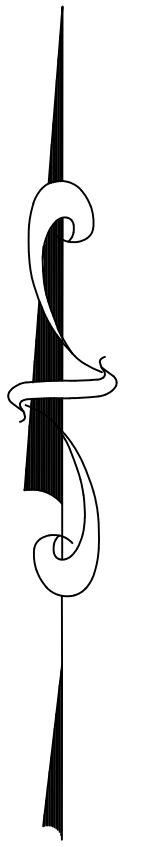
TITLE: **EASEMENT PLAN**  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
TAX MAP 160, LOT 29

JOB NUMBER	DWG. NO.	ISSUE
23-010	6 OF 13	9

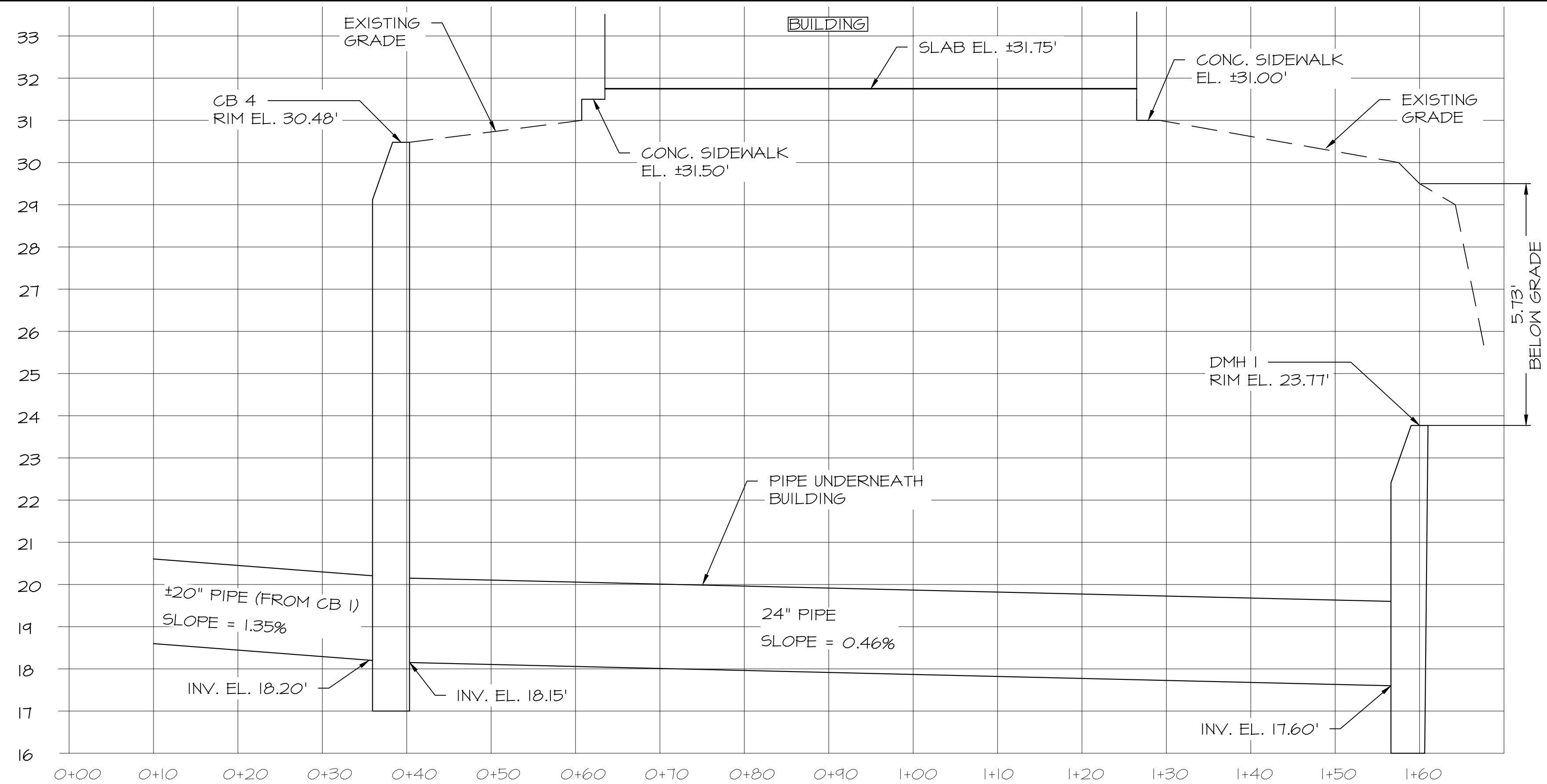
MULTIPLE OWNERS  
SOLANO GROUP LLC  
TAX MAP 160, LOT 31  
RCRD: 5474-2484

N/F YOKO & JUNICHI  
FUKUDA  
TAX MAP 160, LOT 31-1  
RCRD: 5548-0405

N/F MATTHEW LANDRY  
TAX MAP 160, LOT 31-2  
RCRD: 5533-2438

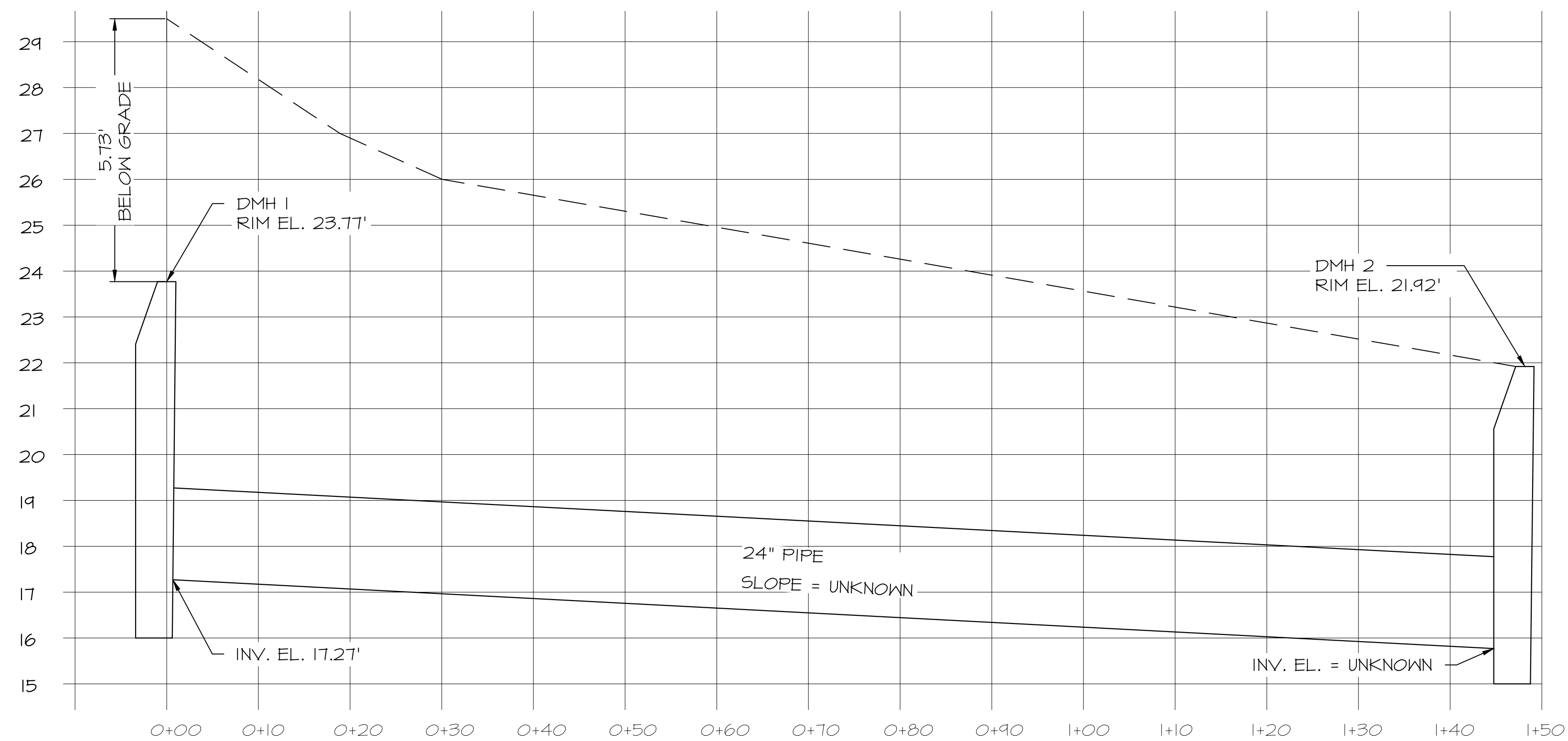






**EXISTING DRAIN LINE PROFILE**

SCALE: HORIZONTAL: 1" = 10'  
 VERTICAL: 1" = 2'



**EXISTING DRAIN LINE PROFILE (BURKITT ST)**

SCALE: HORIZONTAL: 1" = 10'  
 VERTICAL: 1" = 2'

9	4/24/2024	PB SUBMITTAL
8	4/2/2024	REVISIONS
7	3/28/2024	REVISIONS
6	3/20/2024	TAC SUBMITTAL
5	2/22/2024	REVISIONS
ISS.	DATE	DESCRIPTION OF ISSUE

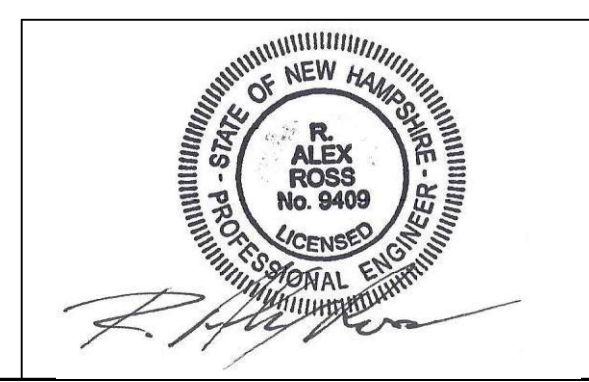
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 DRAWN D.D.D.  
 CHECKED

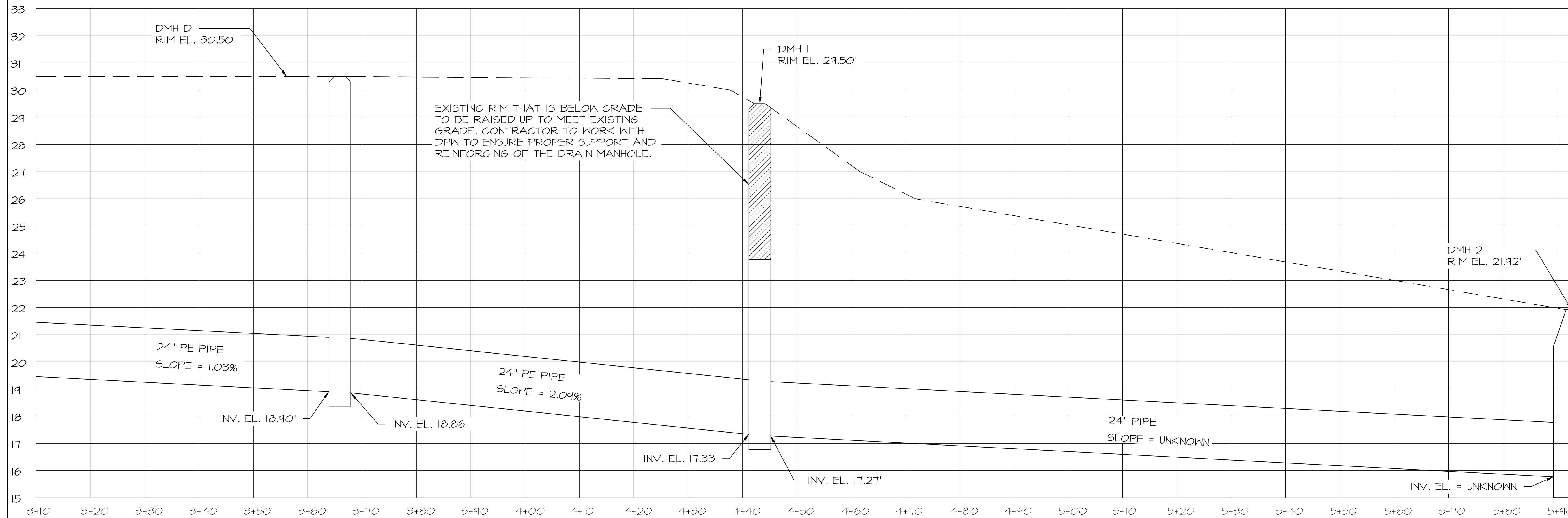
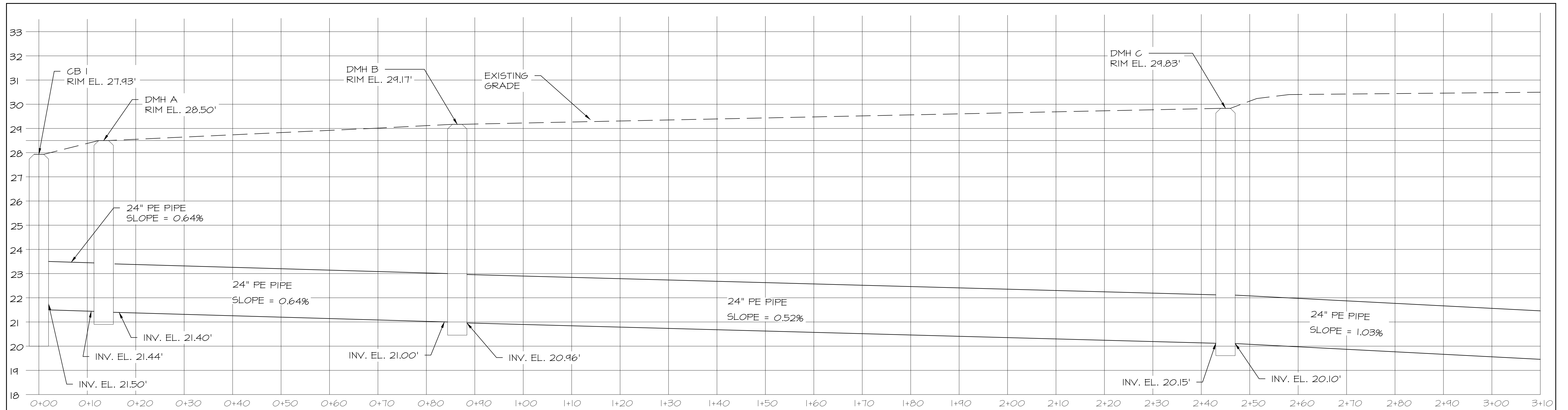
**ROSS ENGINEERING, LLC**  
 Civil/Structural Engineering  
 & Surveying  
 909 Islington St.  
 Portsmouth, NH 03801  
 (603) 433-7560

CLIENT  
 RIGZ ENTERPRISES LLC  
 18 DIXON LANE  
 DERRY, NH 03038

TITLE  
**EXISTING DRAIN PROFILE**  
 822 US ROUTE 1 BYPASS  
 PORTSMOUTH, NH 03801  
 TAX MAP 160, LOT 29

JOB NUMBER	DWG. NO.	ISSUE
23-010	7 OF 13	9





ISS.	DATE	DESCRIPTION OF ISSUE
9	4/24/2024	PB SUBMITTAL
8	4/2/2024	REVISIONS
7	3/28/2024	REVISIONS
6	3/20/2024	TAC SUBMITTAL
5	2/22/2024	REVISIONS

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 CHECKED

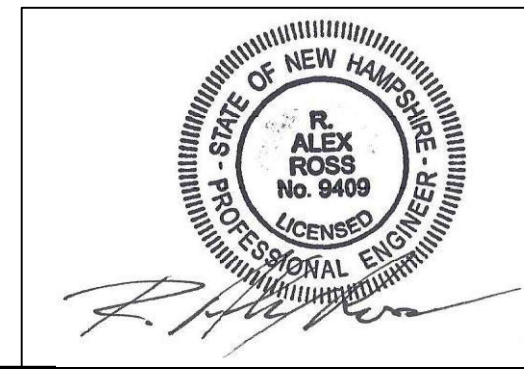
**ROSS ENGINEERING, LLC**  
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 & Surveying  
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 Portsmouth, NH 03801  
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CLIENT  
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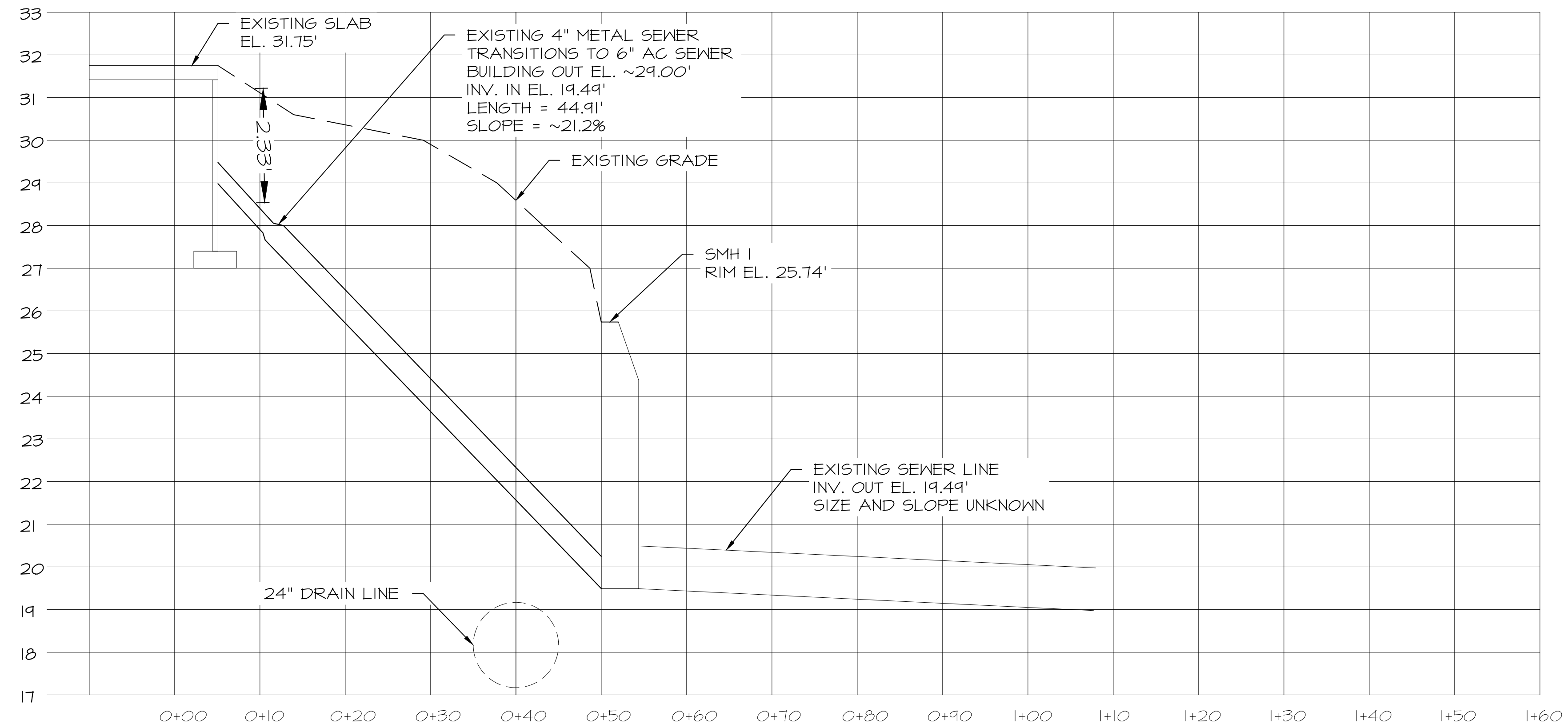
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# PROPOSED DRAIN LINE PROFILE

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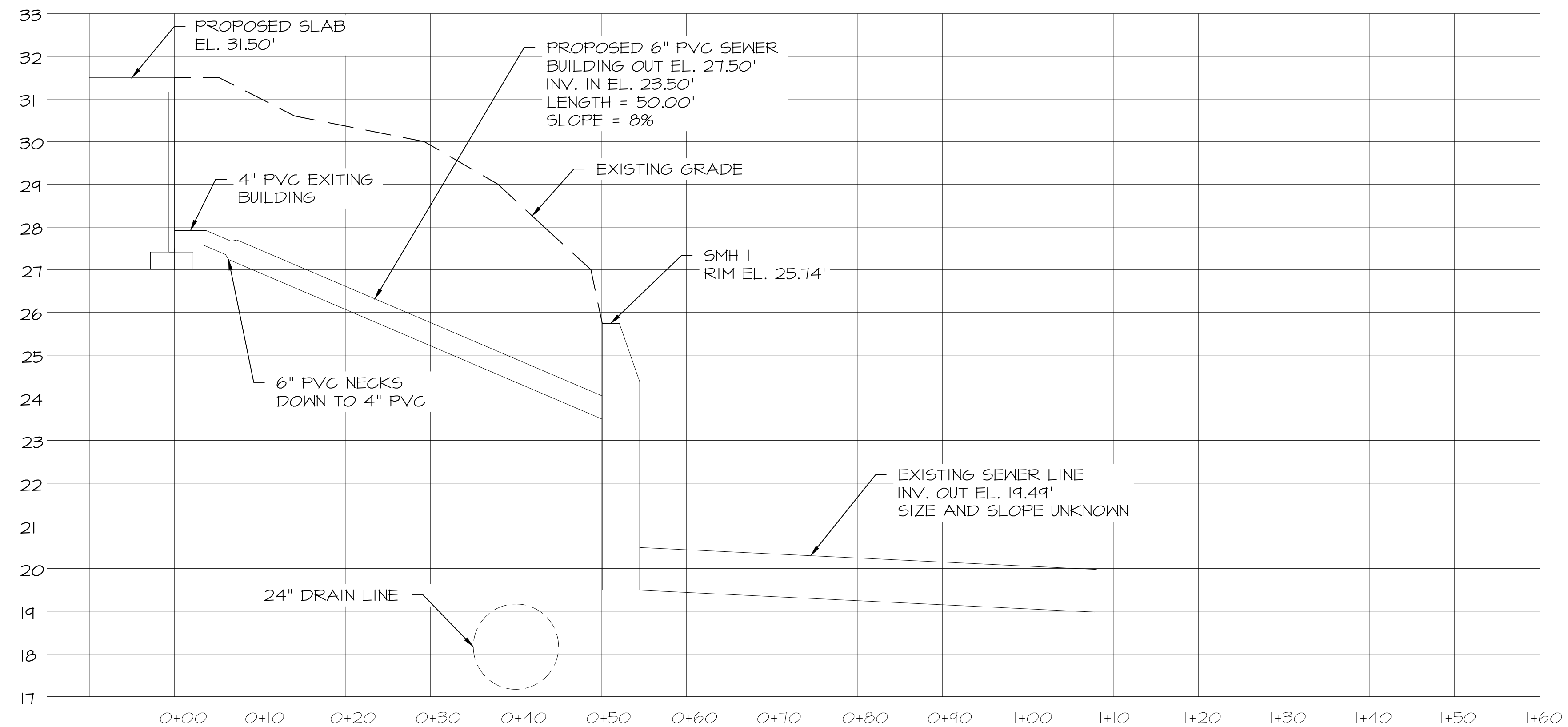


**PROPOSED DRAIN PROFILE**  
 822 US ROUTE 1 BYPASS  
 PORTSMOUTH, NH 03801  
 TAX MAP 160, LOT 29  
 JOB NUMBER 23-010 DWG. NO. 8 OF 13 ISSUE 9



### EXISTING SEWER LINE PROFILE

SCALE: HORIZONTAL: 1" = 10'  
VERTICAL: 1" = 2'



### PROPOSED SEWER LINE PROFILE

SCALE: HORIZONTAL: 1" = 10'  
VERTICAL: 1" = 2'

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8	4/2/2024	REVISIONS	
7	3/28/2024	REVISIONS	
6	3/20/2024	TAC SUBMITTAL	
5	2/22/2024	REVISIONS	
ISS.	DATE	DESCRIPTION OF ISSUE	

SCALE AS SHOWN  
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CHECKED

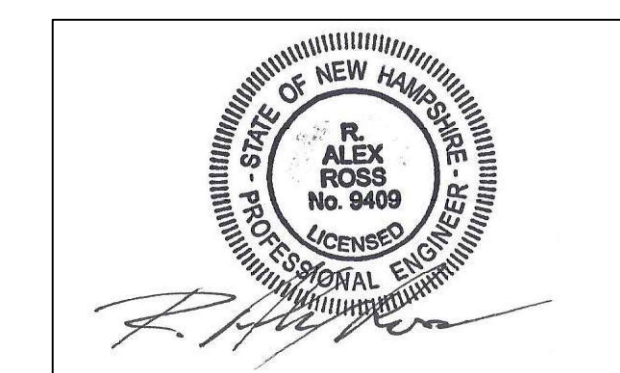
**ROSS ENGINEERING, LLC**  
Civil/Structural Engineering  
& Surveying  
909 Islington St.  
Portsmouth, NH 03801  
(603) 433-7560

CLIENT  
RIGZ ENTERPRISES LLC  
18 DIXON LANE  
DERRY, NH 03038

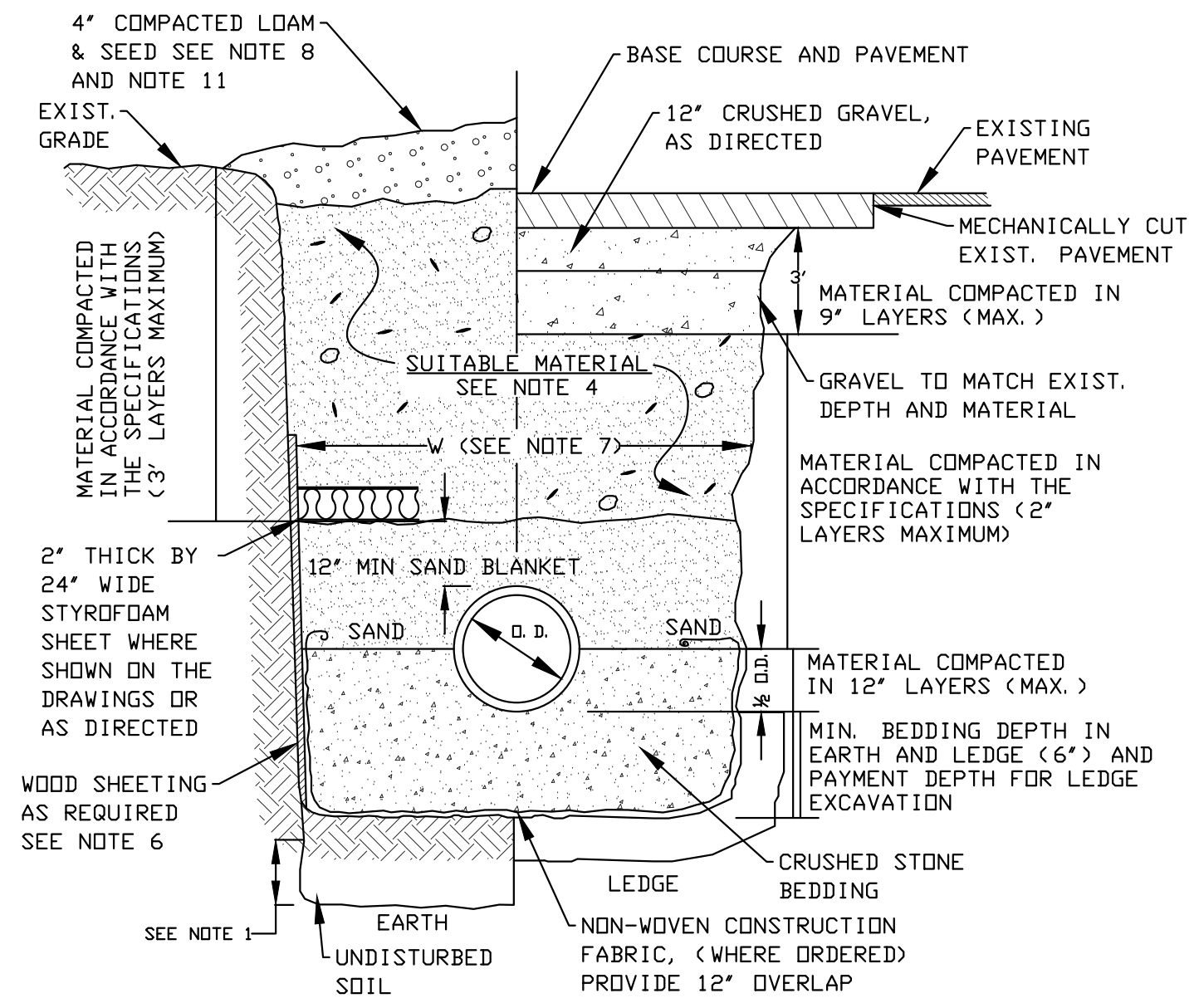
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**SEWER PROFILE**  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
TAX MAP 160, LOT 29

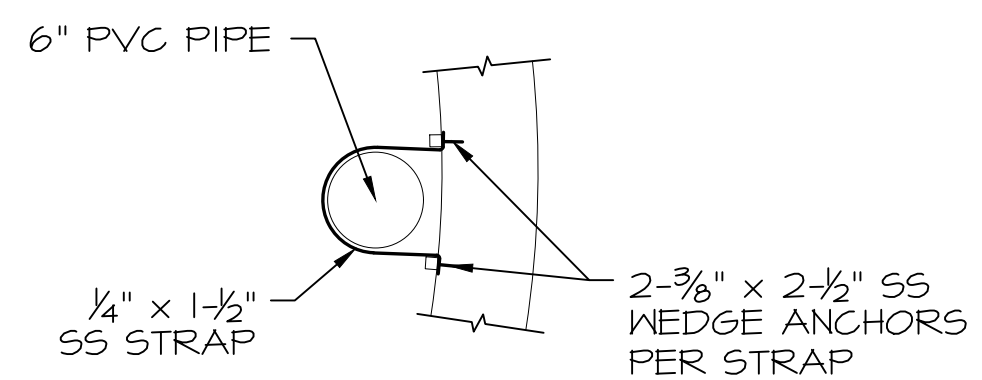
JOB NUMBER	DWG. NO.	ISSUE
23-010	9 OF 13	9







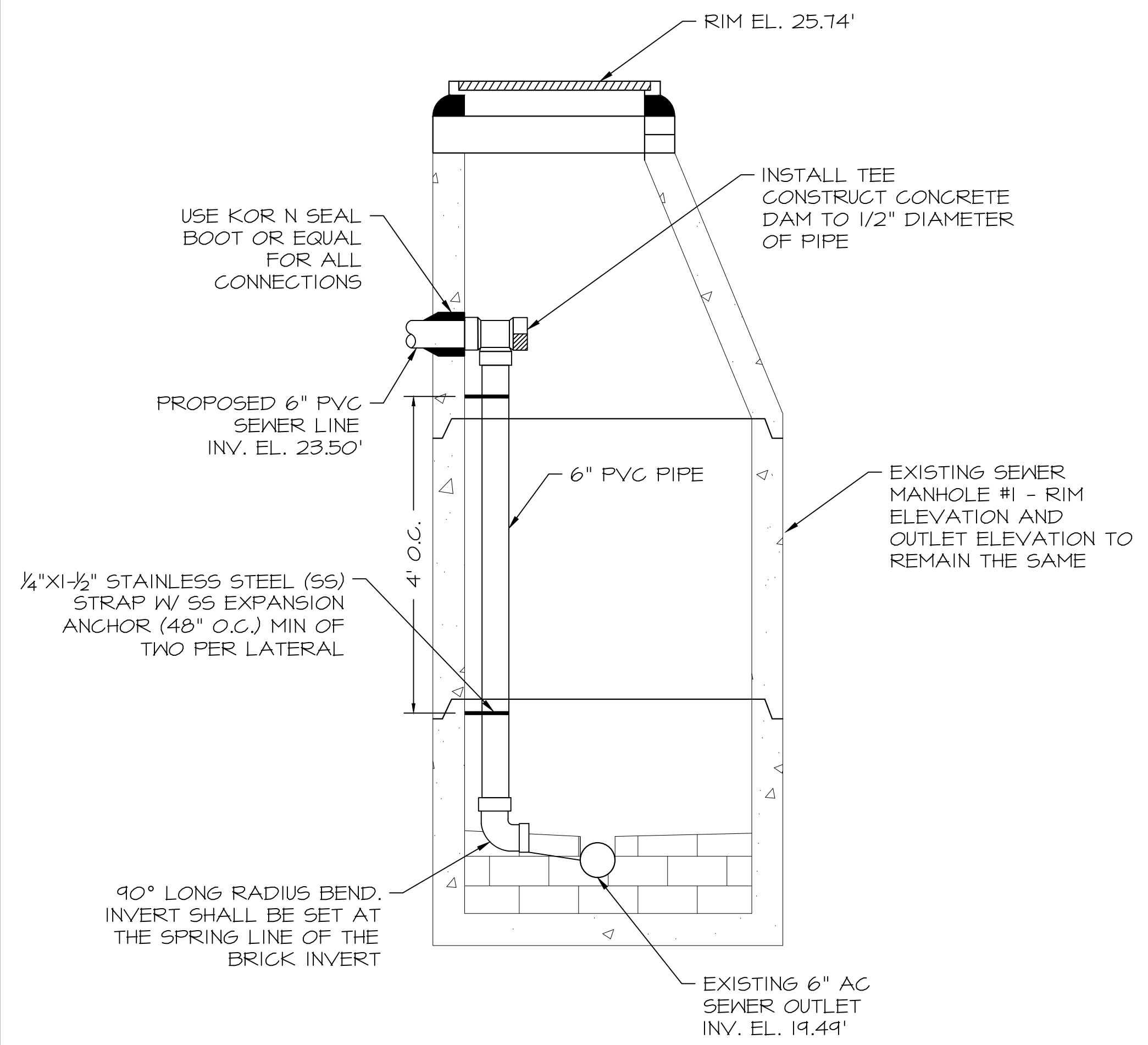
**TRENCH DETAIL- GRAVITY SEWER**  
Scale: N.T.S.



**PIPE STRAP DETAIL**  
Scale: N.T.S.

**GRAVITY SEWER TRENCH NOTES:**

- 1) **ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE:** BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
- 2) **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  
0-10% PASSING #4 SIEVE  
90-100% PASSING 3/4 INCH SCREEN  
0-5% PASSING #8 SIEVE  
20-55% PASSING 3/8 INCH SCREEN  
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 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. NO STONE LARGER THAN 2" SHOULD BE IN CONTACT WITH THE PIPE.
- 4) **SUITABLE MATERIAL:** IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED 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; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND 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 TOP SOIL, 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, WILL BE PRESERVED.
- 5) **BASE COURSE AND PAVEMENT** SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY AND LOCAL REGULATION.
- 6) **WOOD SHEATHING, IF REQUIRED:** WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
- 7) **W = MAXIMUM ALLOWABLE TRENCH PAYMENT WIDTH** FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 12 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.) ALSO, W SHALL BE THE PAYMENT WIDTH.
- 8) **FOR CROSS COUNTRY CONSTRUCTION,** BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 9) **CONCRETE FOR ENCASEMENT** SHALL CONFORM TO THE REQUIREMENTS OF SECTION 520, (NHDDT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- 10) **CONCRETE FULL ENCASEMENT:** IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I. D. (4' MINIMUM). BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
- 11) **GRAVEL DRIVEWAY AND SHOULDER RESTORATION:** CRUSHED GRAVEL IN DRIVEWAYS AND ROAD SHOULDERS SHALL MATCH EXISTING WITH A MINIMUM OF 12". GRAVEL REPLACEMENT SHALL BE SUBSIDIARY TO SEWER CONSTRUCTION AND WILL NOT BE MEASURED FOR PAYMENT.



**SMH 1 INTERIOR MANHOLE DROP CONNECTION**  
Scale: N.T.S.

9	4/24/2024	PB SUBMITTAL	
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6	3/20/2024	TAC SUBMITTAL	
5	2/22/2024	REVISIONS	
ISS.	DATE	DESCRIPTION OF ISSUE	
SCALE 1" = 20'			
CHECKED A.ROSS			
DRAWN D.D.D.			
CHECKED			

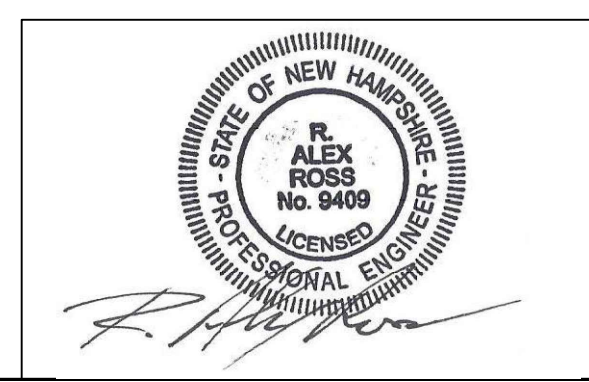
**ROSS ENGINEERING, LLC**  
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Portsmouth, NH 03801  
(603) 433-7560

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RIGZ ENTERPRISES LLC  
18 DIXON LANE  
DERRY, NH 03038

TITLE  
**SEWER DETAILS**

822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
TAX MAP 160, LOT 29

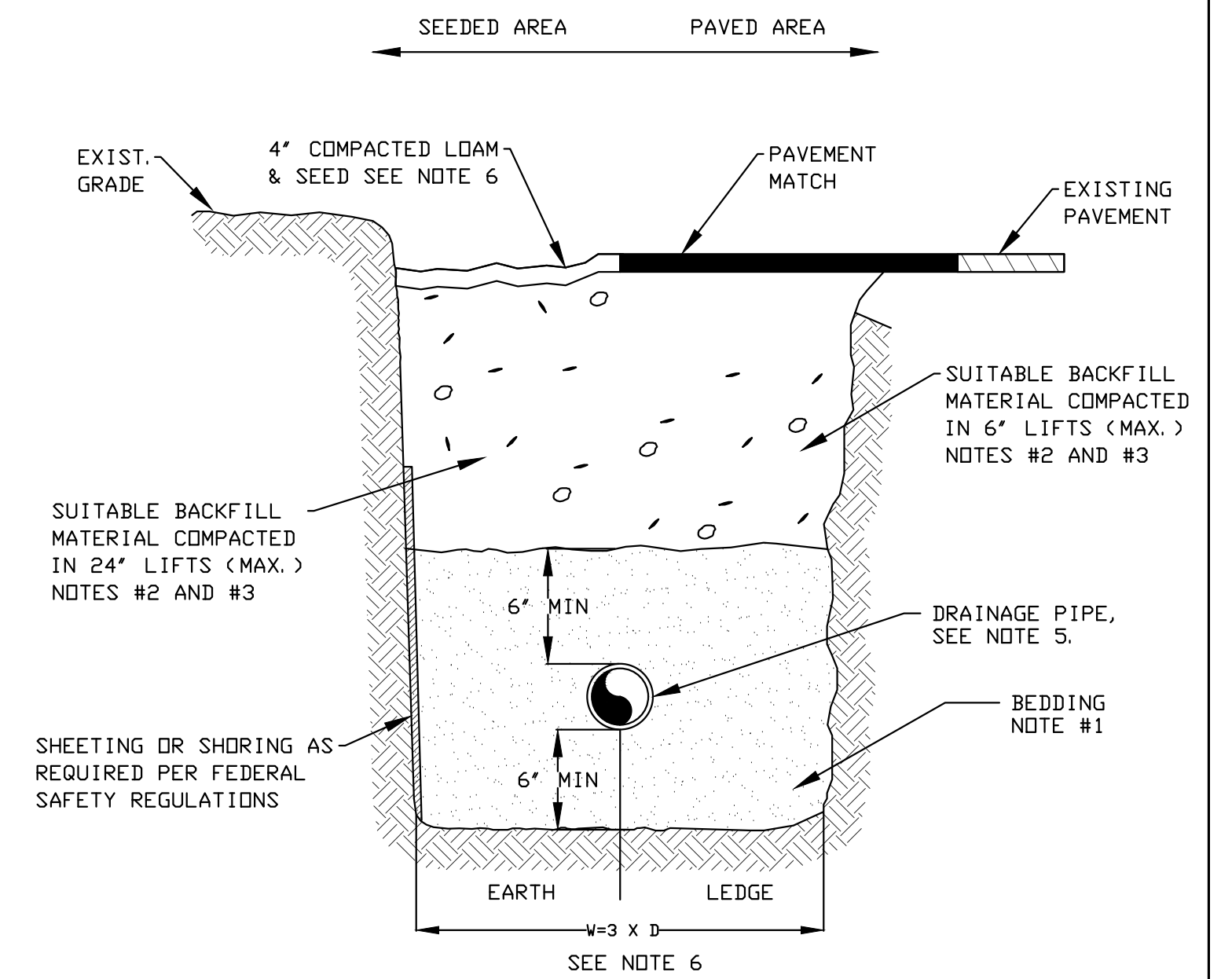
JOB NUMBER	DWG. NO.	ISSUE
23-010	10 OF 13	9





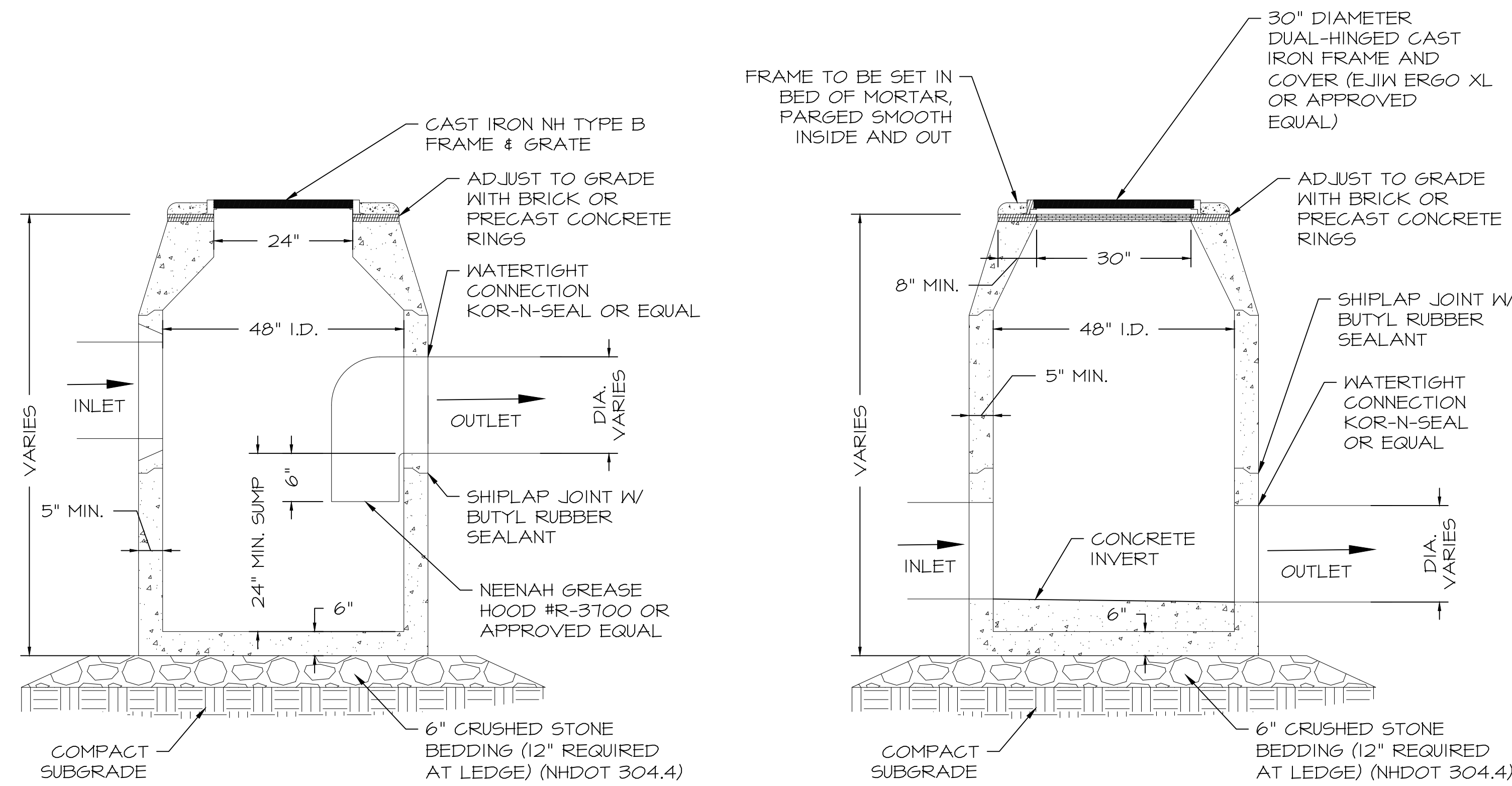
**TRENCH NOTES - STORM DRAIN:**

- 1) BEDDING:** BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS. NORMAL PIPE BEDDING IS CRUSHED STONE TO THE HAUNCH OF THE PIPE AND SAND BEDDING 6" ABOVE THE CROWN. IF THE TOP OF THE PIPE IS LESS THAN 30" FROM FINISH GRADE, BED PIPE COMPLETELY IN STONE UP TO 6" ABOVE PIPE CROWN. UNDERDRAIN TO HAVE 4" MIN' OF STONE OVER PIPE OR AS NECESSARY TO BE IN CONTACT WITH GRAVEL LAYER OF SELECTS ABOVE. FILTER FABRIC TO BE PLACED IN BETWEEN ALL STONE BEDDING MATERIAL AND SUBSEQUENT LAYERS OF FILL MATERIAL.
- 2) COMPACTION:** ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF AASHTO T99, METHOD C.
- 3) SUITABLE MATERIAL:** IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED 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; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6 INCHES IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.  
  
IN SEEDED AREAS, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAD, ROCKS UNDER 12", FROZEN EARTH OR CLAY, IF HE/SHE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EAST ACCESS TO THE PIPE WILL BE PRESERVED.
- 4) BASE COURSE AND PAVEMENT:** SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
- 5) DRAINAGE PIPE:** PIPE MATERIALS SHALL BE POLYETHYLENE (SEE SPECIFICATIONS).
- 6) V=MAXIMUM ALLOWABLE TRENCH WIDTH:** V SHALL BE THE MAXIMUM PAYMENT WIDTH FOR ROCK EXCAVATION (TRENCH) AND FOR ORDERED EXCAVATION BELOW GRADE.



**TRENCH DETAIL-STORM DRAIN**

Scale: N.T.S.



**PROPOSED CATCH BASIN (TYP)**

N.T.S.

**PROPOSED DRAIN MANHOLE (TYP)**

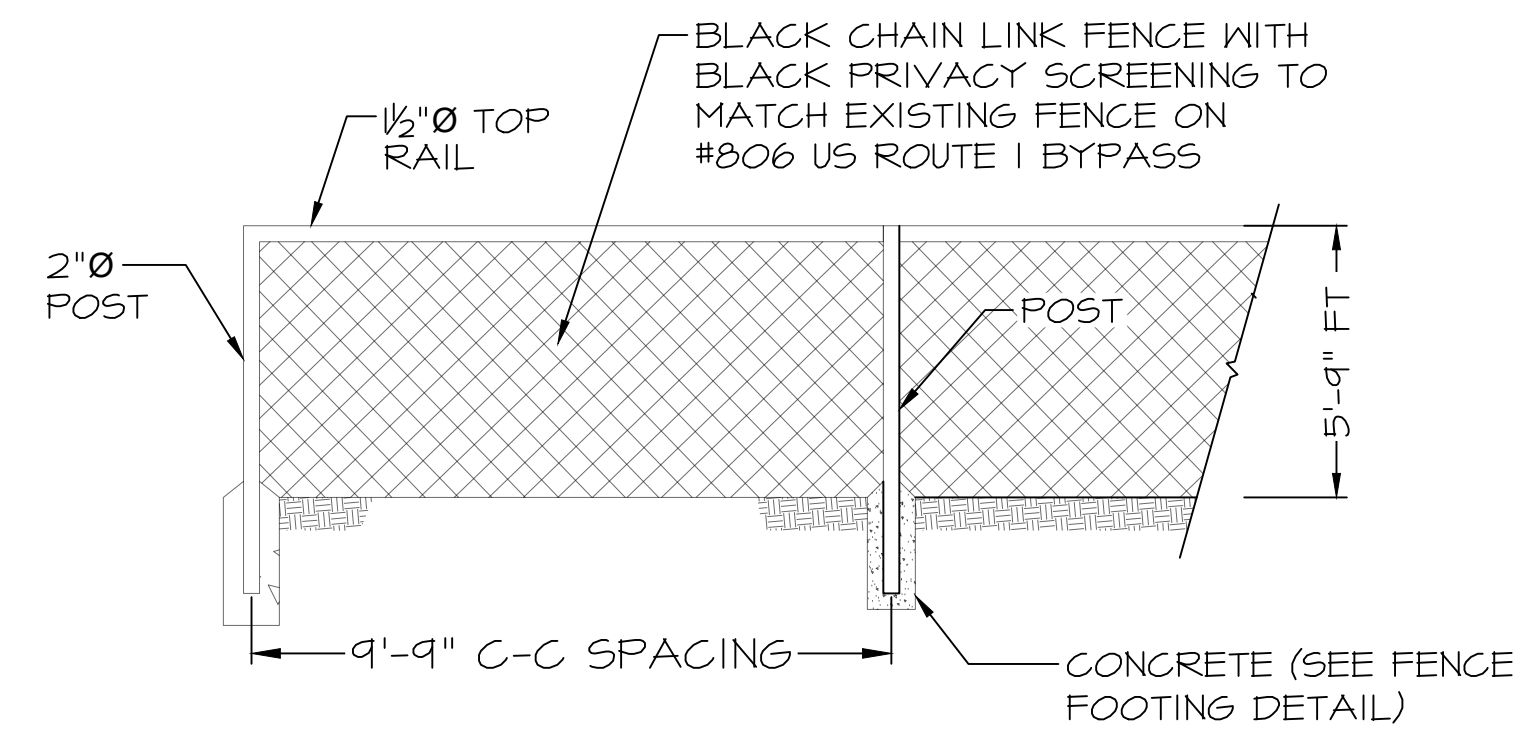
N.T.S.

**NOTES**

- 1) ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
- 2) CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
- 3) JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
- 4) CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
- 5) THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ IN PER LINEAR FT.
- 6) EACH CASTING TO HAVE LIFTING HOLES CAST IN.

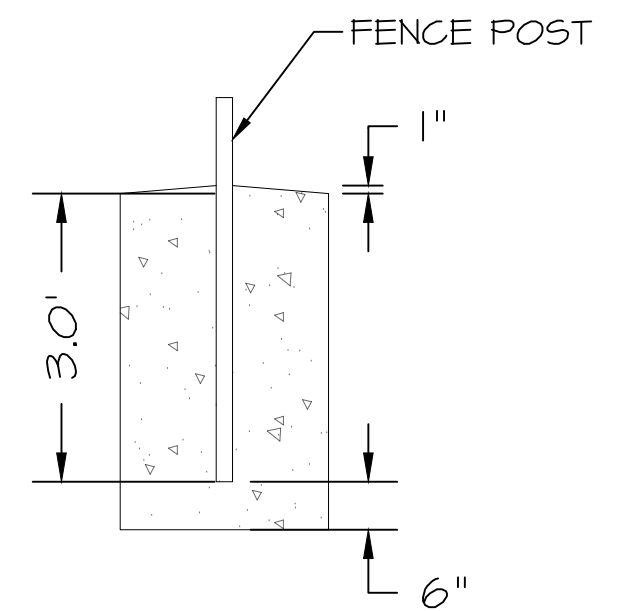
**NOTES**

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- 6) EACH CASTING TO HAVE LIFTING HOLES CAST IN.



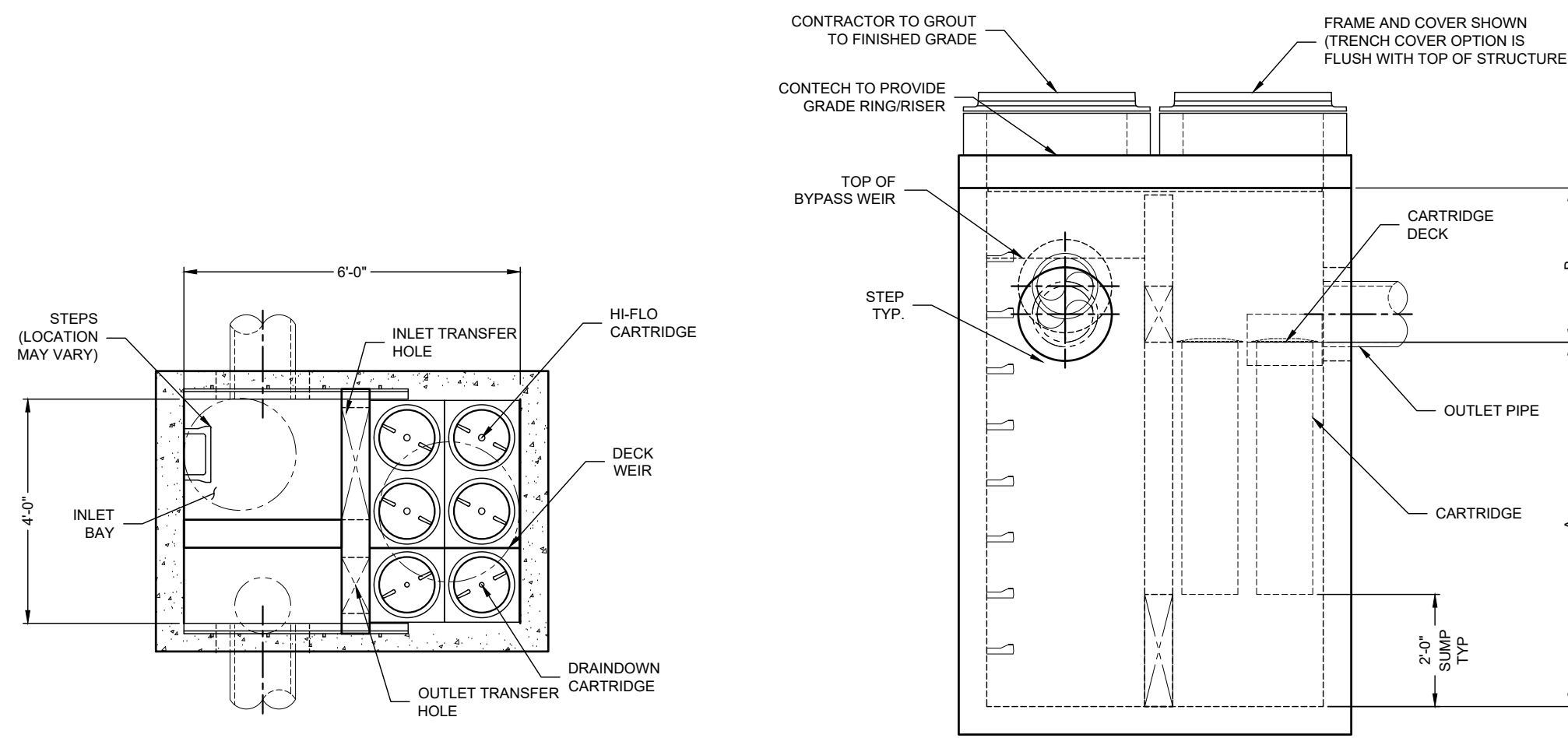
**CHAIN LINK FENCE DETAIL**

SCALE: NTS



**FENCE FOOTING DETAIL**

SCALE: NTS



**JELLYFISH FILTER JFPD0406 (CB C) DETAIL**

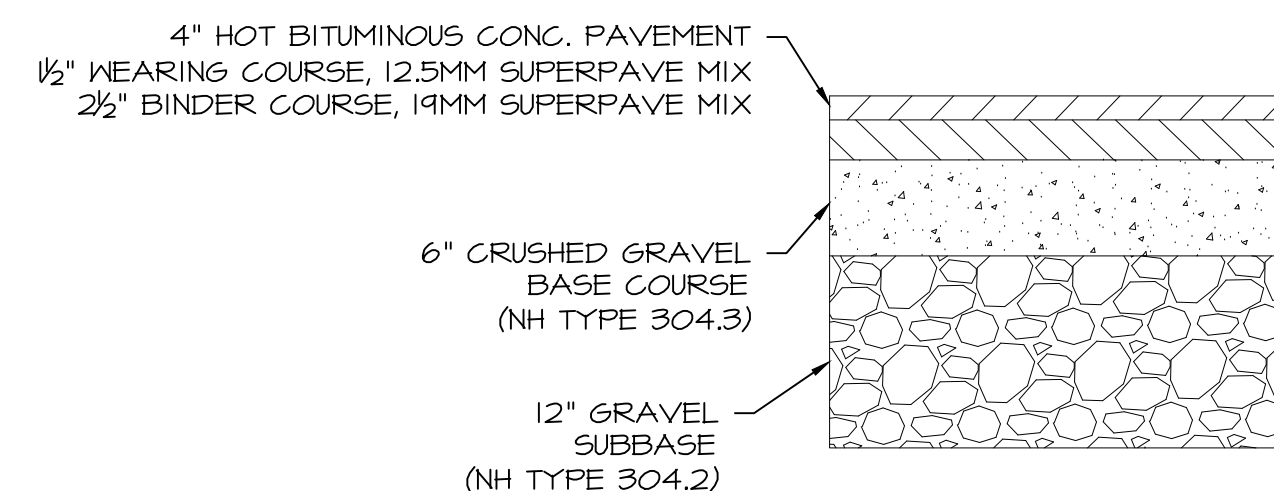
N.T.S.

**JELLYFISH FILTER GENERAL NOTES:**

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

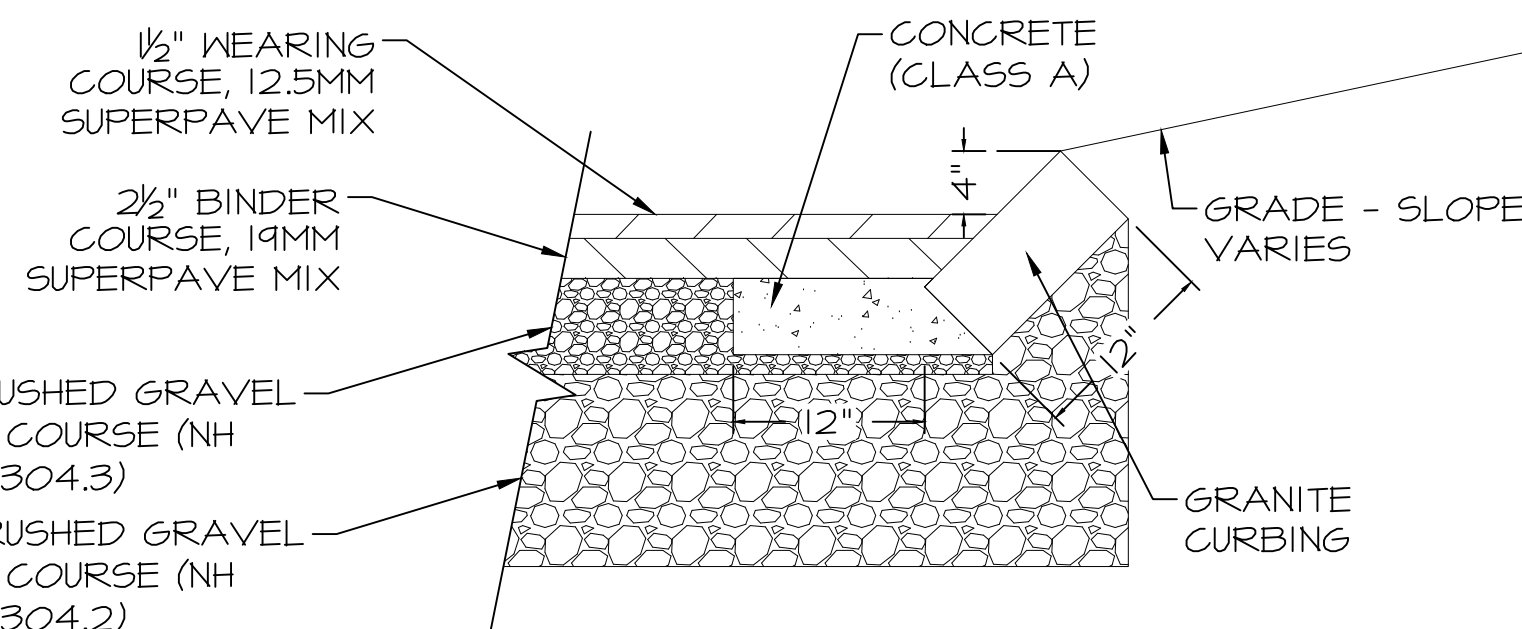
**INSTALLATION NOTES:**

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



**ASPHALT PAVEMENT DETAIL**

Scale: N.T.S.



**SLOPED CURB DETAIL**

Scale: NTS

9	4/24/2024	PB SUBMITTAL
8	4/2/2024	REVISIONS
7	3/28/2024	REVISIONS
6	3/20/2024	TAC SUBMITTAL
5	2/22/2024	REVISIONS
ISS.	DATE	DESCRIPTION OF ISSUE
CHECKED	A.ROSS	
DRAWN	D.D.D.	
CHECKED		

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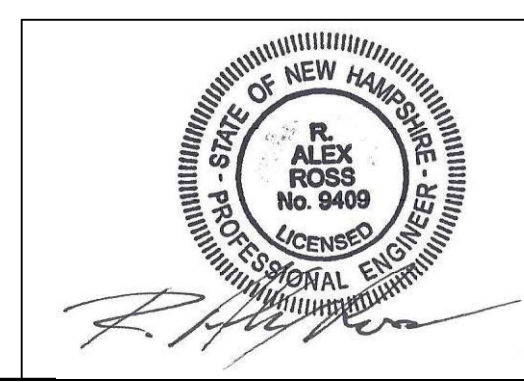
CLIENT  
RIGZ ENTERPRISES LLC  
18 DIXON LANE  
DERRY, NH 03038

TITLE

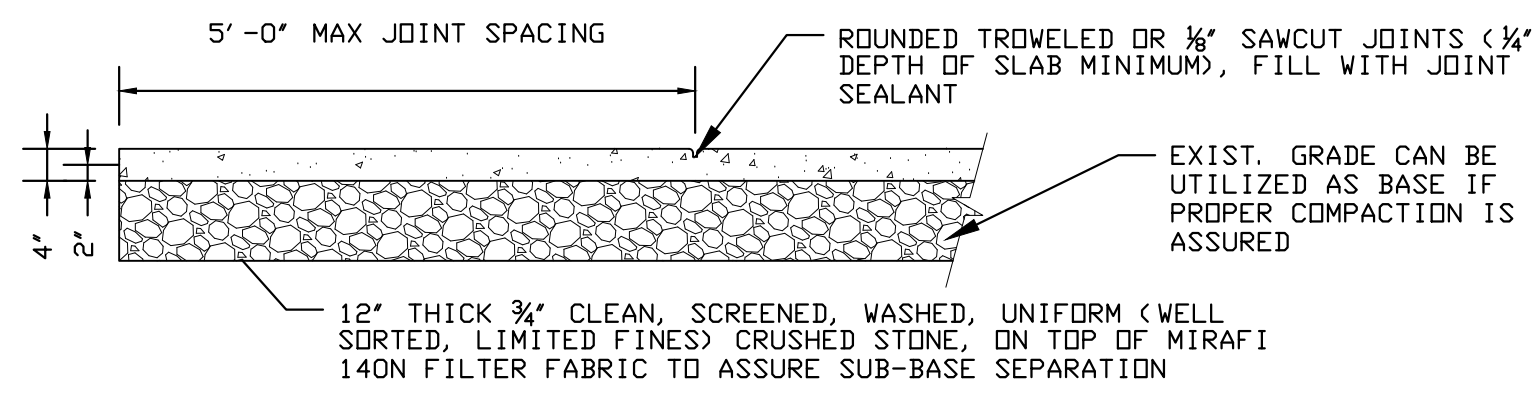
**DETAILS**

822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
TAX MAP 160, LOT 29

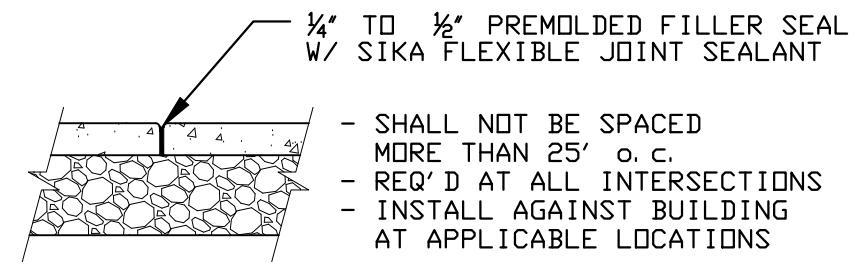
JOB NUMBER	DWG. NO.	ISSUE
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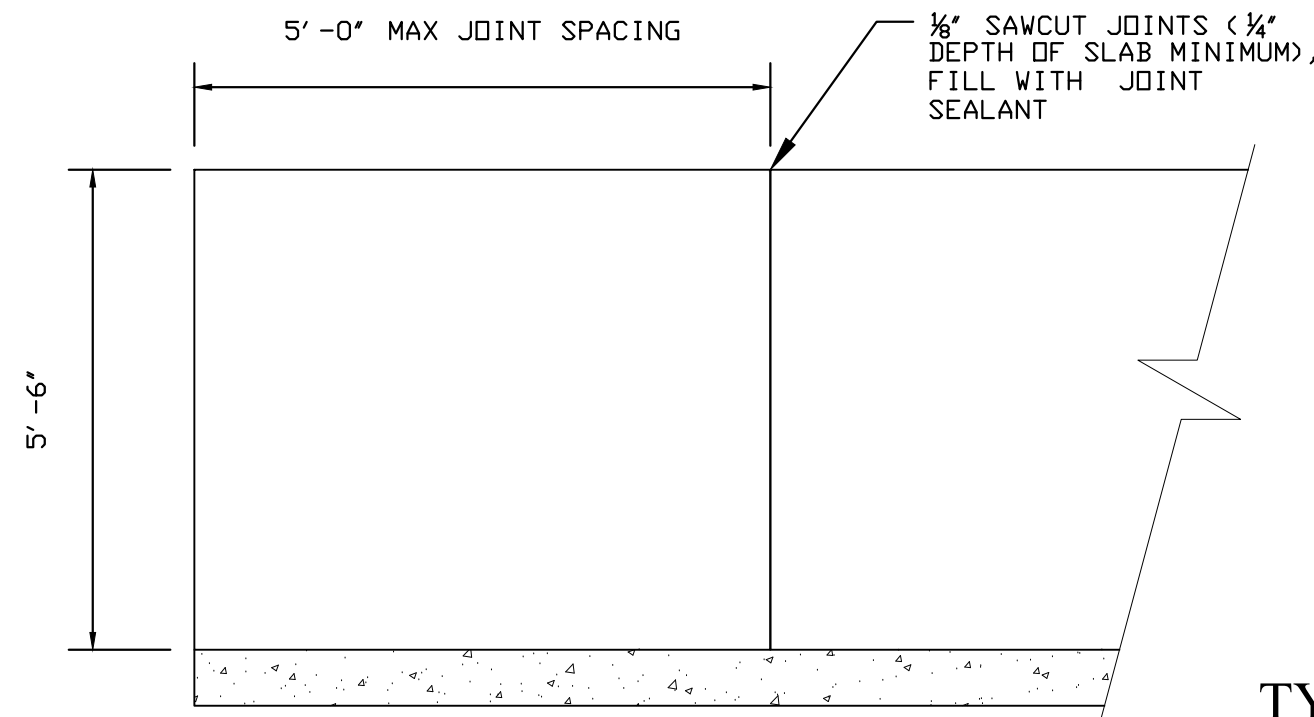




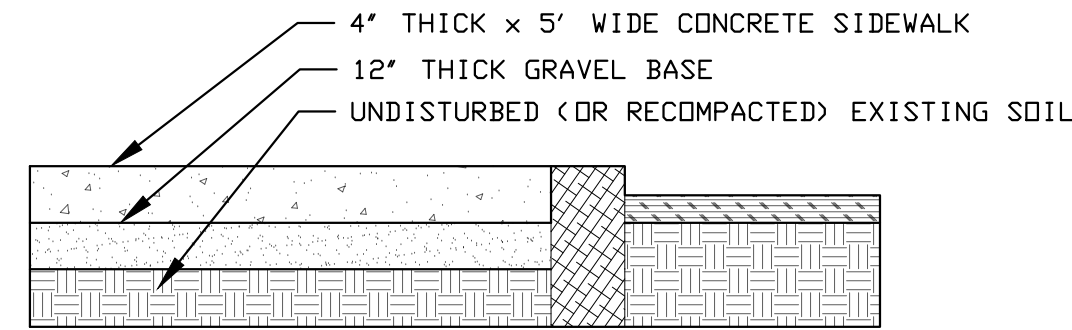
**TYPICAL CONCRETE SIDEWALK SECTION**  
N.T.S.



**TYPICAL EXPANSION JOINT**  
N.T.S.



**TYPICAL CONCRETE SIDEWALK PLAN**  
N.T.S.



**TYPICAL CONC. SIDEWALK CROSS SECTION**  
N.T.S.

ALL CONCRETE MUST BE 4000 PSI, 5-7% AIR ENTRAINED, FIBER REINFORCED WITH CONTROL JOINTS EVERY 5' AND EXPANSION JOINTS EVERY 25'. ALL CONTROL JOINTS WILL BE MADE WITH JOINTING TOOL TO A DEPTH OF 1/4 OF THE SIDEWALK DEPTH. EXPANSION MATERIAL WILL ALSO BE USED AROUND MANHOLE COVERS, UTILITY POLES, ETC.

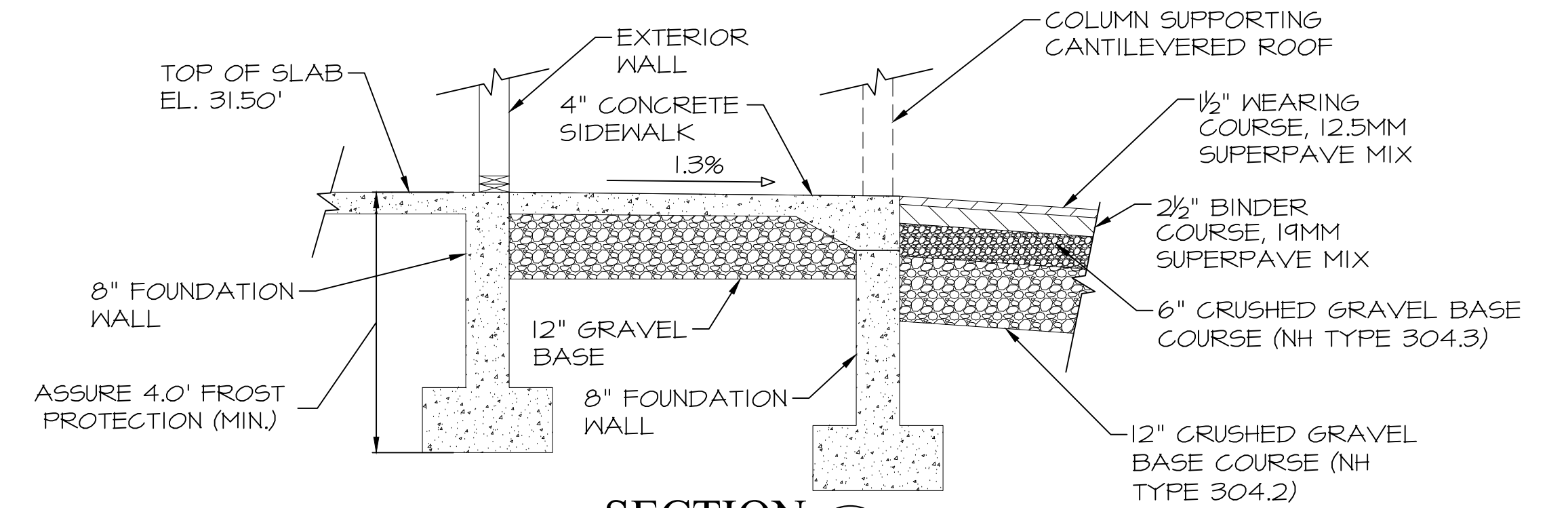
A PROTECTIVE COATING OF SILANE-SILOXANE SHALL BE APPLIED TO ALL EXPOSED SURFACES. THREE DAYS AFTER APPLICATION, THE ENGINEER WILL TEST THE PRODUCT. IF THE TEST COMES OUT NEGATIVE, THE CONTRACTOR WILL INSTALL A SECOND COAT OF THE PRODUCT.

CURING COMPOUNDS WILL NOT BE PERMITTED UNLESS DIRECTED BY THE ENGINEER.

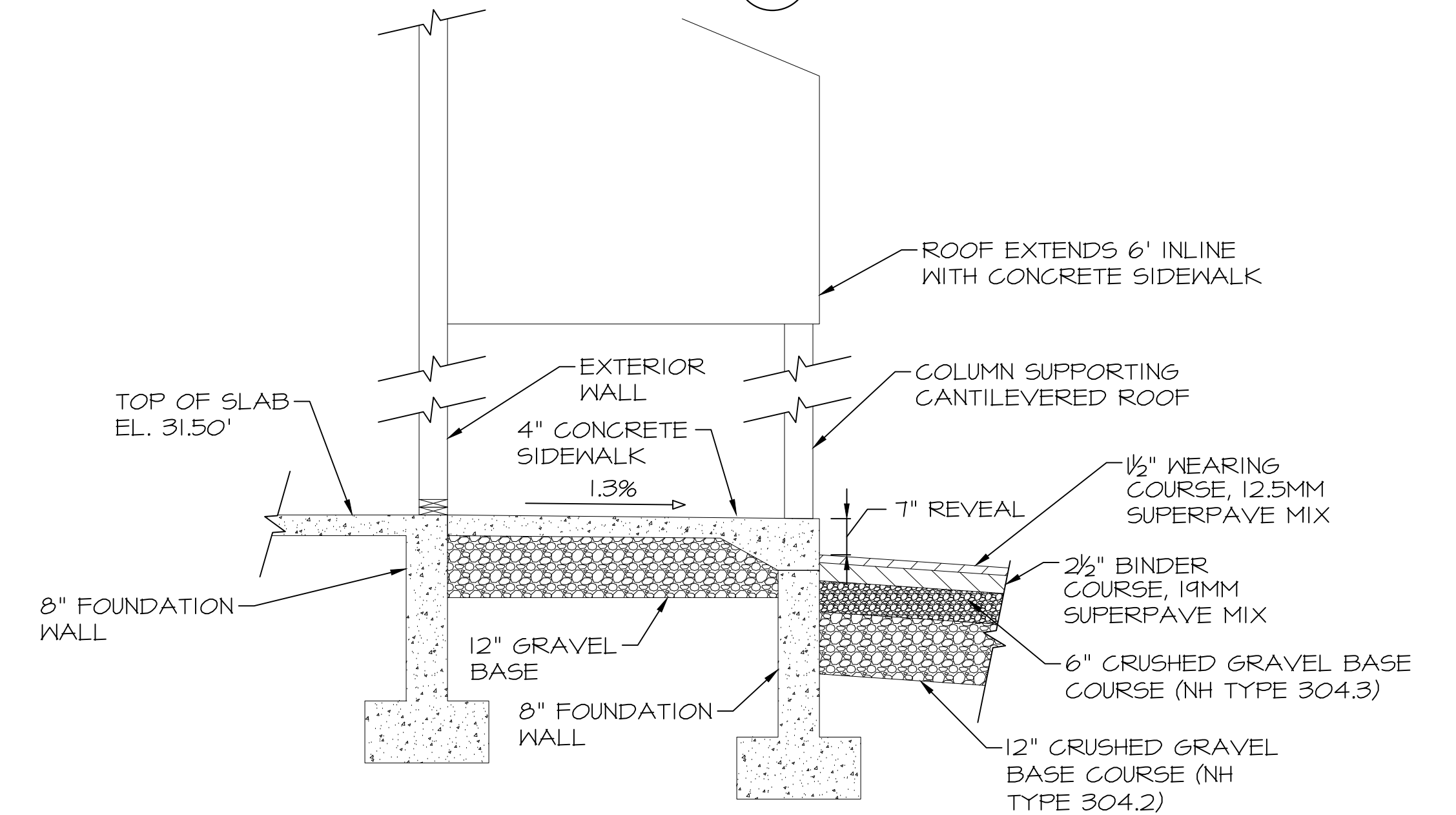
ALL SIDEWALKS WILL HAVE A LIGHT BROOM FINISH TRANSVERSE TO THE WALKING PATH.

AFTER STRIPPING FORMS, THE SUBGRADE ON THE SIDES OF THE CONCRETE WILL BE BROUGHT UP EVEN WITH THE BOTTOM OF THE SIDEWALK OR 5' FROM THE TOP WHICHEVER IS LESS. DISTURBANCE OF LOAM MORE THAN 12" WIDE ON EITHER SIDE OF THE FINISHED SIDEWALK WILL NOT BE PAID FOR UNLESS DIRECTED BY THE ENGINEER. A TRUE 4" OF LOAM WILL BE PLACED ON ALL DISTURBED AREAS.

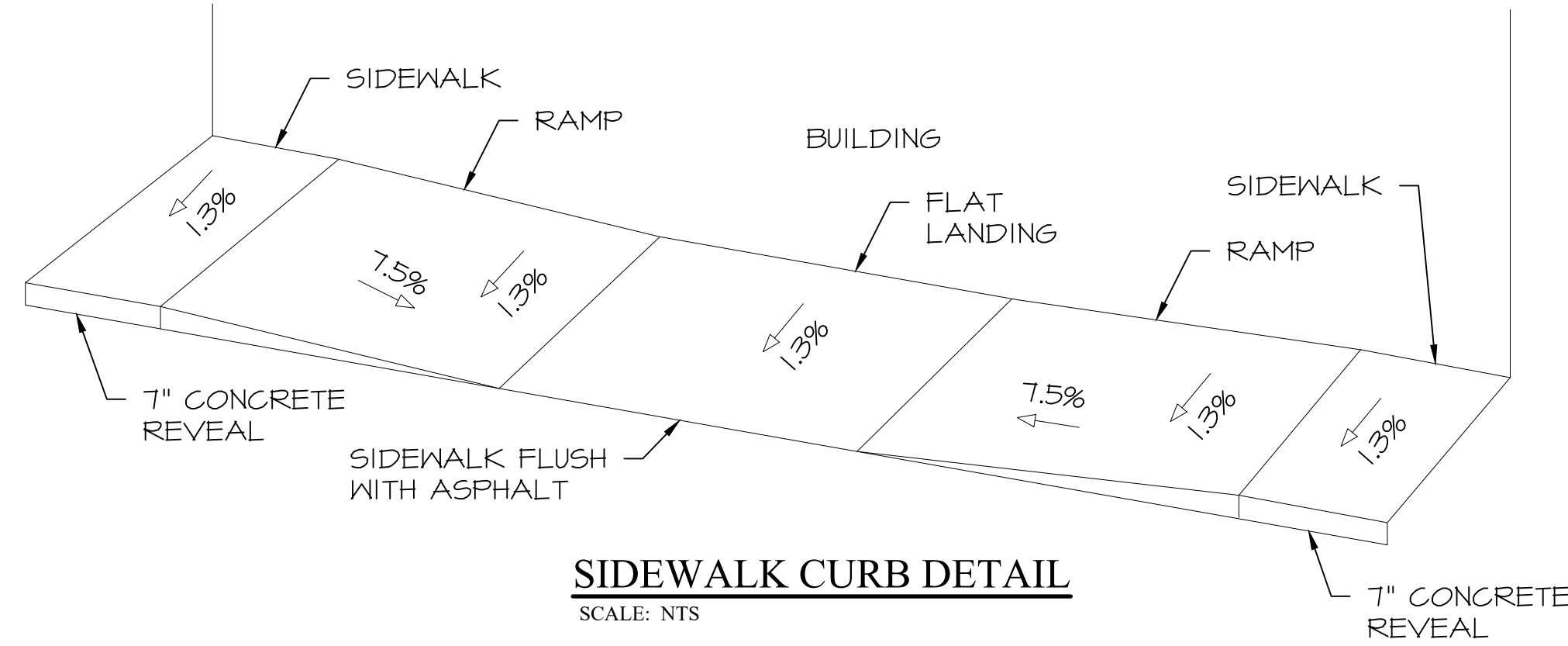
HANDICAPPED RAMPS AT STREET CORNERS SHALL BE 6' DEEP.



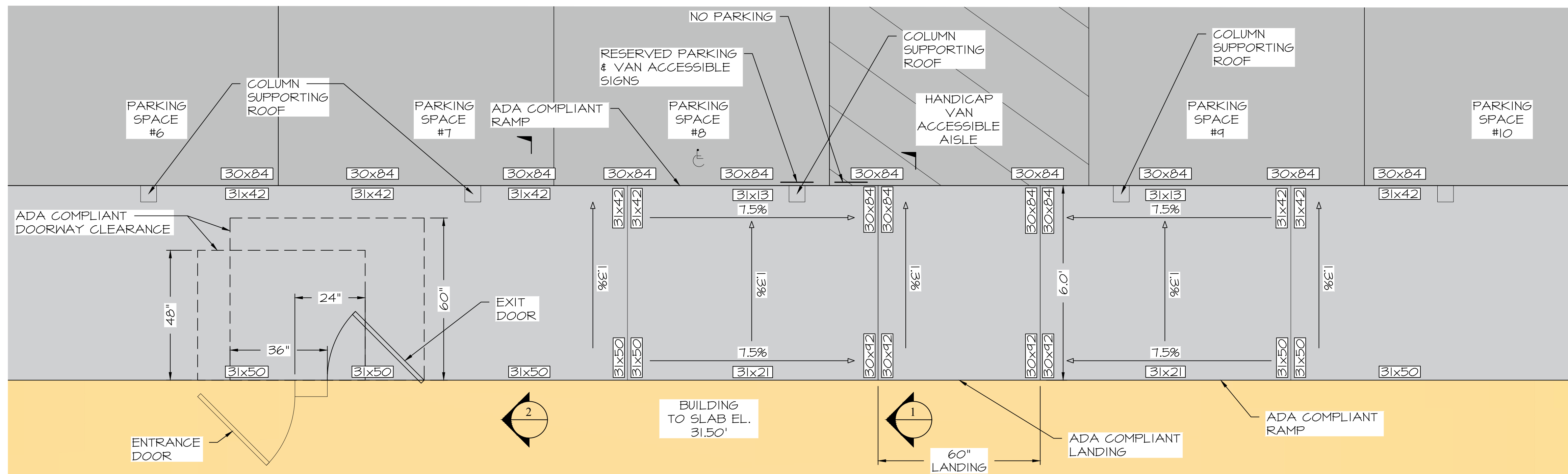
**SECTION 1**  
Scale: 1"=2'



**SECTION 2**  
Scale: 1"=2'



**SIDEWALK CURB DETAIL**  
SCALE: NTS



**DETAIL A**  
Scale: 1"=2'

9	4/24/2024	PB SUBMITTAL
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6	3/20/2024	TAC SUBMITTAL
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ISS.	DATE	DESCRIPTION OF ISSUE
SCALE 1" = 20'		
CHECKED	A. ROSS	
DRAWN	D.D.D.	
CHECKED		

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Portsmouth, NH 03801  
(603) 433-7560

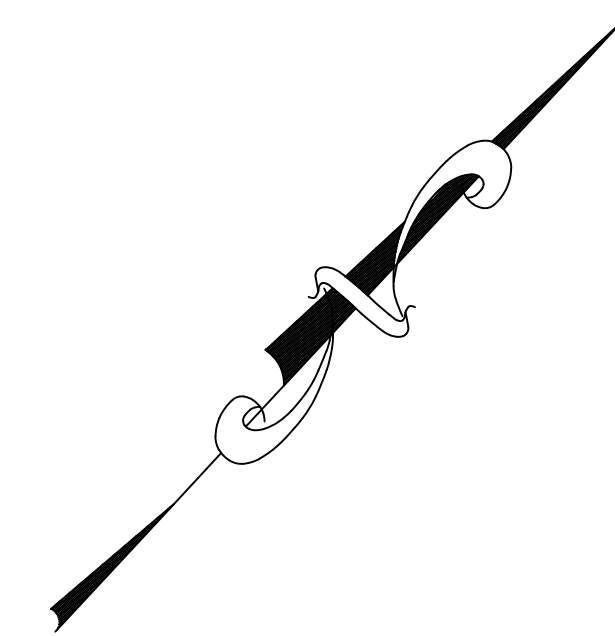
CLIENT  
RIGZ ENTERPRISES LLC  
18 DIXON LANE  
DERRY, NH 03038

TITLE

**SIDEWALK  
DETAILS**

822 US ROUTE 1 BYPASS  
PORTSMOUTH, NH 03801  
TAX MAP 160, LOT 29

JOB NUMBER	DWG. NO.	ISSUE
23-010	12 OF 13	9





**EROSION AND SEDIMENTATION CONTROL CONSTRUCTION PHASING AND SEQUENCING**

- SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
- INSTALL SILT/SOXX FENCING AS PER DETAILS AND AT SEDIMENT MIGRATION.
- CONSTRUCT TREATMENT SWALES, LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
- STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL & COVER WHERE PRACTICABLE.
- MINIMIZE DUST THROUGH APPROPRIATE APPLICATION OF WATER OR OTHER DUST SUPPRESSION TECHNIQUES ON SITE.
- ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
- FINISH GRADE AND COMPACT SITE.
- RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
- STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
- RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
- SILT SOXX FENCING TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO ENSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT SOXX FENCING ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
- PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
- ALL TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC. MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
- PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
- ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
- ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

**PLANTING NOTES:**

- ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK.
- ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR ONE YEAR BY THE LANDSCAPE CONTRACTOR.
- ALL TREES AND SHRUBS SHALL HAVE WATER SAUCERS BUILT AROUND THEIR BASES AND THESE SHALL BE MULCHED WITH 4" OF DARK BROWN AGED BARK MULCH. MULCH MUST BE KEPT 2" AWAY FROM THEIR TRUNKS.
- ALL TREES AND SHRUBS SHALL BE PLANTED AND MULCHED BEFORE LAWN IS SEEDED.

**MAINTENANCE REQUIREMENTS:**

- ALL TREES, SHRUBS, AND PERENNIALS WILL NEED TO BE WATERED THROUGH THANKSGIVING DURING THE FIRST SEASON IN WHICH THEY ARE INSTALLED.
- AN UNDERGROUND DRIP IRRIGATION SYSTEM IS RECOMMENDED. IF AN UNDERGROUND DRIP IRRIGATION SYSTEM IS NOT INSTALLED, SOAKER HOSES AROUND THROUGHOUT PLANTING BEDS ARE ACCEPTABLE. ALTHOUGH OVERHEAD SPRINKLERS ARE RECOMMENDED FOR LAWN AREAS, THEY ARE NOT ACCEPTABLE FOR IRRIGATING TREES AND SHRUBS.

**SEEDING AND STABILIZATION FOR LOAMED SITE:**

FOR TEMPORARY & LONG TERM SEEDINGS USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL  
 COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE,  
 FERTILIZER & LIME:  
 NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P2O5) 100 LBS/ACRE, POTASH (K2O) 100 LBS/ACRE, LIME 2000 LBS/ACRE  
 MULCH:  
 HAY OR STRAW 1.5-2 TONS/ACRE

**A) GRADING AND SHAPING**

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

**B) SEED BED PREPARATION**

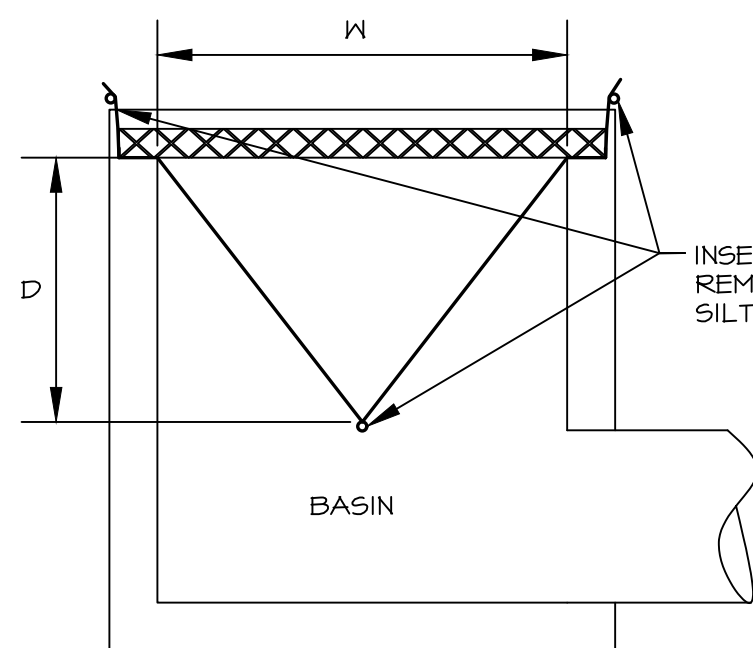
- SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
- STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME 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.

**EROSION AND SEDIMENTATION CONTROL GENERAL NOTES**

- CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 2 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
- ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
- ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED WITHIN 24 HOURS OF EARTH-DISTURBING ACTIVITIES BEING CEASED, AND WILL BE FULLY STABILIZED NO LONGER THAN 14 DAYS AFTER INITIATION, (SEE NOTE II FOR DEFINITION OF STABLE). ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE. ALL TEMPORARY OR LONG TERM SEEDING MUST BE APPLIED TO COMPLY WITH "WINTER CONSTRUCTION NOTES" (SEE WINTER CONSTRUCTION NOTES). EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED (SEE NOTE II FOR DEFINITION OF STABLE).
- TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
- SILT/SOXX FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILT/SOXX AND ANY EDGE OF NET AREA.
- SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
- SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
- SILT/SOXX FENCING WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
- TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
- AN AREA SHALL BE CONSIDERED FULLY STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
  - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
  - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
  - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON STANDARDS AND SPECIFICATIONS SET FORTH IN THE STORM WATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (DECEMBER 2008 OR LATEST) PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, N.H. DES AND NRCS.

**WINTER CONSTRUCTION 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 FLAGGING 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 EVENT.
- 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 OCTOBER 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.



SILT SACK IS TO BE SECURED BY HEIGHT OF BASIN GRATE TO PREVENT SEDIMENT FROM ENTERING THE DRAIN LINE

INSTALL SILT SACK TO CATCH BASINS 1, 3, 4 & 5 PRIOR TO CONSTRUCTION & TO CATCH BASINS A, B, & C DURING CONSTRUCTION. DO NOT REMOVE SILT SACK UNTIL CONSTRUCTION IS COMPLETE AND DRAINAGE LINE IS FULLY OPERATIONAL (SEE SHEET 4)

**Silt sack**  
N.T.S.

**LONG TERM SEEDING**

\*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C	lb/ACRE	lb/10000SF
TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
RED CLOVER (ALSIKE)	20	0.45
TOTAL	40	1.35

LIME: AT 2 TONS PER ACRE OR 100 LBS PER 1,000 S.F.  
 FERTILIZER: 10 20 20 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.  
 MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

**GRADING AND SHAPING:**

SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.  
 SEEDBED PREPARATION:  
 SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.  
 STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED. SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE 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.

\* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

**SHORT TERM SEEDING**

\*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C	#/ACRE	#/10000SF
FOR APRIL 1 - AUGUST 15 ANNUAL RYE GRASS	40	1
FOR FALL SEEDING WINTER RYE	112	2.5

LIME: AT 1 TON PER ACRE OR 100 LBS PER 1,000 S.F.  
 FERTILIZER: 10 10 10 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.  
 MULCH: HAY OR CLEAN STRAW; 2 TONS/ACRE OR 2 BALES/1000 S.F.

**GRADING AND SHAPING:**

SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.

**SEEDBED PREPARATION:**

SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.  
 STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED. SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE 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.

\* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

WHEN PROPOSED FOR ALTERATION DURING CONSTRUCTION AS BEING INFESTED WITH INVASIVE SPECIES SHALL BE MANAGED APPROPRIATELY USING THE DISPOSAL PRACTICES IDENTIFIED IN "NHDOT - BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE PLANTS - 2008" AND "METHODS FOR DISPOSING NON-NATIVE INVASIVE PLANTS - UNH COOPERATIVE EXTENSION - 2010"

SEED MIXES SHALL NOT CONTAIN ANY SPECIES IDENTIFIED BY THE NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST.

**MAINTENANCE NOTES**

**A. MAINTENANCE OF COMMON FACILITIES OR PROPERTY**

1. FUTURE OWNERS OR ASSIGNS ARE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER INFRASTRUCTURE ASSOCIATED WITH THE FACILITY AND THE PROPERTY. THIS INCLUDES THE ROOF DRAINAGE SYSTEM, CISTERN, STORMWATER POND, PERVIOUS PAVERS, STORM TECH CHAMBERS, LANDSCAPED AREAS, PERVIOUS ASPHALT AND CONTECH TREATMENT STRUCTURE.

**B. GENERAL INSPECTION AND MAINTENANCE REQUIREMENTS**

1. PERMANENT STORMWATER AND SEDIMENT AND EROSION CONTROL FACILITIES TO BE MAINTAINED ON THE SITE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- a. PARKING AREAS
- b. LANDSCAPED AREAS
- c. DRAIN LINES
- d. CONTECH JELLYFISH

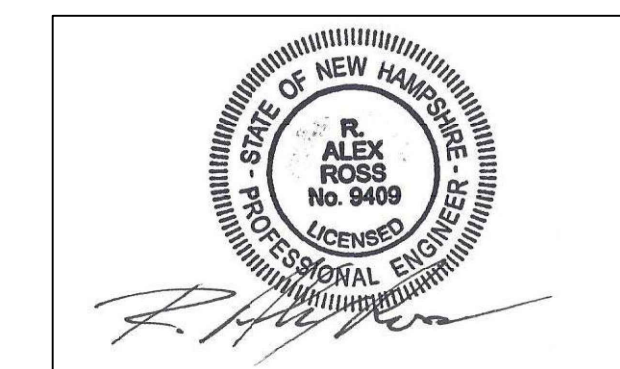
2. MAINTENANCE OF PERMANENT MEASURES SHALL FOLLOW THE FOLLOWING SCHEDULE:

- a. **PARKING AREAS, DRIVEWAY:**  
INSPECTION AT THE END OF EVERY WINTER, PRIOR TO THE START OF THE SPRING RAIN SEASON. SWEEPING SHALL BE DONE ONCE IN EARLY FALL AND THEN AFTER SPRING SNOWMELT. SAND/DEBRIS THAT HAS COLLECTED OFF THE DRIVEWAY AND PARKING LOT SHOULD BE REMOVED OFF-SITE AND DISPOSED OF PROPERLY.
- b. **LANDSCAPED AREAS:**  
ANNUAL INSPECTION OF SITE'S VEGETATION AND LANDSCAPING. ANY AREAS THAT ARE BARE SHALL BE RESEED AND MULCHED WITH HAY OR, IF THE CASE IS EXTREME, LOAMED AND SEEDED OR SODDED TO ENSURE ADEQUATE VEGETATIVE COVER. LANDSCAPE SPECIMENS SHALL BE REPLACED IN-KIND, IF THEY ARE FOUND TO BE DEAD OR DYING.
- c. **DRAIN LINES:**  
INSPECT TWICE A YEAR, MORE OFTEN IF NEEDED. INSPECT FOR ACCUMULATION OF DEBRIS. REMOVE MATERIAL FROM INLET/OUTLET AS NECESSARY, DISPOSE OF OFFSITE.
- d. **CONTECH JELLYFISH TREATMENT STRUCTURE:**  
SEE ATTACHED JELLYFISH MAINTENANCE GUIDE.

C. OWNERS SHALL PROVIDE A REPORT ON ACTIVITIES PERFORMED THROUGHOUT THE YEAR. REPORT SHALL INCLUDE DOCUMENTATION THAT INSPECTION AND MAINTENANCE IS ACCOMPLISHED PER THIS DOCUMENT AND A CERTIFICATION THAT THE SYSTEMS CONTINUE TO FUNCTION AS DESIGNED. AN ANNUAL REPORT WILL BE SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

**STORMWATER INSPECTION & MAINTENANCE LOG**

ACTIVITY	DATE OF INSPECTION	WHO INSPECTED	SATISFACTORY: YES, NO, N/A	MAINTENANCE NEEDED	IMPLEMENTED DATE OF CORRECTIVE ACTION	FINDINGS OF INSPECTOR
PARKING AREA						
LANDSCAPE AREA						
DRAIN LINES						
CONTECH JELLYFISH						



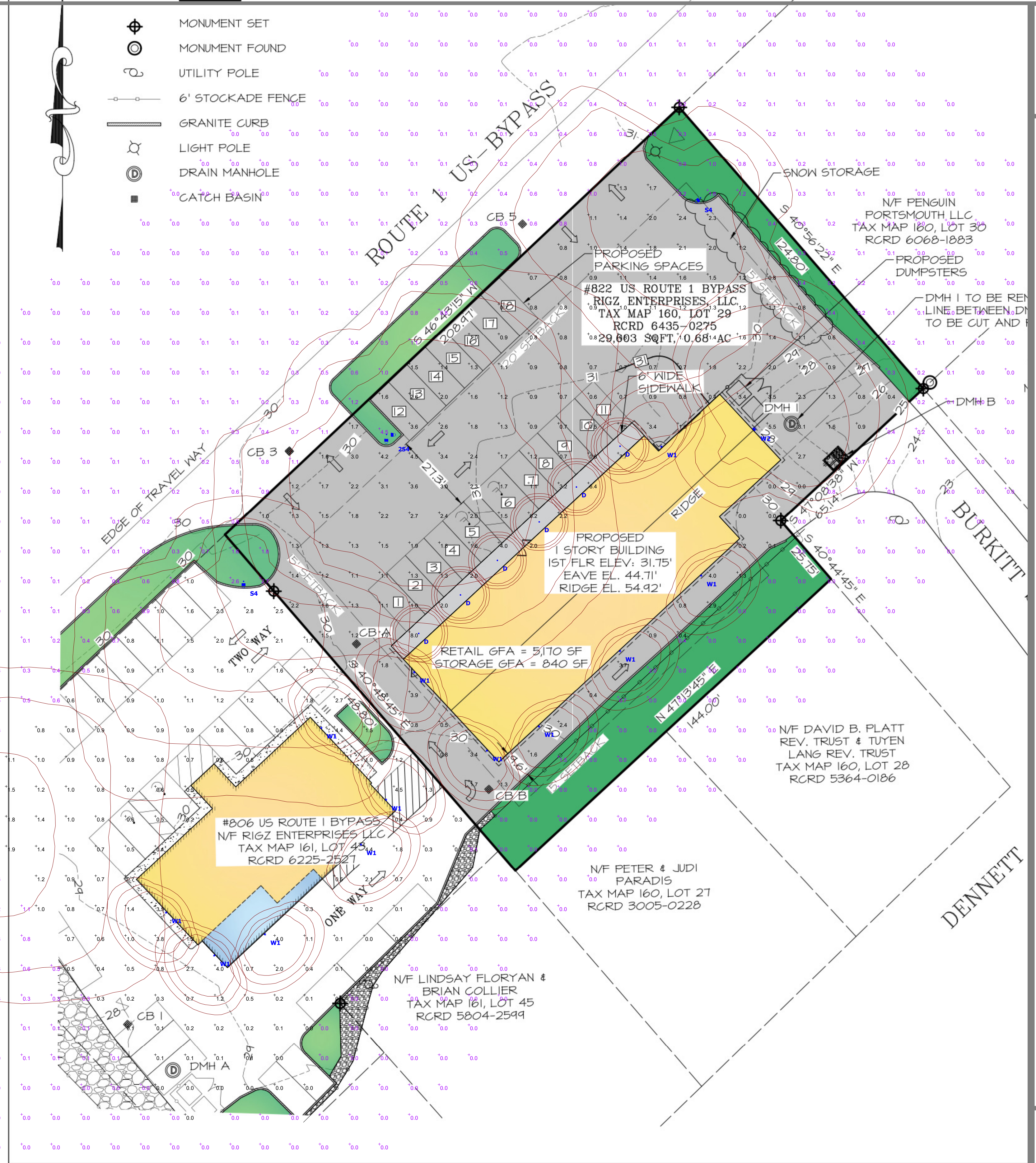
9	4/24/2024	PB SUBMITTAL	
8	4/2/2024	REVISIONS	
7	3/28/2024	REVISIONS	
6	3/20/2024	TAC SUBMITTAL	
5	2/22/2024	REVISIONS	
ISS.	DATE	DESCRIPTION OF ISSUE	
SCALE 1" = 20'			
CHECKED A. ROSS			
DRAWN D.D.D.			
CHECKED			
<b>ROSS ENGINEERING, LLC</b> Civil/Structural Engineering & Surveying 909 Islington St. Portsmouth, NH 03801 (603) 433-7560			
CLIENT RIGZ ENTERPRISES LLC 18 DIXON LANE DERRY, NH 03038			
TITLE			
<b>EROSION CONTROL PLAN</b> 822 US ROUTE 1 BYPASS PORTSMOUTH, NH 03801 TAX MAP 160, LOT 29			
JOB NUMBER	DWG. NO.	ISSUE	
23-010	13 OF 13	9	



Schedule												
Symbol	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Label	Distribution	Polar Plot
	1	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFM MVOLT SPA DDBXD with SSS 18 4C DM29AS DDBXD	2 D-Series Size 0 Area Fixture; mounted at 20ft (18ft pole on 2ft base)	LED	DSX0_LED_P4_30K_80CRI_TFM.ies	9908	0.9	186.08	2S4	TYPE IV, SHORT, BUG RATING: B2 - U0 - G3	
	6	Lithonia Lighting	LDN4 30/10 L04AR LD	4in LDN Round Downlight; mounted at 10ft	LED	LDN4_30_10_L04AR_LD.ies	922	0.9	10.58	D	DIRECT, SC-0=1.04, SC-90=1.06	
	3	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFM MVOLT SPA DDBXD with SSS 18 4C DM19AS DDBXD	D-Series Size 0 Area Fixture; mounted at 20ft (18ft pole on 2ft base)	LED	DSX0_LED_P4_30K_80CRI_TFM.ies	9908	0.9	93.04	S4	TYPE IV, SHORT, BUG RATING: B2 - U0 - G3	
	12	Lithonia Lighting	WDGE1 LED P1 30K 80CRI VW MVOLT SRM DDBXD	WDGE1 LED Wallpack; mounted at 10ft	LED	WDGE1_LED_P1_30K_80CRI_VW.ies	1163	0.9	10.0002	W1	TYPE II, VERY SHORT, BUG RATING: B0 - U0 - G0	
	1	Lithonia Lighting	WDGE3 LED P1 70CRI RFT 30K MVOLT SRM DDBXD	WDGE3 LED Wallpack; mounted at 16ft	LED	WDGE3_LED_P1_70CRI_RFT_30K.ies	6996	0.9	51.1717	W2	TYPE IV, SHORT, BUG RATING: B1 - U0 - G2	

**LEGEND**

- MONUMENT SET
- MONUMENT FOUND
- UTILITY POLE
- 6' STOCKADE FENCE
- GRANITE CURB
- LIGHT POLE
- DRAIN MANHOLE
- CATCH BASIN



Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Outside of Parking Lot	+	0.1 fc	4.5 fc	0.0 fc	N/A	N/A
Parking Lot (larger building)	+	1.7 fc	8.0 fc	0.0 fc	N/A	N/A
Parking Lot (smaller building)	+	1.0 fc	4.5 fc	0.0 fc	N/A	N/A



**THE CITY  
Portsmouth, NH  
Site Lighting Layout**

Designer  
Heidi G. Connors  
Visible Light, Inc.  
24 Stickney Terrace  
Suite 6  
Hampton, NH 03842  
Date  
4/12/2024  
Scale  
1"=20'  
Drawing No.  
Summary



**Ross Engineering, LLC  
Civil / Structural Engineering**

909 Islington Street  
Portsmouth, NH 03801

603-433-7560  
alexross@comcast.net

**822 US Route 1 Bypass  
Low Impact Design & Green Building Description**

February 16, 2024

The following Low Impact Design and Green Building Design practices are proposed to be implemented.

- A jelly fish filtration system will be added to the drainage network in the southwest of the site. This will collect the stormwater from the other catch basins on #806 & #822 US Route 1 Bypass as well as catch basins in the US Route 1 Bypass.
- Landscaping around the whole parcel that will include native plantings.
- LED energy efficient lighting for the site and building interior.
- Dark sky compliant lighting.
- Low flow plumbing fixtures.

Sincerely,

Alex Ross, P.E.



## ***STORMWATER MANAGEMENT OPERATION & MAINTENANCE***

### **822 US Route 1 Bypass, Portsmouth, NH**

The proposed stormwater structures and improvements will result in a massive upgrade for stormwater runoff control and treatment. For all of these elements to work correctly in the future it is imperative to keep up with proper operation and maintenance.

#### **Inspection and Maintenance of Facilities and Property**

##### **A. Maintenance of Common Facilities or Property**

1. Future owners or assigns are responsible for maintenance of all stormwater infrastructure associated with the facility and the property. This includes the landscaped areas, drain lines, and Contech treatment structure.

##### **B. General Inspection and Maintenance Requirements**

1. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include but are not limited to the following:
  - a. Parking areas
  - b. Landscaped areas
  - c. Culverts & Drain lines
  - d. Contech jellyfish
2. Maintenance of permanent measures shall follow the following schedule:
  - a. **Parking Areas:**  
Inspection at the end of every winter, prior to the start of the spring rain season. Sweeping shall be done once in early fall and then after spring snowmelt. Sand/debris that has collected off the driveway and parking lot should be removed off-site and disposed of properly.
  - b. **Landscaped Areas:**  
Annual inspection of site's vegetation and landscaping. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in-kind, if they are found to be dead or dying.

## Ross Engineering

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alexross@comcast.net

- c. **Drain Lines:**  
Inspect twice a year, more often if needed. Inspect for accumulation of debris. Remove material from inlet/outlet as necessary, dispose of offsite.
  - d. **Contech jellyfish treatment structure:**  
See attached Jellyfish Maintenance Guide.
- C. Owners shall provide a report on activities performed throughout the year. Report shall include documentation that inspection and maintenance is accomplished per this document and a certification that the systems continue to function as designed. An annual report will be submitted to the City of Portsmouth Department of Public Works.

909 Islington Street  
Portsmouth, NH 03801

# Ross Engineering

603-433-7560  
alexross@comcast.net

## Annual Operations and Maintenance Report

Activity	Date of Inspection	Who Inspected	Satisfactory: Yes, No, N/A	Maintenance Needed	Implemented date of corrective action	Findings of Inspector
Parking Areas						
Landscaped Areas						
Culverts & Drain lines						
Contech Jellyfish						



# *THE CITY - BUILDING ONE*

## 822 US ROUTE 1 BYPASS

### PORTSMOUTH,, NEW HAMPSHIRE

*Gleason Architects*  
P.O. BOX 596  
STRATHAM, NH 03885



603 772-7370

INDEX TO DRAWINGS

ARCHITECTURAL

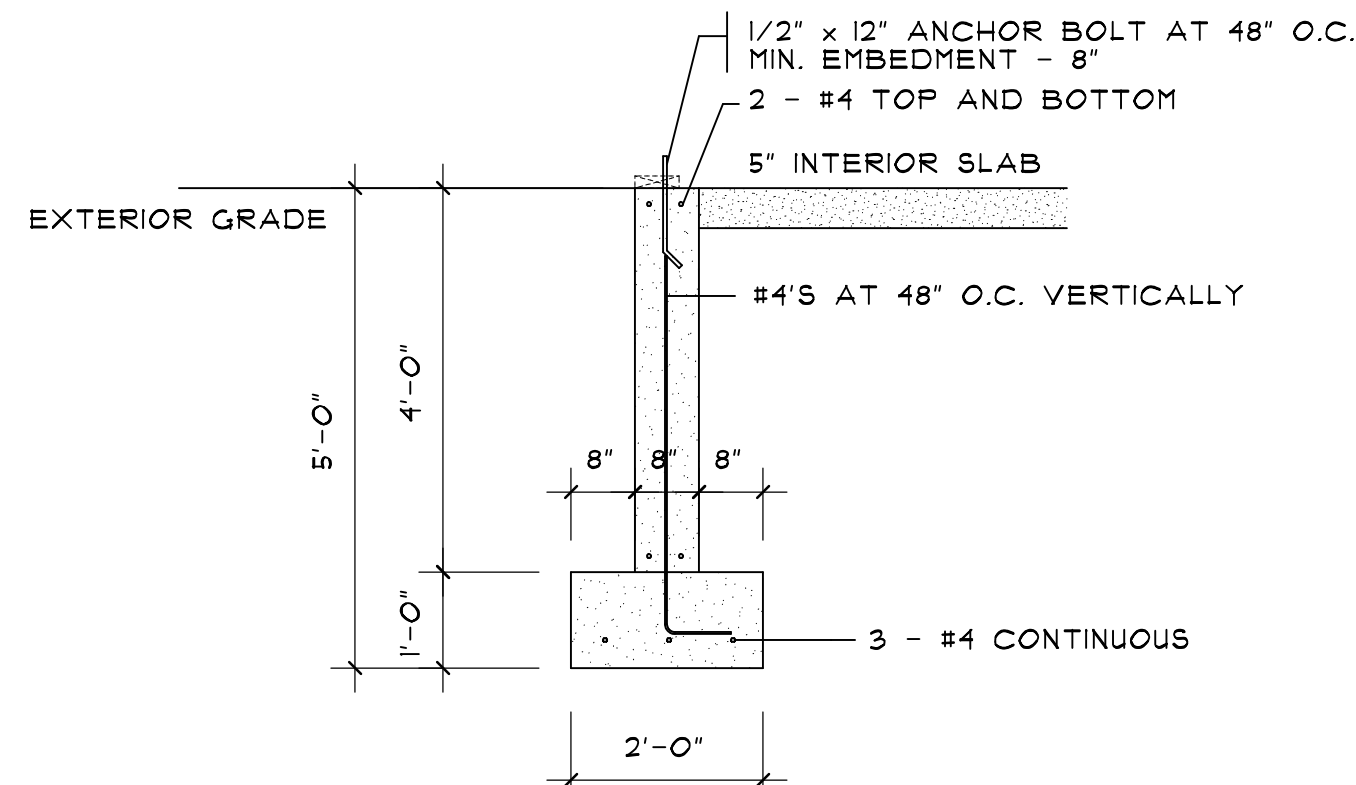
A1 - FOUNDATION PLAN, FIRST FLOOR PLAN, DETAILS AND DOOR SCHEDULE  
A2 - ELEVATIONS, SECTION AND ROOF FRAMING PLAN

#### GENERAL NOTES

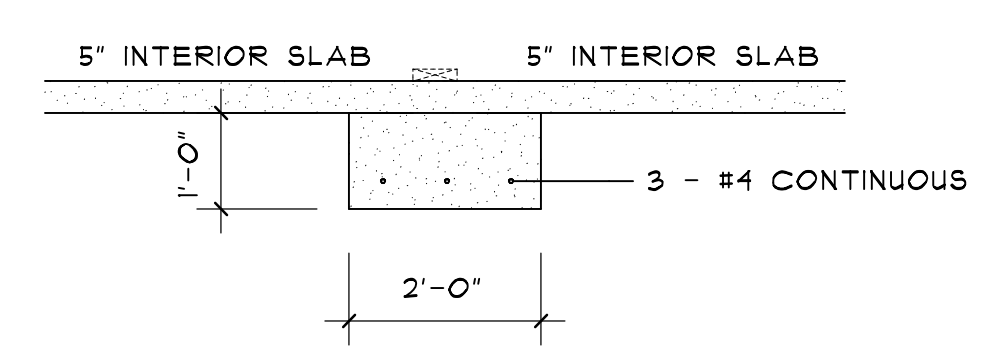
1. All work meets state, local and 2015 IBC Codes.
2. Contractor(s) must visit the job site prior to submitting a bid.
3. It is assumed the soil bearing capacity is 2000 psf or better.
4. Footings are to be placed on undisturbed soil, a minimum of one (1) foot below the frost line.
5. Provide 2" rigid insulation around the foundation perimeter to 4' below grade.
6. All wood on concrete is to be pressure treated lumber with sill seal and insulation.
7. Poured in place concrete is to be 3000 psi or better.
8. Concrete slabs are to have 6/6 10x10 w.w.f., 6 mil poly vapor barrier over 6" of crush stone or gravel, unless noted otherwise.
9. Use anchor bolts at 4'-0" on center on foundation walls.
10. Exterior walls are to be 2 x 6 wood studs, min. no. 2 grade, at 16" on center with lateral bracing, 1/2" gypsum board interior 1/2" sheathing exterior and "building wrap". The walls will have full batt insulation or equal.
11. Interior walls are to be 2 x 4 wood studs at 16" on center with 1/2" gypsum board each side.
12. All material used in the construction of this building will be new. No used or reconditioned material is permitted.
13. All interior finishes are to be determined by the contract with the owner.
14. Notify the architect immediately if conditions are different than indicated on the plans.
15. Any changes to these plans must be reviewed and approved by the owner(s) and the architect.
16. These drawings are prepared for the owner(s) to meet local and state codes. Any deficiencies must be noted and architect contacted to review those deficiencies.

#### CODE REVIEW:

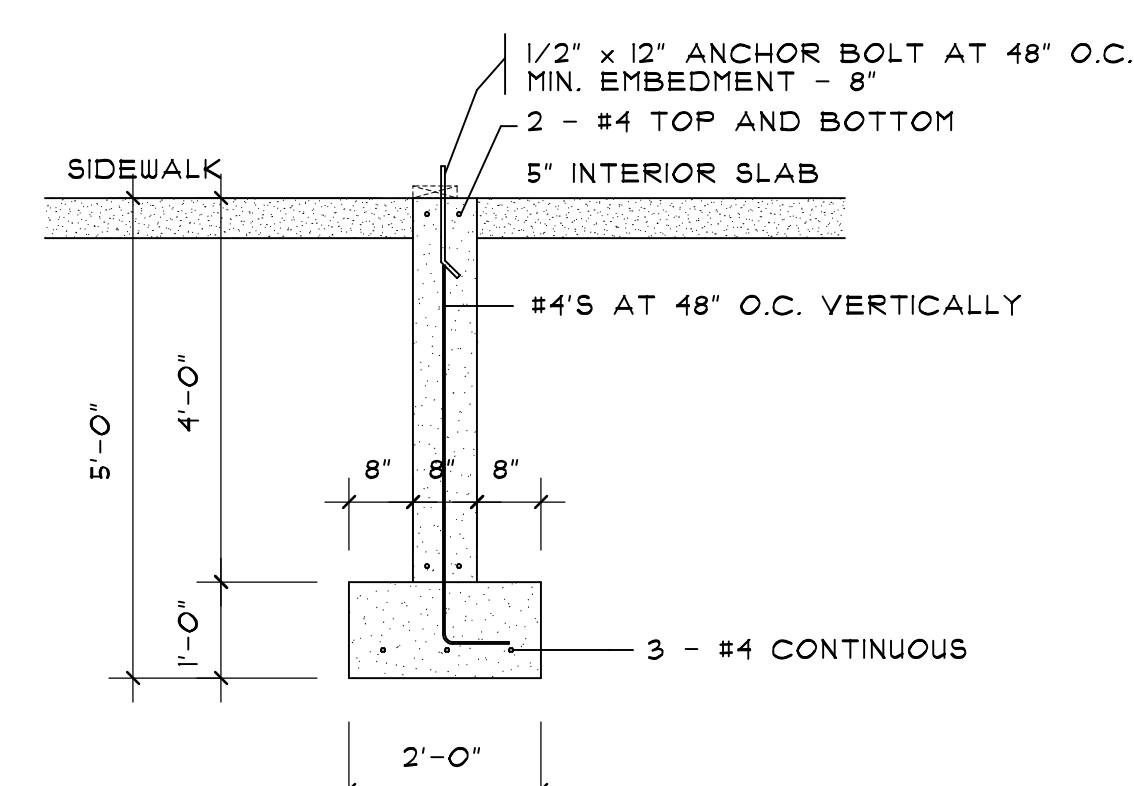
PROJECT: SINGLE STORY COMMERCIAL BUILDING - CONVENIENCE STORE  
USE GROUP: MERCANTILE - M  
TYPE OF CONSTRUCTION: 5B, WOOD FRAME, UNPROTECTED  
HEIGHT - STORIES ALLOWED WITH SPRINKLER SYSTEM, BUILDING IS TWO STORY  
BUILDING TO HAVE AN APPROVED SPRINKLER SYSTEM  
AREA - 36,000 SF, SPRINKLERED, ACTUAL SQUARE FOOTAGE - 5480 SF  
OCCUPANT LOAD - 5480 SF/40 SF PER PERSON - 92 PEOPLE (TABLE 1004.1.2  
TABLE 1011.2 EXIT ACCESS TRAVEL DISTANCE - USE M, WITH SPRINKLER - 250 FEET



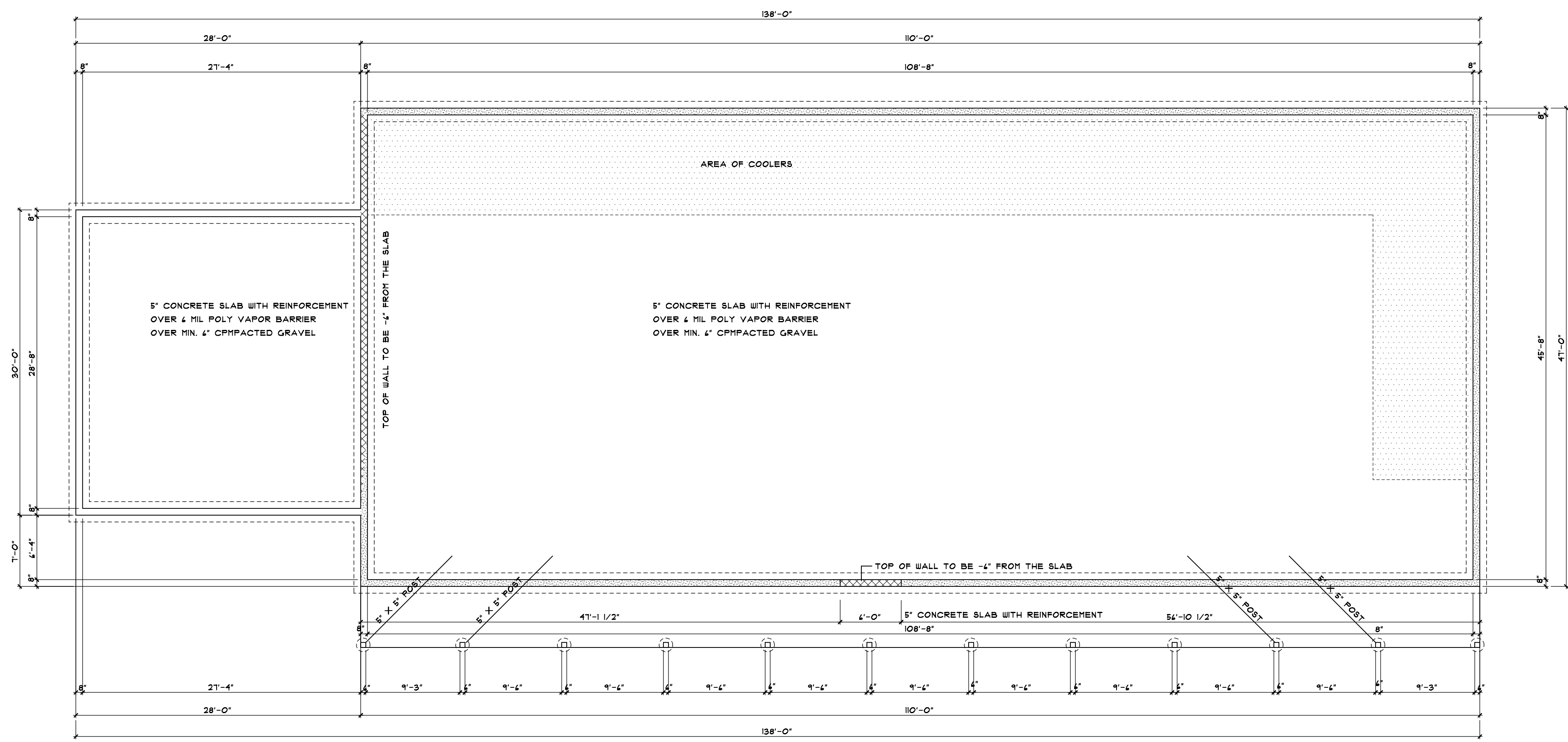
1 FOUNDATION SECTION  
SCALE: 1/2" = 1'-0"



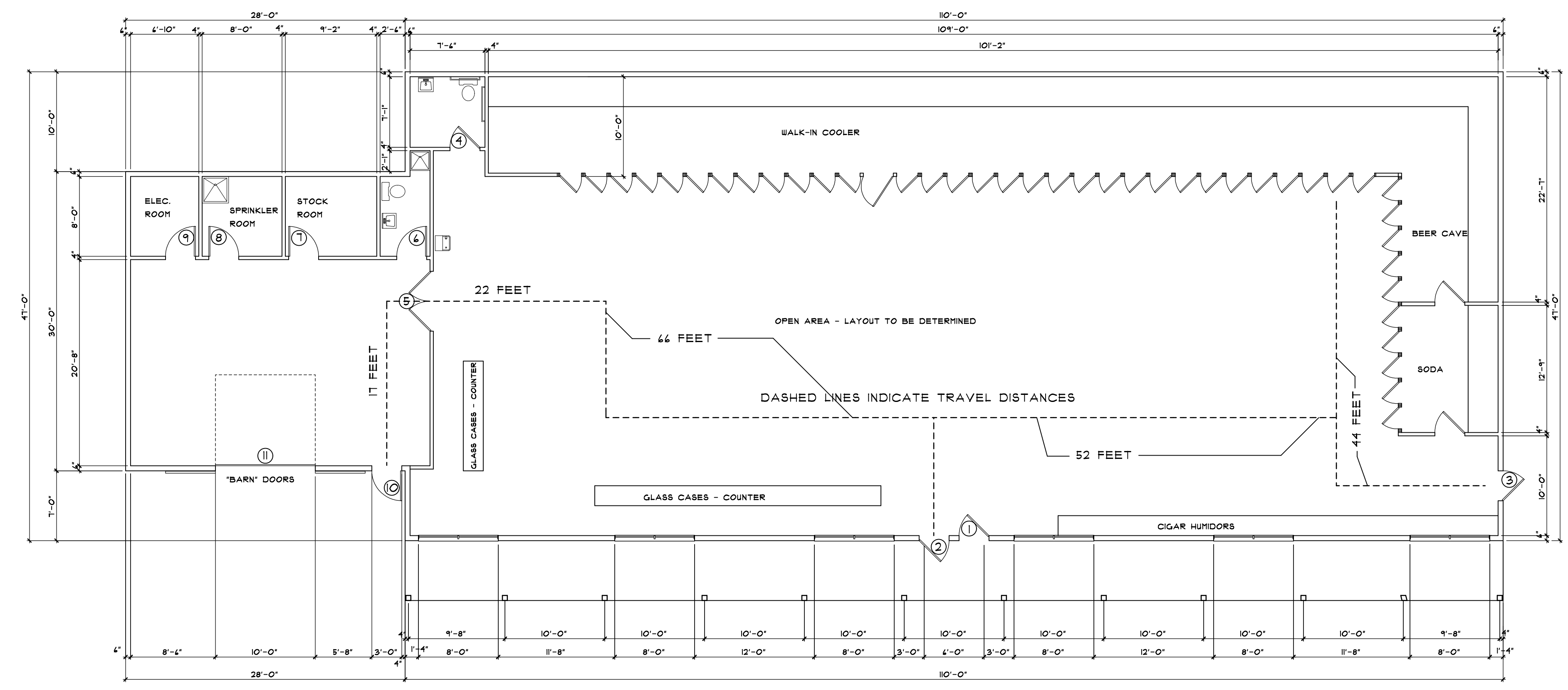
2 FOUNDATION SECTION  
SCALE: 1/2" = 1'-0"



3 FOUNDATION SECTION  
SCALE: 1/2" = 1'-0"



FOUNDATION PLAN  
SCALE: 1/8" = 1'-0"



FLOOR PLAN  
SCALE: 1/8" = 1'-0"

DOOR SCHEDULE			
MARK	DOOR WIDTH	DOOR HEIGHT	REMARKS
FIRST FLOOR			
1.	3'-0"	7'-0"	AL./GLASS ENTRY DOOR
2.	3'-0"	7'-0"	AL./GLASS ENTRY DOOR
3.	3'-0"	6'-8"	HM DOOR HM FRAME
4.	3'-0"	6'-8"	SCWD DOOR HM FRAME SELF CLOSING
5.	FR. 3'-0"	6'-8"	DOUBLE ACTING IMPACT DOORS WITH KICK PLATES
6.	2'-6"	6'-8"	HM DOOR HM FRAME
7.	3'-0"	6'-8"	HM DOOR HM FRAME
8.	3'-0"	6'-8"	HM DOOR HM FRAME
9.	3'-0"	6'-8"	HM DOOR HM FRAME
10.	3'-0"	6'-8"	HM DOOR HM FRAME
11.	10'-0"	9'-0"	INSULATED OVERHEAD DOOR

NO.	DESCRIPTION OF REVISION	DATE

**THE CITY - BUILDING ONE**  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE

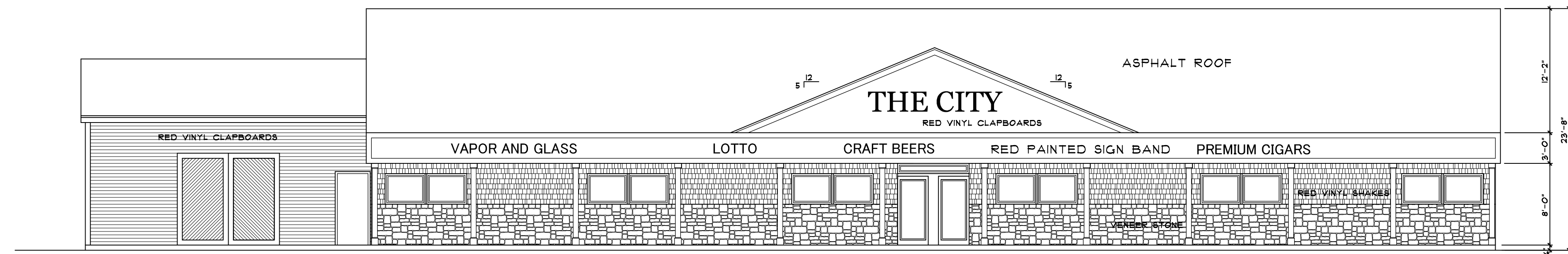
**Gleason Architects**  
P.O. BOX 596  
STRATHAM, NEW HAMPSHIRE 03885  
603 772-7370



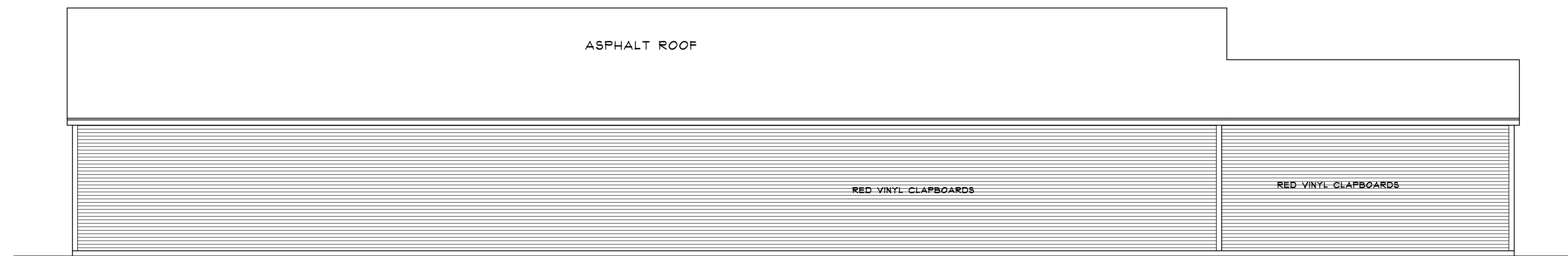
ARCHITECT

ENGINEER  
DATE: 08/04/23  
PROJECT NO. 202329  
SHEET NO.

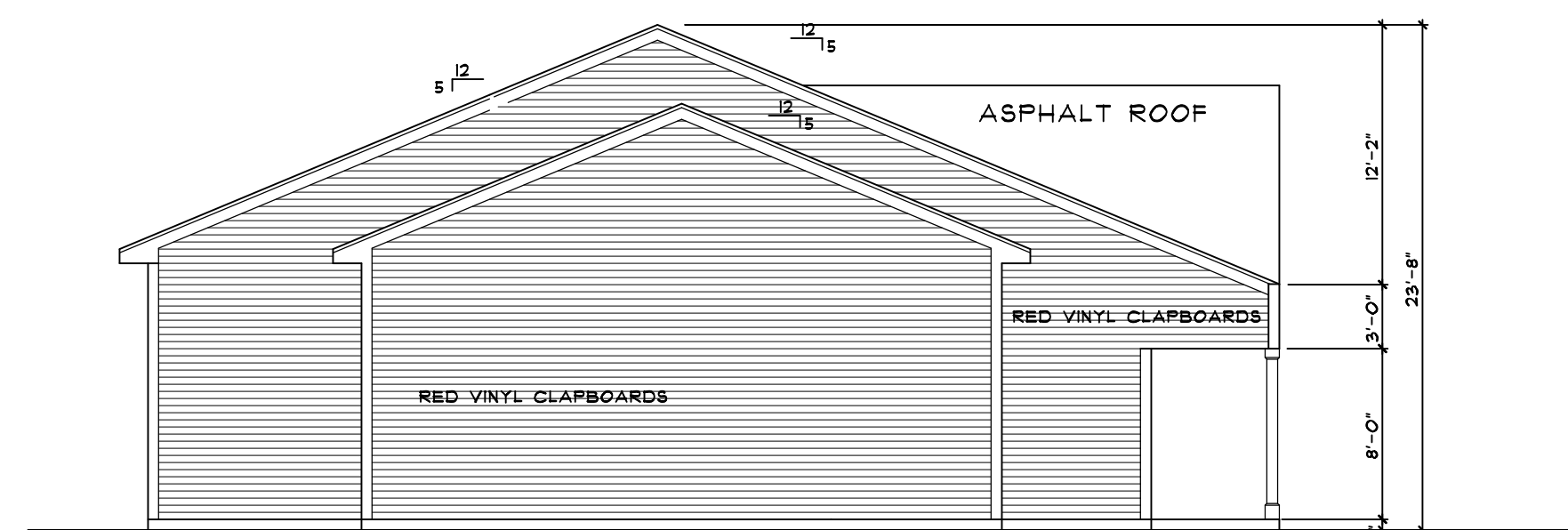




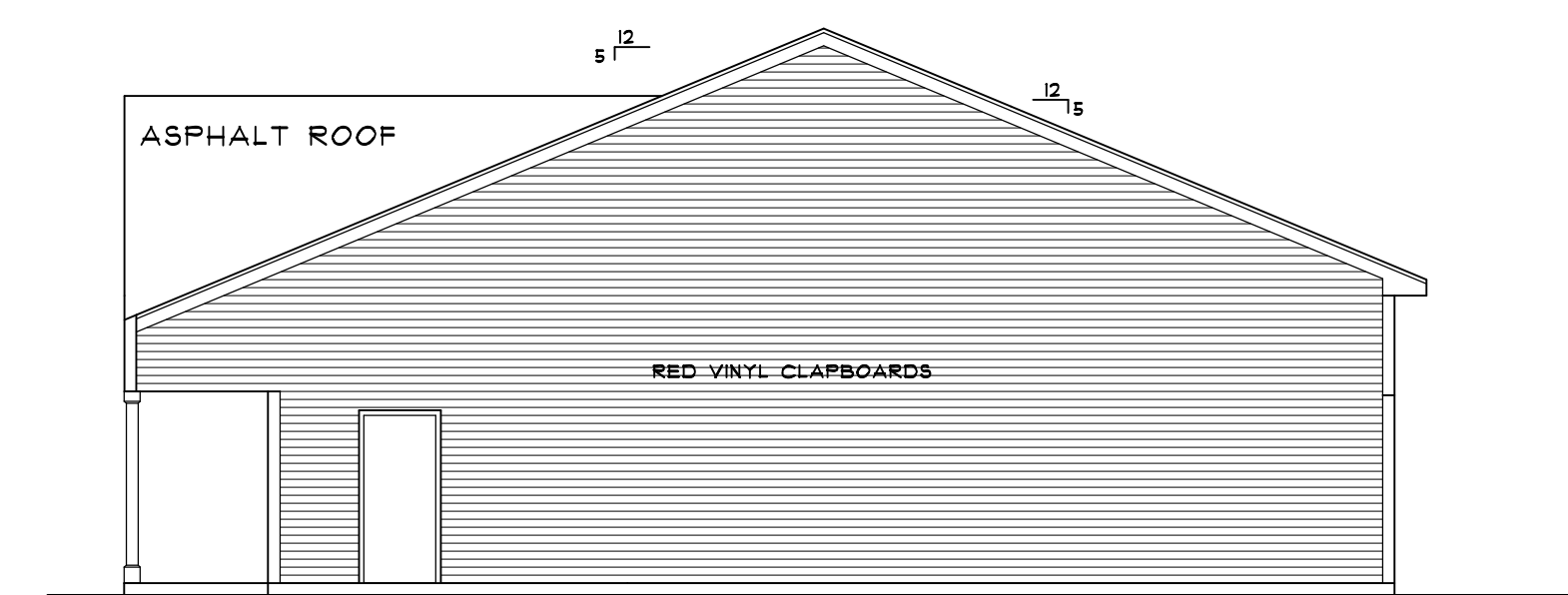
FRONT ELEVATION  
SCALE: 1/8" = 1'-0"



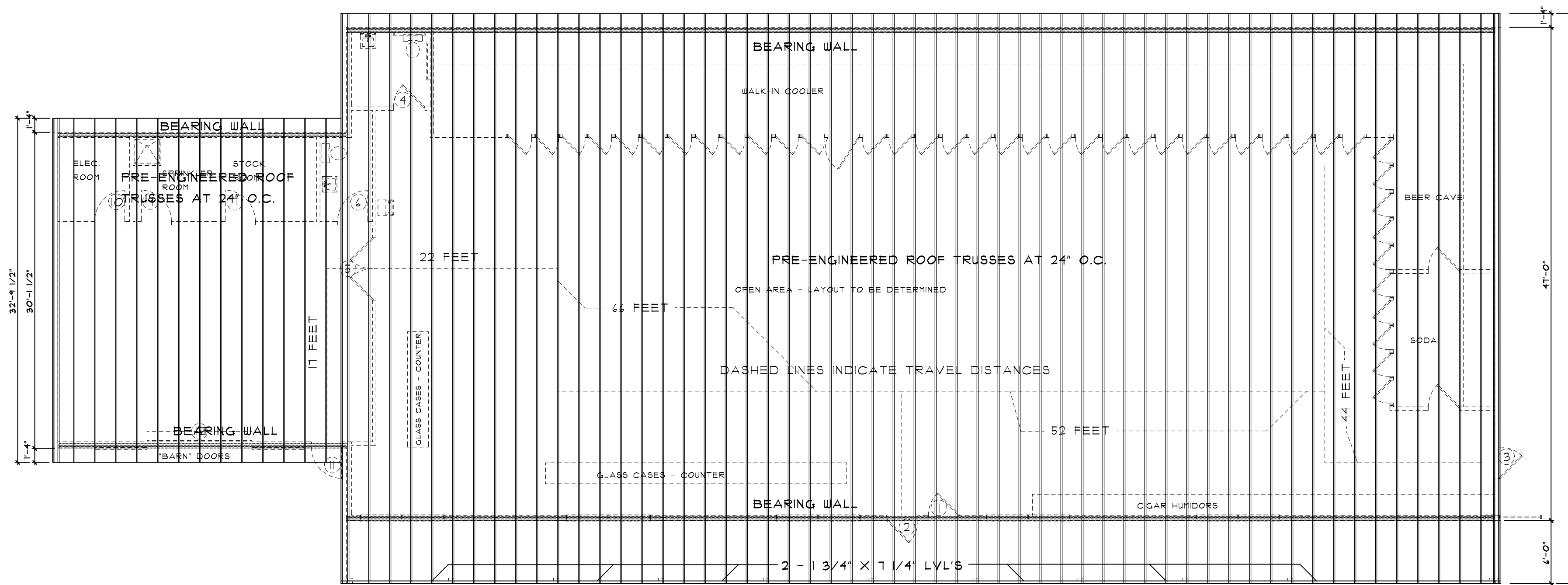
REAR ELEVATION  
SCALE: 1/8" = 1'-0"



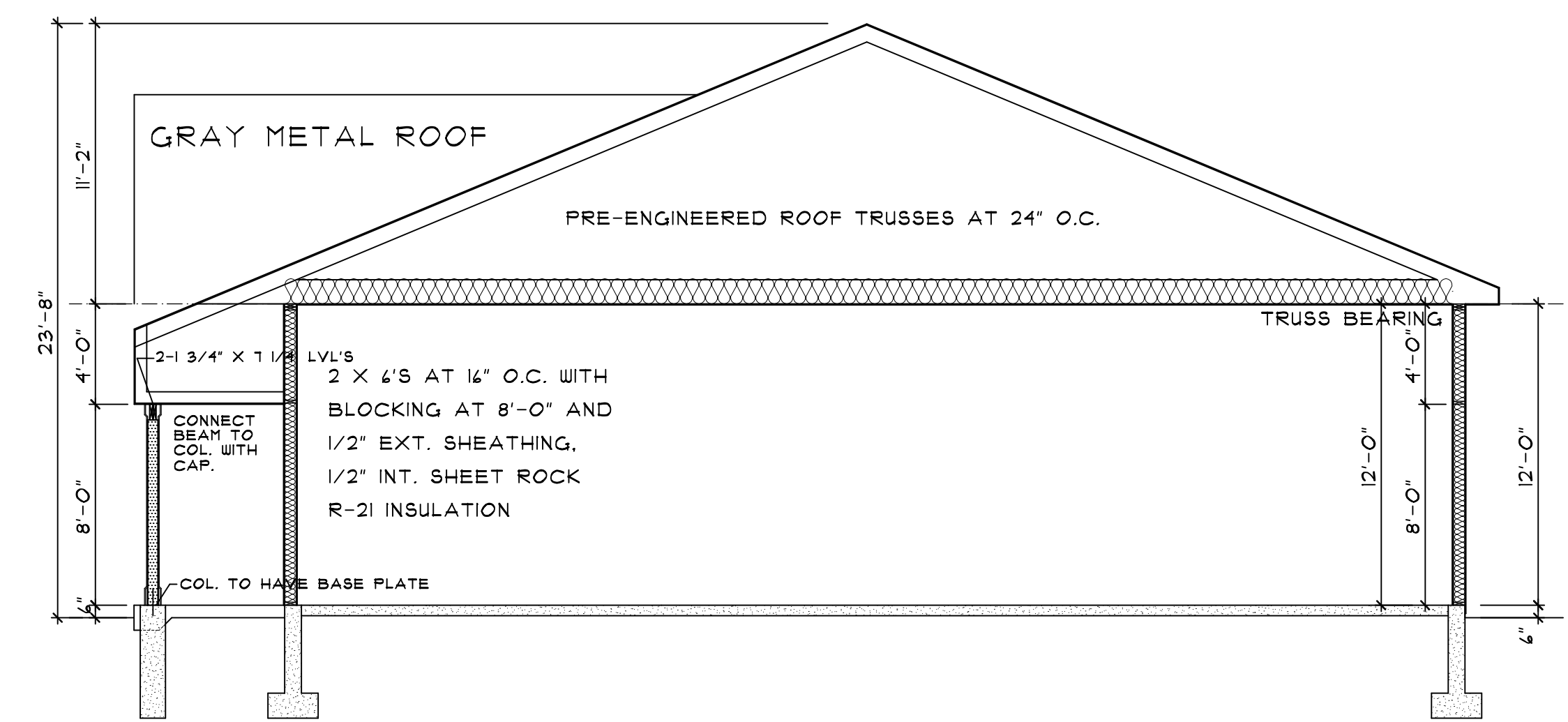
LEFT SIDE ELEVATION  
SCALE: 1/8" = 1'-0"



RIGHT SIDE ELEVATION  
SCALE: 1/8" = 1'-0"



ROOF FRAMING PLAN  
SCALE: 1/8" = 1'-0"



SECTION  
SCALE: 3/16" = 1'-0"

NO.	DESCRIPTION OF REVISION	DATE

**THE CITY - BUILDING ONE**  
822 US ROUTE 1 BYPASS  
PORTSMOUTH, NEW HAMPSHIRE

**Gleason Architects**  
P.O. BOX 596  
STRATHAM, NEW HAMPSHIRE 03885  
603 772-7370



ARCHITECT

ENGINEER  
DATE: 08/04/23  
PROJECT NO. 202329

SHEET NO.

**A-2**  
OF SHEETS



HPGR Draft 4.23.2024

Return To:  
Legal Department  
City Hall  
1 Junkins Ave.  
Portsmouth, NH 03801

**DECLARATION OF COVENANT & RESTRICTIONS**  
**Property located at 822 Rt. 1 Bypass Tax Map 160, Lot 2**

**RIGZ ENTERPRISES, LLC**, a limited liability company with a principal office located at 18 Dixon Lane, Derry, County of Rockingham and State of New Hampshire, 03038, hereinafter “Declarant,” covenants for the benefit of its successors, heirs, and assigns and for consideration provided by the **CITY OF PORTSMOUTH**, a municipal body politic, having a mailing address of 1 Junkins Avenue, Portsmouth, New Hampshire 03801, the following restrictive covenant with respect to Grantor's real property situate on Route 1 Bypass, Portsmouth, Rockingham County, New Hampshire, identified as Portsmouth Tax Assessor’s Map 160, Lot 29 (“the Premises”) as shown on a plan entitled “Rigz Enterprises, LLC, Easement Plan, 822 Rt. 1 Bypass, Portsmouth, NH 03801, Tax Map 160, Lot 29”, dated April 4, 2024, prepared by Ross Engineering, LLC” to be recorded herewith (the “Plan”):

**RECITALS**

WHEREAS, Declarant is the owner of 806 Route 1 Bypass in Portsmouth, Map 161, Lot 43 (hereinafter “Lot 43”) pursuant to a certain deed dated January 25, 2021 and recorded in the Rockingham County Registry of Deeds (“the Registry”) in 6225, Page 2527;

WHEREAS, Lot 43 benefits from “a right to pass and repass from the interstate highway using the exits in common with others” over a portion of the Premises pursuant to a certain deed dated February 15, 1989 and recorded in the Registry in Book 2781, Page 1490.

WHEREAS, Declarant subsequently purchased the Premises pursuant to a certain deed dated August 29, 2022 and recorded in the Registry in Book 6435, Page 0275;

WHEREAS, Declarant seeks to redevelop the Premises and impose a certain covenant, condition, and restriction on the Premises for: the common use and enjoyment of the owners and occupants of the Premises and Lot 43, and their respective successors, heirs, and assigns; continued access to and from Route 1 Bypass to Lot 43; and fulfillment of the requirements of a certain permit issued by the City of Portsmouth Planning Board;

NOW, THEREFORE, in consideration of the mutual benefits granted herein with respect to the Property and in consideration of the benefits reserved hereby or anticipated by the Declarant, the Declarant hereby covenants for itself and its successors and assigns and establishes and makes applicable to the Property and any subsequent subdivision thereof, the following covenant which shall run with the Premises in perpetuity:

The area identified on the Plan as “Easement Area A” shall provide continued permanent and nonexclusive access to Lot 43 for the purpose of commercially reasonable vehicular ingress and egress between New Hampshire Route 1 Bypass and Lot 43 and shall remain free of obstructions interfering with the activities authorized herein. Easement Area A is more particularly bounded and described as follows:

Beginning at a point 5.15 feet North 46° 43’ 15” East of the southwest corner of Map 160, Lot 29; thence traveling North 46° 43’ 15” East a distance of 53.17 feet to a point; thence turning and traveling across Map 160, Lot 29 South 43° 04’ 01” East 46.62 feet to a point; thence turning and traveling South 47° 09’ 04” West a distance of 45.12 feet to a point; thence turning and traveling South 40° 48’ 45” East a distance of 81.77 feet to a point; thence turning and traveling South 46° 15’ 19” West a distance of 15.02 feet, to a point at Map 161, Lot 43; thence turning and traveling North 40° 48’ 45” West a distance of 106.93 feet to a point; thence turning and traveling along an arc with a radius of 12.38 feet a distance of 13.34 feet; thence continuing along an arc with a radius of 8.77 feet a distance of 13.02 feet; thence turning and traveling South 88° 30’ 19” West a distance of 5.42 feet to the point of beginning.

Containing approximately 3,763 square feet more or less.

This covenant is made by the Declarant as the owner of the Property and is a restriction upon use of the Property by any subsequent owner and owners of the Property or any subdivision thereof by acceptance of a deed for said Property and portion thereof, whether or not it shall be so expressed in any such deed. The restriction above represents an enforceable condition established by the City of Portsmouth in Site Plan Approval LU-23-209. Failure by the City of Portsmouth to enforce any covenants or restrictions herein contained shall in no event be deemed a waiver of the right to do so thereafter. This covenant and restrictions may be amended or modified only upon the prior application to and approval of the City of Portsmouth Planning Board or its designee.

Invalidation of any one element of the covenants or restriction set forth herein by a court of law shall in no way affect any other provision which shall remain in full force and effect.

MEANING AND INTENDING to impose a covenant and restriction over a portion of the Premises conveyed to Rigz Enterprises, LLC by deed of Portsmouth Realty, LLC dated August 29, 2022, and recorded at the Rockingham County Registry of Deeds in Book 6435, Page 0275.

This is an exempt transfer pursuant to NH RSA 78-B:2(I).

Dated this \_\_\_\_ day of April, 2024.

**RIGZ ENTERPRISES, LLC**

By: \_\_\_\_\_  
Richard A. Rigazio, Member

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this the \_\_\_\_ day of April, 2024, personally appeared the above-named Richard A. Rigazio, in his capacity as Member of Rigz Enterprises, LLC and acknowledged the foregoing instrument to be his free act and deed executed for the purposes contained therein. Before me,

\_\_\_\_\_  
Notary Public/Justice of the Peace  
My commission expires: \_\_\_\_\_

Executed the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**EXETER ROSE FARM, LLC**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

STATE OF NEW HAMPSHIRE  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, by \_\_\_\_\_, \_\_\_\_\_ of \_\_\_\_\_, a New Hampshire \_\_\_\_\_.

\_\_\_\_\_  
Notary Public / Justice of the Peace  
My Commission Expires: \_\_\_\_\_



Return To:  
Legal Department  
City Hall  
1 Junkins Ave.  
Portsmouth, NH 03801

## PUBLIC ACCESS EASEMENT

**RIGZ ENTERPRISES, LLC**, a limited liability company with a principal office located at 18 Dixon Lane, Derry, County of Rockingham and State of New Hampshire, 03038, hereinafter “Grantor,” for consideration paid, grants to the **CITY OF PORTSMOUTH**, a municipal body politic, having a mailing address of 1 Junkins Avenue, Portsmouth, New Hampshire 03801, hereinafter, "Grantee," with QUITCLAIM COVENANTS, the following easement with respect to Grantor's real property situate on Route 1 Bypass, Portsmouth, Rockingham County, New Hampshire, identified as Portsmouth Tax Assessor’s Map 160, Lot 29 (the “Premises”) on a plan entitled “Rigz Enterprises, LLC, Easement Plan, 822 Rt. 1 Bypass, Portsmouth, NH 03801, Tax Map 160, Lot 29”, dated April 4, 2024, prepared by Ross Engineering, LLC” to be recorded herewith (the “Plan”):

1. **Permanent Easement Area:** A permanent and nonexclusive easement over, upon, through, and across the Grantor Parcel for the purpose of commercially reasonable vehicular and pedestrian ingress and egress between, the existing paved portion of Burkitt Street on the southeast side of the Premises and the state highway known as Route 1 Bypass, together with the right to remove obstructions interfering with the activities authorized herein. The Access Easement is shown on the Plan as “Easement Area B” and more particularly described as follows:

[INSERT METES & BOUNDS DESCRIPTION]

Containing approximately 4,216 square feet more or less.

2. **No Right to Access Private Property:** This easement does not convey any right to the public to access or utilize Grantor’s private property outside Easement Area B.
3. **Maintenance:** Grantee shall have the right, but not the obligation to access Easement Area B for the purpose of maintenance, repair, and replacement of Easement Area B after providing reasonable notice to the Grantor.
4. **Grantor’s Retained Rights:** Grantor retains the right to freely use and enjoy its interest in the Permanent Easement Area insofar as the exercise thereof does not endanger or interfere with the purpose of this instrument. Grantor shall not, however, erect any building, shed, deck or other structure within the Permanent Easement Area.
5. **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, devisees, 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 a public access easement over a portion of premises conveyed to Rigz Enterprises, LLC by deed of Portsmouth Realty, LLC dated August 29, 2022, and recorded at the Rockingham County Registry of Deeds (the "Registry") at Book 6435, Page 0275.

This is an exempt transfer pursuant to NH RSA 78-B:2(I).

Dated this \_\_\_\_ day of April, 2024.

**RIGZ ENTERPRISES, LLC**

By: \_\_\_\_\_  
Richard A. Rigazio, Member

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this the \_\_\_\_ day of April, 2024, personally appeared the above-named Richard A. Rigazio, in his capacity as Member of Rigz Enterprises, LLC and acknowledged the foregoing instrument to be his free act and deed executed for the purposes contained therein. Before me,

\_\_\_\_\_  
Notary Public/Justice of the Peace  
My commission expires: \_\_\_\_\_

Return To:  
Legal Department  
City Hall  
1 Junkins Ave.  
Portsmouth, NH 03801

## DRAINAGE EASEMENT DEED

**RIGZ ENTERPRISES, LLC**, a limited liability company with a principal office located at 18 Dixon Lane, Derry, County of Rockingham and State of New Hampshire, 03038, hereinafter “Grantor,” for consideration paid, grants to the **CITY OF PORTSMOUTH**, a municipal body politic, having a mailing address of 1 Junkins Avenue, Portsmouth, New Hampshire 03801, hereinafter, "Grantee," with QUITCLAIM COVENANTS, the following easement with respect to Grantor's real property situate on Route 1 Bypass, Portsmouth, Rockingham County, New Hampshire, identified as Portsmouth Tax Assessor’s Map 160, Lot 29 (the “Premises”) on a plan entitled “Rigz Enterprises, LLC, Easement Plan, 822 Rt. 1 Bypass, Portsmouth, NH 03801, Tax Map 160, Lot 29”, dated April 4, 2024, prepared by Ross Engineering, LLC” to be recorded herewith (the “Plan”):

1. **Permanent Easement**: Grantee shall have a permanent and non-exclusive easement and right of way for the purpose of installing, maintaining, replacing and repairing catch basins, drainage pipes, filters, and associated stormwater infrastructure and for storm water detention and flowage in, under, across, and over the Premises, together with the right of access and to place and store materials during and related to such activities within the area identified as “Easement Area C” shown on the Plan, bounded and described as follows:

[INSERT METES AND BOUNDS DESCRIPTION OF EASEMENT AREA C]

Containing approximately 5,544 s.f. more or less.

2. **Grantee's Responsibility to Restore**: Disturbed areas within Easement Area C shall be back-filled and restored at the Grantee's expense upon the completion of the construction activities set forth in Paragraph 1 hereof.
3. **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. Grantor shall not, however, erect any building, shed, deck or other structure within the Easement Area, substantially change the grade or slope, or install any pipes in the Permanent Easement Area without prior written consent of the Grantee.
4. **Personal Property**: It is agreed that the pipes and related facilities installed within the Easement Area, whether fixed to the realty or not, shall be the property of the Grantor.
5. **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, devisees, 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 a drainage easement in, under, across, and over a portion of premises conveyed to Rigz Enterprises, LLC by deed of Portsmouth Realty, LLC dated August 29, 2022, and recorded at the Rockingham County Registry of Deeds (the "Registry") at Book 6435, Page 0275.

This is an exempt transfer pursuant to NH RSA 78-B:2(I).

Dated this \_\_\_\_ day of April, 2024.

**RIGZ ENTERPRISES, LLC**

By: \_\_\_\_\_  
Richard A. Rigazio, Member

STATE OF NEW HAMPSHIRE  
COUNTY OF ROCKINGHAM

On this the \_\_\_\_ day of April, 2024, personally appeared the above-named Richard A. Rigazio, in his capacity as Member of Rigz Enterprises, LLC and acknowledged the foregoing instrument to be his free act and deed executed for the purposes contained therein. Before me,

\_\_\_\_\_  
Notary Public/Justice of the Peace  
My commission expires: \_\_\_\_\_



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

3 April 2024

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

**RE: Request for Preliminary Conceptual Consultation Leading to Design Review at 361 Hanover Street, Proposed Site Development and New Structures**

Dear Mr. Chellman and Planning Board Members:

On behalf of 361 Hanover Steam Factory, LLC we are pleased to submit the attached plan set for **Preliminary Conceptual Consultation and Design Review** for the above-mentioned project and request that we be placed on the agenda for your **April 18, 2024**, Planning Board Meeting. The project consists of the addition of a new structure and the renovation of the existing commercial building at 361 Hanover Street with the associated and required site improvements. The new structure is preferred to be entirely residential to add much needed housing stock in a desirable location where significant walkable amenities are in close proximity. Additionally, we believe that the neighborhood will be better served if the entire project is residential instead of having commercial uses on the first floor. We understand that other land use board approvals are therefore required, Planning Board input is important before we engage in that process.

The proposal includes a new building along Hanover Street with a 20-foot tunnel entrance from Hanover street to a central courtyard between the new building and the existing 361 Hanover Street (Portsmouth Steam Factory) building. The courtyard will provide access to the indoor parking areas at both the existing and the new building. The upper floors of the new Hanover Street building will contain 12 residential dwelling units and the Portsmouth Steam Factory Building would contain 24 dwelling units; for a total of 36 dwelling units. There would be 72 off-street parking spaces in the aggregate.

The project creates more than 20 dwelling units and 30,000 square feet of gross floor area so it must be submitted for **Preliminary Conceptual Consultation** as required under Section 2.4.2 of the Site Plan Regulations This applicant also seeks **Design Review** with the Planning Board as allowed under Section 2.4.3 of the Site Plan Regulations. The application conforms to the required density and development standards with some exceptions. The project therefore requires the filing of an application with the Zoning Board of Adjustment for those items. The development team would like feedback from the Planning Board before committing to that part of the process.

The following plans are included in our submission:

- Cover Sheet – This shows the Development Team, Legend, Site Location, and Site Zoning.
- Site Orthophoto – This plan shows the site bird’s eye view.
- Existing Conditions Plan C1 – This plan shows the existing site conditions in detail.
- Demolition Plan C2 – This plan shows proposed site demolition prior to construction.
- Site Plan C3 – This plan shows the site development layout with the associated Zoning Table and notations.
- Utility Plan C4 – this plan shows concept site utilities.
- Parking Plan C5 – This plan shows the lower-level parking layout and details the required parking calculations and stacked parking assignments.
- Architectural Plans A2.1 – A 3.1 – These plans show building elevations.

We look forward to an in-person presentation to the Planning Board and the Board’s review of this submission and feedback on the proposed design.

Sincerely,

A handwritten signature in black ink, appearing to read 'JRC', with a long horizontal flourish extending to the right.

John R. Chagnon, PE

P:\NH\5010135-Hampshire\_Development\2977.01-Hanover St., Portsmouth-JRC\JN 2977\2024 Site Plan\Applications\City of Portsmouth Site Plan\Planning Board Concept and Design Review Submission Letter 4-3-24.doc



# PORTSMOUTH STEAM FACTORY PROJECT

## PROJECT NARRATIVE



**361 HANOVER STREET, PORTSMOUTH, NH**  
**HAMPSHIRE DEVELOPMENT CORPORATION**

**APRIL 4<sup>TH</sup> 2024**

April 4, 2024

To: Rick Chellman, Planning Board Chair

Re: Project Narrative for Design Review – 361 Hanover Street, Portsmouth, NH

## **Executive Summary**

The purpose of this submission for Design Review is two-fold. First, in preparing a formal application for Site Plan Review for the property located at 361 Hanover Street, we are seeking both confirmation and guidance on the proposed as-of-right land use, parking layout, and building and site design for this project. In particular, we want to confirm that the proposed building type, height, footprint, land uses, and off-street parking layout conforms with the Portsmouth Zoning Ordinance and Site Plan Review regulations. Secondly, we are seeking informal input from the Planning Board, City Staff, and the public through the public hearing process, as to whether there is general support and a shared preference for an alternative plan for the property that would allow for residential uses on the ground floor of the buildings. Additionally, if supported by the Board, we would also like to discuss the merits of seeking a Conditional Use Permit for an additional story on the Portsmouth Steam Factory Mill in exchange for the required workforce housing and community space.

## **Introduction**

In accordance with Section 1.2 of Portsmouth's Site Plan Regulations (SPR), this density and scope of this proposed project will require Site Plan Approval. Per the regulations, the proposed project includes over 20 new residential dwelling units and construction of over 30,000 SF of gross floor area. Thus, Section 2.4.2 of the SPR requires a Preliminary Conceptual Consultation. Given the level of design and engineering involved with the preparation of a formal Site Plan, Section 2.4.3 of the SPR allows for non-binding discussions under the Design Review process. As such, we have submitted the information listed under Section 2.5.3 (1) and the general information listed under Section 2.5.4 (3) as appropriate for the Design Review process. The following is a summary of that information.

## **Design Approach and Site Planning**

In designing the buildings and site design, the Design Team (DT) carefully reviewed the recommendations of the 2025 Master Plan, the 2015 North End Vision Plan, and the purpose and intent of the Character-Based Zoning. Within that framework, we have also sought to develop a context-sensitive building and site design that reflects the historic character of the Hill and Hanover Street neighborhood as well as the design narrative of the North End Vision Plan (see Figure 1). Additionally, we have sought to screen our off-street parking and avoid any spillover to the surrounding neighborhood by maximizing the number of off-street parking spaces within our existing and proposed buildings. Finally, we are seeking to modify and expand our existing license agreement with the City for the continued use of the abutting city-owned parcel. Importantly, we are seeking to replace the existing surface parking behind the building with landscaping and add a new brick sidewalk along our frontage facing Rock Street and Hanover Street.

PLAN PORTSMOUTH  
**NORTH END PRELIMINARY VISION PLAN**

**DESIGN NARRATIVE**

The North End is envisioned over the long term to grow as a complementary extension of Portsmouth's downtown. Unlike many other areas of the City within the former Urban Renewal area, very little historical context remains. This fact, coupled with several large vacant parcels, makes this district ripe for redevelopment opportunities close to downtown. Implementation of this vision will likely require a wide array of innovative land use regulations, policies and programs.

The North End Vision Plan has four main components:

**CIVIC SPACE**

The Plan incorporates an extensive network of parks, plazas, paths, playgrounds, trails and open space. One essential feature is the waterfront trail network along the periphery of the North Mill Pond. With several landscaped fingers, this network is designed to pull the waterfront back into the North End and provide public access to and along the waterfront. In celebrating the unique history of this area, a central civic space is located adjacent to the former shipbuilding and launch ramp as a series of landscaped plazas, greens and waterfront esplanades for active and passive recreation. Across the Maplewood Avenue bridge, the existing City-owned boat launch site on Marsh Lane is expanded into a new park. The trail network also includes a path through the Union & North Cemeteries.

**BUILDING DESIGN**

The massing strategy of the vision plan is to respond to the surrounding context and neighborhoods by stepping down building heights and densities towards the waterfront and existing historic structures. While Portsmouth's downtown is rich in historical architectural styles, public opinion during the charrette expressed a desire for a mixture of contemporary building design, styles types, materials and a wide variety of building height, volumes and massing techniques in the North End. This purposeful distinction will help to define the North End as a unique entity while complementing and contrasting with the historic character of the larger downtown.

**LAND USE**

Land uses in the North End will include a variety of residential, office and commercial spaces. The Vision Plan anticipates a range of mixed-use building types from smaller rowhouses and live-work units to mid-rise buildings. Ground floor uses will be commercial in order to activate streetscapes and to keep residences out of potential flood zones. Ideally, these residential units will incorporate a full range of housing opportunities from affordable workforce housing to luxury units. Parking will be located in the rear of lots, in subterranean garages or in wrapped parking structures to be concealed from public view. There may be an opportunity to support mill housing on the former PSNH Substation parcel now that much of the equipment has been removed or consolidated. Additionally, the plan envisions the eventual removal of the overhead transmission lines.

**TRANSPORTATION & INFRASTRUCTURE**

The Vision Plan anticipates a harmonious integration of various modes of transportation including pedestrian, bicycle, vehicular and transit connections in the form of bus and future passenger rail lines. All thoroughfares are designed to be pedestrian-friendly and incorporate multi-modal design features including generous sidewalks and bike lanes where possible. The City is planning to replace the Maplewood Avenue bridge over the North Mill Pond. When this is done, there may be opportunities to integrate new buildings and waterfront dining to better connect the Dennett Street area with the North End.

© 2014 Town Planning & Urban Design Collaborative LLC



- 1 NOBLE'S ISLAND
- 2 ALBACORE MUSEUM
- 3 PSNH SUBSTATION
- 4 MAPLEWOOD/DENNETT GATEWAY REDEVELOPMENT
- 5 MARSH LANE PARK
- 6 WATERFRONT DINING
- 7 MILL POND CIVIC PLAZA & GREEN
- 8 MILL POND WATERFRONT PARK & GREENWAY
- 9 35 ARTSPACE
- 10 MARKET STREET ROUNDABOUT & PARKS
- 11 NORTH END PLAZA
- 12 FUTURE HARBORCOP/WHOLE FOODS CONVENTION CENTER
- 13 UNION CEMETERY/NORTH CEMETERY
- 14 MAPLEWOOD HISTORIC HOMES
- 15 TRANSIT ORIENTED DEVELOPMENT
- 16 FUTURE PASSENGER RAIL STATION
- 17 FUTURE NORTH END PARKING GARAGE W/ MIXED-USE LINER BUILDING
- 18 FUTURE MAPLEWOOD PARKING GARAGE W/ MIXED-USE LINER BUILDING
- 19 FUTURE MAPLEWOOD AVENUE SQUARE/PARK
- 20 FUTURE ARTISAN/WORKFORCE HOUSING DISTRICT
- 21 FUTURE UPWARD EXTENSION OF HEINEMANN BUILDING
- 22 FUTURE MIXED-USE DISTRICT
- 23 FUTURE INFILL & LINER BUILDINGS

Figure 1 – North End Vision Plan

**Neighborhood Context**

The surrounding neighborhood context is characterized by a mix of land uses, building heights and footprints. The context includes the 14 properties shown on Figure 2. The context includes a portion of Foundry Place as well as Hanover, Hill, Rock, and Sudbury Streets. As shown in Figure 2, to the west of the property, most existing structures are 2 to 2 ½ stories, of wood-frame construction and are built in the late 18<sup>th</sup> and 19<sup>th</sup> century. These smaller historic structures are also located directly along the street edge with narrow side yards on small urban lots with limited off-street parking.

To the north are considerably larger urban structures associated with the recent development within the North End Incentive Overlay District. Most buildings on the north side are 4-5 stories and 52-64 feet in height with large footprints, high building coverage, and limited active commercial uses on the ground-floor. Parking is primarily located on the ground-floor behind a commercial liner building. Importantly, the 6 level (64') Foundry Place municipal parking structure, shown on Figure 2, is located direct behind 361 Hanover Street.

To the south, the existing land use pattern is represented by larger, multi-family structures built in the late 19<sup>th</sup> century. Additionally, the Pearl Church is located directly across the site and it is a two-story, wood frame building that is 40 in height and currently used as a mixed-use space.

To the east, the land use pattern is characterized with two – to three-story wood frame multi-family historic structures. These structures were built in the mid-19<sup>th</sup> century, have high building coverage, and have limited open space due to parking behind and between the structures.



NEIGHBORHOOD CONTEXT MAP – 361 HANOVER STREET, PORTSMOUTH, NH



Figure 2 – Neighborhood Context Map

Figure 3 shows an aerial view of the surrounding context and illustrates the substantial footprint of the former industrial building as well as the recent suburban surface parking lots along Hanover Street and at the end of Hill Street.



Figure 3 – Existing Context – Aerial View of 361 Hanover Street

## Site Plan Review Application Required Information

The following information has been submitted for review and consultation during the Design Review process.

### Site Plan Review Checklist

The Site Plan specifications, required exhibits, and supporting documentation have been provided and posted on the city’s online permitting system (OpenGov). The following plans, elevations and exhibits have been submitted for review and consultation:

**City of Portsmouth, New Hampshire  
Site Plan Application Checklist**

This site plan application checklist is a tool designed to make the applicant in the process easier and for speeding the application to drawing board review. The checklist is required to be completed and submitted to the City's online permitting system. It is not a substitute for the applicant's own knowledge of the City's zoning and other regulations. It is strongly encouraged to consult with the Planning Department to ensure that the application is complete and that all required information is provided. The applicant is advised that the checklist is for informational purposes only and does not constitute a guarantee of approval or a waiver of any requirements. For more information, please contact the Planning Department at 603.886.2345.

**Applicant Responsibility (Section 2.2.1):** Applicant has the duty to provide all required information. The applicant shall be responsible for providing and providing information for completion of the application checklist. The applicant shall be responsible for providing and providing information for completion of the application checklist.

Name of Applicant: \_\_\_\_\_ Date Submitted: \_\_\_\_\_  
 Applicant # (in City's online permitting): \_\_\_\_\_  
 Site Address: \_\_\_\_\_ Map: \_\_\_\_\_ Lot: \_\_\_\_\_

Application Requirements		
Required items for Submission	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/> Complete application form submitted via the City's web-based permitting program (4.2.112.5-2.34)		N/A
<input checked="" type="checkbox"/> All application documents, plans, supporting documentation and other materials uploaded to the application form in viewable digital Portable Document Format (PDF). One hard copy of all plans and drawings shall be submitted to the Planning Department by the published deadline. (2.2.2.1)		N/A

Site Plan Review Application Required Information		
Required items for Submission	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input checked="" type="checkbox"/> Statement that lists and describes "green" building components and systems. (2.2.3.1)		N/A
<input checked="" type="checkbox"/> Existing and proposed gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. (2.2.3.2)		N/A
<input checked="" type="checkbox"/> The map grid lot number, and current zoning of all parcels under Site Plan Review. (2.2.3.3)		N/A

Site Plan Application Checklist, December 2020 Page 1 of 4

1. Existing Conditions
2. Building and Structures
3. Access and Circulation
4. Parking and Loading
5. Utilities
6. Solid Waste Facilities
7. Storm Water Management
8. Landscaping & Open Space
9. Easement and License Plans
10. Character District Data

## Historic Use – the Portsmouth Steam Factory

As shown in Figure 4, the historic structure on the property is the remaining first and second floor of the former five- story Portsmouth Steam Factory (c. 1840). Additionally, a portion of the former

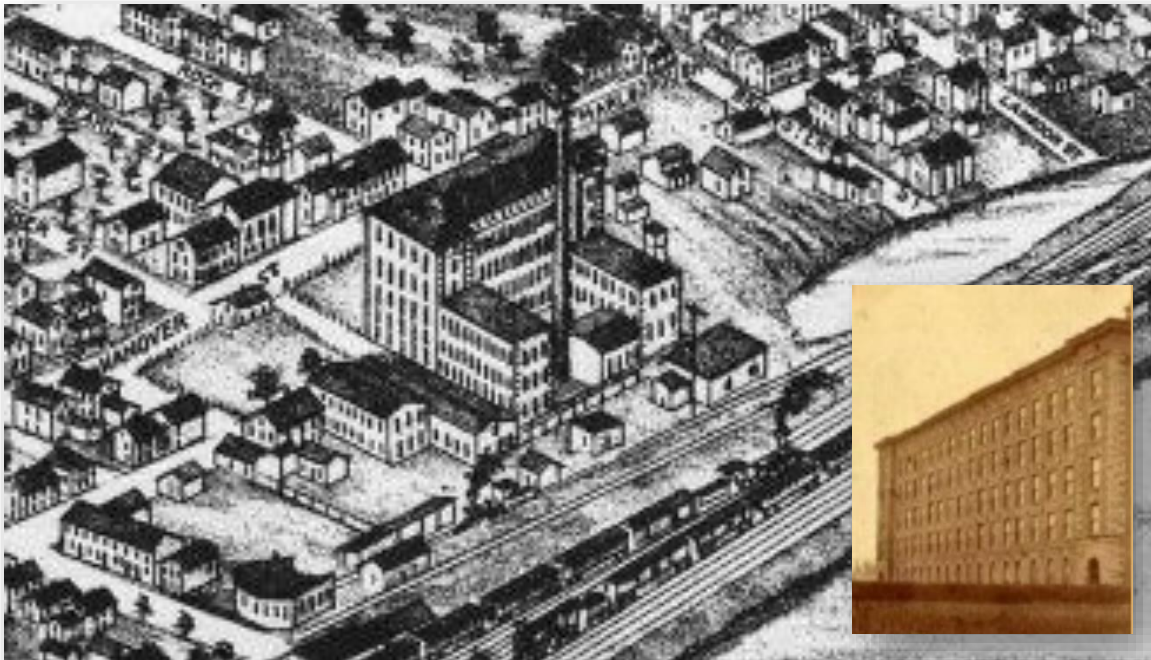


Figure 4 – Former Portsmouth Steam Factory (c. 1840)



Powerhouse Building (c. 1840), a single-story building, remains and is located between Hill Street and Foundry Place. The Portsmouth Steam Factory is a masonry structure designed as an Italianate Renaissance Revival-style building with symmetrical elevations. The building was significantly reduced in height as a result of a fire in the late 19<sup>th</sup> century.

## Existing Zoning

### Character District

As shown in Figure 5, the property is located within the CD5 Character District. The CD5 District is an urban zoning district that allows for a wide variety of higher density commercial and residential uses. Figure 6 shows the Development Standards for the CD5. Such standards allow for 95% building coverage, footprints of up to 20,000 SF and just 5% open space. For buildings located along a public street a maximum setback of 5 feet is required. Flat, Gable, Mansard, Gambrel, and Hip roofs are all permitted in the CD5.

### Overlay Districts

The northern half of the property is also located within the North End Incentive Overlay District (NEIOD). The entire property is also located within the Downtown Overlay District (DOD).

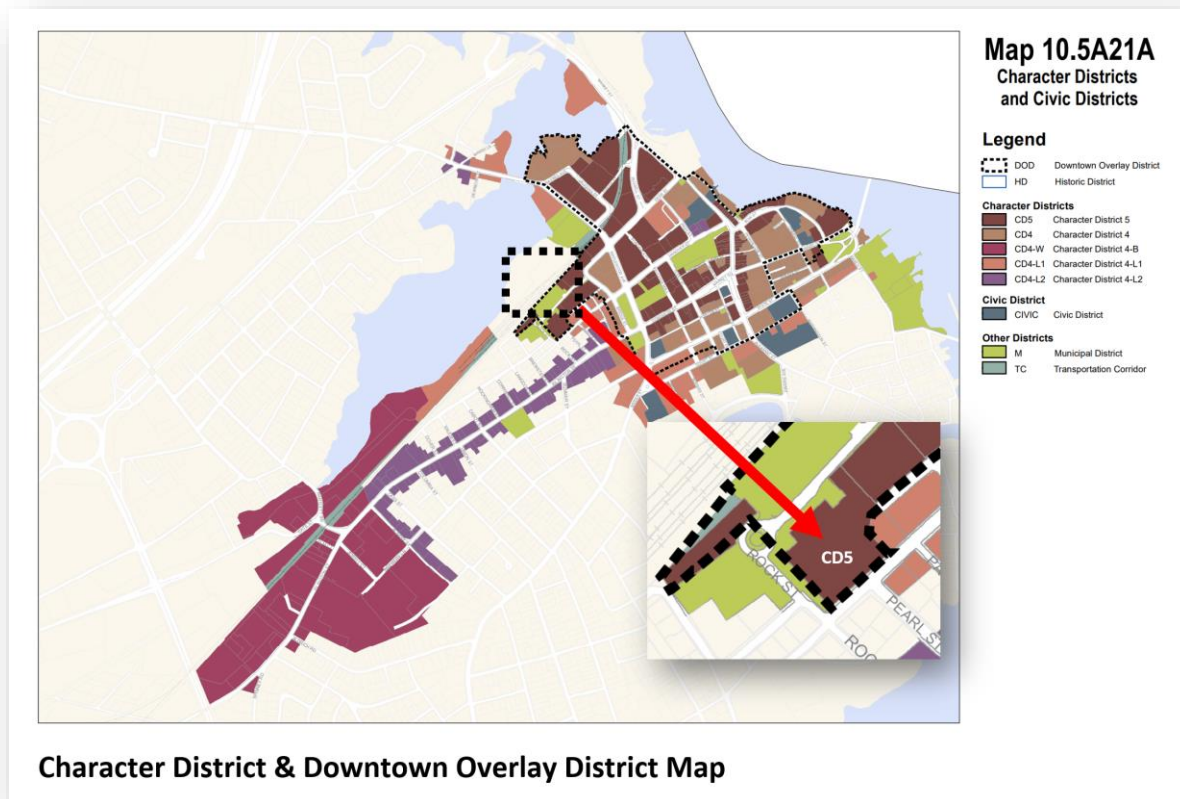
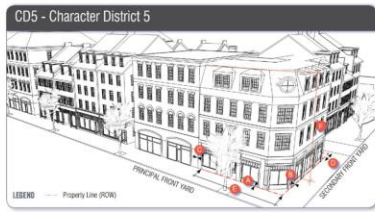


Figure 5 – Character and Overlay District Map



FIGURE 10.5A41.100 DEVELOPMENT STANDARDS  
CHARACTER DISTRICT 5 (CD5)



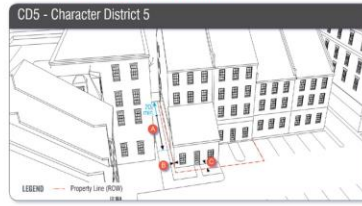
BUILDING PLACEMENT – PRINCIPAL BUILDING*	
Maximum principal front yard	5 ft
Maximum secondary front yard	5 ft
Side yard	NR
Minimum rear yard	Greater of 5 ft from rear lot line or 10 ft from center line of alley
Minimum front lot line buildout	80%

\* Except for items listed under Section 10.5A42.12

BUILDING AND LOT OCCUPATION	
Maximum building block length	225 ft
Maximum facade modulation length	100 ft (see Section 10.5A43.20)
Maximum entrance spacing	50 ft
Maximum building coverage	95%
Maximum building footprint	20,000 sf (or as allowed by Section 10.5A43.40)

BUILDING FORM – PRINCIPAL BUILDING	
Building height	See Map 10.5A21.B & Section 10.5A43.30
Maximum finished floor surface of ground floor above sidewalk grade	36"
Minimum ground story height	12 ft
Minimum second story height	10 ft
Facade glazing:	
Shopfront facade	70% min.
Other facade types	20% min. to 50% max.
Roof type	flat, gable, hip, gambrel, mansard
Roof pitch, if any	
Gable	6:12 min. to 12:12 max
Hip	3:12 min.
Mansard/gambrel	6:12 min. to 30:12 max.

FIGURE 10.5A41.100 DEVELOPMENT STANDARDS  
CHARACTER DISTRICT 5 (CD5)



BUILDING PLACEMENT – OUTBUILDING	
Minimum front yard	20 ft behind a facade of a principal building
Minimum side yard	0 ft
Minimum rear yard	3 ft

BUILDING TYPES	
See Figure 10.5A43.60 for building type definitions	
House	not permitted
Duplex	not permitted
Rowhouse	not permitted
Apartment building	not permitted
Live/work building	permitted*
Small commercial building	permitted
Large commercial building	permitted
Cottage	not permitted
Paired House	not permitted
Gateway Townhouses	not permitted
Mixed-Use Building	permitted*
Flex Space Building	permitted
Community Building	permitted

\*Residential uses are not permitted on the ground floor in the Downtown Overlay District

FACADE TYPES	
See Figure 10.5A43.10 for facade type definitions. Except where required facade types are indicated on Map 10.5A21C, the below standards apply:	
Porch	not permitted
Stoop	permitted
Step	permitted
Shopfront	permitted
Officefront	permitted
Forecourt	not permitted
Recessed-entry	permitted
Dooryard	not permitted
Terrace	not permitted
Gallery	permitted
Arcade	permitted

PARKING	
See Section 10.5A44.30	

COMMUNITY SPACE	
See Section 10.5A45	

BUILDING & LOT USE	
See Sections 10.5A30 and 10.440	

## Development Standards – CD5

Figure 6 – CD5 Development Standards

The DOD requires the ground-floor use to be non-residential and all residential uses are required to be located above the ground-floor. Off-street parking is also not required for all commercial uses and a four-space parking credit is applied to any off-street parking required for either a residential or hotel use of the property.

The NEIOD allows, by a Conditional Use Permit (CUP), for an additional story, or 10 feet, of building height provided line workforce housing and community space is provided. In order to approve a CUP for the project, at least 20% of the total residential units are deed restricted to incomes at or less than 100% of Average Median Income (AMI) for a 4-person household and sold as workforce housing units or, 10% of the total residential units in a project are deed restricted to incomes at or below 60% AMI for a 3-person household and rented as workforce housing units. The workforce housing units are required to be at least 600 SF in area. Additionally, at least 10% of the property shall be deed restricted as Community Space (CS). Permitted CS types include, but are not limited to, pocket parks, pedestrian alley, wide pedestrian sidewalks, pedestrian passage, pedestrian arcade, or a shared multi-model way. Such CS shall connect to existing public sidewalks and shall include landscaping and pedestrian amenities such as benches, lighting, and other street furniture.

## Building Height Standards

As shown in Figure 7, the entire property is located within the 2-3 story building height district with a maximum building height of 40 feet. Except for the existing surface parking lot along Hanover Street, the Building Height Standards Map also shows the property is located within the NEIOD.

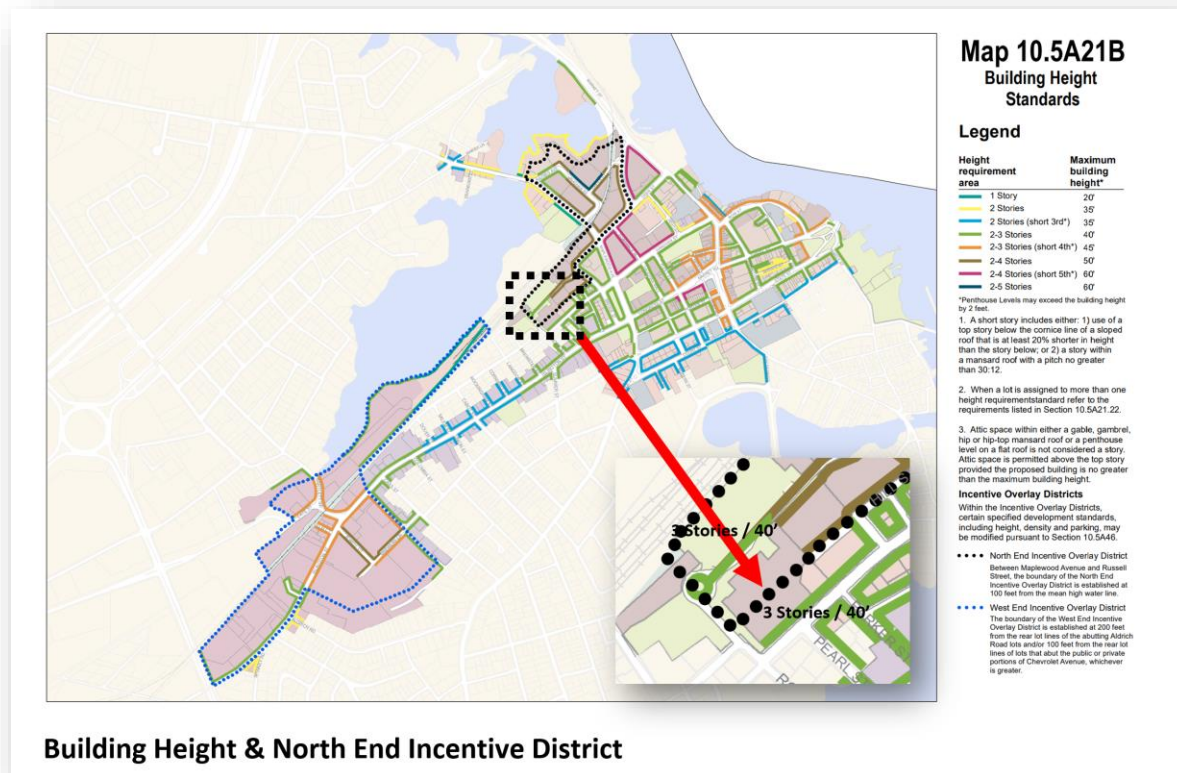


Figure 7 – Building Height Standards and Incentive Overlay District Map

## Existing Conditions

As shown on Figure 8, the Existing Conditions Plans shows the two-story former Steam Factory Building with a footprint of 14,808 SF. It has a second, mezzanine level. The former Powerhouse Building has a footprint of 1,400 SF and is a single-story structure with a partial basement. The total building coverage on the lot is 32%. Both buildings are currently used commercially as professional office and light industrial uses. There are 61 off-street surface parking spaces on the property. Vehicular access to the parking lot is limited to Hanover Street, a Public Street. Private access to the property is also provided from Hill Street, a private way. An access easement is also provided across the Hanover Street parking area to the abutting lot (349 Hanover Street).

The property also has access to the rear parking area adjacent Foundry Place through a license agreement with the City to the 23,000 SF property along Foundry Place. Notably, the retaining walls separating this rear parking area and Foundry Place are between 5 and 8 feet in height. The property has virtually no open space, is 97.5% impervious, and has limited landscaping.



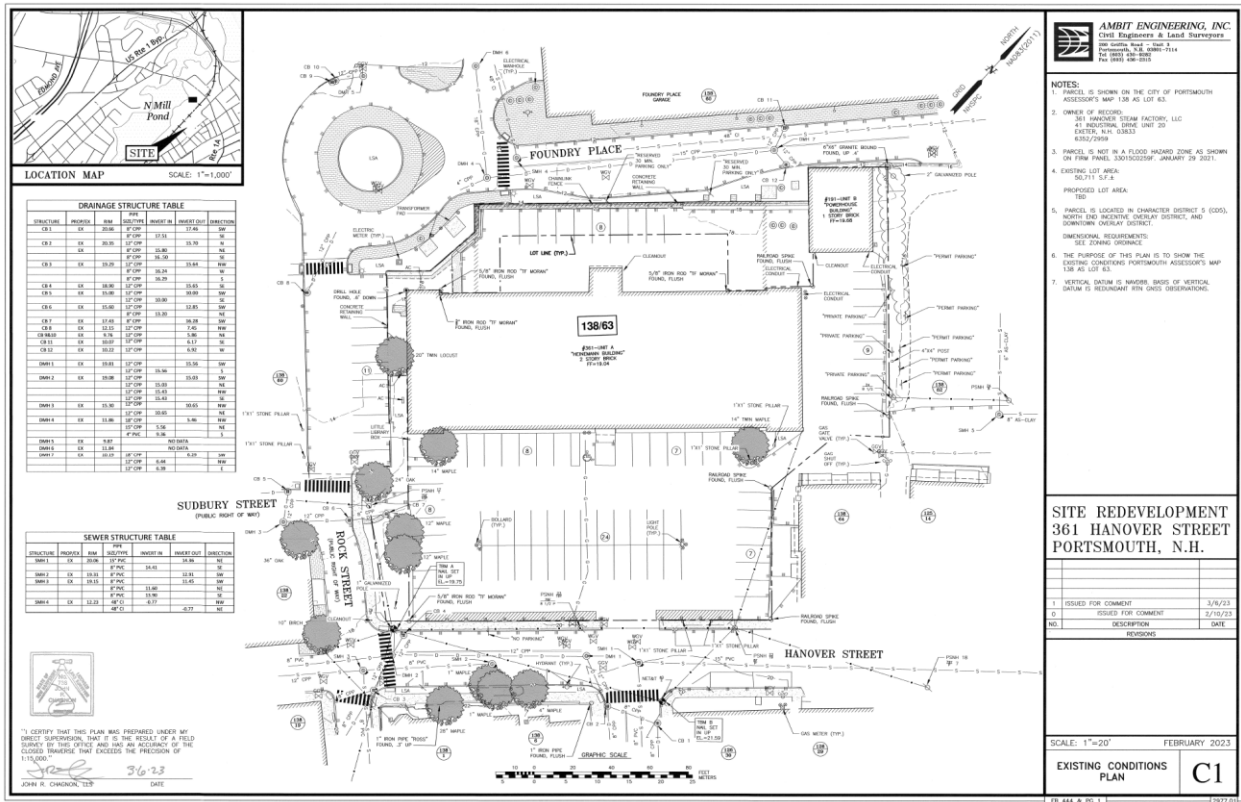


Figure 8 - Existing Conditions (includes the former Powerhouse Building)

## Buildings and Structures

Figure 9 shows the existing buildings and parking areas on the property. Area A is the remaining first and second floor of the former Portsmouth Steam Factory, Area B is the former Powerhouse Building, and Area C is the existing surface parking lot along Hanover Street.

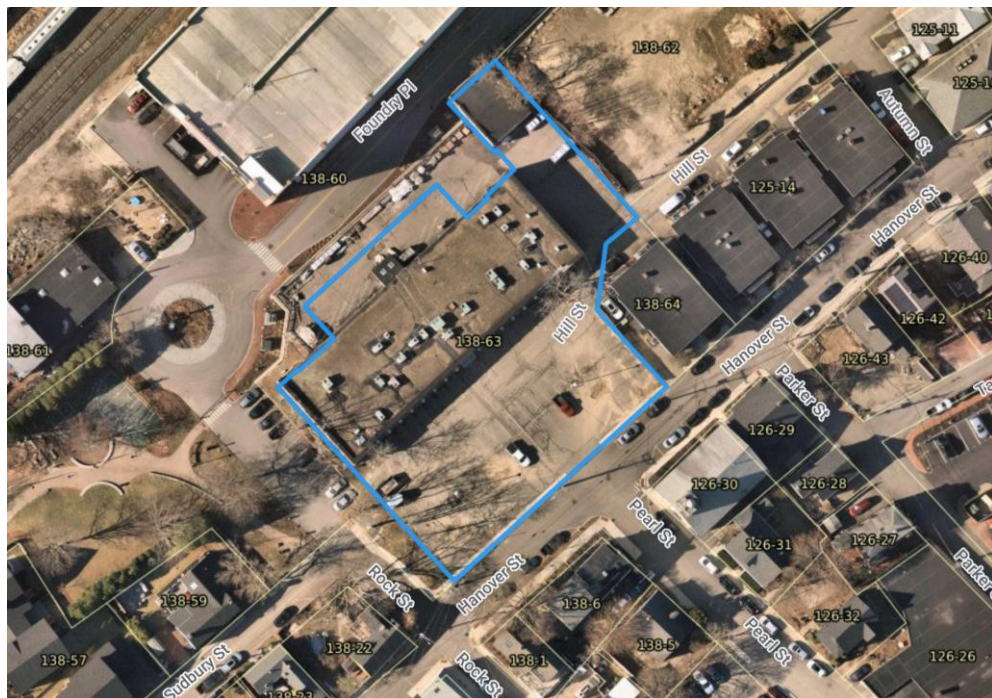






Figure 9 - Existing Conditions showing Buildings and Parking Areas

## Proposed Subdivision Plan

As part of the proposed reorganization of the ownership structure for the property, we are seeking to subdivide the property into two lots. As shown in Figure 10, Lot 1 will contain the former Powerhouse Building, currently *The Last Chance Garage*. Lot 1 is proposed to be a conforming lot with 4,717 SF of land area with 8 off-street parking spaces. Lot 1 will also have an access easement across Lot 2 to Hanover Street. Lot 2 will contain the former Portsmouth Steam Factory building – currently the Portsmouth Offices for the Hampshire Development Corporation – and be 38,528 SF in land area and have frontage and access off of Hanover Street and have 53 surface parking spaces along Hanover Street.

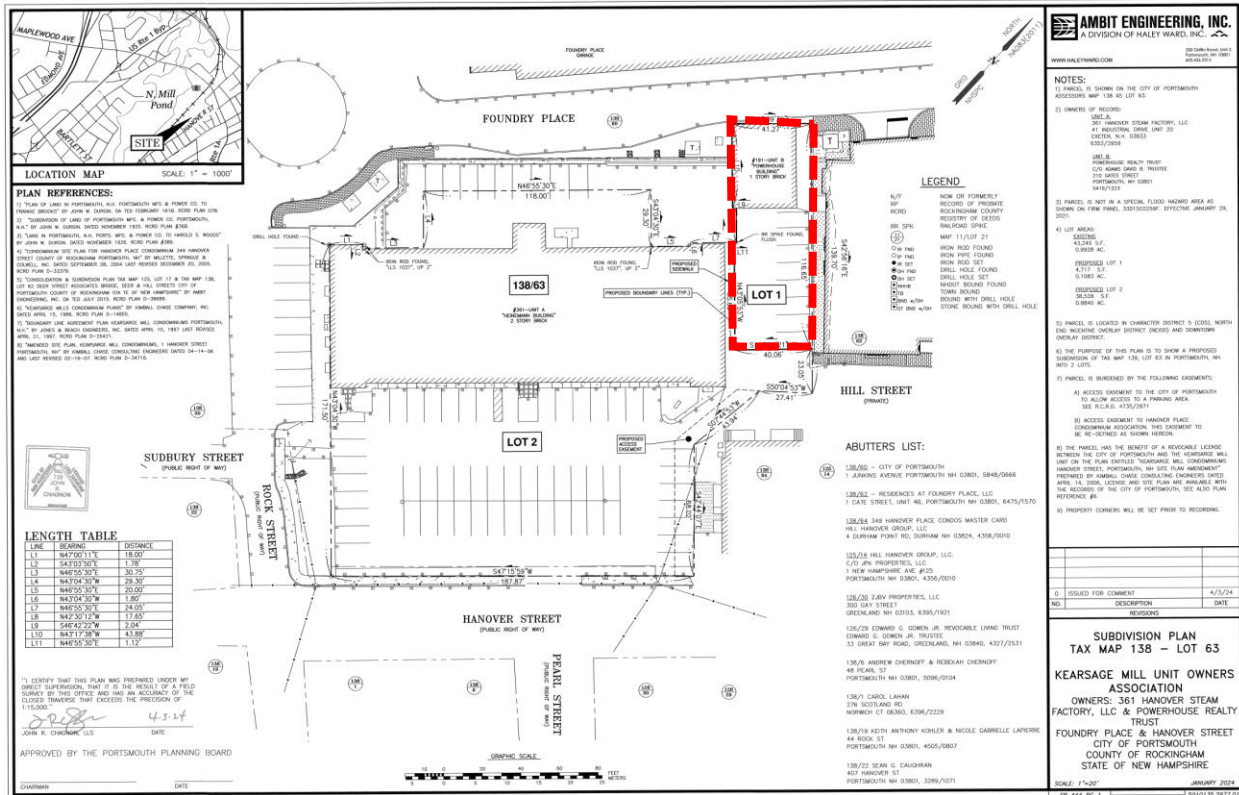


Figure 10 – Proposed Subdivision Plan for Adams Parcel (4,717 SF)

## Proposed Site Plan

The existing land use regulations allow the property to support three-story buildings (with additional attic levels) provided the buildings are no taller than 40 feet in height, 95% in coverage, and have at least 5% open space, and the required off-street parking. The proposed site plan, shown in Figure 11, shows two, three-story buildings totaling approximately 85,000 +/- square feet of floor area with a total of 72 off-street parking spaces. The plan also proposes a small demolition to the rear elevation of the Portsmouth Steam Factory Building and replacement with a multi-story addition with a footprint of 3,485 SF. Along Hanover Street and a new three-story building with an 11,036 SF +/- footprint is proposed. Like the abutting new construction in the North End, structured parking spaces within the ground-floor of both buildings is proposed behind commercial liner buildings.

The proposed new building along Hanover Street would have a 20-foot tunnel entrance from the street to a central courtyard between the buildings that would provide access to the indoor parking areas. The upper floors of the Hanover Street building would contain 12 residential dwelling units and the Portsmouth Steam Factory Building would contain 24 dwelling units; for a total of 36 dwelling units. There would be 72 off-street parking spaces in the aggregate for up to 2 off-street parking spaces per dwelling unit (where only 1.3 spaces per unit are required).

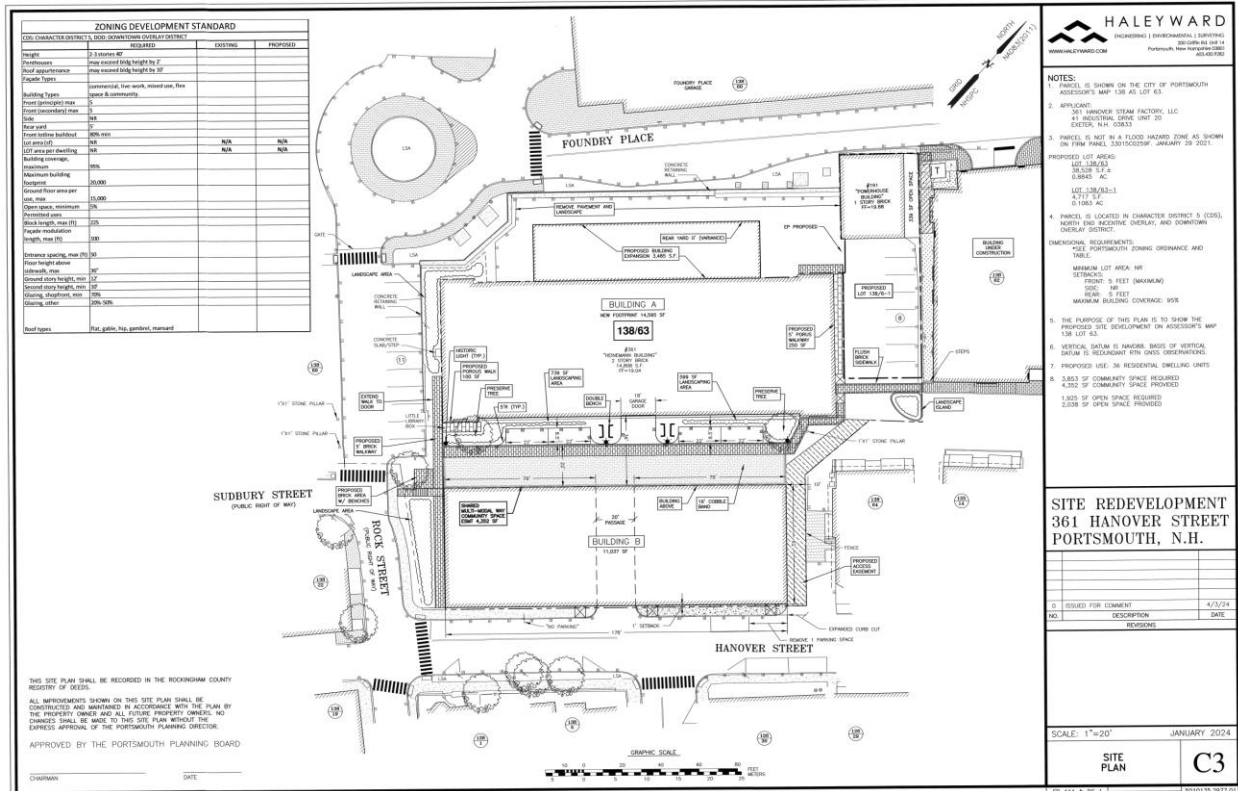


Figure 11 – Proposed Site Plan

### Proposed Building Elevations

As shown in Figures 12 and 13, the proposed building elevations for the Portsmouth Steam Factory and the new building along Hanover Street proposed a mansard roof. The ground floor uses along the street and front façade are commercial (as required in the DOD) with parking for the visitors and the upper floor residential units located behind the liner buildings.



2 NORTH ELEVATION  
Scale: 1/8" = 1'-0"





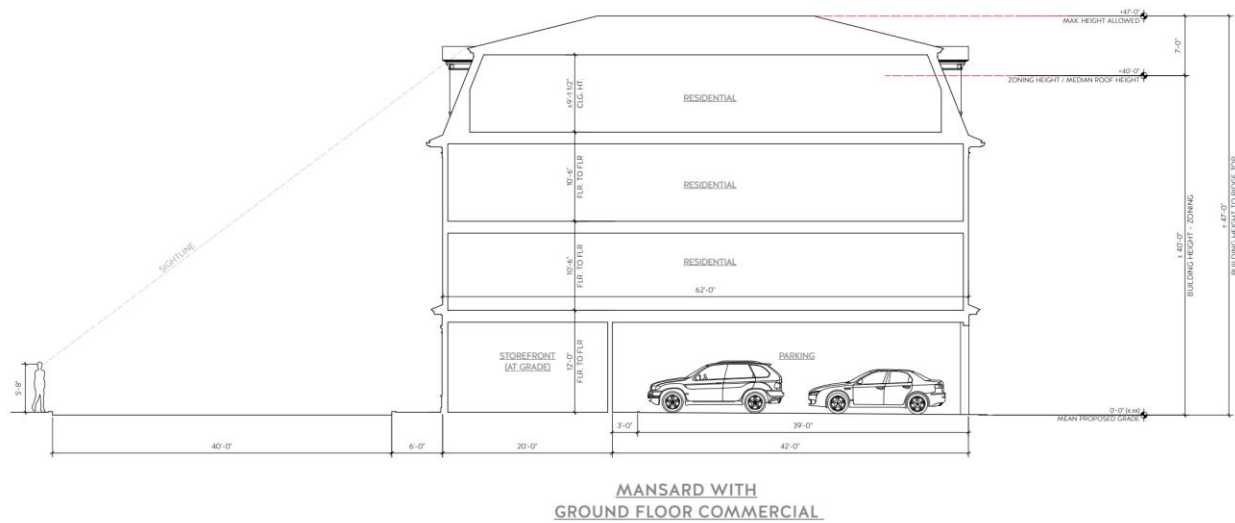
Figure 12 – Proposed Elevations for the Portsmouth Steam Factory Building

Both buildings show an attic level under a mansard roof. The Portsmouth Steam Factory building has a total GFA of nearly 75,000 SF with up to 42 parking spaces proposed within the ground story of the building. Figure 12 shows the proposed three-story mansard building along Hanover Street. The Hanover Street building has ground floor commercial uses along the street edge within a liner building and 26 off-street parking spaces within the rear portion of the ground floor. Additionally, there are four visitor spaces proposed for the courtyard area between the buildings.



Figure 13 – Proposed Elevations for the Mixed-Use Hanover Street Building

Figure 14 shows a cross section of the Hanover Street building and a proposed building height of 40 feet. Importantly, both buildings are proposed to meet the requirement to be no taller than 3 stories (plus and attic level within a mansard roof) and 40 feet. Both buildings will also be designed using traditional design principles to fit in with their surrounding historic context.



*Figure 14 – Proposed Building Height for the Mixed-Use Hanover Street Building*

Figure 15 shows the proposed 3 story building in context along Hanover Street.



*Figure 15 – Proposed Rendering of Hanover Street Mixed-Use Building*

## Proposed Building Dimensions and Land Use

Table 1 lists the proposed uses and gross floor areas by floor for the existing and proposed building.

<b>EXISTING PORTSMOUTH STEAM FACTORY MILL BUILDING</b>					
<b>Floor</b>	<b>Primary Use</b>	<b>GFA (SF)</b>	<b>Accessory Use</b>	<b>GFA (SF)</b>	<b>Total GFA (SF)</b>
1	Commercial	3,264	Parking	15,516	18,780
2	Residential	18,780	-	-	18,780
3	Residential	18,780	-	-	18,780
Attic	Residential	17,800	-	-	17,800
		<b>58,624</b>		<b>15,516</b>	<b>74,140</b>
<b>PROPOSED HANOVER STREET BUILDING</b>					
<b>Floor</b>	<b>Primary Use</b>	<b>GFA (SF)</b>	<b>Accessory Use</b>	<b>GFA (SF)</b>	<b>Total GFA (SF)</b>
1	Commercial	2,816	Parking	6,856	9,672
2	Residential	10,912	-	-	10,912
3	Residential	10,912	-	-	10,912
Attic	Residential	10,300	-	-	10,300
		<b>34,940</b>		<b>6,856</b>	<b>41,796</b>

Table 1 – Uses and Gross Floor Area of the Proposed Buildings

### Future Studies

As we prepare for a formal SPR submission, we are seeking guidance on whether the Board would like traffic study for the project.

### Green Building Statement

The proposed building is still in design development but may be designed with solar-ready roof systems and use hi-efficiency heat pumps for heating and cooling. Additional information will be provided for the formal site plan submission.

### License Plan

As shown on Figure 17, the project includes a modified license amendment with the city to improve and maintain the land area, highlighted in blue, owned by the city along Foundry Place and Rock Street. Except for the area at the intersection of Rock and Hanover Streets, most of this city-owned property is inaccessible due to the presence of an 5-10 foot retaining wall along Foundry Place and a four-foot retaining wall and steep grades along Rock Street between Sudbury Street and Foundry Place. As shown on the proposed site plan, a 6-foot-wide brick sidewalk is proposed to be constructed along the property lines fronting on Hanover and Rock Street to Sudbury Street.



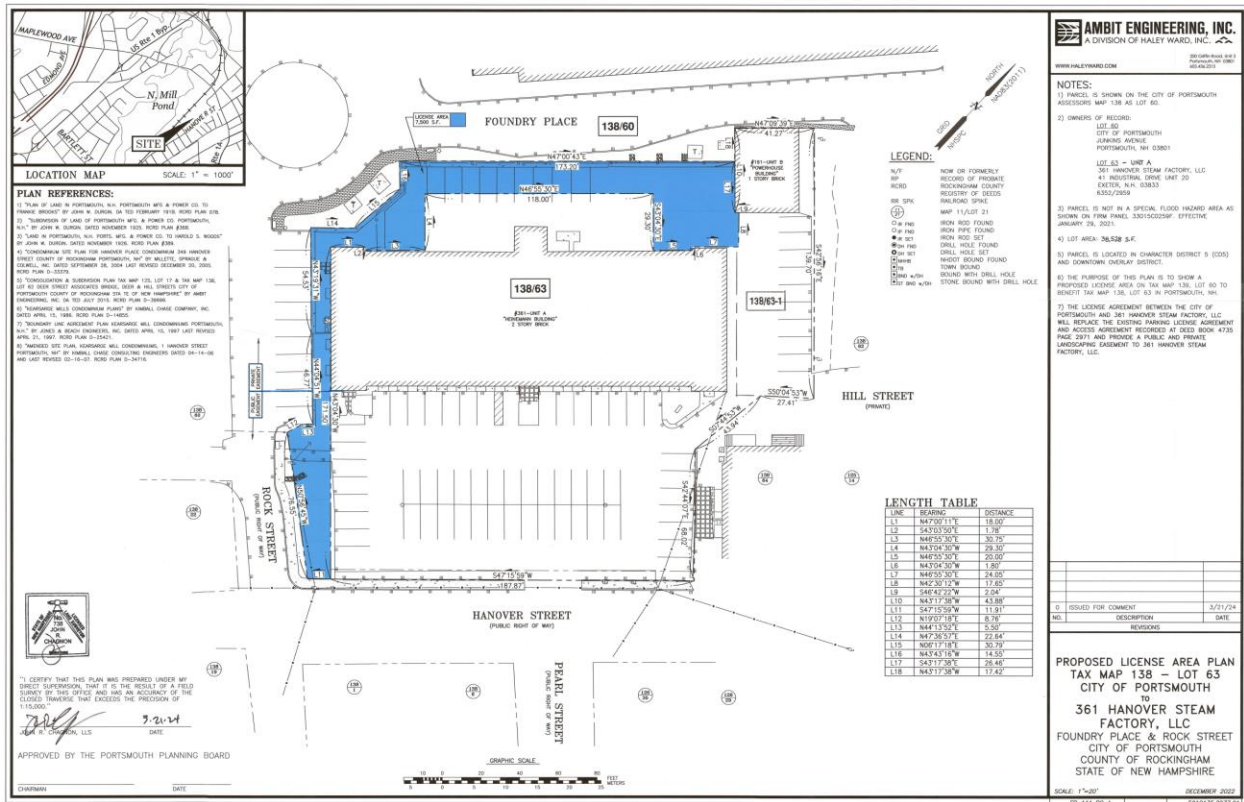


Figure 17 – Proposed License Agreement Plan with the City

### Access and Circulation

As shown above in the proposed site plan, access and egress to the site is proposed using a 20-foot driveway connecting Hanover Street to the proposed courtyard between the buildings. The courtyard will provide access to structured parking within the two buildings as well as four visitor spaces within the courtyard. All parking spaces and driveway aisles will conform to the required minimum dimensions. Emergency access will be provided using the proposed tunnel and driveway within the courtyard area.

### Parking and Loading

As shown in Figure 18, there are 72 proposed off-street parking spaces shown on the proposed site plan. Given the property is located within the DOD only 51 spaces are required for the proposed use. A total of 47 spaces are required for 36 dwelling units given the units are all over 750 SF in GFA. Additionally, 8 visitor spaces are required for a total of 55 spaces. Tandem parking spaces will be assigned to the same unit owner. The DOD does not require any off-street parking for any proposed commercial uses and there is a four-space credit from the required parking. Thus, in the aggregate, the proposed building design and site plan has the capacity to provide nearly 2 spaces per dwelling unit plus visitor parking thereby minimizing any potential spillover parking to the abutting neighborhood.

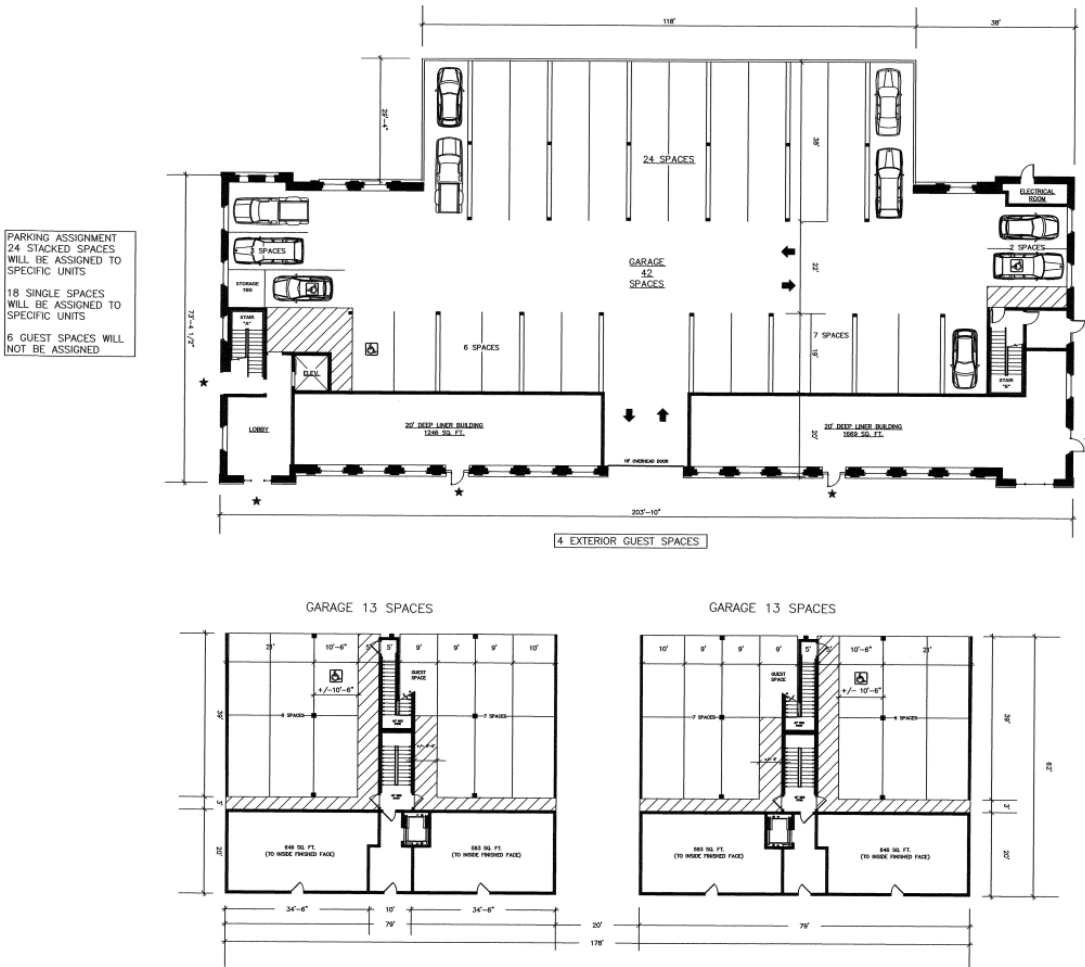


Figure 18 – Proposed Parking Layout (72 Spaces)

**Water and Sewer Infrastructure**

The proposed buildings will be connected to the city’s water distribution and sewer collection systems.

**Utilities**

The proposed buildings will be served by Eversource. Generators will likely be located on the roof structures and all HVAC units will either be internal or roof mounted units.

**Solid Waste**

All solid waste will be managed inside the buildings using totes and a solid waste room.

**Stormwater Management**

The site is currently 98% impervious. A stormwater management plan will be prepared for formal Site Plan submission. Snow will be removed from the site and a management plan will be prepared.

**Outdoor Lighting**

A lighting plan will be proposed for the site. All on-site lighting will be energy efficient and use dark-sky compliant lighting.

### Landscaping

A detailed landscape plan will be developed for the courtyard area and, pending approval by the city, a detailed landscape improvement plan will be submitted for the city-owned license area.

### Open Space

The site will show the required 5% open space areas with at least 51% as pervious surfaces.

### Easements and Licenses

A detailed easement plan will be developed showing all access easements and license areas.

### Character District Zoning

The two proposed mixed-use buildings meet all the development standards of the CD5. Table 2 illustrates how the two buildings comply.

<b>ZONING DEVELOPMENT STANDARD</b>			
CD5: CHARACTER DISTRICT 5, DOD: DOWNTOWN OVERLAY DISTRICT			
	REQUIRED	EXISTING	PROPOSED
Height	2-3 stories 40'	2 stories / 18" +/-	3 stories / 40'
Penthouses	may exceed bldg height by 2'	NA	NA
Roof appurtenance	may exceed bldg height by 10'	< 10'	<10'
Façade Types		NA	NA
Building Types	commercial, live-work, mixed use, flex space & community.	Commercial	Mixed-Use
Front (principle) max	5	99'	1'
Front (secondary) max	5	0'	0'
Side	NR	0.00	1'
Rear yard	5'	0'	0'
Front lot line buildout	80% min	100%	94%
Lot area (sf)	NR	N/A	N/A
Lot area per dwelling	NR	N/A	N/A
Building coverage, maximum	95%	34.0%	75.0%
Maximum building footprint	20,000	14,808	18,808
Ground floor area per use, max	15,000	18,808	7,660
Open space, minimum	5%	<5%	5.3%
Permitted uses		Commercial	Mixed-Use
Block length, max (ft)	225	205'	178'
Façade modulation length, max (ft)	100	205'	79'
Entrance spacing, max (ft)	50	>50'	<50'
Floor height above sidewalk, max	36"	0'	0'
Ground story height, min	12'	10'	12'
Second story height, min	10'	10'	10'
Glazing, shopfront, min	70%	NA	NA
Glazing, other	20%-50%	>20%	>20%
Roof types	flat, gable, hip, gambrel, mansard	Flat	Mansard

Table 2 – Zoning Development Standards for As-of-Right Plan



## Alternative Plans

### Ground-Floor Residential Uses

As part of the informal discussion during the Design Review process, we would like to also discuss the merits of two alternative plans. The first, (shown in Figures 19 and 20) simply proposes to convert the required ground floor commercial space to residential. A variance from the Board of Adjustment would be required to make this change. However, we believe the abutters and larger neighborhood would prefer residential uses on the ground floor to reduce any adverse impacts on the neighborhood such as noise, lighting, and overflow parking. As shown in Figures 19 and 20, changing from a commercial storefront to a residential entryway simplifies the façade along Hanover Street to be more in keeping with the architectural character of the neighborhood buildings.



Figure 19 – Required Ground Floor Commercial Use in Hanover Street Building



Figure 20 – Alternative Ground Floor Residential Use in Hanover Street Building

The second alternative plan (which could also include the alternative plan to convert the ground-floor commercial space to residential) involves using the NEIOD zoning to add an additional story to the Portsmouth Steam Factory Mill Building for a total of four stories or 50' (see Figure 21). Unlike the surface parking lot along Hanover Street, the Portsmouth Steam Factory Building is located within the NEIOD. The overlay district allows the Board to approve a CUP to allow for an additional story or 10 feet to be added to the building provided both workforce housing and community space are provided. Notably, the Hanover Street building is not located within the NEIOD so is ineligible for the additional story.







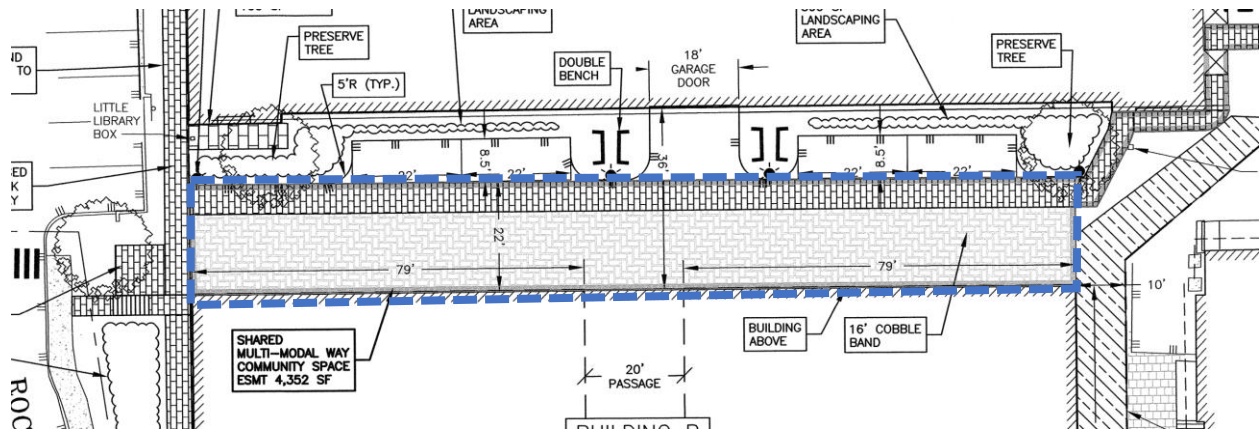


Figure 23 – Proposed Multi-Modal Way

Additionally, as required under the CUP, at least 10% of the proposed dwelling units would be deemed restricted as rental Workforce Housing Units and be rented to a household with an income of no more than 60% of the median family income for a 3-person household. Such units will be at least 600 SF in GFA and are proposed to be located within the ground-floor of both buildings.

**Summary**

We believe the as-of-right site plan submitted for this Design Review process fully conforms to all Zoning and Site Plan requirements without the need for waivers or variances. However, based on preliminary feedback from the neighborhood, we believe the alternative plan(s) are preferred to mitigate any potential adverse impacts of commercial uses on the ground-floor and, under the CUP plan, provide the city with needed workforce housing in the downtown area as well as community space to make a formal and permanent pedestrian link between the Rock and Sudbury Street neighborhood to Hill Street and the heart of the North End. As such, we appreciate any informal feedback the Planning Board can provide on the plan options presented in this narrative as zoning relief may be required to support the building program or development standards for the project. Similarly, your preliminary feedback on the merits of a CUP for the Portsmouth Steam Factory building will allow us to select a development option and prepare a formal application for Site Plan Review.



# PROPOSED DEVELOPMENT

## 361 HANOVER STREET PORTSMOUTH, NEW HAMPSHIRE DESIGN REVIEW PLANS

### OWNER/APPLICANT:

361 HANOVER STEAM  
FACTORY, LLC  
41 INDUSTRIAL DRIVE UNIT 20  
EXETER, NH 03833  
TEL. (603) 235-5475

### CIVIL ENGINEER/LAND SURVEYOR:

AMBIT ENGINEERING, INC.  
200 GRIFFIN ROAD, UNIT 3  
PORTSMOUTH, N.H. 03801  
TEL. (603) 430-9282

### ARCHITECT:

SCOTT BROWN  
29 WATER STREET, SUITE 209  
NEWBURYPORT, MA 01950  
TEL. (978) 465-3535

### PLANNING CONSULTANT:

NICHOLAS CRACKNELL  
TEL. (978) 270-4789

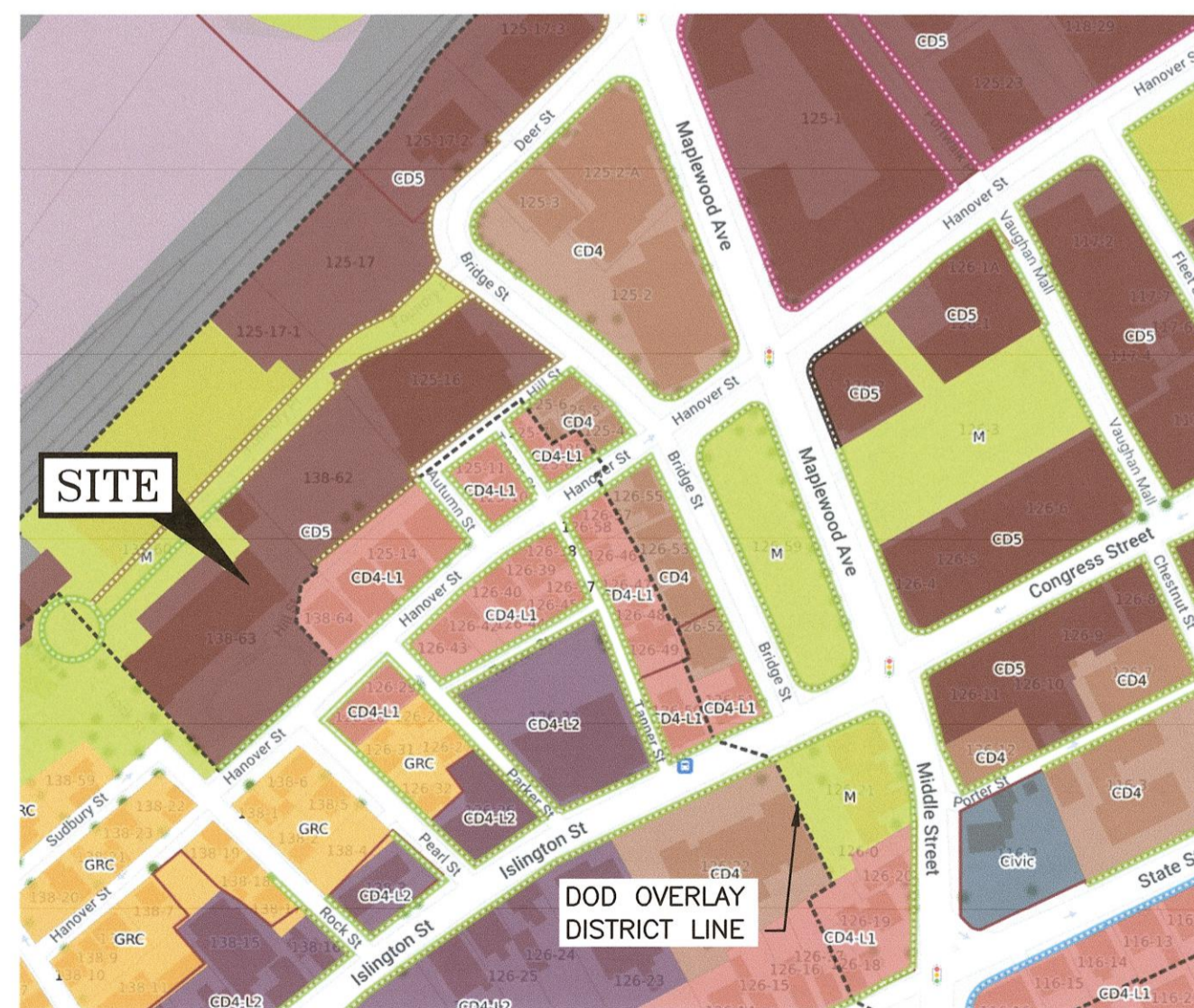
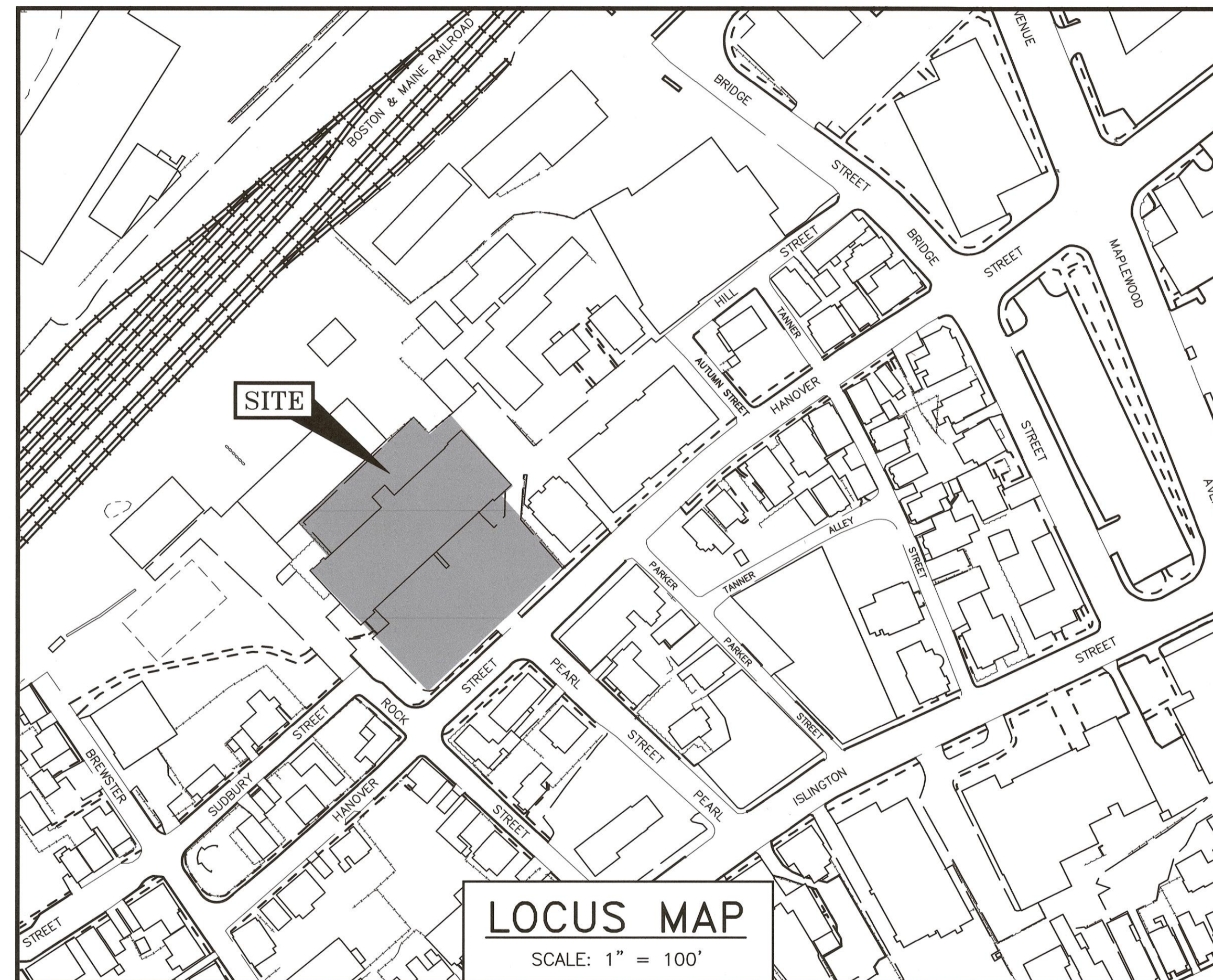
### LAND USE ATTORNEY:

BOSEN & ASSOCIATES  
266 MIDDLE STREET  
PORTSMOUTH, N.H. 03801  
TEL. (603) 427-5500

PERMIT LIST:  
PORTSMOUTH HDC:  
PORTSMOUTH ZONING BOARD:  
PORTSMOUTH SITE REVIEW:  
PORTSMOUTH CONDITIONAL USE PERMIT:

### 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
---	---	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)
⊙	⊙	GATE VALVE
⊙	⊙	HYDRANT
⊙	⊙	HYDRANT
⊙	⊙	CATCH BASIN
⊙	⊙	SEWER MANHOLE
⊙	⊙	DRAIN MANHOLE
⊙	⊙	TELEPHONE MANHOLE
⊙	⊙	PARKING SPACE COUNT
⊙	⊙	PARKING METER
LSA	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



MAP 10.5A21A  
CHARACTER DISTRICTS  
AND CIVIC DISTRICTS

Character Districts
CD2 Character District 2
CD4 Character District 4
CD4-W Character District 4-W
CD4-L1 Character District 4-L1
CD4-L2 Character District 4-L2

MAP 10.5A21B  
BUILDING HEIGHT  
STANDARDS

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.

### 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

### INDEX OF SHEETS

DWG. NO.	
-	SUBDIVISION PLAN
-	SITE ORTHOPHOTO
C1	EXISTING CONDITIONS PLAN
C2	DEMOLITION PLAN
C3	SITE PLAN
-	LICENSE AREA PLAN
C4	UTILITY PLAN
C5	PARKING PLAN
A2.1-3.1	ARCHITECTURAL PLANS

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

DESIGN APPLICATION PLANS  
PROPOSED DEVELOPMENT  
361 HANOVER STREET  
PORTSMOUTH, N.H.

**HALEYWARD**  
ENGINEERING | ENVIRONMENTAL | SURVEYING  
200 Griffin Rd. Unit 14  
Portsmouth, New Hampshire 03801  
603.430.9282  
WWW.HALEYWARD.COM

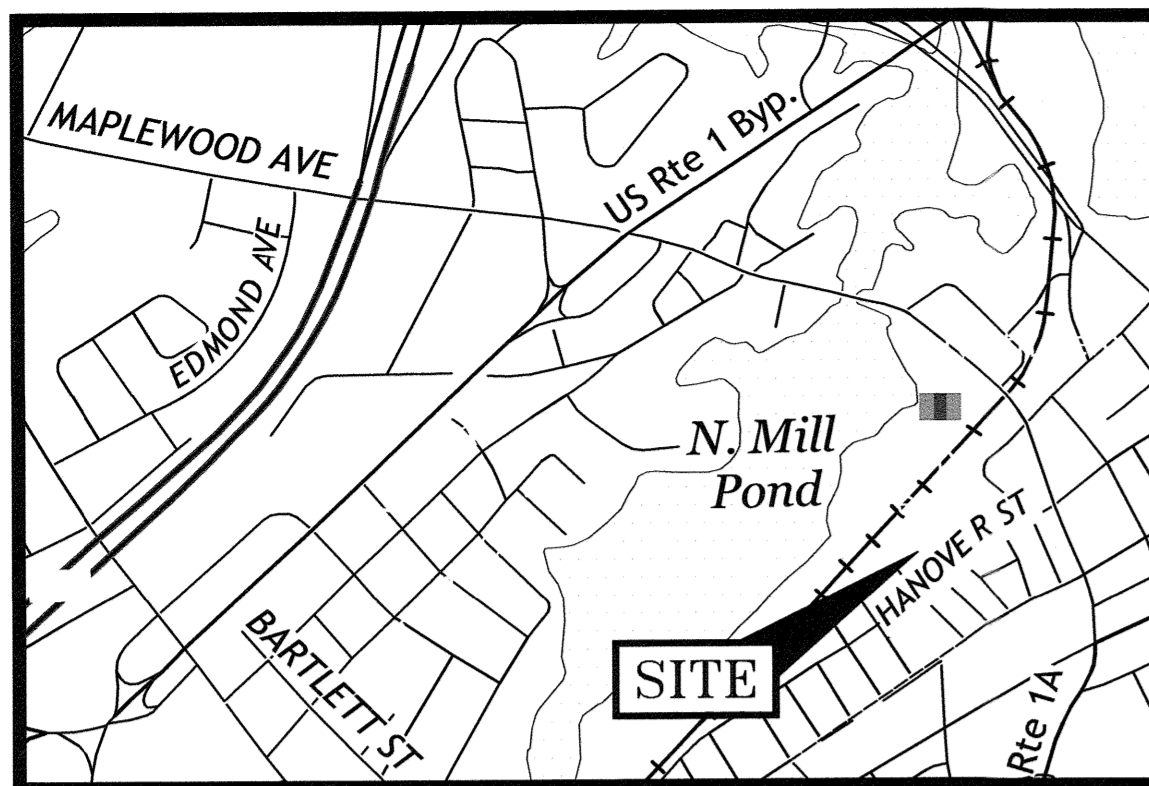
PLAN SET SUBMITTAL DATE: 3 APRIL 2024

5010135.2977.01



**NOTES:**

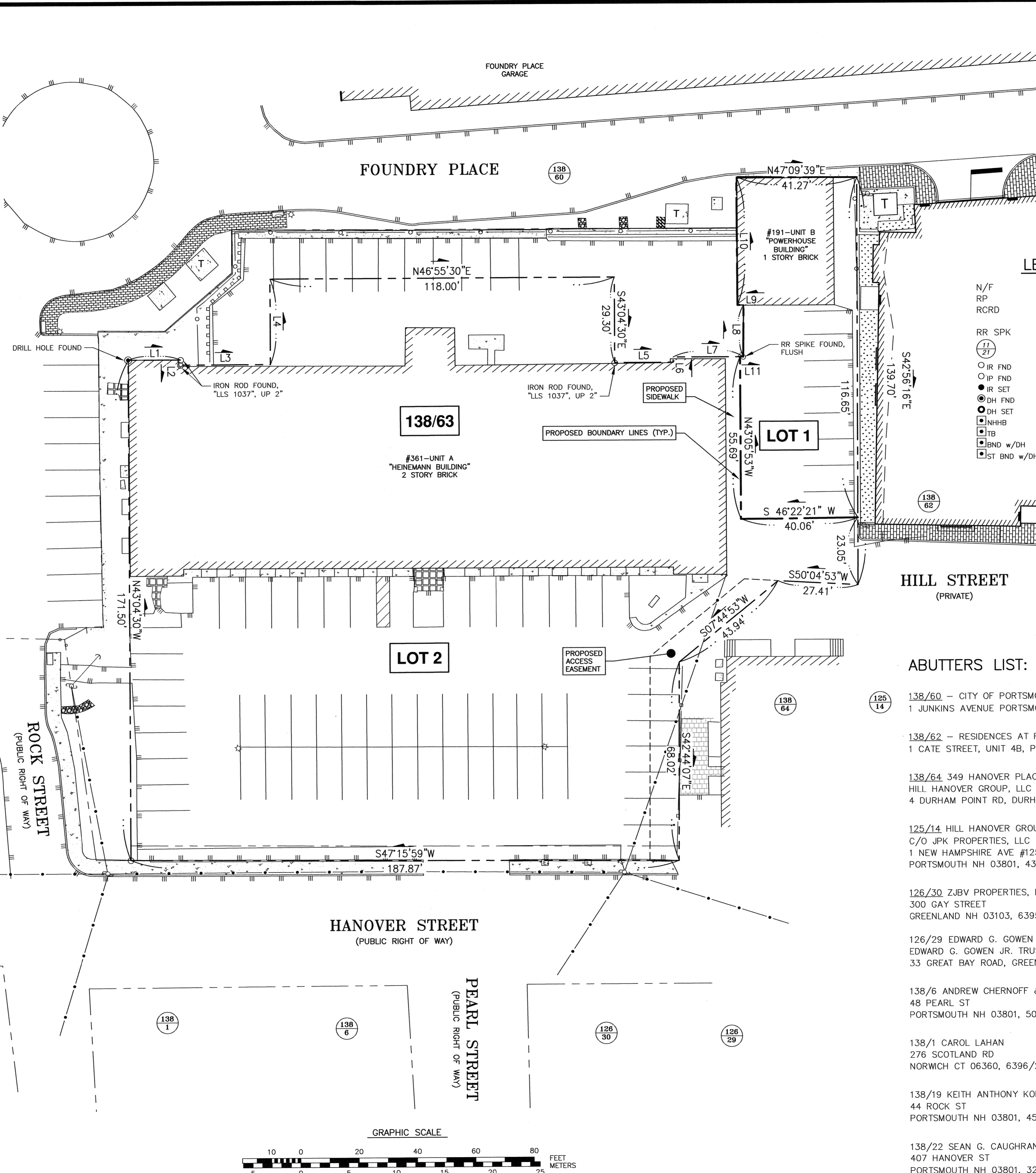
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 138 AS LOT 63.
- 2) OWNERS OF RECORD:  
 UNIT A:  
 361 HANOVER STEAM FACTORY, LLC  
 41 INDUSTRIAL DRIVE UNIT 20  
 EXETER, N.H. 03833  
 6352/2959  
  
 UNIT B:  
 POWERHOUSE REALTY TRUST  
 C/O ADAMS DAVID B. TRUSTEE  
 210 GATES STREET  
 PORTSMOUTH, NH 03801  
 5419/1223
- 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE JANUARY 29, 2021.
- 4) LOT AREAS:  
 EXISTING  
 43,245 S.F.  
 0.9928 AC.  
  
 PROPOSED LOT 1  
 4,717 S.F.  
 0.1083 AC.  
  
 PROPOSED LOT 2  
 38,528 S.F.  
 0.8845 AC.
- 5) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 (CD5), NORTH END INCENTIVE OVERLAY DISTRICT (NEIOD) AND DOWNTOWN OVERLAY DISTRICT.
- 6) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED SUBDIVISION OF TAX MAP 139, LOT 63 IN PORTSMOUTH, NH INTO 2 LOTS.
- 7) PARCEL IS BURDENED BY THE FOLLOWING EASEMENTS:  
 A) ACCESS EASEMENT TO THE CITY OF PORTSMOUTH TO ALLOW ACCESS TO A PARKING AREA. SEE R.C.R.D. 4735/2971  
 B) ACCESS EASEMENT TO HANOVER PLACE CONDOMINIUM ASSOCIATION. THIS EASEMENT TO BE RE-DEFINED AS SHOWN HEREON.
- 8) THE PARCEL HAS THE BENEFIT OF A REVOCABLE LICENSE BETWEEN THE CITY OF PORTSMOUTH AND THE KEARSARGE MILL UNIT ON THE PLAN ENTITLED "KEARSARGE MILL CONDOMINIUM HANOVER STREET, PORTSMOUTH, NH SITE PLAN AMENDMENT" PREPARED BY KIMBALL CHASE CONSULTING ENGINEERS DATED APRIL 14, 2006. LICENSE AND SITE PLAN ARE AVAILABLE WITH THE RECORDS OF THE CITY OF PORTSMOUTH. SEE ALSO PLAN REFERENCE #6.
- 9) PROPERTY CORNERS WILL BE SET PRIOR TO RECORDING.



LOCATION MAP SCALE: 1" = 1000'

**PLAN REFERENCES:**

- 1) "PLAN OF LAND IN PORTSMOUTH, N.H. PORTSMOUTH MFG & POWER CO. TO FRANKIE BROOKS" BY JOHN W. DURGIN. DA TED FEBRUARY 1918. RCRD PLAN 078.
- 2) "SUBDIVISION OF LAND OF PORTSMOUTH MFG. & POWER CO. PORTSMOUTH, N.H." BY JOHN W. DURGIN. DATED NOVEMBER 1925. RCRD PLAN #36B.
- 3) "LAND IN PORTSMOUTH, N.H. PORTS. MFG. & POWER CO. TO HAROLD S. WOODS" BY JOHN W. DURGIN. DATED NOVEMBER 1926. RCRD PLAN #389.
- 4) "CONDOMINIUM SITE PLAN FOR HANOVER PLACE CONDOMINIUM 349 HANOVER STREET COUNTY OF ROCKINGHAM PORTSMOUTH, NH" BY MILLETTE, SPRAGUE & COLWELL, INC. DATED SEPTEMBER 28, 2004 LAST REVISED DECEMBER 20, 2005. RCRD PLAN D-33379.
- 5) "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" BY AMBIT ENGINEERING, INC. DA TED JULY 2015. RCRD PLAN D-39699.
- 6) "KEARSARGE MILLS CONDOMINIUM PLANS" BY KIMBALL CHASE COMPANY, INC. DATED APRIL 15, 1986. RCRD PLAN D-14855.
- 7) "BOUNDARY LINE AGREEMENT PLAN KEARSARGE MILL CONDOMINIUMS PORTSMOUTH, N.H." BY JONES & BEACH ENGINEERS, INC. DATED APRIL 10, 1997 LAST REVISED APRIL 21, 1997. RCRD PLAN D-25421.
- 8) "AMENDED SITE PLAN, KEARSARGE MILL CONDOMINIUMS, 1 HANOVER STREET PORTSMOUTH, NH" BY KIMBALL CHASE CONSULTING ENGINEERS DATED 04-14-06 AND LAST REVISED 02-16-07. RCRD PLAN D-34716.



- LEGEND**
- N/F NOW OR FORMERLY
  - RP RECORD OF PROBATE
  - RCRD ROCKINGHAM COUNTY
  - RR SPK RAILROAD SPIKE
  - 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
  - NHNB NHDOT BOUND FOUND
  - TB TOWN BOUND
  - BND w/DH BOUND WITH DRILL HOLE
  - ST BND w/DH STONE BOUND WITH DRILL HOLE

**HILL STREET**  
(PRIVATE)

**ABUTTERS LIST:**

- 138/60 - CITY OF PORTSMOUTH  
1 JUNKINS AVENUE PORTSMOUTH NH 03801, 5848/0666
- 138/62 - RESIDENCES AT FOUNDY PLACE, LLC  
1 CATE STREET, UNIT 4B, PORTSMOUTH NH 03801, 6475/1570
- 138/64 349 HANOVER PLACE CONDOS MASTER CARD  
HILL HANOVER GROUP, LLC  
4 DURHAM POINT RD, DURHAM NH 03824, 4356/0010
- 125/14 HILL HANOVER GROUP, LLC.  
C/O JPK PROPERTIES, LLC  
1 NEW HAMPSHIRE AVE #125  
PORTSMOUTH NH 03801, 4356/0010
- 126/30 ZJBV PROPERTIES, LLC  
300 GAY STREET  
GREENLAND NH 03103, 6395/1921
- 126/29 EDWARD G. GOWEN JR. REVOCABLE LIVING TRUST  
EDWARD G. GOWEN JR. TRUSTEE  
33 GREAT BAY ROAD, GREENLAND, NH 03840, 4327/2531
- 138/6 ANDREW CHERNOFF & REBEKAH CHERNOFF  
48 PEARL ST  
PORTSMOUTH NH 03801, 5096/0104
- 138/1 CAROL LAHAN  
276 SCOTLAND RD  
NORWICH CT 06360, 6396/2229
- 138/19 KEITH ANTHONY KOHLER & NICOLE GABRIELLE LAPIERRE  
44 ROCK ST  
PORTSMOUTH NH 03801, 4505/0807
- 138/22 SEAN G. CAUGHNAN  
407 HANOVER ST  
PORTSMOUTH NH 03801, 3289/1071

**LENGTH TABLE**

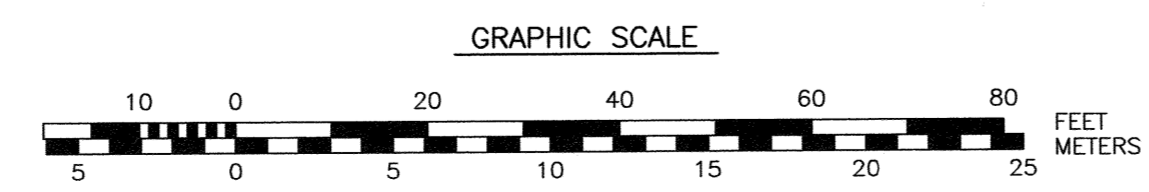
LINE	BEARING	DISTANCE
L1	N47°00'11"E	18.00'
L2	S43°03'50"E	1.78'
L3	N46°55'30"E	30.75'
L4	N43°04'30"W	29.30'
L5	N46°55'30"E	20.00'
L6	N43°04'30"W	1.80'
L7	N46°55'30"E	24.05'
L8	N42°30'12"W	17.65'
L9	S46°42'22"W	2.04'
L10	N43°17'38"W	43.88'
L11	N46°55'30"E	1.12'

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

*John R. Chagnon* 4.3.24  
JOHN R. CHAGNON, LLS DATE

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE



**SUBDIVISION PLAN**  
**TAX MAP 138 - LOT 63**  
**KEARSARGE MILL UNIT OWNERS ASSOCIATION**  
OWNERS: 361 HANOVER STEAM FACTORY, LLC & POWERHOUSE REALTY TRUST  
FOUNDY PLACE & HANOVER STREET  
CITY OF PORTSMOUTH  
COUNTY OF ROCKINGHAM  
STATE OF NEW HAMPSHIRE





**NOTES:**

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 138 AS LOT 63.

2) APPLICANT:  
 361 HANOVER STEAM FACTORY, LLC  
 41 INDUSTRIAL DRIVE UNIT 20  
 EXETER, NH 03833  
 6352/2959

3) THE PURPOSE OF THIS PLAN IS TO SHOW SITE FEATURES AS OF FEBRUARY 2023 ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 138 LOT 63.

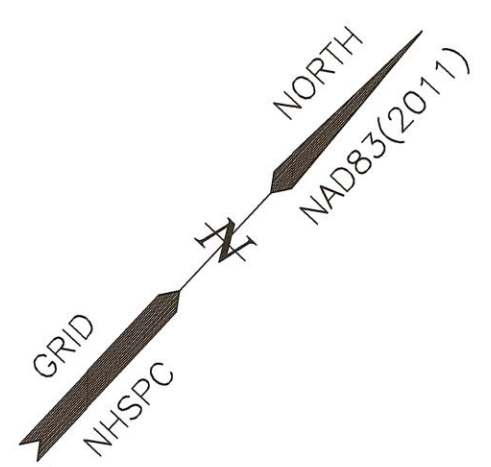
LICENSE AREA  
 7,500 S.F.

138/60

#191 - UNIT B  
 "POWERHOUSE  
 BUILDING"  
 1 STORY BRICK

138/63

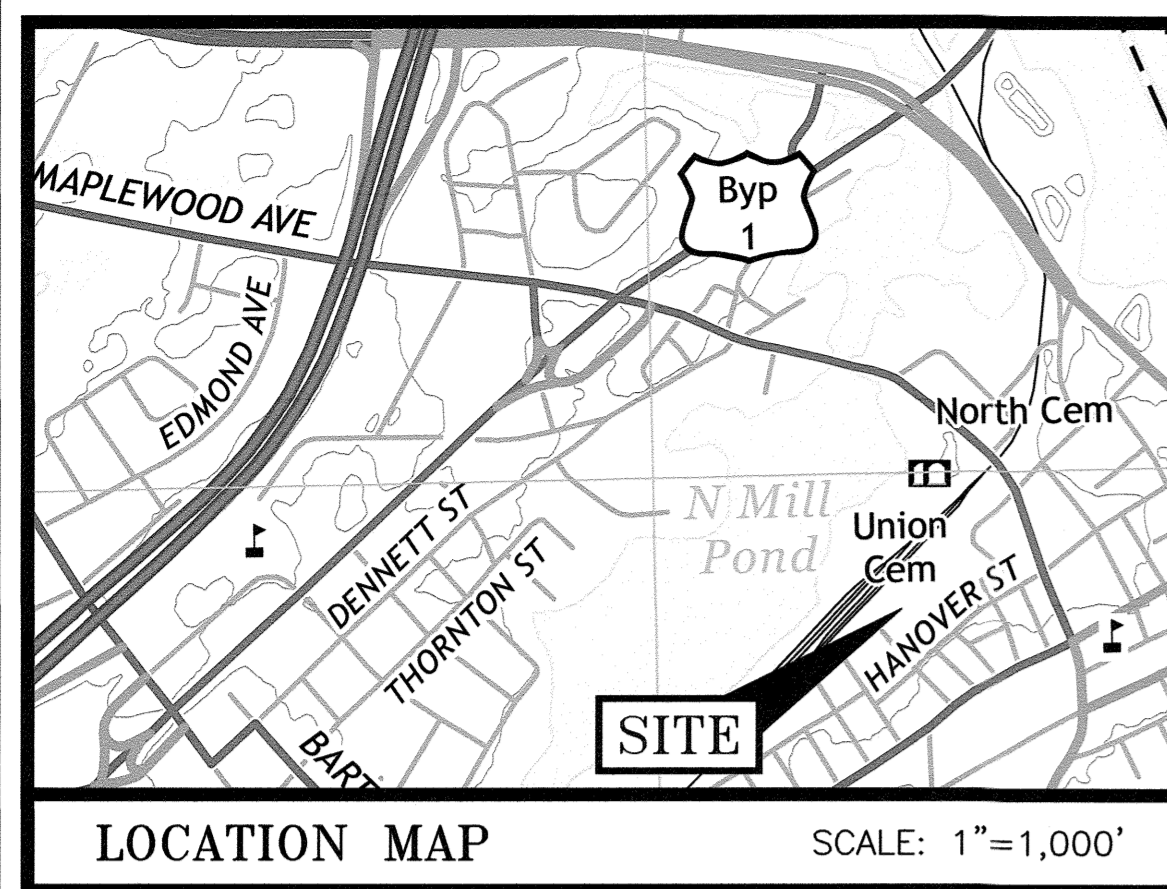
#361 - UNIT A  
 "HEINEMANN BUILDING"  
 2 STORY BRICK



NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/3/24
REVISIONS		

**SITE ORTHOPHOTO**  
**TAX MAP 138 - LOT 63**  
**361 HANOVER STEAM FACTORY, LLC**  
**FOUNDRY PLACE & ROCK STREET**  
**CITY OF PORTSMOUTH**  
**COUNTY OF ROCKINGHAM**  
**STATE OF NEW HAMPSHIRE**





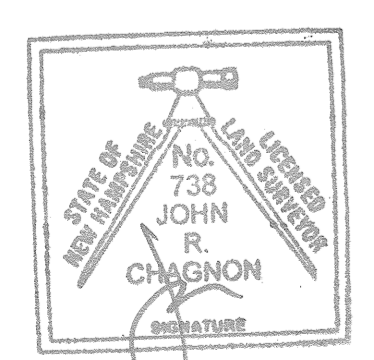
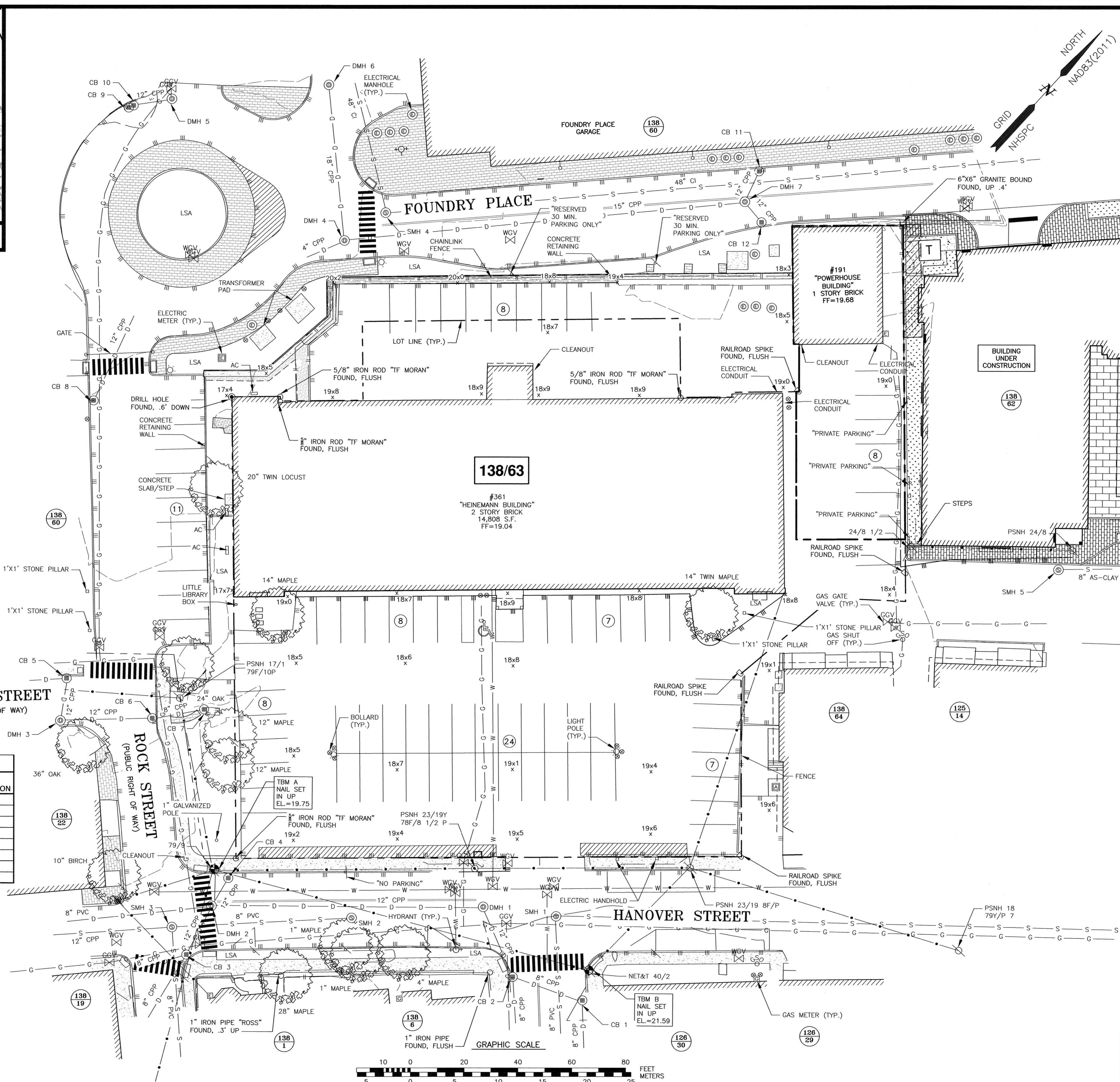
- NOTES:**
- PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 138 AS LOT 63.
  - OWNER OF RECORD:  
 361 HANOVER STEAM FACTORY, LLC  
 41 INDUSTRIAL DRIVE UNIT 20  
 EXETER, N.H. 03833  
 6352/2959
  - PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259F. JANUARY 29 2021.
  - EXISTING LOT AREA:  
 38,528 S.F.
  - PARCEL IS LOCATED IN CHARACTER DISTRICT 5 (CD5), NORTH END INCENTIVE OVERLAY DISTRICT, AND DOWNTOWN OVERLAY DISTRICT.
  - DIMENSIONAL REQUIREMENTS:  
 SEE ZONING ORDINANCE
  - THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON PORTSMOUTH ASSESSOR'S MAP 138 AS LOT 63, AS AMENDED.
  - VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

**DRAINAGE STRUCTURE TABLE**

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION	
CB 1	EX	20.66	8" CPP	17.51	17.46	SW	
CB 2	EX	20.35	12" CPP	15.80	15.70	N	
			8" CPP	15.80		NE	
			8" CPP	16.50		SE	
CB 3	EX	19.29	12" CPP	16.24	15.64	NW	
			8" CPP	16.24		W	
			8" CPP	16.29		S	
CB 4	EX	18.90	12" CPP		15.65	SE	
CB 5	EX	15.00	12" CPP		10.00	SW	
			12" CPP		10.00	SE	
CB 6	EX	15.60	12" CPP		12.85	SW	
			8" CPP		13.20	NE	
CB 7	EX	17.43	8" CPP		16.28	SW	
CB 8	EX	12.15	12" CPP		7.45	NW	
CB 9&10	EX	9.76	12" CPP		5.86	NE	
CB 11	EX	10.07	12" CPP		6.17	SE	
CB 12	EX	10.22	12" CPP		6.92	W	
DMH 1	EX	19.81	12" CPP		15.56	SW	
			12" CPP		15.56	E	
DMH 2	EX	19.08	12" CPP		15.03	SW	
			12" CPP		15.03	NE	
			12" CPP		15.43	NW	
			12" CPP		15.43	SE	
DMH 3	EX	15.30	12" CPP		10.65	NW	
			12" CPP		10.65	NE	
DMH 4	EX	11.86	18" CPP		5.46	NW	
			15" CPP		5.56	NE	
			4" PVC		9.36	S	
DMH 5	EX	9.87	NO DATA				
DMH 6	EX	11.84	NO DATA				
DMH 7	EX	10.19	18" CPP		6.29	SW	
			12" CPP		6.44	NW	
			12" CPP		6.39	E	

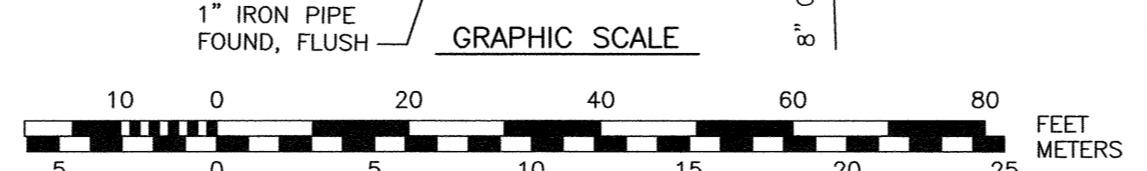
**SEWER STRUCTURE TABLE**

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
SMH 1	EX	20.06	15" PVC		14.36	NE
			8" PVC		14.41	SE
SMH 2	EX	19.31	8" PVC		12.91	SW
SMH 3	EX	19.15	8" PVC		11.45	SW
			8" PVC		11.60	NE
			8" PVC		13.90	SE
SMH 4	EX	12.23	48" CI		-0.77	NW
			48" CI		-0.77	NE



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

*John R. Chagnon* 4.3.24  
 JOHN R. CHAGNON, LLS DATE



**SITE REDEVELOPMENT  
 361 HANOVER STREET  
 PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	ISSUED FOR REVIEW	4/3/24
1	UPDATE E.C. & ADD SPOT GRADES	2/28/24
0	ISSUED FOR COMMENT	1/31/24

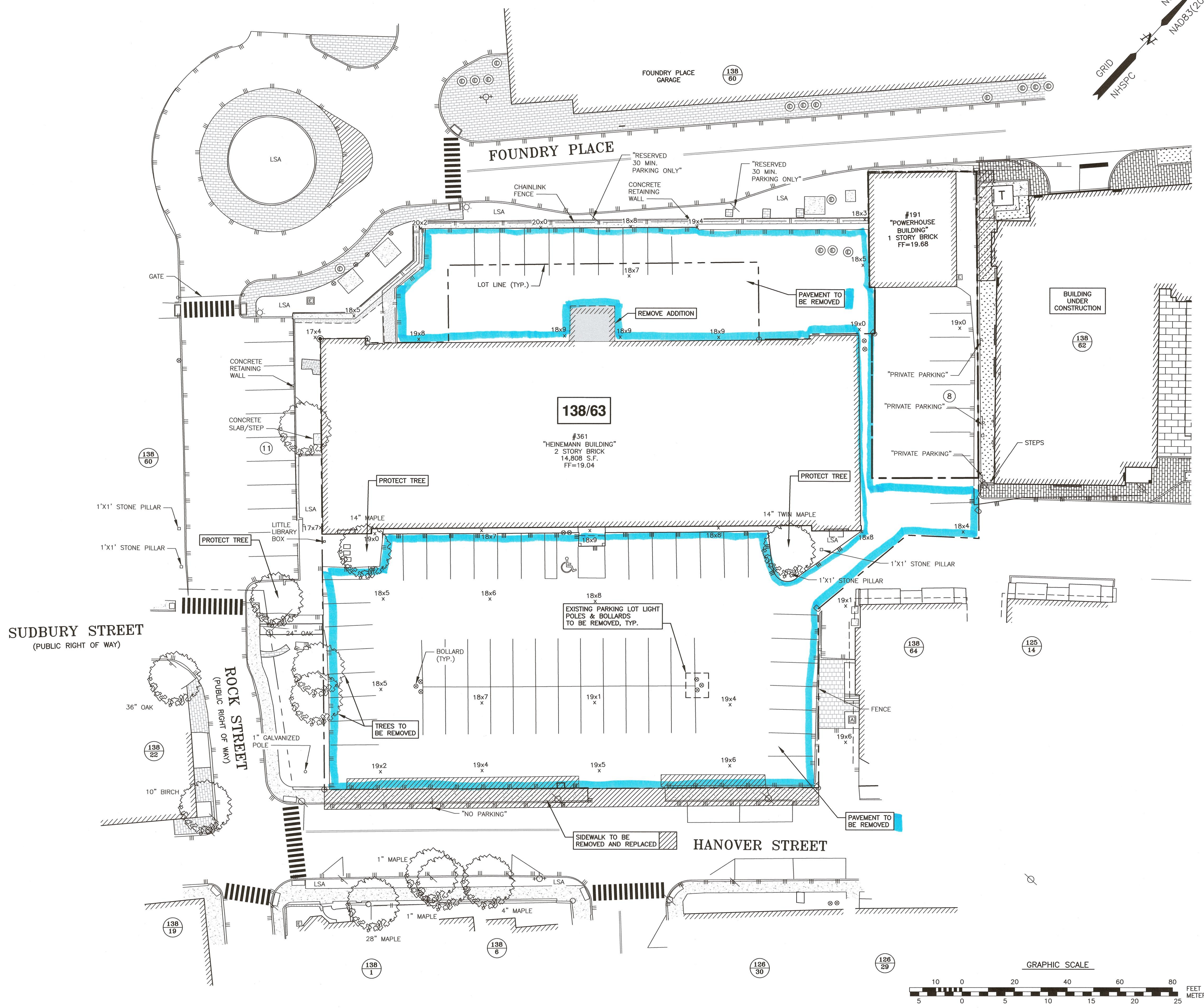
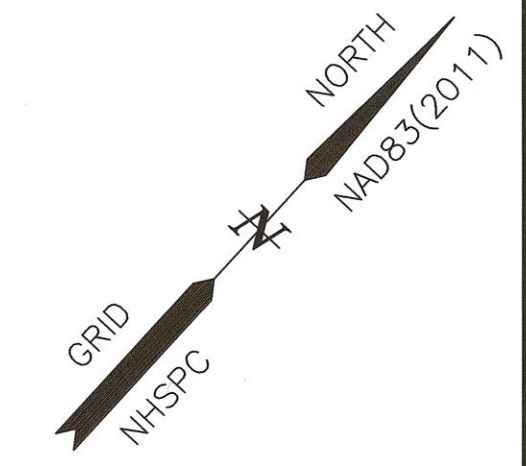
REVISIONS

NO.	DESCRIPTION	DATE

SCALE: 1"=20' JANUARY 2024

EXISTING CONDITIONS PLAN **C1**





- 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) COORDINATE ACCESS IN STREET/ROW AREAS ADJACENT TO DEMOLITION TO INSURE SAFE PASSAGE. UTILIZE DETOURS IF NEEDED.
  - 5) EXISTING UTILITIES TO BE ABANDONED SHALL BE REMOVED TO THE UTILITY MAIN AND CAPPED PER THE UTILITY COMPANY REQUIREMENT.

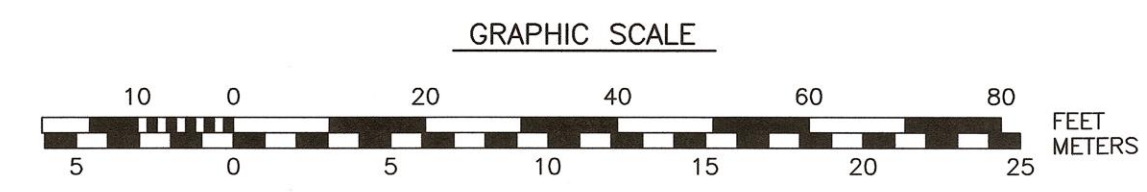
**SITE REDEVELOPMENT  
 361 HANOVER STREET  
 PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/3/24
REVISIONS		



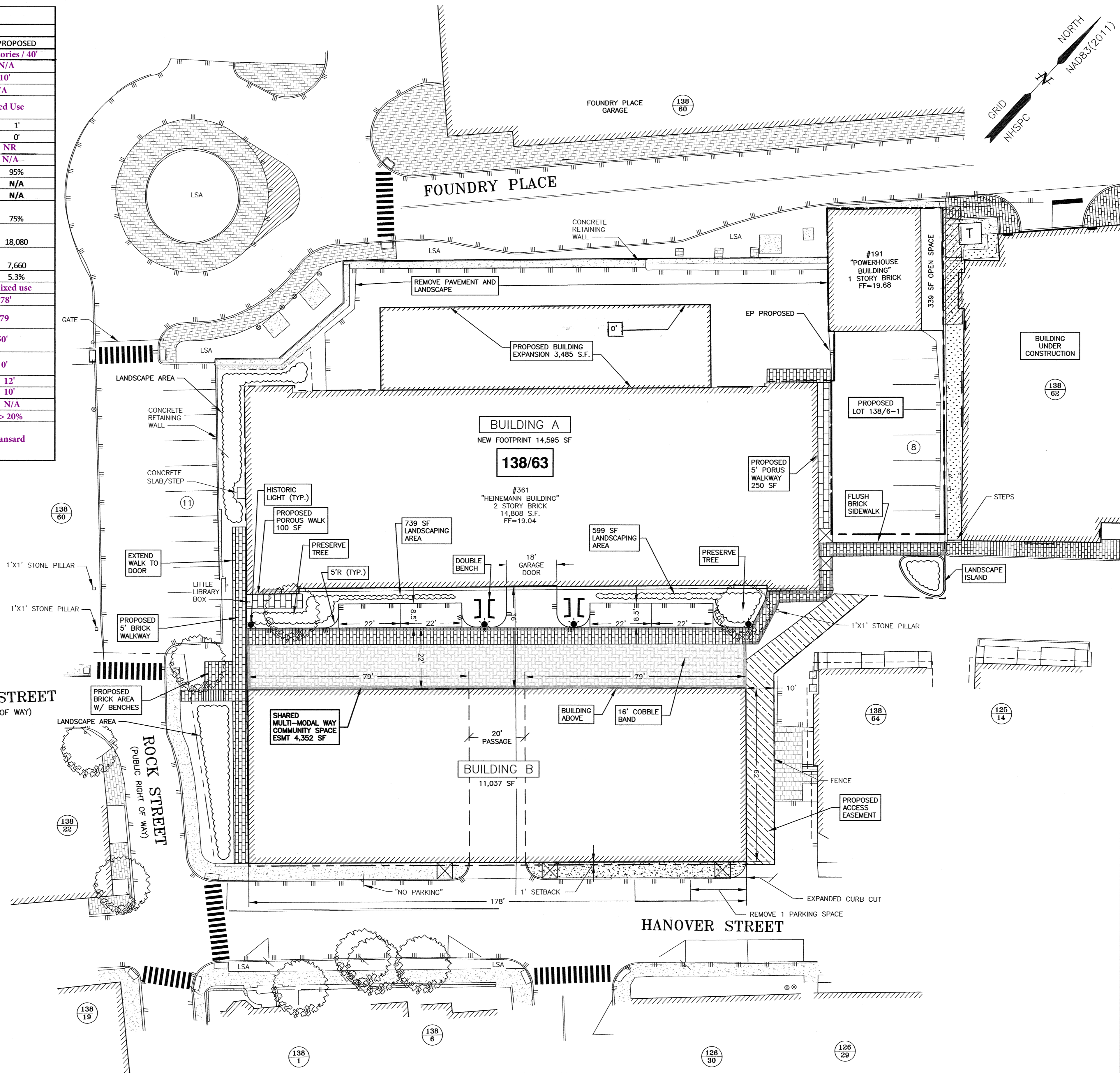
SCALE: 1"=20' JANUARY 2024

**DEMOLITION PLAN** **C2**





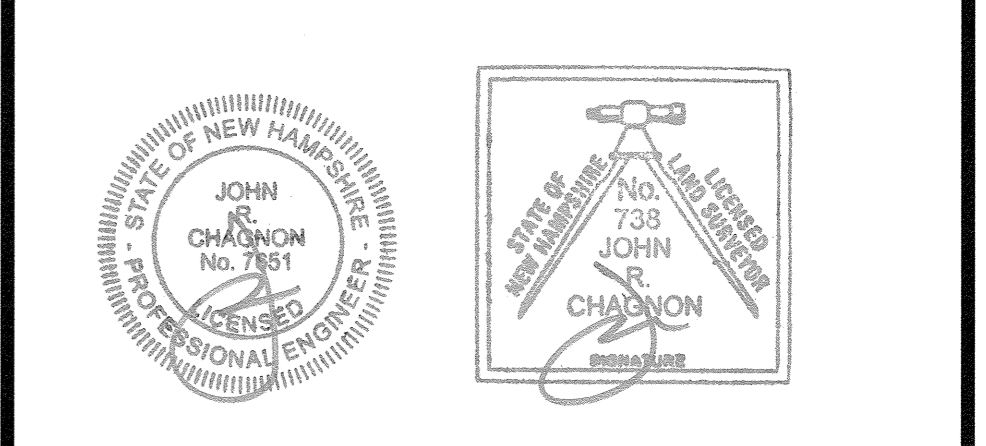
ZONING DEVELOPMENT STANDARD			
CDS: CHARACTER DISTRICT 5, DOD: DOWNTOWN OVERLAY DISTRICT			
	REQUIRED	EXISTING	PROPOSED
Height	2-3 stories 40'	2 Stories / 18' +/-	3 stories / 40'
Penthouses	may exceed bldg height by 2'	N/A	N/A
Roof appurtenance	may exceed bldg height by 10'	< 10'	< 10'
Facade Types		N/A	N/A
Building Types	commercial, live-work, mixed use, flex space & community.	Commercial	Mixed Use
Front (principle) max	5	99'	1'
Front (secondary) max	5	0'	0'
Side	NR	NR	NR
Rear yard	5'	N/A	N/A
Front lotline buildout	80% min	100%	95%
Lot area (sf)	NR	N/A	N/A
LOT area per dwelling	NR	N/A	N/A
Building coverage, maximum	95%	38%	75%
Maximum building footprint	20,000	14,808	18,080
Ground floor area per use, max	15,000	14,808	7,660
Open space, minimum	5%	<5%	5.3%
Permitted uses		Commercial	Mixed use
Block length, max (ft)	225	205'	178'
Facade modulation length, max (ft)	100	205	79
Entrance spacing, max (ft)	50	>50'	<50'
Floor height above sidewalk, max	36"	0'	0'
Ground story height, min	12'	10'	12'
Second story height, min	10'	10'	10'
Glazing, shopfront, min	70%	N/A	N/A
Glazing, other	20%-50%	> 20%	> 20%
Roof types	flat, gable, hip, gambrel, mansard	Flat	Mansard



- NOTES:**
- PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 138 AS LOT 63.
  - APPLICANT:  
361 HANOVER STEAM FACTORY, LLC  
41 INDUSTRIAL DRIVE UNIT 20  
EXETER, N.H. 03833
  - PARCEL IS NOT IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 33015C0259F, JANUARY 29 2021.
- PROPOSED LOT AREAS:**
- LOT 138/63  
38,528 S.F.±  
0.8845 AC
- LOT 138/63-1  
4,717 S.F.  
0.1083 AC
- PARCEL IS LOCATED IN CHARACTER DISTRICT 5 (CD5), NORTH END INCENTIVE OVERLAY, AND DOWNTOWN OVERLAY DISTRICT.
- DIMENSIONAL REQUIREMENTS:**  
 \*SEE PORTSMOUTH ZONING ORDINANCE AND TABLE.
- MINIMUM LOT AREA: NR  
 SETBACKS:  
 FRONT: 5 FEET (MAXIMUM)  
 SIDE: NR  
 REAR: 5 FEET  
 MAXIMUM BUILDING COVERAGE: 95%
- THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 138 LOT 63.
  - VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
  - PROPOSED USE: 36 RESIDENTIAL DWELLING UNITS
  - 3,853 SF COMMUNITY SPACE REQUIRED  
4,352 SF COMMUNITY SPACE PROVIDED  
1,925 SF OPEN SPACE REQUIRED  
2,038 SF OPEN SPACE PROVIDED

**SITE REDEVELOPMENT  
 361 HANOVER STREET  
 PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
1	Zoning Table	4/7/24
0	ISSUED FOR COMMENT	4/3/24



SCALE: 1"=20' JANUARY 2024

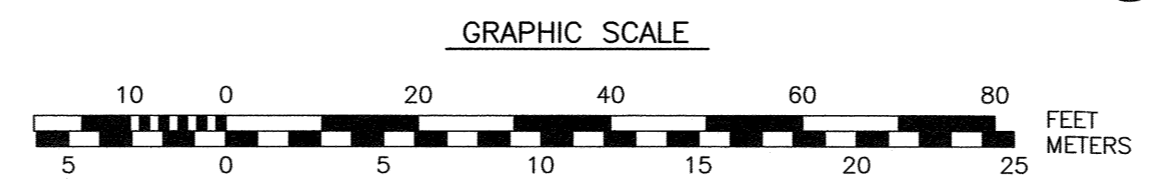
**SITE PLAN** **C3**

THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

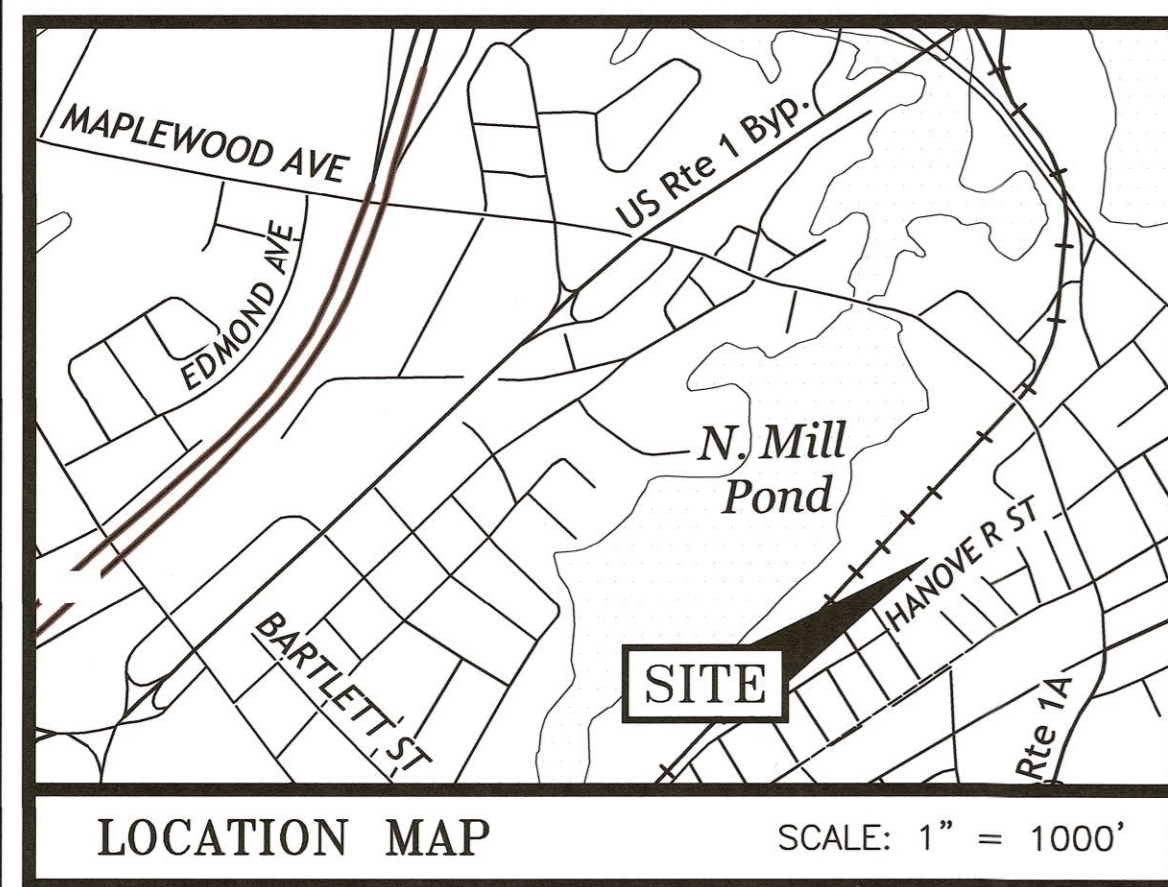
CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_





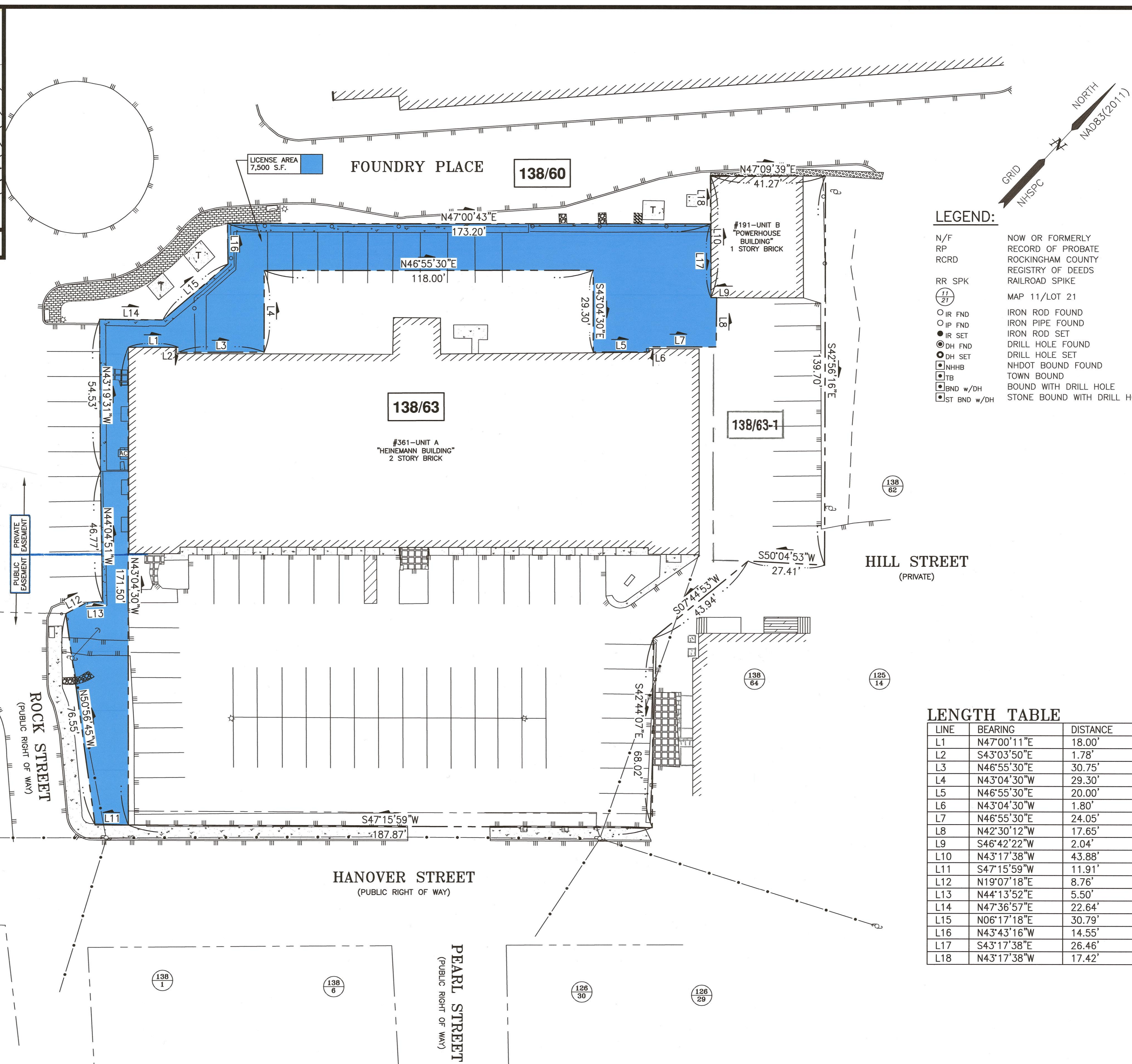
**NOTES:**

- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 138 AS LOT 60.
- 2) OWNERS OF RECORD:  
LOT 60  
CITY OF PORTSMOUTH  
JUNKINS AVENUE  
PORTSMOUTH, NH 03801  
  
LOT 63 - UNIT A  
361 HANOVER STEAM FACTORY, LLC  
41 INDUSTRIAL DRIVE UNIT 20  
EXETER, N.H. 03833  
6352/2959
- 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE JANUARY 29, 2021.
- 4) LOT AREA: 38,528 S.F.
- 5) PARCEL IS LOCATED IN CHARACTER DISTRICT 5 (CD5) AND DOWNTOWN OVERLAY DISTRICT.
- 6) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED LICENSE AREA ON TAX MAP 139, LOT 60 TO BENEFIT TAX MAP 138, LOT 63 IN PORTSMOUTH, NH.
- 7) THE LICENSE AGREEMENT BETWEEN THE CITY OF PORTSMOUTH AND 361 HANOVER STEAM FACTORY, LLC WILL REPLACE THE EXISTING PARKING LICENSE AGREEMENT AND ACCESS AGREEMENT RECORDED AT DEED BOOK 4735 PAGE 2971 AND PROVIDE A PUBLIC AND PRIVATE LANDSCAPING EASEMENT TO 361 HANOVER STEAM FACTORY, LLC.



**PLAN REFERENCES:**

- 1) "PLAN OF LAND IN PORTSMOUTH, N.H. PORTSMOUTH MFG & POWER CO. TO FRANKIE BROOKS" BY JOHN W. DURGIN. DA TED FEBRUARY 1918. RCRD PLAN 078.
- 2) "SUBDIVISION OF LAND OF PORTSMOUTH MFG. & POWER CO. PORTSMOUTH, N.H." BY JOHN W. DURGIN. DATED NOVEMBER 1925. RCRD PLAN #368.
- 3) "LAND IN PORTSMOUTH, N.H. PORTS. MFG. & POWER CO. TO HAROLD S. WOODS" BY JOHN W. DURGIN. DATED NOVEMBER 1926. RCRD PLAN #389.
- 4) "CONDOMINIUM SITE PLAN FOR HANOVER PLACE CONDOMINIUM 349 HANOVER STREET COUNTY OF ROCKINGHAM PORTSMOUTH, NH" BY MILLETTE, SPRAGUE & COLWELL, INC. DATED SEPTEMBER 28, 2004 LAST REVISED DECEMBER 20, 2005. RCRD PLAN D-33379.
- 5) "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" BY AMBIT ENGINEERING, INC. DA TED JULY 2015. RCRD PLAN D-39699.
- 6) "KEARSARGE MILLS CONDOMINIUM PLANS" BY KIMBALL CHASE COMPANY, INC. DATED APRIL 15, 1986. RCRD PLAN D-14855.
- 7) "BOUNDARY LINE AGREEMENT PLAN KEARSARGE MILL CONDOMINIUMS PORTSMOUTH, N.H." BY JONES & BEACH ENGINEERS, INC. DATED APRIL 10, 1997 LAST REVISED APRIL 21, 1997. RCRD PLAN D-25421.
- 8) "AMENDED SITE PLAN, KEARSARGE MILL CONDOMINIUMS, 1 HANOVER STREET PORTSMOUTH, NH" BY KIMBALL CHASE CONSULTING ENGINEERS DATED 04-14-06 AND LAST REVISED 02-16-07. RCRD PLAN D-34716.

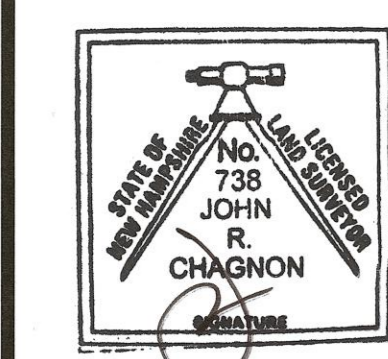


**LEGEND:**

- N/F NOW OR FORMERLY
- RP RECORD OF PROBATE
- RCRD ROCKINGHAM COUNTY REGISTRY OF DEEDS
- RR SPK RAILROAD SPIKE
- (11) 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

**LENGTH TABLE**

LINE	BEARING	DISTANCE
L1	N47°00'11"E	18.00'
L2	S43°03'50"E	1.78'
L3	N46°55'30"E	30.75'
L4	N43°04'30"W	29.30'
L5	N46°55'30"E	20.00'
L6	N43°04'30"W	1.80'
L7	N46°55'30"E	24.05'
L8	N42°30'12"W	17.65'
L9	S46°42'22"W	2.04'
L10	N43°17'38"W	43.88'
L11	S47°15'59"W	11.91'
L12	N19°07'18"E	8.76'
L13	N44°13'52"E	5.50'
L14	N47°36'57"E	22.64'
L15	N06°17'18"E	30.79'
L16	N43°43'16"W	14.55'
L17	S43°17'38"E	26.46'
L18	N43°17'38"W	17.42'

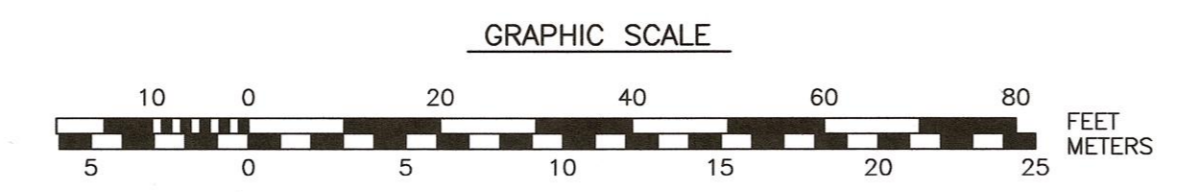


"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

*John R. Chagnon*  
JOHN R. CHAGNON, LLS  
DATE 3.21.24

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

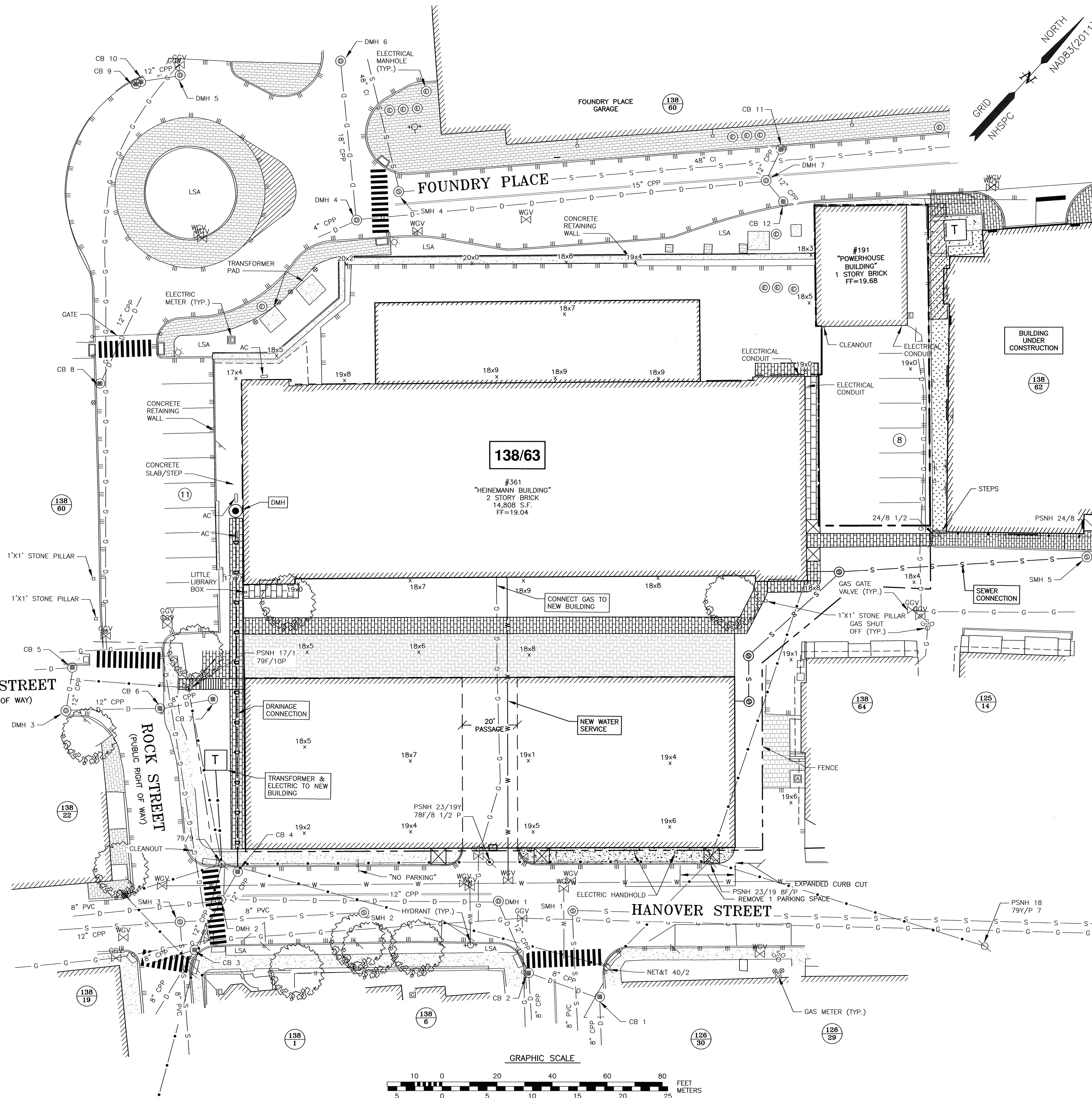


**PROPOSED LICENSE AREA PLAN**  
**TAX MAP 138 - LOT 63**  
**CITY OF PORTSMOUTH**  
TO  
**361 HANOVER STEAM**  
**FACTORY, LLC**  
FOUNDY PLACE & ROCK STREET  
CITY OF PORTSMOUTH  
COUNTY OF ROCKINGHAM  
STATE OF NEW HAMPSHIRE



**UTILITY NOTES:**

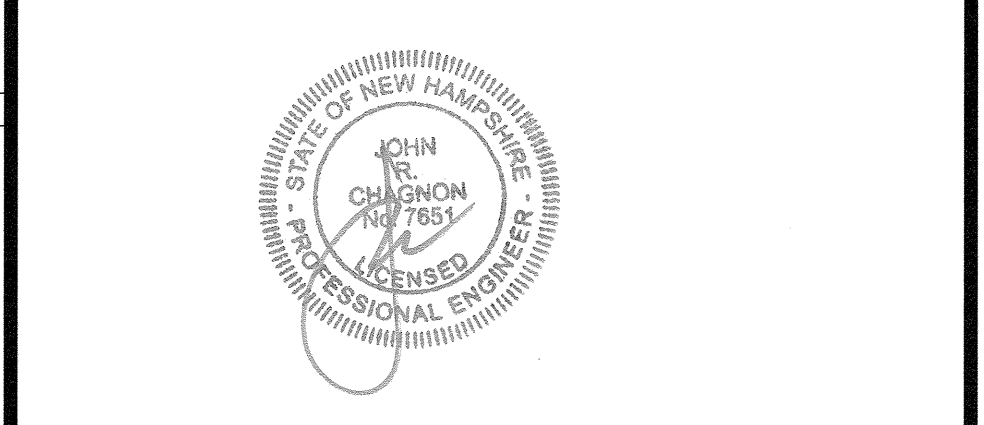
- 1) SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
- 2) COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
- 3) CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
- 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 ADJUTING 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.



- 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 (IN THE PROJECT VICINITY) 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 #XXXXXX
  - 8) PROPOSED SEWER FLOW:  
 36 UNITS X 170 GPD/UNITS = 6,120 GPD  
 TOTAL FLOW: 6,120 GPD  
 COMMERCIAL TBD S.F. 5 GPD/100 SF = TBD GPD
  - 9) THE APPLICANT SHALL HAVE A COMMUNICATIONS SITE SURVEY CONDUCTED BY A MOTOROLA COMMUNICATIONS CARRIER APPROVED BY THE PORTSMOUTH'S COMMUNICATIONS DIVISION. THE RADIO COMMUNICATIONS CARRIER MUST BE FAMILIAR AND CONVERSANT WITH THE PORTSMOUTH POLICE AND FIRE RADIO SYSTEMS CONFIGURATION. IF THE SITE SURVEY INDICATES THAT 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 PROPERTY OWNER WILL BE REQUIRED TO MAINTAIN ANY INSTALLED EQUIPMENT. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO PAY FOR THE SITE SURVEY WHETHER OR NOT THE SURVEY INDICATES THAT EQUIPMENT IS NECESSARY. THE OWNER SHALL COORDINATE WITH THE SUPERVISOR OF RADIO COMMUNICATIONS FOR PORTSMOUTH. THE SURVEY SHALL BE COMPLETED AND ANY REQUIRED EQUIPMENT INSTALLED, TESTED, AND ACCEPTED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
  - 10) FINAL CONDUIT LOCATION SUBJECT TO CONFIRMATION FROM UTILITY PROVIDERS.
  - 11) EXISTING UTILITIES TO BE ABANDONED SHALL BE REMOVED TO THE UTILITY MAIN AND CAPPED PER THE UTILITY COMPANY REQUIREMENT.

**SITE REDEVELOPMENT  
 361 HANOVER STREET  
 PORTSMOUTH, N.H.**

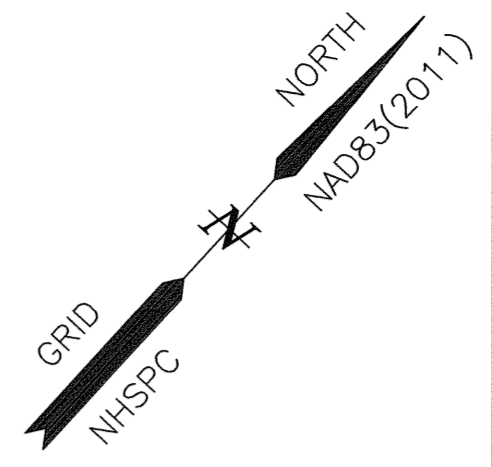
0	ISSUED FOR COMMENT	4/3/24
NO.	DESCRIPTION	DATE
REVISIONS		



SCALE: 1"=20' JANUARY 2024

UTILITY PLAN **C4**



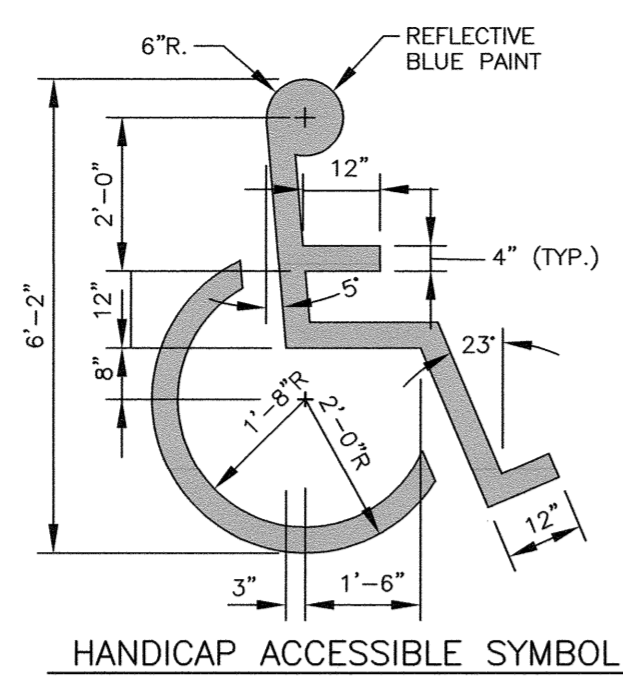


R7-8a  
 12" x 18"  
 SIGN ON POST

EACH SPACE  
 SHALL HAVE  
 THIS SIGN  
 DISPLAYED PER  
 ADA CODE

SIGNAGE

LEGEND SYMBOL



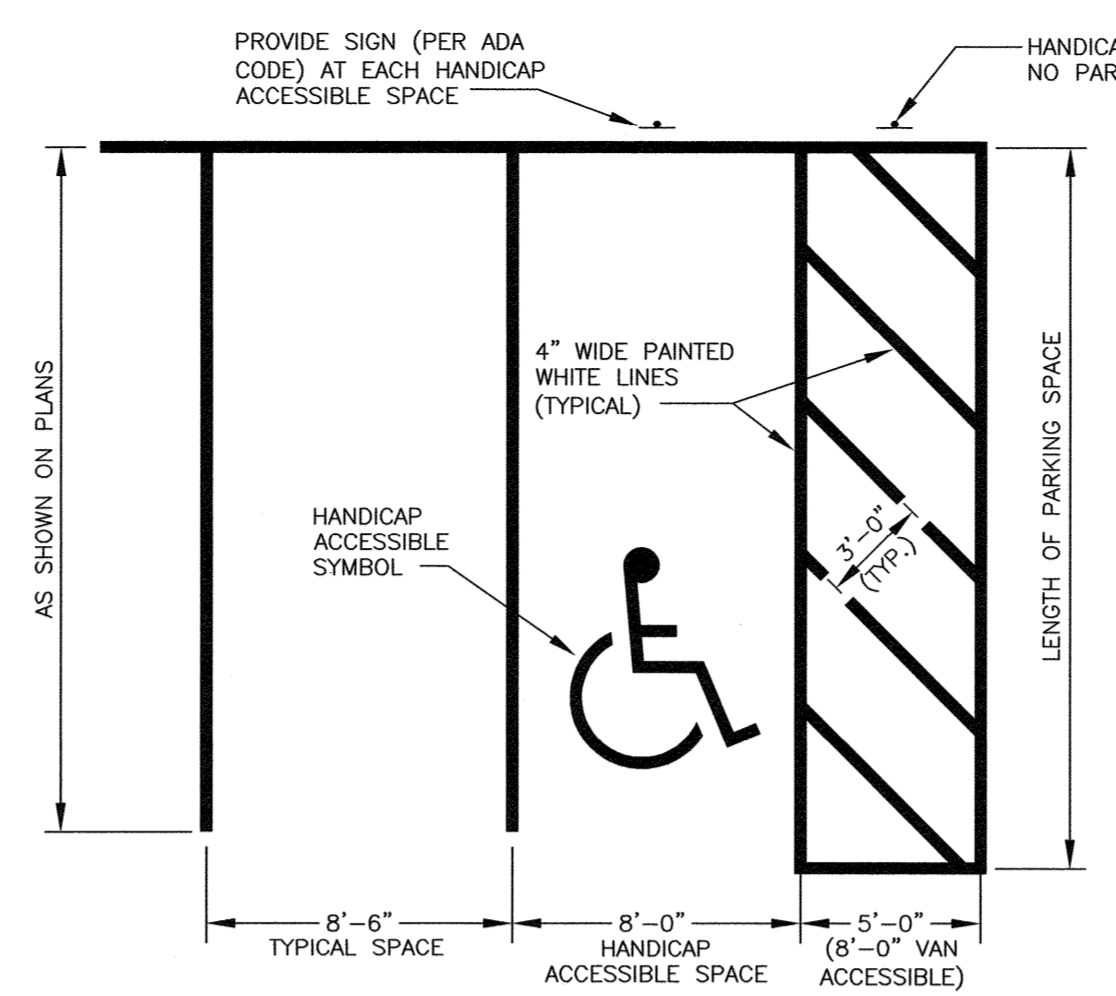
HANDICAP ACCESSIBLE SYMBOL



K-4438  
 12" x 18"  
 SIGN ON POST

SIGNAGE

HANDICAP ACCESS AISLE  
 NO PARKING SIGN

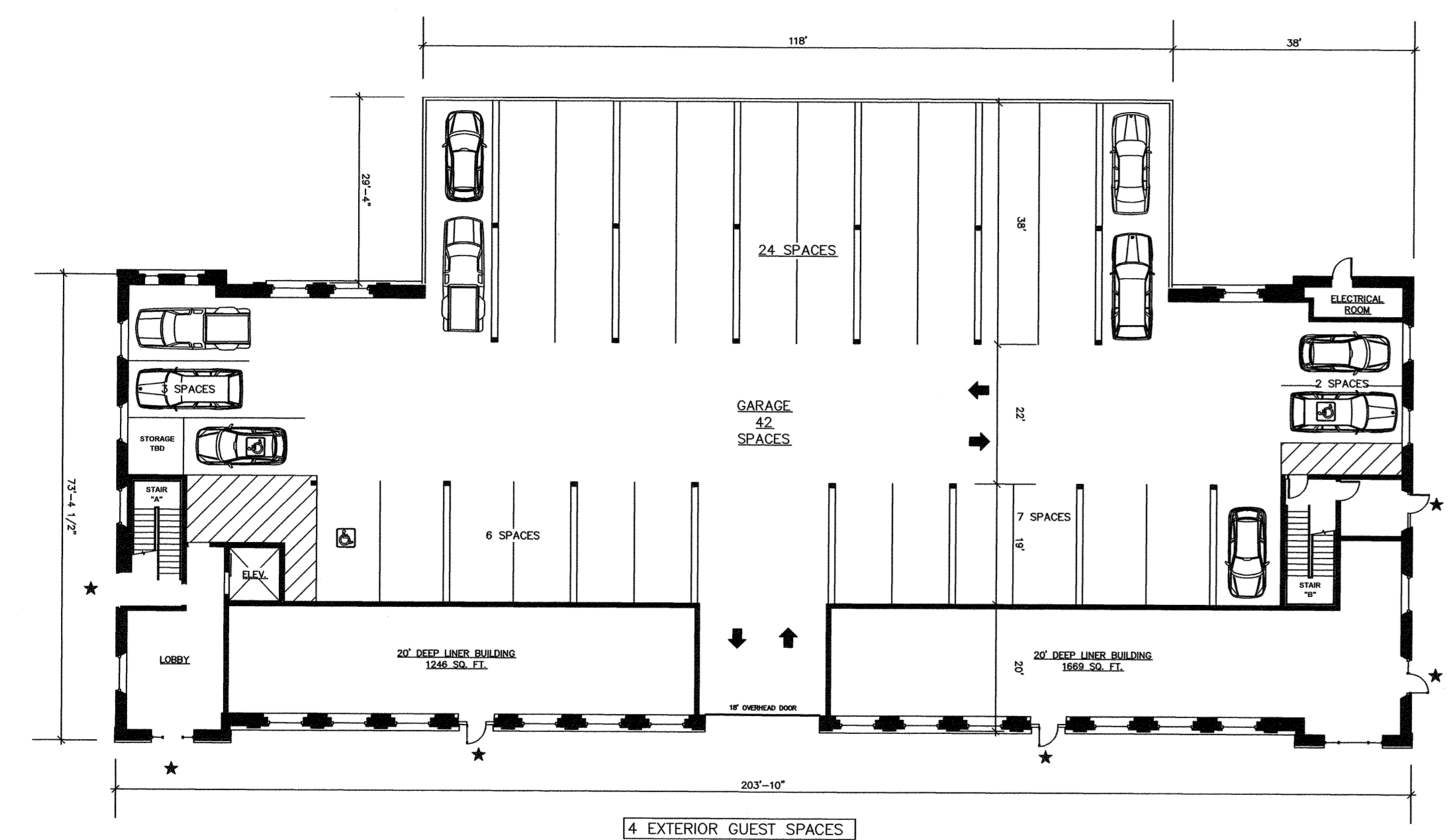


NOTES:

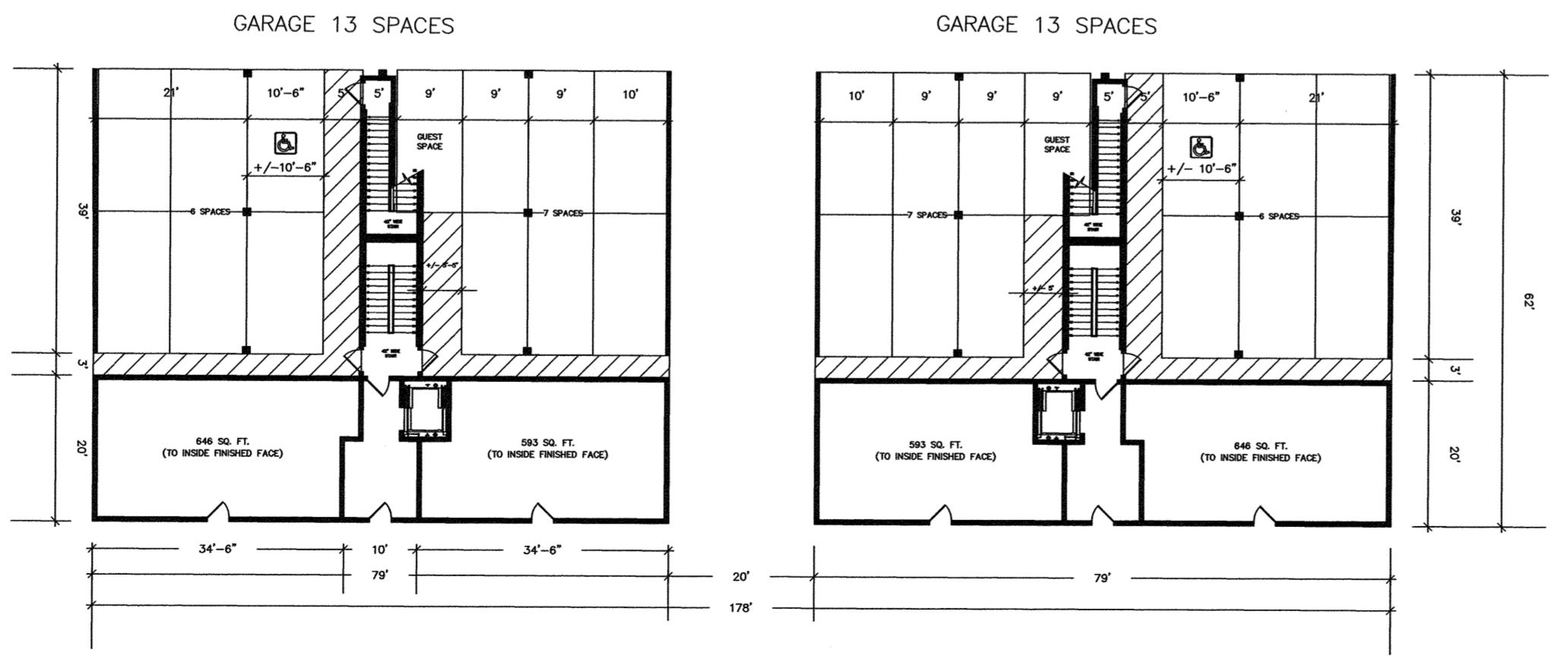
- 1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.
- 2) SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).
- 3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.

1 HANDICAP PARKING DETAIL  
 C5 NTS

PARKING ASSIGNMENT  
 24 STACKED SPACES  
 WILL BE ASSIGNED TO  
 SPECIFIC UNITS  
 18 SINGLE SPACES  
 WILL BE ASSIGNED TO  
 SPECIFIC UNITS  
 6 GUEST SPACES WILL  
 NOT BE ASSIGNED



4 EXTERIOR GUEST SPACES

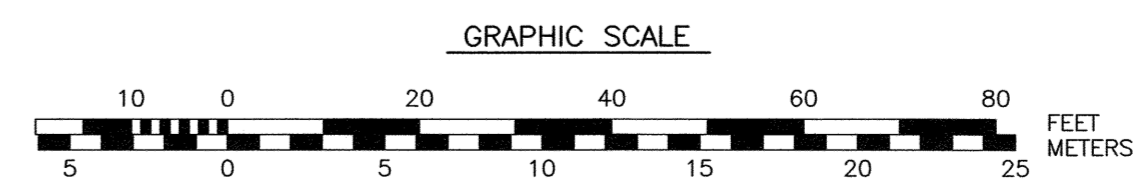


GARAGE 13 SPACES

GARAGE 13 SPACES

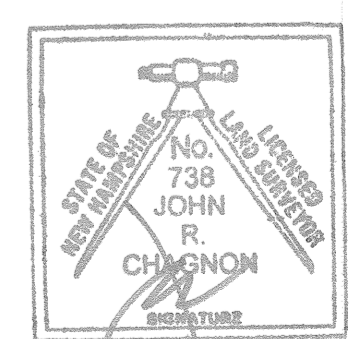
APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_



SITE REDEVELOPMENT  
 361 HANOVER STREET  
 PORTSMOUTH, N.H.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	4/3/24



SCALE: 1"=20' JANUARY 2024

PARKING PLAN C5

361 HANOVER STREET  
PORTSMOUTH, NH 03801



3 WEST (LEFT SIDE) ELEVATION  
Scale: 1/8" = 1'-0"



2 EAST (RIGHT SIDE) ELEVATION  
Scale: 1/8" = 1'-0"



1 SOUTH (FRONT) ELEVATION  
Scale: 1/8" = 1'-0"

REVISION & REISSUE NOTES

No.	Date	Notes

Project # 2024-09	Project Manager X.X.	Date 4-2-24
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Scale: AS NOTED

PROPOSED  
ELEVATIONS

A2.1













