PLANNING BOARD

Tuesday, December 9, 2025 at 4:30 PM
Room 24 (Ground Level of City Hall) and Zoom

MEMBERS
Brandon Mazer, Chair
David Silk, Vice Chair
Austin Smith
Nicholas Messina
Joseph Zamboni
Kelsey Robertson
Michael Joseph Fox

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PUBLIC COMMENT INFORMATION:

To submit written public comment on an agenda item, email planningboard@portlandmaine.gov. Submissions must be received by 12:00 pm the day before the Planning Board meeting to guarantee their inclusion in the agenda packet. All submissions must include the commenter's name and legal address. To help ensure your comment is submitted for the correct item, please include the name of the agenda item (see below).

AGENDA:

PUBLIC HEARING - 4:30 PM

1. **ROLL CALL AND DECLARATION OF QUORUM**
2. **BOARD ELECTIONS**
3. **COMMUNICATION AND REPORTS**
4. **REPORT OF ATTENDANCE AT THE MEETING HELD ON NOVEMBER 18, 2025**

   Workshop*:*
   410 Auburn Street: Fox, Mazer, Smith, and Zamboni present. Messina, Robertson, and Silk absent.
5. **REPORTS OF DECISIONS AT THE MEETING HELD ON NOVEMBER 18, 2025**

   i. There were no public hearing items scheduled on the agenda to report on.
6. **NEW BUSINESS**

   i. Major Site Plan and Traffic Movement Permit; 45 Union Street; East Brown Cow - Kowtower, LLC., Applicant. The Planning Board will hold a hybrid public hearing to consider an application for the development of a 30-story, approximately 199,803 square foot mixed use residential and commercial building. This project includes 73 residential condominiums and an 88-room hotel, located at 45 Union Street within the Downtown Business B-3 zone. A project and plan summary are available for viewing on the city's CSS Portal (https;//css.portlandmaine.gov/) by referencing Plan Number PL-003157-2024.

45 Union Street
Major Site Plan Application
PL-003157-2024
East Brown Cow Management LLC, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Eric Freeman
Public Hearing Date:	December 9, 2025	**Date:**	December 3, 2025

I. INTRODUCTION

East Brown Cow Management LLC has submitted a Major Site Plan and Traffic Movement Permit (TMP) application that would facilitate the construction of a 30-story mixed-use building with hotel, retail, restaurant, and residential units, as well as new public realm improvements at 45 Union Street within the B-3 Downtown Business zone.

This application is being referred to the Planning Board for compliance with the City of Portland's Land Use Code Site Plan Standards, Section 13.6. Additionally, this application is required to meet the City of Portland's inclusionary zoning requirements outlined in Section 17.2 of the City's Land Use Code.

The Planning and Urban Development Department mailed 239 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the November 26 and November 28, 2025 editions of the Portland Press Herald.

Applicant: East Brown Cow Management LLC
Applicant Representatives: Woodard & Curran, Safdie Architects



Figure 1: Project Rendering

II. REQUIRED REVIEWS

Review	*Applicable Standards*
Site Plan	Section 13.6
Inclusionary Zoning (Residential)	Section 17.2
Inclusionary Zoning (Hotel)	Section 17.2.4
B-3 Design Standards	City of Portland Design Manual (A)

Project Data	
Existing Zoning	B-3 Downtown Business zone
Property Size	25,397 square feet
Existing Use	Surface parking lot.
Proposed Development Program	30-story mixed use tower with 73 residential units, 88 hotel rooms, restaurant, retail and amenity space.

III. PRIOR PLANNING BOARD REVIEW

The Planning Board held two public workshops on September 23, 2025 and October 28, 2025. Both meetings were conducted in a hybrid format, allowing both in-person and virtual public comment. Written public comments were also submitted and shared with the Planning Board at both meetings.

Key themes that emerged from public comment included concerns about the scale and height of the proposed building. Commenters also raised questions about potential shadow impacts on public open space, as well as concerns about noise generated from trash on the site. In addition, the public emphasized the need for the applicant to carefully consider how construction activities may affect adjacent historic buildings. Commenters also expressed a desire to ensure that the applicant uses high-quality materials and that any deviations or amendments to the approved materials return to the Planning Board for review.

During the workshops, Board questions and deliberations focused largely on bicycle parking. Several Board members urged the applicant to explore options for incorporating the required bicycle parking adjacent to or within the building, particularly given that the project does not include any vehicle parking. In response, the applicant has revised the bicycle parking plan to include a 225-square-foot secure bicycle storage room within the adjacent Fore Street garage, capable of accommodating up to 20 bicycles. Additional external bicycle racks would be provided within the public plaza and along the surrounding public rights-of-way on Exchange, Middle, and Union Streets. In total, the applicant proposes to provide parking for up to 56 bicycles. The full bicycle parking program is included as Attachment X.

Board members also expressed concerns about sightlines along Union Street from the existing driveway serving the site and requested that the City's third-party traffic engineer review those sightlines. In response, the applicant is proposing to remove two metered parking spaces on Union Street on either side of the existing drive aisle. Removing these spaces would improve visibility for vehicles exiting the site onto Union Street. These changes are reflected in the civil site plan drawing included as Attachment X. Furthermore, the Board requested that the City ensure that the parking garage circulation is reviewed by the third-party traffic engineer to confirm appropriate access and circulation.

IV. EXISTING CONDITIONS AND SURROUNDING AREA

The site is located in the Old Port Neighborhood, in the interior of the block bounded by Union, Middle, Exchange and Fore Streets. The site currently features a 33-space surface parking lot located between the Fore Street parking garage and a 10-story office building at 200 Middle Street that is associated with Old Port Square, formerly known as One Canal Plaza. The parking lot is accessed via an existing drive aisle from Union Street. The site also features concrete sidewalks, providing mid-block pedestrian access from Exchange Street. A stairwell connects the site to the Old Port Square plaza on Middle Street. The surrounding neighborhood is within the heart of Portland's downtown core and features a wide range of uses, including commercial office, retail, restaurants, bars, hotels, theaters & performance halls, as well as residential units. Old Port Square, is comprised of four-buildings including 190 Middle Street, a seven-story office building, 200 Middle Street, a 10-story office building, that recently underwent significant renovation intended to activated the ground-floors of the building with more active uses, 220 Middle Street, a five-story office building, and 210 Middle Street, a small free-standing 1,350-square-foot structure located within the middle of Old Port Square. To the east is the Old Port Square Garage, a four-story structure with ground-level commercial space, and the Hyatt Place Portland Downtown–Old Port Hotel. Constructed in 2012 and opened in 2014, the hotel is located on an approximately 19,000-square-foot lot that was formerly a surface parking lot, and includes 130 rooms along with ground-level restaurant space. To the north is Exchange Street and the Old Port–Waterfront Historic District, which is characterized by older three- to five-story historic buildings. To the south is Union Street, which features a mix of larger high-rise buildings, including The Casco at 201 Federal Street, One and Two Monument Square, One City Center, One Portland Square, Two Portland Square, and Two City Center.



Figure 2: Proposed Development Site outlined in yellow

V. PROPOSED DEVELOPMENT

A. Site Plan

The proposed development involves the construction of a 30-story, 365-foot mixed-use tower with 73 residential units, 88 hotel rooms, retail, restaurant and amenity space. The proposed tower would feature approximately 200,000 square feet of gross floor area with an average floorplate of 6,600 square feet.

The site would be accessed via an existing 24-foot drive aisle connected to Union Street via an existing curb cut between the Central Maine Power Substation and the 200 Middle Street office building. The drive aisle would terminate in a one-way motor court, allowing for hotel valet pick-up and drop-off. The drive aisle and motor court would be paved with granite pavers. A new 13-foot sidewalk would extend along the northern edge of the drive aisle along the frontage of the 200 Middle Street office building. This sidewalk would feature 10 new tree plantings and be paved with brick.

The new tower would be surrounded by a public plaza connected to existing sidewalks on Exchange, Union and Fore Streets. This plaza would feature new tree plantings, perennial plantings and seating areas. Site grades would be modified to provide a flat pad for the building. Stairs and accessible ramps would connect upper and lower levels of the new public plaza.

The site will be served by a 6-inch domestic water service and two 8-inch fire service lines connecting to existing stubs on Union Street. Electrical service will extend to the site from Union Street via below-grade conduits.

B. Building Programing

The ground floor of the proposed building would feature separate lobbies for residential and hotel users fronting the motor court on the southern side of the building. The two lobbies would have shared access to a central elevator landing. A proposed café space would front the pedestrian courtyard on the northern side of the building. The ground floor would also house service entrances, luggage storage and a mail room.

Levels two through 10 would feature hotel rooms, with eight to 10 rooms per level.

Levels 11 and 12 would be dedicated to mechanical and service space and would not be accessible to residents or hotel guests.

Level 13 would feature a “wellness level” with a pool, fitness center and other amenity space for the 73 residential units.

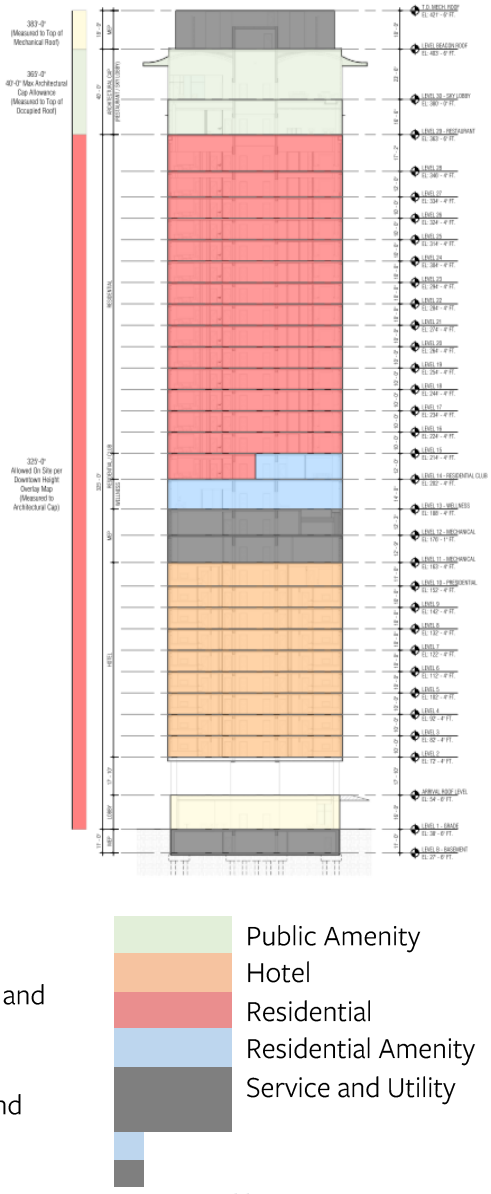

Figure 3: Building Program

Levels 14-28 would be dedicated to residential use, with 26 two-bedroom units and 47 one-bedroom units.

The building's 40-foot architectural cap, spanning the top two levels would feature a restaurant, publicly-accessible observation area, hotel reception area and lounge.



Figure 4: Overall Site Plan

VI. RIGHT, TITLE, & INTEREST

The applicant has demonstrated sufficient right, title and interest to the parcel involved in this application. The applicant has also provided documentation regarding the ownership of surrounding properties. The subject lot was conveyed together with associated rights and easements to East Brown Cow Management LLC on April 3, 2009. Conveyance of this parcel is recorded in the Cumberland County Registry of Deeds Book 27480, Page 310. Full Right, Title and Interest documentation is included as attachment G.

VII. FINANCIAL & TECHNICAL CAPACITY

East Brown Cow Management LLC manages a portfolio of 26 properties in the Portland area. The applicant owns and manages 10 properties surrounding the 45 Union Street site. East Brown Cow maintains lending relationships with several local and regional banks and has experience securing construction financing for development projects. The applicant has provided a letter from Maine Community Bank detailing the applicants financial standing. Full financial capacity documentation is included as attachment J.

Woodard & Curran is an established engineering firm that has demonstrated experience developing large-scale developments throughout Maine and New England.

VIII. ZONING ANALYSIS

The site is located within the B-3 Downtown Business zone. As outlined in Table 5-D of the Land Use Code, the purpose of the B-3 zone is: *"To maintain and enhance the role of the downtown as the business and commercial center of the region, and to enhance and promote the orderly expansion of retail and service businesses downtown, satisfying the related needs of the city's resident, working, and visitor populations. The B-3 zone encourages increased housing opportunities downtown, including three-family, four-family, townhouse, and multi-family structures to accommodate Portland's diverse residential population, and supports an active, walkable pedestrian environment through the encouragement of intensive mixed-use activities, enhancement and maintenance of public and private open space, and the enlivenment and increased attractiveness of the street environment. Standards of the B-3 zone require excellence in urban design, to preserve and capitalize on the unique character and historic fabric of downtown Portland by encouraging reuse of significant existing structures and providing opportunities for an enhanced presence and integration of arts and cultural activities. The zone reinforces the role of downtown as a meeting place for community residents and visitors alike from all walks of life and all socio- economic groups by prioritizing access via multiple modes of transportation and enhancing and protecting the pedestrian environment."*

As submitted, this application is consistent with the dimensional requirements of the B-3 zone. A zoning analysis of the proposed project is provided in the table below:

	Required	Proposed
Lot Size	None	25,397 SF
Maximum Height (ft)	325 ft.	325 ft. (See Section B below)
Architectural Cap	40 ft.	40 ft. (See Section B below)
Tower Floorplate	10,000 SF over 125 ft.	6,600 SF.
Build-to Zone	0-5 ft.	This application is utilizing the build-to zone exception outlined in Section 7.6.5.B.3 (See below)
Step Back	30 ft. above 125 ft.	Building is greater than 100 feet from public ROW, not applicable.

Height and Architectural Cap.

Section 7.5.3.E (Architectural Cap Allowance) permits a tower to extend up to 40 feet above the designated height limit for the purpose of enclosing rooftop appurtenances and providing a distinctive architectural cap that adds visual interest to the Portland skyline. Per *Section 7.5.3.E.2*, no habitable floor area may be created within the building envelope of an architectural cap unless at least 50% of that floor area is devoted exclusively to one or more uses open to the public (e.g., a restaurant, atrium, or viewing area). Any such floor area should be clearly incidental to the cap's design expression, rather than a continuation of the lower floor plates.

The applicant is proposing a 40-foot architectural cap that would be publicly accessible and include restaurant and lounge space, viewing areas, and a reception area for the hotel, while providing a distinctive design element that contributes visual interest to the building and the Portland skyline. This proposal meets the requirements of Section 7.5.3.E, by providing a clear and distinct termination of the building, and follows the general design principle of base–middle–top composition while also creating amenity space for the public to visit.

Beyond the architectural cap, other associated rooftop appurtenances extend above the cap and are appropriately screened. Under Section 7.6.1.E (Exceptions for Rooftop Appurtenances), rooftop elements such as elevator and stairway housings, access vestibules, tanks, fans, or other building equipment not intended for human occupancy, as well as pedestal paver systems and decks up to 18 inches above the roof surface, deck railings or guards, skylights, steeples, flagpoles, chimneys, smokestacks, water tanks, or silos, may be erected above the height limitations.

Build-To Zone.

As stated in Section 7.6.5.B.3 of the City of Portland's Land Use Code, The Planning Board or Planning Authority may approve a different front setback or build-to zone for irregularly shaped lots provided the front setback or build-to zone is met to the maximum extent practicable. The Planning Authority has determined that the subject property qualifies as an irregularly shaped lot due to its location within the interior of the block and therefore can deviate from the build-to-zone requirements, which would not be feasible to meet due to the site's configuration.

Residential Inclusionary Zoning

As outlined in Section 17.2.3 of the City of Portland's Land Use Code, this application is subject to Inclusionary Zoning requirements and must provide at least 25% (18 units) as workforce housing. The applicant has indicated that they intend to pay a fee-in-lieu of $182,830 per required IZ unit, totaling $3,290,940, into the City's Jill C. Duson Housing Trust Fund in lieu of providing the affordable units on-site.

Hotel Inclusionary Zoning

As outlined in Section 17.2.4 of the City of Portland's Land Use Code, this application is also subject to hotel Inclusionary Zoning standards for the hotel component of the project. The applicant intends to construct the required affordable housing units at an off-site location. Staff have drafted a condition of approval requiring that the applicant either provide off-site affordable housing or contribute to the City's Housing Trust Fund in the amount of $4,831 per guest room into the Jill C. Duson Housing Trust Fund to satisfy this requirement.

IX. SITE PLAN STANDARDS (Section 13.6)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's Site Plan Ordinance, Section 13.6. Staff comments are below.

1. Transportation Standards (Section 13.6.1

   A. Impact on surrounding street systems

   Vehicular access to the site would be provided via a 24-foot drive aisle connecting to Union Street at the same location as an existing curb cut. The drive aisle would be paved with granite pavers and terminate at a motor court with a one-way loop to allow for drop-off and valet operations. No alterations to on-street parking or traffic movements are proposed.

   Loading and servicing for the proposed building would occur within a designated portion of the motor court and would not impact public rights-of-way. The applicant has provided vehicle turning templates for the motor court area demonstrating sufficient turning movements for this location.

This application requires a Traffic Movement Permit (TMP) and the City has delegated review authority for TMP applications. A scoping meeting was held on October 14, 2025, facilitated by Tom Errico, third-party traffic consultant for the City of Portland, and attended by the Department of Planning & Urban Development staff, Department of Public Works staff and the applicant team. As detailed in section one of the TMP application, this project is anticipated to generate 84 vehicle trips during the AM peak hour and 181 trips during the PM peak hour on weekdays, with 235 vehicle trips anticipated during the Saturday peak hour.

During the scoping meeting, the intersections of Union Street at both Fore and Middle Streets were identified as an area of further study. Staff recommended modifications to the intersection of Union and Spring Streets to remove the existing dedicated left-turn lanes and add dedicated right-turn lanes. These changes are detailed in figure 6

Staff also recommended modifications to the intersection of Union and Fore Streets to remove the two dedicated left-turn lanes from Union onto Fore Street and from Fore Street onto Union. Staff also recommended improved pedestrian lighting within the vicinity of the intersection.

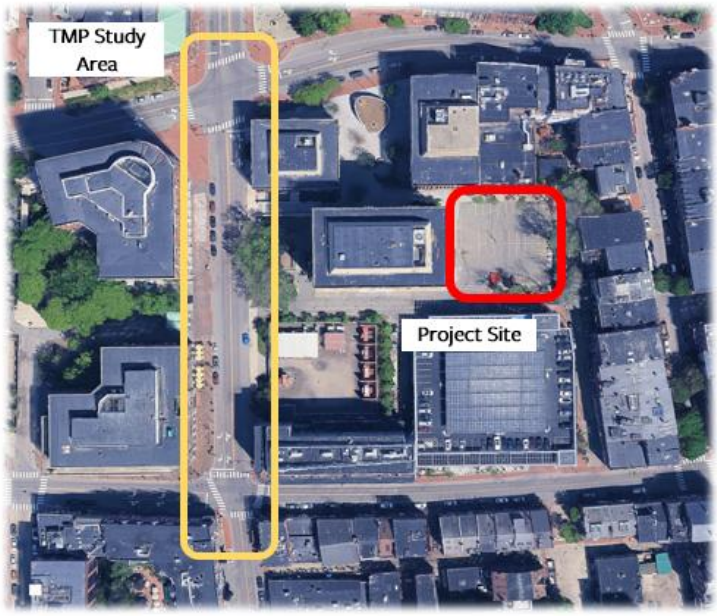

Figure 5 TMP Study Area

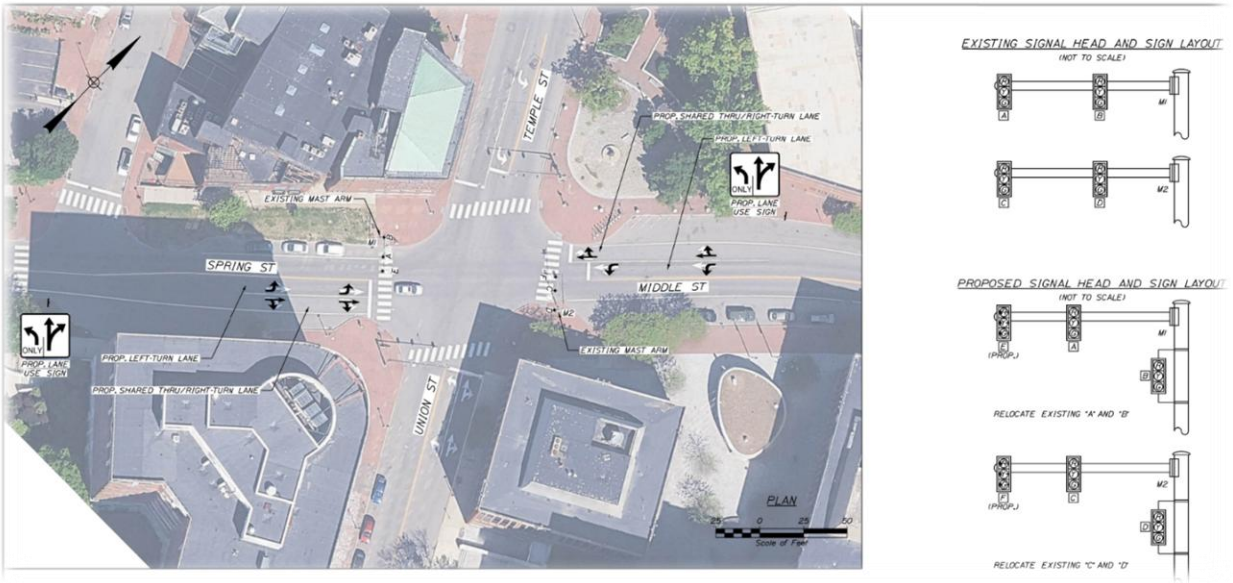

Figure: 6: Proposed Modifications to the intersection of Union and Spring Streets

The applicant has provided a valet management plan (Attachment O) detailing how hotel valet traffic will be managed. Valet movements will remain internal to the site and will not impact surrounding streets. Valet drivers will circulate guest vehicles from the motor court directly into the adjacent Fore Street garage, which is owned by the applicant. The applicant intends to manage vehicle queuing by requiring hotel guests to utilize an app to request vehicle pick-up at dedicated times to minimize vehicle queuing within the motor court area.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met subject to the draft conditions of approval.

B. Access and circulation

Pedestrian access to the site is provided via a new ADA-compliant curbed sidewalk from Union Street. ADA-compliant ramps would provide pedestrian access to the site from Fore Street/Patton Court. Continuous internal circulation is provided with connections to existing public sidewalks on Exchange, Fore and Union Streets. All new sidewalks and internal walkways will be paved using City standard brick found throughout the Old Port.

Additional pedestrian connectivity to Middle Street is provided with a stairway leading to the Canal Plaza courtyard. These access routes provide interconnection with a new centralized pedestrian plaza which would wrap around the ground level of the building. This courtyard will feature landscaping and publicly accessible seating. A new ADA-accessible mid-block pedestrian crossing is planned to be installed on Exchange Street, paved with brick and would align with the sites pedestrian entrance. Two new curb extensions would be installed on either side of Exchange Street to enhance visibility and pedestrian safety, supporting the City's Vision Zero initiative and its goal of improving overall safety.

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Figure 7: Overall Site Access & Circulation Within the Block

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met subject to the draft condition of approval.

C. Public transit access

Developments of 20 or more residential units are required to provide a transit shelter if there are no existing transit shelters within a quarter mile of the proposed development. There are existing transit shelters within a quarter mile of the site at the intersection of Congress and Temple Streets, therefore this standard does not apply to this application.

Finding of Fact: Not applicable.

D. Parking

Per Section 18.1.2 of the Land Use Code, off-street vehicle parking is not required. Table 18-A sets the maximum number of off-street parking spaces allowed for each designated use. This application does not propose any on-site vehicular parking. Hotel valet parking will be provided within the adjacent 423-space Fore Street garage, which is owned by the applicant. Residential parking will be offered as a separate, as-requested amenity.

As outlined in Table 18-A of the Land Use Code, this application is required to provide one bicycle parking space per two dwelling units (36 spaces). An additional six bicycle parking spaces are required based on the combined floor area of the building's amenity spaces. This application proposed 56 new bicycle parking spaces. In response to Board feedback over the course of the review, secure internal storage for up to 20 bicycles would be provided within the adjacent Fore Street garage. An additional 36 external bicycle racks would be installed both within the pedestrian plaza and within public rights-of-way on Middle, Exchange and Union Streets.

Staff have drafted a condition of approval requiring the applicant to coordinate with the Planning Authority to finalize the locations of proposed bicycle racks within public rights-of-way.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

E. Transportation demand management (TDM)

The proposed mixed-use building is over 50,000 square feet of floor area and is required to provide a Transportation Demand Management (TDM) plan. The applicant has provided a TDM plan which outlines trip reduction strategies and provides a framework for annual reporting on the effectiveness of proposed TDM strategies. The provided TDM plan anticipates an overall trip reduction of approximately 10% by implementing the following strategies:

The applicant has provided a TDM plan which outlines trip reduction strategies including:

- Providing new residents with credit on the "DiroGo" app to use transit services.
- Detaching parking spaces from residential units. Residential parking will be provided to residents on an as-requested basis.
- Promoting telecommuting for residents.

- Incentive credits for hotel guests to complete a TDM survey.
  The full TDM plan is included as attachment M.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

2. Environmental Quality Standards (Section 13.6.2)

A. Preservation of significant natural features

The existing site is 100% impervious. There are no natural features such as streams, wetlands or stands of mature trees on the existing site. The applicant has provided a Low-Impact Development (LID) scorecard demonstrating compliance with LID standards. The applicant received a passing score of 97 out of a possible 178 points. LID strategies include:

- Redeveloping an existing urban infill site.
- Building on a site with no streams or wetlands.
- Using only locally-sourced plantings.
- Minimizing impervious area by eliminating on-site parking.
- Utilizing a shared driveway design

The full LID scorecard is included as attachment V.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

B. Site landscaping and buffers

The site would feature 20 new shade tree plantings within the pedestrian courtyard and lining the walkway to Union Street. The number of proposed trees exceed planting requirements for the 25,400 SF lot. Additional plantings include bushes and seasonal flowerbeds within the public plaza and motor court areas. Proposed plantings meet technical manual spacing standards .

One new street tree would be planted along Union Street to satisfy minimum street tree requirements. Given the site's narrow frontage on Exchange Street, no street trees are required along Exchange Street.

Loading and servicing locations would be located within a designated area of the motor court and would not be immediately visible from public rights-of-way.

All pedestrian areas are proposed to be paved with brick to extend the sidewalk material of the Old Port into the site. The drive aisle will be paved with granite pavers. The applicant has demonstrated that hardscaped surfaces would have a minimum initial solar-reflectivity (SRI) of 33 or greater.

The applicant has provided a landscaping plan included as attachment 14

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

C. Water quality/storm water management/erosion control

The project is required to manage stormwater on the Site in accordance with the applicable Maine Department of Environmental Protection (DEP) and Section 5 of the City of Portland's Technical Manual. The project will disturb less than one acre and therefore will not require a DEP stormwater permit .

The proposed development would result in approximately 0.84 acres of disturbance and approximately 0.83- acres of impervious area. The project would result in a net change in impervious area of less than 0.2 acres.

Stormwater Treatment from the plaza , motor court and building will be managed via a subsurface sand filter and R-tank designed based on the Maine Department of Environmental Protection's stormwater BMP manual. On-site stormwater detention is not anticipated to create ponding or flooding within the site or on adjacent properties. Existing sewer service within Union Street has capacity to accommodate anticipated stormwater discharge without creating downstream capacity constraints.

The provided stormwater management report was reviewed by Wright-Pierce. Final review comments were provided by Wright-Pierce on November 21, 2025, which are included as attachment S3. These review comments are largely technical in nature, and do not impact this applications adherence to this standard.

Staff have drafted a condition of approval requiring the applicant to address outstanding review comments raised by Wright-Pierce and finalize their stormwater management plan to the satisfaction of the Planning Authority and peer reviewers.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met subject to the draft condition of approval.

3. Public Infrastructure and Community Safety Standards (Section 13.6.3)

A. Consistency with City Master Plans

This application meets the dimensional requirements and use standards of the B-3 zone, which demonstrates consistency with the City's Comprehensive Plan. The proposed development would create an active and mixed-use space within the Downtown, on an underutilized impervious site with access to public transit and walkable to jobs and services, where there are no jobs or housing existing today.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

B. Public Safety and Fire Prevention

Emergency vehicles would have access to the building and public plaza via the 24-foot drive aisle connected to Union Street. Larger emergency vehicles would utilize the existing alleyway between the Fore Street garage and Central Maine Power substation to enable turn-around movements. Turning templates have been provided for fire trucks and ambulances. The applicant is proposing to install a new fire hydrant at the intersection of the drive aisle and Union Street.

The City's Fire Marshall has reviewed and accepted the proposed fire access and life safety program.

Given the site's urban character and surrounding active uses, the public plaza will promote natural surveillance and visibility while enhancing the usability of what is currently an underutilized space.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

C. Availability and capacity of public utilities

The site would be served by a 6-inch domestic water service line and two 8-inch fire service lines extending from an existing stub on Union Street. A 6-inch sewer service would connect to an existing 15-inch cement pipe from the adjacent 200 Middle Street building which drains via gravity to a 24-inch sewer main on Exchange Street.

The site would be served by a 2-inch natural gas main that would be extended from Patton Court into the site.

Solid waste would from the site would be disposed of through a dedicated trash chute and collected in the basement level of the building. Trash would be moved to an existing trash compactor located in the service alley between the Fore Street Garage and CMP substation, where it would be collected by a private hauler. In response to Board feedback raised during both workshops, the applicant has provided additional detail regarding the existing trash compactor and waste collection on site. The current trash compactor, which serves multiple properties owned by the applicant including all three office buildings located in Canal Plaza, currently operates at approximately 15% of its total capacity. The compactor is emptied five times per week by a private hauler. The proposed development is not expected to overburden the existing compactor. The full solid waste management narrative is included as attachment R.

Staff have drafted a condition of approval requiring the applicant to provide ability to serve letters from Unitil and the Portland Water District.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met subject to the draft condition of approval.

4. Site Design Standards (Section 13.6.4)

A. Massing, ventilation, and wind impact

The applicant has provided a wind impact study detailing pre- and post-development wind conditions within the site.

Wind impacts created by the proposed tower are largely limited to areas between the 45 Union Street tower and the existing 200 Middle Street office building. Although the proposed tower does create increased wind impacts in limited areas, primarily along the northern façade of the 200 Middle Street building, these impacts are not anticipated to generate dangerous or unpleasant wind impacts to open space or public rights-of-way. The building is designed to mitigate wind impacts at ground level. The exposed undercut between levels two and four of the building are

expected to reduce wind impacts within the public plaza and motor court by allowing wind flows to pass through the lower levels of the structure. The full wind impact study is included as attachment Q.



Figure 8: Pre (left) and Post (right) Wind Impacts

The applicant has demonstrated compliance that roofing materials will have an initial solar reflectivity (SRI) of 36.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

B. Shadows

The proposed building is over 65 feet in height and is required to provide a shadow study detailing the impacts that the proposed building would have on nearby public open space. The Planning Board was presented with these findings at the October 28, 2025, Planning Board workshop, where there were limited questions.

The provided shadow study details the proposed buildings' shadow impacts on three public open spaces that may experience the most shadows from the proposed development:

- Tommy's Park
- Post Office Park
- Lobsterman Park

The shadow study provided as Attachment S, includes all dates required by the City of Portland: March 21st (or September 21st), May 6th, June 21st (or August 6th), and December 21st.

In general, a significant adverse shadow impact occurs when the incremental shadow added by a proposed project falls on a sunlight sensitive resource and substantially reduces or completely eliminates direct sunlight exposure.

Post-Office Park:
Incremental shadows would reach Post-Office Park on the March 21st and December 21st analysis day. No incremental shadows from the proposed building would reach Post-Office Park on other analysis days (May 6 or June 21).

On the March 21st analysis day, the sun rises at 6:41 AM and sets at 6:54 PM. Incremental shadows from the proposed building would begin entering Post Office Park at approximately 11:00 AM and would exit by 12:45 PM. At 11:00 AM, a small incremental shadow would appear along the park's southern lot line adjacent to Exchange Street. By 12:00 PM, the shadow shifts eastward, allowing sunlight to reach most of the park, with remaining shadow limited to areas near the easterly property line by Middle Street. By 1:00 PM, the incremental shadow fully exits the park, restoring full sunlight across the space.

In conclusion, the incremental shadow from the proposed building would cover only a small portion of the park, and the majority of the space would continue to receive direct sunlight during this relatively short period. Given the limited extent and brief duration of the shadow on this analysis day, the incremental impact is not considered significant.

On the December 21st analysis day, the sun rises at 7:11 AM and sets at 4:07 PM. Incremental shadows from the proposed building would begin entering Post Office Park at approximately 10:00 AM and would exit by 12:45 PM. At 11:00 AM, an incremental shadow would appear for half of the park. By 12:00 PM, the shadow shifts eastward, allowing sunlight to reach most of the park, with remaining shadow limited to areas near the easterly property line by Middle Street. By 1:00 PM, the incremental shadow fully exits the park, restoring full sunlight across the space.

In conclusion, the incremental shadow from the proposed building would extend over a portion of the park, and the majority of the space would continue to receive direct sunlight during this relatively short period. Given the limited extent and duration of the shadow on this analysis day, and the fact that December falls outside the growing season, the incremental impact is not considered significant.

Tommy's Park
Incremental shadows would reach Tommy's Park on the March 21st and December 21st analysis day. No incremental shadows from the proposed building would reach Tommy's Park on other analysis days (May 6 or June 21).

On the March 21st analysis day, the sun rises at 6:41 AM and sets at 6:54 PM. Incremental shadows from the proposed building would begin entering Tommy's Park at approximately 10:00 AM and would cover approximately 97% of the park. Incremental shadows would exit the park eastward by 12:00 PM

On the December 21st analysis day, the sun rises at 7:11 AM and sets at 4:07 PM. Approximately 93% of Tommy's Park is covered by existing shadows at 10AM, with the proposed development creating 100% shadow coverage at 10AM. Tommy's Park is 95-100% covered by existing shadows between 12PM and 2PM.

In conclusion, the incremental shadow from the proposed building would extend over a portion of the park, and the majority of the space would be shaded during relatively short periods of time on the March 21st and December 21st analysis dates. Given the duration of the shadow on this analysis day, and the fact that March and December fall outside the growing season, the incremental impact is not considered significant.



Figure 9 Shadow Impacts on Tommy's Park and Post Office Park on December 21st.

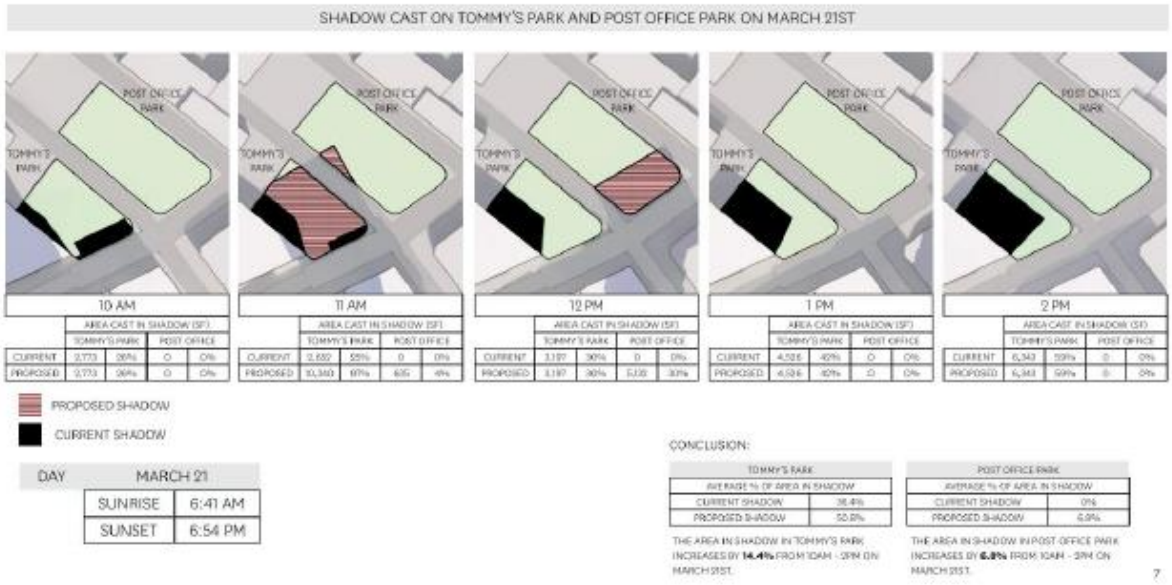

Figure 10 Shadow Impacts on Tommy's Park and Post Office Park on March 21st..

Lobsterman Park

Incremental shadows would reach Lobsterman Park on the May 6 analysis day. No incremental shadows from the proposed building would reach Lobsterman Park on other analysis days.
On the May 6 analysis day, the sun rises at 5:26 AM and sets at 7:49 PM. Incremental shadows from

the proposed building would begin entering the eastern portion of Lobsterman Park at approximately 9AM and would exit by 9:30 AM. On the June 21 analysis day, shadow impacts would be limited to the far edge of Lobsterman Park along Exchange Street, with shadows lasting from approximately 9AM to 9:15 AM.

In conclusion, the incremental shadow from the proposed building would extend over a portion of Lobsterman Park for limited durations on the May 6 analysis date. This incremental impact is not considered significant.

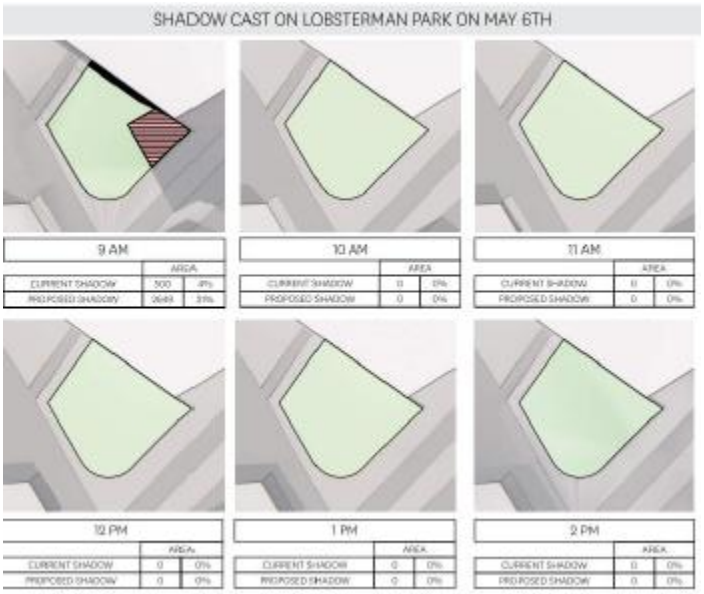

Figure 11: Shadow Impacts on Lobsterman Park on May 6th.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

C. Snow and ice loading

Snow removal on-site will be managed using radiant heating inlaid within sidewalks and the motor court area. This radiant heating system will convert snow to water, which will then be directed to the site drainage system per applicable stormwater management requirements. Any snow not melted by the radiant heating system will be collected and melted using an existing snow melter system owned by the applicant. This snow melter will also discharge melted snow into the sites drainage system. The applicant has detailed areas where snow will be collected and transported. Snow storage is not anticipated to impact sidewalks or public rights-of-way.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

View corridors

Not applicable. This application is not within a protected view corridor.

Finding of Fact: Not Applicable

D. Historic resources

Not applicable. This proposed building is not located within a historic district and does not require historic preservation review. Note that a small portion of the walkway to Exchange Street is within the Old Port Historic District and was subject to administrative review by Historic Preservation Staff. Modifications to the walkway within the Old Port Historic District were approved by the Planning Authority on November 17, 2025. The approval is included as attachment S4.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

E. Exterior lighting

The applicant has submitted a photometric plan that depicts proposed exterior lighting. The public plaza and motor court would be illuminated with wall and pole-mounted light fixtures as well as up-lighting within tree wells. Proposed up-lighting meets standards outlined in Section 13.6.4.F.2.B, which states that up-lighting may be used for landscape features. The building would feature architectural lighting along the facade and within the building cap. The building would be topped with red navigation lights as required by the FAA for buildings over 200 feet in height.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

F. Noise and vibration

HVAC, air handling units, and other necessary equipment will be installed on the roof of the building and would be screened within a mechanical penthouse. Given the placement of HVAC generators and other equipment, there are no anticipated impacts anticipated on abutting properties.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

G. Signage and wayfinding

The applicant proposes to install branded wayfinding signage within the public plaza area and on adjacent properties owned by the applicant. These signs will be internal to the Old Port Square block and will not impact public rights-of-way.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

H. Zoning-related design standards

This application was subject to a design review as outlined in the City of Portland Design Manual section (A) (*B-3 Downtown Business Zone &TOD Design Standards*). A design memo was provided to the applicant by Planning Staff on August 28, 2025

Initial design recommendations included:

- Adding an additional entrance at the northeast corner of the building to create a more distinct entry to the proposed café space.

- Providing additional outdoor seating within the public plaza to promote site use and activation.
- Realigning the stairs surrounding the building to reflect the geometry and shape of the building.
- Site lighting to match the City's decorative Old Port light fixtures.

The full September design memo is included as attachment S2.

Staff have reviewed the applicant's response to the August, 2025 design review and have determined that design recommendations have been effectively addressed. Specifically, Staff have noted that:

- The buildings ground-level design promotes activation of the public spaces around the building.
- The proposed public spaces around the building enhance connectivity within the Old Port and create new active spaces.
- The design and materiality of the building creates a contextual relationship with adjacent buildings.
- The building's height aligns with the general pattern of development in downtown Portland, which features buildings of varying heights and massing.
- The building is set back approximately 130 feet from the front façades along Exchange Street, creating a meaningful transition from the lower-scale buildings to the north and east toward the taller buildings to the south and west. This setback pulls the building massing inward, minimizing its perceived scale when viewed from neighboring structures and the historic Exchange Street corridor. By significantly reducing the building's presence along the street, the setback helps break up the overall massing and limits its interface with the existing historic context.

Staff have provided a follow-up design review which is included as attachment S3.

Finding of Fact: Based on the submitted application materials and description presented above, this standard is determined to be met.

X. NEIGHBORHOOD MEETING & PUBLIC COMMENT

As required by Section 13.5.5 of the City's Land Use Code, applicants for major site plan review must hold a neighborhood meeting at least 21 calendar days prior to the first Planning Board workshop. The applicant held the required neighborhood meeting on Tuesday, September 2, 2025 at 5:30 PM. The in-person meeting was held at 200 Middle Street. Public comment centered on:

- Parking.
- Construction Management.
- Height, massing and visual impact.

A full sign-in sheet and meeting minutes are included as attachment AA.

Four items of written public comment have been received since the October 28, 2025 Workshop. Written public comment has focused on height, massing and visual impact.

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning & Urban Development Department staff recommends that the Planning Board find that the Major Site Application and Traffic Movement Permit for 45 Union Street (PL-003157-2024) meets the applicable standards of Portland's Land Use Code.

XII. PROPOSED MOTIONS

A. SITE PLAN REVIEW

Based on the information in the application, plans, reports through testimony at the Planning Board hearing and other information submitted by the applicant, the Planning Board adopts the findings, conclusions, and recommendations contained in the Planning Board Report for the public hearing on December 9, 2025 for application # PL-003157-2024 at 45 Union Street relevant to the site plan regulations and [finds/does not find] that the plan is in conformance with the site plan standards of the land use code, subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall address outstanding stormwater review comments provided on November 21, 2025 by Wright-Pierce and submit a finalized stormwater management plan for review and approval by the Planning Authority.
2. The applicant shall provide ability to serve letters from Unitil and the Portland Water District

PRIOR TO ISSUANCE OF A BUILDING PERMIT

3. The applicant shall establish a public access easement encompassing all publicly accessible areas of the site within the property boundary, including sidewalks and open spaces. This easement shall be reviewed and accepted by the Planning Authority and Corporation Counsel prior to recording in the Cumberland County Registry of Deeds.
4. The applicant shall coordinate with the Department of Public Works to finalize the design of utility connections between the project site and Union Street.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

5. The applicant shall enter into an agreed upon Affordable Housing Agreement for the off-site inclusionary zoning units (AHA with the City of Portland, for (NUMBER OF UNITS) to satisfy the City's Hotel Inclusionary Zoning requirements. At the time of completion of the project at 45 Union Street the off-site units are not yet complete but staff determines that construction is actively underway and being pursued, a Certificate of Occupancy for 45 Union Street may be issued, provided all other conditions have been met. If the applicant elects to satisfy the inclusionary zoning requirement through payment instead, a fee-in-lieu of $4,831 per hotel room shall be paid into the Jill C. Duson Housing Trust Fund.
6. The applicant shall pay a fee-in-lieu of $182,830 per unit into the Jill C. Duson Housing Trust Fund for all 18 required affordable housing units as set forth in the City's Inclusionary Zoning Ordinance. In the event the applicant elects to provide the units on-site, the applicant shall enter into an agreed upon Affordable Housing Agreement (AHA) in compliance with the City's Inclusionary Zoning Ordinance.
7. The applicant shall coordinate with the Planning Authority to finalize the locations and installation of bicycle racks within the public right-of-way on Middle, Exchange and Union Streets.

B. TRAFFIC MOVEMENT PERMIT

Based on the information in the application, plans, reports, through testimony at the Planning Board hearing, and other information submitted by the applicant, the Planning Board adopts the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing on December 9, 2025 for application PL-003157-2024 at 45 Union Street relevant to the traffic movement permit regulations and **[finds/does not find]** that that the plan is in conformance with 23 M.R.S. §704-A and Chapter 305 Rules and Regulations pertaining to Traffic Movement Permits, subject to the following conditions of approval:

ON-SITE MITIGATION

1. The project is responsible for the implementation of details noted on the Site Plan, C-100.
2. The applicant has proposed a Valet Operations Plan and the applicant is responsible for implementation of the plan as detailed.
3. Regular Tractor Trailers deliveries will not be permitted into the site.
4. The parking garage gate system shall be upgraded to offer greater efficiency in the gateopenings for daily parkers.

OFF-SITE MITIGATION

5. Intersection of Union Street/Temple Street/Middle Street/Spring Street
   The applicant shall change the lane assignment on the Spring Street and Middle Street approaches to consist of dedicated left-turn lanes and shared through/right lanes. The traffic signal equipment shall be upgraded to reflect this change and include replacement of existing signal heads with signal heads that have yellow retroreflective borders. The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.
6. Intersection of Union Street and Fore Street
   The applicant shall change the lane assignment on the southbound Union Street approach to eliminate the dedicated right-turn lane and implement changes to on-street parking regulations, as directed by the city. The Applicant shall conduct an evaluation of converting all approaches to single-lane configuration and if analysis completed by the Applicant demonstrates adequate level of service for the intersection, the changes shall be fully implemented. These changes shall include replacement of existing signal heads with heads that have yellow retroreflective borders. The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.
7. Intersection of Fore Street and Exchange Street
   The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for review and approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.
8. Intersection of Fore Street and Exchange Street

The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for review and approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.

OVERALL REQUIREMENTS

9. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to City, MaineDOT and/or National standards.
10. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".
11. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from the City of Portland a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.
12. The applicant must obtain approval of the design plans and coordinate work through the City of Portland Department of Public Works.

C. PLANNING BOARD DECISION

On the basis of the findings, conclusions and recommendations contained in the Planning Board report for the public hearing on December 9, 2025 related to application PL-0031572-2024 for 45 Union Street, which is attached to the draft approval letter and incorporated therein, the Planning Board **[adopts/does not adopt]** the approval letter as drafted as the Planning Board's decision for application PL-003157-2024, and authorizes the Planning Board Chair to sign the approval letter as drafted.

ATTACHMENTS

Public Comment

PC 1- Public Comments Received before 9/23/2025
PC2- Public Comments Received before 10/28/2025
PC3- Public Comments Received before 12/9/2025

Report Attachments

S1. September Site Plan Worksheet
S2. August, 2025 Design Review Memo
S3. November, 2025 Design Review Memo
S4. Historic Preservation Administrative Approval
S5. Draft Traffic Movement Permit
S6. Wright Pierce November 21, 2025 Stormwater Comments

Applicants Submittal

A. Project Summary
B. Major Site Plan Checklist

C. Site Plan Data Sheet
D. Site Plan Standards Narrative
E. Permitting and Zoning
F. Agent Authorization
G. Right, Title & Interest
H. Reciprocal Easement Agreements
I. Draft Condominium Documents
J. Financial Capacity
K. Zoning Assessment Table
L. Average Grade Calculation
M. TDM Plan
N. Traffic Movement Permit (Sections 1-7)
O. Valet Operations Plan
P. Bicycle Parking
Q. Wind Impact Study
R. Waste Management Operations Summary
S. Shadow Study
T. Stormwater Management Report
U. Applicant Response to Storwmater Review
V. LID Scoring Tool
W. Fire & Life Safety Strategy Narrative
X. HVAC Basis of Design Narrative
Y. Construction Management Plan
z. Bird Safe Design Narrative
AA. Neighborhood Meeting Materials
BB. CMP Ability to Serve Letter

Plans

1. Title Sheet
2. Program Calculations
3. Area Calculations
4. Overall Elevation Diagrams
5. Elevations
6. Building Floorplans
7. Civil Cover
8. General Notes and Legend
9. Boundary Survey
10. Existing Conditions
11. Site Plan
12. Utility Plan
13. Civil Site Details
14. Landscape Plan
15. Landscape Details
16. Bike Rack Locations
17. Grading & Drainage Plan
18. Erosion Control Plan

19. Photometric Plan
20.Site Lighting Cut Sheets
21. Site Lighting Details
22. Vehicle Turning Templates
23. Rendered Perspective Views

General Comments

Technical Manual Section 14.2

Boundary Survey	14.2.1.29 *Property Corners: Location and descriptions of all property corners set or found, proposed to be set, and all granite survey monuments set. Where no property markers exist, the City of Portland requires that the property markers be installed and that a licensed surveyor set and confirm proposed building locations on site prior to the issuance of a building permit;*	• No proposed property markers shown to be set.	More Information Required
	14.2.1.36 *Street Status. The Status of the street shall be shown; IE Accepted City Street, Continued Paper Street, Discontinued City Street, Vacated Paper Street, or new Proposed Street as per the project submission*	• The street status is not listed for the abutting streets, alleys, courts, and ways	

Site Plan Review Standards (Sec. 13.6)

Transportation Standards (Sec. 13.6.1)

Standard	***Standard***	***How the standard is being met***	***Finding***
Impact on Surrounding Street Systems	13.6.1.A.1 The provisions for vehicular loading and unloading, parking, and vehicular and pedestrian circulation on the site and onto adjacent public streets and ways and the incremental volume of vehicular, bicycle, pedestrian, and transit traffic will not: 1. Create or aggravate any significant hazard to safety on the surrounding street network.	Vehicular access to the site will be provided via a 24-foot drive aisle connecting to Union Street at the same location as an existing curb cut. The drive aisle would be paved with granite pavers and terminate at a motor court with a one-way loop to allow for drop-off and valet operations. No alterations to on-street parking are proposed What still needs to be addressed: Staff are not requesting any additional information related to this standard	Met
	13.6.1.A.2 The provisions for vehicular loading and unloading, parking, and vehicular and pedestrian circulation on the site and onto adjacent public streets and ways and the incremental volume of vehicular, bicycle, pedestrian, and transit traffic will not: 2. Substantially increase congestion on any street without mitigation proportionate to the level of impact.	A traffic Movement Permit (TMP) will be required for this project. The applicant is preparing a scoping document and traffic impact study. What still needs to be addressed: • The applicant shall provide turning templates for an articulated truck with a 30' trailer. • Vehicle turning templates shall be provided for valet vehicles entering the Fore Street garage. • The applicant shall provide a hotel valet operations plan. This plan should anticipate vehicle queuing and movement within the site and on surrounding streets.	More Information Needed

Access and Circulation	13.6.1.B.1.a ***In General*** All development subject to this article shall provide safe and reasonable access and internal circulation for all users of the site and shall comply with the transportation systems and street design standards of the Technical Manual.	Pedestrian access to the site is provided via a new ADA-compliant walkway from Union Street. ADA compliant ramps will provide pedestrian access to the site from Fore Street/Patton Court. An existing sidewalk to Exchange Street will be widened to provide pedestrian-only access to the site from Exchange Street. Within the site, a pedestrian courtyard will wrap around the ground level of the building. This courtyard will feature landscaping and publicly accessible seating. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard.	Met
	13.6.1.B.1.b ***In General*** Shared circulation, parking, and transportation infrastructure shall be provided to the extent practicable, with utilization of joint curb cuts, walkways, service alleys, bus pull-out areas, and related infrastructure shared with abutting lots and roadways. Easements for access for abutting properties and shared internal access points at property lines shall be provided where possible to facilitate present or future sharing of access and infrastructure.	The drive aisle will be connected to Union Street via an existing curb cut. Pedestrian infrastructure will be shared with surrounding properties. **What still needs to be addressed:** • The applicant shall provide access easements to enable abutting properties to access shared open space and sidewalks.	More Information Needed
	13.6.1.B.1.c ***In General*** Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site, transit stops and street crossings, and building entrances on the site.	Continuous internal circulation is provided with connections to existing public sidewalks on Exchange, Fore and Union Streets. Additional pedestrian connectivity to Middle Street is provided with a stairway leading to the Canal Plaza courtyard. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.1.B.1.d ***In General*** Where the site abuts or includes an existing or planned publicly accessible trail, a connection to or integration of such trail shall be provided to the extent practicable, including rights of public access.	Not applicable. This application does not have access to a trail. **What still needs to be addressed:**	N/A
	13.6.1.B.1.e ***In General*** Points of access and egress shall be located to avoid conflicts with turning movements and traffic flows.	The applicant has provided vehicle turning templates defining paths of travel for various vehicle types. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.1.B.2.a ***Curb and sidewalks*** All development shall provide curb and sidewalks along all frontages, installed to specifications as described in the	New curbed sidewalk will be installed on the northern side of the drive aisle connecting Union Street to the pedestrian plaza.	Met

	transportation systems and street design standards of the Technical Manual.	What still needs to be addressed: Staff are not requesting any additional information related to this standard	
	13.6.1.B.2.b *Curb and sidewalks* Where sidewalks already exist but are in substandard condition, they shall be repaired or replaced in conformance with Chapter 25 of the City of Portland Code of Ordinances and the transportation systems and street design standards of the Technical Manual.	The applicant proposes to reconstruct a portion of sidewalk on Exchange Street. All other sidewalks will be privately owned and will be built to City Standards by using the same bricks are are used throughout the Old Port. What still needs to be addressed: Staff are not requesting any additional information related to this standard	Met
	13.6.1.B.2.c *Curb and sidewalks* An applicant may request a waiver from sidewalk installation requirements if they meet two or more applicable waiver criteria as listed below: i. There is no reasonable expectation for pedestrian usage coming from, going to, and traversing the site. ii. There is no sidewalk in existence or expected within 1000 feet and the construction of sidewalks does not contribute to the development of pedestrian-oriented infrastructure. iii. A safe alternative walking route is reasonably available, for example, by way of a sidewalk on the other side of the street that is lightly traveled. iv. The reconstruction of the street is specifically identified and approved in the first or second year of the current Capital Improvement Program (CIP) or has been funded through an earlier CIP or through other sources. v. The street has been constructed or reconstructed without sidewalks within the last 24 months. vi. Strict adherence to the sidewalk requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of a greater public value.	Not applicable. The applicant is not requesting a waiver from sidewalk installation requirements. What still needs to be addressed:	N.A
	13.6.1.B.2.d *Curb and sidewalks* An applicant may request a waiver from curb installation requirements if	Not applicable. The applicant is not requesting a waiver from sidewalk installation requirements	n/A

	they meet two or more applicable waiver criteria as listed below: i. The cost to construct the curbing, including any applicable street opening fees, is in excess of 5% of the overall project cost. ii. The reconstruction of the street is specifically identified and approved in the first or second year of the current CIP or has been funded through an earlier CIP or through other sources. iii. The street has been rehabilitated without curbing in the last 60 months and the proposed use and design of the site does not necessitate the installation of curbing. iv. Strict adherence to the curb requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of a greater public value. v. Runoff from the development site or within the street does not require curbing for stormwater management.	What still needs to be addressed:	
Public Transit Access	13.6.1.C.1 All residential development consisting of 20 or more dwelling units and all commercial and institutional developments of at least 20,000 square feet gross floor area shall provide a transit shelter adjacent to or within the public right-of-way along its frontage, or at a nearby high-volume transit stop without a transit shelter, when the following criteria are met: A. The development is proposed along an existing public transit route on a principal or minor arterial roadway, as shown in the Federal Street Classification Map. B. The nearest existing transit shelter on the route is more than ¼ mile from the site, measured along rights-of-way.	There are two existing transit shelters within ¼ mile of the site. No transit shelters or transit improvements are proposed. What still needs to be addressed: Staff are not requesting any additional information related to this standard	Met
	13.6.1.C.2 Transit facilities shall be connected to the public sidewalk system.	Not applicable to this application. What still needs to be addressed:	N/A
	13.6.1.C.3 All or some of this standard may be waived if the review authority determines that the development is not anticipated to generate public transit usage due to particular characteristics of the development or proposed use.	Not applicable to this application. What still needs to be addressed:	N/A
Parking	13.6.1.D.1.a ***Vehicular parking*** Developments shall comply with the parking standards of Article 18.	No on-site parking is proposed as part of this application. Parking for residents and hotel valet will be provided in the adjacent Fore Street garage, which is owned by the applicant. The garage has controlled access directly from the proposed drive aisle. What still needs to be addressed:	More Information Needed

		• The applicant shall provide additional information on the current and projected capacity of the Fore Street garage, including the number of spaces to be allocated for residents, hotel guests, and other non-building-related uses.	
	13.6.1.D.1.b ***Vehicular parking*** Where provided, parking spaces and aisles shall not be located in front and corner side yards, unless the applicant can demonstrate that site constraints preclude the location of parking elsewhere on the site.	No on-site parking is proposed as part of this application. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.1.D.1.c ***Vehicular parking*** Where provided, parking spaces and aisles shall meet applicable dimensional standards as detailed in the transportation systems and street design standards of the Technical Manual.	No on-site parking is proposed as part of this application. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.1.D.2.a ***Bicycle parking*** All development shall provide secure bicycle parking in accordance with the parking requirements of Article 18 and the transportation systems and street design standards of the Technical Manual.	Based on the current programming of 73 residential units, 37 bicycle parking spaces are required. An additional 6 bicycle totals approximately 8,200 square feetfor all restaurant and retail spaced. This brings the total anticipated bicycle parking spaces required for the project to 43 spaces. The applicant intends to provide bicycle parking for all 43 required spaces in outdoor spaces on the site and on adjacent commonly owned properties. Final locations of bicycle parking spaces are to be determined based upon further coordination with the City **What still needs to be addressed:** • The applicant shall detail on a site plan the locations and types of bicycle parking to be provided both on-site and within the garage.	Met
	13.6.1.D.2.b ***Bicycle parking*** The review authority may reduce the required number of bicycle parking spaces if it is determined, based on evidence submitted by the applicant, that the proposed development is expected to generate reduced demand for bicycle parking due to particular site characteristics or proposed uses.	Not applicable to this application. The applicant intends to provide all required bicycle parking **What still needs to be addressed:**	N/A
	13.6.1.D.3.a ***Snow storage*** All developments shall include areas for snow storage or provide an acceptable snow removal plan.	Snow removal on-site will be managed using a snow melter. Accumulated snow from driveways, walkways, and other paved surfaces will be collected and transported to a designated snow melting area an adjacent commonly owned. The snow melter will rapidly convert snow to water, which will then be directed to the site drainage system	Met

		in accordance with applicable stormwater management requirements. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	
	13.6.1.D.3.b ***Snow storage*** Snow storage areas may not encroach on adjacent properties, public ways, and pedestrian walkways, and shall not be located where they would adversely impact the functionality of stormwater management systems.	Snow will be collected and directed to the snow-melter system. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.1.D.3.c ***Snow storage*** Landscaping in designated snow storage areas shall be such that it can withstand the snow pile.	The applicant has detailed snow storage and collection locations on the site plan. These areas do not impact landscaping **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	
	13.6.1.D.4 ***Electric vehicle (EV) charging*** All development shall meet applicable EV standards as provided in Section 1 of the Technical Manual.	N/A **What still needs to be addressed:**	N/A
Transportation Demand Management	13.6.1.E.1 The following types of development shall design and implement a Transportation Demand Management (TDM) plan: A. All commercial, institutional, or mixed-use developments of 50,000 square feet or more in total floor area. B. All commercial or institutional uses designed to accommodate 100 or more employees or, for educational institutions, 100 or more students.	The applicant has provided a draft Transportation Demand Management (TDM) Plan. **What still needs to be addressed:** See TDM comments below	More Information Required
	13.6.1.E.2 The TDM Plan shall comply with the standards for transportation studies and plans as contained in the Technical Manual.	The draft TDM plan includes trip generation estimates for residential, hotel and restaurant uses. The TDM plan also outlines strategies for reducing trip demand. A TDM coordinator will oversee implementation of identified TDM strategies. **What still needs to be addressed:** • Peer Reviewers have reviewed the TDM Plan and offer the following comments as it relates to the trip generation estimate, which is included: • LUC 222 Multi-Family Housing (High-Rise). The sample size for this land use code is small and further review is needed to determine appropriateness. • LUC 931 Fine Dining. Reviewers find the use of this land use code to be acceptable. • LUC 930 Fast Casual Restaurant. The applicant should provide additional	More Information Required

		information in the support of using this land use code. • With that said the Saturday ITE data is limited. Reviewers find the use of PM ITE data to be acceptable	
Environmental Quality Standards (Sec. 13.6.2)			
Standard	*Standard*	*How the standard is being met*	*Finding*
Preservation of Significant Natural Features	13.6.2.A.1 All development shall preserve and protect significant natural features by incorporating the principles of Low-Impact Development (LID) in accordance with the LID standards of the Technical Manual.	The applicant has provided a LID scorecard, receiving a score of 81 out of a possible 178 points. **What still needs to be addressed:** • Add a note to the landscaping planting plan that native vegetation must be used for all plantings and that only local sourced landscape materials are to be used. • Please provide a written narrative to justify selections in the following point categories: Providing transportation alternatives and Innovative LID site design and/or stormwater management. Note: The points in this category are intended for cutting-edge treatment systems that may not have DEP approval but which show promise in research and development from trusted and unbiased research partners such as the UNH Stormwater Center. Based on the preliminary review we don't find that the subsurface sand-filter/R-tank detention systems meet the intent of this bonus point category	More information Required
	13.6.2.A.2 Where complete preservation of significant natural features substantially compromises development of the site as otherwise permitted by zoning, the review authority may reduce the requirement in accordance with the LID standards of the Technical Manual provided that the applicant implements preservation measures to the extent practicable and demonstrates compliance with applicable state and federal regulations.	Not applicable to this application. **What still needs to be addressed:**	N/A
	13.6.2.A.3 The site plan shall include adequate measures to protect significant natural features to be preserved from construction impacts, in accordance with the LID standards of the Technical Manual.	There are no significant natural features on this site. The current site is 100% impervious. **What still needs to be addressed:**	Met
Site Plan	13.6.2.B.1.a ***On-site landscaping*** All development subject to this article shall provide a minimum of one	20 new shade tree plantings are proposed within the pedestrian courtyard and lining the	Met

	shade tree consisting of species identified on the City of Portland Recommended Tree list or six plantings, defined as one shrub, one ornamental grass, and/or three perennials, per 5,000 square feet of lot area in accordance with the landscaping standards of the Technical Manual.	walkway to Union Street. This exceeds planting requirements for the 26,000 SF lot. Proposed plantings meet technical manual standards **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	
	13.6.2.B.1.b *On-site landscaping* Existing vegetation to be preserved on the site may be counted towards this requirement as described in the landscaping and landscape preservation standards of the Technical Manual.	No existing on-site vegetation is proposed to remain. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.2.B.1.c *On-site landscaping* Where site constraints prevent the planting of required shade trees or plantings at the development site, the reviewing authority may approve an alternative as described in the landscaping standards of the Technical Manual.	Not applicable to this application. **What still needs to be addressed:**	N/A
	13.6.2.B.2.a *Buffers and screening* Loading and servicing areas, trash and recycling areas, storage areas, and roof- and ground-mounted utility structures, except for renewable energy systems, shall be screened from view from public sidewalks, streets and adjacent properties by dense evergreen and deciduous landscaping, fencing, architectural screening products, masonry walls, building walls, or a combination thereof.	Loading and servicing will take place within a designated portion of the motor court. This area will not be immediately visible from public rights of way. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.2.B.2.b *Buffers and screening* Where immediately visible from the right-of-way, surface parking areas shall be screened with dense evergreen and deciduous landscaping, fencing, or masonry wall in accordance with the landscaping standards of the Technical Manual.	Not applicable to this application. No on-site parking areas are proposed. **What still needs to be addressed:**	N/A
	13.6.2.B.2.c *Buffers and screening* For nonresidential development abutting a residential zone, an evergreen, densely landscaped buffer of not less than 10 feet in depth and six feet tall is required along the side abutting the residential zone. In cases where architectural fencing is used, the depth of the landscaped buffer may be reduced, so long as the fencing is at least six feet in height and a mix of evergreen and deciduous trees spaced no further than 20 feet apart is planted abutting the residential zone.	Not applicable to this application. **What still needs to be addressed:**	N/A
		Not applicable to this application	N/A

	13.6.2.B.2.d ***Buffers and screening*** All residential development shall provide and/or preserve evergreen vegetated buffers where necessary to buffer the development from detrimental impacts of existing surrounding development.	What still needs to be addressed:	
	13.6.2.B.3.a ***Parking and vehicle display lot landscaping*** Developments with more than five parking spaces shall include at least one tree for every 750 square feet of uncovered asphalt parking area (including drive aisles), planted in landscaped islands to screen, shade, and break up parking. Trees and shrubs in parking lots may be in informal groups, straight rows, or concentrated in clusters as described in the landscaping standards of the Technical Manual.	Not applicable to this application. No on-site surface parking is proposed. What still needs to be addressed:	N/A
	13.6.2.B.3.b ***Parking and vehicle display lot landscaping*** Landscaped islands shall be distributed so that uninterrupted pavement does not exceed forty parking spaces.	Not applicable to this application. No on-site parking is proposed What still needs to be addressed:	Met
	13.6.2.B.3.c ***Parking and vehicle display lot landscaping*** Where site constraints prevent implementation of all or a portion of required parking lot landscaping, as determined by the review authority, the reviewing authority may approve an alternative as described in the landscaping standards of the Technical Manual.	Not applicable to this application What still needs to be addressed:	N/A
	13.6.2.B.4 ***Non-vehicular hardscape*** All uncovered paving for non-vehicular use, including pathways and patios, must either have a minimum Solar Reflective Index (SRI) of 33 initially and 28 once aged three years or include one tree for every 750 square feet of asphalt paving.	All pedestrian areas are proposed to be paved with brick to extend the sidewalk material of the Old Port into the site. The drive aisle will be paved with granite pavers. What still needs to be addressed: • The applicant shall provide details regarding the solar reflectivity of proposed hardscaped surfaces.	More information needed
	13.6.2.B.5.a ***Street trees*** All development shall include one street tree per 25-35 linear feet of frontage along a city right-of-way or private roadway as specified in the landscaping standards of the Technical Manual. The provision of measures to enhance tree survival (such as raised planters, irrigation, and structural soils as recommended by the City Arborist) shall be required.	The Union and Exchange Street frontages would each feature one street tree. What still needs to be addressed: • Staff recommends removing the proposed street tree within the Exchange Street walkway. • Staff encourage the applicant to either identify another on-site location or coordinate with City staff to explore potential off-site planting opportunities along Exchange or Union Streets.	More Information Needed
		Not applicable to this application	More

	13.6.2.B.5.b ***Street trees*** Where the applicant can demonstrate that site constraints prevent the planting of required street trees in the city right-of-way, the review authority may permit an alternative subject to the landscaping standards of the Technical Manual.	**What still needs to be addressed:** See above comment exploring off-site planting opportunities along Exchange or Union Streets.	
	13.6.2.B.5.c ***Street trees*** Where the proposed development includes the removal of an existing street tree determined by the City Arborist to be a heritage or feature mature tree, the applicant shall be required to contribute to the Tree Fund at the designated rate in the Technical Manual so that the total replacement cost is significantly higher than planting a new street tree/contributing for a new street tree.	Not applicable to this application. No existing street trees are proposed to be removed. **What still needs to be addressed:**	N/A
Water Quality, Stormwater Management and Erosion Control	13.6.2.C.1.a All development shall be designed to minimize total area of impervious surface on the site and both the volume and rate of runoff from the lot. Provisions for stormwater management shall demonstrate the following: a) Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or redirected so as to create ponding on, or flooding of, adjacent lots.	The existing site is 100% impervious. The proposed development maintains the site's character as an urban infill lot. The applicant has provided a stormwater management plan detailing drainage patterns and impacts to existing sewer and stormdrain infrastructure within Fore, Union and Exchange Streets. **What still needs to be addressed:** Stormwater review by a third-party is in progress.	More information Required
	13.6.2.C.1.b All development shall be designed to minimize total area of impervious surface on the site and both the volume and rate of runoff from the lot. Provisions for stormwater management shall demonstrate the following: b) Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot or City property following the improvement can be handled on the adjacent lot or City property without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot or City property.	The existing site is 100% impervious. The proposed development maintains the site's character as an urban infill lot. The project is required to manage stormwater on the site in accordance with the applicable Maine Department of Environmental Protection (DEP) and City of Portland regulations. The project will disturb less than one acre and therefore will not require a DEP stormwater permit. The applicant has provided a stormwater management plan detailing drainage patterns and impacts to existing sewer and stormdrain infrastructure within Fore, Union and Exchange Streets. **What still needs to be addressed:** Stormwater review by a third-party is in progress.	More Information Required

	13.6.2.C.1.c All development shall be designed to minimize total area of impervious surface on the site and both the volume and rate of runoff from the lot. Provisions for stormwater management shall demonstrate the following: c) Any increase in volume or rate of stormwater draining from the lot into the City's storm sewer system can be accommodated in the system without creating downstream problems or exceeding the capacity of the storm sewer system.	Stormwater review by a third party is ongoing **What still needs to be addressed:**	More Information Required
	13.6.2.C.2 All development shall comply with the stormwater management standards of the Technical Manual.	The proposed project is required to comply with Section 5.2.4 of the City of Portland's Technical Manual. **What still needs to be addressed:** • DPW requests that both the sewer and storm drain connections for the project be brought out to Union Street, rather than tying into the internal sewer line that runs through the adjacent parking garage and ultimately connects to the Fore Street sewer. This request is being made due to the condition of the Fore Street sewer. This request should be shown on an updated utility plan.	More information Required
	13.6.2.C.3 Development shall not pose a risk of groundwater contamination either during or post-construction, as described in the stormwater management and water supply standards of the Technical Manual.	Stormwater review by a third party is ongoing **What still needs to be addressed:** Stormwater review by a third party is ongoing	More Information Required
	13.6.2.C.4 Applicants shall demonstrate that subsurface and/or any adjacent slope conditions are suitable to support the development, and where determined necessary, shall prepare a geotechnical study to demonstrate that the development as designed will not adversely impact the development site or any abutting property. Soil surveys and/or geotechnical studies shall be prepared in accordance with the requirements of the Technical Manual.	The site has a slope with an average gradient of less than 1%. Planning Staff have not requested a geotechnical study as of 9/8/2025. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
Public Infrastructure and Community Safety Standards (Sec. 13.6.3)			
Standard	*Standard*	*How the standard is being met*	*Finding*
Consistency with City Master Plans	13.6.3.A.1 All developments shall be designed so as to be consistent with City Council-approved master plans and facilities plans and with off-premises infrastructure.	The development is an allowed use within the B-3 zone. **What still needs to be addressed:**	Met

		Staff are not requesting any additional information related to this standard	
	13.6.3.A.2 The site plan shall include suitable easements, rights, and improvements to connect or continue off-premises public infrastructure as may be required by the review authority.	Reciprocal drainage easements have been identified in the provided boundary survey **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
Public Safety and Fire Prevention	13.6.3.B.1.a All development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime: a) Natural surveillance that promotes visibility of public spaces and areas.	The shared open space will be surrounded by active uses which will promote public safety through site activation. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.3.B.1.b All development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime: b) Access control that promotes authorized and/or appropriate access to the site.	A large portion of the site will be open to the public. Site access will be controlled via narrow points of access from public rights of way. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.3.B.1.c All development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime: c) Territorial reinforcement that promotes a sense of ownership and responsibility through environmental design.	The shared open space will be surrounded by active uses which will promote public safety through site activation. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.3.B.2 All developments shall be designed to provide adequate emergency vehicle access to the site and comply with the Public Safety standards of the Technical Manual.	Emergency vehicles would access the site via the existing curb cut on Union Street. The existing alleyway between the CMP substation and the Fore Street garage will be utilized for fire truck turning movements. The applicant has provided a fire & life safety narrative. **What still needs to be addressed:** • The applicant shall provide an updated fire truck turning template detailing emergency vehicle movements with the assumption that a delivery vehicle is parked in the designated loading area	More information required
Public Utilities	13.6.3.C.1 The development shall not overburden sanitary sewers and storm drains, water lines or supply, or other public infrastructure and utilities.	The proposed project is required to comply with Section 5.2.4 of the City of Portland's Technical Manual.	More information

	Development shall provide adequate utility infrastructure on-site and in connection to surrounding locations and facilities.	What still needs to be addressed: • The applicant shall provide a wastewater capacity application for review and approval by DPW • The applicant shall provide an ability to serve letter from Central Maine Power	
	13.6.3.C.2 Electrical service shall be underground unless otherwise specified for industrial uses, or if it is determined to be unfeasible due to extreme cost, the need to retrofit properties not owned by the applicant, or complexity of revising existing overhead facilities.	Electrical utilities will be extended from Union and Exchange Street via underground conduits. What still needs to be addressed:	Met
	13.6.3.C.3 All sanitary sewer lines, storm drains, water lines, and other utilities proposed as part of the development shall be designed to conform with the sanitary sewer and storm drain and water supply standards of the Technical Manual.	Stormwater from the plaza around the building will be managed via a trench train and catch basin inlets that discharge to the on-site subsurface stormwater treatment system and ultimately to the same 15-inch cement combined sewer main as in the existing condition. What still needs to be addressed: • The Department of Public Works requests that the applicant consider diverting the off-site drainage system through the on-site R-tank/storage system. As currently designed, the off-site drainage would connect to the proposed site's drainage system downstream of the treatment and storage facility. • It appears that the storm drain pipe from the existing catch basin (1174) running towards DMH-2 could be run straight without the proposed bend and cleanout. DPW would suggest removing the bend from the line and running it straight between the two structures. • The applicant is proposing to reroute private sewer and drainage lines serving separate parcels located north of the site around the proposed building. Based on the boundary survey, it appears that reciprocal easements have been established for this private sewer infrastructure running across the site. These easements may need to	More Information Required

		be adjusted to reflect the proposed site plan and the relocation of the private sewer and drainage lines. The applicant should provide additional information on this matter.	
	13.6.3.C.4 All development within 200 feet of a public sanitary collection and treatment system shall connect sanitary sewer lines into the nearest available public sewer. If a public sanitary collection and treatment system is not available, a private wastewater system may be used according to the requirements of Chapter 24 of the City Code and the sanitary sewer and storm drain standards of the Technical Manual.	The development proposes to connect to the existing sanitary sewer in Fore Street. **What still needs to be addressed:** • DPW requests that both the sewer and storm drain connections for the project be brought out to Union Street, rather than tying into the internal sewer line that runs through the adjacent parking garage and ultimately connects to the Fore Street sewer. See attached schematic	More Information Required
	13.6.3.C.5 All residential development of 20 units or more, commercial development, and industrial development shall provide for the temporary storage and timely removal of all trash and recyclable materials including, at a minimum, paper, corrugated cardboard, plastics, and metals. Storage containers for recyclable materials shall be separated from trash containers. All exterior storage of trash and recyclables shall be screened from view from public sidewalks, streets, and adjacent properties.	The site would utilize a private hauler for solid waste removal **What still needs to be addressed:** • The applicant shall detail the frequency of solid waste pickup.	More information required
Site Design Standards (Sec. 13.6.4)			
Standard	*Standard*	*How the standard is being met*	*Finding*
Massing, Ventilation and Wind Impact	13.6.4.A.1 The bulk, location, or height of proposed buildings and structures shall not result in health or safety problems from a reduction in ventilation to abutting structures or changes to the existing wind climate that would result in unsafe wind conditions for users of the site and/or adjacent public spaces.	The applicant has indicated that a wind study is being developed and will be submitted in advance of a future meeting. **What still needs to be addressed:** • Staff are awiting the submission of the wind impact study.	More Information required
	13.6.4.A.2 Development shall locate all HVAC venting mechanisms to direct exhaust away from public spaces and residential properties directly adjacent to the site.	HVAC equipment will be located on the roof of the building within a screened mechanical penthouse. **What still needs to be addressed:**	Met
	13.6.4.A.3 In proposed buildings or additions with an aggregate roof area greater than 2,000 square feet, measured horizontally, and, for residential projects, greater than nine residential units, a minimum of 75% of the roof area must meet the following "cool roof" Solar Reflective Index (SRI) standards:	The proposed building will be required to meet rooftop SRI standards. **What still needs to be addressed:** • The applicant shall provide details sheets demonstrating that roofing materials meet SRI standards.	More Information Required

	a) Roofs with a slope less than 2:12: SRI of 82+ (initial)/64+ (3-year aged) b) Roofs with a slope greater than 2:12: SRI of 25+ (initial)/25+ (3-year aged) Roof areas covered by shade structures with an SRI of 39+, including photovoltaic panels that shade the roof, are considered exempt from roof area calculations for the purposes of this standard.		
Shadow	13.6.4.B All development over 65 feet in height shall be designed to avoid and/or mitigate the adverse impacts of shadows cast by new structures or building additions from falling on publicly accessible open space in accordance with the shadow standards of the Technical Manual.	The applicant is preparing a shadow study for review detailing the impacts the proposed building may have on public open space, with particular emphasis placed on Post Office Park and Lobsterman's Plaza. **What still needs to be addressed:** • A full shadow analysis shall be provided. Staff is awaiting submission	More information Required
Snow and Ice Loading	13.6.4.C All development shall be designed to prevent significant amounts of accumulated snow and ice from loading or falling onto adjacent properties or public ways.	Snow and ice will be collected and moved within the site to designated snow melting areas. **What still needs to be addressed:**	Met
View Corridors	13.6.4.D The massing, location, and height of development shall not substantially obstruct public view corridors identified in the City of Portland Design Manual.	This application is not within a protected view corridor **What still needs to be addressed:**	N/A
Historic Resources	13.6.4.E.1 When a development affects a designated landmark or lies within a designated historic district or historic landscape district, such development shall be required to obtain historic preservation approval under Article 16.	The proposed building is not within a historic district.t A small portion of the pedestrian plaza is located within the Old Port Historic District. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.4.E.2.a All development shall document and protect state or local archaeological resources known to exist or discovered on the site. a) Protection may include leaving archaeological resources untouched beneath a new development through adaptation of foundation design or architectural layout.	The applicant will be responsible for documenting and preserving any archaeological materials discovered during the course of construction. **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
	13.6.4.E.2.b All development shall document and protect state or local archaeological resources known to exist or discovered on the site.	The applicant will be responsible for documenting and preserving any archaeological materials discovered during the course of construction.	Met

	b) Where the applicant can demonstrate that complete protection is not feasible, the applicant shall excavate and document archeological resources. Such measures shall be conducted in consultation with the City's historic preservation program and Maine Historic Preservation Commission. For resources of state significance, excavation and documentation shall be conducted by a qualified professional, in coordination with Maine Historic Preservation Commission. Local archeological resources may or may not be recognized by the Maine Historic Preservation Commission as significant and shall include the following: i. Original seawall structure located landward of Commercial Street. ii. Inactive historic family cemetery plots. iii. Historic railroad beds including but not limited to the Portland-Lewiston interurban railroad. iv. Original structure and/or landforms associated with the Cumberland and Oxford Canal. v. Buried portions of colonial and post-colonial period structures or built features located on the Portland Peninsula predating the Great Fire of 1866. vi. Pre-colonial occupation sites identified by shell middens or other evidence. vii. Sites listed or eligible for listing on the National Register of Historic Places.	What still needs to be addressed: Staff are not requesting any additional information related to this standard	
	13.6.4.E.2.c All development shall document and protect state or local archaeological resources known to exist or discovered on the site. c) In order to preserve archeological resources, the review authority may waive standards listed in the City of Portland Technical Manual where necessary if it is determined that such a waiver would not jeopardize the health, safety, or welfare of the development's occupants, the public, or the natural environment.	The applicant will be responsible for documenting and preserving any archaeological materials discovered during the course of construction. What still needs to be addressed: Staff are not requesting any additional information related to this standard	Met
Exterior Lighting	13.6.4.F.1.a ***Site lighting*** All exterior site lighting shall be full cutoff with no light emitted above the horizontal plane or spilled onto adjacent properties. Illumination levels shall be adequate but not excessive	A photometric plan and site lighting details have not been provided at this time. What still needs to be addressed:	More Information Required

	for the safety, comfort, and convenience of occupants and users of the site, and shall conform to the lighting standards of the Technical Manual.	• The applicant shall provide a photometric plan detailing the variety and location of site lighting fixtures. Site lighting shall be designed in accordance with standards outlined in the Technical Manual.	
	13.6.4.F.1.a ***Site lighting*** Where light from a proposed development may adversely impact adjacent residential properties, exterior lighting shall employ building-side shielding.	A photometric plan and site lighting details have not been provided at this time. **What still needs to be addressed:**	More Information Required
	13.6.4.F.2.a ***Architectural and specialty lighting*** Architectural and specialty lighting of such features as architectural details, monuments, public art, or other site features shall be designed to illuminate specific details or attributes only and shall meet the lighting standards of the Technical Manual.	A photometric plan and site lighting details have not been provided at this time. **What still needs to be addressed:**	More Information Required
	13.6.4.F.2.b ***Architectural and specialty lighting*** Up-lighting by any method is prohibited except for public buildings and parklands; clock towers and steeples; landscape features; designated historic landmarks; flags of state, federal, or national jurisdictions; and public art. Such light fixtures, brackets, conduits, and all other components shall be designed by a lighting professional and shall be scaled and placed to minimize their visibility and installed in accordance with the lighting standards of the Technical Manual.	A photometric plan and site lighting details have not been provided a this time. **What still needs to be addressed:**	More Information Required
	13.6.4.F.3 ***Street lighting*** All development shall provide municipal street lighting adequate for the safety and comfort of pedestrians, bicyclists, and motorists and, where applicable, conforming to specific lighting district requirements as specified in the street lighting standards of the Technical Manual.	A photometric plan and site lighting details have not been provided at this time. **What still needs to be addressed:**	More Information Required
Noise and Vibration	13.6.4.G All heating, ventilation and air conditioning equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment shall meet applicable state and federal emissions requirements and shall be located to the interior of the site, away from abutting properties.	All HVAC and related equipment will be mounted on the roof the building and will be screened **What still needs to be addressed:** Staff are not requesting any additional information related to this standard	Met
Signage and Wayfinding	13.6.4.H.1 On-site directional traffic signage may be provided to enable users to safely and easily navigate into, around and out of the site.	No wayfinding signage is proposed as part of this application **What still needs to be addressed:**	N/A
	13.6.4.H.2 Signage shall not adversely affect visibility at intersections on or off the site.	No wayfinding signate is proposed as part of this application **What still needs to be addressed:**	N/A
Design Standards	13.6.4.I.1 Development of certain types and/or proposed in certain zones, as specified in the City of Portland Design Manual, shall meet the design	The proposed mixed-use development at 45 Union is reviewed in accordance with the B-3 design standards outlined in the City of	More information

	standards of the Design Manual in order to ensure that building and site design contribute to and enhance the goals and policies for specific zones within the city. The City of Portland Design Manual is incorporated by reference as part of this Land Use Code.	Portland Design Manual, Land Use Code Section 13.6.4.I Design standards. What still needs to be addressed: See attached design memo.	
	13.6.4.I.2 If the development is located in a historic district or associated with a historic landmark, the standards of Article 16 shall supersede.	What still needs to be addressed:	N/A

Design Review
Planning and Urban Development Department

City of portland

Subject:	45 Union Street – Major Site Plan Review
Zone:	B3
Date of Review:	August 29, 2025
Reviewer(s):	Sean King (Urban Designer), Eric Freeman (Planner), Neha Sunil Pol (Planner), Andrew Graminski (Planning & Development Review Manager), Evan Schueckler (Historic Preservation Manager), Kevin Kraft (Director)
Project ID:	PL-003157-2024

I. INTRODUCTION

The proposed mixed-use development at 45 Union Street is being reviewed under the B-3 design standards, as outlined in the City of Portland Design Manual and Section 13.6.4.I of the Land Use Code.

II. DESIGN REVIEW COMMENTS: red text denotes standards not met and require resubmission.

§(b)(1)a.1. Relationship of pedestrian environment:

- *§(b)(1).A. Relationship to the pedestrian environment: The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment.*

  Factors to be considered include the design, placement, character and quality of the following: Storefronts and building facades, Building entrances, Blank facades; and Special features

  Staff comment:
  The proposed site is currently a surface parking lot nestled between Exchange Street, Fore Street, and Old Port Square (formerly Canal Plaza). Exchange Street features historic buildings with active ground floors and storefronts, utilizing materials such as glass, granite, and brick. Fore Street is defined by a contemporary parking garage with ground-floor retail spaces, clad in granite with metal mesh screening, as well as the Hyatt Place Hotel, which incorporates an active restaurant space at the ground level. The hotel utilizes a contemporary design with a primarily glass ground floor, granite base, and supporting pillars. Old Port Square consists of three contemporary towers constructed in the early 1970s by Canal National Bank as part of the Maine-Way urban renewal projects near Monument Square. The complex, originally known as Canal Plaza, was built on the footprints of the former Plum Street and the Falmouth Hotel.



Figure 1: Old Port Square Garage/retail in the foreground; Canal Plaza in the background; and the rear of Exchange Street to the north (left)



Figure 2: Proposed Building - Hotel/Residential Entrance (right) | Cafe space (left)

The exterior design of the building within the first 35 feet enhances the character, attractiveness, comfort, security, and usability of the street-level pedestrian environment. Expansive glass and structural elements are incorporated on all facades, providing visibility into the proposed retail spaces and hotel lobby. A projecting modern canopy at the east elevation clearly defines the primary entrance for residents and hotel patrons. In addition, the applicant proposes a glass and aluminum sliding/folding door system along the ground-level café façade, which Staff believes will encourage greater activity and connectivity between the café and plaza while also improving airflow during favorable weather.

Staff recommends that the applicant consider adding an additional entrance at the northeast corner of the building to create a clear, distinct entry into the proposed café space, particularly for patrons approaching from Old Port Square and Exchange Street. Additionally, staff requests that the applicant label all of the proposed facade materials on the building elevations.

Staff believes the tower cantilever over the ground floor enhances activation at the street level, while the soffit design and material selection help contextualize and integrate the building into the broader eclectic downtown context. However, Staff recommends that the applicant provide an architectural narrative describing the design intent and function of the voided space between the Level 1 roof and Level 2. In addition, Staff suggests the applicant consider extending the

curtain wall system or exploring other design treatments, such as providing access to the Level 1 roof area to assist with additional activation or utilization of the space.

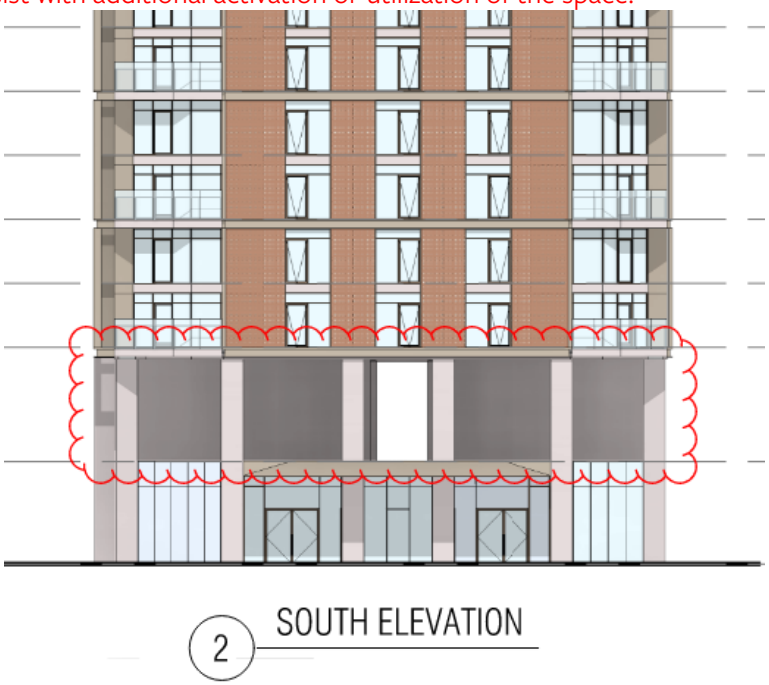

Figure 1: Clouded area denotes Staff comments on sheet A-40.01

- *§(b)(1).B. Pedestrian Activities District (PAD): In addition to subsection 1 (a through d), proposed development and substantial building alterations located within the PAD overlay zone shall be designed and constructed to accommodate pedestrian-oriented uses at the street level.*

  Staff comment: The proposed project includes a new building nestled on a lot situated between Old Port Square, the Old Port Square parking garage, and Exchange Street. It incorporates accessible walkways and plazas that connect to adjacent public rights-of-way. The project is expected to significantly improve connectivity within the Old Port by strengthening links between surrounding streets and Old Port Square, enhancing the neighborhood, and creating more opportunities for pedestrian use and activity.

- *§(b)(1).C. Sidewalk areas and open space: The design of publicly accessible sidewalk areas and open space shall complement the general pattern of the downtown pedestrian environment, conform to special City of Portland streetscape programs described in the Technical Manual, and enhance the attractiveness, comfort, security, and usability of the pedestrian environment.*

  Factors to be considered include the design, placement, character, durability, and quality of the following: Sidewalk, crosswalk, and street paving materials; Landscaping, planters, irrigation, and tree guards and grates; Lighting; Pedestrian amenities such as benches and other seating, trash receptacles, kiosks, bus shelters, artwork, directional and informational signage, fountains, and other special features; and Sidewalk vendors and sidewalk cafes.

  Staff comment: The proposed project significantly enhances neighborhood connectivity by providing access to public sidewalks from Union Street, Exchange Street, and Patton Court.

The continuation of the Old Port brick sidewalk pattern and the City's Old Port-style pedestrian streetlights helps unify the site and signals that these spaces are open to the public. Staff finds that this design enhances the open space, which includes pedestrian amenities such as planters with trees, landscaping, and stone benches. These features integrate the development into the surrounding neighborhood, creating a seamless transition from the historic buildings of the Old Port to the Old Port Square complex, composed of contemporary buildings constructed in the 1970s.

Staff recommends additional pedestrian amenities to enhance activation of the publicly accessible open space. These include: additional outdoor seating (granite benches) at the higher street-level grade adjacent to the rear of buildings at 188 Middle Street; street lighting matching the City's decorative Old Port fixture (Technical Manual, Section 8, Figure X-6B) throughout the open space; consideration of a staircase at the terminus of Patton Court to improve visible permeability into the property; and substituting granite pavers for brick around the building footprint to better delineate pedestrian areas and continuation of the sidewalk and publicly accessible spaces from the shared drive.

Furthermore, Staff recommends realigning the plaza stair to reflect the building's geometry, possibly through a chamfer, to create greater unity with the building design and soften the harder edges. See diagram for Staff's recommendations.

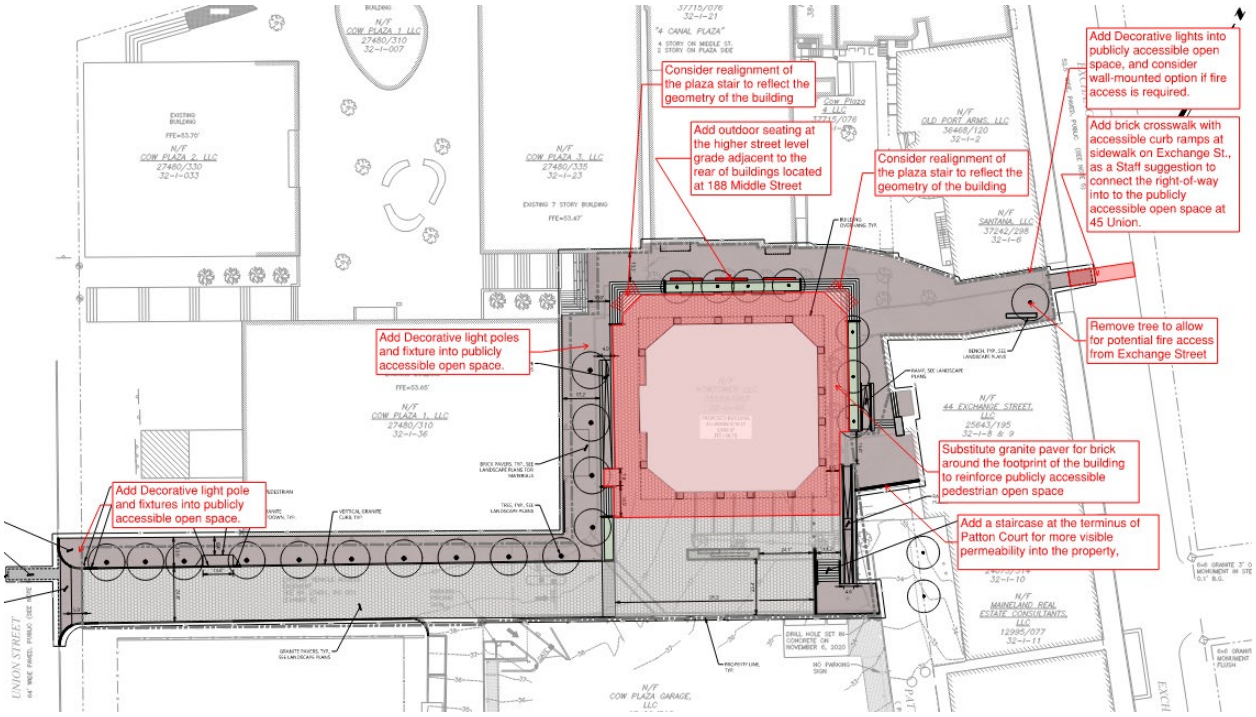

Figure 2: Staff comments on sheet C-100

- *§(b)(1).D. Relationship to existing development: General - Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the downtown, surrounding building environment and streetscape, as described and illustrated in the Downtown Urban Design Guidelines (Appendix 1).*

Factors to be considered include the relationship to the following existing patterns: Street walls and building setbacks; Open space; Building form, scale and massing; Façade proportion and composition; Pedestrian circulation and building entrances; Parking

Staff comment: The proposed building is situated within a uniquely shaped lot, creating multiple publicly accessible entry points from adjacent streets. Staff finds that the curtain wall system—composed of glass, perforated metal screens, and framed floor divisions—provides a well-defined façade that is appropriate to the downtown context. The building's materials, including glass, granite, and other durable finishes, help the point tower relate to the smaller-scale historic buildings nearby.

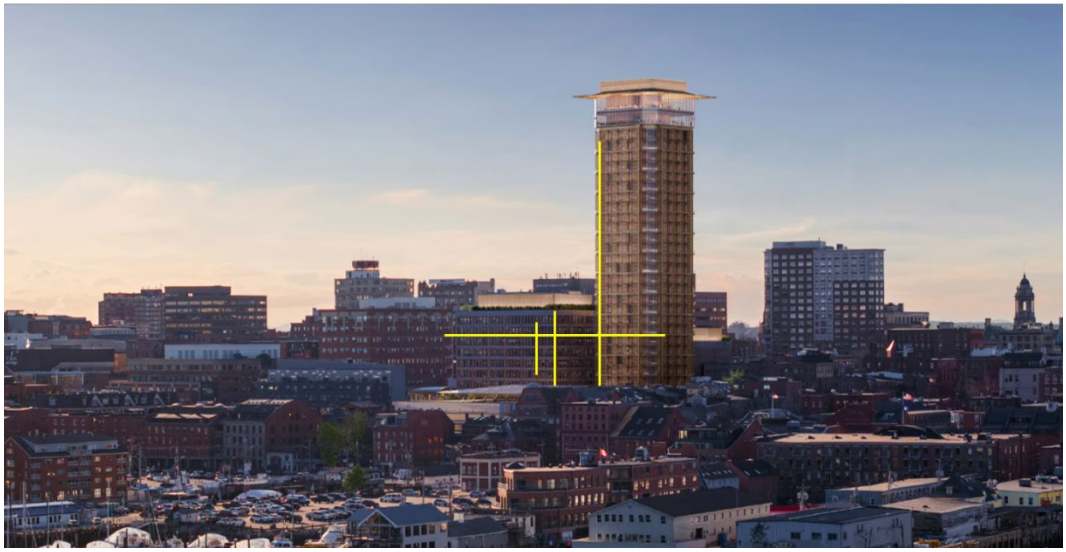

Figure 3: Proposed Building

The design also transitions effectively from the historic context to the more contemporary Old Port Square complex (formerly Canal Plaza), which consists of three large 1970s-era office buildings that use primarily brick, concrete, and glass as prominent materials throughout the complex. The proposed development integrates elements of these neighboring structures through clearly defined floor divisions that align with the adjacent towers and vertical elements that correspond with neighboring façades (See Figure 3 diagram). These features provide visual references to the surrounding context while establishing the building's own identity, allowing the contemporary point tower to fit harmoniously between the historic Old Port buildings on Exchange and Middle Streets and the larger-scale structures of Old Port Square, including the parking garage and Hyatt Place Hotel. In addition, Staff finds that the façade is appropriately proportioned through the expression of the building's base and top with large volumes of glass, supported by perforated metal screens, that provide contextuality that is consistent with the surrounding context in Downtown.

- *§(b)(1).D. Relationship to existing development: Standards for increasing setback beyond street build-to line - A proposed development may exceed maximum setbacks as required in Table 7-C or Table 7-D only where the applicant demonstrates to the Planning Board that the introduction of increased building setbacks at the street level:*

  Provides substantial and viable publicly accessible open space; does not substantially detract from the prevailing street wall character; does not detract from existing publicly accessible open space; the area of setback is of high quality and character of design.

  Staff comment: The proposed development locates the new building within the interior of the uniquely shaped property. Staff finds the proposed plaza space within the increased setback area beyond the street build-to line provides substantial and viable publicly accessible open space from adjacent streets. Staff finds that the proposed open space provides an appropriate mid-block permeability from Exchange Street that does not substantially detract from the prevailing street wall character.

- *§(b)(1).E. Rooftop appurtenances: All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building.*

  Staff comment: Staff requests that the mechanical area located above the Level Beacon Roof be fully enclosed, and suggests increasing the height of the screening element to align with the tallest rooftop appurtenance.

- *§(b)(1).F. Shadow impact on open space: The location, massing and orientation of portions of buildings in excess of 65 feet in height shall be such that substantial shadow impacts on public plazas, parks, and other publicly accessible open space are avoided.*

  Staff comment: Staff is awaiting the submission of a shadow study to better understand shadow impacts on public plazas, and parks.

- *§(b)(1).G. Wind impacts:* The location, massing, orientation and architectural design of a new building or a building addition shall be such that no significant adverse wind impacts are created.

  Staff comment: Staff is awaiting the submission of a wind study.

- *§(b)(1).H. Setbacks for existing structures: The location and design of proposed structures shall not create a detrimental impact on the structural integrity or the safety of adjacent structures or the occupants thereof.*

  Staff comment: Staff finds that the proposed building includes a separate structural wall system that will not impact the structural integrity of the adjacent buildings on the property.

- *§(b)(1).I. Building tops: Buildings or structures which exceed 150 feet in height shall be designed so as to provide a distinctive top to the building which visually conveys a sense of interest and vertical termination to the building.*

Staff comment: The proposed building exceeds 150 feet in height and is required to have a distinctive top. Staff finds that the steel-supported curtain wall system with fixed vision glazing on all sides, combined with the exposed heavy timber trellis projecting from the interior, creates visual interest and a strong vertical termination consistent with the building's overall design. The glass-clad top floors also serve as a distinct visual beacon while maintaining a cohesive architectural expression.

Design Review
Planning and Urban Development Department

Subject:	45 Union Street – Major Site Plan Review
Zone:	B3
Date of Review:	November 21, 2025
Reviewer(s):	Sean King (Urban Designer), Eric Freeman (Planner), Neha Sunil Pol (Planner), Andrew Graminski (Planning & Development Review Manager), Evan Schueckler (Historic Preservation Manager), Kevin Kraft (Director)
Project ID:	PL-003157-2024

I. INTRODUCTION

The proposed mixed-use development at 45 Union Street is being reviewed under the B-3 design standards, as outlined in the City of Portland Design Manual and Section 13.6.4.I of the Land Use Code.

II. BACKGROUND AND HISTORICAL CONTEXT

Portland's first steel-framed high-rise building was the Fidelity Trust Building at 465 Congress Street, which was constructed in 1910. At 135 feet in height, the Fidelity Trust Building was significantly taller than any other occupiable structure in Portland at that time. The building stood as Portland sole high-rise for over a decade, until it was joined by both the 185-foot Time & Temperature Building in 1924 and the 160-foot Eastland Hotel in 1927. These buildings maintained relatively small footprints of between 6,000 and 10,000 square feet and were highly prominent from vantage points throughout the City for several decades.



Figure 1: The Fidelity Trust building soon after its construction in 1914.

Downtown Portland's skyline grew significantly in the later half of the 20th century, with multiple commercial high-rise buildings being constructed between 1970 and 2000. High-rise buildings of this era include One and Two Monument Square, One City Center and One Canal Plaza.
These buildings range in height from 120 to 180 feet. Unlike earlier high-rises, these buildings typically had larger footprints of 10,000-16,000 square feet. Residential high-rises constructed during this era include the 165-foot Franklin Towers and the 150-foot Back Bay towers, which both have footprints of approximately 8,500 square feet.



Figure 2: The Eastland Hotel under construction in 1926

Since 1910, Portland's skyline has continued to evolve upward, reflective of the City's growth and prominence as Northern New England's urban center. The most notable 21st century addition to Portland's skyline came in 2023 with the completion of 201 Federal Street ("The Casco"). An approximately 200-foot residential tower with a footprint of 9,500 square feet. When constructed, this tower became the tallest in Portland and was a notably taller than the existing mid-century office buildings surrounding it.

Portland has historically allowed and in many cases encouraged greater building heights in the Downtown, particularly along Congress Street and throughout the Temple and Union Street corridors, which have seen much of the city's recent high-rise development. These areas are also adjacent to several historic districts. While historic districts do allow new construction that complies with zoning, contributing and landmark structures cannot be demolished, which limits the potential for widespread skyline change within those districts and constrains redevelopment capacity over the short, medium, and long term.

For this reason, Portland's zoning and height maps have intentionally concentrated height Downtown. Through the ReCode process, additional height was assigned in and around Congress Street and the Temple/Union corridors—two major urban "spines" capable of supporting long-term growth. This approach promotes sustainable development by focusing density in Portland's most walkable, transit-accessible areas, where significant portions of land—often surface parking lots—remain underutilized. Concentrating height here also helps protect the historic character and authenticity of adjacent districts.

Throughout the ReCode process, there was broad public support for increasing allowable heights Downtown and in targeted growth nodes across the city. The Planning Board endorsed this approach and urged even greater Downtown heights as a way to accommodate growth responsibly and in line with smart-growth principles. To prevent towers from becoming monolithic, ReCode also introduced tower regulations that limit floorplate size above 150 feet, encouraging slender profile buildings that reduce view and shadow impacts.

This approach was ultimately adopted with unanimous support from both the Planning Board and the City Council following an extensive and inclusive public process, resulting in the zoning framework in place today.

III. DESIGN REVIEW COMMENTS: red text denotes standards not met and require resubmission, **bold** denotes standards met from latest submission.

§(b)(1)a.1. Relationship of pedestrian environment:

- ***§(b)(1).A. Relationship to the pedestrian environment: The exterior design of portions of buildings within the first thirty-five (35) feet of height shall enhance the character, attractiveness, comfort, security, and usability of the street level pedestrian environment. Factors to be considered include the design, placement, character and quality of the following: Storefronts and building facades, Building entrances, Blank facades; and Special features***

  Findings: The proposed site is currently a surface parking lot nestled between Exchange Street, Fore Street, and Old Port Square (formerly Canal Plaza). Exchange Street features historic buildings with active ground floors and storefronts, utilizing materials such as glass, granite, and brick. Fore Street is defined by a contemporary parking garage with ground-floor retail spaces, clad in granite with metal mesh screening, as well as the Hyatt Place Hotel, which incorporates an active restaurant space at the ground level and an interior valet parking drop-off area. The hotel utilizes a contemporary design with a primarily glass ground floor, granite base, and supporting pillars. Old

Port Square consists of three contemporary towers constructed in the early 1970s by Canal National Bank as part of the Maine-Way urban renewal projects near Monument Square. The complex, originally known as Canal Plaza, consist of office buildings with storefront windows at the ground level, brick and precast concrete detailing built on the footprints of the former Falmouth Hotel and Plum Street in Old Port.



Figure 3: Old Port Square Garage/retail in the foreground; Canal Plaza in the background; and the rear of Exchange Street to the north (left)



Figure 4: Proposed Building - Hotel/Residential Entrance (right) | Cafe space (left)

The proposed building provides activation at the first 35 feet with expansive glass and structural elements incorporated on all facades, providing visibility into the proposed retail spaces and hotel lobby. A projecting modern canopy at the east elevation clearly defines the primary entrance for residents and hotel patrons. In addition, a glass and aluminum sliding/folding door system provides greater activity and connectivity between the café and plaza while also improving airflow during favorable weather. The tower cantilever over the ground floor enhances activation at the street level by adding dimensionality to the building, while the soffit design and material selection help contextualize and integrate the building into the broader eclectic downtown context.

- *§(b)(1).B. Pedestrian Activities District (PAD): In addition to subsection 1 (a through d), proposed development and substantial building alterations located within the PAD overlay*

zone shall be designed and constructed to accommodate pedestrian-oriented uses at the street level.

Findings: The proposed project includes a new building nestled on an irregularly shaped lot situated between Old Port Square, the Old Port Square parking garage, and Exchange Street. It incorporates accessible walkways and plazas that enhance connections to adjacent public rights-of-way. The project is expected to significantly improve connectivity within the Old Port by strengthening links between surrounding streets and Old Port Square, enhancing the neighborhood, and creating more opportunities for pedestrian use and activity.

- *§(b)(1).C. Sidewalk areas and open space: The design of publicly accessible sidewalk areas and open space shall complement the general pattern of the downtown pedestrian environment, conform to special City of Portland streetscape programs described in the Technical Manual, and enhance the attractiveness, comfort, security, and usability of the pedestrian environment.*

  Factors to be considered include the design, placement, character, durability, and quality of the following: Sidewalk, crosswalk, and street paving materials; Landscaping, planters, irrigation, and tree guards and grates; Lighting; Pedestrian amenities such as benches and other seating, trash receptacles, kiosks, bus shelters, artwork, directional and informational signage, fountains, and other special features; and Sidewalk vendors and sidewalk cafes.

  Findings: The proposed development significantly enhances neighborhood connectivity by providing access to public sidewalks from Union Street, Exchange Street, Fore Street, and Patton Court. The continuation of the Old Port brick sidewalk pattern and the City's Old Port-style pedestrian streetlights create a seamless transition from the historic buildings of the Old Port to the Old Port Square complex and signifies that these spaces are open to the public and that pedestrians are encouraged into the spaces. In addition, pedestrian amenities such as shade trees and landscaping, movable seasonal planters, and stone benches complement the open space found throughout Downtown.

- *§(b)(1).D.1. Relationship to existing development: General - Proposed development shall respect, enhance, and be integrated with the existing character of the general pattern of development in the downtown, surrounding building environment and streetscape, as described and illustrated in the Downtown Urban Design Guidelines (Appendix 1). Factors to be considered include the relationship to the following existing patterns: Street walls and building setbacks; Open space; Building form, scale and massing; Façade proportion and composition; Pedestrian circulation and building entrances; Parking*

  Findings: The general pattern of development in Downtown Portland includes buildings of varying height, scale and articulation located within close proximity to the street that reinforce a continuous street wall. This pattern of building form and massing along the street is exemplified by existing buildings, such as the Time and Temperature Building (473-477 Congress St.) and Fidelity Trust Building (465 Congress St.). Each of these existing buildings occupy a relatively small footprint, ranging from approximately 6,000 to 8,500 square feet, with building heights above 125 feet and multiple facades visible from various vantages throughout the City.

Other contributing elements to the built character in Downtown include a relatively fine-grained street network with frequent separation between buildings, relatively short blocks and a publicly accessible open spaces that enhance the quality of the streetscape environment.

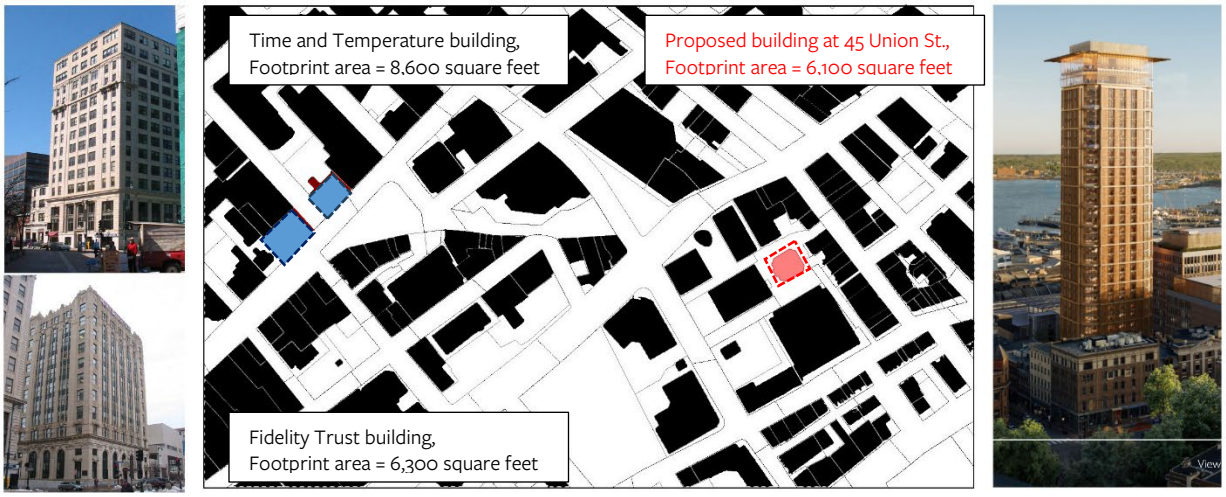

Figure 5: Time and Temperature building (top left), Fidelity Trust building (bottom left), diagram of Downtown's built context (center), 45 Union St proposed rendering (right).

The proposed building utilizes a contemporary design with a curtain wall system—composed of glass, perforated metal screens, and framed floor divisions— to express the proportion of the building's base, middle and top that Staff finds to provide a well-defined façade that is appropriate to the downtown context. Other exterior façade materials, including glass, granite, and other durable finishes, are pedestrian-scaled and relate to the smaller-scale historic buildings nearby. The selection of façade materials, alignment of horizontal floors and verticality effectively transitions from the historic context to the more contemporary Old Port Square complex (formerly Canal Plaza). See Figure 4 diagram.

The exterior façade materials provide visual references to the surrounding context while establishing the building's own identity, allowing the contemporary point tower to fit between the historic Old Port buildings on Exchange and Middle Streets and the larger-scale structures of Old Port Square, including the parking garage and Hyatt Place Hotel.

The proposed building is well integrated into Portland's Downtown and reflects the city's continued growth, consistent with the pattern of existing high-rises concentrated along Congress Street and within the Temple/Union Street corridors. Figure 6 below illustrates the existing cluster of high-rise development adjacent to and surrounding historic districts.

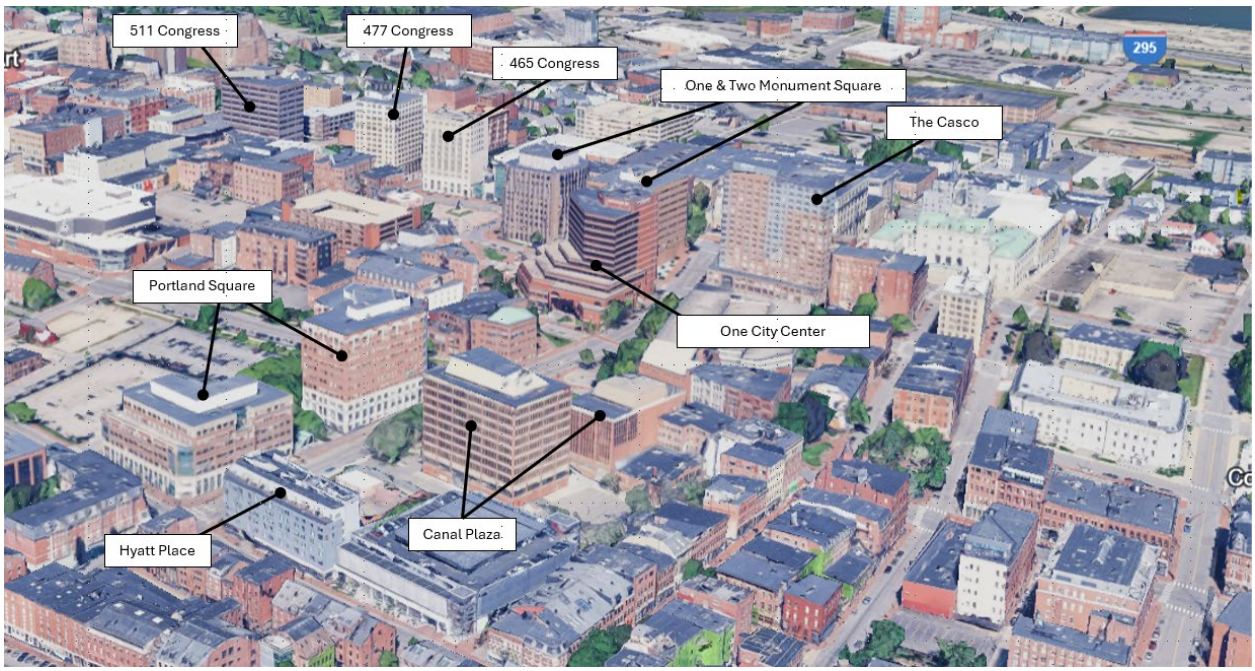

Figure 6: Portland's existing high-rises, concentrated Downtown along Congress Street & Temple/Union Street Corridor

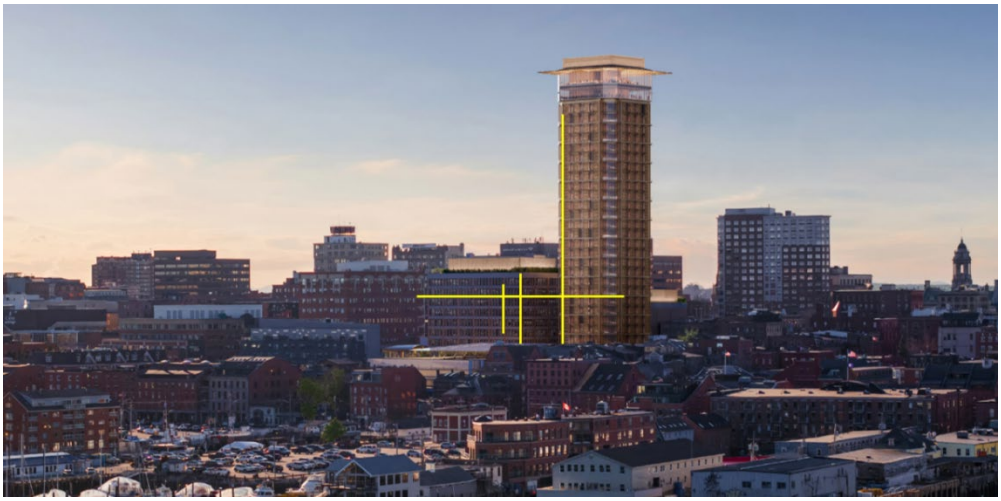

Figure 6A: Proposed Building with alignment of floors at adjacent structures

- *§(b)(1).D.2. Relationship to existing development: Standards for increasing setback beyond street build-to line - A proposed development may exceed maximum setbacks as required in Table 7-C or Table 7-D only where the applicant demonstrates to the Planning Board that the introduction of increased building setbacks at the street level: Provides substantial and viable publicly accessible open space; does not substantially detract from the prevailing street wall character; does not detract from existing publicly accessible open space; the area of setback is of high quality and character of design.*

  Findings: The proposed development locates the new building within the interior of the uniquely shaped property. The proposed plaza space within the increased setback area beyond the street build-to line provides substantial and viable publicly accessible open space from adjacent streets.

Staff finds that the proposed open space provides an appropriate mid-block permeability from Exchange Street that does not substantially detract from the prevailing street wall character and that the proposed buildings placement and layout enhances activation of the block.

- *§(b)(1).E. Rooftop appurtenances: All mechanical equipment, ventilating and air conditioning and other building systems, elevators, stairways, radio or television masts or equipment, or other rooftop elements not intended for human occupancy shall be fully enclosed in a manner consistent with the character, shape and materials of the principal building.*

  Findings: The applicant proposes rooftop screening that is integrated into the overall building design and fully encloses rooftop appurtenances, consistent with the intent of the standard.

- *§(b)(1).F. Shadow impact on open space: The location, massing and orientation of portions of buildings in excess of 65 feet in height shall be such that substantial shadow impacts on public plazas, parks, and other publicly accessible open space are avoided.*

  Findings: The applicant submitted a shadow impact study to assess the potential shadow impacts of the proposed building onto existing public open spaces within two blocks of the site. The new building does not substantially increase the area in shadow.

- *§(b)(1).G. Wind impacts:* The location, massing, orientation and architectural design of a new building or a building addition shall be such that no significant adverse wind impacts are created.

  Findings: The applicant submitted a wind impact study to assess wind conditions generated by the proposed building on outdoor pedestrian use areas. The wind impact study analyzed a wind safety criterion that included site location, adjacent structures and seasonal wind patterns with predicted wind conditions created by the new building. The building's design effectively reduces wind conditions by incorporating large chamfered corners, a large void space at the second level and an extended canopy structure at the main entrance. The predicted wind conditions are suitable for walking and not expected to create unacceptable conditions.

- *§(b)(1).H. Setbacks for existing structures: The location and design of proposed structures shall not create a detrimental impact on the structural integrity or the safety of adjacent structures or the occupants thereof.*

  Findings: The proposed building includes a separate structural wall system that will not impact the structural integrity of the adjacent buildings. Furthermore, the proposed building is set back approximately 130 feet from the front building façades along Exchange Street, creating a clear visual hierarchy with the historic blocks of the Old Port/Waterfront Historic District. This substantial setback pulls the building massing inward, supporting a gradual transition from the smaller-scale historic fabric of the Old Port to the more contemporary high-rise context of Downtown.

- *§(b)(1).I. Building tops: Buildings or structures which exceed 150 feet in height shall be designed so as to provide a distinctive top to the building which visually conveys a sense of interest and vertical termination to the building.*

Findings: The proposed building exceeds 150 feet in height and is required to have a distinctive top. The proposed building includes a steel-supported curtain wall system with fixed vision glazing on all sides, combined with the exposed heavy timber trellis projecting from the interior, creating visual interest and a strong vertical termination consistent with the building's overall design. The glass-clad top floors also serve as a distinct visual beacon while maintaining a cohesive architectural expression.

Planning and Urban Development
Historic Preservation Program

November 17. 2025

Owner: Jacob Soley
Kowtower, LLC
100 Commercial Street, Unit 306
Portland, ME 04101

Applicant: Caitlin Suhr
Woodard & Curran, Inc.
12 Mountfort Street
Portland, ME 04101

Address: 45 Union Street
Project: Sitework

Project ID: HP-00045-2025
CBL: 032 I040001

Jacob Soley and Cailtin Suhr,

In accordance with Subsections 16.5.2 and 16.5.7 of the City of Portland Land Use Code, the Planning Authority found that your application for historic preservation approval for sitework at 45 Union Street is appropriately reviewed at the administrative level. After review, Historic Preservation staff have approved your application as meeting the standards for review under Section 16.6 based on the application materials stamped for approval on November 17, 2025.

All improvements shall be carried out as shown on the materials stamped for approval on November 17, 2025. Amendments to this approval may be requested in accordance with Subsection 16.5.14. Any changes to the approved plans and any additional work that may be desired must be reviewed and approved by the Historic Preservation program PRIOR to undertaking such alternative or additional work.

Per Subsection 16.5.13 (A), this approval shall be valid for a period of three (3) years from the initial date of approval. If the work authorized herein is not commenced or a building permit for the same is not issued within that time, such approval shall expire. Should the building permit expire after the three (3) year approval period, this approval shall also expire. Per Subsection 16.5.13 (B), if a site plan approval is required for this work under Article 13 of the City of Portland Land Use Code, expiration of this approval shall be concurrent with expiration of the site plan approval.

Sincerely,

Evan R. Schueckler
Historic Preservation Program Manager

Applicant:	East Brown Cow – Kowtower LLC 100 Commercial Street, Suite 300 Portland, ME 04101
Project Location:	45 Union Street Tax Map # 32 Lot #I040001
Project:	45 Union Street
Identification #:	PL-003157-2024
Permit Category:	200+ PCE's
Traffic Engineer:	John Adams, Barton and Loguidice

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations, the City of Portland through their Delegated Review Authority has considered the application of Major Site Plan (PL-003157-2024) 45 Union Street with supportive data, city review and other related materials on file.

PROJECT DESCRIPTION

The application is for the development of a 30-floor mixed-use building comprised of 88 hotel rooms, 73 residential dwelling units, a 1,495 square foot café on the ground floor, a 5,007 square foot restaurant, a 3,271 square foot bar and lounge, a 1,100 square foot viewing area on the top floor, and a 6,373 square foot wellness level with a pool and a gym. The café, restaurant, bar and lounge, viewing area, and wellness level will be open to the public. The development is projected to generate a total of 116 vehicular trips in the AM peak hour of the Generator, 214 vehicle trips during the PM peak hour, and 228 during the Saturday peak hour. Trips generated by the development were assumed to enter and exit the driveway off Union Street and park in the Fore Street garage. Construction of the development is currently scheduled to start in 2026 with occupancy scheduled for spring 2030.

Findings

Based on a review of the files and related information, The City of Portland approves the Traffic Movement Permit Application of 45 Union Street subject to the following conditions:

MITIGATION

The mitigation is intended to describe that conceptually shown on the following plans provided by The Engineer:

1. Site Plan, C-100, prepared by Woodard and Curran.

If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all of the mitigation discussed herein may be shown on those or any plan. The following mitigation shall be constructed or implemented to the City of Portland's satisfaction prior to the opening of the facility, unless otherwise approved by the City of Portland.

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On-Site Mitigation

1. The project is responsible for the implementation of details noted on the Site Plan, C-100.
2. The applicant has proposed a Valet Operations Plan and the applicant is responsible for implementation of the plan as detailed.
3. Regular Tractor Trailers deliveries will not be permitted into the site.
4. The parking garage gate system shall be upgraded to offer greater efficiency in gate openings for daily parkers.

General Requirements for All Entrances

A. N/A

Off-Site Mitigation

1. Intersection of Union Street/Temple Street/Middle Street/Spring Street

The applicant shall change the lane assignment on the Spring Street and Middle Street approaches to consist of dedicated left-turn lanes and shared through/right lanes. The traffic signal equipment shall be upgraded to reflect this change and include replacement of existing signal heads with signal heads that have yellow retroreflective borders. The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.

2. Intersection of Union Street and Fore Street

The applicant shall change the lane assignment on the southbound Union Street approach to eliminate the dedicated right-turn lane and implement changes to on-street parking regulations, as directed by the city. The Applicant shall conduct an evaluation of converting all approaches to single-lane configuration and if analysis completed by the Applicant demonstrates adequate level of service for the intersection, the changes shall be fully implemented. These changes shall include replacement of existing signal heads with heads that have yellow retroreflective borders. The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.

3. Intersection of Fore Street and Exchange Street

The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for review and approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.

4. Intersection of Middle Street and Exchange Street

The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are

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identified. Design plans shall be provided for review and approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.

Overall Requirements

A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to City, MaineDOT and/or National standards.

B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from the City of Portland a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

D. The applicant must obtain approval of the design plans and coordinate work through the City of Portland Department of Public Works.

By:

_____
Jeremiah J. Bartlett, PE, PTOE
City of Portland
Transportation Systems Engineer
Date: December 5, 2025

DRAFT

WRIGHT-PIERCE
Engineering a Better Environment

Memorandum

Date: 9/17/2025

Project No.: 21989C

To: Eric Freeman, City of Portland Planning & Urban Development

From: Jaime Wallace, PE

Brooke Springer, EI

Subject: Major Site Plan – 45 Union Street

Wright-Pierce has performed a stormwater review of the Major Site Plan application for the proposed development at 45 Union Street in downtown Portland (PL-003157-2024).

Documents Review by Wright Pierce

- Project Plans:
  - Civil Plans developed by Safdie Architects, LLC consisting of Sheets G-001, C-001, C-002, C-100, C-200, C-300, and C-400 through C-406, dated August 2025.
  - Boundary Survey developed by Sebago Technics dated May 28, 2025.
  - Landscape Plans developed by Michael Boucher Landscape Architecture consisting of sheets L1.0, L2.0, L3.0, and L5.0 through L5.3, dated August 11, 2025.
- Application Documents
  - Major Site Plan Application developed by Woodard & Curran dated August 2025.
  - Stormwater Management Plan developed by Woodard & Curran dated August 15, 2025.
  - Construction Management Plan developed by Consigli dated November 26, 2024.

Comments

The following comments provided by Wright-Pierce focus on the stormwater infrastructure on site with respect to the City of Portland Technical Manual and Maine DEP Chapter 500 and Best Management Practices.

1. **Maine DEP Chapter 500 Review:**
   a. Urban Impaired Stream Standard
      i. As noted by the applicant, the proposed development is not located within an urban impaired stream watershed. Therefore, this standard is not applicable.
   b. Basic Standard
      i. On Sheet C-002 of the Civil Plans, it appears that CB 1644 within the perimeter barrier does not have temporary inlet protection. We recommend the applicant confirm and revise as necessary.
      ii. On Sheet C-002 of the Civil Plans, it appears the perimeter barrier may need to extend to CB-1572 and CB-1590 due to the area being downgradient of proposed improvements on this road. We recommend the applicant confirm and revise as necessary.
      iii. On Sheet C-002, there is a proposed soil stockpile located directly on top of CB 3673. While there is inlet protection proposed in the catch basin, we would recommend relocating the stockpile to another location on site, if possible, to avoid potential sediment migration into the storm drain. It is not clear

where the existing storm drain discharges and whether the existing pipe is abandoned or ties into infrastructure within Union Street.

iv. On Sheet C-400 of the Civil Plans, in section I of the General Notes, the start date for permanent seeding is listed as April 1 whereas the start date for permanent seeding specified in the "Permanent Erosion Control" table on the same sheet is listed as April 15. We recommend the applicant confirm dates and revise as necessary.

v. There does not appear to be any inspection or maintenance requirements listed for the proposed hydrodynamic separator in the Stormwater Inspection & Maintenance Plan. We would recommend the applicant includes requirements specific to the hydrodynamic separator.

vi. It's stated in the Stormwater Inspection & Maintenance Plan that an example BMP Maintenance Log is attached, however the Maintenance Log does not appear to be included.

c. General Standard

i. Based on the City of Portland's Technical Manual (Section 5.2.2), the project must provide 95% stormwater treatment for non-roof areas since more than 10,000 square feet of area is disturbed. However, the Technical Manual allows that the treatment required be reduced for linear portions of projects as allowed by Maine DEP Chapter 500. The applicant is claiming two subcatchment areas as linear portions of a project (Area 1 and Area 2) and must provide treatment for 75% of impervious area and 50% of developed area. Additionally, Area 3 must provide 95% treatment for the non-roof redeveloped impervious area. The following comments are specific to stormwater treatment standards:

1. The applicant has stated that treatment requirements cannot be met for Area 1 and Area 3 due to site constraints. Area 1 and Area 3 requires treatment for 75% of impervious area and 95% of non-roof redeveloped impervious area, respectively. No treatment is provided for Area 1 and 94.8% of the required treated area is provided for Area 3. To compensate for the loss in treated area, additional area on the roof of the building will be treated by the proposed stormwater BMP. In Section 4.C.(2)(d)(iii) of Maine DEP's Chapter 500, it's noted that the Department may allow equivalent treatment on an off-site parcel within the same watershed as an alternative if redevelopment standards cannot be met. It is recommended the applicant verify if the drainage from Union Street and the existing combined sewer main are within the same watershed as runoff to Union Street will still not be receiving any treatment.

d. Flooding Standard

i. Based on the City of Portland's Technical Manual (Section 5.2.3), the project must meet Maine DEPs Chapter 500 Flooding Standard. The following comments are specific to the flooding standard:

1. The applicant has demonstrated that proposed peak runoff rates do not exceed existing peak runoff rates for the 2-, 10-, and 25-year, 24-hour storms.
2. Maine DEP Chapter 500 Section 4.F.(2)(b) requires that piped systems meet the 10-year, 24-hour storm without overloading. We would recommend the applicant verify that the proposed storm drain have adequate capacity for the 10-year, 24-hour storm.
3. The modeled peak elevation for the R-Tank indicates runoff from the proposed project will not result in the flooding of the site under the 25-year, 24-hour storm.

2. General Comments

a. We recommend the applicant provide proposed storm drain pipe material.

b. Civil detail Sheet C-400 notes that any dewatering flow that's directed to the City's combined sewer system will be reviewed and approved by the Department of Public Services or Portland Water District. The

Construction Management Plan does not include reference to dewatering. We would recommend the applicant verify if dewatering is anticipated for the project.

c. The City of Portland's Code Section 32-38 requires an annual report for BMP inspections be submitted to the Department of Public Works. We recommend the applicant includes this requirement as part of the Inspection and Maintenance Plan.
d. The City of Portland's Code Section 32-45 requires weekly inspection reports be submitted to the Stormwater Coordinator in the Water Resources Division of Public Works and the Development Review Coordinator in Planning. We would recommend the applicant include these inspection requirements as part of the Civil Detail Sheet C-400 or in the Inspection & Maintenance Plan.
e. The City of Portland's Code Section 32-45 requires additional erosion and sedimentation control inspections occur before disturbance but after all erosion control BMPs have been installed and at completion of the project. We would recommend the applicant include these inspection requirements as part of the Civil Detail Sheet C-400.

3. Stormwater Management Plan
   a. It's understood stormwater within Area 1 discharges to the existing separated storm system on Union Street and Areas 2 and 3 ultimately drain to an existing 15-inch combined sewer main. The following comments are specific to the minimum stormwater detention volume requirement under Section 5.2.4 of the City of Portland's Technical Manual (Section 5.2.4).
      i. For a separated storm system, Area 1 must provide a minimum stormwater detention of 1" times the total impervious area within the project's disturbed area and stormwater outflow rates must not exceed 0.1 CFS until the detention system has reached design capacity. It's understood that due to site constraints, a detention system is not practicable within Area 1. As this does not meet the City's Technical Standards, it's recommended the applicant request a waiver from this requirement or receive approval from the City.
      ii. For a combined sewer system, Area 2 must provide a minimum stormwater detention equal to the greater of 1" times the total impervious area within the project's disturbed area or the proposed increase in average daily sewer flow added to the combined sewer system, and stormwater outflow rates must not exceed 0.1 CFS until the detention system has reached design capacity. It's recommended the applicant provide previous stormwater models for the Filterra unit or confirmation Area 2 has previously met Section 5.2.4.
      iii. For a combined sewer system, Area 3 must meet the same requirements listed for Area 2. It's unclear how the total impervious area provided under the Stormwater Detention Volume calculations in Appendix A of the Stormwater Management Plan was calculated based on the provided site plan. The sum of all provided impervious areas calculates to 37,580 SF. We request the applicant verify the impervious area.
   b. It's understood the proposed average daily sewer flow is 3,975 CF/day. We recommend the applicant clarify how this flow value was obtained.
   c. In the water quality volume calculations for subsurface sand filter 1, the applicant is using a roof area treated value of 3,161 SF which aligns with the required treatment for Area 1 on the previous page. However, the note for the roof area treated value includes area 1 and remainder of Area 3. We would recommend the applicant verify the values included in the water quality calculations are correct and revise as appropriate.
   d. We recommend the applicant provide calculations for the provided on-site detention volume of 3,980 CF. It's unclear based on the HydroCAD model how the WQV Provided volume was obtained.

e. The R-Tank Approval Letter in Appendix B of Maine DEP's Stormwater Best Management Practices Manual requires review and approval by the manufacturer for the proposed use and sizing of the system. It's recommended the applicant provide approval from the manufacturer.
f. It's recommended the applicant verify pretreatment requirements listed in the R-Tank Approval Letter (Provision #2.B.) in Appendix B of Maine DEP's Stormwater Best Management Practices Manual are met. Furthermore, the total pre-treatment volume required is provided as 18 CF, but the volume provided is not stated. We recommend the applicant confirm the pre-treatment volume provided to verify pre-treatment requirements are met.
g. The 15" storm drain inlet invert from the outlet control structure differs between the HydroCAD model and Sheet C-300. We would recommend the applicant verify the inverts at the outlet control structure.

4. Plan Comments

a. Proposed DMH-6 on Sheet C-300 appears to only have an outlet pipe. We request the applicant verify if the existing storm drains will connect to DMH-6 or if they are to be abandoned.
b. We would recommend the applicant verify the bottom elevations of the proposed trench drain to verify the direction of runoff and tie ins to the proposed drainage system.
c. We would recommend the application provide spot elevations on the east side of the building to ensure runoff is draining away from the building.
d. We would recommend the applicant verify if the gate control boxes will be maintained or demolished and update the civil plans accordingly.
e. We would recommend the applicant include a detail for the diversion manhole.
f. On Sheet C-300, DMH-8 appears to be missing one invert. We would recommend that applicant verify inverts and update the plan accordingly.
g. On Sheet C-300, DMH-3 is shown over an existing combined sewer overflow main with an 18" invert out. However, the existing sewer main is shown as a 15" cement pipe. We recommend the applicant provide detail on how the connection between the 18" invert out from DMH-3 and the 15" cement sewer main will be made.
h. On Sheet C-300, DMH-12 calls for a 15" pipe as the invert out and connects to the diversion manhole. However, the invert in at the diversion manhole calls for a 12" pipe. It is unclear where this change in pipe size occurs on the plan set. We would recommend the applicant provide detail on this change.
i. On Sheet C-403, the catch basin and manhole details do not specify a diameter. Additionally, structure sizes are not seen in the General Notes (Sheet G-001), on the Utility Plan (C-200), or on the Grading & Drainage Plan (C-300). We would recommend the applicant verify structure sizes and update the plans accordingly.

Att. A

45 Union Street

Major Site Plan Application

45 Union Street
Portland, ME 04101

12 Mountfort Street
Portland, ME 04101
800.426.4262

woodardcurran.com

0232191.08

August 2025

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1. PROJECT SUMMARY

On behalf of the property owner and Applicant, East Brown Cow – Kowtower LLC, Woodard & Curran, Inc. (Woodard & Curran) acting as the agent, is submitting a revised Major Site Plan Application for the proposed development at 45 Union Street (the project). The project will include construction of a new 365'0" tall (occupiable, plus rooftop mechanicals), 199,803 GSF mixed-use building, comprising residential and hospitality as its primary uses. A letter authorizing Woodard & Curran to act as the agent on behalf of the Applicant is attached to this section. This application has been prepared in accordance with the City of Portland's Chapter 14, Land Use Code effective December 4, 2024, and the applicable sections of the City of Portland Design and Technical Manuals. The proposed work is shown on the drawings submitted with this application.

1.1 Project Site and Background

The project site is located at 45 Union Street (formerly addressed as 44 Exchange Street) in Portland, Maine, and is identified as Map 32, Parcel ID I040001. A view of the parcel and zoning maps from the City's online GIS viewer are provided in Figures 1-1 and 1-2 and an aerial photo of the project neighborhood is provided in Figure 1-3.



FIGURE 1-1 PROJECT PARCEL TAX MAP (CITY OF PORTLAND PARCELS AND TAX MAP VIEWER)

The project site is located within the B-3 Downtown Business Zone. The site's frontage on Exchange Street is located within the Pedestrian Activities District (PAD) Overlay Zone, and a portion of the site, including the pedestrian walkway on Exchange Street, is located within the Waterfront (Old Port) Historic District. The

current land use at the site is an underutilized surface parking lot with 32 parking spaces. The existing site area is approximately 25,159 square feet. Vehicular access to the site will be provided via an existing curb cut on Union Street through the parcel identified as Map 32, Parcel ID I043001. Although the parcels are deeded to different LLCs, both entities are affiliated through shared parent company ownership, and coordination. A related party authority letter is provided as part of this application to demonstrate authorization for actions involving both properties.



FIGURE 1-2 PROJECT ZONING MAP (CITY OF PORTLAND ZONING MAP VIEWER)

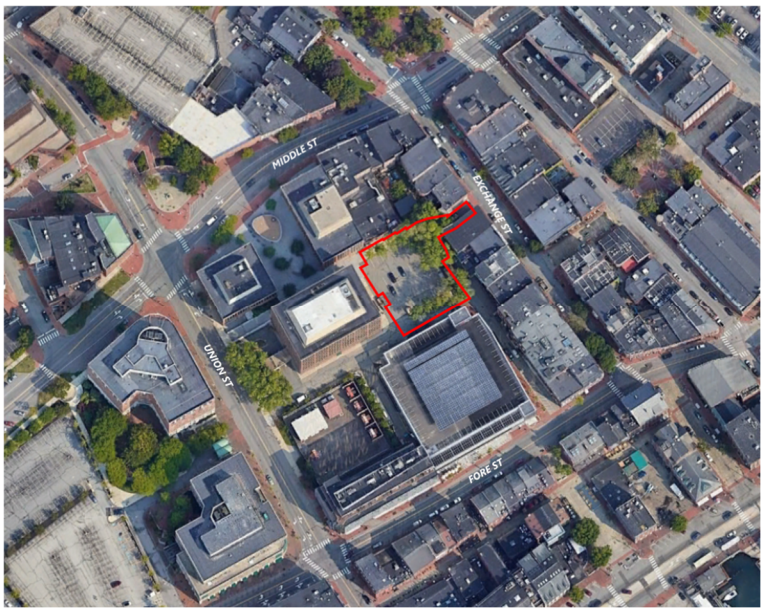


FIGURE 1-3 PROJECT LOCATION MAP (GOOGLE AERIAL PHOTO, IMAGERY SEPTEMBER 2022)

1.2 Project Description

East Brown Cow and its affiliates, including Kowtower LLC, comprise a real estate investment, development and management company that was established in the summer of 1989 by Tim Soley in Portland's Old Port neighborhood as a first-generation family business. Since that time, the portfolio has grown significantly and now comprises over 28 assets in Maine's Greater Portland urban area, including over 1.2 million square feet of mixed-use office, retail, food and beverage, hospitality space and structured parking.

East Brown Cow seeks to create meaningful connections to the surrounding urban fabric through high-quality design, carefully curated uses and tenancies, and a dedication to providing first-class management services. Actively acquiring and redeveloping several high-profile properties in Portland's fast-changing downtown, East Brown Cow is grounded in a longstanding commitment to environmental stewardship, excellence in urban design, historic preservation, activation of open space, and the exploration of new technology.

East Brown Cow acquired the surface parking lot at 45 Union Street as part of a larger portfolio deal in 2009. Originally completed between 1973 and 1979, the 190, 200, and 220 Middle Street buildings were designed to function like a suburban office park - despite being situated at the cultural and economic center of Maine's largest city. East Brown Cow set out to strengthen the connectivity of the site to Portland's urban fabric and create an activated and distinct destination featuring local and national retail, luxury hospitality and residences, award-winning food and beverage offerings, Class A offices, and outdoor experiential uses in Portland's historic Old Port. Intended to be used as a place for all, East Brown Cow hopes for the larger site to be considered a new urban heart for all of Portland.

The 45 Union Street project serves as both the geographic and strategic center of this larger vision for the city block. As such, since 2016 East Brown Cow has been studying and iterating an infill development on this site in collaboration with Safdie Architects and Michael Boucher Landscape Architecture. Throughout that period, the team has consistently envisioned an architecturally significant and slender building with an elevated profile and smaller footprint lifted off the ground, allowing for the creation of engaging public open space at the base of the building and publicly accessible program at the top of the building in the sky lobby. The mixed-use building at 45 Union Street will include 73 1- and 2-bedroom residential condos, 88 hotel rooms, and amenities for visitors and guests alike — including a sky lobby with an observatory, bar and lounge, and check-in/concierge services. Other amenity levels include a restaurant level, residential club level, a wellness level with a pool and gym, and dual arrival lobbies on grade with associated motor court and adjacent café. The observatory, a publicly accessible amenity on the top level, will offer a lens from which to view our city, Casco Bay, and the White Mountains beyond.

The project also envisions a significant investment in associated placemaking including site and landscaping improvements around and under the canopy of the new building. These are intended to enhance the pedestrian experience, tapping into the vibrant physical network of pedestrian pathways between Middle, Exchange, Fore, and Union streets, and drawing the public in to enjoy a series of new outdoor amenities including permanent and semi-permanent public seating options, native trees and vegetation, and outdoor seating for the new café. Parking will be accommodated in the adjacent, and recently renovated, Old Port Square Garage, which is also owned by East Brown Cow.

With the design of both the building and landscape intended to source local materials, evoke quintessentially Maine-based craftsmanship and design motifs, and achieve focused environmental goals,

the project aims to contribute to Portland's evolving urban landscape, both for current and future generations.

1.3 Attachments

- Agent authorization letter (uploaded separately to Documents folder)
- Related Party Authority Letter (uploaded separately to Documents folder)
- Project Plans (uploaded separately to Plans folder)

CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST
Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes in the left-hand column.

**** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE AND WAIVER TABLE SEPARATELY AS NOTED BELOW ****

At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.

GENERAL APPLICATION DOCUMENTS	
Yes NA	**Project Description** ● Cover letter with detailed project description
Yes NA	**Completed Checklist** (this document)
Yes NA	**Evidence of Right, Title, and Interest** ● Deeds, leases, or purchase and sales agreements
Yes **NA**	**Evidence of State or Federal Approvals** ● Permits or letters of non-jurisdiction, if applicable
Yes NA	**Zoning Assessment** (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
Yes NA	**Site Plan Standards Assessment** (see Section 14.6 of the land use code) • Summary of project compliance with site plan standards of the land use code
Yes NA	**Summary of Existing and/or Proposed Easements or Covenants, applicable.** ● Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
Yes NA	**Waiver Requests** (see Waiver Table) ● Written request for waiver describing request and compliance with applicable waiver standards
Yes NA	**Financial Capability** ● Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes NA	**Technical Capability** ● Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR SITE PLAN
STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.
Please submit each document as a separate PDF file.

TRANSPORTATION	
Yes **NA**	**Impact on Surrounding Street Systems (14-14.6.1(A))** ● Describe incremental volume of traffic impacts and mitigation measures. If needed
Yes **NA**	**Access and Circulation (14-14.6.1(B))** Identify and describe the following: ● Site access and internal circulation, including ADA access ● Drive-up features, if applicable ● Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable ● Sidewalks and condition along street frontages and internal walkways ● Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)
Yes **NA**	**Public Transit (14-14.6.1(C)), if applicable** Identify and describe the following: ● Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter
Yes **NA**	**Off-Street Parking (14-14.6.1(D)), if applicable** Identify and describe the following: ● Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code ● Curb cut separation and parking layout (Technical Manual, Section 1) ● Construction details for bicycle racks ● Management plan for snow storage and removal
Yes **NA**	**Transportation Demand Management (TDM) (14-14.6.1(E)), if applicable** ● Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements

ENVIRONMENTAL	
Yes **NA**	**Preservation of Significant Natural Features (14-14.6.2(A)), if applicable** Identify and describe the following: ● High and moderate value waterfowl and wading habitat ● Aquifers (for Casco Bay Islands) ● Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) ● Proposed preservation areas and protection measures ● Documentation from environmental compliance consultants and determinations from applicable state and federal agencies
Yes **NA**	**Landscape Preservation (14-14.6.2(B))** Identify and describe the following: ● Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4) ● Measures to protect existing vegetation during construction
Yes NA	**Site Landscaping and Buffers (14-14.6.2(C))** Identify and describe the following: ● Overall landscaping approach and consistency with standards ● The use of screening and buffering of service areas and between non-residential and residential uses ● Existing Heritage or Feature Trees on site and measures to preserve ● Compliance with street tree requirements
Yes NA	**Water Quality, Stormwater Management, and Erosion Control (14-14.6.2(D))** Identify and describe the following: ● Erosion and sedimentation control plan and measures ● Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater law, as applicable ● Subsurface sanitary sewage disposal and groundwater protection measures

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY	
Yes NA	**Consistency with City Master Plans (14-14.6.3(A))** ● Describe proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA	**Public Safety and Fire Prevention (14-14.6.3(B))** Identify and describe the following: ● Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3) ● Emergency vehicle access ● Consistency with public safety standards (Technical Manual, Section 3)
Yes NA	**Availability and Adequacy of Public Utilities (14-14.6.3(C)) (Technical Manual, Sections 2 & 9)** Identify and describe the following: ● Electrical services, including providing underground services ● Existing and proposed connections for public utilities and required public utility upgrades ● Sewer line connections
SITE DESIGN	
Yes NA	**Massing, Ventilations and Wind Impact (14-14.6.4(A))** Identify and describe the following: ● Wind and ventilation impacts on adjoining structures and/or adjacent public spaces, including wind study, if applicable ● Bulk, location, or height impacts on adjoining structures
Yes NA	**Shadows (14-14.6.4(B)), if applicable** ● Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA	**Snow and Ice Loading (14-14.6.4(C))** ● Describe building design measures to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes **NA**	**View Corridors (14-14.6.4(D)), if applicable** ● Describe any protection of designated view corridors (Portland Design Manual, Appendix. 1)
Yes NA	**Historic Resources (14-14.6.4(E)), if applicable** Identify and describe the following: ● The site's status as a designated landmark, within a historic district or historic landscape district, or within 100 feet of any designated landmark, historic district, or historic landscape district ● Compliance with standards for preservation and documentation of archaeological resources

Yes **NA**	**Exterior Lighting (14-14.6.4(F))** ● Describe how the proposed site lighting will adhere to photometrics requirements as it relates to light trespass and full cutoff fixture design, pursuant to Technical Manual Section 12
Yes **NA**	**Noise and Vibration (14-14.6.4(G))** ● Provide data on noise levels for HVAC and other mechanical equipment, such as design specifications, to demonstrate consistency with state and federal noise emissions requirements as well as City code
Yes **NA**	**Signage and Wayfinding (14-14.6.4(H)), if applicable** ● Provide signage plan showing the location, dimensions, height and setback of all existing and proposed signs ● Provide drawings of all commercial and directional signage on site
Yes **NA**	**Zone-Related Design Standards (14-14.6.4(I))** ● Address any applicable design review standards by zone, including compliance with Design Manual

MAJOR SITE PLAN
DRAWINGS CHECKLIST

Please upload the following DRAWINGS with the listed details into e-Plan as separate pdfs.

All drawings must be submitted in a 24 x 36 sheet size.

BOUNDARY SURVEY (stamped by a Maine Licensed Surveyor and drawn as per Technical Manual Sec. 13)

SITE PLAN(s) (stamped by a Maine Licensed Professional Engineer) including:

All sheets – Include a title block with project title and the following information:

- Project street address
- Name and address of property owner & applicant
- Licensed design professional, incl firm that produced plans
- North arrow
- Date of preparation and revision history block
- Tax parcel (chart, block, and lot) number

Existing Conditions Plan with the following:

- Existing structures, with distance from primary building façade(s) to the property line
- Approximate location of structures on abutting properties
- All streets and intersections adjacent to the site
- Existing driveways, pedestrian ways, and bicycle infrastructure, including dimensions and materials
- Existing public transit infrastructure
- Existing vehicle & bicycle parking areas
- Existing utilities on site and within adjacent rights-of-way
- Existing grades (two-foot contours preferred)
- Location of water courses, wetlands, and vegetation, or other significant natural features
- Existing soil conditions and location of test pits and borings
- Zoning boundary lines, including overlays
- Location of all existing easements and rights-of-way

Proposed Site Plan with the following:

- Proposed structures, including distance from primary building façade(s) to property lines
- Ground floor area, and finished floor elevations for all buildings
- Any proposed geometric modifications to streets and intersections adjacent to site
- Location, dimensions and materials of all proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- Location and dimensions of proposed loading areas, including turning templates
- Proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications
- Location of all snow storage areas
- Exterior lighting (please see Technical Manual Sec. 12 for photometrics requirements)

- Location of fire hydrants
- Location of solid waste management receptacles
- Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable
- Location of proposed easements and rights-of-way, including dimensions
- Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed

UTILITY PLAN including:

- Proposed electrical infrastructure
- Location, sizing and directional flows of all proposed sewer and stormwater infrastructure
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

GRADING AND DRAINAGE PLAN including:

- Proposed grades
- Proposed stormwater management measures meeting Technical Manual (Section 5) standards
- Any proposed alteration of a watercourse or wetlands
- Any groundwater protection measures
- Proposed buffers and preservation measures for wetlands or significant natural features

LANDSCAPE PLAN including:

- Existing vegetation to be preserved and preservation measures
- Proposed landscaping, screening, and street trees, including caliper widths for trees
- Planting schedule, including street trees

ARCHITECTURAL PLANS AND RENDERINGS including:

- Exterior building elevations, color renderings, illustrations of all sides
- Axonometric and street-level views for structures greater than three stories in height
- Provide context drawings, if applicable (Design Manual, page 1)
- Floor plans

CONSTRUCTION MANAGEMENT PLAN including:

- Specifics on traffic control, sidewalk sheds, and pedestrian rerouting
- Include a drawing and written narrative

OTHER

- Details and cross-sections, as necessary

City of Portland Site Plan Form

Part 1. Project Description & Site Information			
Application type:	Major Site Plan	Submission type:	Initial Submission
	Address:	CBL number:	Lot area (square feet):
Main property:	45 Union Street	032 I040001	25,397
Additional properties (if applicable):			
Project description:			

Type(s) of work: (Select which type(s) of work apply from the dropdown list. If not applicable, select N/A.)	
New residential construction or additions	
New non-residential construction or additions	
Creation of disturbed area	1,000 square feet - 3 acres
Creation of impervious surface	1,000 square feet - 1 acre
Construction or paving of parking	N/A
Change of use	N/A
Does this project include State or Federal funding, permits, review, or sponsorship?	☐ Yes ☐ No
If yes, list applicable entities:	

Associated applications: (Check all that apply)							
	Army Corps of Engineers General Permit		Maine DEP- GC Permit		Subdivision		
	Floodplain Development Permit		Maine DEP - NRPA	✔	Traffic Movement Permit		
	Harbor Commission Construction Permit	✔	Site Location of Development		Zoning Amendment		
			Stormwater Quality		Other:		

Part 2. Use Information				Total Existing	Total Proposed	Net New
Residential	General	Residential floor area (square feet)		0	63,992	63,992
		For Group Living uses with no dwelling units, list the number of rooming units				
		Dwelling units		0	73	73
		Ownership units		0	73	73
		Rental units		0	0	
	Bedrooms	Studio units		0	0	
		1-bedroom units		0	45	45
		2-bedroom units		0	28	28
		3-bedroom units		0	0	
		4+ bedroom units		0	0	
	Affordability	Market-rate units		0	73	73
			% AMI			
			% AMI			
			% AMI			
Non-Residential		Commercial/Service floor area (square feet)		0	90,146	90,146
		Industrial floor area (square feet)		0	0	
		Institutional floor area (square feet)		0	0	
		Other floor area (square feet)		0	0	

Part 3. Inclusionary Zoning			Total Existing	Total Proposed	Net New
Inclusionary Zoning (IZ) dwelling units			0	0	
Ownership IZ units		% AMI			
Rental IZ units		% AMI			
Bedrooms	Studio IZ units				
	1-bedroom IZ units				
	2-bedroom IZ units				
	3-bedroom IZ units				
	4-bedroom IZ units				

IZ fee-in-lieu | $ 182,830.00 for 73 of the required 73 IZ dwelling units

City of Portland Site Plan Form

Part 4. Building & Site Metrics	Total Existing	Total Proposed	Net New
Number of buildings	0	1	1
Building floor area (square feet)	0		
Building footprint (square feet)	0	5,900	5,900
Street trees			
Automobile parking spaces	26	0	-26
ADA-accessible parking spaces	0	0	
Compact parking spaces	0	0	
Level 2 Electric Vehicle (EV) charging spaces	0	0	
Level 3 Electric Vehicle (EV) charging spaces	0	0	
Bicycle parking spaces	0	42	42
Number of water service connections	0	3	3
Number of sewer service connections	0	1	1
Impervious area (square feet)	36,910	37,313	403
New developed area (square feet)		37313	
Non-roof redeveloped impervious area (square feet)		14505	
Limits of disturbance (square feet)		38154	
Alteration to wetlands or watercourses (square feet)		0	

Part 5. Zoning (You can use this link to view the zoning for your property)					
Base Zone	B-3		Base Zone #2 (if applicable)		
Local Historic District?	Portland Waterfront	Overlay Zone #1 (if applicable)	Select from List	Overlay Zone #2 (if applicable)	

Zoning Standards – Project Site	B-3 Requirements	Proposed	Requirements	Proposed
Lot area (square feet)	none	25,397		
Street frontage, Minimum (feet)	none	N/A		
Lot coverage, Maximum (%)	none	N/A		
Landscaped open space ratio, Minimum (%)	none	N/A		
Build-to Zone (feet)	0-5	N/A		
Build-to percentage, Minimum (%)	100.0	§7.6.5.B.3 Exception		
Blank wall area, Maximum (feet)	20.0	§7.6.5.B.3 Exception		
Additional standard:				

Zoning Standards by Building (Use Extra Sheets if >2 Buildings)	Building #1 Zone Requirements	Proposed	Building #2 Zone Requirements	Proposed
Front setback, Minimum/Maximum (feet)	none	N/A		
Rear setback, Minimum (feet)	none	N/A		
Side setback, Minimum (feet)	none	N/A		
Structure height, Maximum (feet)	325	325		
Additional standard:				

Affordable Housing Density Bonuses (if applicable)	Maximum Allowable with Bonus	Proposed
Density, Maximum (x base)		
Height, Maximum (feet)		

If Needed, Explanatory Text Can Be Provided Below

The proposed building is not located within a Historic District, however a portion of the site (the pedestrian walkway on Exchange Street) is located within the Waterfront (Old Port) Historic District. Additionally, the project intends to pay the 2025 Inclusionary Zoning Fee in-lieu of $4,831 per guest room.

3. CONSISTENCY WITH CITY OF PORTLAND SITE PLAN REVIEW STANDARDS

The project design has considered the Site Plan Review Standards as outlined in Section 13.6 of the City of Portland Land Use Code. This section describes the applicable standards and how the project proposes to meet them.

13.6.1 Transportation Standards

It is anticipated that a Traffic Movement Permit (TMP) will be required for the project. A Scoping Document is currently being prepared by traffic consultant, Barton & Loguidice, which will be submitted to the City for review. Through coordination with the City, the Scoping Document will be refined and the area of study determined. Following that coordination, a Traffic Impact Study will be completed and submitted to the City for review. Additional information on how the project meets the Transportation Standards of the Land Use Code is provided in the following sections.

13.6.1 (A) Impact on Surrounding Street Systems

The proposed facility is not anticipated to have an impact on the surrounding street systems. No new curb cuts are proposed as part of the project. Vehicular access to 45 Union Street will be through the use of the existing curb cut into the site from Union Street.

13.6.1 (B) Access and Circulation

The primary vehicular access to and from the building will be from an existing curb cut on Union Street. The existing alleyway between the CMP substation and Old Port Square Garage will be utilized for emergency vehicle turning movements. Vehicle turning movements for a passenger vehicle, fire truck, ambulance, and SU-3 are shown on drawings C-1 through C-4, included as attachments to this section.

Pedestrian access will be provided via a walkway from Union Street, which will be ADA compliant. In addition, two ADA compliant ramps will provide pedestrian access to the building from Fore Street/Patton Court, Exchange Street, and the Old Port Square Garage. Public elevator access during normal business hours inside 190 and 200 Middle Street will provide convenient ADA access to the site and Middle Street beyond.

13.6.1 (C) Public Transit Access

The proposed project is located near numerous Greater Portland METRO Transit routes, including Greater Portland METRO Local Services 8 and 9A on Union Street, South Portland Bus Route 24A on Union Street, and is within walking distance from Congress Street, where Greater Portland METRO Local Service Route 1, 2, 5, 7, 9B, and METRO BREEZ Express Service are all available.

13.6.1 (D) Parking / Bicycles / Snow Management

No off-street parking spaces are required as part of the project, and no new parking is proposed, consistent with the requirements of the Land Use Code. Parking for the project will be provided in the existing Old Port Square Garage adjacent to the site and with vehicular access via the north side of the building and on Fore Street.

The Land Use Code requires 1 bicycle parking space to be provided for every 2 dwelling units. Based on the current programming of 73 residential units, 37 bicycle parking spaces are required. An additional 6 bicycle parking spaces are required based on the combined floor area of the restaurant, sky bar, and café, which totals approximately 8,200 square feet combined. For restaurant spaces greater than 5,000 square feet, one bicycle space per 1,500 square feet is required. Therefore, the total anticipated bicycle parking spaces required for the project is 43 spaces. The applicant intends to provide bicycle parking for all 43 required spaces in outdoor spaces on the site and on adjacent commonly owned properties. Final locations of bicycle parking spaces are to be determined based upon further coordination with the City.

Snow removal on-site will be managed using a snow melter. Accumulated snow from driveways, walkways, and other paved surfaces will be collected and transported to a designated snow melting area an adjacent commonly owned. The snow melter will rapidly convert snow to water, which will then be directed to the site drainage system in accordance with applicable stormwater management requirements. Use of the snow melter reduces the need for off-site snow storage or hauling and minimizes the potential for large stockpiles that could impact visibility, parking, or pedestrian access.

13.6.1 (E) Transportation Demand Management (TDM)

Transportation Demand Management (TDM) Plans are required for all commercial, institutional, or mixed-use developments of 50,000 square feet or more in total floor area. A TDM Plan has been prepared for the project and is included as an attachment to this section.

13.6.2 Environmental Quality Standards

13.6.2 (A) Preservation of Significant Natural Features

The proposed project will replace an existing paved parking lot. There are no existing significant natural features within the project area.

A Low Impact Design Analysis was completed for the project using the City's scoring tool. The project achieves 81 total points awarded, exceeding the minimum of 80 points required for approval of LID strategies and techniques. There are no natural resources present on the site, and the site has been previously developed. Additionally, no new parking is proposed as part of the project. Refer to the attached LID Scoring Tool, and Stormwater Management Report, for more information on the project's site design and stormwater improvements.

13.6.2 (B) Site Landscaping & Buffers

A site landscaping plan is included as part of the submitted project plans.

Per the City's Site Plan standard, a minimum of one shade tree or six plantings is required per 30 linear feet of property frontages as measured along the property line. The site's frontage along Exchange Street is approximately 24 linear feet, requiring 1 tree or groups of plantings. As shown on the landscape plans, this quantity will be exceeded with the trees and plantings proposed for the interior of the site.

13.6.2 (C) Water Quality, Stormwater Management, and Erosion Control

Stormwater quality treatment and management will be provided, as described in the attached Stormwater Management Report. Erosion and sediment controls will be implemented as shown on the drawings and as described in the Stormwater Management Report and Construction Management Plan.

13.6.3 Public Infrastructure and Community Safety Standards

13.6.3 (A) Consistency with City Master Plans

The project will not result in inconsistencies with City master plans. Consistent with the City's Plan 2030, the project will contribute to the City's vibrant and growing economy by providing a unique lodging and living experience that is in walking distance of the Arts District and located within the Old Port. The project will support the creation of new jobs, transforming an existing surface parking lot into a vibrant residential building and hotel, with a publicly accessible observatory, sky lobby, bar/lounge, restaurant, café, wellness center and meeting space and will provide pedestrian connectivity between Union Street, Fore Street/Patton Court, and Exchange Street through a revitalized courtyard and walkways. One of the City's core goals in its Plan 2030 is the creation of housing for all income levels and household sizes city-wide. Consistent with that goal, the project will include 73 new 1- and 2-bedroom residential units. Further, in Portland's Plan 2030, and as demonstrated in the recently adopted ReCode, the City has encouraged increased density, as high-density areas can be more environmentally friendly, promote transit use, and can benefit the health of a community by providing customers for local businesses and opportunities for social interaction. Consistent with the City's Plan 2030, the project will bolster Portland's downtown as a predominant locus of activity and achieve the City's urban design goals of providing excellence in architecture through thoughtful and high-quality design.

13.6.3 (B) Public Safety and Fire Protection

Emergency vehicles will access the site through the existing curb cut on Union Street and will use the existing alleyway between the CMP substation and Fore Street parking garage as a turnaround area. The applicant held meetings with Portland Fire Department in 2019 to review and discuss this approach and anticipate revisiting with Portland Fire Department as part of this Site Plan application review. A Fire & Life Safety Strategy Narrative has been prepared for the project by Arup and is included as an attachment to this section.

13.6.3 (C) Public Utilities

Utilities servicing the new building will include natural gas, domestic water and fire protection, sanitary sewer, electric, communications, and stormwater. As part of this project, coordination and communication with various agencies is being conducted to confirm prior assumptions. Ability to serve letters will be provided when they are received. Existing and proposed utilities are identified on the Utility Master Plan included in the attached drawings.

<u>Water</u>

A 6-inch domestic water service and two 8-inch fire protection services are proposed for this project. Per District records, existing water mains are present on Union Street, Exchange Street, and Patton Court. Due

to the age of the water mains on Union Street and Exchange Street, the proposed primary domestic water service and fire protection service connections will come from Union Street, including a new fire hydrant at the Union Street project driveway entrance consistent with an earlier request of Portland Fire Department. The redundant fire protection service will come from Exchange Street.

Sanitary Sewer

A 6-inch sewer service and 4-inch sewer service and external grease trap are proposed. A City-owned combined sanitary sewer/stormwater drainage is present on-site and discharges via gravity through a 15" cement pipe from 200 Middle Street beneath the Old Port Square Garage to Fore Street. A 24" vitrified clay sewer main in Exchange Street, and 18" asbestos cement sewer main in Union Street and 8" PVC sewer service in Patton Court is also located in the projected vicinity. The proposed sewer services will connect to the existing 15" cement pipe from 200 Middle Street. The existing sewer service from 188 Middle Street to Exchange will be impacted by the proposed building foundation and will be relocated for construction of the building.

Natural Gas

Natural gas mains are present in Union Street and Patton Court. There is a relatively new 2" service on Patton Court that previously serviced the Old Port Square Garage, which Unitil indicated is in good condition with good pressure and currently does not serve any users. Natural gas service for the existing garage was relocated in 2021, along a service alley west of the garage through the driveway to Union Street. Unitil advised that this new 4" gas main is in good condition with 56-pound operating pressure and is the optimal service to connect to for the project. A gas meter will need to be installed on the building with clearance from building features per Unitil requirements. The service connection location, size, and gas meter location on the building will be coordinated with Until.

Communications

Spectrum, First Light, and Consolidated Communications are internet service and telecommunications providers in the project vicinity. Spectrum has below-grade service in the middle of Union Street and on the west side of Exchange Street. First Light has below-grade service in the middle of Union Street but no infrastructure in Exchange Street. Consolidated Communications has below-grade service on the west side of Exchange Street.

Spectrum and First Light each allow connection below grade from building-to-building for telecommunication service, similar to how 200 and 220 Middle Street are fed. It is anticipated that the preferred option for both utilities is to provide service connection from the adjacent 200 Middle Street to the new building. Consolidated Communications does not allow connection building-to-building.

Electric

Existing secondary electrical service exists on the project site for site lighting. It is anticipated that existing site lighting will be maintained until building construction. The existing electrical service will not be sufficient to service the project. The applicant has been coordinating with CMP to establish how electrical service would be provided. CMP indicated that the site is likely able to be served from existing electrical services in the alley by the Hyatt Place Portland Downtown - Old Port Square hotel. Further coordination will be necessary for electrical conduit and transformer position and sizing as the design progresses.

Stormwater

Refer to the attached stormwater memo.

13.6.4 Site Design Standards

13.6.4 (A) Massing, Ventilation, Wind, and Heat impact

The proposed building height and massing are consistent with the requirements of the City's Land Use Code and are not anticipated to result in health or safety concerns related to reduced ventilation for abutting structures or changes to the existing wind climate that could create unsafe conditions for users of the site or adjacent public areas.

13.6.4 (B) Shadow

A shadow study is currently being developed and will be provided to the City for review as part of the Major Site Plan process.

13.6.4 (C) Snow and Ice Loading

The building design incorporates measures intended to mitigate snow and ice accumulation, thereby supporting the safety and comfort of pedestrians and neighboring uses throughout the year.

13.6.4 (D) View Corridors

The project is sited on an existing surface parking lot and is not located directly on any street frontages included on the City's View Corridor Protection Plan. However, based on feedback provided by the City during the pre-application meeting, renderings have been developed to show views of the building from the following public spaces: Post Office Park, Lobsterman Park, and Portland Harbor. A package of the renderings has been prepared for the project by Safdie Architects and is included as an attachment to this section.

13.6.4 (E) Historic Resources

A portion of the project site, specifically the pedestrian walkway connecting to Exchange Street, is located within the Waterfront (Old Port) Historic District. The proposed building itself will be located outside of the district boundary. Based on discussions during the pre-application meeting with the City, we understand that only the elements of the project located within the Historic District—namely, the pedestrian walkway—will be subject to Historic Preservation review. All proposed materials and finishes within the Historic District will be selected and detailed in accordance with the City's Historic Preservation standards to maintain compatibility with the surrounding historic context.



FIGURE 3-1 PORTION OF PROJECT SITE IN WATERFRONT (OLD PORT) HISTORIC DISTRICT

13.6.4 (F) Exterior Lighting

Exterior lighting, including site and architectural lighting, will be designed in accordance with the requirements of the City's Land Use Code, and Section 8, Lighting Standards, of the Technical Manual. A photometric plan and lighting details for the site are currently under development and will be submitted to the City for review as part of the Site Plan process.

13.6.4 (G) Noise and Vibration

All heating, ventilation, and air condition equipment (HVAC), air handling units (AHU), emergency generators, and similar equipment will meet applicable state and federal emissions requirements. HVAC and other similar equipment will be located on mechanical floors interior to the building and on the roof. Rooftop equipment will be set back and screened as required. A Heating, Ventilation, and Air Conditioning Basis of Design Narrative has been prepared for the project by Cosentini and is included as an attachment to this section.

13.6.4 (H) Signage and Wayfinding

Sign permit applications will be submitted under separate cover. The size, scale, proportions, design, materials, placement, quantity, and source and intensity of illumination shall be designed to complement and enhance the architectural attributes of the proposed building and site. The primary vehicular entrance to the site is from Union Street. Pedestrian wayfinding to the site will be provided both from Union Street and Exchange Street, as well as via an existing stairway from the plaza area to the northwest of the site on Middle Street.

13.6.4 (I) Design Standards

The project is being designed in accordance with the City of Portland Design Manual to ensure that building and site design contribute to and enhance the goals and policies for the B-3 Downtown Business Zone.

3.1 Construction Management Plan

Consigli Construction will be the Construction Manager for the project. A Construction Management Plan is attached.

3.2 Attachments

- Transportation Demand Management (TDM) Plan (uploaded separately to Documents folder)
- Vehicle Turning Movement Figures (uploaded separately to Drawings folder)
- Low-Impact Design (LID) Scoring (uploaded separately to Documents folder)
- Stormwater Management Report (uploaded separately to Documents folder)
- Fire & Life Safety Strategy Narrative (uploaded separately to Documents folder)
- Architectural Renderings (uploaded separately to Drawings folder)
- Heating, Ventilation, & Air Conditioning Basis of Design Narrative (uploaded separately to Documents folder)
- Construction Management Plan (uploaded separately to Documents folder)

For Press Inquiries, Please Contact:
Jessica James
Longfellow Communications

Email:
jessica@longfellowcomms.com

woodardcurran.com

2. PERMITTING AND ZONING

This application for a Major Site Plan for the proposed work will meet the Site Plan and Zoning requirements for an application as outlined in the City of Portland Land Use Code.

2.1 Site Plan

The proposed project work will require a Major Site Plan Approval due to new construction of greater than 10,000 square feet. The project has been designed to meet the applicable site plan review standards, as outlined in Section 3 of this report. The Major Site Plan Checklist has been provided as a separate attachment with this application.

2.2 Zoning

The project site is located within the B-3 Downtown Business Zone. Based on the timing of the filing of the initial application, the project has been designed to comply with the City of Portland Land Use Code (ReCode), effective December 4, 2024.

The site's frontage on Exchange Street is located within the Pedestrian Activities District (PAD) Overlay Zone, and a portion of the site, including the pedestrian walkway on Exchange Street, is located within the Waterfront (Old Port) Historic District. The current land use at the site is a surface parking lot.

The Site Plan Data Sheet demonstrates the project's compliance with dimensional requirements and is provided as a separate attachment with this application. The site is not located within a flood zone and will not be subject to the City's Shoreland and Flood Plain Management regulations.

2.2.1 B-3 Downtown Business Zone

The property is in the B-3 Downtown Business Zone and meets all applicable standards for this section. Per Table 6-C of the Land Use Code, the proposed uses of hotel, residential, and restaurant are all permitted uses within the B-3 zone.

2.2.2 Pedestrian Activities District (PAD) Overlay Zone

The requirements of the PAD Overlay Zone are outlined in section 8.5 of the City of Portland Land Use Code. The intent of the PAD Overlay Zone is to ensure that key areas within the City are maintained as active, walkable, and pedestrian-oriented activity centers. The site's frontage along Exchange Street is located within the PAD Overlay Zone (see Figure 2-1 below).

The current site frontage along Exchange Street is utilized as a pedestrian walkway to provide access from Exchange Street to the site, which the project is proposing to maintain and enhance via landscape, hardscape, and signage/wayfinding.

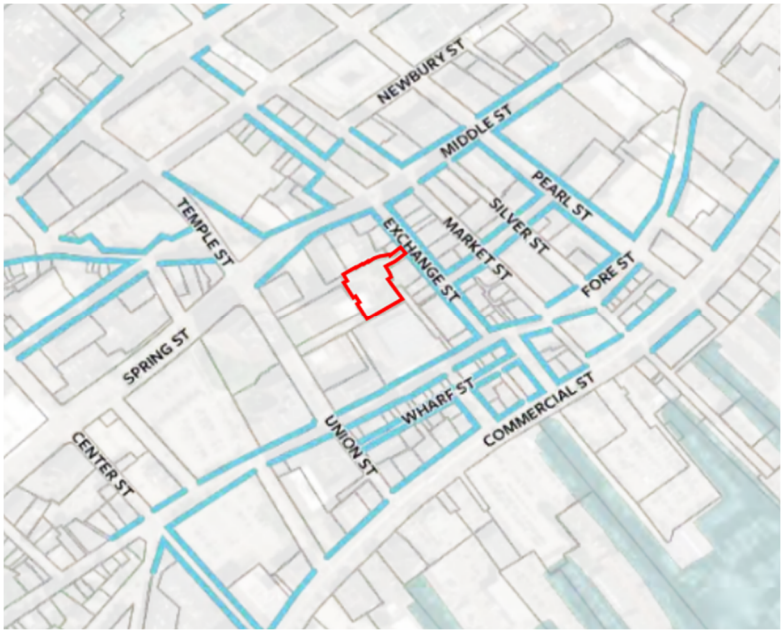


FIGURE 2-1 PEDESTRIAN ACTIVITIES DISTRICT (PAD) OVERLAY MAP

2.2.3 Waterfront (Old Port) Historic District

A portion of the site, the pedestrian walkway into the site from Exchange Street, is located within the Waterfront (Old Port) Historic District (see Figure 2-2). The proposed building footprint will not be located within the boundaries of the Historic District.

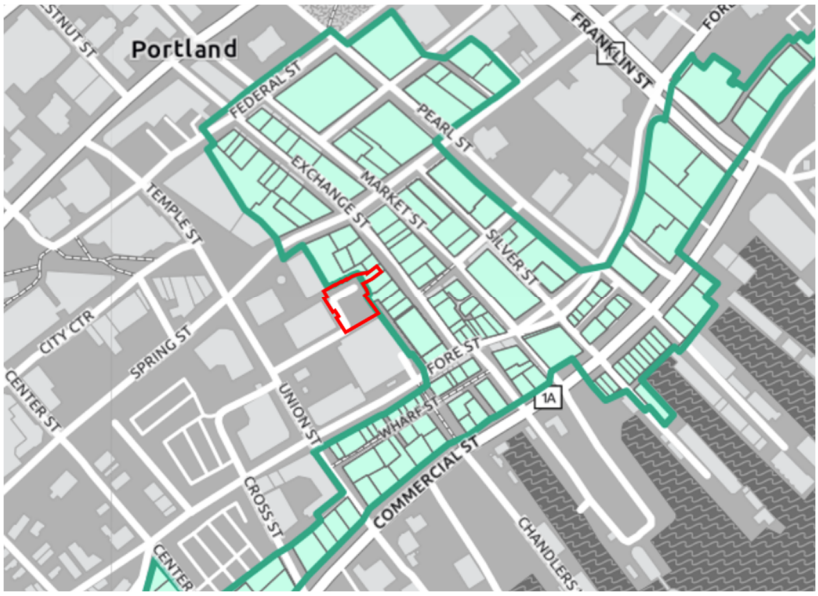


FIGURE 2-2 WATERFRONT (OLD PORT) HISTORIC DISTRICT MAP

2.2.3.1 Dimensional Requirements

The site meets the dimensional requirements of the B-3 Business Zone as described below.

Setbacks

There are no setback requirements for the project. Section 7.5.3 of the Land Use Code requires all portions of buildings above 125 feet in height provide a minimum of 35 feet of setback from side and rear lot lines when abutting another tower. The tallest adjacent building to the proposed 45 Union Street is 200 Middle Street, which has a building height of 123'-0", measured to the roof beams of the top occupied level. Therefore, the setback criteria are not applicable.

Build-to zone

The required build-to zone in zoning district B-3 is 0-5 feet. Due to the irregularly shaped lot and the location of the proposed building in an urban infill lot, the building is not located directly on any street frontage. Per the Land Use Code Section 7.6.5.B.3, the Planning Board may approve a different build-to zone for irregularly shaped lots provided the build-to zone is met to the maximum extent practicable. The building has been placed in a location that is as close to Exchange Street as possible, while meeting all other applicable dimensional and fire separation code requirements.

Build-to percentage

The required build-to percentage in B-3 is 100%. Due to the irregularly shaped lot and the location of the proposed building in an urban infill lot, the building is not located directly on any street frontage. As noted above, the Planning Board can approve a different built-to zone for this irregularly shaped parcel. The building façade will be approximately parallel to Exchange Street, so 100% of the façade will be within the built-to zone approved by the Planning Board.

Building length as a percentage of street frontage

In the B-3 zone, lots up to 50 feet in frontage require building length to be 80% of the street frontage; lots greater than 50 feet in length require building length to be 60% of the street frontage. Due to the irregularly shaped lot and the location of the proposed building in an urban infill lot, the building is not located directly on any street frontage. Therefore, this requirement does not apply.

Blank wall area

In the B-3 zone, the maximum blank wall area is 20 feet. In accordance with the Land Use Code, no section of the contiguous building façade without fenestration, doors, change in wall plane, or other architectural or material embellishment will be greater than 20 feet in the horizontal linear dimension.

Building Height and Architectural Cap

The B-3 Zone Height Map included in the Land Use Code allows a maximum building height of 325 feet (measured to top of occupiable floor) on the site, plus the potential for an additional height of up to 40 feet for the purpose of providing a distinctive architectural cap (Section 7.5.3.E.1). Furthermore, creating habitable area within the architectural cap should only be allowed if a minimum of 50% of the area is devoted exclusively to one or more uses open to the public such as a restaurant, atrium, or viewing area

(Section 7.5.3.E.2.A). The proposed building design includes a distinctive architectural cap at level 29 and 30 that will both add visual interest to the Portland skyline and is integral to the overall building design and program. Consistent with Section 7.5.3.E.2.A of the Land Use Code, the architectural cap includes publicly accessible spaces such as a restaurant level and sky lobby that comprises a bar and lounge and observatory. These uses make up significantly greater than 50% of the habitable floor area of the architectural cap – 86.90% to be precise. See the table below for full public area calculations. As permitted by Section 7.6.1.E of the Land Use Code, rooftop appurtenances will be located above the occupied architectural cap and will be adequately screened in accordance with City requirements.

Level	Total Area (NSF)	Percent Dedicated to Public Use
29	5,037	100% (5,037 NSF)
30	4,952	73.57% (3,643 NSF)
Architectural Cap Total Area Dedicated to Public Use:		86.90% (8,680 NSF)

FIGURE 2-3 ARCHITECTURAL CAP PUBLIC AREA TABLE

2.2.3.2 Parking

No new parking is proposed as part of this project; parking will be provided in the adjacent Old Port Square Garage for guests and residents.

2.2.3.3 Loading

Loading activities will be accommodated at the front of the building, with trucks entering the site from Union Street via the existing driveway. During loading and unloading, vehicles will stage in front of the building, and materials will be brought inside through the side door, as shown on the submitted site plans. Per Section 18.2, Off-Street Loading, of the Land Use Code, hotels with a gross floor area over 100,000 square feet must provide at least one loading bay or berth. The proposed hotel includes 37,501 net square feet of hotel space; therefore, no loading bay or berth is required.

2.2.3.4 Signage

Signage will comply with the requirements of the Land Use Code. Refer to section 13.6.4 (H) of this narrative for additional information.

2.3 Waiver Requests

There are no waivers being requested at this time. A copy of the waiver table is provided as a separate attachment for record.

2.4 Evidence of State and/or Federal Permits

Due to the Site's proximity to the Portland Jetport, submittal of Notice of Proposed Construction or Alteration (Form 7460-1) filings to the Federal Aviation Administration (FAA) will be required prior to construction. No other state or federal permits are expected to be required.

2.5 Evidence of Financial Capability

Attached is a memo from East Brown Cow - Kowtower LLC providing confirmation of the financial capacity for the completion of this project.

2.6 Evidence of Right, Title, and Interest

A copy of the property's deed documentation is attached.

2.7 Evidence of Technical Capability

The project is being developed by a team with experience in site and building development in the City of Portland, and throughout the State of Maine. Resumes of key project team members are available upon request.

Woodard & Curran has extensive experience with design for site development projects and specifically on the peninsula within the City of Portland. Woodard & Curran, a 1,300-person Portland-based firm, has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, stormwater, and construction management services.

Safdie Architects is an architectural design studio driven by a spirit of innovation, and guided by the principles that architecture should uplift humanity, celebrate nature, and aspire to timelessness. Recently completed projects by Safdie Architects include the iconic Marina Bay Sands Integrated Resort in Singapore and the Crystal Bridges Museum of American Art in Bentonville, heralded for its intertwining of art, architecture, and nature. Safdie Architects' current projects in New England include a new village resort at Killington, Vermont. Safdie Architects is based in Boston, with branch offices in Singapore, Jerusalem, Shanghai, and Toronto.

Michael Boucher Landscape Architecture, based in Freeport Maine, has over 30 years' experience providing Landscape Architecture services including permitting, grading, landscape design and construction administration services throughout the US and internationally.

Consigli Construction has also been selected as the construction manager for the project. Consigli Construction is an 1,800-employee firm with broad experience in Portland and beyond. Their project portfolio includes the ground-up construction of Hyatt Place Portland Old Port and the renovation of the Fore Street Garage.

2.8 Attachments

- Major Site Plan Checklist (uploaded separately to Documents folder)
- Site Plan Data Sheet (uploaded separately to Documents folder)
- Waiver Table (uploaded separately to Documents folder)
- Financial Capacity Memo (uploaded separately to Documents folder)

- Property Deeds (uploaded separately to Documents folder)
- Boundary Survey (uploaded separately to Plans folder)

EAST BROWN COW™

SUBJECT

12.2.2024

East Brown Cow - Kowtower LLC Agent Authorization Letter

45 Union Street, Portland, ME

To Whom It May Concern:

Woodard & Curran, Inc. will be acting as the agent on behalf of East Brown Cow - Kowtower LLC in applying for permitting approvals associated with the 45 Union Street project.

Please contact me if you have any questions.

Sincerely,

Jacob Taylor Soley, Director of Development

East Brown Cow - Kowtower LLC

100 Commercial Street — Suite 300 Portland, ME 04101
eastbrowncow.com

T: 207.775.2252
E: info@eastbrowncow.com

Book 35559, Page 67
4/4/2019 10:27 a.m.

Att. G

SHORT FORM QUITCLAIM DEED WITHOUT COVENANT

DLN: 1001940053979

COW PLAZA 1 LLC, a Maine limited liability company with a place of business at Portland, Maine ("Grantor"), FOR CONSIDERATION PAID, grants to **KOWTOWER LLC**, a Maine limited liability company with a mailing address of 100 Commercial Street, Portland, Maine 04101 ("Grantee"), certain real property, together with any improvements thereon, located in the City of Portland, Cumberland County, Maine and more particularly described on Exhibit A attached hereto and made a part hereof.

Being a portion of the premises conveyed to the Grantor by deed from GRE Congress Canal LLC dated December 22, 2009 and recorded in the Cumberland County Registry of Deeds in Book 27480, Page 310.

IN WITNESS WHEREOF, Cow Plaza 1 LLC has caused this instrument to be executed by J. Tim Soley, Manager of East Brown Cow Holdings II LLC, the Sole Member of Cow Plaza 1 LLC thereunto duly authorized, as of this 3rd day of April, 2019.

WITNESS:

Name:

COW PLAZA 1 LLC

By: East Brown Cow Holdings II LLC
Its Sole Member

By: _____
J. Tim Soley
Its Manager

State of Maine
County of Cumberland, ss.

April 2nd, 2019

Personally appeared before me the above named J. Tim Soley, Manager of East Brown Cow Holdings II LLC, the Sole Member of Cow Plaza 1 LLC, as aforesaid, and acknowledged the above instrument to be his free act and deed in his said capacity and the free act and deed of said Cow Plaza 1 LLC.

MARINA WAISMAN
NOTARY PUBLIC
CUMBERLAND COUNTY
MAINE
MY COMMISSION EXPIRES JUNE 9, 2023

Before me,

Name: Marina Waisman
Notary Public / Attorney at Law

1

EXHIBIT A

A certain lot or parcel of land, with the buildings and other improvements thereon, located on the southwesterly side of Exchange Street, in the City of Portland, County of Cumberland, State of Maine, being bound and described as follows:

BEGINNING on the southwesterly side of Exchange Street at the easterly corner of land now or formerly (N/F) of Fitzgibbons Family Trust, as described in Book 26232, Page 250, recorded in the Cumberland County Registry of Deeds;

THENCE: S 37°49'46" E, along said Exchange Street, 23.55', to the northerly corner of land N/F of 44 Exchange Street, LLC, as described in Book 25643, Page 195;

THENCE: S 51°16'00" W, along said 44 Exchange Street, LLC, 43.00', to a point;

THENCE: S 60°12'30" W, along said 44 Exchange Street, LLC, 37.84', to the westerly corner of said 44 Exchange Street, LLC;

THENCE: S 37°23'00" E, along said 44 Exchange Street, LLC, 26.57', to a point;

THENCE: S 13°55'30" E, along said 44 Exchange Street, LLC, 19.71', to a point;

THENCE: S 59°00'30" W, along said 44 Exchange Street, LLC, 12.59', to a point;

THENCE: S 37°00'30" E, along said 44 Exchange Street, LLC, 26.00', to the northwesterly end of Patton Court;

THENCE: continuing S 37°00'30" E, along said Patton Court, 57.94', to the northerly corner of land of Cow Plaza Garage LLC, as described in Book 27480, Page 325;

THENCE: S 59°56'30" W, along said Cow Plaza Garage LLC, 139.44', to a point;

THENCE: N 29°47'06" W, through land of the Grantor, 64.50', to a point;

THENCE: N 60°12'54" E, through land of said Grantor, 10.00', to a point;

THENCE: N 29°47'06" W, through land of said Grantor, 24.00', to a point;

THENCE: S 60°12'54" W, through land of said Grantor, 10.00', to a point;

THENCE: N 29°47'06" W, through land of said Grantor, 52.00', to a point;

THENCE: N 60°12'54" E, through land of said Grantor, 12.82', to a point;

THENCE: N 29°47'06" W, through land of said Grantor, 28.00', to a point on the southeasterly line of land of Cow Plaza 3 LLC, as described in Book 27480, Page 335;

THENCE: N 60°12'54" E, along said Cow Plaza 3 LLC, 25.00', to a point;

THENCE: N 30°34'30" W, along said Cow Plaza 3 LLC, 3.62', to the southerly corner of land N/F of Middle Street Holdings, LLC, as described in Book 31724, Page 277;

THENCE: N 59°03'34" E, along said Middle Street Holdings, LLC, 21.89', to a point;

THENCE: S 30°56'26" E, along said Middle Street Holdings, LLC, 1.00', to a point;

THENCE: N 59°18'12" E, along said Middle Street Holdings, LLC, 27.42', to a point;

THENCE: S 30°41'48" E, along said Middle Street Holdings, LLC, 1.77', to a point;

THENCE: N 59°42'35" E, along said Middle Street Holdings, LLC, 17.31', to a point;

THENCE: S 29°57'00" E, along said Middle Street Holdings, LLC, 1.13', to a point;

THENCE: N 59°27'00" E, along said Middle Street Holdings, LLC, 20.88', to a point;

THENCE: N 69°43'00" E, along said Middle Street Holdings, LLC, 21.60', to a point;

THENCE: N 79°11'00" E, along said Middle Street Holdings, LLC, 27.13', to the southerly corner of said Fitzgibbons Family Trust;

THENCE: continuing N 79°11'00" E, along said Fitzgibbons Family Trust, 5.61', to a point;

THENCE: S 37°49'00" E, along said Fitzgibbons Family Trust, 2.45', to a point;

THENCE: N 51°21'00" E, along said Fitzgibbons Family Trust, 42.96', to the POINT of BEGINNING.

The above described parcel contains 25,159 square feet.

Bearings for the above described parcel are based on the Maine State Coordinate System, West Zone 1813, Grid North.

The above described parcel is shown on plan entitled "Mortgage Release/Retention Plan, Canal Plaza, Portland, Maine, prepared by Northeast Civil Solutions, Inc., dated December 7, 2018, NCS Project No. 29696.14.

This conveyance is made together with the benefit of and subject to the rights of Grantor and others which are expressly reserved hereby, and the terms and conditions of, that certain Reciprocal Easement Agreement among Grantor, Cow Plaza 2 LLC, Cow Plaza 3 LLC and Cow Plaza Garage LLC dated December 22, 2009 and recorded in the Cumberland County Registry of Deeds in Book 27481, Page 1, as affected by Partial Releases recorded in said Registry of Deeds in Book 30060, Page 93, Book 30060, Page 95, Book 30361, Page 232, and Book 30361, Page 234.

DRAFT – FOR CITY REVIEW

EASEMENT AGREEMENT

THIS EASEMENT AGREEMENT ("Agreement") is made as of this ___ day of _____, 2025, by and among Kowtower LLC, a Maine limited liability company ("Kowtower"), Cow Plaza 4 LLC, a Maine limited liability company ("Cow Four"), and Cow Exchange LLC, a Maine limited liability company ("Cow Exchange"), all of which have a place of business at 100 Commercial Street, Suite 300, Portland, Maine 04101 (Kowtower, Cow Four, and Cow Exchange are each hereinafter referred to as an "Owner" and collectively as the "Owners").

WITNESSETH:

WHEREAS, Kowtower is the Owner of all of the parcel known as 44 Exchange Street a/k/a 45 Union Street containing a surface parking lot with associated sidewalks, driveways, and landscaping, comprising approximately .58 acres of land, located in Portland, Cumberland County, Maine, as more fully described in that certain deed to Kowtower dated April 3, 2019 and recorded in the Cumberland County Registry of Deeds in Book 35559, Page 67 (the "Kowtower Parcel"); and

WHEREAS, Cow Four is the Owner of all of the improved parcel known as Four Canal Plaza a/k/a 188 Middle Street containing a four/five-story office building on approximately 0.34 acres of land, located in Portland, Cumberland County, Maine, as more fully described in that certain deed to Cow Four dated January 13, 2021 and recorded in said Registry of Deeds in Book 37715, Page 76 as affected by that certain Corrective Deed recorded in said Registry of Deeds in Book 37832, Page 235 (the "Four Parcel"); and

WHEREAS, Cow Exchange is the Owner of all of the improved parcel known as 36-44 Exchange Street containing a three-story office/retail building on approximately 0.16 acres of land, located in Portland, Cumberland County, Maine, as more fully described in that certain deed to Cow Exchange dated September 19, 2022 and recorded in said Registry of Deeds in Book 39752, Page 172 (the "Cow Exchange Parcel"; the Kowtower Parcel, the Four Parcel and the Cow Exchange Parcel are sometime hereinafter referred to collectively as the "Parcels" or individually as a "Parcel"); and

WHEREAS, Kowtower wishes to grant to each of the other Owners certain easements to facilitate the continued operation of the Parcels as they have been operated historically and to accommodate the future development of the Kowtower Parcel.

NOW, THEREFORE, for and in consideration of the mutual entry into this Agreement by the Owners and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged by each Owner, the Owners agree as follows:

1. Grant of Easements.

1.1 Kowtower hereby grants and conveys:

1.1.1 Unto Cow Four an irrevocable, perpetual and non-exclusive easement, subject to the right of relocation reserved in Section 2.2 below, over, across and through the driveways, parking lots, sidewalks, plaza, stairs and all other open spaces, as currently existing and as may be constructed in the future, on the Kowtower Parcel to allow Cow Four, its successors and assigns, and its and their tenants, contractors, agents, invitees, licensees, employees and any other person having business upon the Four Parcel, free and unimpeded, except as herein provided, pedestrian ingress to and egress from the Four Parcel across the Kowtower Parcel to all public streets which are contiguous to the Kowtower Parcel and to all access points of appurtenant access easements to public streets. With respect to driveways and parking lots, the foregoing easement is subject to the priority right of vehicles to use and occupy such areas.

1.1.2 Unto Cow Exchange an irrevocable, perpetual and non-exclusive easement, subject to the right of relocation reserved in Section 2.2 below, over, across and through the driveways, parking lots, sidewalks, plazas, stairs and all other open spaces, as currently existing and as may be constructed in the future, on the Kowtower Parcel to allow Cow Exchange, its successors and assigns, and its and their tenants, contractors, agents, invitees, licensees, employees and any other person having business upon the Cow Exchange Parcel, free and unimpeded, except as herein provided, pedestrian ingress to and egress from the Cow Exchange Parcel across the Kowtower Parcel to all public streets which are contiguous to the Kowtower Parcel and to all access points of appurtenant access easements to public streets. With respect to driveways and parking lots, the foregoing easement is subject to the priority right of vehicles to use and occupy such areas.

1.1.3. Unto Cow Four an irrevocable, perpetual and non-exclusive easement, over, across, under and through the Kowtower Parcel, subject to the right of relocation reserved in Section 2.2 below, to allow Cow Four to use, maintain, repair, replace and remove the stormwater sewer pipe that currently exists on the Kowtower Parcel serving the Four Parcel, the location of such stormwater sewer pipe being depicted and labeled on **Exhibit A** attached hereto. As part of the foregoing easement, a temporary easement is hereby granted by Kowtower unto Cow Four, over, across and through so much of the remainder of the Kowtower Parcel as is reasonably necessary for access by and for machinery, equipment, materials, and workers during any maintenance, repair, replacement or removal of said stormwater sewer pipe on the Kowtower Parcel; provided, however, that prior to entry onto any portion of the Kowtower Parcel for any such maintenance, repair, replacement or removal, the Owner of the Four Parcel shall, except in the event of an emergency, notify the Owner of the Kowtower Parcel and obtain the prior approval of the Owner of the Kowtower Parcel, which approval shall not be unreasonably withheld, delayed or conditioned.

1.2 The burden of the easements granted herein shall run with and bind upon the title to the Kowtower Parcel and upon each person from time to time hereafter holding such title of record.

1.3 The benefit of the easements granted herein shall run with the title to the benefited Parcels and each person from time to time hereafter holding such title of record.

2. Exercise of Easements.

2.1 Indemnification. Each Owner benefited by easements herein agrees to indemnify, defend and hold harmless the Owner of the Kowtower Parcel from:

2.1.1 Any and all claims, actions, damages, liability or expense, including without limitation reasonable attorneys' fees, expert witness and consultants' fees, and court costs, which the Owner of the Kowtower Parcel, or its owners, members, managers, tenants, agents, contractors, employees and licensees, may incur in connection with any and all injuries to or deaths of persons or damage to real or personal property or business arising out of the exercise or use of the rights granted hereunder by the indemnifying Owner.

2.1.2 Any and all mechanic's liens, materialmen's or other liens or claims arising out of any action taken by such indemnifying Owner or its owners, members, manager, tenants, agents, contractors, licensee, or employees pursuant to the provisions of this Agreement, including without limitation reasonable attorneys' fees, expert witness and consultants' fees, and court costs incurred by the Owner of the Kowtower Parcel in connection with such claims.

2.2 Relocation. The easements granted herein to provide pedestrian ingress and egress and utility service across, through or under the driveways, parking lots, sidewalks, plazas, and stairs currently existing or constructed in the future on the Kowtower Parcel are not intended to prevent the placement of any future improvements on the Kowtower Parcel or prevent the relocation of or construction of new buildings, parking, landscaped areas, sidewalks, driveways and related fixtures and improvements, including without limitation the right of Kowtower to construct buildings and other improvements on the Kowtower Parcel. Accordingly, Kowtower shall have the right at any time and from time to time, to relocate the pedestrian access easements and utility easements granted herein provided that the same shall be done only: (a) at the sole cost and expense of Kowtower; (b) in compliance with all applicable laws, ordinances, rules and regulations of each governmental or quasi-governmental entity having jurisdiction over the same; (c) in such manner as will minimize to the greatest extent reasonably possible any inconvenience to the Owner(s) of the benefited Parcel, and their tenants, licensees or occupants; and (d) the Owner of the benefited Parcel will have upon completion of relocation all rights under the relocated easement as existed prior to relocated except to the extent relocated.

2.3 Construction and Maintenance Procedures. During the course of any, maintenance, repair, replacement or removal of the stormwater sewer pipe reference in Section 1.3 above, the Owner of Four Parcel shall: (a) provide prior notice thereof to the Owner of the Kowtower Parcel which shall specify, if applicable, the extent of and times during which access or use of the easement described in Section 1.3 above shall be impaired; (b) the location of any such work; (c) cause such work area and any land adjoining it to be kept reasonably clean

and free of trash and building debris, taking into account the work being performed; (d) with reasonable promptness upon completion of such work cause all such trash and debris to be removed therefrom and the disturbed area to be restored as much as reasonably practical to do so to the condition existing prior to disturbance, taking into account the new improvements constructed; (e) cause its agents, employees, contractors, subcontractors and other invitees to use reasonable care not to damage or deposit dirt, construction debris or other materials on any of the portions thereof; and (f) repair or cure, and indemnify and hold harmless the Owner of the Kowtower Parcel against and from any liability and expense on account of any such damage or deposit, including without limitation reasonable attorneys' fees, expert witness and consultants' fees, and court costs.

2.4 Breach of Obligations. In the event that any Owner shall breach its obligations hereunder, and shall fail to cure the same within ten (10) business days after receipt of written notice from another Owner (or such longer period as reasonably may be necessary in the event same cannot be cured within the ten (10) business day period), except in the event of an emergency situation in which event, twelve (12) hours prior notice, either telephonic or in writing, shall be sufficient, the non-breaching Owner shall have the right to take such legal or equitable action as may be allowed under the circumstances including, but not by way of limitation, a request for injunctive relief or the non-breaching Owner may perform the work necessary to cure the breach and shall be entitled to promptly reimbursement from the breaching Owner of the actual and verifiable cost incurred by the non-breaching Owner to cure or a credit against payments owed by the non-breaching Owner to the breaching Owner. In any such action, the prevailing party also shall be entitled to a reimbursement of all of its reasonable costs and expenses, including reasonable attorney's fees, expert witness or consultants' fees, and court costs in conjunction with such action.

3. Notices. Any notice, demand, consent, approval, request or other communication or document to be provided hereunder to an Owner shall be: (a) in writing; and (b) deemed to have been provided: (1) forty-eight (48) hours after being sent as certified or registered mail in the United States mail, postage prepaid, return receipt requested, or (2) the next business day after having been deposited (in time for delivery by such service on such business day) with Federal Express or another national courier service, in each case to the address of such Owner set forth hereinabove or to such other address as such Owner may designate from time to time by notice to each other Owner; provided, however, that in emergency situations, telephonic notice or such notice, if any, as is reasonable under the circumstances, shall be satisfactory.

4. General.

4.1 Effectiveness. This Agreement shall become effective on and only on its execution and delivery by all of the Owners.

4.2 Complete understanding. This Agreement represents the complete understanding between the Owners as to the subject matter hereof, and supersedes all prior negotiations, representations, guaranties, warranties, promises, statements or agreements, either written or oral, between the Owners as to the same.

4.3 Amendment. This Agreement may be amended by and only by an instrument executed and delivered by the Owners.

4.4 Applicable law. This Agreement shall be given effect and construed by application of the law of the State of Maine (without regard to the principles thereof governing conflicts or choice of laws), and any action or proceeding arising hereunder shall be brought in the courts of the State of Maine, except that if any such action or proceeding arises under the Constitution, laws or treaties of the United States of America, or if there is a diversity of citizenship between the parties thereto, so that it is to be brought in a United States District Court, it shall be brought in the United States District Court for the District of Maine or any successor federal court having original jurisdiction.

4.5 Headings. The headings of the sections and subsections hereof are provided for and only for convenience of reference, and shall not be considered in interpreting their contents.

4.6 Construction. As used herein, (a) the term "person" means a natural person, a trustee, a corporation, a partnership, a limited liability company, and any other form of legal entity; (b) all references made (i) in the neuter, masculine or feminine gender shall be deemed to have been made in all such genders, and (ii) in the singular or plural number shall be deemed to have been made, respectively, in the plural or singular number as well; and (c) the terms Kowtower, Cow Four, and Cow Exchange shall mean the persons hereinabove named or described as such and their respective heirs, personal representatives, successors and assigns. The use of terms such as herein, hereto, hereof and the like shall mean this entire Agreement and not the provision, section or paragraph in which such terms appear, unless a contrary meaning is clearly manifest.

4.7 Exhibits. Each writing or plan referred to herein as being attached hereto as an exhibit or otherwise designated herein as an exhibit hereto is incorporated herein and made a part hereof.

4.8 Assignment. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, personal representatives, successors and assigns.

4.9 Effect of Agreement. Nothing in this Agreement shall be deemed in any way to grant any easement in, over, under or through any property or any other land or improvements whatsoever, unless within the areas expressly described herein.

4.10 Liability. Except as provided in Section 2.1 above, neither the Owners nor their respective heirs, personal representatives, successors and assigns shall have any liability hereunder for any expense or obligation whatsoever, unless such expense or obligation accrues while such person is the owner of record of the Parcel with respect to which such expense or obligation accrued. Each Owner liable under Section 2.1 shall be liable only for any such expense or obligation which accrues while such Owner is the owner of record of the Parcel,

and such personal liability shall survive such Owner's subsequent conveyance of the Parcel.

4.11 Rights to be Private. Neither this Agreement and grant of any easement, nor the use and enjoyment pursuant to the provisions of this Agreement, shall be deemed in any way to create or confer in or on any member of the public any right to use or enjoy the same, or any estate therein, or operate as a dedication by the Owners or any of them.

4.12 Termination of Agreement. Anything contained in the provisions of this Agreement to the contrary notwithstanding, this Agreement shall terminate upon the recordation at the Cumberland County Registry of Deeds of a document executed on behalf of each Owner and each mortgagee of any or all of the benefited Parcel(s), consenting to such termination.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Owners have caused this Agreement to be executed under seal by their respective duly authorized representatives, on the day and year first above written.

WITNESS:

Kowtower LLC

_____

By: _____
J. Tim Soley
Its duly authorized Manager

Cow Exchange LLC
By: East Brown Cow Holdings LLC
Its Sole Member

_____

By: _____
J. Tim Soley
Its duly authorized Manager

Cow Plaza Four LLC
By: East Brown Cow Holdings II LLC
Its Sole Member

_____

By: _____
J. Tim Soley
Its duly authorized Manager

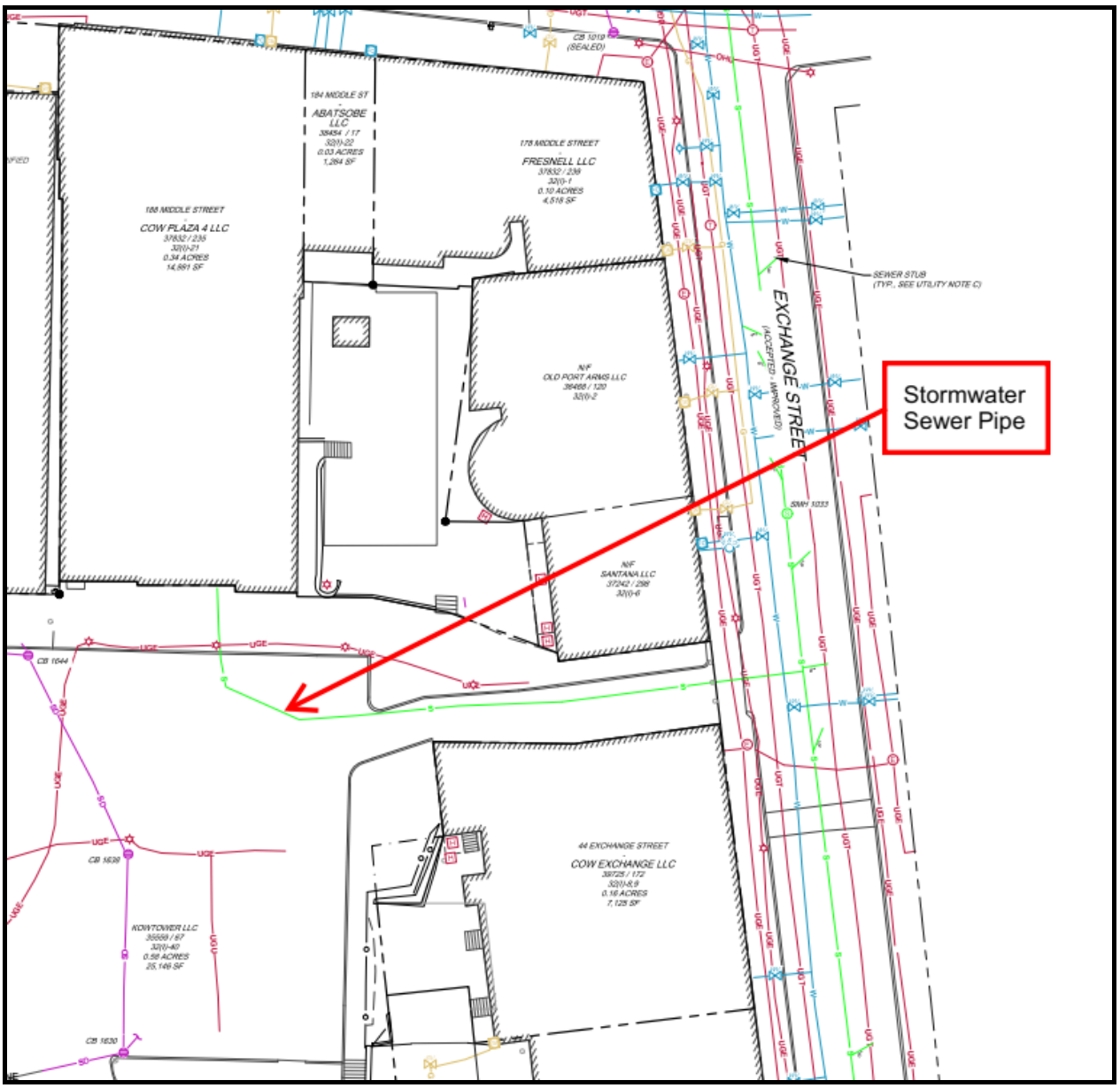
State of Maine
County of Cumberland, ss.

_____, 2025

Personally appeared before me the above-named J. Tim Soley, Manager of Kowtower LLC and Manager of East Brown Cow Holdings LLC, Sole Member of Cow Exchange LLC, and Manager of East Brown Cow Holdings II LLC, Sole Member of Cow Plaza 4 LLC, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacities and the free act and deed of said limited liability companies.

_____
Name:
Notary Public/Attorney at Law
My commission expires:

EXHIBIT A


Stormwater Sewer Pipe
EXCHANGE STREET
SEWER STUB (TYP., SEE UTILITY NOTE C)
184 MIDDLE ST
ABATSCOBE LLC
178 MIDDLE STREET
FRESNELL LLC
188 MIDDLE STREET
COW PLAZA 4 LLC
N/F OLD PORT ARMS LLC
N/F SANTANA LLC
44 EXCHANGE STREET
COW EXCHANGE LLC
CB 1019 (SEALED)
CB 1644
CB 1638
CB 1630
SMH 1033

BERN
STEIN
SHUR

Bernstein, Shur,
Sawyer & Nelson, P.A.
100 Middle Street
PO Box 9729
Portland, ME 04104-5029

T (207) 774 - 1200
F (207) 774 - 1127

Casey M. McCullen
Shareholder
207-228-7327 direct
cmccullen@bernsteinshur.com

November 10, 2025

City of Portland – Department of Planning & Urban Development
389 Congress Street
Portland, ME 04101

RE: Engagement for Preparation of Legal Documents for Planned Condominium Project at 45 Union Street (Parcel 032-I-040-001)

To Whom it May Concern:

This letter is sent to confirm that Bernstein Shur has been engaged to prepare, in conjunction with DLA Piper, legal documentation for the formation and development of a certain planned condominium project by East Brown Cow - Kowtower LLC to be located at 45 Union Street (Parcel 032 I040001, Plan Number: PL-003157-2024) in Portland, Maine, including the drafting of a condominium declaration, formation and governing documents for the condominium's association, and other related legal documents in connection with the planned condominium.

Don't hesitate to reach out should you have any questions.

Best,

Casey McCullen

MAINE COMMUNITY BANK

October 1, 2025

Nathaniel Lamy CPA, Director of Finance
East Brown Cow – Kowtower LLC
100 Commercial Street, Suite 300
Portland, ME 04101

East Brown Cow – Kowtower LLC Financial Capacity Letter
45 Union Street, Portland, ME

To Whom It May Concern,

This letter is intended as support for Kowtower LLC's submission for approvals regarding the intended development project located at 45 Union Street in Portland, ME. Maine Community Bank and the Lender have worked with the Sponsor, J. Tim Soley, on various development projects over the last 15+ years, and we have found that the projects the Bank and the Lender have financed have been completed on time, on budget, and with all financial obligations being met, complied with, and in an excellent manner.

East Brown Cow – Kowtower LLC and Sponsor J. Tim Soley currently have sufficient financial capacity to undertake the proposed project.

Should you need additional information, please do not hesitate to contact me directly.

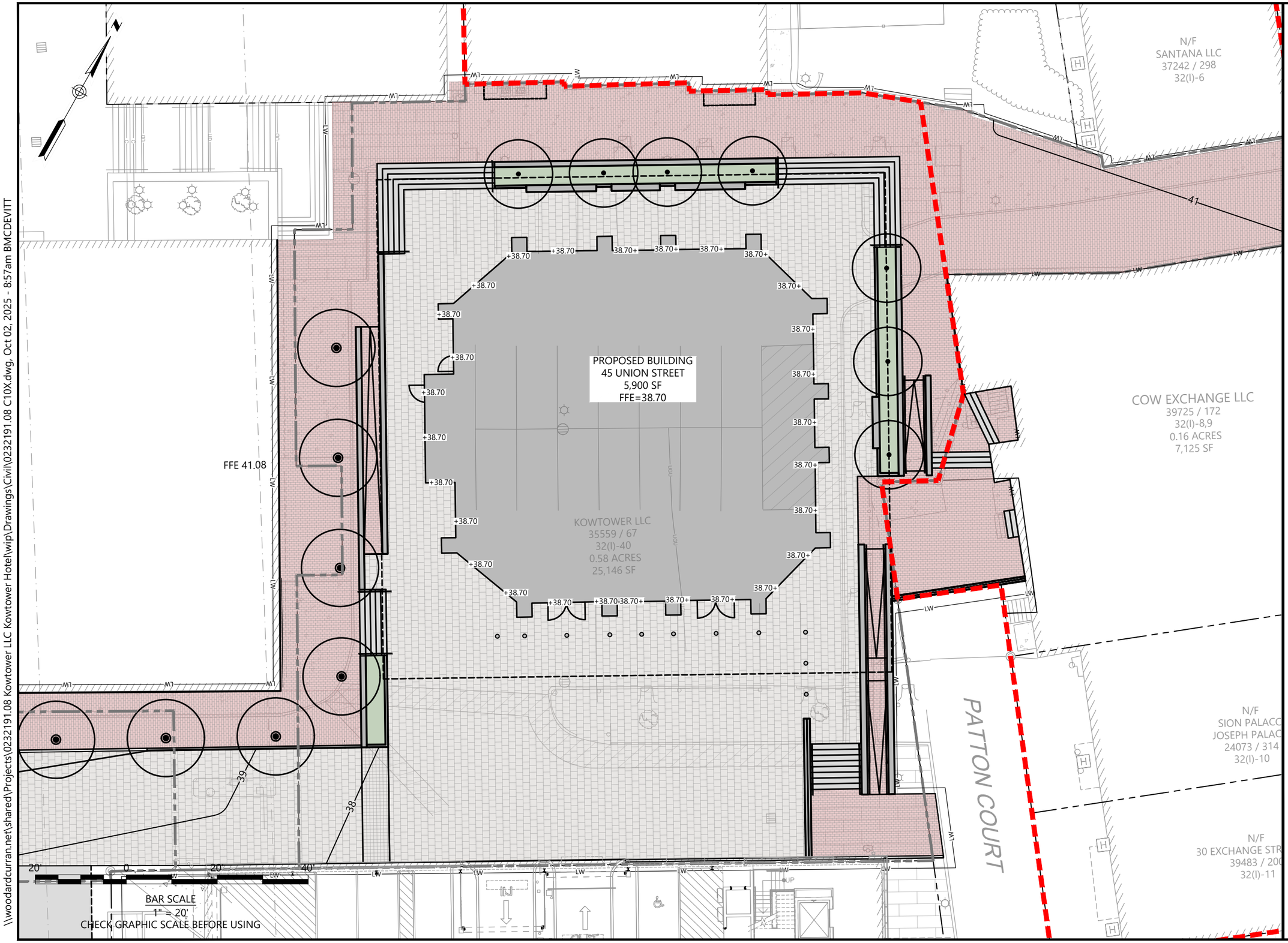
Sincerely,

Jennifer Sirois

Jennifer Sirois
Senior Vice President, Commercial Banking Market Manager
(207) 571-5614
jsirois@maine.bank

45 Union Street
Zoning Assessment Table

	Required	**Proposed**
Lot Size	None	25,397 SF
Area Per Dwelling Unit	N/A	N/A
Minimum Street Frontage	None	N/A
Front Yard Minimum	None	N/A
Front Yard Maximum	See Build-to Zone	See Build-to Zone
Rear Yard	None	N/A
Yard Right	None	N/A
Yard Left	None	N/A
Side Street Setback	None	N/A
Step Back	§7.5.3 portions of towers above 125 feet must be stepped back a minimum of 30 feet from street or public open space	N/A – Building is greater than 100 feet from Exchange Street. Project does not abut public open space. This standard does not apply.
Maximum Lot Coverage	None	N/A
Minimum Lot Coverage	None	N/A
Maximum Height	325 feet	325 feet
Open Space	None	N/A
Maximum Impervious Area	None	N/A
Pavement Setback	None	N/A
Floor Area Ratio	None	N/A
Off Street Parking Spaces	Maximum: 1.5 per guest room and 2 per dwelling unit	0
Loading Bays	1	No loading bays are being provided. Loading operations to be discussed with City Staff.
Other 1: Build-to Zone	0-5 feet	§7.6.5.B.3 Build-to Zone Exception
Other 2: Build-to Percentage	100%	§7.6.5.B.3 Build-to Zone Exception
Other 3: Building Length	80% for up to 50 feet frontage 60% for greater than 50 feet frontage	N/A
Other 4: Blank Wall Area	20 ft.	N/A
Other 5: Minimum Bicycle Spaces	1 per 2 dwelling units	52 dwelling units proposed – 26 bicycle spaces will be provided
Other 6: Tower Floor Plates	Maximum Floor Plate of 10,000 sq. ft. above 125 feet	The Maximum Floor Plate above 125 feet is less than 10,000 SF (~6,600 SF).
Other 7: Tower Separation	Portions of buildings above 125 feet must be setback 35 from side and rear lot lines when abutting another tower	N/A – Building will not abut another tower.
Other 8: Architectural Cap Allowance	40 feet above 325 feet	A 40-ft architectural cap will be provided on the 325-foot building, with habitable floor area devoted to restaurant use.



Woodard & Curran
12 Mountfort Street
Portland, Maine 04101
800.426.4262 | www.woodardcurran.com

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PE SEAL:

Att. L

NOT FOR CONSTRUCTION

CLIENT INFO:

45 UNION STREET

EAST BROWN COW - KOWTOWER LLC
100 COMMERCIAL STREET
SUITE 300
PORTLAND, MAINE 04101

JOB NO:	0232191.08
DATE:	OCTOBER 2025
SCALE:	1"=20'
DESIGNED BY:	AG
DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 C10X.dwg

DRAWING TITLE:

CIVIL
AVERAGE GRADE

DRAWING NO:

FIG. 1

\\woodardcurran.net\shared\Projects\0232191.08 Kowtower LLC Kowtower Hotel\wip\Drawings\Civil\0232191.08 C10X.dwg, Oct 02, 2025 - 8:57am BMCDEVITT

Preliminary Transportation Demand Management Plan (TDM)

Date: October 3, 2025

To: **East Brown Cow – Kowtower LLC**
100 Commercial St, Suite 300, Portland, ME 04101
(207) 775-2252

From: Jacob W. Sirois, E.I.
Engineer II
Barton & Loguidice, LLC

John Q. Adams, P.E., PTOE
Senior Associate
Barton & Loguidice, LLC

Re: **Multi-Use Building**
45 Union St, Portland, ME

Traffic Demand Management (TDM) 14-14.6.1 (E)

The following types of development shall design and implement a Transportation Demand Management (TDM) plan:

a. All major site plan triggering development in the B-3 zone.

b. All commercial, institutional, or mixed-use developments of 50,000 square feet or more total floor area.

c. All commercial or institutional uses designed to accommodate 100 or more employees or, for educational institutions, 100 or more students.

The TDM Plan shall comply with the transportation systems and street design standards of the Technical Manual.

A Traffic Demand Management Plan is enclosed.

1 Transportation Narrative

East Brown Cow – Kowtower LLC, the applicant, is proposing the development of a 30-story mixed use building on the parcel addressed 45 Union Street in the City of Portland. The multi-use building will provide 88 hotel rooms, 73 residential dwelling units, a 1,495 nsf café on the ground floor, a 5,007 nsf restaurant, a 3,271 nsf bar and lounge, a 1,100 nsf viewing area on the top floor, and a 6,373 gsf wellness level with a pool and a gym. The café, restaurant, bar, viewing area, and wellness level will be open to the public. The proposed building has a roughly 5,650 gsf footprint at-grade totaling approximately 200,000sf gross floor area.

The development site is 25,397sf and currently serves as a 32-space surface parking lot. With the project's development, the parking lot will be removed. Of the site's total acreage, all is developable.

Vehicle access to the site will be provided via an existing driveway entrance on Union Street, located approximately 260 feet northwest of Fore Street. Pedestrian access will be provided to the site by a sidewalk along the site driveway from Union Street, a pedestrian path between Exchange Street, Middle Street, and Union Street via the plaza, and a sidewalk connection to Fore Street along Patton Court (A.K.A. Fox Court).

No vehicle parking will be provided on-site. In lieu, a drop-off loop will be provided at the main entrances, and a valet service will be offered for guests, and the public. The valet service will use the adjoining Old Port Square Garage. The garage has 423 spaces. Of these 423 spaces, some of these spaces will be available for the residents and guests. Users of the development can also park in the parking garage without using the valet system.

The project will provide storage for 43 bicycles, external to the building. All 43 spaces will be located outside on the site itself and on adjacent properties owned by a related party for utilization by all users.

2 Area / Neighborhood Existing Conditions

The City of Portland, within the vicinity of the site, is a welcoming community to alternative modes of traffic, especially pedestrian and bicycle traffic, and has made efforts to provide more complete streets with traffic calming elements to assist with slowing motorized modes of transportation. Crosswalks are provided at unsignalized intersections, and pedestrian signals are provided at signalized intersections. This area of Portland is known for its many and various restaurants, shops, and other retail establishments.

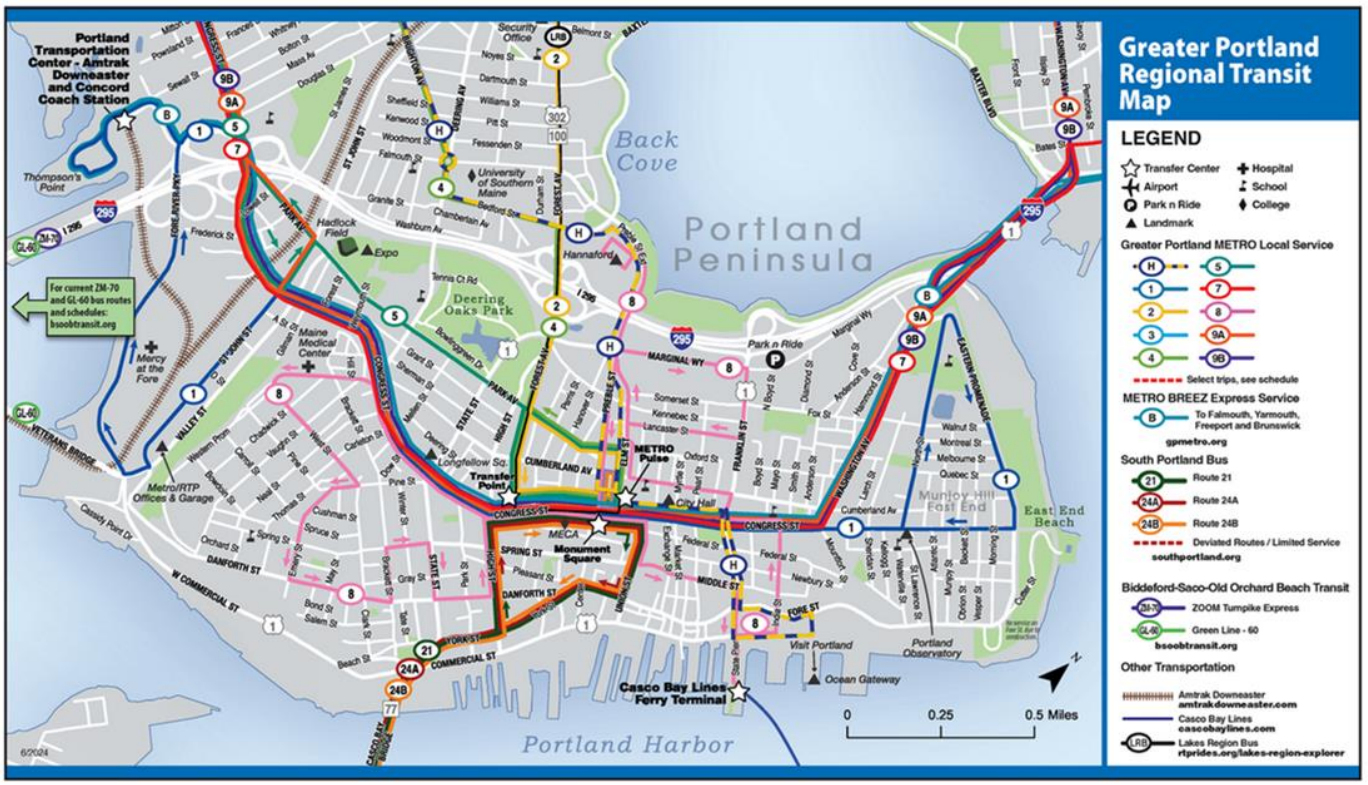
3 Site Access

The project site's location on Union Street provides vehicular traffic access to regional routes in and out of the greater Portland area as well as to local destinations within Portland. Access to Interstate 295 is provided by heading southbound on Commercial Street to the Veterans Memorial Bridge or by heading north on Commercial Street to Franklin Street to Exit 7. Access to these destinations is also provided through alternative connecting streets such as Fore Street, Middle Street, Spring Street, and Congress Street.

Access to other local City destinations such as the Eastern Promenade, Old Port, Downtown District, and the City's Transportation Center are also easily accessible from this neighborhood utilizing Commercial Street, Temple Street, Middle Street, Spring Street, and Congress Street.

4 Transit Access/Connections

This area of Portland is well served by public transit. Temple Street, Union Street, and Middle Street, within the vicinity of the site, are currently served by Routes 8, 21, 24A, and 24B. See Transit Route Map below:



Effective June 16, 2024

Further details of the routes are included below:

Metro Route 8: Peninsula – Route 8 provides transportation throughout the Portland Peninsula, with service to Congress Street, the Old Port, Maine Medical Center and Mercy Hospital (State Street location), Trader Joe's, Whole Foods, Art's District, Back Cove Hannaford, and the Waterfront (Casco Bay Lines and Visitor Information Center at Ocean Gateway), including the following points:

- Casco Bay Ferry Terminal
- Downtown Portland
- Maine College of Art and Design
- Maine Medical Center
- Ocean Gateway Terminal
- Old Port
- West End

Metro Route 21: SMCC-Downtown Portland – Route 21 provides transportation between downtown Portland, the Millcreek Transit Hub in South Portland, and SMCC, including the following points along the route:

- Downtown Portland
- Maine College of Art and Design
- Southern Maine Community College
- Millcreek Park
- Willard Beach
- Spring Point Light
- Bug Light

Metro Route 24A: South Portland (Broadway – Redbank – Maine Mall) – Route 24A provides bus service between Downtown Portland and the Mill Creek Transit Hub, Broadway, Redbank, the Maine Mall in South Portland, and Walmart in Scarborough, including the following points along the route:

- Cash Corner
- Gannett Drive
- Target
- Downtown Portland
- Maine College of Art and Design
- Maine Mall

Metro Route 24B: South Portland (Highland Ave – Brick Hill – Maine Mall) – Route 24B provides bus service, Monday – Friday only, between Downtown Portland, the Millcreek Transit Hub, Highland Avenue, Brick Hill, and the Maine Mall, and includes the following points of interest:

- Downtown Portland
- Maine College of Art and Design
- Maine Mall

See additional detail of Transit Routes in the Metro graphic below:



TDM Coordinator

An appointed TDM Coordinator will oversee the implementation of all TDM measures. Responsibilities include:

- Conducting annual surveys of employees to determine travel mode share and identify barriers to alternative transportation.
- Completing the City of Portland's TDM Reporting Form annually by May 15.
- Coordinating communication of transportation options to employees and guests, including posting maps, schedules, and rideshare information in common areas.
- Tracking mode split progress toward the City-approved targets.

6 Resident, Guest, Customer & Employee Survey

The TDM Plan will include a transportation survey prior to implementation and on an annual basis. The survey will consist of questions to gain an understanding of resident, guest, and employee commuting means and effectiveness of the TDM strategies. The survey will include questions such as:

1. Vehicle ownership and parking location
2. Mode of transportation (car, bus, walking, taxi/rideshare, bicycle, etc.) to travel to and from the multi-use building.

3. Reason for selected transportation mode
4. Ease of use of selected transportation mode
5. Concerns with using other transportation modes
6. Barriers to vehicle trip reductions such as transit ridership and bicycle use
7. Use of personal vehicles
8. Interest in carpooling to share in transportation expenses.

This survey will be conducted annually for residents of the apartments and employees of the commercial uses and will be electronically tabulated. This information will be used to develop specific strategies and adjust the TDM plan as needed.

7 Parking and Trip Reduction Targets

Trip Generation

As part of the Applicant's traffic study for this development, trip generation was calculated using the ITE Trip Generation Manual, 11th Edition. See the summary tables below for the expected trip generation. Trip generation for the proposed 88 hotel rooms, 73 residential units, 1,495sf café, 5,007sf restaurant, 3,271sf bar and lounge, 1,100sf viewing area, and the 6,373 gsf wellness level was determined based on the trip generation rates provided in the 11th edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The ITE Manual provides numerous land use codes (LUC) and the volume of site generated trips produced by each category.

Trip generation calculations for the **73 residential dwelling units** have been prepared using **LUC #222 – Multifamily Housing (High-Rise) (Dense Multi-Use Urban)**. ITE describes LUC #222 as "*high-rise multifamily housing includes apartments, townhouses, and condominiums. Each building has more than 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevators, and a set of hallways."* During the Saturday peak hour, ITE warns of a small sample size. In this hour, ITE utilizes 2 studies, compared to the 5 studies used in the AM and PM peak hours of the adjacent street. While there are only 2 studies, the 2 different trip generation rates derived from these studies are similar (0.07 and 0.11 trips per dwelling unit). Since there rates from the studies are similar, it is B&L's opinion that the use of the Saturday rate is acceptable.

The trip generation calculations for the **88 hotel rooms** have been prepared using **LUC #310 – Hotel (Dense Multi-Use Urban)**. ITE describes LUC 310 as *"a place of lodging that provides sleeping accommodations and supporting facilities such as a full-service restaurant, a cocktail lounge, meeting rooms, banquet room, and convention facilities. A hotel typically provides a swimming pool or another recreational facility such as a fitness room."*

To estimate the trips generated by the **5,007sf restaurant**, we have utilized **LUC #931 – Fine Dining Restaurant (General Urban/Suburban)**, described as "*a full-service eating establishment with a typical duration of stay of at least 1 hour. A fine dining restaurant generally does not serve breakfast; some do not serve lunch; all serve dinner. This type of restaurant often requests and sometimes requires a reservation and is generally not part of a chain. A patron commonly waits to be seated, is served by wait staff, orders from a menu and pays after the meal. Some of the study*

sites have lounge or bar facilities (serving alcoholic beverages), but meal service is the primary draw to the restaurant."

The trip generation estimates for the **1,495sf café** have been prepared using **LUC #930 – Fast Casual Restaurant (General Urban/Suburban)**. ITE describes LUC #930 as "*a sit-down restaurant with no (or very limited) wait staff or table service. A customer typically orders off a menu board, pays for food before the food is prepared, and seats themselves. The menu generally contains higher-quality, made-to-order food items with fewer frozen or processed ingredients than a fast-food restaurant. Most patrons eat their meal within the restaurant, but a significant proportion of the restaurant sales can be carry-out orders. A fast-casual restaurant typically serves lunch and dinner; some serve breakfast. A typical duration of stay for an eat-in customer is 40 minutes or less."* ITE has a land use code for a coffee/donut shop without a drive-through window (LUC #936) in a dense multi-use urban setting. However, this LUC only provides trip generation rates for person trip ends and does not provide rates for vehicle trip ends. To be conservative in our analysis, we have utilized LUC #930 to determine the trip generation for the proposed café, based on the similarities between the two uses. Because cafés are typically busiest in the AM, and LUC #930 is busiest in the PM, in our analysis, we have assumed that the AM peak hour trip generation rate is similar to the PM peak hour trip generation rate.

For the **3,271sf bar and lounge**, trip generation calculations have been prepared using **LUC #975 – Drinking Place (General Urban/Suburban)**, which ITE describes as *"a drinking place contains a bar, where alcoholic beverages and food are sold, and possibly some type of entertainment, such as music, television screens, video games, or pool tables."*

ITE does not provide a LUC specifically for the **1,100sf viewing area** with a **capacity of 110** standing persons. For this application, we have assumed that it is similar to **LUC #931 – Fine Dining (General Urban/Suburban)**, which typically has a duration of stay of at least 1 hour. For the trip generation calculations, we will use the independent variable of "seats," using the 110 person capacity, for a total of 110 "Seats." This land use code was utilized to determine trip generation based on the similarities between the uses. Both have limited seating, the viewing area is ticketed essentially requiring a "reservation", similar to LUC #931, and both have an expected duration of at least 1 hour.

Trip generation estimates for the proposed **6,373sf wellness level**, with a gym and pool, have been determined using **LUC #492 – Health/Fitness Club (General Urban/Suburban**), defined by ITE as "*a privately-owned facility that primarily focuses on individual fitness or training. It typically provides exercise classes, fitness equipment, a weight room, spa, lockers rooms, and a small restaurant or snack bar. This land use may also include ancillary facilities, such as a swimming pool, whirlpool, sauna, limited retail, and tennis, pickle ball, racquetball, or handball courts. These facilities are membership clubs that may allow access to the general public for a fee."*

In the *Trip Generation Manual*, ITE provides the *Average* trip generation rate, and the *Fitted Curve* trip generation rate. MaineDOT guidelines state that when $R^2 \geq 0.80$, the *Fitted Curve* trip generation rate shall be used. The trip generation calculations for the proposed uses are provided below in Table 1.1 through Table 1.7:

Table 1.1 ITE Trip Generation Calculations - Dense Multi-Use Urban							
Land Use	**Multifamily Housing (High-Rise) Not Close to Rail Transit - LUC 222**						
Time Period	**Dwelling Units (X)**	**R^2**	**Fitted Curve Equation/Avg. Rate**	**Trips Generated (T)**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	73	0.92	T = 0.28(X) - 7.17	13	41% / 59%	5	8
PM Weekday Peak Hour (Street)	73	0.91	Ln(T) = 0.95 Ln(X) - 1.36	15	50% / 50%	8	7
AM Weekday Peak Hour (Generator)	73	n/a	0.26	19	10% / 90%	2	17
PM Weekday Peak Hour (Generator)	73	n/a	0.15	11	66% / 34%	7	4
Saturday Peak Hour	73	n/a	0.09	7	43% / 57%	3	4

Table 1.2 ITE Trip Generation Calculations - Dense Multi-Use Urban						
Land Use	**Hotel - LUC 310**					
Time Period	**Rooms**	**Avg. Trip Gen. Rate (Trips/Room)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	88	0.31	27	39% / 61%	11	16
PM Weekday Peak Hour (Street)	88	0.21	18	44% / 56%	8	10
AM Weekday Peak Hour (Generator)	88	0.33	29	51% / 49%	15	14
PM Weekday Peak Hour (Generator)	88	0.34	30	30% / 70%	9	21
Saturday Peak Hour	88	0.22	19	67% / 33%	13	6

Table 1.3 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Fine Dining Restaurant - LUC 931**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1 ksf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)		n/a				
PM Weekday Peak Hour (Street)	5.007	7.80	39	67% / 33%	26	13
AM Weekday Peak Hour (Generator)	5.007	4.47	22	80% / 20%	18	4
PM Weekday Peak Hour (Generator)	5.007	8.28	41	61% / 39%	25	16
Saturday Peak Hour	5.007	10.68	53	59% / 41%	31	22

Table 1.4 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Fast Casual Restaurant - LUC 930**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)*	1.495	12.55	19	50% / 50%	10	9
PM Weekday Peak Hour (Street)	1.495	12.55	19	55% / 45%	10	9
AM Weekday Peak Hour (Generator)*	1.495	18.57	28	63% / 37%	18	10
PM Weekday Peak Hour (Generator)	1.495	18.57	28	62% / 38%	17	11
Saturday Peak Hour	1.495	32.64	49	55% / 45%	27	22

*We have assumed that the AM peak hours are similar to the PM peak hours because the study sites do not typically serve breakfast.

Table 1.5 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Drinking Place - LUC 975**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)		Closed				
PM Weekday Peak Hour (Street)	3.271	11.36	37	66% / 34%	24	13
AM Weekday Peak Hour (Generator)		Closed				
PM Weekday Peak Hour (Generator)	3.271	15.53	51	68% / 32%	35	16
Saturday Peak Hour*	3.271	15.53	51	68% / 32%	35	16

*Saturday peak hour data not provided by ITE; Saturday peak hour assumed similar to Weekday PM (generator),

Table 1.6 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Fine Dining Restaurant - LUC 931**					
Time Period	**Seats**	**Avg. Trip Generation Rate (Trips Per Seat)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)*	110	0.15	17	69% / 31%	12	5
PM Weekday Peak Hour (Street)	110	0.28	31	67% / 33%	21	10
AM Weekday Peak Hour (Generator)	110	0.15	17	69% / 31%	12	5
PM Weekday Peak Hour (Generator)	110	0.29	32	59% / 41%	19	13
Saturday Peak Hour	110	0.33	36	59% / 41%	22	14

*ITE does not provide trip generation data for AM peak hour (street). Assumed similar to AM peak hour (generator).

Table 1.7 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Health/Fitness Club - LUC 492**					
Time Period	**Sq. Footage (1k Sf)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	6.373	1.31	8	51% / 49%	4	4
PM Weekday Peak Hour (Street)	6.373	3.45	22	57% / 43%	13	9
AM Weekday Peak Hour (Generator)	6.373	1.40	9	46% / 54%	4	5
PM Weekday Peak Hour (Generator)	6.373	3.92	25	52% / 48%	13	12
Saturday Peak Hour	6.373	3.19	20	49% / 51%	10	10

Table 1.8, following, summarizes the trip generation calculations provided in Tables 1.1 through 1.7, and presents the total trip generation for the proposed multi-use building.

Table 1.8 ITE Trip Generation Summary			
Time Period	**Total Trips Generated**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	84	26	33
PM Weekday Peak Hour (Street)	181	76	52
AM Weekday Peak Hour (Generator)	124	53	45
PM Weekday Peak Hour (Generator)	218	93	68
Saturday Peak Hour	235	109	70

The preceding table shows that the proposed multi-use building is expected to generate 84 trips during the AM peak hour of the adjacent street and 181 trips during the PM peak hour of the adjacent street. During the peak hours of the generator, the site is expected to produce 124 trips in the AM and 218 trips in the PM. The development is expected to generate 235 trips during the Saturday peak hour.

Trip Adjustments

It is assumed that a certain number of trips generated by the proposed residential units and hotel rooms will also visit the on-site café, restaurant, and bar. We have calculated the internally captured (shared) trips for proposed developments using the approach recommended by the ITE *Trip Generation Handbook*, which recommends using the NCHRP Report 684 methodology. The NCHRP Report 684 determines the internally captured trips between office, retail, restaurant, cinema/entertainment, residential, and hotel land uses.

The NCHRP spreadsheets, included in the *Traffic Movement Permit*, have been prepared by inputting the total trips generated by the proposed residential, hotel, and restaurant uses. The outputs of the spreadsheets are summarized below in Table 1.9:

Table 1.7 NCHRP Report 684 Summary						
Time Period	**Internal Capture Percentages**			**External Vehicle Trips**		
	Total	**Enter**	**Exit**	**Total**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	12%	12%	12%	74	37	37
PM Weekday Peak Hour (Street)	13%	11%	17%	157	98	59
Saturday Peak Hour	14%	12%	18%	201	124	77

Table 1.9 shows that with the internally captured trips accounted for, the site is expected to produce 74 external vehicle trips in the AM peak hour, 157 external vehicle trips in the PM peak hour, and 201 external vehicle trips in the Saturday peak hour.

Expected Parking Generation

It should be noted that based on the City's Land Use Code, on-site parking is not required to be provided. However, as part of this TDM Plan, we are estimating parking demand based on the proposed uses of the site. The uses included 88 hotel rooms, 73 residential dwelling units, a 1,495sf café, a 5,007sf restaurant, a 3,271sf bar and lounge, a 6,373sf wellness level, and a 1,100sf viewing area.

Based on the Institute of Transportation Engineers (ITE) Parking Generation Manual, 6th Edition, we have estimated parking demand for the proposed development. Further information on the applied land use codes is provided in the prior Trip Generation section. The calculations are shown below in Tables 2.1 through 2.7:

Table 2.1 ITE Parking Generation Calculations				
Land Use	**Multifamily Housing (High-Rise) Not Close to Rail Transit - LUC 222**			
Time Period	**Dwelling Units (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Friday)	73	0.98	P = 1.25(X) - 39.49	52
Saturday	73	n/a	1.11	81

Table 2.2 ITE Parking Generation Calculations				
Land Use	**Hotel - LUC 310**			
Time Period	**Rooms (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Friday)	88	0.88	Ln(P) = 0.82Ln(X) + 0.55	68
Saturday	88	0.69	0.65	57

Table 2.3 ITE Parking Generation Calculations				
Land Use	**Fine Dining Restaurant - LUC 931**			
Time Period	**Sq. Footage (1k) (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Thursday)	5.007	0.97	P = 17.69(X) - 8.25	80
Weekday (Friday)	5.007	0.87	Ln(P) = 0.81LN(X) + 3.25	95
Saturday	5.007	0.84	P = 15.80(X) + 15.37	94

Table 2.4 ITE Parking Generation Calculations				
Land Use	**Fast Casual Restaurant - LUC 930**			
Time Period	**Sq. Footage (1k) (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Friday)	1.495	0.63	9.77	15
Saturday	1.495	n/a	7.97	12

Table 2.5 ITE Parking Generation Calculations				
Land Use	**Brewery Tap Room - LUC 971**			
Time Period	**Sq. Footage (1k) (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Thursday)	3.271	n/a	5.66	19
Weekday (Friday)	3.271	n/a	6.21	20
Saturday	3.271	n/a	6.76	22

Table 2.6 ITE Parking Generation Calculations				
Land Use	**Fast Casual Restaurant - LUC 930 (Viewing Area)**			
Time Period	**Sq. Footage (1k) (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Friday)	1.1	0.63	9.77	11
Saturday	1.1	n/a	7.97	9

Table 2.7 ITE Parking Generation Calculations				
Land Use	**Health/Fitness Club - LUC 492**			
Time Period	**Sq. Footage (1k) (X)**	**R^2**	**Fitted Curve Equation/Avg Rate**	**Parking Demand (P)**
Weekday (Monday - Friday)	6.373	0.69	5.20	33
Saturday	6.373	0.84	Ln(P) = 0.80LN(X) + 1.92	30

Table 2.8 ITE Parking Generation Summary	
Time Period	**Total Trips Generated**
Weekday (Monday - Friday)	294
Saturday	305

Table 2.8 shows that the parking demand for the proposed development is 305 spaces.

However, this type of development is transit-oriented and located in a part of Portland well-served by public transportation, with connections to multiple other transit routes. As a result, it is anticipated that residents, employees, and visitors will have less reliance on single-occupancy vehicles. Additionally, the area's existing pedestrian and bicycle infrastructure will support and encourage walking and biking for local and neighborhood trips.

8 Parking & Trip Rate Reduction Targets

Studies show that implementation of an effective TDM plan can reasonably achieve vehicle trip reductions of up to 10%. Implementation will begin with a thorough initial survey to document travel mode splits and observe travel patterns to and from the different uses within the development.

Customize Parking and Trip Reduction Strategies

The strategy to reduce parking and trip demand will be aimed at residents, guests, and staff. Strategies will seek to reduce employee vehicle trips to the site, especially during normal peak traffic hours. Ridesharing will be coordinated and promoted amongst staff. Information regarding the Metro, Metro Breez, South Portland and the Biddeford, Saco and Old Orchard Beach Transit Service, and a program to discount passes will be made available to residents, guests, and staff. As mentioned above, bicycle parking will also be provided outside to encourage bicycle commuting.

For residents and guests, strategies will focus on both initially travelling to and from the building for work and pleasure trips, especially those within the greater Portland area. Information will be provided and readily available regarding desirable walking routes to transit and nearby attractions, such as restaurants and shops and other nearby destinations such as the Eastern Promenade and the Old Port.

9 Education

<u>Transit Maps and Schedules:</u>

Within the vicinity of the site, the METRO has bus stops at Union St at Fore St, Middle St at 188 Middle St, Temple St at Federal St, and Temple St at Free St. Information on routes, schedules, and payment methods for buses will be provided to residents and guests upon request. Information may also be provided on the services available at the Portland Transportation Center, which include the Amtrak Downeaster and Concord Coach Bus Lines for intercity and regional service.

Suggestions for the most convenient pedestrian routes to relevant local bus stops will be made available. All intersection crossings along the route have crosswalks and include pedestrian signals at signalized intersections.

Resident and employee orientation will include information related to discount programs for the Metro, Metro Breez, South Portland Bus Service, and Biddeford/Saco/Old Orchard Beach Bus service.

Ridesharing:
The TDM Coordinator will actively promote and coordinate ridesharing amongst residents and employees. This will be done through bulletin boards in employee areas, and employee email lists. Residents and employees who actively rideshare/carpool will be recognized for their efforts on newsletter announcements and/or bulletin board postings in the employee areas.

10 Monitoring

The TDM Plan will be monitored over time to determine its ongoing effectiveness. The TDM Coordinator will be responsible for this monitoring and making changes as necessary to better meet the TDM goals.

After an initial startup period, the Applicant, through the TDM Coordinator, will submit a status report to the City of Portland containing the following information:

- Summary and analysis of completed TDM Surveys
- Usage data for TDM programs initiated
- Mode Split by trip type
-
- Comparison to previous surveys (after initial survey)
- Proposed changes to TDM Plan (Education, Infrastructure, and Incentive) after each subsequent survey
- Updated TDM usage data from year to year and noted updated programs.

The development may not be at or near full occupancy at opening, an annual report will be filed with the City, however, it will be important to note how the TDM plan is functioning and how effective it is as the project nears full capacity. Because the hotel demand is seasonal, this will be completed after the first full summer season of operation.

11 Project Specific Standards

Infrastructure
The following onsite infrastructure improvements are currently proposed:

- Bicycle parking racks will be located exterior to the building on the site itself and on adjacent properties owned by a related party. Number of spaces (42 total) will meet minimum according to Article 14 of the Land Use Code.
- A bulletin board will be provided in the employee area with information as described herein. The TDM Coordinator will be responsible for keeping material current and available.
- An option for a kiosk or monitor in the lobby will be further investigated.

Incentives

The following incentives will be provided to residents, guests, and employees to encourage their active participation in the TDM plan:

A. Effective Parking "Cash Out": With no parking provided on-site or included in the rent, tenants will be provided with a choice as to whether to pay for a parking space off-site. Those who choose not to own their own vehicle will be able to reduce their housing costs through this decoupling of parking cost and condo ownership.

B. Transit Incentives: Research has shown that moving into a new home is a chance for residents to try new transportation options. In order to make sure that new residents are aware of, and have incentives to try, transit, the Applicant will provide new residents with a credit on the DiriGo app. That app can be used for trips on METRO, BSOOB Transit and/or South Portland Bus Service. This loaded amount will make trying transit very easy and ensure that residents have loaded the DiriGo app on their phones. This credit will be provided to new residents for at least five years after building occupancy. Should residents not own a phone, the Applicant will provide them with a DiriGo Pass (formerly a DiriGo TouchPass) loaded with a credit amount, to be determined.

C. Car and Bike Sharing: While Portland currently does not have a car-sharing vendor, should one become available, the Applicant commits to working with the City to provide a car-sharing vehicle nearby. Similarly, the Applicant is interested in working with the City and any bike-sharing systems it may have, including assisting with sponsorship of some of the system.

D. Telecommuting: This building will be set-up and wired with the best internet access currently available in this location, to encourage telecommuting as a trip reduction strategy.

E. Hotel Credit: As an incentive for participating in the annual TDM survey, hotel guests may receive a hotel credit to use on property.

10 Conclusions

This preliminary TDM plan has been prepared in conjunction with East Brown Cow – Kowtower LLC, and will continue to be detailed during the Site Plan Approval process. We anticipate there will be comments from City staff, and we look forward to working with the City to arrive at a TDM plan that best fits this type of development and its location within the City of Portland. To that end, this project is supportive of the City's goals of reducing single occupancy usage, increasing transit ridership, and increasing pedestrian and bicycle activity.

Barton & Loguidice

Att. N

TRAFFIC MOVEMENT PERMIT

FOR PROPOSED

Multi-Use Building

45 Union Street, Portland, Maine

Prepared For: **East Brown Cow – Kowtower LLC**
Prepared By: Barton & Loguidice

September 23, 2025
Section 7 Submission Date: November 10, 2025

4464.007.001

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45 Union Street, Portland, Maine

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7B. Analysis
7C. Pedestrian & Transit Modes
7D. General Safety Issues
7E. Conclusions & Recommendations

APPENDIX 46

1/2000

CERTIFICATION

The traffic engineer responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: 11083

Name (print): John Q. Adams, PE, PTOE

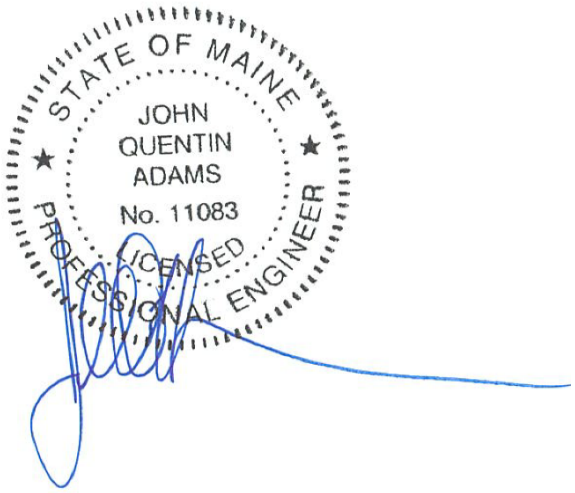
Date: 9/23/2025

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

_____ 9/21/2025

Signature of applicant Date



Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-624-3600

FOR MDOT USE
ID #

Total Fees:
Date: Received

****

PERMIT APPLICATION - TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. § 704 - A

Please type or print:

This application is for:

Traffic 100-200 PCE's	
Traffic 100-200 PCE's (Expedited)	
Traffic 200+ PCE's	**X**

Name of Applicant: **East Brown Cow – Kowtower LLC**

Address: **100 Commercial St, Suite 300, Portland, ME 04101** Telephone: **(207) 775-2252**

Name of local contact or agent: **John Q. Adams, P.E., PTOE, Barton & Loguidice, LLC**

Address: **383 US Route 1, Suite 2E, Box 4, Scarborough, ME 04074** Telephone: **(207) 331-6694**

Name and type of development: **45 Union Street – Multi-Use Hotel, Residential, & Commercial Building**

Location of development including road, street, or nearest route number: **45 Union St, Portland, ME 04101**

City/Town/Plantation: **Portland** County: **Cumberland**, Tax Map # **32** Lot # **I040001**

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? Yes ____ No **X**

Was this development started prior to obtaining a traffic permit? **No**

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30 - A, chapter 187)? Yes **X** No __

Is this project located within a compact area of an urban compact municipality? Yes **X** No_____

Is this development or any portion of the site currently subject to state or municipal enforcement action? **No**

Existing DEP or MDOT permit number (if applicable): **N/A**

Name(s) of DOT staff person(s) contacted concerning this application: **N/A**

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: **N/A**

NOTICE OF INTENT TO FILE
Traffic Movement Permit

Please take notice that

East Brown Cow – Kowtower LLC
100 Commercial St, Suite 300, Portland, ME
(207) 775-2252

Are intending to file a Maine Department of Transportation Traffic Movement Permit with the City of Portland under their delegated review authority pursuant to the provisions of 23 M.R.S.A. § 704 - A on or about

September 23, 2025

The application is for the development of a 30-floor mixed-use building comprised of 88 hotel rooms, 73 residential dwelling units, a 1,495 nsf café on the ground floor, a 5,007 nsf restaurant, a 3,271 nsf bar and lounge, a 1,100 nsf viewing area on the top floor, and a 6,373 gsf wellness level with a pool and a gym. The café, restaurant, bar and lounge, viewing area, and wellness level will be open to the public. The project is anticipated to generate the following peak hour trips:

AM Peak Hour (Generator) = 116
PM Peak Hour (Generator) = 214
Saturday Peak Hour = 228

At the following location:

45 Union Street
Portland, ME 04101

Any interested party may request in writing to participate in the scoping meeting for the subject project no later than 20 days after the application is found by the City to be complete and is accepted for processing. Public comments on the application pertaining to either congestion or safety will be accepted throughout the processing of the application.

The application will be filed for public inspection at the City of Portland's Planning and Urban Development office during normal working hours.

Written public comments concerning congestion or safety only, may be sent to the Department of Transportation, State Traffic Engineer, 16 State House Station, Augusta, Maine 04333

PARCEL NUMBER	COMPANY/NAME	ADDRESS	CITY	STATE	ZIP
032 I012307	10 EXCHANGE ME LLC	3225 MCLEOD DR STE 777	LAS VEGAS	NV	89121
032 I012200	10 EXCHANGE PROPERTIES LLC	PO BOX 4894	PORTLAND	ME	04112
032 I012000	10 EXCHANGE STREET CONDO	10 EXCHANGE ST	PORTLAND	ME	04101
032 I012101	10 EXCHANGE STREET LLC	PO BOX 4894	PORTLAND	ME	04112
032 I011001	30 EXCHANGE STREET LLC	340 FORE ST	PORTLAND	ME	04101
032 I006000	50 EXCHANGE CONDO	50 EXCHANGE ST	PORTLAND	ME	04101
032 I022001	ABATSOBE LLC	100 COMMERCIAL ST STE 300	PORTLAND	ME	04101
032 I012402	ARDAIOLO MICHAEL PALMA & KARISA LEIGH WERNER JTS	UNIT 4170 BOX 8	DPO	AE	09862
032 I012404	BURNS THOMAS	137 HUTCHIN HILL RD	BEARSVILLE	NY	12409
032 I039001	CENTRAL MAINE POWER CO	ONE CITY CENTER 5TH FLOOR	PORTLAND	ME	04101
032 E005001	COW BELLA LLC	100 COMMERCIAL ST STE 300	PORTLAND	ME	04101
032 I008001	COW EXCHANGE LLC	100 COMMERCIAL ST	PORTLAND	ME	04101
032 I036001	COW PLAZA 1 LLC	100 COMMERCIAL ST	PORTLAND	ME	04101
032 I041001	COW PLAZA GARAGE LLC	100 COMMERCIAL ST	PORTLAND	ME	04101
032 I042001	COW PLAZA HOTEL LLC	100 COMMERCIAL ST	PORTLAND	ME	04101
032 I012303	CULPOVICH ANDREW J & JENNIFER C CULPOVICH JTS	11 JENNY LN	RAYMOND	ME	04071
032 I012302	CURRAN JENNIFER A	22 GREENWOOD AVE	NEEDHAM	MA	02492
032 I012414	DEPALMA CHRISTOPHER R & JOSHUA A GOMES JTS	10 EXCHANGE ST # 414	PORTLAND	ME	04101
032 I012405	DOYLE KEVIN F & PAMELA J DOYLE TRUSTEES	168 CARDING MACHINE RD	BOWDOINHAM	ME	04008
032 I012305	DRISCOLL ROBERT E & JENNIFER DRISCOLL TRUSTEE	33 THURSTON RD	MELROSE	MA	02176
032 I012306	EASTON THORA	10 EXCHANGE ST # 306	PORTLAND	ME	04101
032 I012310	ECHM REALTY LLC	15 CHERRY RD	NORTH HAMPTON	NH	03862
032 I012312	EESI LLC	16 AVENUE FIVE	SCARBOROUGH	ME	04074
032 I012308	EVANS SHERI CHRISTIENNE	10 EXCHANGE ST # 308	PORTLAND	ME	04101
032 I012311	FECTEAU JANIS	15 CHERRY RD	NORTH HAMPTON	NH	03862
032 I006003	FIFTY EXCHANGE LLC	50 EXCHANGE ST	PORTLAND	ME	04101
032 I001001	FRESNEL LLC	100 COMMERCIAL ST STE 300	PORTLAND	ME	04101
032 I012301	FUEGEN STACY & ERNESTO RAMIREZ JTS	157 BROOK RD	FALMOUTH	ME	04105
032 I012314	GORDON ABIGAIL	10 EXCHANGE ST # 314	PORTLAND	ME	04101
032 I012407	GRINDLE BARRY JONATHAN	PO BOX 554	WINTERPORT	ME	04496
032 I012313	HANSON CARL F	10 EXCHANGE ST # 313	PORTLAND	ME	04101
032 I012406	JULASA INVESTMENTS LLC	246 N BOWMAN AVE	MERION STATION	PA	19066
032 I040001	KOWTOWER LLC	100 COMMERCIAL ST	PORTLAND	ME	04101
032 I012401	MOON HILL PROPERTY MANAGEMENT LLC	381 FALMOUTH RD	FALMOUTH	ME	04105
032 I002001	OLD PORT ARMS LLC	PO BOX 368	SCARBOROUGH	ME	04070
032 E002001	PALACCI JOSEPH A TRUSTEE	53 EXCHANGE ST STE 400	PORTLAND	ME	04101
032 I012304	RICH CURTIS P & KATHLEEN THERESE LYTLE JTS	22 UPPER ST	BUCKLAND	MA	01338
032 I012409	SAHA DEBASMITA & RAVI RANJAN SINGH JTS	6098 BLUE CHURCH RD	COOPERSBURG	PA	18036
032 I006001	SANTANA LLC	6 ISLAND VIEW DR	CUMBERLAND FORESIDE	ME	04110
032 I012309	SHEPHERD THOMAS A & ELIZABETH A SHEPHERD JTS	PO BOX 185	BETHEL	ME	04217
032 I012411	SPANNAUS MICHAELA LILY	10 EXCHANGE ST # 411	PORTLAND	ME	04101
032 I012410	THOMAS ALISA G & STEVEN L THOMAS JTS	5835 W 167TH ST	STILWELL	KS	66085
032 I012412	URBANEK NICHOLAS P	81 GRAY ST # 2	PORTLAND	ME	04102
032 I012408	WALTERS BRETT D & KAILI A WALTERS TRUSTEES	543 SHEPHERD AVE	WINTER PARK	FL	32789
032 I012413	WHEELWRIGHT HENRY J TRUSTEE	17 LANDGRANE ST	QUINCY	MA	02171

Section 1

1

1A. Site Plan

East Brown Cow – Kowtower LLC, the applicant, is proposing the development of a 30-story mixed use building on the parcel addressed 45 Union Street in the City of Portland. The multi-use building will provide 88 hotel rooms, 73 residential dwelling units, a 1,495 nsf café on the ground floor, a 5,007 nsf restaurant, a 3,271 nsf bar and lounge, a 1,100 nsf viewing area on the top floor, and a 6,373 gsf wellness level with a pool and a gym. The café, restaurant, bar, viewing area, and wellness level will be open to the public. The proposed building has a roughly 5,650 gsf footprint at-grade totaling approximately 200,000sf gross floor area.

The development site is 25,397sf and currently serves as a 32-space surface parking lot. With the project's development, the parking lot will be removed.

Vehicle access to the site will be provided via an existing driveway entrance on Union Street, located approximately 260 feet northwest of Fore Street. Pedestrian access will be provided to the site by a sidewalk along the site driveway from Union Street, a pedestrian path between Exchange Street, Middle Street, and Union Street via the plaza, and a sidewalk connection to Fore Street along Patton Court (A.K.A. Fox Court).

No vehicle parking will be provided on-site. In lieu, a drop-off loop will be provided at the main entrances, and a valet service will be offered for guests and the public. The valet service will use the adjoining Old Port Square Garage, which has 423 spaces. Some of these spaces will be available for residents and guests. Users of the development can also park in the parking garage without using the valet system.

The project will provide storage for 43 bicycles, external to the building. All 43 spaces will be located outside on the site itself and on adjacent properties owned by a related party for utilization by all users.

1B. Existing & Proposed Uses

Existing

The existing parcel is occupied by a 32-space surface parking lot, which will be removed when the proposed project is developed.

Proposed

The proposed multi-use building will provide 88 hotel rooms, 73 residential dwelling units, a 1,495 nsf café on the ground floor, a 5,007 nsf restaurant, a 3,271 nsf bar and lounge, a 1,100 nsf viewing area on the top floor, and a 6,373 gsf wellness level with a pool and a gym. The viewing area will be ticketed, with a capacity of 110 persons (10sf per standing person). Limited amenities such as food, drink, and souvenirs will be provided.

The café, restaurant, bar, viewing area, and wellness level will be open to the public.

1C. Regional Mapping

For the regional mapping analysis, we have established a study area with a ¼-mile radius from the site entrance at Union Street. The study area is based on MaineDOT's requirements for an urban/suburban development area.

Pedestrian & Bicycle Trip Origins/Destinations
Portland, within a ¼-mile radius of the site entrance, generally consists of residential, hotel, retail, recreational, and commercial land uses. It is assumed that these existing residential dwellings and lodgings could be pedestrian/bicycle trip origins and that the pedestrian/bicycle destinations would be the retail, commercial, and recreational uses.

Pedestrian Infrastructure
A review of existing pedestrian and bicycle infrastructure was completed using Google Earth and field surveys. Our surveys indicate that within the ¼-mile study radius, existing sidewalks are present on one or both sides of most streets. The existing sidewalks and crosswalks are illustrated in the *Regional Mapping Plan* attached in *Section A of the appendix*.

Bicycle Infrastructure
A review of existing pedestrian and bicycle infrastructure was completed using the City's Bikeway Network Map. The map shows that within the study area, there are striped one-way bike lanes on Spring Street, southwest of Temple Street, and Preble Street. The existing bike lanes are illustrated in the *Regional Mapping Plan* attached in *Section A of the appendix*.

Transit Infrastructure
A review of bus stops and bus routes has been completed for the study area. The review reveals that there are three bus stops situated near the development site: on Fore Street at Union Street, on Middle Street at Exchange Street, and on Temple Street at Free Street. These bus stops are served by Route 8, Route 21, Route 24A, and Route 24B. Graphics detailing these routes are included in *Section A of the appendix*. The existing bus stops are included in the *Regional Mapping Plan*.

Pedestrian Infrastructure Gaps
As shown in the *Regional Mapping Plan*, there are no significant gaps in the pedestrian sidewalk infrastructure.

1D. Proposed Uses in the General Vicinity of the Proposed Development

Traffic generated by projects that have been approved by the Local Planning Board and/or the Maine Department of Transportation, but are not yet opened, must be included in the estimate of pre-development traffic. The City of Portland has been consulted to identify any and all development projects whose trips may impact the study area. During the scoping meeting, the City identified that the traffic generated by the 385 Congress Street project should be included.

1E. Site Trip Generation

Site trip generation estimates for the proposed multi-use building have been determined based on the trip generation rates provided in the 11th edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The ITE Manual provides numerous land use codes (LUC) and the volume of site generated trips produced by each category.

Trip generation calculations for the 73 residential dwelling units have been prepared using **LUC #222 – Multifamily Housing (High-Rise)** (Dense Multi-Use Urban). ITE describes LUC #222 as "*high-rise multifamily housing includes apartments, townhouses, and condominiums. Each building has more than 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevators, and a set of hallways.*"

Note: During the Saturday peak hour, the trip generation rate is only comprised of two data points, and cautions of a small sample size. In lieu of using the Saturday rate, we have reviewed the ratio between the PM peak hour and the Saturday peak hour of the General Urban/Suburban multi-family housing (mid-rise), and assumed that it was similar for the Dense Multi-Use Urban setting. See calculation below:

$$\frac{\boldsymbol{Sat.\,(DMUU)}}{\boldsymbol{0.20\ (PM\ DMUU)}} = \frac{\boldsymbol{0.39\ (Sat.\,Urban/Sub.)}}{\boldsymbol{0.39\ (PM\ Urban/Sub.)}} \rightarrow \boldsymbol{Sat.\,Peak\ Hour\ (DMUU) = 0.20}$$

The trip generation calculations for the 88 hotel rooms have been prepared using **LUC #310 – Hotel** (Dense Multi-Use Urban). ITE describes LUC 310 as *"a place of lodging that provides sleeping accommodations and supporting facilities such as a full-service restaurant, a cocktail lounge, meeting rooms, banquet room, and convention facilities. A hotel typically provides a swimming pool or another recreational facility such as a fitness room."* Similarly to LUC #222, ITE only provides two data points for the PM peak hour of the adjacent street, and the Saturday peak hour.

Note: For the Saturday peak hour, we have compared the ratio between the PM peak hour and the Saturday peak hour of the General Urban/Suburban Hotel, and assumed that it was similar for the Dense Multi-Use Urban setting. See calculation below:

$$\frac{\boldsymbol{Sat.\,(DMUU)}}{\boldsymbol{0.34\ (PM\ DMUU)}} = \frac{\boldsymbol{0.72\ (Sat.\,Urban/Sub.)}}{\boldsymbol{0.60\ (PM\ Urban/Sub.)}} \rightarrow \boldsymbol{Sat.\,Peak\ hour\ (DMUU) = 0.41}$$

For the PM peak hour, we have assumed that it is similar to the Dense Multi-Use Urban PM peak hour of the generator rate.

To estimate the trips generated by the 5,007sf restaurant, we have utilized **LUC #931 – Fine Dining Restaurant** (General Urban/Suburban), described as "*a full-service eating establishment with a typical duration of stay of at least 1 hour. A fine dining restaurant generally does not serve breakfast; some do not serve lunch; all serve dinner. This type of restaurant often requests and sometimes requires a reservation and is generally not part of a chain. A patron commonly waits to be seated, is served by wait staff, orders from a menu and pays after the meal. Some of the study sites have lounge or bar facilities (serving alcoholic beverages), but meal service is the primary draw to the restaurant.*"

The trip generation estimates for the 1,495sf café have been prepared using **LUC #932 – High-Turnover (Sit-Down) Restaurant** (General Urban/Suburban). ITE describes LUC #930 as "*a full-service eating establishment with a typical duration of stay of 60 minutes or less. This type of restaurant is usually moderately priced, frequently belong to a restaurant chain, and is commonly referred to as casual dining. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours a day. These restaurants typically do not accept reservations. A patron commonly waits to be seated, is served by wait staff, orders from a menu, and pays after a meal.*" While this description does not quite fit the proposed development, we expect the trip generation to be very similar, based on the typical duration of stay.

For the 3,271sf bar and lounge, trip generation calculations have been prepared using **LUC #975 – Drinking Place** (General Urban/Suburban), which ITE describes as *"a drinking place contains a bar, where alcoholic beverages and food are sold, and possibly some type of entertainment, such as music, television screens, video games, or pool tables."*

ITE does not provide a LUC specifically for the 1,100sf viewing area with a capacity of 110 standing persons. For this application, we have assumed that it is similar to **LUC #931 – Fine Dining** (General Urban/Suburban), which typically has a duration of stay of at least 1 hour. For the trip generation calculations, we will use the independent variable of "seats," using the 110 person capacity, for a total of 110 "Seats."

Trip generation estimates for the proposed 6,373sf wellness level, with a gym and pool, have been determined using **LUC #492 – Health/Fitness Club** (General Urban/Suburban), defined by ITE as "*a privately-owned facility that primarily focuses on individual fitness or training. It typically provides exercise classes, fitness equipment, a weight room, spa, lockers rooms, and a small restaurant or snack bar. This land use may also include ancillary facilities, such as a swimming pool, whirlpool, sauna, limited retail, and tennis, pickle ball, racquetball, or handball courts. These facilities are membership clubs that may allow access to the general public for a fee.*"

In the *Trip Generation Manual*, ITE provides the *Average* trip generation rate, and the *Fitted Curve* trip generation rate. MaineDOT guidelines state that when $R^2 \geq 0.80$, the *Fitted Curve* trip generation rate shall be used. The trip generation calculations for the proposed uses are provided below in Table 1.1 through 1.7:

Table 1.1
ITE Trip Generation Calculations - Dense Multi-Use Urban

Land Use	Multifamily Housing (High-Rise) Not Close to Rail Transit - LUC 222						
Time Period	**Dwelling Units (X)**	**R^2**	**Fitted Curve Equation/Avg. Rate**	**Trips Generated (T)**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	73	0.92	T = 0.28(X) - 7.17	13	41% / 59%	5	8
PM Weekday Peak Hour (Street)	73	0.91	Ln(T) = 0.95 Ln(X) - 1.36	15	50% / 50%	8	7
AM Weekday Peak Hour (Generator)	73	n/a	0.26	19	10% / 90%	2	17
PM Weekday Peak Hour (Generator)	73	n/a	0.15	11	66% / 34%	7	4
Saturday Peak Hour*	73	n/a	0.20	15	43% / 57%	6	9

*See note at beginning of Section 1E.

Table 1.2
ITE Trip Generation Calculations - Dense Multi-Use Urban

Land Use	Hotel - LUC 310					
Time Period	**Rooms**	**Avg. Trip Gen. Rate (Trips/Room)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	88	0.31	27	39% / 61%	11	16
PM Weekday Peak Hour (Street)*	88	0.59	52	44% / 56%	23	29
AM Weekday Peak Hour (Generator)	88	0.33	29	51% / 49%	15	14
PM Weekday Peak Hour (Generator)	88	0.34	30	30% / 70%	9	21
Saturday Peak Hour**	88	0.41	36	67% / 33%	24	12

*Assumed Similar to General Urban/Suburban PM Peak Hour (Street).

** See note at beginning of Section.

Table 1.3 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Fine Dining Restaurant - LUC 931**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)		n/a				
PM Weekday Peak Hour (Street)	5.007	7.80	39	67% / 33%	26	13
AM Weekday Peak Hour (Generator)	5.007	4.47	22	80% / 20%	18	4
PM Weekday Peak Hour (Generator)	5.007	8.28	41	61% / 39%	25	16
Saturday Peak Hour	5.007	10.68	53	59% / 41%	31	22

Table 1.4 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**High-Turnover (Sit-Down) Restaurant - LUC 932**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	1.495	9.57	14	50% / 50%	7	7
PM Weekday Peak Hour (Street)	1.495	9.05	14	55% / 45%	8	6
AM Weekday Peak Hour (Generator)	1.495	13.68	20	63% / 37%	13	7
PM Weekday Peak Hour (Generator)	1.495	16.35	24	62% / 38%	15	9
Saturday Peak Hour	1.495	11.19	17	55% / 45%	9	8

Table 1.5 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Drinking Place - LUC 975**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)		Closed				
PM Weekday Peak Hour (Street)	3.271	11.36	37	66% / 34%	24	13
AM Weekday Peak Hour (Generator)		Closed				
PM Weekday Peak Hour (Generator)	3.271	15.53	51	68% / 32%	35	16
Saturday Peak Hour*	3.271	15.53	51	68% / 32%	35	16

*Saturday peak hour data not provided by ITE; Saturday peak hour assumed similar to Weekday PM (generator),

Table 1.6 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Fine Dining Restaurant - LUC 931**					
Time Period	**Seats**	**Avg. Trip Generation Rate (Trips Per Seat)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)*	110	0.15	17	69% / 31%	12	5
PM Weekday Peak Hour (Street)	110	0.28	31	67% / 33%	21	10
AM Weekday Peak Hour (Generator)	110	0.15	17	69% / 31%	12	5
PM Weekday Peak Hour (Generator)	110	0.29	32	59% / 41%	19	13
Saturday Peak Hour	110	0.33	36	59% / 41%	22	14

*ITE does not provide trip generation data for AM peak hour (street). Assumed similar to AM peak hour (generator).

Table 1.7 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**Health/Fitness Club - LUC 492**					
Time Period	**Sq. Footage (1k Sf)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	6.373	1.31	8	51% / 49%	4	4
PM Weekday Peak Hour (Street)	6.373	3.45	22	57% / 43%	13	9
AM Weekday Peak Hour (Generator)	6.373	1.40	9	46% / 54%	4	5
PM Weekday Peak Hour (Generator)	6.373	3.92	25	52% / 48%	13	12
Saturday Peak Hour	6.373	3.19	20	49% / 51%	10	10

Table 1.8, following, summarizes the trip generation calculations provided in Tables 1.1 through 1.7, and presents the total trip generation for the proposed multi-use building.

Table 1.8 ITE Trip Generation Summary			
Time Period	**Total Trips Generated**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	79	39	40
PM Weekday Peak Hour (Street)	210	123	87
AM Weekday Peak Hour (Generator)	116	64	52
PM Weekday Peak Hour (Generator)	214	123	91
Saturday Peak Hour	228	137	91

The preceding table shows that the proposed multi-use building is expected to generate 79 trips during the AM peak hour of the adjacent street and 210 trips during the PM peak hour of the adjacent street. During the peak hours of the generator, the site is expected to produce 116 trips in the AM and 214 trips in the PM. The development is expected to generate a maximum of 228 trips during the Saturday peak hour.

1F. Trip Adjustments

It is assumed that a certain number of trips generated by the proposed residential units and hotel rooms will also visit the on-site café, restaurant, bar and lounge, wellness level, and the viewing area. We have calculated the internally captured (shared) trips for proposed developments using the approach recommended by the ITE *Trip Generation Handbook*, which recommends using the NCHRP Report 684 methodology. The NCHRP Report 684 determines the internally captured trips between office, retail, restaurant, cinema/entertainment, residential, and hotel land uses.

The NCHRP spreadsheets, *attached in Section A of the appendix*, have been prepared by inputting the trips generated by the proposed residential, hotel, and restaurant uses. The outputs of the spreadsheets are summarized below in Table 1.9:

Table 1.9
NCHRP Report 684 Summary

Time Period	Internal Capture Percentages			External Vehicle Trips		
	Total	Enter	Exit	Total	Enter	Exit
AM Weekday Peak Hour (Street)	8%	8%	8%	73	36	37
PM Weekday Peak Hour (Street)	11%	10%	14%	186	111	75
Saturday Peak Hour	14%	12%	18%	196	121	75

Table 1.9 shows that with the internally captured trips accounted for, the site is expected to produce 73 external vehicle trips in the AM peak hour, 186 external vehicle trips in the PM peak hour, and 196 external vehicle trips in the Saturday peak hour.

1G. Site Trip Distribution

Vehicle trips generated by the proposed multi-use building have been assigned to and from the site during the AM and PM peak hours based on the entering and exiting distribution patterns provided by ITE. The entering and exiting distributions are provided in Table 1.1 through Table 1.7

1H. Site Trip Assignment

Trips generated by the proposed development during the PM and Saturday peak hour time periods have been assigned to and from the development site based on the existing traffic patterns found at the following intersections:

- Union St at Fore St
- Union St and Temple St at Spring St and Middle St
- Exchange St at Middle St
- Exchange St at Fore St and Moulton St

The turning movement counts, recorded on the 10th and 12th of April, 2025, are attached in *Section A of the appendix*. The applied trip assignment percentages are provided below in Table 1.10:

Table 1.10 Vehicle Trip Assignment		
Approach	**PM Peak Hour**	**Saturday Peak Hour**
Middle St (East of Site)	16%	12%
Exchange St (North of Site)	8%	10%
Fore St (East of Site)	13%	11%
Temple St (North of Site)	18%	21%
Spring St (West of Site)	16%	18%
Union St (South of Site)	9%	10%
Fore St (West of Site)	20%	18%

The site generated trips have been assigned through the intersections, to/from the site, following the percentages shown in Table 1.10. **Figure 2**, attached in *Section A of the appendix*, illustrates the site trip assignment.

Section 2

2

2A. Crash Analysis

MaineDOT's Office of Safety, Crash Records Section, has provided crash data for the latest three-year period (2022 – 2024) for the roadway sections and intersections within the vicinity of the site. A summary of the crash report is provided below, and the crash report plus a map showing the crash study area is included in *Section B of the appendix*.

Table 2.1
2022 - 2024 Crash Summary

#	Location		Total Crashes	Critical Rate Factor
1	Spring St @	Center St	5	0.33
2	Spring St @	Temple St & Union St	5	0.36
3	Spring St @	Middle St and Spring St	3	1.03
4	Union St @	Fore St	5	0.46
5	Fore St @	Dana St	2	1.40
6	Fore St @	Patton Ct	4	2.79
7	Union St @	Commercial St and Union Warf Rd	3	0.19
8	Commercial St @	Dana St	3	0.68
9	Commercial St @	Moulton St	1	0.23
10	Spring St btw.	Center St and Union St	5	2.15
11	Spring St btw.	Middle St and Union St	1	0.81
12	Middle St btw.	Spring St and Exchange St	1	0.85
13	Spring St btw.	Middle St and Union St	3	2.66
14	Spring St btw.	Union St and Cross St N	1	1.18
15	Spring St btw.	Cross St N and Center St	1	0.35
16	Exchange St btw.	Milk St and Fore St	3	3.66
17	**Exchange St btw.**	**Milk St and Middle St**	**8**	**5.56**
18	Moulton St btw.	Fore St and Warf St	1	4.79
19	Patton Ct btw.	End of Rd and Fore St	7	n/a
20	Union St btw.	Warf St and Commercial St	5	6.43
21	Union St btw.	Warf St and Fore St	1	2.68
22	Union St btw.	Fore St and Middle St	3	1.27
23	Fore St btw.	Patton Ct and Exchange St	6	17.39
24	Fore St btw.	Non. Intersection and Dana St	6	16.54
25	**Fore St btw.**	**Non. Intersection and Union St**	**8**	**8.45**
26	Commercial St btw.	Cross St S and Union St	7	1.72
27	**Commercial St btw.**	**Union St and Dana St**	**11**	**2.67**
28	Commercial St btw.	Dana St and Moulton St	7	2.59

MaineDOT considers any roadway intersection or segment a high crash location (HCL) if both of the following criteria are met:

- ***8 or more crashes in the most recent three-year period***
- ***A Critical Rate Factor greater than or equal to 1.00***

As shown in the preceding table, there are three HCLs identified. **Location #17**, the section of Exchange Street located between Milk Street and Middle Street, meets MaineDOT's dual HCL criteria with 8 total crashes and a critical rate factor (CRF) of 5.56. **Location #25**, the 0.05-mile section of Fore Street between Union Street and non-intersection, is classified as an HCL with 8 total crashes and a CRF of 8.45. **Location #27**, the section of Commercial Street between Dana Street and Moulton Street, meets MaineDOT's HCL criteria with 11 crashes and a CRF of 2.67.

For each of the three HCLs, MaineDOT has prepared detailed collision diagrams that illustrate the location, type, and cause of each crash identified on the HCL. The HCLs are attached in *Section B of the appendix*, and a summary of the diagrams is provided below.

Location #17 – Exchange St btw. Milk St and Middle St
The collision diagram shows that of the 8 total crashes, 6 involved parked cars caused by one of the following: "*improper backing,*" "*Improper turn,*" or "*failure to keep in lane.*" One (1) crash was a "*head-on*" collision caused by an "*OUI," and one was a "side swipe" caused by a "failure to yield."* All 8 of the identified crashes were property damage only.

Location #25 – Fore St btw. Union St and Non-Int.
Of the 8 identified crashes, 5 involved parked cars caused by one of the following: *"hit-and-run," "Improper backing,"* or *"fail to keep in lane."* One (1) crash was a *side swipe"* caused by a *"failure to yield,"* 1 was a *"head-on"* collision caused by an *"OUI,"* and 1 involved a motorist backing into a light pole. Of the 8 identified crashes, 1 was a Type A crash (suspected major injury), and 7 were property damage only.

Location #27 – Commercial St btw. Dana St and Moulton St
Of the 11 identified crashes, 8 crashes involved motorists backing out of the angled parking spaces on the northwest side of Commercial Street. Of these 8 crashes, 6 vehicles backed into motorists traveling southwest on Commercial Street, and 2 vehicles backed into vehicles in the adjacent parking space. OF the remaining 3 crashes, 1 was a single-vehicle crash where a vehicle struck the curb due to snow road conditions, 1 was a "*rear-end*" crash, and the last was a "*side-swipe*" crash caused by a "*failure to keep in lane.*" All 11 crashes were property damage only.

2B. Pedestrian & Bike Crash Analysis

MaineDOT's crash report shows that within the study area, there were 6 pedestrian crashes and 2 bicycle crashes. From a review of MaineDOT's Public Map Viewer, we have identified the location and Injury Crash severity for each bicycle and pedestrian crash within the study area. The crashes are summarized in the following chart:

Table 2.2 2022 - 2024 Pedestrian & Bicycle Crash Summary				
#	**Location**		**Crash Type**	**Injury Crash**
1	Fore St @	Patton Ct	Bicycle	B
2	Commercial St btw.	Cross St S and Union St	Bicycle	B
3	Union St @	Temple St, Spring St, and Middle St	Pedestrian	C
4	Union St @	Commercial St	Pedestrian	C
5	Spring St btw.	Center St and Union St	Pedestrian	A
6	Union St @	Fore St	Pedestrian	C
7	Spring St btw.	Center St and Union St	Pedestrian	A
8	Middle St @	Exchange St	Pedestrian	B

Type A = Suspected Serious Injury, Type B = Suspected Minor Injury, Type C = Possible Injury, PD = Property Damage.

Section 3

3

3A. Entrance/Exit Location

Vehicle access to the site will be provided via an existing driveway entrance on Union Street, located approximately 260 feet northwest of Fore Street.

3B. Entrance & Exit Plan View

Intersection sight distances were directionally recorded from the existing site entrance in accordance with the criteria established within the MaineDOT's *Highway Driveway and Entrance Rules* publication, which require the following minimum sight distances for non-mobility roadways based upon the posted speed limit:

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

The section of Union Street fronting the site driveway is unposted and assumed to be 25 mph, requiring an unobstructed sight distance of 200 feet. In accordance with *Highway Driveway and Entrance Rules,* sight distance measurements were recorded using the following procedures: "*Sight distance is measured to and from the point on the centerline of the proposed access that is located 10 feet from the edge of traveled way. The height of the hypothetical person's view is considered to be 3½ feet above the pavement, and the height of the object being viewed is considered to be 4¼ feet above the pavement.*"

The field measurements recorded from the proposed site entrance looking directionally onto Union Street indicate that existing sight distances do not meet the minimum requirements based on the assumed speed limit. The sight distances, looking both left and right, are obstructed by the on-street parking spaces located adjacent to the site driveway.

To meet the sight distance requirements, we recommend that the two (minimum) on street parking spots adjacent to the driveway entrance, on the left and right, be removed. Once the parking spaces are removed, we recommend that sight distances are measured in the field to confirm that the minimum requirement is provided.

3C. Entrance/Exit Design

The proposed project, including any required off-site improvements, will be designed and constructed as directed by the City of Portland.

3D. Entrance/Exit Criteria

This site driveway will be designed to meet the requirements of the City of Portland's Technical Standards.

Section 4

4

4. Title, Right or Interest

A SHORT FORM QUITCLAIM DEED WITHOUT COVENANT, signed and dated April 2, 2019, provides documentation of Kowtower LLC's ownership of the property portrayed in the *Boundary Survey Plan*, dated 4/22/2025, prepared by Sebago Technics, and attached In *Section D of the appendix*. The deed is attached in *Section C of the appendix*.

Section 5

5

5. Public or Private Right-of-way

The *Boundary Survey Plan*, dated 4/22/2025, prepared by Sebago Technics, and attached In *Section D of the appendix*, identifies three easements on the development parcel:

- Easement J: Subject to right of way to access the parking garage recorded in Book 30060, page 82.
- Easement G: Subject to access and maintenance rights recorded in Book 3495, Page 183.
- Easement M: Subject to building restrictions recorded in Book 2074, Page 29.

Section 6

6

6. Schedule

East Brown Cow – Kowtower LLC is anticipating the start of construction in 2028 with a 2030 completion.

Section 7

7A EXISTING & PROJECTED TRAFFIC VOLUMES

7A-1. Existing Traffic Volumes

Turning movement traffic counts were conducted at following intersections, on the noted dates, during the weekday PM peak hour, and the Saturday midday peak hour:

- **Union Street at Fore Street (Signalized)**
  - Data collected on 4/10/2025 and 4/12/2025
  - Weekday PM peak hour begins at 5:00 PM
  - Saturday midday peak hour begins at 11:45 AM
- **Union Street and Temple Street at Spring Street and Middle Street (Signalized)**
  - Data collected on 4/10/2025 and 4/12/2025
  - Weekday PM peak hour begins at 4:45 PM
  - Saturday midday peak hour begins at 11:45 AM
- **Middle Street at Exchange Street (Unsignalized)**
  - Data collected on 4/10/2025 and 4/12/2025
  - Weekday PM peak hour begins at 5:00 PM
  - Saturday midday peak hour begins at 12:45 PM
- **Fore Street at Exchange Street and Moulton Street (Unsignalized)**
  - Data collected on 4/10/2025 and 4/12/2025
  - Weekday PM peak hour begins at 4:45 PM
  - Saturday midday peak hour begins at 12:15 PM
- **Union Street at the Site Entrance (Unsignalized)**
  - Data collected on10/21/2025 and 10/25/2025
  - Weekday PM peak hour begins at 4:45 PM
  - Saturday midday peak hour begins at 12:45 PM

All vehicular traffic entering each intersection was recorded in 15-minute intervals; the PM traffic data was recorded between 3:00 and 6:00 PM, and the Saturday traffic data was recorded between 11:00 AM and 2:00 PM. From a summary of the data, peak hour time periods were established for the *"peak"* commuter travel periods. The peak hour time periods are summarized above, and the count data is included in *Section A of the appendix*.

The 2025 traffic volumes are illustrated in **Figure 1**, attached in *Section A of the appendix*. This figure only includes the study intersections, as defined in the following section.

In addition to the typical weekday PM and Saturday counts, a 12-hour turning movement count was recorded at the intersection of Fore Street and Union Street on October 21, 2025. The count will be used to determine if the existing traffic signal is still warranted. The count data is included in *Section A of the appendix*.

During the scoping meeting, it was noted that the April counts might not accurately represent pedestrian volumes in the area. Accordingly, as directed by the City, turning movement counts were collected at the site intersection with Union Street, and the intersection of Union Street at Fore Street on October 21, 2025, when there were two cruise ships docked.

7A-2. Study Intersections

During the scoping meeting, it was determined that the study intersections are as follows:

- Union Street at the Site Entrance (Unsignalized)
- Union Street at Fore Street (Signalized)
- Union Street and Temple Street at Spring Street and Middle Street (Signalized)

7A-2. Seasonal Adjustments

Traffic data collected during the months of April and October requires a seasonal adjustment to reflect the "*peak*" travel conditions found during the summer months of July and August. MaineDOT provides Weekly Mean Factors for adjusting traffic volumes collected outside of the peak time periods.

MaineDOT utilizes highway classifications of I, II, or III for all State and Local roadways. MaineDOT's 2023 Count Book classifies the roadways within the vicinity of the site as Group I roadways. **Group I** *roadways or urban roads are those which carry commuter traffic and exhibit little seasonal change in traffic volumes.* The Group I classification indicates that the roadways at the study intersections will experience minimal seasonal fluctuation.

In accordance with MaineDOT's 2024 Weekly Group Mean Factors, we have applied a seasonal adjustment factor of 1.092 to the April and October traffic volumes recorded at the study intersections.

7A-3. Annual Adjustments

This traffic study has been prepared based on a projected build-out year of 2030. MaineDOT's traffic counts recorded on Commercial Street northeast of Union Street show that traffic volumes on Commercial Street have decreased between 2019 (AADT of 11,050) and 2022 (AADT of 9,470). To be conservative in this study, we will apply a 1% annual growth rate (factor of 1.051) to the recorded traffic volumes.

Figure 3, attached in *Section A of the appendix*, depicts the 2030 design-hour traffic volumes, including the seasonal and annual adjustments. These adjustments were not applied to the volumes recorded on the site approach, nor the Portland Square approach, opposite the site driveway.

7A-4. Other Development Trips

Traffic generated by projects that have been approved by the Local Planning Board and/or the Maine Department of Transportation, yet are not opened, must be included in the estimate of pre-development traffic. During the scoping meeting, the City identified that the 385 Congress Street project should be included in our background traffic estimates. The project proposes the following:

- 149 Residential Units (LUC 222 DMUU)
- 179 Hotel Rooms (LUC 310 DMUU)
- 4,775sf Restaurant/Retail (LUC 932 General Urban/Suburban)

Table A1 ITE Trip Generation Calculations - Dense Multi-Use Urban							
Land Use	**Multifamily Housing (High-Rise) Not Close to Rail Transit - LUC 222**						
Time Period	**Dwelling Units (X)**	**R^2**	**Fitted Curve Equation/Avg. Rate**	**Trips Generated (T)**	**Distribution Entering / Exiting**	**Enter**	**Exit**
PM Weekday Peak Hour (Street)	149	0.91	Ln(T) = 0.95 Ln(X) - 1.36	30	50% / 50%	15	15
Saturday Peak Hour*	149	n/a	0.20	30	43% / 57%	13	17

*See note at beginning of Section 1E.

Table A2 ITE Trip Generation Calculations - Dense Multi-Use Urban						
Land Use	**Hotel - LUC 310**					
Time Period	**Rooms**	**Avg. Trip Gen. Rate (Trips/Room)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
PM Weekday Peak Hour (Street)*	179	0.59	106	44% / 56%	47	59
Saturday Peak Hour**	179	0.41	73	67% / 33%	49	24

*Assumed Similar to General Urban/Suburban PM Peak Hour (Street).

** See note at beginning of Section 1E.

Table A3 ITE Trip Generation Calculations - General Urban/Suburban						
Land Use	**High-Turnover (Sit-Down) Restaurant - LUC 932**					
Time Period	**Sq. Footage (1k)**	**Avg. Trip Generation Rate (Trips Per 1k Sf)**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
PM Weekday Peak Hour (Street)	4.775	9.05	43	55% / 45%	24	19
Saturday Peak Hour	4.775	11.19	53	55% / 45%	29	24

Table A4 ITE Trip Generation Summary			
Time Period	**Total Trips Generated**	**Enter**	**Exit**
PM Weekday Peak Hour (Street)	179	86	93
Saturday Peak Hour	156	91	65

The Traffic Movement Permit Application prepared for the project states that 25% of trips will travel to/from Congress Street, west of the site. Based on the AADT data, we have assumed that 44% of these trips (11% of the total trips) will travel on Temple Street and through the Union Street study intersections. The entering and exiting trips that will travel on Temple Street are below:

- PM Peak Hour
  - Enter Trips = 9
  - Exit Trips = 10
- Saturday Peak Hour
  - Enter Trips = 10
  - Exit Trips = 7

These trips have been assigned through the study intersections, following the existing traffic patterns shown in Figure 1. The other development trip assignment is shown in **Figure 4**, attached in *Section A of the appendix*.

7A-5. 2030 Pre-Development Traffic

The 2030 pre-development traffic volumes are shown in **Figure 5**, attached in *Section A of the appendix*. This figure has been prepared by combining the 2030 design hour traffic volumes, shown in Figure 3, with the other development trips, shown in Figure 4.

7A-6. 2030 Post-Development Traffic

The 2030 post-development traffic volumes are provided in **Figure 6**, attached in *Section A of the appendix*. This figure has been prepared by combining the 2030 pre-development traffic volumes shown in Figure 5 with the site trip assignment shown in Figure 2.

7B ANALYSIS

7B-1. Pedestrian Volumes

Turning movement counts were collected during April and October of 2025 at the signalized intersection of Union Street and Fore Street. The April traffic counts were collected on a typical weekday, and per the City's request, the October counts were collected on a weekday while there were 2 cruise ships in the harbor.

During the scoping meeting, the City requested a comparison of the April and October pedestrian volumes. A summary of the pedestrian volumes recorded during the PM peak hour is provided below:

- April Counts
  - Total peak hour pedestrian crossings = 326
- October Counts
  - Total peak hour pedestrian crossings = 423

As shown above, the October PM peak hour pedestrian volumes were approximately 30% higher than those in April. Accordingly, we will use the October pedestrian volumes in the Capacity Analysis. For this analysis, we have assumed 4 pedestrians per actuation.

7B-2. Capacity Analysis

A capacity analysis of the 2030 pre- and post-development traffic conditions has been performed for each of the three study intersections:

- Union Street at the Site Entrance (Unsignalized)
- Union Street at Fore Street (Signalized)
- Union Street and Temple Street at Spring Street and Middle Street (Signalized)

Within the capacity analysis, we review the level of service (LOS) for the vehicle movements at each of the study intersections. LOS is a measurement of the delay experienced by stopped vehicles at an intersection. LOS rankings are similar to the academic grading system, where an "A" is very good with little delay, and an "F" represents very poor conditions. The following chart presents the relationship between delay and LOS for signalized and unsignalized intersections.

Level of Service Criteria for Signalized Intersections		Level of Service Criteria for Unsignalized Intersections	
Level of Service	**Total Control Delay (sec/veh)**	**Level of Service**	**Total Control Delay (sec/veh)**
A	Up to 10.0	A	Up to 10.0
B	10.1 to 20.0	B	10.1 to 15.0
C	20.1 to 35.0	C	15.1 to 25.0
D	35.1 to 55.0	D	25.1 to 35.0
E	55.1 to 80.0	E	35.1 to 50.0
F	Greater Than 80.0	F	Greater Than 50.0

The capacity analysis was performed using Synchro v12 inputs and SimTraffic v12 reporting outputs. The results are based upon 7 SimTraffic runs, averaging 5 runs with the lowest and highest run removed. The SimTraffic reports are included in *Section E of the appendix.*

Table B1, following, summarizes the results of the capacity analysis completed for the weekday PM and Saturday peak hours of the 2030 pre- and post-development conditions.

Table B1 Level of Service Summary								
Approach/Lane	2030 Pre-Development				2030 Post-Development			
	PM Peak Hour		Sat. Peak Hour		PM Peak Hour		Sat. Peak Hour	
	Delay (sec./veh.)	LOS	Delay (sec./veh.)	LOS	Delay (sec./veh.)	LOS	Delay (sec./veh.)	LOS
1. Spring Street/Middle Street & Union Street/Temple Street								
Union St - NBL	25.2	C	37.4	D	35.6	D	36.3	D
Union St - NBTR	10.1	B	10.0	A	10.5	B	9.6	A
Temple St - SBL	24.6	C	18.8	B	26.2	C	23.3	C
Temple St - SBTR	11.8	B	10.2	B	14.6	B	13.1	B
Spring St - NELT	15.6	B	13.6	B	18.5	B	14.5	B
Spring St - NER	3.3	A	2.8	A	3.8	A	3.3	A
Middle St - SWLT	13.7	B	11.6	B	15.9	B	13.4	B
Middle St - SWR	3.1	A	3.1	A	3.5	A	3.4	A
Overall	***13.0***	***B***	***11.5***	***B***	***15.5***	***B***	***13.1***	***B***
2. Union Street & Fore Street								
Fore St - EBL	12.4	B	10.1	B	12.7	B	10.3	B
Fore St - EBTR	5.8	A	5.6	A	6.4	A	5.6	A
Fore St - WBLTR	11.5	B	9.4	A	12.2	B	9.4	A
Union St - NBLTR	9.6	A	9.3	A	10.3	B	8.5	A
Union St - SBLT	14.0	B	11.1	B	15.5	B	11.7	B
Union St - SBR	3.2	A	2.6	A	3.0	A	3.0	A
Overall	***9.4***	***A***	***8.2***	***A***	***10.1***	***B***	***8.3***	***A***
3. Union Street & Site Driveway								
Portland Square - EBLTR	7.7	A	5.3	A	9.3	A	7.3	A
Site Drive - WBLTR	7.0	A	7.2	A	9.6	A	9.5	A
Union St - NBLTR	0.9	A	0.8	A	1.1	A	1.0	A
Union St - SBLTR	1.3	A	1.2	A	2.4	A	2.6	A
Overall	***2.3***	***A***	***1.2***	***A***	***3.8***	***A***	***3.1***	***A***

The capacity analysis completed for the three study intersections shows that the proposed development will have a minimal impact on traffic operations within the general vicinity of the site. Overall, all lanes, at each of the three study intersections will continue to operate at an acceptable LOS D or better, and all intersections will operate at LOS B or better. This is primarily due to the excess capacity that exists at the study intersections today.

At the site's intersection with Union Street, all approaches will operate at LOS A in the pre- and post-development peak hours.

7B-3. Vehicle Queuing Analysis

In addition to outputting the vehicle delay, SimTraffic also provides vehicle queue reports, which show the average queue, 95th percentile queue, and maximum queue. For the 2030 pre- and post-development conditions, the 95th percentile vehicle queue results are summarized in Table B2, below,

while the average and maximum vehicle queues are included in the SimTraffic reports provided in *Section E of the appendix*.

Table B2 95th Percentile Vehicle Queue Summary					
Approach/Lane	Storage Length (ft)	2030 Pre-Development		2030 Post-Development	
		PM Peak Hour	Sat. Peak Hour	PM Peak Hour	Sat. Peak Hour
		Veh. Queue (ft)	Veh. Queue (ft)	Veh. Queue (ft)	Veh. Queue (ft)
1. Spring Street/Middle Street & Union Street/Temple Street					
Union St - NBL	-	113	80	152	108
Union St - NBTR	**55**	**88**	**84**	**91**	**89**
Temple St - SBL	80	64	65	69	81
Temple St - SBTR	-	129	104	168	130
Spring St - NELT	-	121	124	142	135
Spring St - NER	**70**	**74**	50	**79**	**72**
Middle St - SWLT	-	126	79	144	89
Middle St - SWR	110	42	48	53	46
2. Union Street & Fore Street					
Fore St - EBL	-	61	46	74	60
Fore St - EBTR	100	92	75	97	76
Fore St - WBLTR	-	139	99	131	108
Union St - NBLTR	-	91	83	95	83
Union St - SBLT	-	125	104	136	111
Union St - SBR	**50**	**83**	**76**	**90**	**76**
3. Union Street & Site Driveway					
Portland Square - EBLTR	-	40	21	40	19
Site Drive - WBLTR		61	35	96	75
Union St - NBLTR	-	13	8	19	19
Union St - SBLTR	-	16	18	66	76

The vehicle queuing analysis shows that both the 2030 pre-development and the 2030 post-development traffic volumes exceed the storage lengths in 3 lanes:

- The northbound shared through/right-turn lane on Union Street at Temple Street, Spring Street and Middle Street.
- The northeast right-turn lane on Spring Street at Union Street, Temple Street, and Middle Street.
- The southbound right-turn lane on Union Street at Fore Street.

In the Spring Street right-turn lane, the storage length is only exceeded by 4 to 9 feet in the pre- and post-development peak hours.

These turn lanes are exceeded by approximately 1-2 vehicle lengths (assuming 25’ per vehicle) in the pre- and post-development peak hours. Additionally, the proposed development has a minimal impact on traffic operations in these lanes and only slightly exacerbates an existing condition. Accordingly, we are not proposing any timing adjustments or storage length modifications at this time.

7B-4. Signal Warrant Analysis

During the scoping meeting, the City requested that a traffic signal warrant be completed for the (signalized) intersection of Union Street and Fore Street, to determine if a traffic signal is still warranted at that location.

For this analysis, we have reviewed both the Eight-Hour Vehicular Volume warrant (MUTCD Warrant 1), and the Pedestrian Volume warrant (MUTCD Warrant 4).

Warrant 1, Eight-Hour Vehicular Volume

In accordance with 11th edition of the MUTCD, *the need for a traffic control signal should be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours on an average day:*

A. The vehicles per hour given in both the 100% columns of Condition A in Table 4C-1 exist on the major street and the more critical minor-street approach, respectively, to the intersection; or

B. The vehicles per hour given in both of the 100% columns of condition B in Table 4C-1 exist on the major street and the more critical minor-street approach, respectively to the intersection.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on more critical minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on more critical minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

The Eight-Hour Vehicular Volume warrant analysis was completed for 12 hours, using the turning movement counts collected at the intersection of Union Street and Fore Street on October 21, 2025.

We have completed the 8-hour vehicular volume warrant for the existing 2025 average traffic conditions and the forecast 2030 average traffic conditions. We have reviewed MaineDOT's Group Mean Factors, and they shows that "average" traffic conditions typically occur in mid-to-late October for Group I roadways. Thus, no seasonal adjustments have been applied to the recorded traffic volumes. To estimate the average 2030 traffic conditions, we have applied the 1% annual growth rate, as determined

in Section 7A-3. The 2025 and 2030 average condition traffic volumes are summarized in Tables 7.1 and 7.2, attached in *Section F of the appendix*.

2025 Existing Conditions: We have completed the 2025 existing conditions traffic signal warrant under 2 Alternatives:

1. With the right-turn-on-red volume discounted, and
2. With all right-turns included

The traffic signal warrant completed for the 2025 existing conditions indicate that a traffic signal is not warranted. The worksheets, attached in *Section F of the appendix*, shows that under Alternative 1, Condition A is met for 0 Hours, Condition B is met for 0 hours, and the 80% combination warrant is met for 0 hours. Under Alterative 2, with the all right-turns included, Condition A is met for 0 Hours, Condition B is met for 0 hours, and the 80% combination warrant is met for 0 hours. Note that for the 80% combination warrant to be met, both Condition A and Condition B must be met for the same 8 Hours. In this case, only some hours of Condition A were met to 80%.

2030 Future Conditions: We have completed the 2030 future conditions traffic signal warrant under 2 Alternatives:

1. With the right-turn-on-red volume discounted, and
2. With all right-turns included

The traffic signal warrant completed for the average 2030 traffic conditions indicate that a traffic signal is not warranted. The worksheet, attached in *Section F of the appendix*, shows that under Alternative 1, Condition A is met for 0 Hours, Condition B is met for 0 hours, and the 80% combination warrant is met for 0 hours. Under Alternative 2, Condition A is met for 1 Hour, Condition B is met for 0 hours, and the 80% combination warrant is met for 0 hours. Note that for the 80% combination warrant to be met, both Condition A and Condition B must be met for the same 8 Hours. In this case, only some hours of Condition A were met to 80%.

Warrant 1 Summary: The warrants completed for both conditions show that warrants are not met due to the volume on the "Major Street." To warrant a signal under Condition A, a minimum of 500 vehicles per hour (vph) is required. The worksheets, shows that under the 2025 existing conditions, the traffic volumes on the "Major Street" volumes were generally 70% to 85% of the required volume.

Similarly to the 2025 analysis, the 2030 future conditions analysis shows that the warrant wasn't met due to the low volume on the "Major Street." To warrant a signal under Condition A, a minimum of 500 vehicles per hour (vph) is required. Table worksheet, shows that under the 2030 future conditions, the traffic volumes on the "Major Street" were typically 80% to 95% of the required volume.

Note that to estimate the 2030 traffic conditions, we assumed a 1% annual growth rate. MaineDOT's count data shows that the Average Annual Daily Traffic (AADT) volumes on Fore Street northeast of Cross Street were 6,330 in 2019 and 4,870 in 2023. These volumes suggest that the assumed 1% annual increase is overly conservative and likely overestimates the 2030 traffic volumes at the intersection.

In summary, the eight-hour vehicular volume warrant analysis shows that the existing 2025 average condition traffic volumes, and the conservative 2030 future traffic volumes, do not warrant a traffic signal at the intersection of Fore Street and Union Street.

Warrant 4, Pedestrian Volume

Per the 11th Edition of the MUTCD,

01 T*he Pedestrian Volume signal warrant is intended for application where traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.*

Guidance:

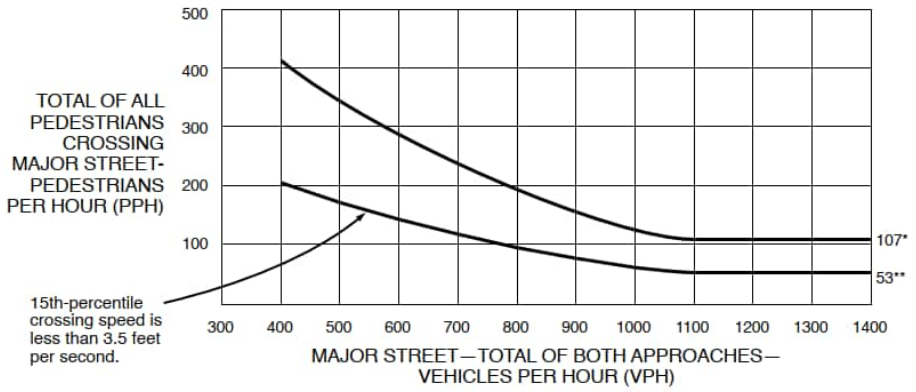
02 The need for a traffic control signal at an intersection or midblock crossing should be considered if an engineering study finds that one of the following criteria is met:

A. For each of any 4 hours of an average day, the plotted points representing vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-6.

The MUTCD figures follow:

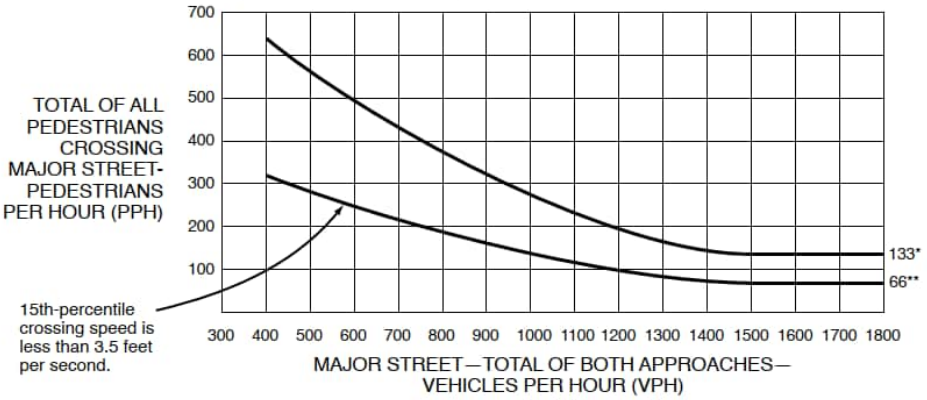
Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



* 107 pph applies as the lower threshold volume

** 53 pph applies as the lower threshold volume if the 15th-percentile crossing speed is less than 3.5 feet per second

Figure 4C-6. Warrant 4, Pedestrian Peak Hour



* 133 pph applies as the lower threshold volume

** 66 pph applies as the lower threshold volume if the 15th-percentile crossing speed is less than 3.5 feet per second

Table B3, following, summarizes the vehicular volume on the major street, with all right-turns included, and all crossings on the major street.

Table B3 2025 Average Condition Traffic Volumes		
Collected 10/21/2025	**Fore Street (Major Street)**	
Begin Hour	**TOTAL Ped Crossings**	**TOTAL Vehicles**
6:00 AM	7	80
7:00 AM	18	253
8:00 AM	60	387
9:00 AM	86	370
10:00 AM	162	379
11:00 AM	189	404
12:00 PM	205	448
1:00 PM	273	410
2:00 PM	148	415
3:00 PM	189	433
4:00 PM	196	456
5:00 PM	190	478
6:00 PM	170	345
TOTAL Volume	1893	4858

Table B3 shows that the existing pedestrian volumes recorded on October 21, a sunny 50 to 63 degree day with 2 cruise ships in the harbor, do not warrant a traffic signal. To warrant a signal, per Figure 4C-5 (pedestrian four-hour volume warrant), 350+ pedestrian crossings are required per hour, for four. With our major street volumes, Table B3 shows that the existing volumes are not close to warranting a signal. To warrant a signal per Figure 4C-6 (pedestrian peak hour warrant), 575+ pedestrians are required during 1 peak hour. With our major street volumes, Table B3 shows that the existing pedestrian volumes do not warrant a signal under this condition.

7B-5. Traffic Operations Analysis of Requested Improvements

During the scoping meeting, the City requested that we study the intersection of Union Street at Spring Street, and determine if protected left-turn lanes on Spring Street and Middle Street are a viable alternative to the current phasing. This change would improve pedestrian safety by eliminating permissive left-turns from Middle Street and Spring Street during active concurrent pedestrian phases on both Temple Street and Union Street.

Today, shared left/through lanes and a dedicated right-turn lanes are provided on the Spring Street and Middle Street approaches. In this analysis, we will change the shared left/through lanes to dedicated left-turn lanes, and change the dedicated right-turn lanes into shared through/right-turn lanes. To improve traffic operations at the intersection, we also modified the Cycle length.

In this analysis, we will also analyze traffic conditions at the intersection of Fore Street and Union Street, with the existing traffic signal removed. The intersection will be modeled as an all-way stop with single shared lanes on each approach.

CAPACITY ANALYSIS

The capacity analysis was completed using the methodology described in Section 7B-1, and with the intersection improvements described above. Table B4, following, summarizes the results of the capacity analysis completed for the 2030 post-development PM peak hour, the worst case scenario. The SimTraffic Reports are attached in *Section E of the appendix*.

Table B4 Level of Service Summary				
Approach/Lane	2030 Post-Development			
	PM Peak Hour		PM Peak Hour	
	NO Improvements		WITH Improvements	
	Delay (sec./veh.)	LOS	Delay (sec./veh.)	LOS
1. Spring Street/Middle Street & Union Street/Temple Street				
Union St - NBL	35.6	D	40.9	D
Union St - NBTR	10.5	B	12.7	B
Temple St - SBL	26.2	C	29.7	C
Temple St - SBTR	14.6	B	17.9	B
Spring St - NEL	-	n/a	41.4	D
Spring St - NELT	18.5	B	-	n/a
Spring St - NETR	-	n/a	13.0	B
Spring St - NER	3.8	A	-	n/a
Middle St - SWL	-	n/a	38.3	D
Middle St - SWLT	15.9	B	-	n/a
Middle St - SWTR	-	n/a	16.9	B
Middle St - SWR	3.5	A	-	n/a
Overall	15.5	***B***	***19.7***	B
2. Union Street & Fore Street				
Fore St - EBL	12.7	B	-	n/a
Fore St - EBLTR	-	n/a	35.8	D
Fore St - EBTR	6.4	A	-	n/a
Fore St - WBLTR	12.2	B	18.6	B
Union St - NBLTR	10.3	B	14.2	B
Union St - SBLTR	-	n/a	27.6	C
Union St - SBLT	15.5	B	-	n/a
Union St - SBR	3.0	A	-	n/a
Overall	10.1	***B***	***26.0***	***C***
3. Union Street & Site Driveway				
Portland Square - EBLTR	9.3	A	10.1	B
Site Drive - WBLTR	9.6	A	19.6	C
Union St - NBLTR	1.1	A	1.5	A
Union St - SBLTR	2.4	A	3.6	A
Overall	3.8	***A***	***6.7***	***A***

Table B4 shows that overall, with the protected left-turn lanes Spring Street and Middle Street, and with the all-way stop at Fore Street and Union Street, the overall delay at each intersection is expected to increase, however, the increase in delay is not significant, and all lanes will continue to operate at an acceptable LOS D or better. A summary of each intersection is provided below:

1. Spring St/Middle St at Union St/Temple St: With protected left-turn lanes provided on Spring Street and Middle Street, the level of delay for the Spring Street and Middle Street left-turn movements will increase from a LOS B, in the shared left/through lanes, to a LOS D, in the protected left-turn lanes.

While there is an increase in delay for the left-turn movements, the delay is projected to remain at an acceptable level. Today, the left-turn movements are permissive, and conflict with pedestrians crossing the Temple Street and Union Street approaches. Adding the protected left-turn phases will be a safety improvement, protecting pedestrians from left-turn movements when crossing the Union Street and Temple Street approaches.

Overall, with the protected left-turn phase included, the intersection LOS is expected to increase from 15.5 seconds of average delay to 19.7 seconds of average delay, and will continue operation at LOS B.

2. Union St at Fore Street: Without the traffic signal, there is expected to be an increase in delay on all 4 approaches (modeled as single lane approaches); however, each approach is projected to operate at LOS D or better.

Overall, the intersection will increase from LOS B with 10.1 seconds of average delay to a LOS C with 26.0 seconds of average delay.

3. Union St at Site Entrance: The analysis shows that with the modifications to the intersections on either side of the site driveway, the site intersection is expected to experience a 10-second increase in delay, but continue to operate satisfactorily at a LOS C.

VEHICLE QUEUING ANALYSIS

In addition to the capacity analysis, we have also completed a vehicle queueing analysis for the intersections, with the modifications noted above included. The 95th percentile queues are summarized below in Table B5, and the SimTraffic reports are included in *Section E of the appendix*.

Table B5 95th Percentile Vehicle Queue Summary			
Approach/Lane	Storage Length (ft)	2030 Post-Development	
		PM Peak Hour	PM Peak Hour
		NO Improvements	WITH Improvements
		Veh. Queue (ft)	Veh. Queue (ft)
1. Spring Street/Middle Street & Union Street/Temple Street			
Union St - NBL	-	152	161
Union St - NBTR	**55**	**91**	**89**
Temple St - SBL	80	69	80
Temple St - SBTR	-	168	183
Spring St - NEL	-	-	150
Spring St - NELT	-	142	-
Spring St - NETR	**70**	-	**105**
Spring St - NER	**70**	**79**	-
Middle St - SWL	**-**	**-**	121
Middle St - SWLT	-	144	-
Middle St - SWTR	**110**	-	**131**
Middle St - SWR	110	53	-
2. Union Street & Fore Street			
Fore St - EBL	-	74	-
Fore St - EBLTR	-	-	328
Fore St - EBTR	100	97	-
Fore St - WBLTR	-	131	149
Union St - NBLTR	-	95	104
Union St - SBLTR	-	-	213
Union St - SBLT	-	136	-
Union St - SBR	**50**	**90**	**-**
3. Union Street & Site Driveway			
Portland Square - EBLTR	-	40	42
Site Drive - WBLTR		96	162
Union St - NBLTR	-	19	20
Union St - SBLTR	-	66	93

1. Spring St/Middle St at Union St/Temple St: The vehicle queueing analysis shows that the projected vehicle queues in the Spring Street and Middle Street shared through/right-turn lanes will exceed the existing storage length by 21 feet to 35 feet, approximately 1 car length (assuming a 25' vehicle). Additionally, the analysis shows that the 95th percentile vehicle queues in the protected left-turn lanes on Middle Street and Spring Street will block the shared through/right-turn lanes at times.

The average queues will be 64 feet in the Union Street northbound left-turn lane and 65 feet in the shared through and right-turn lane; 33 feet in the Union Street southbound left-turn lane and 100 feet in the shared through and right-turn lane. On the Spring Street approach, the average queue is 65 feet in the left-turn lane and 69 feet in the shared through and right-turn lane. On Middle Street, the average queues will be 46 feet in the left-turn lane and 80 feet in the shared through and right-turn lane.

These 95th percentile and average vehicle queues are minor, and it is our opinion that the pedestrian safety benefit from the protected left-turns outweighs the vehicle queue increases at this intersection. Additionally, while the vehicle queues do exceed some storage lengths, the capacity analysis shows that the intersection will operate satisfactorily.

2. Union St at Fore Street: The queueing analysis shows that the 95th percentile vehicle queues are expected to range from 104 feet to 325 feet long. The average vehicle queues are expected to be 151 feet, 85 feet, 65 feet, and 123 feet on the eastbound Fore Street approach, the westbound Fore Street approach, the northbound Union Street approach, and the southbound Union Street approach, respectively. Assuming a vehicle length of 25 feet, the 95th percentile vehicle queues are expected to be 4 vehicles to 13 vehicles long. This is not unusual for all-way stop intersections in urban centers with moderate vehicle and pedestrian volumes.

3. Union St at Site Entrance: The analysis shows that the 95th percentile vehicle queues on the site approach are expected to be 162 feet, or 7 vehicles, long. This vehicle queue is not significant and can be accommodated by the site without impeding on-site operations.

7C PEDESTRIAN & TRANSIT MODES

7C-1. Transit

During the scoping meeting, the City requested that the bus stops and bus routes be included in the Regional Mapping analysis. These items are included in Section 1C.

7C-2. ADA Compliance Evaluation

During the scoping meeting, the City requested that the following intersections be checked for ADA compliance.

- Union Street at Fore Street (Signalized)
- Union Street and Temple Street at Spring Street and Middle Street (Signalized)
- Middle Street at Exchange Street (Unsignalized)
- Fore Street at Exchange Street and Moulton Street (Unsignalized)

ADA compliance for the curb ramps at the intersection was determined based on a field review and the use of a handheld slope meter. At both signalized intersections, the pedestrian signals had countdown heads, but the push buttons were not equipped with audible tones. The results of our field review are summarized below.

Table C1 ADA Compliance Summary			
Intersection	**Orientation**	**ADA Compliant?**	**NOTE**
1. Middle St and Spring St at Temple St and Union St	East quadrant, Union St Crossing	NO	Install APS and regrade ramp
	East quadrant, Middle St Crossing	NO	Install APS and regrade ramp
	North quadrant, Middle St crossing	NO	Install APS and regrade ramp and level landing
	North quadrant, Temple St crossing	NO	Install APS, regrade ramp, regrade counter slope, and regrade and level landing
	West quadrant, Temple St Crossing	NO	Install APS and regrade level landing
	West quadrant, Spring St Crossing	NO	Install APS and regrade level landing
	South quadrant, Spring St crossing	NO	Install APS and regrade ramp and level landing
	South quadrant, Union St crossing	NO	Install APS and regrade ramp and level landing
2. Middle St at Exchange St	South quadrant	NO	Regrade ramp, counter slope, and level landing
	East quadrant	YES	
	North quadrant	YES	
	West quadrant	YES	
3. Middle St at Exchange St and Moulton St	West quadrant	NO	Install DWF, regrade ramp, counter slope, and level landing
	East quadrant	NO	Regrade ramp and level landing
	South quadrant, Middle St crossing	NO	Regrade ramp, counter slope, and level landing
	South quadrant, Middle St & Moulton St crossing	NO	Reset flush curb, regrade ramp, regrade counter slope, and regrade level landing
	Southeast quadrant, Moulton St Crossing	NO	Regrade ramp, counter slope, and level landing
4. Fore St at Exchange St	South quadrant	NO	Install APS, regrade ramp, regrade counter slope, and regrade and level landing
	West quadrant	NO	Install APS, regrade ramp, regrade counter slope, regrade and level landing, and install ped signal sign
	North quadrant, Union St crossing	NO	Install APS and regrade ramp and level landing
	North quadrant, Fore St Crossing	NO	Install APS and regrade ramp and level landing
	East quadrant	NO	Install APS, regrade ramp and regrade level landing

7D GENERAL SAFETY ISSUES

7D-1. Crash Data

During the scoping meeting, the City requested that collision diagrams be requested from MaineDOT for Locations #23 and #24, as shown in Table 2A of Section 2, due to the high critical rate factor (CRF).

In the latest three-year period, Location #23, the section of Fore Street between Patton Court and Exchange Street, experienced a total of 6 crashes and had a CRF of 17.39. Location #24, the section of Fore Street between a non-intersection and Dana Street, had 6 total crashes and a CRF of 16.54. Collision diagrams were requested from MaineDOT for both of these locations, and they have stated that there are no significant safety concerns that would warrant diagrams to be drawn, and that diagrams have never been prepared for these locations. MaineDOT's summary of the crashes is provided below:

- *The first segment had 4 crashes related to improper parking. And the other two were rear-end crashes at the crosswalk. There were no injuries for any of these crashes.*

- *The second segment had 3 crashes that were sideswiping parked vehicles, 2 crashes that were parking related, and 1 that was a rear-end that also included the vehicle that did the rear-ending, hit a pedestrian in the leg that was illegally crossing the road (this was the only injury for this set of crashes, and it was a B (suspected minor) injury).*

Accordingly, we are not proposing any mitigation measures at these two locations, at this time.

7D-2. Pedestrian & Bicycle Crashes

During the scoping meeting, the City requested that the pedestrian and bicycle crash study area be expanded to a ¼ mile study radius from the site. Table D1, following, summarizes the bicycle and pedestrian crashes that occurred in the latest three- year period (2022 to 2024). This analysis was completed using MaineDOT's Map Viewer.

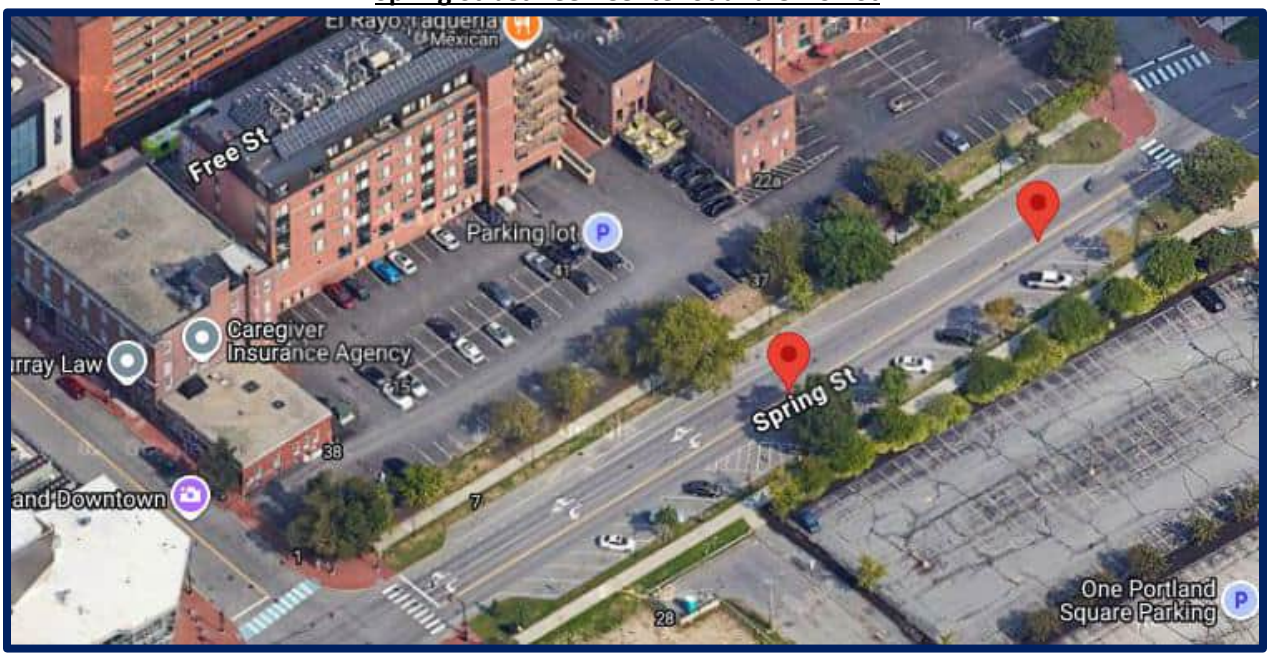
Table D1 2022 to 2024 Pedestrian & Bicycle Crash Summary 0.25 Mile Study Radius					
#	**Location**		**Crash Type**	**Date**	**Injury Level**
1	Commercial St @	Union St	Pedestrian	11/16/2023	C
2	Commercial St @	Center St	Bicycle	9/13/2024	B
3	Commercial St @	Pearl St	Bicycle	6/20/2024	B
4	Commercial St btw.	Non-Intersection and Center St	Bicycle	7/14/2023	C
5	Commercial St btw.	Cross St S and Union St	Bicycle	7/27/2023	B
6	Congress St @	Preble St	Pedestrian	1/20/2022	A
	Congress St @	Preble St	Pedestrian	12/8/2024	B
	Congress St @	Preble St	Bicycle	10/18/2023	B
	Congress St @	Preble St	Pedestrian	8/21/2024	B
7	Congress St @	Brown St	Pedestrian	5/17/2022	PD
8	Congress St @	Myrtle St	Pedestrian	1/13/2024	C
	Congress St @	Myrtle St	Bicycle	5/13/2022	C
9	Congress St @	Pearl St	Bicycle	6/6/2023	C
10	Fore St @	Patton Ct	Bicycle	6/16/2023	B
11	Fore St btw.	Non-Intersection and Dana St	Pedestrian	10/2/2022	B
12	Free St @	Brown St	Pedestrian	9/8/2024	B
13	Pearl St @	Federal St W	Pedestrian	12/13/2024	C
14	Spring St @	Exchange St	Pedestrian	2/26/2022	B
15	Spring St @	Union St	Pedestrian	12/5/2023	C
16	Spring St btw.	Center St and Union St	Pedestrian	10/7/2023	A
	Spring St btw.	Center St and Union St	Pedestrian	9/25/2024	A
17	Temple St @	Federal St W	Pedestrian	11/18/2024	B
18	Temple St @	Free St	Bicycle	12/22/2023	C
19	Union St @	Fore St	Pedestrian	8/4/2023	C
20	Union St btw.	Fore St and Commercial St	Bicycle	8/24/2022	C

Type A = Suspected Serious Injury, Type B = Suspected Minor Injury, Type C = Possible Injury, PD = Property Damage.

The crash data indicates that the crashes are generally spread out and occur in different locations; however, three pedestrian crashes and one bicycle crash are clustered at the intersection of Commercial Street and Preble Street. We completed a field review of this intersection. The review concluded that the audible tone is not working on the push button in the west quadrant and on the two push buttons in the southeast quadrant. Accordingly, we recommend replacing the pedestrian buttons.

During the scoping meeting, information was requested regarding the locations of the two pedestrian crashes on Spring Street, between Center Street and Union Street. These crashes have been evaluated using the Maine Public Crash Query Tool. The tool shows that both of these pedestrian crashes occurred outside of the crosswalks. The crash locations are shown below in Image D1. On the west side of this section, at Center Street, there is a signalized crosswalk. And on the east side, at Cross Street, there is an unsignalized crosswalk. Accordingly, we are not proposing any mitigation measures at this time.

Image D1 – Pedestrian Crashes on Spring St between Center St and Union St



7D-4. Intersection Sight Distance

In Section 3, it was noted that the sightline on the Site approach at the Union Street intersection is obstructed by the on-street parking spaces located directly adjacent to the site intersection. To improve the sightline and meet the minimum 200-foot requirement, we recommend removing these parking spaces. If the signal at the intersection of Fore Street and Union Street is removed, these parking spaces can remain on Union Street and be relocated to the current location of the existing southbound right-turn lane. A graphic showing the sightline obstructions and the proposed no-parking areas is attached in *Section G of the appendix*.

7D-5. Turning Templates

During the scoping meeting, the City requested that turning templates showing the design loading vehicle be included in the Section 7 study. The turning template showing a WB-40 entering the site and servicing the proposed building is included in *Section G of the appendix*.

7E CONCLUSIONS & RECOMMENDATIONS

7E-1. Capacity Analysis

A capacity analysis of 2030 pre-development and post-development traffic conditions was performed for the three study intersections:

- Union Street at the Site Entrance (Unsignalized)
- Union Street at Fore Street (Signalized)
- Union Street and Temple Street at Spring Street and Middle Street (Signalized)

The results of the capacity analysis show that the proposed project will have a minimal impact on traffic operations within the general vicinity of the site. Overall, all lanes at each of the three study intersections will continue to operate at an acceptable Level of Service (LOS) D or better, and all

intersections will operate at LOS B or better. At the site's intersection with Union Street, all approaches will operate at LOS A in the pre- and post-development peak hours.

Based on the results of the capacity analysis, we are not recommending any intersection improvements or traffic signal timing adjustments, at this time.

7E-2. Vehicle Queueing Analysis

A vehicle queueing analysis was completed for both the 2030 pre-development and the 2030 post-development traffic conditions at each of the three study intersections:

- Union Street at the Site Entrance (Unsignalized)
- Union Street at Fore Street (Signalized)
- Union Street and Temple Street at Spring Street and Middle Street (Signalized)

The analysis showed that three of the existing storage lanes at the signalized intersections are slightly exceeded in both the pre-development and the post-development conditions. The analysis indicates that the proposed development has a minimal impact on traffic operations in these lanes and only slightly exacerbates an existing condition. Accordingly, we are not proposing any timing adjustments or storage length modifications at this time.

7E-3. Traffic Signal Warrant Analysis

A traffic signal warrant analysis was completed for the signalized intersection of Fore Street and Union Street, to determine if a traffic signal is still warranted at the location. The analysis was completed using MUTCD's Warrant 1, the eight-hour vehicular volume warrant, and Warrant 4, the pedestrian volume warrant.

The results of the analysis indicate that, currently, the existing 2025 average condition traffic volumes do not warrant a signal. Similarly, the 2 2030 average condition volumes do not warrant a signal either. Although the analysis shows that the existing and projected volumes do not meet the traffic signal warrants, at this time, we do not recommend removing it, as it provides better safety for pedestrians crossing Fore Street and Union Street in this busy downtown area.

7E-4. Traffic Operations Analysis of Requested Improvements

A traffic operations analysis was completed for the requested improvements at the two signalized study intersections:

1. Union Street at Fore Street (Signalized)
2. Union Street and Temple Street at Spring Street and Middle Street (Signalized)

Intersection #1 was requested to be analyzed as an all-way stop, with single lane approaches on each of the four approaches. **Intersection #2** was requested to be analyzed with protected left-turn phases on Spring Street and Middle Street. The results of the traffic operations analysis show that both of these intersection improvements are viable. Overall, the average delay and the vehicle queue lengths are anticipated to increase; however, the increases are not significant, and all lanes will continue to operate at an acceptable LOS D or better.

We recommend that protected left-turns be provided on Spring Street and Middle Street. Adding the protected left-turn phases will be a safety improvement, protecting pedestrians from left-turn movements when crossing the Union Street and Temple Street approaches. To implement this change, signal heads, signal phasing, signal programing, and the cycle length will need to be revised.

7E-4. ADA Compliance Evaluation

An evaluation of ADA compliance was completed for the curb ramps at the following intersections:

- Union Street at Fore Street (Signalized)
- Union Street and Temple Street at Spring Street and Middle Street (Signalized)
- Middle Street at Exchange Street (Unsignalized)
- Fore Street at Exchange Street and Moulton Street (Unsignalized)

ADA compliance for the curb ramps at the intersection was determined based on a field review and the use of a handheld slope meter. At both signalized intersections, the pedestrian signals had countdown heads, but the push buttons were not equipped with audible tones. The analysis showed that the majority of the curb ramps at these intersections are not ADA-compliant. Further information is provided in Table C1 of Section 7C-2.

7E-5. Crash Data

During the scoping meeting, two locations on Fore Street, with 6 crashes each, were identified for further study by the City, due to the high critical rate factors (17.39 and 16.54). Per the City's request, we submitted a request for collision diagrams to MaineDOT. MaineDOT reviewed the two locations and determined that there were no significant safety concerns that would warrant diagrams to be drawn.

7E-6. Pedestrian & Bicycle Crashes

During the scoping meeting, the City requested that the pedestrian and bicycle crash study area be expanded to a ¼ mile study radius from the site. The crash data indicate that there were 10 bicycle crashes and 15 pedestrian crashes within this area during the three-year period from 2022 to 2024.

The crash data indicates that the crashes are generally spread out and occur in different locations; however, three pedestrian crashes and one bicycle crash are clustered at the intersection of Commercial Street and Preble Street. We completed a field review of this intersection. The review concluded that the audible tone is not working on the push button in the west quadrant and on the two push buttons in the southeast quadrant. Accordingly, we recommend replacing the pedestrian buttons.

During the scoping meeting, the section of Spring Street between Exchange Street and Union Street was identified for further study due to the two Type A injury crashes. We have reviewed these crashes using the Maine Public Crash Query Tool. The tool shows that both of these pedestrian crashes occurred outside of the crosswalks. On the west side of this roadway section, at Center Street, there is a signalized crosswalk. And on the east side, at Cross Street, there is an unsignalized crosswalk. Accordingly, we are not proposing any mitigation measures at this time.

7E-7. Intersection Sight Distance

In Section 3, it was noted that the sightline on the Site approach at the Union Street intersection is obstructed by the on-street parking spaces located directly adjacent to the site intersection. To improve the sightline and meet the minimum 200-foot requirement, we recommend removing these parking spaces. If the signal at the intersection of Fore Street and Union Street is removed, these parking spaces can remain on Union Street and be relocated to the current location of the existing southbound right-turn lane. A graphic showing the sight distance restriction and the proposed “no parking” areas is included in *Section G of the appendix*.

7E-8. Turning Templates

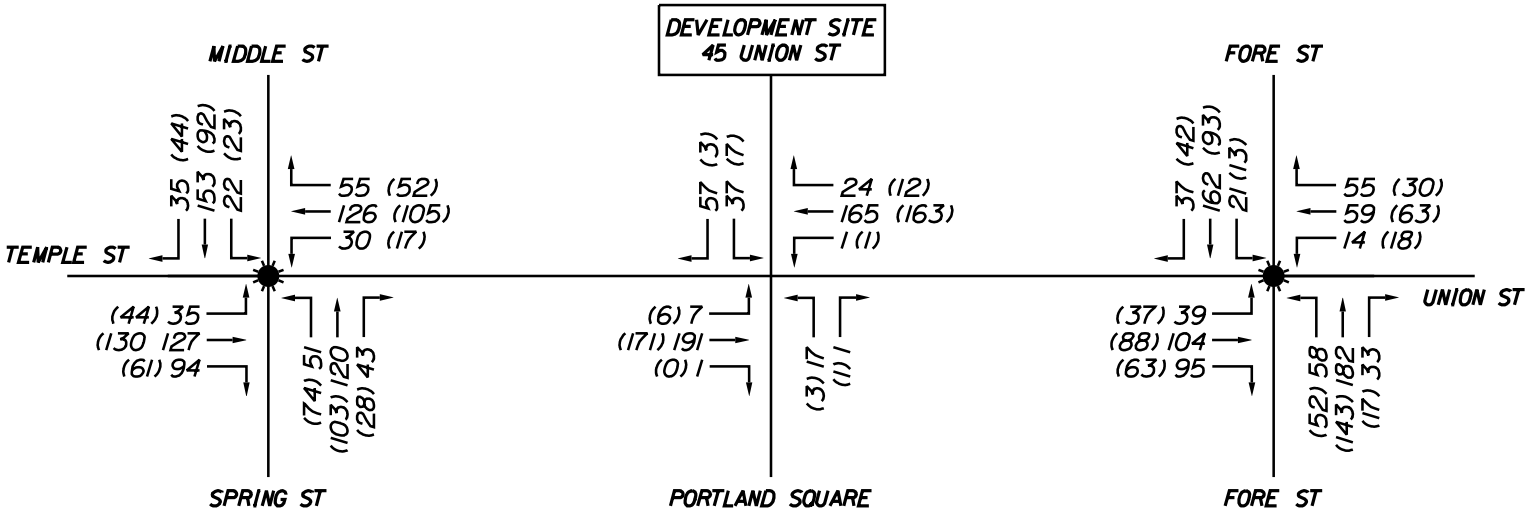
The turning template completed for the design vehicle shows that a WB-40 can enter the site and navigate through the site to service the proposed building.

APPENDIX

A. TRAFFIC FIGURES, NCHRP REPORT 684 CALCULATION SHEETS, REGIONAL MAPPING PLAN, BUS ROUTE GRAPHICS & TRAFFIC COUNTS
B. MAINEDOT CRASH DATA
C. DEED
D. SURVEY PLAN & SITE PLAN
E. SIMTRAFFIC REPORTS
F. TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS, AND 12-HOUR AVERAGE CONDITION TRAFFIC VOLUMES
G. TURNING TEMPLATE & SIGHT DISTANCE PLAN

APPENDIX A

- TRAFFIC FIGURES
- NCHRP REPORT 684 CALCULATION SHEETS
- REGIONAL MAPPING PLAN
- BUS ROUTE GRAPHICS
- TRAFFIC COUNTS



2025 TRAFFIC VOLUMES

FIGURE 1

LEGEND:

XX = PM PEAK HOUR

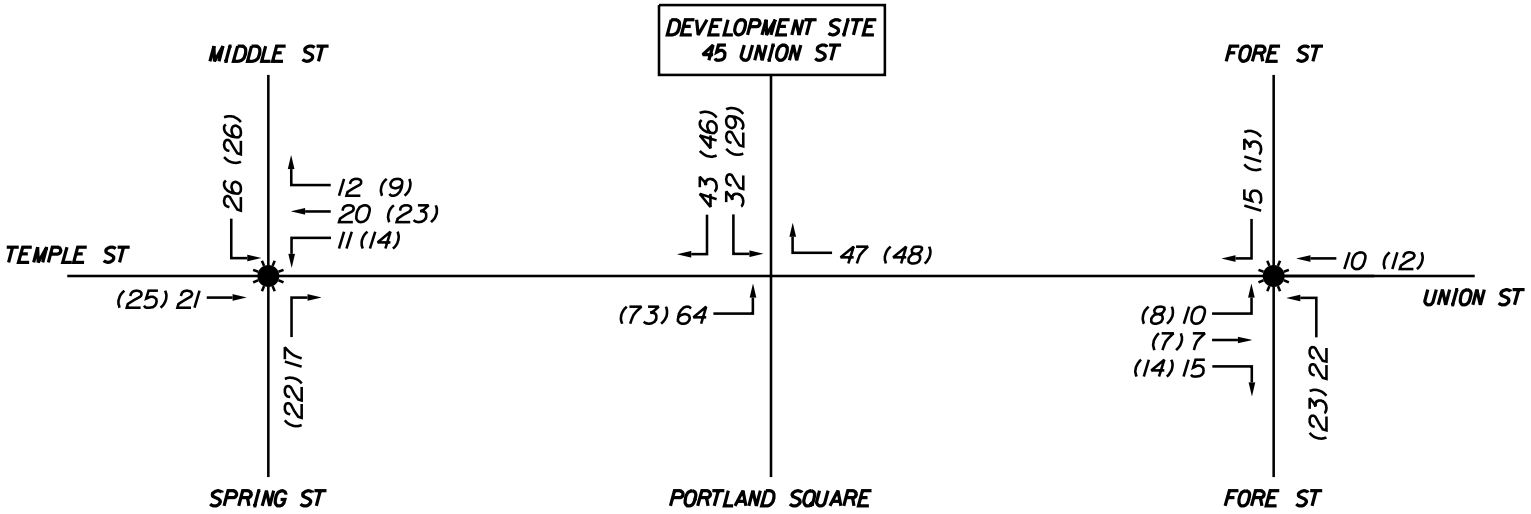
(XX) = SATURDAY PEAK HOUR

☀ = TRAFFIC SIGNAL

45 UNION STREET
MULTI-USE BUILDING
PORTLAND, MAINE

4464.007.001 DATE: OCT., 2025

Barton & Loguidice



SITE TRIP ASSIGNMENT

FIGURE 2

LEGEND:

XX = PM PEAK HOUR

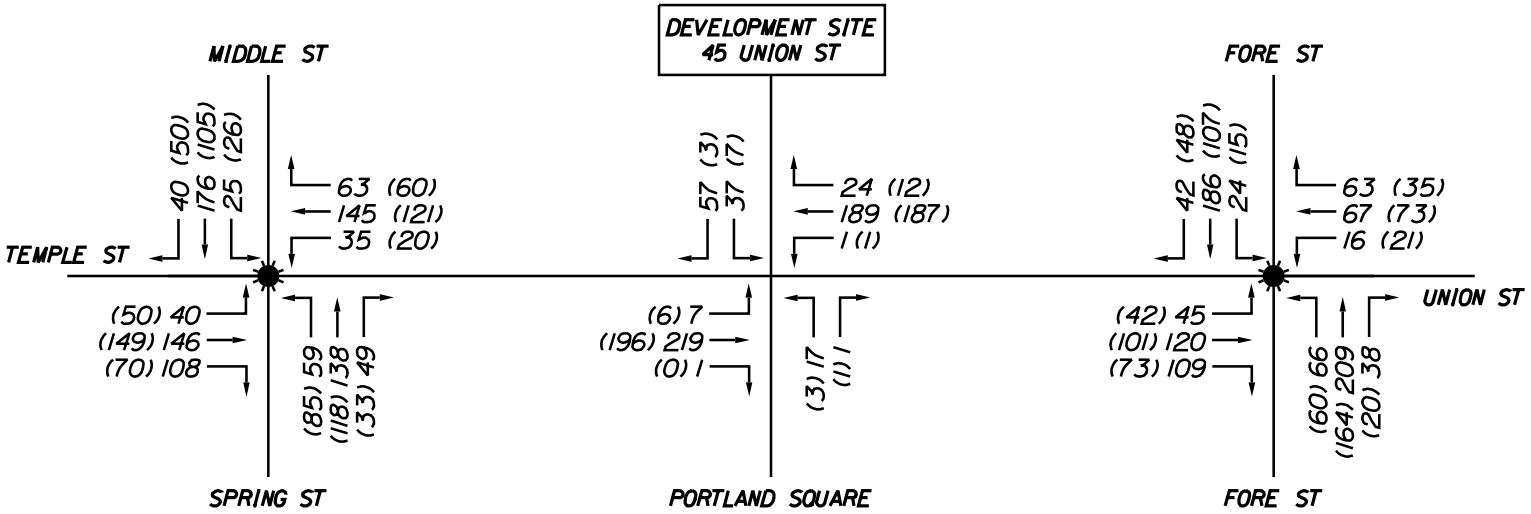
(XX) = SATURDAY PEAK HOUR

☀ = TRAFFIC SIGNAL

45 UNION STREET
MULTI-USE BUILDING
PORTLAND, MAINE

4464.007.001 DATE: OCT., 2025

Barton & Loguidice



2030 DESIGN HOUR TRAFFIC VOLUMES

FIGURE 3

LEGEND:

XX = PM PEAK HOUR

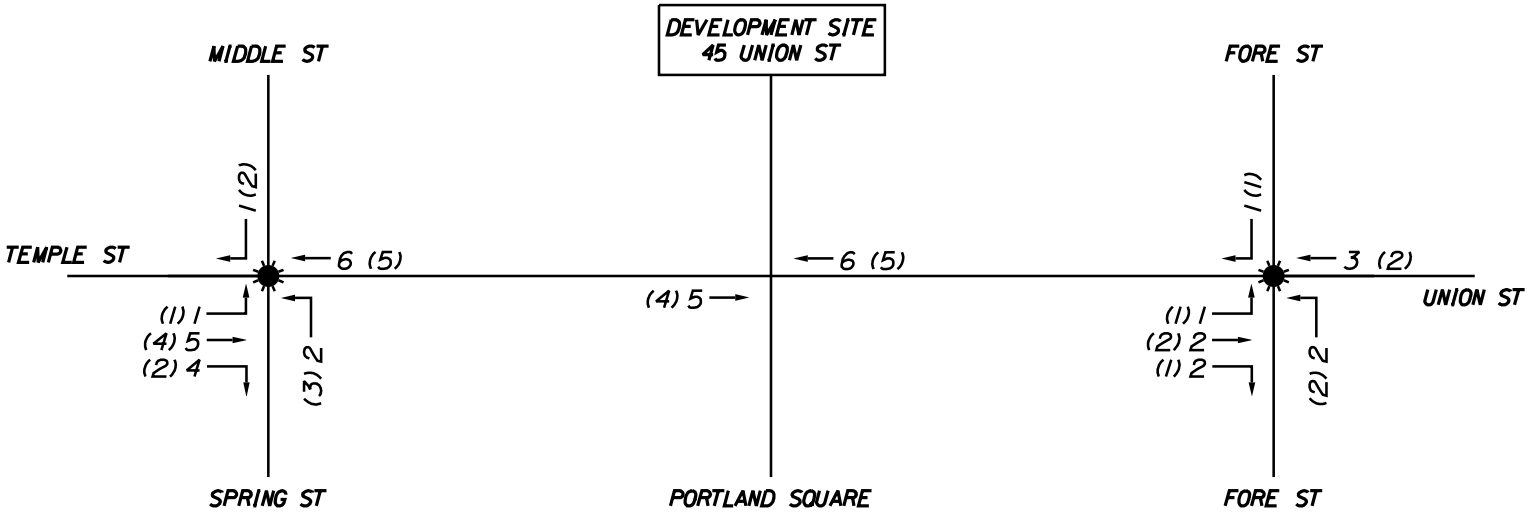
(XX) = SATURDAY PEAK HOUR

☀ = TRAFFIC SIGNAL

45 UNION STREET
MULTI-USE BUILDING
PORTLAND, MAINE

4464.007.001 DATE: OCT., 2025

Barton & Loguidice



OTHER DEVELOPMENT TRIP ASSIGNMENT

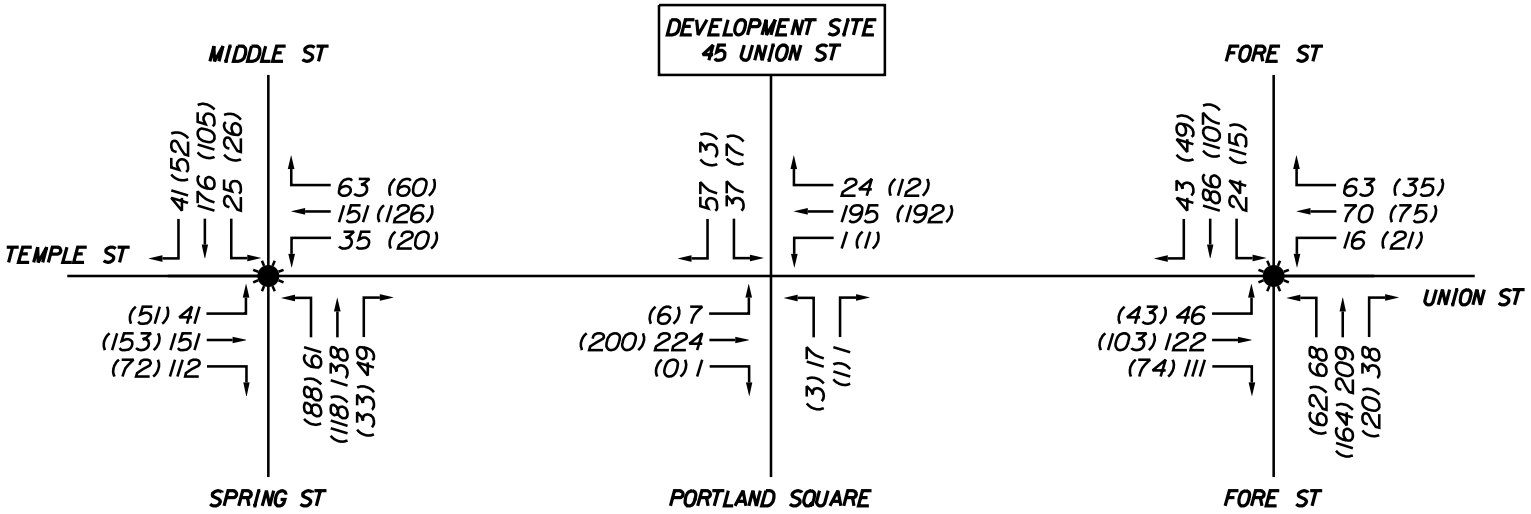
FIGURE 4

LEGEND:
XX = PM PEAK HOUR
(XX) = SATURDAY PEAK HOUR
☀ = TRAFFIC SIGNAL

45 UNION STREET
MULTI-USE BUILDING
PORTLAND, MAINE

4464.007.001 DATE: OCT., 2025

Barton & Loguidice



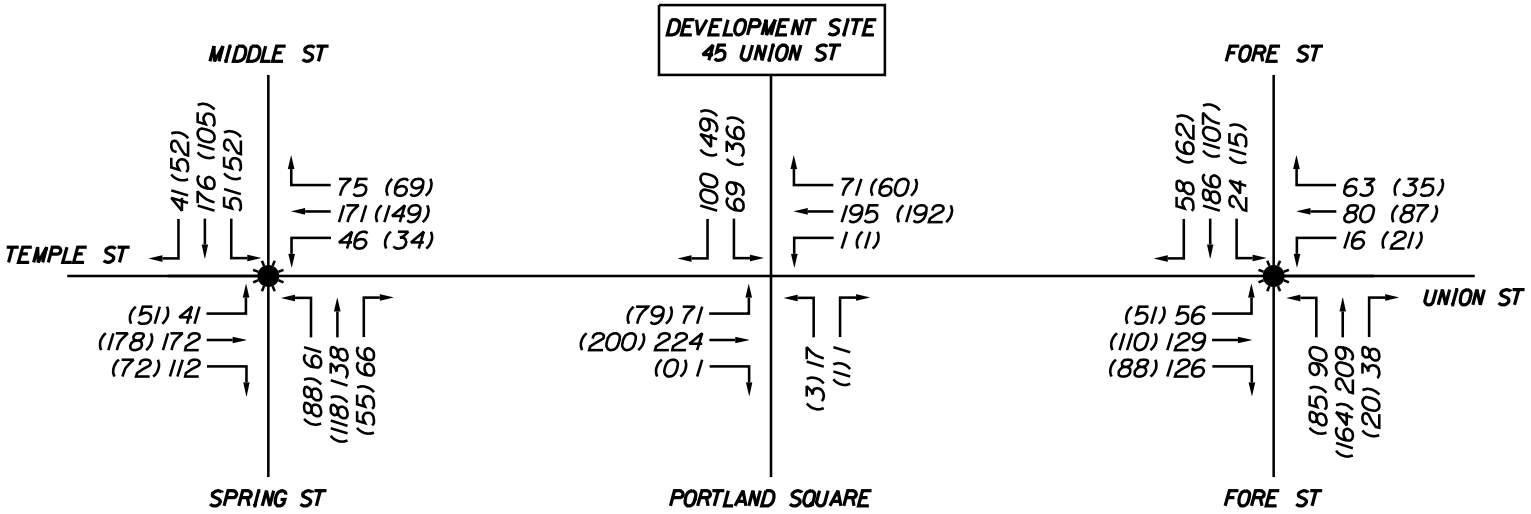
2030 PRE-DEVELOPMENT TRAFFIC VOLUMES

FIGURE 5

LEGEND:
XX = PM PEAK HOUR
(XX) = SATURDAY PEAK HOUR
☀ = TRAFFIC SIGNAL

45 UNION STREET
MULTI-USE BUILDING
PORTLAND, MAINE
4464.007.001 DATE: OCT., 2025

Barton & Loguidice



2030 POST-DEVELOPMENT TRAFFIC VOLUMES

FIGURE 6

LEGEND:
XX = PM PEAK HOUR
(XX) = SATURDAY PEAK HOUR
☀ = TRAFFIC SIGNAL

45 UNION STREET
MULTI-USE BUILDING
PORTLAND, MAINE

4464.007.001 DATE: OCT., 2025

Barton & Loguidice

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Multi-Use Building	**Organization:**	B&L
Project Location:	45 Union St, Portland	**Performed By:**	JWS
Scenario Description:		**Date:**	10/31/2022
Analysis Year:		**Checked By:**	JQA
Analysis Period:	**AM Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				0		
Restaurant	931, 932, 975	9,773	sf	14	7	7
Cinema/Entertainment	931	110	Seats	17	12	5
Residential	222	73	units	13	5	8
Hotel	310	88	rooms	27	11	16
All Other Land Uses[2]	492	6,373	sf	8	4	4
Total				79	39	40

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		1	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	1	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	79	39	40
Internal Capture Percentage	8%	8%	8%
External Vehicle-Trips[3]	73	36	37
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	N/A	N/A
Restaurant	14%	29%
Cinema/Entertainment	8%	0%
Residential	20%	13%
Hotel	0%	0%

[1]Land Use Codes (LUCs) from *Trip Generation Manual* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Multi-Use Building	**Organization:**	B&L
Project Location:	45 Union St, Portland	**Performed By:**	JWS
Scenario Description:		**Date:**	10/31/2025
Analysis Year:		**Checked By:**	JQA
Analysis Period:	**PM Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				0		
Restaurant	931, 932, 975	10	ksf	90	58	32
Cinema/Entertainment	931	110	Seats	31	21	10
Residential	222	73	units	15	8	7
Hotel	310	88	rooms	52	23	29
All Other Land Uses[2]	492	110	seats	22	13	9
Total				210	123	87

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		3	1	2
Cinema/Entertainment	0	0	2		0	0
Residential	0	0	1	0		0
Hotel	0	0	3	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	210	123	87
Internal Capture Percentage	11%	10%	14%
External Vehicle-Trips[3]	186	111	75
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	N/A	N/A
Restaurant	10%	19%
Cinema/Entertainment	14%	20%
Residential	13%	14%
Hotel	9%	10%

[1]Land Use Codes (LUCs) from *Trip Generation Manual* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Multi-Use Building	**Organization:**	B&L
Project Location:	45 Union St, Portland	**Performed By:**	JWS
Scenario Description:		**Date:**	10/31/2025
Analysis Year:		**Checked By:**	JQA
Analysis Period:	**Saturday Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				0		
Restaurant	931, 932, 975	10	ksf	121	75	46
Cinema/Entertainment	931			36	22	14
Residential	222	73	units	15	6	9
Hotel	310	88	rooms	36	24	12
All Other Land Uses[2]	492			20	10	10
Total				228	137	91

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		4	1	3
Cinema/Entertainment	0	0	2		0	0
Residential	0	0	2	0		0
Hotel	0	0	4	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	228	137	91
Internal Capture Percentage	14%	12%	18%
External Vehicle-Trips[3]	196	121	75
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	N/A	N/A
Restaurant	11%	17%
Cinema/Entertainment	18%	14%
Residential	17%	22%
Hotel	13%	33%

[1]Land Use Codes (LUCs) from *Trip Generation Manual* , published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute

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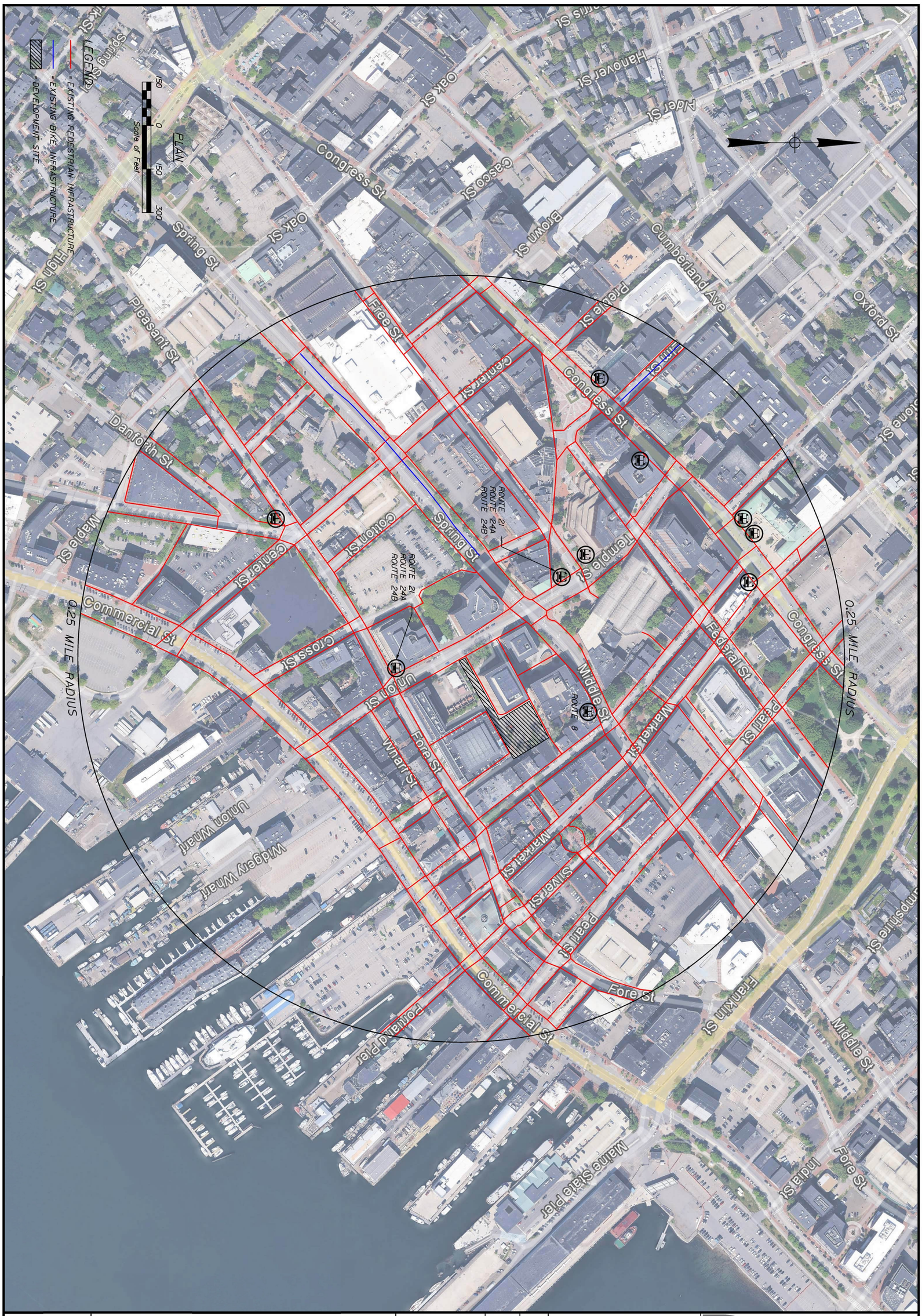


PROJ. MANAGER $PROJMANAGER$		BY	DATE
DESIGN-DETAILED	JWS	JWS	04/2025
CHECKED-REVIEWED	JQA	JQA	04/2025
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

CITY OF PORTLAND
45 UNION STREET
REGIONAL MAPPING PLAN

SHEET NUMBER 1 OF 1

Barton & Loguidice

Metro Route 8 — Peninsula Loop CASCO BAY FERRY TERMINAL

Effective Date: June 16, 2024

ROUTE NUMBER 8

MONDAY THROUGH FRIDAY

PENINSULA LOOP TO CASCO BAY LINES

Hannaford Plaza (A)	Congress & Forest (B)	Bramhall St Maine Medical (C)	Monument Square (D)	Casco Bay Lines (E)	Franklin Towers (F)	Whole Foods (G)	Hannaford Plaza (A)
…	…	…	…	6:40	…	…	…
…	…	…	…	…	6:50	6:55	7:05
…	6:44	6:50	7:02	7:10	7:17	7:25	7:35
7:05	7:11	7:20	7:32	7:40	7:47	7:55	8:05
7:35	7:41	7:50	8:02	8:10	8:17	8:25	8:35
8:05	8:11	8:20	8:32	8:40	8:47	8:55	9:05
8:35	8:41	8:50	9:02	9:10	9:17	9:25	9:35
9:05	9:11	9:20	9:32	9:40	9:47	9:55	10:05
9:35	9:41	9:50	10:02	10:10	10:17	10:25	10:35
10:05	10:11	10:20	10:32	10:40	10:47	10:55	11:05
10:35	10:41	10:50	11:02	11:10	11:17	11:25	11:35
11:05	11:11	11:20	11:32	11:40	11:47	11:55	**12:05**
11:35	11:41	11:50	**12:05**	**12:14**	**12:22**	**12:30**	**12:40**
12:05	**12:11**	**12:20**	**12:35**	**12:44**	**12:52**	**1:00**	**1:10**
12:40	**12:46**	**12:55**	**1:10**	**1:19**	**1:27**	**1:35**	**1:45**
1:10	**1:16**	**1:25**	**1:40**	**1:49**	**1:57**	**2:05**	**2:15**
1:45	**1:51**	**2:00**	**2:15**	**2:24**	**2:32**	**2:40**	**2:50**
2:15	**2:21**	**2:30**	**2:45**	**2:54**	**3:02**	**3:10**	**3:20**
2:50	**2:56**	**3:05**	**3:20**	**3:29**	**3:37**	**3:45**	**3:55**
3:20	**3:26**	**3:35**	**3:50**	**3:59**	**4:07**	**4:15**	**4:25**
3:55	**4:01**	**4:10**	**4:25**	**4:34**	**4:42**	**4:50**	**5:00**
4:25	**4:31**	**4:40**	**4:55**	**5:04**	**5:12**	**5:20**	**5:30**
5:00	**5:06**	**5:15**	**5:30**	**5:39**	**5:47**	**5:55**	**6:00**
5:30	**5:36**	**5:45**	**6:00**	**6:09**	**6:15**	…	…
6:00	**6:05**	…	…	…	…	…	…

SUNDAY

PENINSULA LOOP TO CASCO BAY LINES

Hannaford Plaza (A)	Congress & Forest (B)	Bramhall St Maine Medical (C)	Monument Square (D)	Casco Bay Lines (E)	Franklin Towers (F)	Whole Foods (G)	Hannaford Plaza (A)
…	…	8:50	9:02	9:10	9:17	9:25	9:35
9:35	9:40	9:50	10:02	10:10	10:17	10:25	10:35
10:35	10:40	10:50	11:02	11:10	11:17	11:25	11:35
11:35	11:40	11:50	**12:02**	**12:10**	**12:17**	**12:25**	**12:35**
12:35	**12:40**	**12:50**	**1:02**	**1:10**	**1:17**	**1:25**	**1:35**
1:35	**1:40**	**1:50**	**2:02**	**2:10**	**2:17**	**2:25**	**2:35**
2:35	**2:40**	**2:50**	**3:02**	**3:10**	**3:17**	**3:25**	**3:35**
3:35	**3:40**	**3:50**	**4:02**	**4:10**	**4:17**	…	…



Routes and schedules subject to change.



Denise Beck Photo

Casco Bay Lines provides year-round passenger, freight, postal and vehicle ferry service from Portland to the islands of Casco Bay.

SATURDAY

PENINSULA LOOP TO CASCO BAY LINES

Hannaford Plaza (A)	Congress & Forest (B)	Bramhall St Maine Medical (C)	Monument Square (D)	Casco Bay Lines (E)	Franklin Towers (F)	Whole Foods (G)	Hannaford Plaza (A)
…	…	7:50	8:02	8:10	8:17	8:25	8:35
8:35	8:40	8:50	9:02	9:10	9:17	9:25	9:35
9:35	9:40	9:50	10:02	10:10	10:17	10:25	10:35
10:35	10:40	10:50	11:02	11:10	11:17	11:25	11:35
11:35	11:40	11:50	**12:02**	**12:10**	**12:17**	**12:25**	**12:35**
12:35	**12:40**	**12:50**	**1:02**	**1:10**	**1:17**	**1:25**	**1:35**
1:35	**1:40**	**1:50**	**2:02**	**2:10**	**2:17**	**2:25**	**2:35**
2:35	**2:40**	**2:50**	**3:02**	**3:10**	**3:17**	**3:25**	**3:35**
3:35	**3:40**	**3:50**	**4:02**	**4:10**	**4:17**	**4:25**	**4:35**
4:35	**4:40**	**4:50**	**5:02**	**5:10**	**5:17**	**5:25**	**5:35**
5:35	**5:40**	**5:50**	**6:02**	**6:10**	**6:17**	…	…



Corey Templeton Photo

Visiting Portland?

Hop on Metro Route #8 for an affordable, accessible and scenic ride throughout downtown Portland. Take Metro from Ocean Gateway and the waterfront.

See the Longfellow Statue and Victoria Mansion along Portland's historic West End.

Travel back through the Old Port to Casco Bay Lines Ferry Terminal and to attractions, shopping and dining along Portland's waterfront.

Connect to the Metro BREEZ on Congress Street for Express service to Yarmouth, Freeport and Brunswick (Mon. – Sat.) The closest stop to Commercial Street (Casco Bay Lines Ferry Terminal and Ocean Gateway) is at the corner of Congress and India Streets.

Metro Route 21 — South Portland WILLARD SQUARE-SMCC

Effective Date: June 22, 2025

21





MONDAY THROUGH FRIDAY
OUTBOUND TO WILLARD SQUARE & SMCC

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	Ocean & Sawyer St (C)	Pillsbury & Cottage Rd (D)	SMCC (E)
6:00	6:10	6:15	6:25	6:27
6:50	7:00	7:05	7:10	7:12
7:40	7:50	7:55	8:00	8:02
8:30	8:45	8:50	8:55	8:58
9:30	9:45	9:50	9:55	9:58
10:30	10:45	10:50	10:55	10:58
11:30	11:45	11:50	11:55	11:58
12:30	**12:45**	**12:50**	**12:55**	**12:58**
1:30	**1:45**	**1:50**	**1:55**	**1:58**
2:30	**2:45**	**2:50**	**2:55**	**2:58**
3:30	**3:45**	**3:50**	**3:55**	**3:58**
4:30	**4:45**	**4:50**	**4:55**	**4:58**
5:30	**5:45**	**5:50**	**5:55**	**5:58**
6:15	**6:25**	**6:30**	**6:35**	**6:38**
7:00	**7:10**	**7:14**	**7:18**	**7:21**
7:45	**7:55**	**7:59**	**8:03**	**8:06**
8:30	**8:40**	**8:44**	**8:48**	**8:51**
9:10	**9:20**	**9:24**	**9:28**	**9:31**
9:50	**10:00**	**10:04**	**10:08**	**10:11**
10:30	**10:40**	**10:44**	**10:48**	**10:51**

MONDAY THROUGH FRIDAY
INBOUND TO DOWNTOWN PORTLAND

SMCC (E)	Ferry Village & High St (F)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
6:27	6:30	6:40	6:50
7:17	7:20	7:30	7:40
8:07	8:10	8:20	8:30
9:08	9:10	9:20	9:30
10:08	10:10	10:20	10:30
11:08	11:10	11:20	11:30
12:08	**12:10**	**12:20**	**12:30**
1:08	**1:10**	**1:20**	**1:30**
2:08	**2:10**	**2:20**	**2:30**
3:08	**3:10**	**3:20**	**3:30**
4:08	**4:10**	**4:20**	**4:30**
5:08	**5:10**	**5:20**	**5:30**
5:58	**6:00**	**6:05**	**6:15**
6:38	**6:40**	**6:50**	**7:00**
7:23	**7:25**	**7:35**	**7:45**
8:13	**8:15**	**8:20**	**8:30**
8:53	**8:55**	**9:00**	**9:10**
9:33	**9:35**	**9:40**	**9:50**
10:13	**10:15**	**10:20**	**10:30**
10:53	**10:55**	**11:00**	**11:10**

SATURDAY
OUTBOUND TO WILLARD SQUARE & SMCC

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	Ocean & Sawyer St (C)	Pillsbury & Cottage Rd (D)	SMCC (E)
6:00	6:10	6:15	6:25	6:27
6:50	7:00	7:05	7:10	7:12
7:40	7:50	7:55	8:00	8:02
8:30	8:45	8:50	8:55	8:58
9:30	9:45	9:50	9:55	9:58
10:30	10:45	10:50	10:55	10:58
11:30	11:45	11:50	11:55	11:58
12:30	**12:45**	**12:50**	**12:55**	**12:58**
1:30	**1:45**	**1:50**	**1:55**	**1:58**
2:30	**2:45**	**2:50**	**2:55**	**2:58**
3:30	**3:45**	**3:50**	**3:55**	**3:58**
4:30	**4:45**	**4:50**	**4:55**	**4:58**
5:30	**5:45**	**5:50**	**5:55**	**5:58**
6:15	**6:25**	**6:30**	**6:35**	**6:38**
7:00	**7:10**	**7:14**	**7:18**	**7:21**
7:45	**7:55**	**7:59**	**8:03**	**8:06**
8:30	**8:40**	**8:44**	**8:48**	**8:51**
9:10	**9:20**	**9:24**	**9:28**	**9:31**
9:50	**10:00**	**10:04**	**10:08**	**10:11**
10:30	**10:40**	…	…	…

SATURDAY
INBOUND TO DOWNTOWN PORTLAND

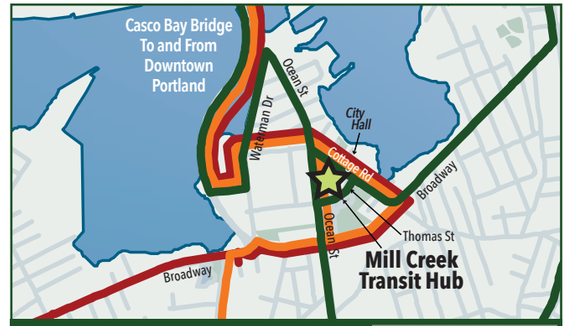
SMCC (E)	Ferry Village & High St (F)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
6:27	6:30	6:40	6:50
7:17	7:20	7:30	7:40
8:07	8:10	8:20	8:30
9:08	9:10	9:20	9:30
10:08	10:10	10:20	10:30
11:08	11:10	11:20	11:30
12:08	**12:10**	**12:20**	**12:30**
1:08	**1:10**	**1:20**	**1:30**
2:08	**2:10**	**2:20**	**2:30**
3:08	**3:10**	**3:20**	**3:30**
4:08	**4:10**	**4:20**	**4:30**
5:08	**5:10**	**5:20**	**5:30**
5:58	**6:00**	**6:05**	**6:15**
6:38	**6:40**	**6:50**	**7:00**
7:23	**7:25**	**7:35**	**7:45**
8:13	**8:15**	**8:20**	**8:30**
8:53	**8:55**	**9:00**	**9:10**
9:33	**9:35**	**9:40**	**9:50**
10:13	**10:15**	**10:20**	**10:30**

SUNDAY
OUTBOUND TO WILLARD SQUARE & SMCC

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	Ocean & Sawyer St (C)	Pillsbury & Cottage Rd (D)	SMCC (E)
…	…	…	6:40	6:43
8:50	9:00	9:05	9:08	9:10
…	…	…	10:35	10:38
11:30	11:45	11:50	11:53	11:55
1:00	**1:15**	**1:20**	**1:23**	1:25
2:15	**2:30**	**2:35**	**2:38**	**2:40**
3:40	**3:55**	**4:00**	**4:03**	**4:05**
6:25	**6:35**	…	…	…

SUNDAY
INBOUND TO DOWNTOWN PORTLAND

SMCC (E)	Ferry Village & High St (F)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
6:43	6:45	6:50	7:00
9:10	9:12	9:20	9:30
10:38	10:40	10:50	11:00
11:55	11:58	**12:05**	**12:15**
1:25	**1:27**	**1:35**	**1:45**
2:40	**2:43**	**2:50**	**3:00**
4:05	**4:08**	**4:15**	**4:25**



The three South Portland Bus routes – **21**, **24A**, and **24B** – stop at Mill Creek Transit Hub, located behind City Hall on Thomas Street.

South Portland Bus

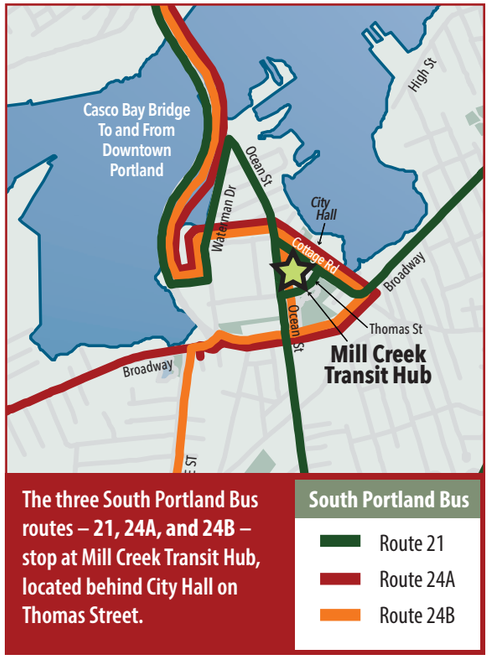
- Route 21
- Route 24A
- Route 24B

Rev. 6/22/25

Metro Route 24A — South Portland/Maine Mall

Effective Date: December 29, 2024





The three South Portland Bus routes – 21, 24A, and 24B – stop at Mill Creek Transit Hub, located behind City Hall on Thomas Street.



MONDAY THROUGH FRIDAY
OUTBOUND TO MAINE MALL

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	On Broadway at Evans St (C)	Cash Corner on Main St (D)	Main St & Westbrook St (E)	Redbank (F)	Maine Mall JC Penney (M)	Walmart (W)
...	...	...	...	...	...	...	...
5:45	5:55	6:00	6:05	6:08	6:13	6:20	6:30
7:30	7:45	7:50	7:55	7:58	8:03	8:15	8:23
9:30	9:45	9:50	9:53	9:55	10:00	10:10	10:17
11:30	11:45	11:50	11:55	11:58	**12:05**	**12:15**	**12:25**
1:40	**1:55**	**2:05**	**2:10**	**2:13**	**2:20**	**2:30**	**2:35**
3:45	**4:00**	**4:08**	**4:10**	**4:13**	**4:20**	**4:30**	**4:40**
5:50	**6:05**	**6:10**	**6:15**	**6:18**	**6:25**	**6:35**	**6:45**
7:45	**7:55**	**8:00**	**8:05**	**8:08**	**8:10**	**8:20**	**8:30**
9:10	**9:20 H**	...	...	...	...	...	...
9:50	**9:58**	**10:02**	**10:05**	**10:13**	**10:13**	**10:25**	...
11:05	**11:15**	**DROP OFF** only Willard Square Route 21 and outer Highland Ave					

MONDAY THROUGH FRIDAY
INBOUND TO DOWNTOWN PORTLAND

Gannett Dr (G)	Running Hill Rd (R)	Maine Mall JC Penney (M)	Redbank (F)	Main St & Westbrook St (E)	Cash Corner on Main St (D)	On Broadway at Evans St (C)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
...	...	...	5:20	5:23	5:25	5:28	5:35	5:45
...	...	6:50	7:00	7:05	7:07	7:10	7:20	7:30
8:28	8:30	8:50	8:55	8:58	9:00	9:05	9:15	9:30
10:25	10:28	10:50	10:55	10:58	11:00	11:05	11:15	11:30
12:30	**12:35**	**12:45**	**12:55**	**1:00**	**1:03**	**1:08**	**1:20**	**1:40**
2:40	**2:43**	**3:05**	**3:15**	**3:20**	**3:23**	**3:28**	**3:35**	**3:45**
4:45	**4:48**	**5:15**	**5:20**	**5:25**	**5:28**	**5:30**	**5:40**	**5:50**
6:50	**6:53**	**7:15**	**7:20**	**7:23**	**7:25**	**7:28**	**7:35**	**7:45**
...	...	**8:40**	**8:45**	**8:48**	**8:50**	**8:53**	**9:00**	**9:10**
...	...	...	...	...	...	...	...	...
...	...	**10:30**	**10:35**	**10:38**	**10:40**	**10:43**	**10:50**	**11:05**

SATURDAY
OUTBOUND TO MAINE MALL

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	On Broadway at Evans St (C)	Cash Corner on Main St (D)	Main St & Westbrook St (E)	Redbank (F)	Maine Mall JC Penney (M)	Walmart (W)
7:00	7:10	7:20	7:25	7:28	7:40	7:50	7:55
9:00	9:15	9:20	9:25	9:28	9:35	9:45	9:50
11:00	11:15	11:20	11:25	11:28	11:35	11:45	11:50
1:00	**1:15**	**1:20**	**1:25**	**1:28**	**1:35**	**1:45**	**1:50**
3:00	**3:15**	**3:20**	**3:25**	**3:28**	**3:35**	**3:45**	**3:50**
5:00	**5:15**	**5:20**	**5:25**	**5:28**	**5:35**	**5:45**	**5:50**
7:00	**7:15**	**OUT OF SERVICE**					

SATURDAY
INBOUND TO DOWNTOWN PORTLAND

Gannett Dr (G)	Running Hill Rd (R)	Maine Mall JC Penney (M)	Redbank (F)	Main St & Westbrook St (E)	Cash Corner on Main St (D)	On Broadway at Evans St (C)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
...	...	8:15	8:25	8:28	8:30	8:35	8:45	9:00
...	9:55	10:15	10:25	10:28	10:30	10:35	10:45	11:00
...	11:55	**12:15**	**12:25**	**12:28**	**12:30**	**12:35**	**12:45**	**1:00**
...	**1:55**	**2:15**	**2:25**	**2:28**	**2:30**	**2:35**	**2:45**	**3:00**
...	**3:55**	**4:15**	**4:25**	**4:28**	**4:30**	**4:35**	**4:45**	**5:00**
...	**6:00**	**6:15**	**6:25**	**6:28**	**6:30**	**6:35**	**6:45**	**7:00**

SUNDAY
OUTBOUND TO MAINE MALL

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	On Broadway at Evans St (C)	Cash Corner on Main St (D)	Main St & Westbrook St (E)	Redbank (F)	Maine Mall JC Penney (M)	Walmart (W)
7:00	7:10	7:20	7:25	7:28	7:40	7:50	7:55
9:30	9:45	9:50	9:55	9:58	10:05	10:15	10:25
11:00	11:15	11:20	11:25	11:35	11:40	11:50	**12:00**
12:15	**12:30**	**12:35**	**12:40**	**12:43**	**12:50**	**1:00**	**1:10**
1:45	**2:00**	**2:05**	**2:10**	**2:13**	**2:20**	**2:30**	**2:40**
3:00	**3:15**	**3:20**	**3:25**	**3:28**	**3:30**	**3:40**	**3:45**
4:25	**4:40**	**4:45**	**4:50**	**4:53**	**5:00**	**5:10**	**5:20**
6:25	**6:35**	**DROP OFF** Willard					

SUNDAY
INBOUND TO DOWNTOWN PORTLAND

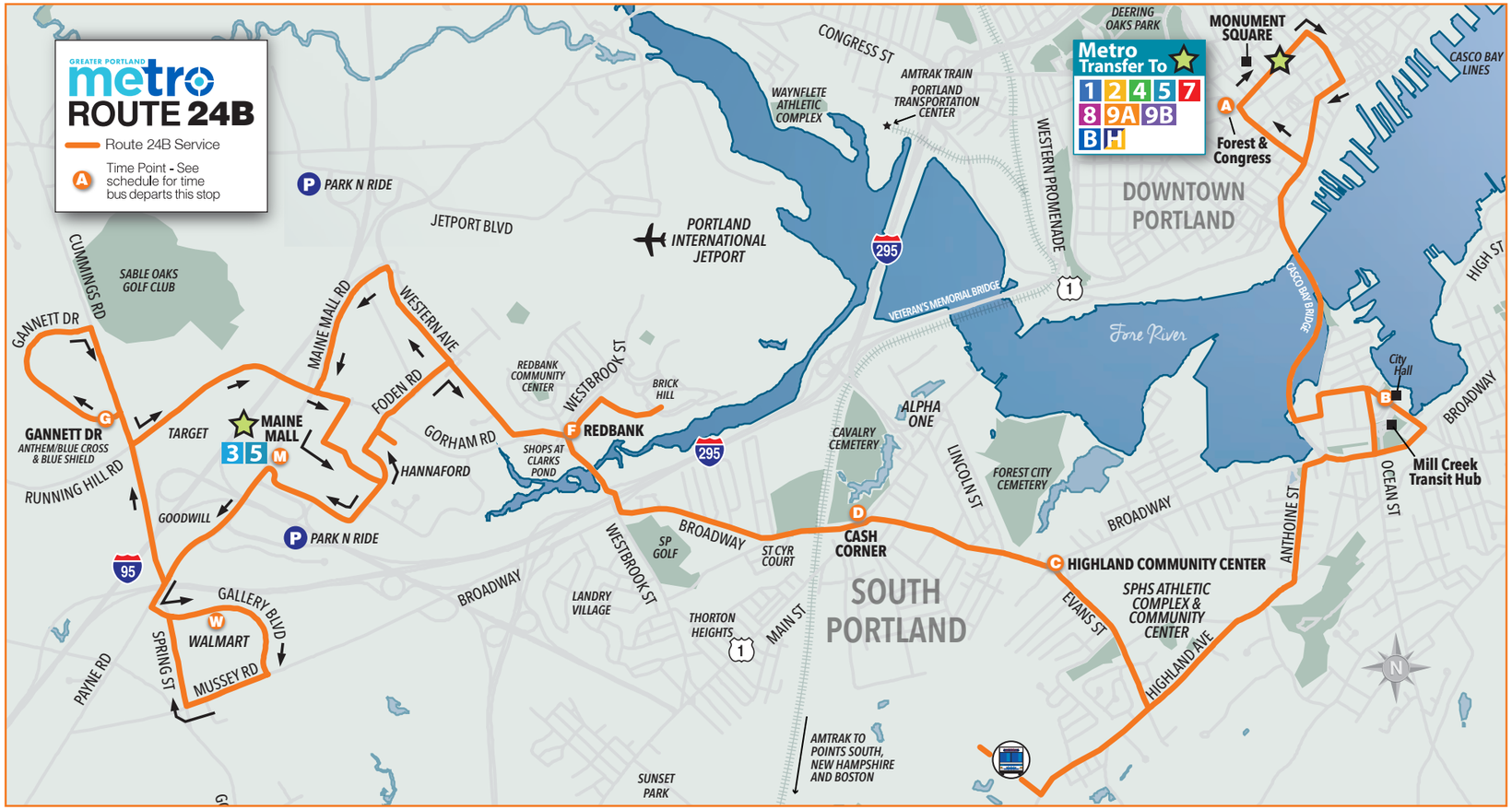
Gannett Dr (G)	Running Hill Rd (R)	Maine Mall JC Penney (M)	Redbank (F)	Main St & Westbrook St (E)	Cash Corner on Main St (D)	On Broadway at Evans St (C)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
...	...	8:10	8:20	8:23	8:25	8:30	8:40	8:50
...	10:30	10:50	11:00	11:03	11:05	11:10	11:20	11:30
...	**12:05**	**12:20**	**12:30**	**12:33**	**12:35**	**12:40**	**12:50**	**1:00**
...	**1:15**	**1:30**	**1:40**	**1:43**	**1:45**	**1:50**	**2:00**	**2:15**
...	**2:45**	**3:00**	**3:10**	**3:13**	**3:15**	**3:20**	**3:30**	**3:40**
...	...	...	**3:55**	**3:58**	**4:00**	**4:05**	**4:15**	**T**
...	**5:25**	**5:35**	**5:45**	**5:48**	**6:00**	**6:05**	**6:15**	**6:25**

T - Via Transfer to Rt. 21 at Mill Creek Hub

Metro Route 24B — South Portland/Maine Mall

Effective Date: December 29, 2024

24B



MONDAY THROUGH FRIDAY
OUTBOUND TO MAINE MALL VIA COMMUNITY CENTER

Congress St & Forest Ave (A)	Mill Creek Transit Hub (B)	Highland Community Center (H)	Cash Corner (C)	Brick Hill Redbank (R)	Maine Mall (M)	Walmart (W)
…	…	…	…	…	…	…
B 6:30	6:40	6:50	6:55	B7:05	7:15	7:23
B 8:30	8:45	H8:55	9:00	B9:13	9:25	9:35
B 10:30	10:45	10:55	11:00	B11:13	11:25	11:35
B 12:30	**12:45**	**12:55**	**1:00**	**B 1:10**	**1:25**	**1:35**
B 2:45	**3:00**	**3:10**	**3:15**	**B 3:25**	**3:35**	**3:45**
B 4:45	**5:00**	**H 5:10**	**5:15**	**B 5:30**	**5:40**	**5:50**
7:00	**7:10**	**7:15**	**7:20**	**7:25**	**7:35**	**7:40**
8:25	**8:35**	**8:40**	**8:45**	**8:50**	**8:55**	**9:00**

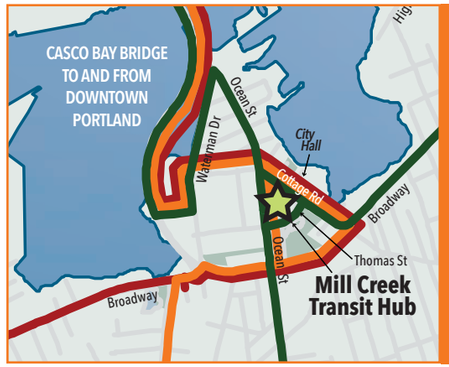
B - Bus runs to Brick Hill. **H** - Bus runs to Outer Highland Ave. **RH** - Bus runs to Running Hill Rd after Walmart.

MONDAY THROUGH FRIDAY
INBOUND TO DOWNTOWN PORTLAND VIA COMMUNITY CENTER

Gannett Dr (G)	Maine Mall (M)	Brick Hill Redbank (R)	Cash Corner (C)	Highland Community Center (H)	Mill Creek Transit Hub (B)	Congress St & Forest Ave (A)
…	…	…	…	…	6:20	6:30
7:30	7:50	B7:55	8:05	H 8:10	8:20	8:30
9:40	9:55	B10:05	10:10	10:15	10:20	10:30
11:40	11:50	**B 12:00**	**12:05**	**12:10**	**12:15**	**12:30**
1:40	**1:55**	**B 2:05**	**2:10**	**H 2:15**	**2:35**	**2:45**
3:50	**4:00**	**B 4:15**	**4:20**	**H 4:25**	**4:35**	**4:45**
RH	**6:15**	**B 6:25**	**6:30**	**6:35**	**6:45**	**7:00**
RH	**7:55**	**8:00**	**8:05**	**8:10**	**8:15**	**8:25**
RH	**9:15**	**9:20**	**9:25**	**9:30**	**9:40**	**9:50**

There is no weekend service on Route 24B Maine Mall.





The three South Portland Bus routes – **21, 24A, and 24B** – stop at Mill Creek Transit Hub, located behind City Hall on Thomas Street.

South Portland Bus

- Route 21
- Route 24A
- Route 24B



SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-1
Intersection Name	Union St/Temple St & Spring St/Middle St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	15:00
End Time	17:45
Location	12061-1
Latitude and Longitude	(43.656987, -70.256138)

	START	END	PHF
AM PEAK			
PM PEAK	**04-10-2025 16:45:00**	**04-10-2025 17:45:00**	**0.96**
Mid-Day PEAK			
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

TURNING MOVEMENT DATA

Leg	Spring St								Middle St								Union St								Temple St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
15:00	10	20	7	3	0	40	6	25	10	29	12	1	0	52	3	7	4	20	11	4	0	39	16	3	6	25	13	3	0	47	11	7	178
15:15	11	31	1	0	0	43	5	20	4	22	7	6	0	39	4	15	4	20	10	3	0	37	12	5	25	36	11	3	0	75	16	13	194
15:30	8	38	5	2	0	53	4	7	6	27	5	3	0	41	2	6	4	27	14	1	0	46	3	2	14	23	13	4	1	55	16	5	195
15:45	7	39	6	3	0	55	6	20	2	28	3	1	0	34	11	11	5	20	11	5	0	41	6	19	10	27	17	6	0	60	22	19	190
Hourly Total	36	128	19	8	0	191	21	72	22	106	27	11	0	166	20	39	17	87	46	13	0	163	37	29	55	111	54	16	1	237	65	44	757
16:00	14	27	9	4	0	54	7	9	4	34	6	4	0	48	4	10	6	34	9	1	0	50	8	9	18	26	7	4	0	55	5	11	207
16:15	8	36	8	1	0	53	7	13	4	34	5	2	0	45	4	13	4	36	16	3	0	59	11	8	17	15	11	1	0	44	15	6	201
16:30	7	28	3	3	0	41	12	7	11	32	5	1	0	49	10	15	4	40	12	2	0	58	10	10	8	36	14	5	0	63	22	16	211
16:45	13	37	9	2	0	61	6	10	5	37	5	6	0	53	6	6	6	30	7	5	0	48	12	5	8	34	20	1	0	63	21	10	225
Hourly Total	42	128	29	10	0	209	32	39	24	137	21	13	0	195	24	44	20	140	44	11	0	215	41	32	51	111	52	11	0	225	63	43	844
17:00	16	32	5	7	0	60	7	24	3	40	5	2	0	50	11	14	7	26	8	2	0	43	10	13	12	24	17	9	0	62	18	13	215
17:15	10	25	11	1	0	47	9	11	10	32	7	3	0	52	11	12	10	27	9	6	0	52	12	3	7	44	23	6	0	80	24	10	231
17:30	12	26	7	1	0	46	2	13	4	44	5	2	0	55	8	9	7	43	12	6	0	68	6	10	8	25	15	3	0	51	19	8	220
17:45	15	35	6	4	0	60	11	13	10	25	8	5	0	48	10	6	3	27	7	4	0	41	6	12	7	42	14	3	0	66	19	5	215
Hourly Total	53	118	29	13	0	213	29	61	27	141	25	12	0	205	40	41	27	123	36	18	0	204	34	38	34	135	69	21	0	259	80	36	881
Grand Total	131	374	77	31	0	613	82	172	73	384	73	36	0	566	84	124	64	350	126	42	0	582	112	99	140	357	175	48	1	721	208	123	2482
approach %	21	61	12	5	0	100	13	28	12	67	12	6	0	100	14	21	10	60	21	7	0	100	19	17	19	49	24	6	0	100	28	17	400
Total %	5	15	3	1	0	24	3	6	2	15	2	1	0	22	3	5	2	14	5	1	0	23	4	3	5	14	7	1	0	29	8	4	100
Motorcycles	0	2	0	1	0	3	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	7
Motorcycles %	0	0	0	3	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
Cars & Light Goods	130	363	75	30	0	598	0	0	70	376	68	35	0	549	0	0	63	340	122	40	0	565	0	0	129	342	173	47	1	692	0	0	2404
Cars & Light Goods	99	97	97	96	0	0	0	0	95	97	93	97	0	0	0	0	98	97	96	95	0	0	0	0	92	95	98	97	100	0	0	0	96
Single Unit Trucks	1	3	1	0	0	5	0	0	1	3	0	1	0	5	0	0	1	5	3	0	0	9	0	0	2	7	0	0	0	9	0	0	28
Single Unit Trucks	0	0	1	0	0	0	0	0	1	0	0	2	0	0	0	0	1	1	2	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	2	0	3	0	0	6	6	0	1	0	13	0	0	17
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	1	0	2	0	0	0	0	0
Bicycles on Road	0	6	1	0	0	7	0	0	2	2	5	0	0	9	0	0	0	3	1	0	0	4	0	0	3	1	2	0	0	6	0	0	26
Bicycles on Road %	0	1	1	0	0	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	1
Peds	0	0	0	0	0	0	81	172	0	0	0	0	0	0	84	123	0	0	0	0	0	0	111	99	0	0	0	0	0	0	207	123	0
Peds %	0	0	0	0	0	0	98	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	99	0	0	0	0	0	0	0	99	0	0
Pcl	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Pcl %	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	0	0	0	0	0	0	0

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

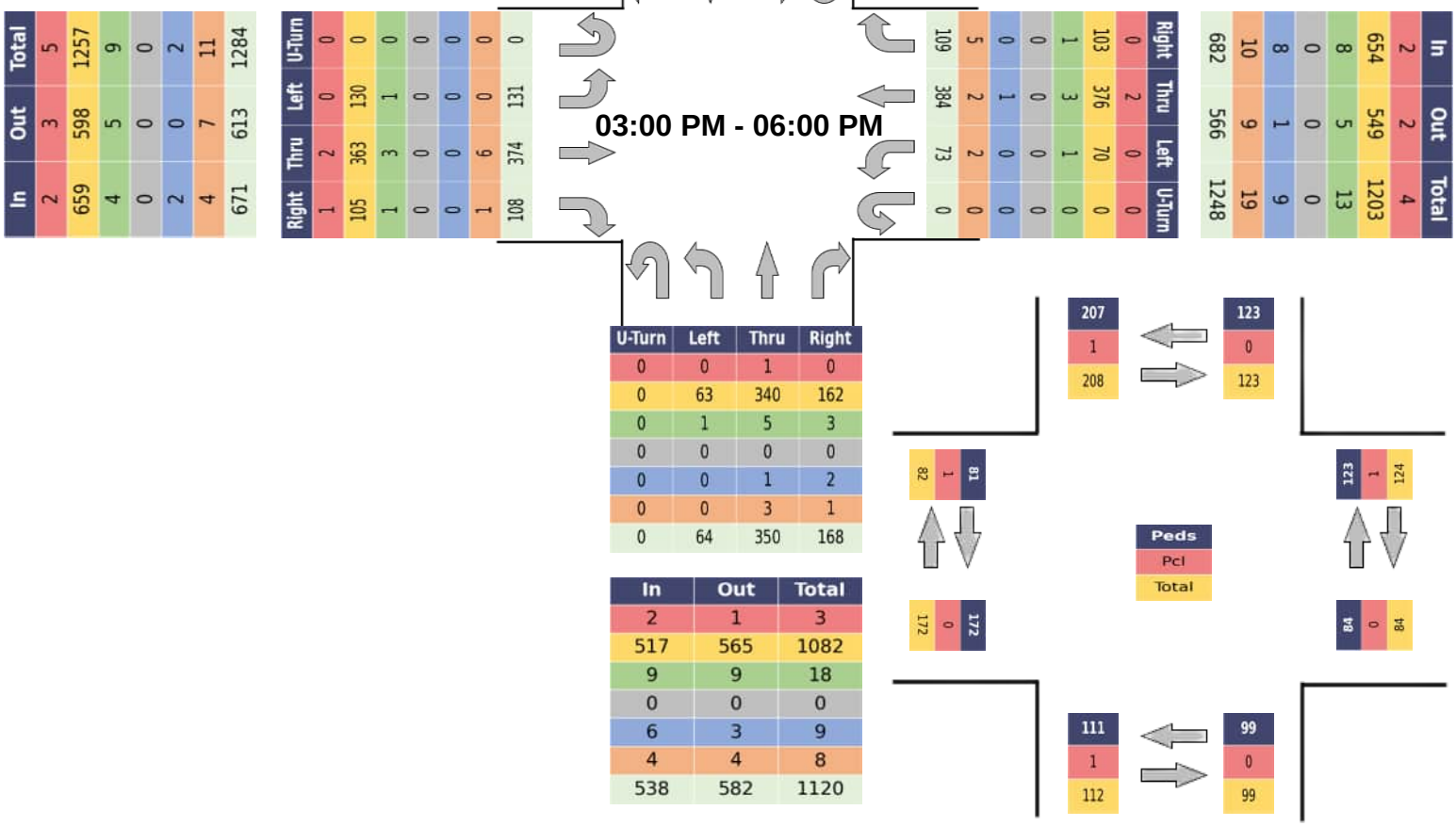
Date: 04-10-2025

Turning Movement Data

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

In	Out	Total
1	1	2
574	691	1265
7	9	16
0	0	0
1	13	14
8	6	14
591	720	1311

Right	Thru	Left	U-Turn
0	1	0	0
220	342	129	1
0	7	2	0
0	0	0	0
1	6	6	0
2	1	3	0
223	357	140	1



In	Out	Total
2	1	3
517	565	1082
9	9	18
0	0	0
6	3	9
4	4	8
538	582	1120

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

TURNING MOVEMENT PM PEAK HOUR

Leg	Spring St								Middle St								Union St								Temple St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
16:45:00	13	37	9	2	0	61	6	10	5	37	5	6	0	53	6	6	6	30	7	5	0	48	12	5	8	34	20	1	0	63	21	10	225
17:00:00	16	32	5	7	0	60	7	24	3	40	5	2	0	50	11	14	7	26	8	2	0	43	10	13	12	24	17	9	0	62	18	13	215
17:15:00	10	25	11	1	0	47	9	11	10	32	7	3	0	52	11	12	10	27	9	6	0	52	12	3	7	44	23	6	0	80	24	10	231
17:30:00	12	26	7	1	0	46	2	13	4	44	5	2	0	55	8	9	7	43	12	6	0	68	6	10	8	25	15	3	0	51	19	8	220
Grand Total	51	120	32	11	0	214	24	58	22	153	22	13	0	210	36	41	30	126	36	19	0	211	40	31	35	127	75	19	0	256	82	41	891
approach %	24	56	15	5	0	100	11	27	10	73	10	6	0	100	17	20	14	60	17	9	0	100	19	15	14	50	29	7	0	100	32	16	400
Total %	6	13	4	1	0	24	3	7	2	17	2	1	0	24	4	5	3	14	4	2	0	24	4	3	4	14	8	2	0	29	9	5	100
Motorcycles	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3
Motorcycles %	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Cars & Light Goods	51	118	31	11	0	211	0	0	19	149	21	13	0	202	0	0	29	122	36	19	0	206	0	0	33	120	75	19	0	247	0	0	866
Cars & Light Goods	100	98	97	100	0	0	0	0	86	97	95	100	0	0	0	0	97	97	100	100	0	0	0	0	94	94	100	100	0	0	0	0	97
Single Unit Trucks	0	1	1	0	0	2	0	0	1	1	0	0	0	2	0	0	1	2	0	0	0	3	0	0	0	3	0	0	0	3	0	0	10
Single Unit Trucks	0	1	3	0	0	0	0	0	5	1	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	0	0	4
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0
Bicycles on Road	0	1	0	0	0	1	0	0	2	1	1	0	0	4	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	8
Bicycles on Road %	0	1	0	0	0	0	0	0	9	1	5	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Peds	0	0	0	0	0	0	24	58	0	0	0	0	0	0	36	41	0	0	0	0	0	0	39	31	0	0	0	0	0	0	81	41	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	98	0	0	0	0	0	0	0	99	0	0
Pcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Pcl %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0
PHF	0.8	0.81	0.73	0.39	0.0	0.88	0.67	0.6	0.55	0.87	0.79	0.54	0.0	0.95	0.82	0.73	0.75	0.73	0.75	0.79	0.0	0.78	0.83	0.6	0.73	0.72	0.82	0.53	0.0	0.8	0.85	0.79	0.96

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

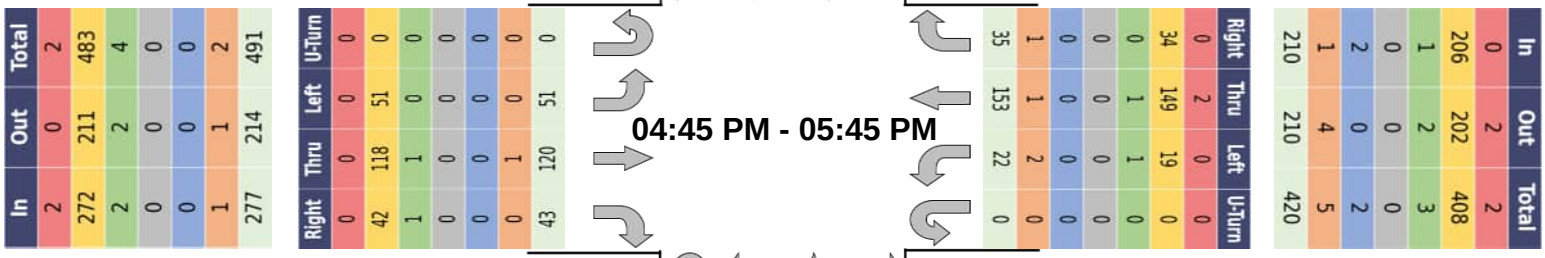
Date: 04-10-2025

PM Peak Turning Movement Data Summary

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

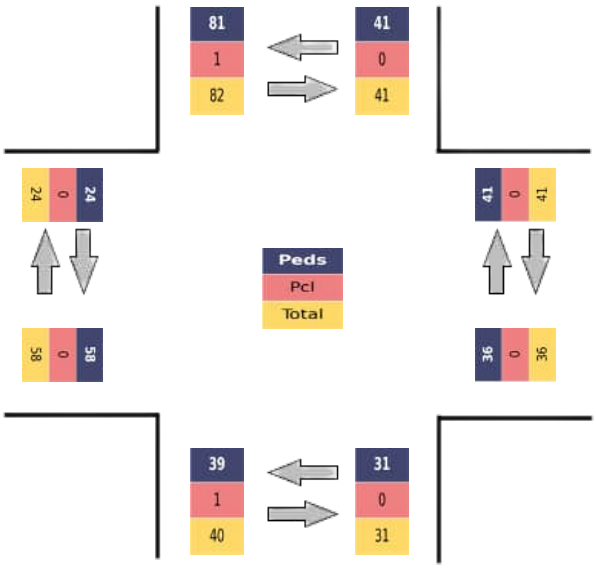
In	Out	Total
0	1	1
207	247	454
2	3	5
0	0	0
0	4	4
3	1	4
212	256	468

Right	Thru	Left	U-Turn
0	1	0	0
94	120	33	0
0	3	0	0
0	0	0	0
0	2	2	0
0	1	0	0
94	127	35	0



U-Turn	Left	Thru	Right
0	0	0	0
0	29	122	55
0	1	2	0
0	0	0	0
0	0	0	0
0	0	2	0
0	30	126	55

In	Out	Total
1	0	1
181	206	387
5	3	8
0	0	0
2	0	2
3	2	5
192	211	403



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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

Motorcycles

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	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
15:15	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
15:30	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
15:45	0	2	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
Hourly Total	0	2	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
16:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	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
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	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
Hourly Total	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	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
17:15	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
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
17:45	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
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Total	0	2	0	1	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

Cars & Light Goods

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	10	19	7	3	0	0	0	10	28	11	1	0	0	0	4	18	11	4	0	0	0	5	25	12	3	0	0	0
15:15	11	31	1	0	0	0	0	4	22	7	6	0	0	0	4	19	9	3	0	0	0	24	35	11	3	0	0	0
15:30	8	38	5	2	0	0	0	6	27	4	3	0	0	0	4	27	13	0	0	0	0	13	21	13	4	1	0	0
15:45	7	33	6	3	0	0	0	2	27	3	1	0	0	0	5	19	11	4	0	0	0	8	26	16	6	0	0	0
Hourly Total	36	121	19	8	0	0	0	22	104	25	11	0	0	0	17	83	44	11	0	0	0	50	107	52	16	1	0	0
16:00	14	27	9	3	0	0	0	4	33	5	3	0	0	0	6	34	9	1	0	0	0	17	26	7	4	0	0	0
16:15	7	35	8	1	0	0	0	4	34	5	2	0	0	0	4	36	15	3	0	0	0	16	14	11	1	0	0	0
16:30	7	28	2	3	0	0	0	11	31	4	1	0	0	0	4	39	11	2	0	0	0	8	34	14	4	0	0	0
16:45	13	37	9	2	0	0	0	5	36	5	6	0	0	0	6	29	7	5	0	0	0	7	32	20	1	0	0	0
Hourly Total	41	127	28	9	0	0	0	24	134	19	12	0	0	0	20	138	42	11	0	0	0	48	106	52	10	0	0	0
17:00	16	31	4	7	0	0	0	2	39	5	2	0	0	0	7	25	8	2	0	0	0	12	23	17	9	0	0	0
17:15	10	24	11	1	0	0	0	8	32	6	3	0	0	0	10	25	9	6	0	0	0	7	43	23	6	0	0	0
17:30	12	26	7	1	0	0	0	4	42	5	2	0	0	0	6	43	12	6	0	0	0	7	22	15	3	0	0	0
17:45	15	34	6	4	0	0	0	10	25	8	5	0	0	0	3	26	7	4	0	0	0	5	41	14	3	0	0	0
Hourly Total	53	115	28	13	0	0	0	24	138	24	12	0	0	0	26	119	36	18	0	0	0	31	129	69	21	0	0	0
Total	130	363	75	30	0	0	0	70	376	68	35	0	0	0	63	340	122	40	0	0	0	129	342	173	47	1	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

Single Unit Trucks

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0
15:45	0	1	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
Hourly Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	1	2	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Hourly Total	1	0	0	0	0	0	0	0	2	0	1	0	0	0	0	1	1	0	0	0	0	0	3	0	0	0	0	0
17:00	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Hourly Total	0	1	1	0	0	0	0	1	1	0	0	0	0	0	1	2	0	0	0	0	0	1	2	0	0	0	0	0
Total	1	3	1	0	0	0	0	1	3	0	1	0	0	0	1	5	3	0	0	0	0	2	7	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

Articulated Trucks

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	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
15:15	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
15:30	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
15:45	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
Hourly Total	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
16:00	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
16:15	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
16:30	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
16:45	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
Hourly Total	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
17:00	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
17:15	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
17:30	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
17:45	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
Hourly Total	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
Total	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

Tri-State Traffic Data, Inc.

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

Buses

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	0	0	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
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	2	2	0	0	0	0	0
16:00	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
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	0
17:00	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
17:15	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
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	6	6	0	1	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-10-2025

Bicycles on Road

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0
15:15	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
15:30	0	0	0	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
15:45	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Hourly Total	0	3	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
16:15	0	1	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
16:30	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	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
Hourly Total	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	0	0	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
17:30	0	0	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
17:45	0	1	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
Hourly Total	0	2	0	0	0	0	0	2	1	1	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0
Total	0	6	1	0	0	0	0	2	2	5	0	0	0	0	0	3	1	0	0	0	0	3	1	2	0	0	0	0

Tri-State Traffic Data, Inc.

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SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-1
Intersection Name	Union St/Temple St & Spring St/Middle St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	11:00
End Time	13:45
Location	12061-1
Latitude and Longitude	(43.656987, -70.256138)

	START	END	PHF
AM PEAK			
PM PEAK			
Mid-Day PEAK	**04-12-2025 11:45:00**	**04-12-2025 12:45:00**	**0.91**
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

TURNING MOVEMENT DATA

Leg	Spring St								Middle St								Union St								Temple St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:00	25	24	7	0	0	56	2	1	1	19	11	2	0	33	5	7	3	19	8	12	0	42	1	3	10	30	15	10	0	65	15	4	196
11:15	16	16	5	2	0	39	0	10	7	22	10	4	0	43	2	3	5	23	12	3	0	43	2	1	11	28	19	5	0	63	22	2	188
11:30	20	26	8	1	0	55	5	10	5	20	4	1	0	30	4	1	9	19	5	2	0	35	3	9	16	22	13	5	0	56	20	5	176
11:45	16	24	5	0	0	45	0	14	2	26	10	0	0	38	18	13	7	29	11	5	0	52	0	12	7	28	8	4	0	47	7	10	182
Hourly Total	77	90	25	3	0	195	7	35	15	87	35	7	0	144	29	24	24	90	36	22	0	172	6	25	44	108	55	24	0	231	64	21	742
12:00	18	28	4	3	0	53	2	11	6	23	5	4	0	38	0	0	2	25	5	2	0	34	6	0	12	32	14	5	0	63	17	13	188
12:15	16	19	4	2	0	41	3	8	8	19	10	4	0	41	2	18	2	30	12	3	0	47	4	4	14	29	11	8	0	62	16	16	191
12:30	24	32	8	2	0	66	4	7	7	24	11	0	0	42	3	6	6	21	9	5	0	41	2	13	11	41	8	3	0	63	17	8	212
12:45	24	24	5	1	0	54	13	9	5	18	4	2	0	29	10	2	3	28	6	4	0	41	9	7	10	28	14	6	0	58	23	3	182
Hourly Total	82	103	21	8	0	214	22	35	26	84	30	10	0	150	15	26	13	104	32	14	0	163	21	24	47	130	47	22	0	246	73	40	773
13:00	27	24	2	1	0	54	6	13	4	15	8	5	0	32	6	10	2	29	12	0	0	43	12	9	11	25	13	5	0	54	12	14	183
13:15	18	24	6	0	0	48	1	14	2	25	2	3	0	32	2	14	2	25	7	3	0	37	4	8	14	32	18	4	0	68	18	15	185
13:30	19	25	7	2	0	53	8	7	5	25	6	1	0	37	5	13	4	21	10	3	0	38	6	9	11	28	11	7	0	57	17	14	185
13:45	15	25	8	1	0	49	4	9	11	21	5	1	0	38	11	21	10	21	5	7	0	43	10	4	11	28	17	4	0	60	25	16	190
Hourly Total	79	98	23	4	0	204	19	43	22	86	21	10	0	139	24	58	18	96	34	13	0	161	32	30	47	113	59	20	0	239	72	59	743
Grand Total	238	291	69	15	0	613	48	113	63	257	86	27	0	433	68	108	55	290	102	49	0	496	59	79	138	351	161	66	0	716	209	120	2258
approach %	38	47	11	2	0	100	7	18	14	59	19	6	0	100	15	24	11	58	20	9	0	100	11	15	19	49	22	9	0	100	29	16	400
Total %	10	12	3	0	0	27	2	5	2	11	3	1	0	19	3	4	2	12	4	2	0	21	2	3	6	15	7	2	0	31	9	5	100
Motorcycles	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	0
Motorcycles %	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	0
Cars & Light Goods	237	288	69	15	0	609	0	0	62	255	85	26	0	428	0	0	54	286	101	49	0	490	0	0	134	341	161	66	0	702	0	0	2229
Cars & Light Goods	99	98	100	100	0	0	0	0	98	99	98	96	0	0	0	0	98	98	99	100	0	0	0	0	97	97	100	100	0	0	0	0	98
Single Unit Trucks	1	3	0	0	0	4	0	0	1	1	1	1	0	4	0	0	1	3	1	0	0	5	0	0	1	5	0	0	0	6	0	0	19
Single Unit Trucks	0	1	0	0	0	0	0	0	1	0	1	3	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0	8	0	0	8
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Bicycles on Road %	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	0
Peds	0	0	0	0	0	0	48	113	0	0	0	0	0	0	68	108	0	0	0	0	0	0	59	79	0	0	0	0	0	0	208	120	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	99	0	0
Pcl	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	1	0	0
Pcl %	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	0

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

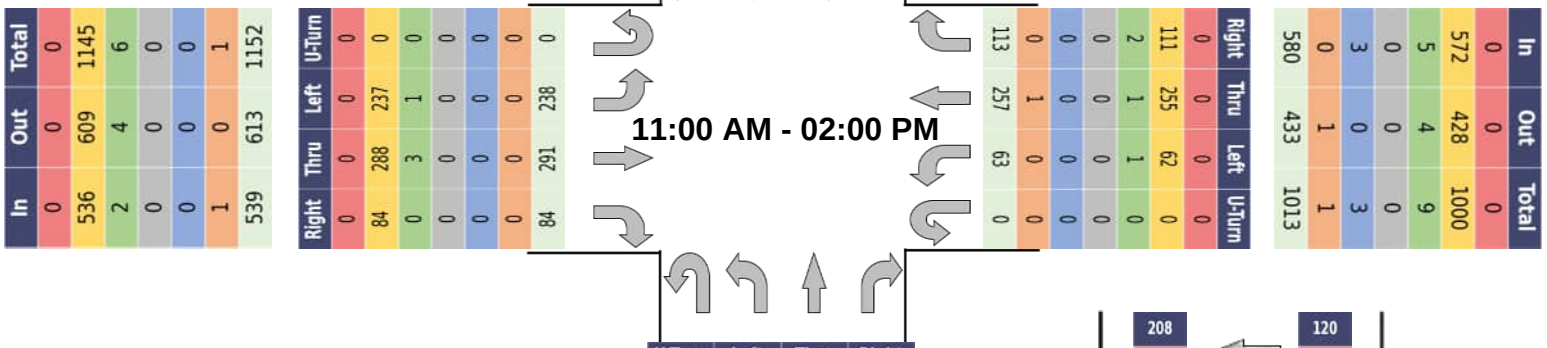
Date: 04-12-2025

Turning Movement Data

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

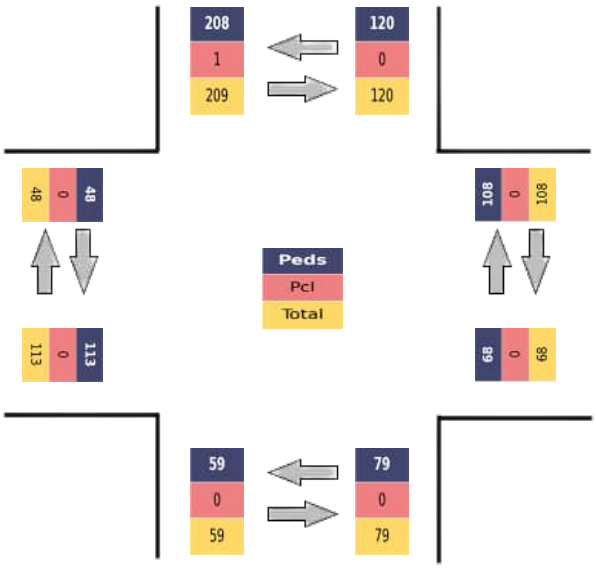
In	Out	Total
0	0	0
634	702	1336
6	6	12
0	0	0
0	8	8
1	0	1
641	716	1357

Right	Thru	Left	U-Turn
0	0	0	0
227	341	134	0
0	5	1	0
0	0	0	0
0	5	3	0
0	0	0	0
227	351	138	0



U-Turn	Left	Thru	Right
0	0	0	0
0	54	286	150
0	1	3	1
0	0	0	0
0	0	0	0
0	0	1	0
0	55	290	151

In	Out	Total
0	0	0
487	490	977
6	5	11
0	0	0
5	0	5
0	1	1
498	496	994



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

TURNING MOVEMENT MID PEAK HOUR

Leg	Spring St								Middle St								Union St								Temple St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:45:00	16	24	5	0	0	45	0	14	2	26	10	0	0	38	18	13	7	29	11	5	0	52	0	12	7	28	8	4	0	47	7	10	182
12:00:00	18	28	4	3	0	53	2	11	6	23	5	4	0	38	0	0	2	25	5	2	0	34	6	0	12	32	14	5	0	63	17	13	188
12:15:00	16	19	4	2	0	41	3	8	8	19	10	4	0	41	2	18	2	30	12	3	0	47	4	4	14	29	11	8	0	62	16	16	191
12:30:00	24	32	8	2	0	66	4	7	7	24	11	0	0	42	3	6	6	21	9	5	0	41	2	13	11	41	8	3	0	63	17	8	212
Grand Total	74	103	21	7	0	205	9	40	23	92	36	8	0	159	23	37	17	105	37	15	0	174	12	29	44	130	41	20	0	235	57	47	773
approach %	36	50	10	3	0	100	4	20	14	58	23	5	0	100	14	23	10	60	21	9	0	100	7	17	19	55	17	9	0	100	24	20	400
Total %	10	13	3	1	0	27	1	5	3	12	5	1	0	21	3	5	2	14	5	2	0	23	2	4	6	17	5	3	0	30	7	6	100
Motorcycles	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	0
Motorcycles %	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	0
Cars & Light Goods	74	101	21	7	0	203	0	0	23	92	36	8	0	159	0	0	17	103	37	15	0	172	0	0	43	129	41	20	0	233	0	0	767
Cars & Light Goods	100	98	100	100	0	0	0	0	100	100	100	100	0	0	0	0	100	98	100	100	0	0	0	0	98	99	100	100	0	0	0	0	99
Single Unit Trucks	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Single Unit Trucks	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	2
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
Bicycles on Road	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	0
Bicycles on Road %	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	0
Peds	0	0	0	0	0	0	9	40	0	0	0	0	0	0	23	37	0	0	0	0	0	0	12	29	0	0	0	0	0	0	56	47	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	98	0	0
Pcl	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	1	0	0
Pcl %	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	2	0	0
PHF	0.77	0.8	0.66	0.58	0.0	0.78	0.56	0.71	0.72	0.88	0.82	0.5	0.0	0.95	0.32	0.51	0.61	0.88	0.77	0.75	0.0	0.84	0.5	0.56	0.79	0.79	0.73	0.62	0.0	0.93	0.84	0.73	0.91

Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Mid Peak Turning Movement Data Summary

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

In	Out	Total
0	0	0
221	233	454
2	0	2
0	0	0
0	2	2
0	0	0
223	235	458

N

Right	Thru	Left	U-Turn
0	0	0	0
61	129	43	0
0	0	0	0
0	0	0	0
0	1	1	0
0	0	0	0
61	130	44	0

In	Out	Total
0	0	0
170	203	373
0	2	2
0	0	0
0	0	0
0	0	0
170	205	375

Right	Thru	Left	U-Turn
0	28	0	0
0	101	2	0
0	74	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	103	74	0

11:45 AM - 12:45 PM

Right	Thru	Left	U-Turn
44	92	23	0
0	0	0	0
0	0	0	0
0	0	0	0
44	92	23	0
0	0	0	0
0	0	0	0

In	Out	Total
199	159	358
0	0	0
1	0	1
0	0	0
2	0	2
196	159	355
0	0	0

U-Turn	Left	Thru	Right
0	0	0	0
0	17	103	52
0	0	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	17	105	52

In	Out	Total
0	0	0
180	172	352
0	2	2
0	0	0
1	0	1
0	0	0
181	174	355

56	47
1	0
57	47

6	0	6

40	0	40

37	0	37

23	0	23

Peds
Pcl
Total

12	29
0	0
12	29

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Motorcycles

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	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
13:45	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
Hourly Total	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
Total	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

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Cars & Light Goods

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	25	24	7	0	0	0	0	1	18	10	2	0	0	0	3	19	7	12	0	0	0	8	28	15	10	0	0	0
11:15	16	16	5	2	0	0	0	7	22	10	4	0	0	0	5	23	12	3	0	0	0	11	27	19	5	0	0	0
11:30	19	26	8	1	0	0	0	5	20	4	1	0	0	0	8	19	5	2	0	0	0	16	21	13	5	0	0	0
11:45	16	24	5	0	0	0	0	2	26	10	0	0	0	0	7	29	11	5	0	0	0	7	28	8	4	0	0	0
Hourly Total	76	90	25	3	0	0	0	15	86	34	7	0	0	0	23	90	35	22	0	0	0	42	104	55	24	0	0	0
12:00	18	26	4	3	0	0	0	6	23	5	4	0	0	0	2	25	5	2	0	0	0	11	32	14	5	0	0	0
12:15	16	19	4	2	0	0	0	8	19	10	4	0	0	0	2	28	12	3	0	0	0	14	29	11	8	0	0	0
12:30	24	32	8	2	0	0	0	7	24	11	0	0	0	0	6	21	9	5	0	0	0	11	40	8	3	0	0	0
12:45	24	24	5	1	0	0	0	4	18	4	1	0	0	0	3	28	6	4	0	0	0	10	27	14	6	0	0	0
Hourly Total	82	101	21	8	0	0	0	25	84	30	9	0	0	0	13	102	32	14	0	0	0	46	128	47	22	0	0	0
13:00	27	24	2	1	0	0	0	4	15	8	5	0	0	0	2	29	12	0	0	0	0	11	24	13	5	0	0	0
13:15	18	23	6	0	0	0	0	2	24	2	3	0	0	0	2	25	7	3	0	0	0	13	31	18	4	0	0	0
13:30	19	25	7	2	0	0	0	5	25	6	1	0	0	0	4	19	10	3	0	0	0	11	27	11	7	0	0	0
13:45	15	25	8	1	0	0	0	11	21	5	1	0	0	0	10	21	5	7	0	0	0	11	27	17	4	0	0	0
Hourly Total	79	97	23	4	0	0	0	22	85	21	10	0	0	0	18	94	34	13	0	0	0	46	109	59	20	0	0	0
Total	237	288	69	15	0	0	0	62	255	85	26	0	0	0	54	286	101	49	0	0	0	134	341	161	66	0	0	0

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Single Unit Trucks

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
11:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	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
Hourly Total	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	2	0	0	0	0	0
12:00	0	2	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
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
12:30	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
12:45	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Hourly Total	0	2	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0
13:00	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
13:15	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
Total	1	3	0	0	0	0	0	1	1	1	1	0	0	0	1	3	1	0	0	0	0	1	5	0	0	0	0	0

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Articulated Trucks

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	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
13:45	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
Hourly Total	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
Total	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

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Buses

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
11:15	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
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
11:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
12:15	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
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0	0	0

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Site: 12061-1

Intersection Name: Union St/Temple St & Spring St/Middle St

GPS: 43.656987, -70.256138

Date: 04-12-2025

Bicycles on Road

Leg	Spring St							Middle St							Union St							Temple St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	0	0	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
11:15	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
11:30	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
11:45	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
Hourly Total	0	0	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
13:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-2
Intersection Name	Middle St & Exchange St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	15:00
End Time	17:45
Location	12061-2
Latitude and Longitude	(43.657723, -70.254672)

	START	END	PHF
AM PEAK			
PM PEAK	**04-10-2025 17:00:00**	**04-10-2025 18:00:00**	**0.98**
Mid-Day PEAK			
Forced Peak AM			
Forced Peak PM			



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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

TURNING MOVEMENT DATA

Leg	Middle St							Middle St							Exchange St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
15:00	0	33	9	0	42	13	33	13	39	0	0	52	6	7	0	0	0	0	0	14	10	11	6	9	0	26	13	22	120
15:15	0	52	11	0	63	18	15	4	30	0	0	34	10	7	0	0	0	0	0	9	11	7	11	10	0	28	17	14	125
15:30	0	56	12	0	68	14	9	3	31	0	0	34	8	7	0	0	0	0	0	10	7	6	9	10	0	25	23	15	127
15:45	0	48	15	0	63	10	13	5	28	0	0	33	4	16	0	0	0	0	0	10	21	8	10	6	0	24	20	10	120
Hourly Total	0	189	47	0	236	55	70	25	128	0	0	153	28	37	0	0	0	0	0	43	49	32	36	35	0	103	73	61	492
16:00	0	48	14	0	62	16	14	7	40	0	0	47	4	7	0	0	0	0	0	9	16	13	6	11	0	30	14	17	139
16:15	0	47	17	0	64	15	12	8	32	0	0	40	6	0	0	0	0	0	0	17	10	4	6	10	0	20	8	5	124
16:30	0	48	9	0	57	10	21	13	44	0	0	57	15	8	0	0	0	0	0	10	17	5	5	8	0	18	12	18	132
16:45	0	45	11	0	56	16	20	12	41	0	0	53	4	6	0	0	0	0	0	16	23	4	2	6	0	12	9	16	121
Hourly Total	0	188	51	0	239	57	67	40	157	0	0	197	29	21	0	0	0	0	0	52	66	26	19	35	0	80	43	56	516
17:00	0	31	16	0	47	5	26	12	44	0	0	56	3	15	0	0	0	0	0	31	21	13	9	3	0	25	25	14	128
17:15	0	39	14	0	53	8	12	12	45	0	0	57	20	11	0	0	0	0	0	12	16	7	13	6	0	26	13	9	136
17:30	0	44	9	0	53	7	14	13	40	0	0	53	15	23	0	0	0	0	0	12	13	6	11	13	0	30	14	9	136
17:45	0	47	7	0	54	15	10	15	35	0	0	50	14	4	0	0	0	0	0	8	13	12	10	11	0	33	10	8	137
Hourly Total	0	161	46	0	207	35	62	52	164	0	0	216	52	53	0	0	0	0	0	63	63	38	43	33	0	114	62	40	537
Grand Total	0	538	144	0	682	147	199	117	449	0	0	566	109	111	0	0	0	0	0	158	178	96	98	103	0	297	178	157	1545
approach %	0	78	21	0	99	21	29	20	79	0	0	100	19	19	0	0	0	0	0	0	0	32	32	34	0	100	59	52	300
Total %	0	34	9	0	44	9	12	7	29	0	0	36	7	7	0	0	0	0	0	10	11	6	6	6	0	19	11	10	100
Motorcycles	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	6
Motorcycles %	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cars & Light Goods	0	510	140	0	650	0	0	114	440	0	0	554	0	0	0	0	0	0	0	0	0	94	96	97	0	287	0	0	1491
Cars & Light Goods	0	94	97	0	0	0	0	97	97	0	0	0	0	0	0	0	0	0	0	0	0	97	97	94	0	0	0	0	96
Single Unit Trucks	0	7	1	0	8	0	0	3	2	0	0	5	0	0	0	0	0	0	0	0	0	1	0	3	0	4	0	0	17
Single Unit Trucks	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	1
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	8	0	0	8	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Buses %	0	1	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
Bicycles on Road	0	11	0	0	11	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	1	1	3	0	5	0	0	22
Bicycles on Road %	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1
Peds	0	0	0	0	0	147	198	0	0	0	0	0	109	111	0	0	0	0	0	158	178	0	0	0	0	0	177	155	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	99	0	0
Pcl	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	1	2	0
Pcl %	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

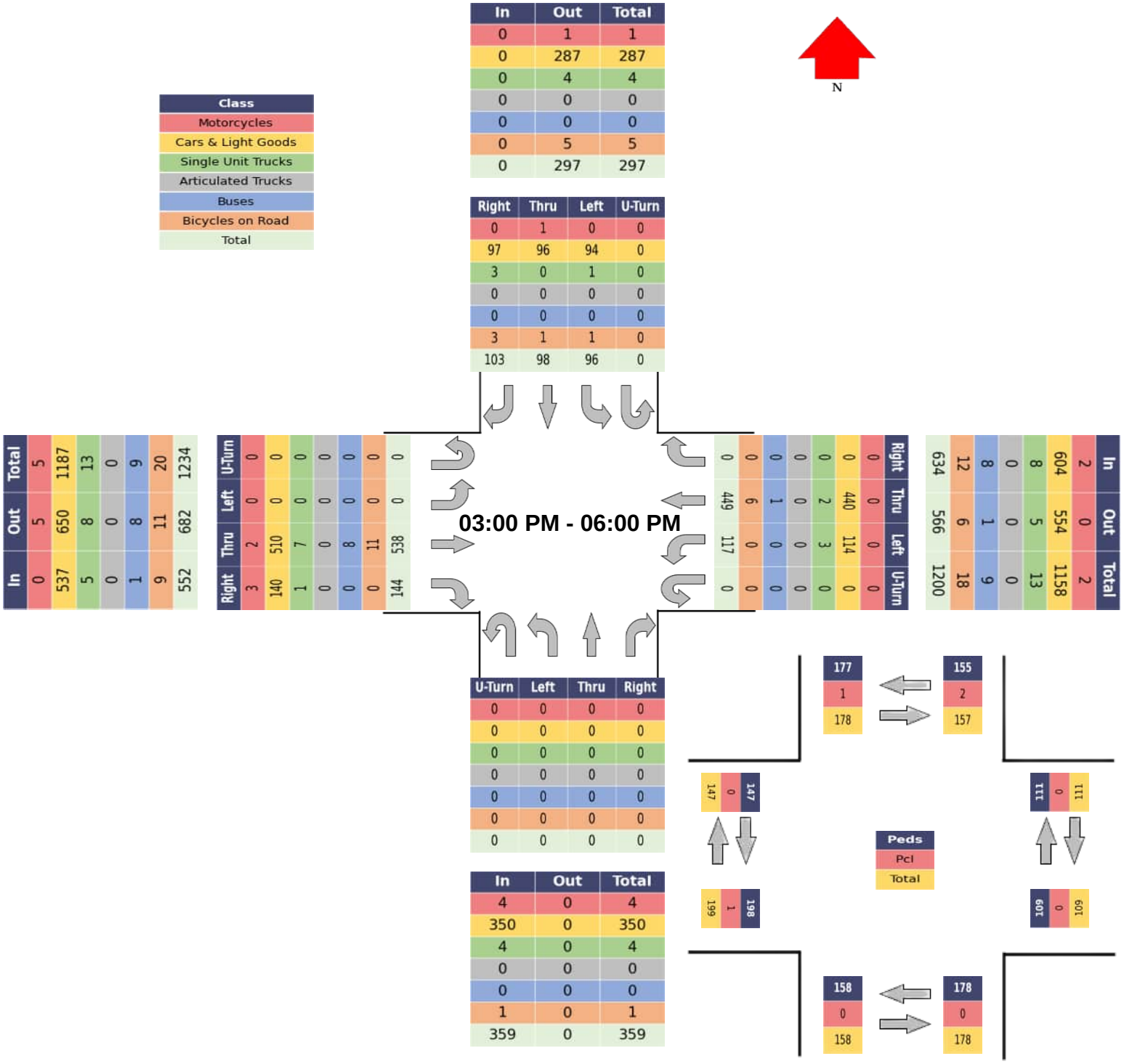
Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Turning Movement Data



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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

TURNING MOVEMENT PM PEAK HOUR

Leg	Middle St							Middle St							Exchange St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
17:00:00	0	31	16	0	47	5	26	12	44	0	0	56	3	15	0	0	0	0	0	31	21	13	9	3	0	25	25	14	128
17:15:00	0	39	14	0	53	8	12	12	45	0	0	57	20	11	0	0	0	0	0	12	16	7	13	6	0	26	13	9	136
17:30:00	0	44	9	0	53	7	14	13	40	0	0	53	15	23	0	0	0	0	0	12	13	6	11	13	0	30	14	9	136
17:45:00	0	47	7	0	54	15	10	15	35	0	0	50	14	4	0	0	0	0	0	8	13	12	10	11	0	33	10	8	137
Grand Total	0	161	46	0	207	35	62	52	164	0	0	216	52	53	0	0	0	0	0	63	63	38	43	33	0	114	62	40	537
approach %	0	78	22	0	100	17	30	24	76	0	0	100	24	25	0	0	0	0	0	0	0	33	38	29	0	100	54	35	300
Total %	0	30	9	0	39	7	12	10	31	0	0	40	10	10	0	0	0	0	0	12	12	7	8	6	0	21	12	7	100
Motorcycles	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
Motorcycles %	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
Cars & Light Goods	0	154	46	0	200	0	0	51	162	0	0	213	0	0	0	0	0	0	0	0	0	37	42	30	0	109	0	0	522
Cars & Light Goods	0	96	100	0	0	0	0	98	99	0	0	0	0	0	0	0	0	0	0	0	0	97	98	91	0	0	0	0	97
Single Unit Trucks	0	2	0	0	2	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	6
Single Unit Trucks	0	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	1
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Buses %	0	1	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
Bicycles on Road	0	3	0	0	3	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0	3	0	0	7
Bicycles on Road %	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	1
Peds	0	0	0	0	0	35	62	0	0	0	0	0	52	53	0	0	0	0	0	63	63	0	0	0	0	0	61	40	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	98	0	0
Pcl	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	1	0	0
Pcl %	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	2	0	0
PHF	0.0	0.86	0.72	0.0	0.96	0.58	0.6	0.87	0.91	0.0	0.0	0.95	0.65	0.58	0.0	0.0	0.0	0.0	0.0	0.51	0.75	0.73	0.83	0.63	0.0	0.86	0.62	0.71	0.98

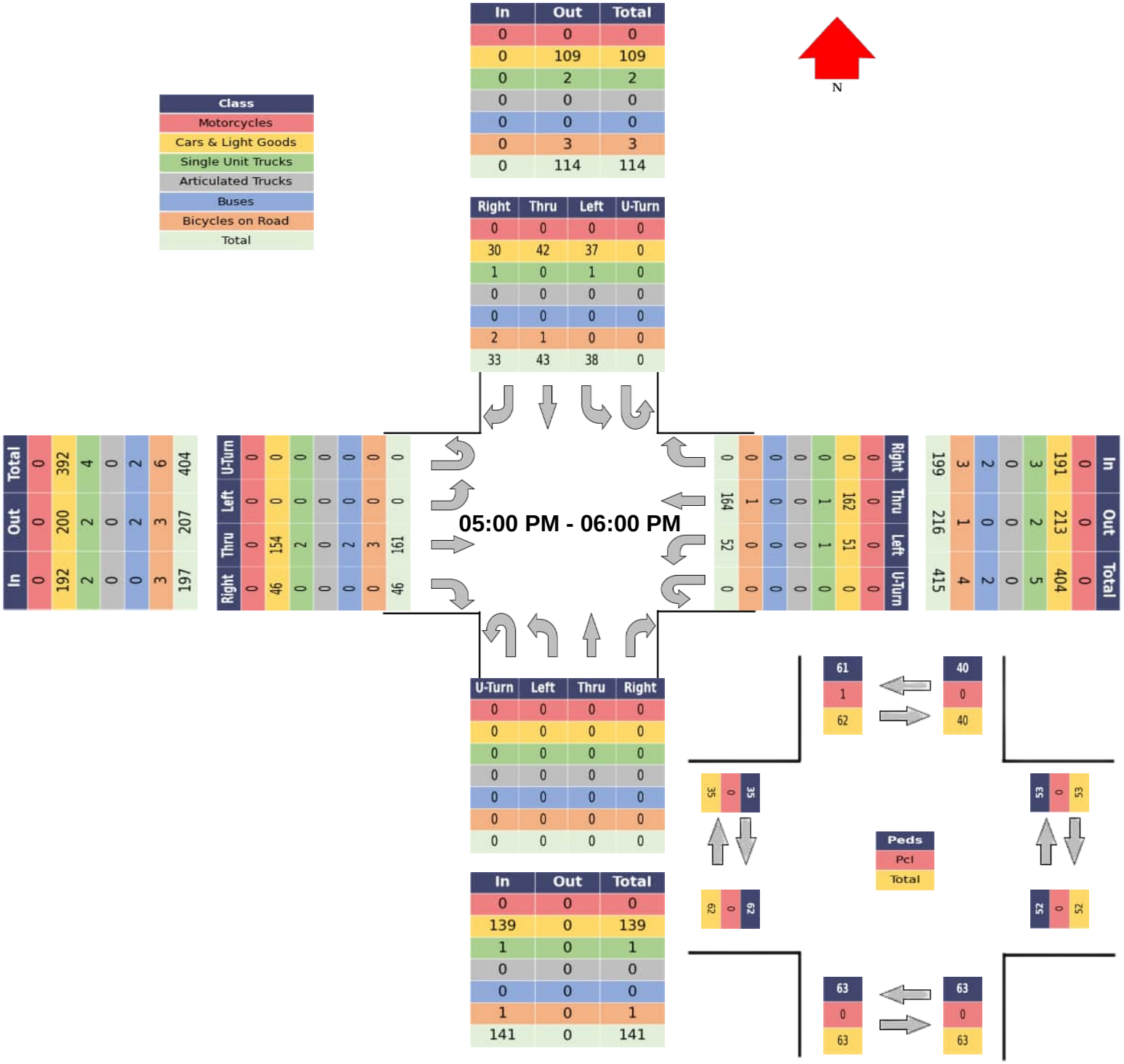
Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

PM Peak Turning Movement Data Summary



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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Motorcycles

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Cars & Light Goods

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	32	9	0	0	0	11	37	0	0	0	0	0	0	0	0	0	0	10	5	9	0	0	0
15:15	0	51	11	0	0	0	4	29	0	0	0	0	0	0	0	0	0	0	7	11	10	0	0	0
15:30	0	53	10	0	0	0	3	31	0	0	0	0	0	0	0	0	0	0	6	9	10	0	0	0
15:45	0	41	13	0	0	0	5	27	0	0	0	0	0	0	0	0	0	0	8	10	6	0	0	0
Hourly Total	0	177	43	0	0	0	23	124	0	0	0	0	0	0	0	0	0	0	31	35	35	0	0	0
16:00	0	45	14	0	0	0	7	39	0	0	0	0	0	0	0	0	0	0	13	6	9	0	0	0
16:15	0	45	17	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	4	6	10	0	0	0
16:30	0	46	9	0	0	0	13	42	0	0	0	0	0	0	0	0	0	0	5	5	7	0	0	0
16:45	0	43	11	0	0	0	12	41	0	0	0	0	0	0	0	0	0	0	4	2	6	0	0	0
Hourly Total	0	179	51	0	0	0	40	154	0	0	0	0	0	0	0	0	0	0	26	19	32	0	0	0
17:00	0	31	16	0	0	0	12	43	0	0	0	0	0	0	0	0	0	0	13	8	3	0	0	0
17:15	0	36	14	0	0	0	11	44	0	0	0	0	0	0	0	0	0	0	6	13	5	0	0	0
17:30	0	43	9	0	0	0	13	40	0	0	0	0	0	0	0	0	0	0	6	11	11	0	0	0
17:45	0	44	7	0	0	0	15	35	0	0	0	0	0	0	0	0	0	0	12	10	11	0	0	0
Hourly Total	0	154	46	0	0	0	51	162	0	0	0	0	0	0	0	0	0	0	37	42	30	0	0	0
Total	0	510	140	0	0	0	114	440	0	0	0	0	0	0	0	0	0	0	94	96	97	0	0	0

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Single Unit Trucks

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	4	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
17:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Total	0	7	1	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Articulated Trucks

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Buses

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-10-2025

Bicycles on Road

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
15:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
16:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	5	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
17:15	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0
Total	0	11	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0

SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-2
Intersection Name	Middle St & Exchange St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	11:00
End Time	13:45
Location	12061-2
Latitude and Longitude	(43.657723, -70.254672)

	START	END	PHF
AM PEAK			
PM PEAK			
Mid-Day PEAK	**04-12-2025 12:15:00**	**04-12-2025 13:15:00**	**0.93**
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

TURNING MOVEMENT DATA

Leg	Middle St							Middle St							Exchange St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:00	0	41	13	0	54	14	4	4	25	0	0	29	6	6	0	0	0	0	0	10	6	8	6	5	0	19	8	17	102
11:15	0	28	12	0	40	6	19	6	33	0	0	39	1	3	0	0	0	0	0	10	11	3	8	8	0	19	16	3	98
11:30	0	38	7	0	45	18	20	7	23	0	0	30	5	7	0	0	0	0	0	17	12	6	5	5	0	16	8	18	91
11:45	0	44	9	0	53	13	15	6	26	0	0	32	9	4	0	0	0	0	0	21	30	6	7	9	0	22	7	20	107
Hourly Total	0	151	41	0	192	51	58	23	107	0	0	130	21	20	0	0	0	0	0	58	59	23	26	27	0	76	39	58	398
12:00	0	38	6	0	44	15	23	1	26	0	0	27	7	7	0	0	0	0	0	22	24	7	5	9	0	21	13	10	92
12:15	0	39	13	0	52	16	17	11	30	0	0	41	10	15	0	0	0	0	0	17	12	8	7	14	0	29	17	13	122
12:30	0	46	12	0	58	13	33	10	29	0	0	39	13	5	0	0	0	0	0	22	30	5	5	13	0	23	19	15	120
12:45	0	39	8	0	47	30	35	6	23	0	0	29	15	6	0	0	0	0	0	14	14	11	11	8	0	30	17	9	106
Hourly Total	0	162	39	0	201	74	108	28	108	0	0	136	45	33	0	0	0	0	0	75	80	31	28	44	0	103	66	47	440
13:00	0	40	9	1	50	13	9	7	21	0	0	28	17	8	0	0	0	0	0	24	7	8	8	12	0	28	18	15	106
13:15	0	38	8	0	46	22	20	8	24	0	0	32	27	16	0	0	0	0	0	26	29	11	12	7	0	30	31	16	108
13:30	0	38	13	0	51	28	28	12	25	0	0	37	18	19	0	0	0	0	0	15	38	6	11	7	0	24	23	15	112
13:45	0	34	6	0	40	14	46	14	26	0	0	40	20	14	0	0	0	0	0	24	17	9	14	8	0	31	28	17	111
Hourly Total	0	150	36	1	187	77	103	41	96	0	0	137	82	57	0	0	0	0	0	89	91	34	45	34	0	113	100	63	437
Grand Total	0	463	116	1	580	202	269	92	311	0	0	403	148	110	0	0	0	0	0	222	230	88	99	105	0	292	205	168	1275
approach %	0	79	20	0	100	34	46	22	77	0	0	100	36	27	0	0	0	0	0	0	0	30	33	35	0	100	70	57	300
Total %	0	36	9	0	45	15	21	7	24	0	0	31	11	8	0	0	0	0	0	17	18	6	7	8	0	22	16	13	100
Motorcycles	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
Motorcycles %	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
Cars & Light Goods	0	456	115	1	572	0	0	92	308	0	0	400	0	0	0	0	0	0	0	0	0	88	97	104	0	289	0	0	1261
Cars & Light Goods	0	98	99	100	0	0	0	100	99	0	0	0	0	0	0	0	0	0	0	0	0	100	97	99	0	0	0	0	98
Single Unit Trucks	0	4	1	0	5	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	10
Single Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Buses %	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
Bicycles on Road	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bicycles on Road %	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
Peds	0	0	0	0	0	202	269	0	0	0	0	0	148	110	0	0	0	0	0	222	230	0	0	0	0	0	205	168	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Pcl	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
Pcl %	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

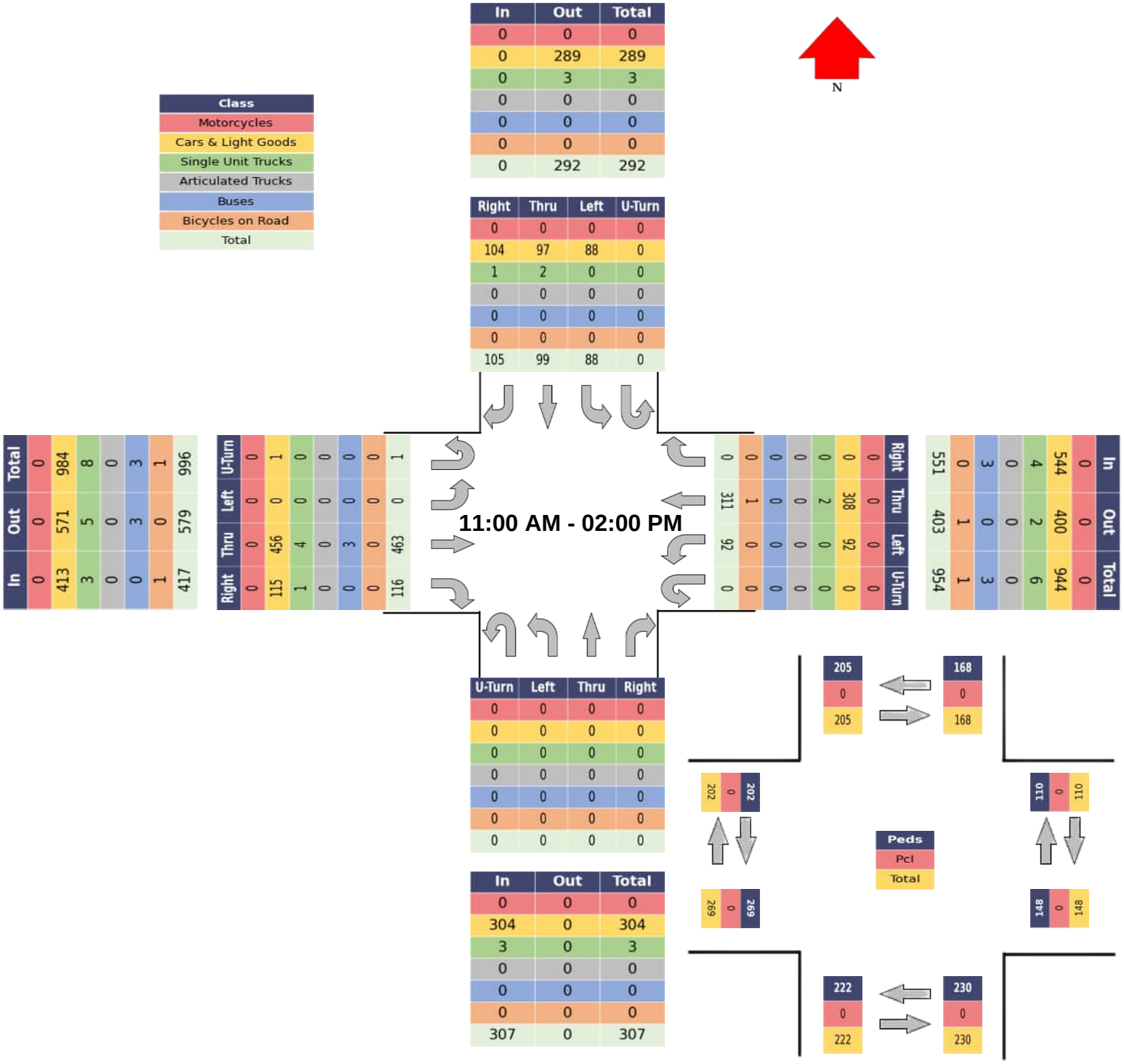
Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Turning Movement Data



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

TURNING MOVEMENT MID PEAK HOUR

Leg	Middle St							Middle St							Exchange St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
12:15:00	0	39	13	0	52	16	17	11	30	0	0	41	10	15	0	0	0	0	0	17	12	8	7	14	0	29	17	13	122
12:30:00	0	46	12	0	58	13	33	10	29	0	0	39	13	5	0	0	0	0	0	22	30	5	5	13	0	23	19	15	120
12:45:00	0	39	8	0	47	30	35	6	23	0	0	29	15	6	0	0	0	0	0	14	14	11	11	8	0	30	17	9	106
13:00:00	0	40	9	1	50	13	9	7	21	0	0	28	17	8	0	0	0	0	0	24	7	8	8	12	0	28	18	15	106
Grand Total	0	164	42	1	207	72	94	34	103	0	0	137	55	34	0	0	0	0	0	77	63	32	31	47	0	110	71	52	454
approach %	0	79	20	0	100	35	45	25	75	0	0	100	40	25	0	0	0	0	0	0	0	29	28	43	0	100	65	47	300
Total %	0	36	9	0	46	16	21	7	23	0	0	30	12	7	0	0	0	0	0	17	14	7	7	10	0	24	16	11	100
Motorcycles	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
Motorcycles %	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
Cars & Light Goods	0	164	42	1	207	0	0	34	102	0	0	136	0	0	0	0	0	0	0	0	0	32	31	46	0	109	0	0	452
Cars & Light Goods	0	100	100	100	0	0	0	100	99	0	0	0	0	0	0	0	0	0	0	0	0	100	100	98	0	0	0	0	100
Single Unit Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
Single Unit Trucks	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Articulated Trucks	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
Articulated Trucks %	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
Buses	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
Buses %	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
Bicycles on Road	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
Bicycles on Road %	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
Peds	0	0	0	0	0	72	94	0	0	0	0	0	55	34	0	0	0	0	0	77	63	0	0	0	0	0	71	52	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Pcl	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
Pcl %	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
PHF	0.0	0.89	0.81	0.25	0.89	0.6	0.67	0.77	0.86	0.0	0.0	0.84	0.81	0.57	0.0	0.0	0.0	0.0	0.0	0.8	0.52	0.73	0.7	0.84	0.0	0.92	0.93	0.87	0.93

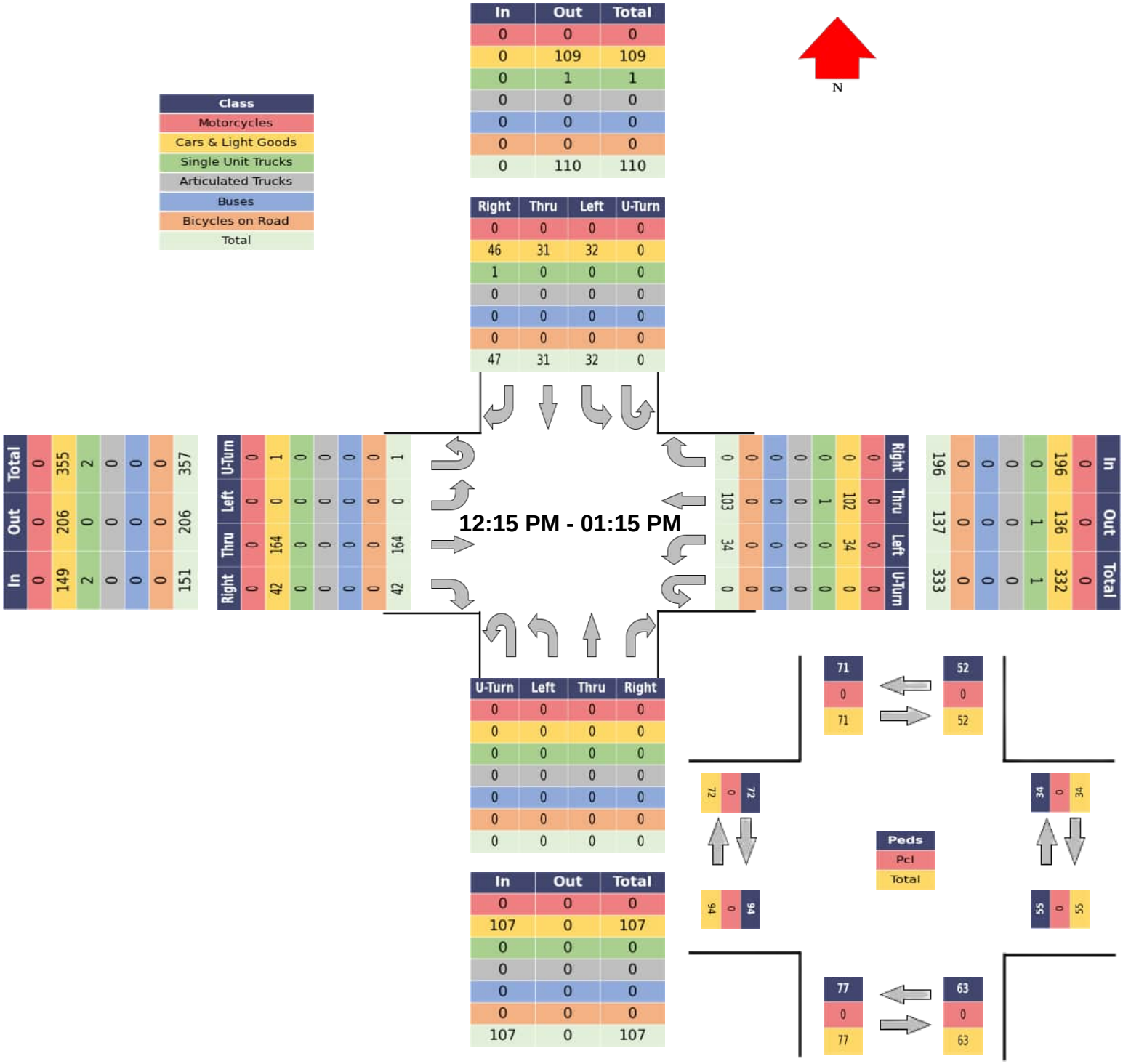
Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Mid Peak Turning Movement Data Summary



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Motorcycles

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Cars & Light Goods

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	39	12	0	0	0	4	24	0	0	0	0	0	0	0	0	0	0	8	6	5	0	0	0
11:15	0	28	12	0	0	0	6	33	0	0	0	0	0	0	0	0	0	0	3	8	8	0	0	0
11:30	0	38	7	0	0	0	7	23	0	0	0	0	0	0	0	0	0	0	6	5	5	0	0	0
11:45	0	44	9	0	0	0	6	26	0	0	0	0	0	0	0	0	0	0	6	7	9	0	0	0
Hourly Total	0	149	40	0	0	0	23	106	0	0	0	0	0	0	0	0	0	0	23	26	27	0	0	0
12:00	0	35	6	0	0	0	1	26	0	0	0	0	0	0	0	0	0	0	7	5	9	0	0	0
12:15	0	39	13	0	0	0	11	30	0	0	0	0	0	0	0	0	0	0	8	7	14	0	0	0
12:30	0	46	12	0	0	0	10	29	0	0	0	0	0	0	0	0	0	0	5	5	13	0	0	0
12:45	0	39	8	0	0	0	6	22	0	0	0	0	0	0	0	0	0	0	11	11	7	0	0	0
Hourly Total	0	159	39	0	0	0	28	107	0	0	0	0	0	0	0	0	0	0	31	28	43	0	0	0
13:00	0	40	9	1	0	0	7	21	0	0	0	0	0	0	0	0	0	0	8	8	12	0	0	0
13:15	0	36	8	0	0	0	8	23	0	0	0	0	0	0	0	0	0	0	11	12	7	0	0	0
13:30	0	38	13	0	0	0	12	25	0	0	0	0	0	0	0	0	0	0	6	10	7	0	0	0
13:45	0	34	6	0	0	0	14	26	0	0	0	0	0	0	0	0	0	0	9	13	8	0	0	0
Hourly Total	0	148	36	1	0	0	41	95	0	0	0	0	0	0	0	0	0	0	34	43	34	0	0	0
Total	0	456	115	1	0	0	92	308	0	0	0	0	0	0	0	0	0	0	88	97	104	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Single Unit Trucks

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Hourly Total	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Total	0	4	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Articulated Trucks

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Buses

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-2

Intersection Name: Middle St & Exchange St

GPS: 43.657723, -70.254672

Date: 04-12-2025

Bicycles on Road

Leg	Middle St						Middle St						Exchange St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-3
Intersection Name	Fore St & Exchange St/Moulton St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	15:00
End Time	17:45
Location	12061-3
Latitude and Longitude	(43.656507, -70.253223)

	START	END	PHF
AM PEAK			
PM PEAK	**04-10-2025 16:45:00**	**04-10-2025 17:45:00**	**0.9**
Mid-Day PEAK			
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

TURNING MOVEMENT DATA

Leg	Fore St							Fore St							Moulton St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
15:00	0	41	7	0	48	21	29	4	32	0	0	36	7	13	0	0	0	0	0	14	4	8	3	14	0	25	6	11	109
15:15	0	39	6	1	46	11	13	2	26	0	0	28	16	11	0	0	0	0	0	8	3	12	5	15	0	32	10	12	106
15:30	0	45	9	0	54	19	9	4	30	0	0	34	16	16	0	0	0	0	0	20	3	9	4	11	0	24	3	11	112
15:45	0	33	5	0	38	13	14	4	30	0	0	34	19	9	0	0	0	0	0	15	13	10	3	20	0	33	13	13	105
Hourly Total	0	158	27	1	186	64	65	14	118	0	0	132	58	49	0	0	0	0	0	57	23	39	15	60	0	114	32	47	432
16:00	0	55	2	0	57	16	16	5	35	0	0	40	6	17	0	0	0	0	0	10	6	14	5	9	0	28	6	9	125
16:15	0	45	4	0	49	9	7	4	31	0	0	35	11	13	0	0	0	0	0	6	12	13	4	13	0	30	4	11	114
16:30	0	38	8	0	46	5	13	3	30	0	0	33	13	11	0	0	0	0	0	10	6	8	9	11	0	28	7	10	107
16:45	0	60	8	0	68	18	16	4	44	0	0	48	18	6	0	0	0	0	0	15	15	8	4	10	0	22	9	16	138
Hourly Total	0	198	22	0	220	48	52	16	140	0	0	156	48	47	0	0	0	0	0	41	39	43	22	43	0	108	26	46	484
17:00	0	43	15	0	58	18	18	2	38	0	0	40	14	20	0	0	0	0	0	17	10	22	2	12	0	36	13	13	134
17:15	0	57	9	0	66	4	10	2	47	0	0	49	10	14	0	0	0	0	0	13	11	19	4	14	0	37	4	15	152
17:30	0	58	15	0	73	14	12	4	44	0	0	48	18	18	0	0	0	0	0	15	14	13	7	21	0	41	21	25	162
17:45	0	58	14	0	72	16	22	2	31	0	1	34	11	9	0	0	0	0	0	18	9	7	3	15	0	25	6	14	131
Hourly Total	0	216	53	0	269	52	62	10	160	0	1	171	53	61	0	0	0	0	0	63	44	61	16	62	0	139	44	67	579
Grand Total	0	572	102	1	675	164	179	40	418	0	1	459	159	157	0	0	0	0	0	161	106	143	53	165	0	361	102	160	1495
approach %	0	84	15	0	100	24	26	8	91	0	0	100	34	34	0	0	0	0	0	0	0	39	14	45	0	100	28	44	300
Total %	0	38	6	0	45	10	11	2	27	0	0	30	10	10	0	0	0	0	0	10	7	9	3	11	0	24	6	10	100
Motorcycles	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4	0	0	5
Motorcycles %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
Cars & Light Goods	0	562	101	1	664	0	0	40	411	0	1	452	0	0	0	0	0	0	0	0	0	141	52	156	0	349	0	0	1465
Cars & Light Goods	0	98	99	100	0	0	0	100	98	0	100	0	0	0	0	0	0	0	0	0	0	98	98	94	0	0	0	0	97
Single Unit Trucks	0	3	1	0	4	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	1	3	0	4	0	0	11
Single Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	2	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Buses %	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
Bicycles on Road	0	4	0	0	4	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	11
Bicycles on Road %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Peds	0	0	0	0	0	164	178	0	0	0	0	0	159	156	0	0	0	0	0	161	106	0	0	0	0	0	102	159	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Pcl	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pcl %	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

Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

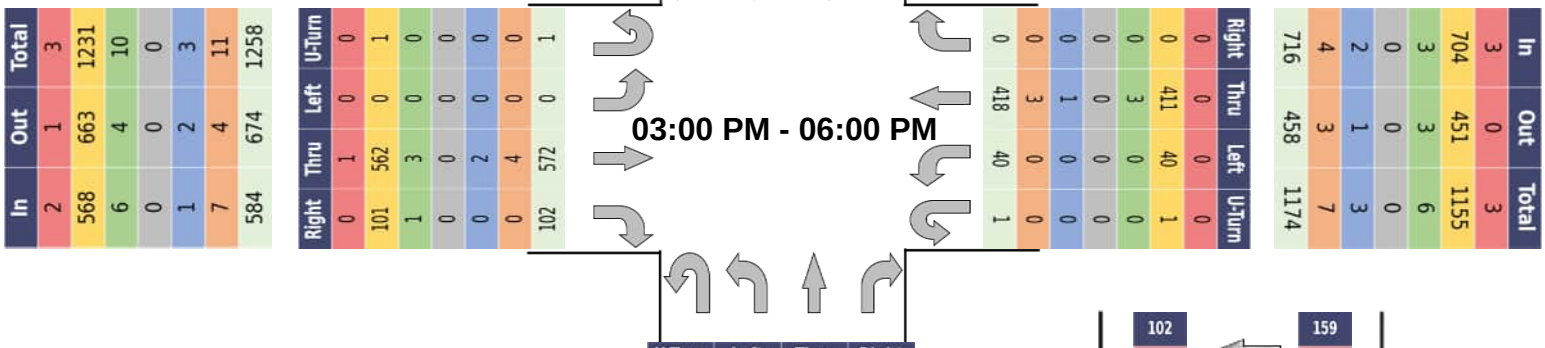
Date: 04-10-2025

Turning Movement Data

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

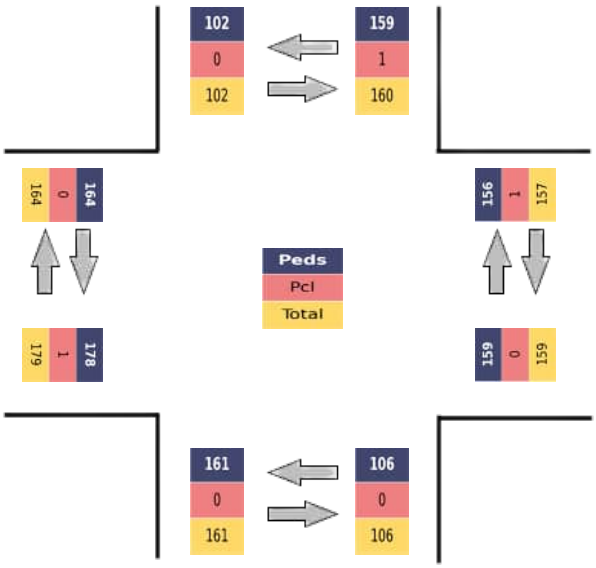
In	Out	Total
0	4	4
0	349	349
0	4	4
0	0	0
0	0	0
0	4	4
0	361	361

Right	Thru	Left	U-Turn
2	0	2	0
156	52	141	0
3	1	0	0
0	0	0	0
0	0	0	0
4	0	0	0
165	53	143	0



U-Turn	Left	Thru	Right
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

In	Out	Total
0	0	0
193	0	193
2	0	2
0	0	0
0	0	0
0	0	0
195	0	195



Tri-State Traffic Data, Inc.

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

TURNING MOVEMENT PM PEAK HOUR

Leg	Fore St							Fore St							Moulton St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
16:45:00	0	60	8	0	68	18	16	4	44	0	0	48	18	6	0	0	0	0	0	15	15	8	4	10	0	22	9	16	138
17:00:00	0	43	15	0	58	18	18	2	38	0	0	40	14	20	0	0	0	0	0	17	10	22	2	12	0	36	13	13	134
17:15:00	0	57	9	0	66	4	10	2	47	0	0	49	10	14	0	0	0	0	0	13	11	19	4	14	0	37	4	15	152
17:30:00	0	58	15	0	73	14	12	4	44	0	0	48	18	18	0	0	0	0	0	15	14	13	7	21	0	41	21	25	162
Grand Total	0	218	47	0	265	54	56	12	173	0	0	185	60	58	0	0	0	0	0	60	50	62	17	57	0	136	47	69	586
approach %	0	82	18	0	100	20	21	6	94	0	0	100	32	31	0	0	0	0	0	0	0	46	12	42	0	100	35	51	300
Total %	0	37	8	0	45	9	10	2	30	0	0	32	10	10	0	0	0	0	0	10	9	11	3	10	0	23	8	12	100
Motorcycles	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
Motorcycles %	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
Cars & Light Goods	0	215	47	0	262	0	0	12	172	0	0	184	0	0	0	0	0	0	0	0	0	62	16	54	0	132	0	0	578
Cars & Light Goods	0	99	100	0	0	0	0	100	99	0	0	0	0	0	0	0	0	0	0	0	0	100	94	95	0	0	0	0	99
Single Unit Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Single Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Buses %	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
Bicycles on Road	0	1	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	5
Bicycles on Road %	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	1
Peds	0	0	0	0	0	54	56	0	0	0	0	0	60	58	0	0	0	0	0	60	50	0	0	0	0	0	47	69	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Pcl	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
Pcl %	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
PHF	0.0	0.91	0.78	0.0	0.91	0.75	0.78	0.75	0.92	0.0	0.0	0.94	0.83	0.72	0.0	0.0	0.0	0.0	0.0	0.88	0.83	0.7	0.61	0.68	0.0	0.83	0.56	0.69	0.9

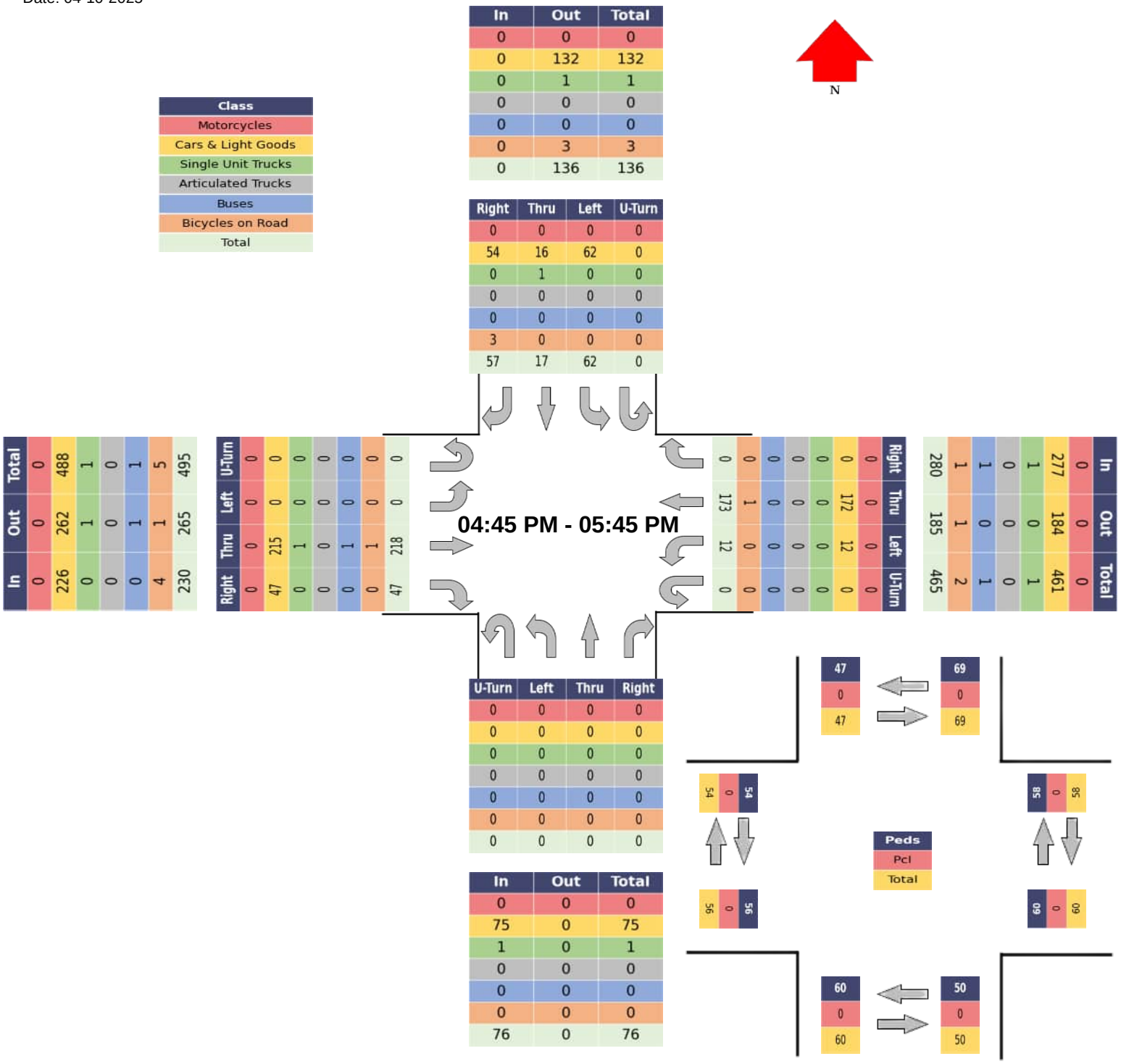
Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

PM Peak Turning Movement Data Summary



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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

Motorcycles

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0
16:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

Cars & Light Goods

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	41	7	0	0	0	4	32	0	0	0	0	0	0	0	0	0	0	8	3	13	0	0	0
15:15	0	37	5	1	0	0	2	25	0	0	0	0	0	0	0	0	0	0	11	5	14	0	0	0
15:30	0	45	9	0	0	0	4	29	0	0	0	0	0	0	0	0	0	0	9	4	9	0	0	0
15:45	0	33	5	0	0	0	4	30	0	0	0	0	0	0	0	0	0	0	9	3	19	0	0	0
Hourly Total	0	156	26	1	0	0	14	116	0	0	0	0	0	0	0	0	0	0	37	15	55	0	0	0
16:00	0	53	2	0	0	0	5	35	0	0	0	0	0	0	0	0	0	0	14	5	8	0	0	0
16:15	0	44	4	0	0	0	4	27	0	0	0	0	0	0	0	0	0	0	13	4	13	0	0	0
16:30	0	37	8	0	0	0	3	30	0	0	0	0	0	0	0	0	0	0	8	9	11	0	0	0
16:45	0	58	8	0	0	0	4	44	0	0	0	0	0	0	0	0	0	0	8	4	10	0	0	0
Hourly Total	0	192	22	0	0	0	16	136	0	0	0	0	0	0	0	0	0	0	43	22	42	0	0	0
17:00	0	43	15	0	0	0	2	38	0	0	0	0	0	0	0	0	0	0	22	2	11	0	0	0
17:15	0	57	9	0	0	0	2	46	0	0	0	0	0	0	0	0	0	0	19	3	13	0	0	0
17:30	0	57	15	0	0	0	4	44	0	0	0	0	0	0	0	0	0	0	13	7	20	0	0	0
17:45	0	57	14	0	0	0	2	31	0	1	0	0	0	0	0	0	0	0	7	3	15	0	0	0
Hourly Total	0	214	53	0	0	0	10	159	0	1	0	0	0	0	0	0	0	0	61	15	59	0	0	0
Total	0	562	101	1	0	0	40	411	0	1	0	0	0	0	0	0	0	0	141	52	156	0	0	0

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

Single Unit Trucks

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
15:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
15:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Total	0	3	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

Articulated Trucks

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

Buses

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-10-2025

Bicycles on Road

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:15	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Total	0	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0

SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-3
Intersection Name	Fore St & Exchange St/Moulton St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	11:00
End Time	13:45
Location	12061-3
Latitude and Longitude	(43.656507, -70.253223)

	START	END	PHF
AM PEAK			
PM PEAK			
Mid-Day PEAK	**04-12-2025 12:15:00**	**04-12-2025 13:15:00**	**0.98**
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

TURNING MOVEMENT DATA

Leg	Fore St							Fore St							Moulton St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:00	0	43	6	0	49	13	8	1	32	0	0	33	13	12	0	0	0	0	0	2	9	10	0	12	0	22	7	4	104
11:15	0	38	0	0	38	8	11	2	22	0	0	24	17	11	0	0	0	0	0	16	9	10	7	13	0	30	8	15	92
11:30	0	34	6	0	40	17	19	2	26	0	0	28	8	6	0	0	0	0	0	10	14	10	1	8	0	19	9	4	87
11:45	0	43	10	0	53	22	20	3	37	0	0	40	14	12	0	0	0	0	0	4	19	5	6	9	0	20	6	13	113
Hourly Total	0	158	22	0	180	60	58	8	117	0	0	125	52	41	0	0	0	0	0	32	51	35	14	42	0	91	30	36	396
12:00	0	41	11	0	52	7	13	1	20	0	0	21	14	20	0	0	0	0	0	12	11	3	3	7	0	13	12	23	86
12:15	0	43	8	0	51	11	12	4	28	0	0	32	9	14	0	0	0	0	0	4	12	11	4	14	0	29	7	13	112
12:30	0	45	4	0	49	16	14	3	34	0	0	37	19	10	0	0	0	0	0	4	13	9	3	13	0	25	11	5	111
12:45	0	43	11	0	54	23	24	2	26	0	0	28	18	13	0	0	0	0	0	16	13	13	0	15	0	28	16	18	110
Hourly Total	0	172	34	0	206	57	63	10	108	0	0	118	60	57	0	0	0	0	0	36	49	36	10	49	0	95	46	59	419
13:00	0	41	7	0	48	19	18	3	24	0	2	29	23	17	0	0	0	0	0	7	8	8	2	17	0	27	13	26	104
13:15	0	40	7	0	47	33	21	4	17	0	0	21	24	43	0	0	0	0	0	16	4	8	5	16	0	29	5	29	97
13:30	0	47	8	0	55	29	15	4	25	0	0	29	16	24	0	0	0	0	0	6	6	11	2	21	0	34	21	29	118
13:45	0	31	7	0	38	35	33	0	25	0	0	25	33	22	0	0	0	0	0	13	10	12	7	18	0	37	19	26	100
Hourly Total	0	159	29	0	188	116	87	11	91	0	2	104	96	106	0	0	0	0	0	42	28	39	16	72	0	127	58	110	419
Grand Total	0	489	85	0	574	233	208	29	316	0	2	347	208	204	0	0	0	0	0	110	128	110	40	163	0	313	134	205	1234
approach %	0	85	14	0	100	40	36	8	91	0	0	100	59	58	0	0	0	0	0	0	0	35	12	52	0	100	42	65	300
Total %	0	39	6	0	46	18	16	2	25	0	0	28	16	16	0	0	0	0	0	8	10	8	3	13	0	25	10	16	100
Motorcycles	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
Motorcycles %	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
Cars & Light Goods	0	483	85	0	568	0	0	29	313	0	2	344	0	0	0	0	0	0	0	0	0	108	39	163	0	310	0	0	1222
Cars & Light Goods	0	98	100	0	0	0	0	100	99	0	100	0	0	0	0	0	0	0	0	0	0	98	97	100	0	0	0	0	99
Single Unit Trucks	0	5	0	0	5	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	11
Single Unit Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0
Articulated Trucks	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
Articulated Trucks %	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
Buses	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
Buses %	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
Bicycles on Road	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bicycles on Road %	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
Peds	0	0	0	0	0	233	208	0	0	0	0	0	208	204	0	0	0	0	0	110	128	0	0	0	0	0	134	205	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Pcl	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
Pcl %	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

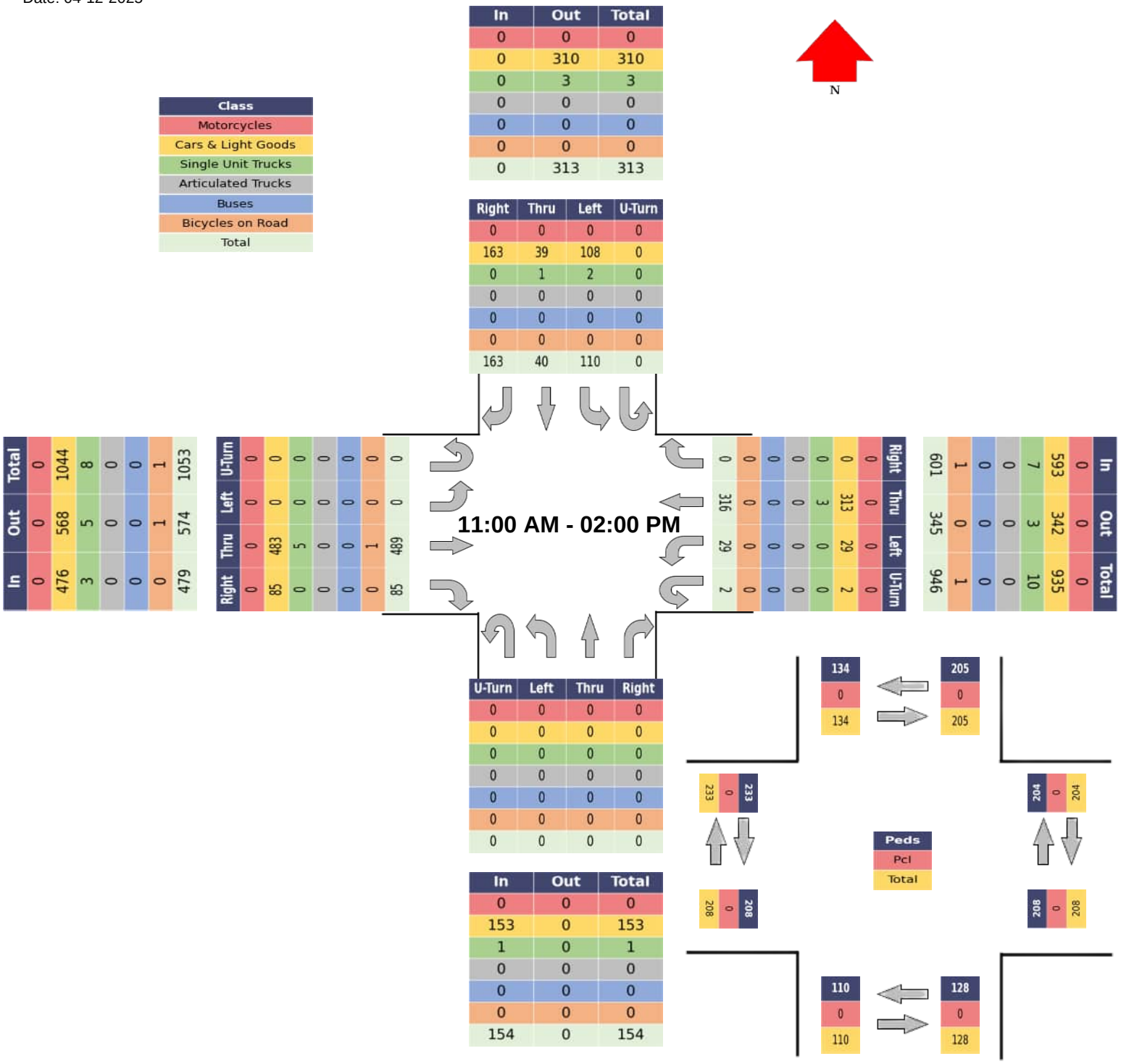
Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Turning Movement Data



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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

TURNING MOVEMENT MID PEAK HOUR

Leg	Fore St							Fore St							Moulton St							Exchange St							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
12:15:00	0	43	8	0	51	11	12	4	28	0	0	32	9	14	0	0	0	0	0	4	12	11	4	14	0	29	7	13	112
12:30:00	0	45	4	0	49	16	14	3	34	0	0	37	19	10	0	0	0	0	0	4	13	9	3	13	0	25	11	5	111
12:45:00	0	43	11	0	54	23	24	2	26	0	0	28	18	13	0	0	0	0	0	16	13	13	0	15	0	28	16	18	110
13:00:00	0	41	7	0	48	19	18	3	24	0	2	29	23	17	0	0	0	0	0	7	8	8	2	17	0	27	13	26	104
Grand Total	0	172	30	0	202	69	68	12	112	0	2	126	69	54	0	0	0	0	0	31	46	41	9	59	0	109	47	62	437
approach %	0	85	15	0	100	34	34	10	89	0	2	100	55	43	0	0	0	0	0	0	0	38	8	54	0	100	43	57	300
Total %	0	39	7	0	46	16	16	3	26	0	0	29	16	12	0	0	0	0	0	7	11	9	2	14	0	25	11	14	100
Motorcycles	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
Motorcycles %	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
Cars & Light Goods	0	171	30	0	201	0	0	12	112	0	2	126	0	0	0	0	0	0	0	0	0	41	9	59	0	109	0	0	436
Cars & Light Goods	0	99	100	0	0	0	0	100	100	0	100	0	0	0	0	0	0	0	0	0	0	100	100	100	0	0	0	0	100
Single Unit Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Single Unit Trucks	0	1	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
Articulated Trucks	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
Articulated Trucks %	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
Buses	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
Buses %	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
Bicycles on Road	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
Bicycles on Road %	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
Peds	0	0	0	0	0	69	68	0	0	0	0	0	69	54	0	0	0	0	0	31	46	0	0	0	0	0	47	62	0
Peds %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Pcl	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
Pcl %	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
PHF	0.0	0.96	0.68	0.0	0.94	0.75	0.71	0.75	0.82	0.0	0.25	0.85	0.75	0.79	0.0	0.0	0.0	0.0	0.0	0.48	0.88	0.79	0.56	0.87	0.0	0.94	0.73	0.6	0.98

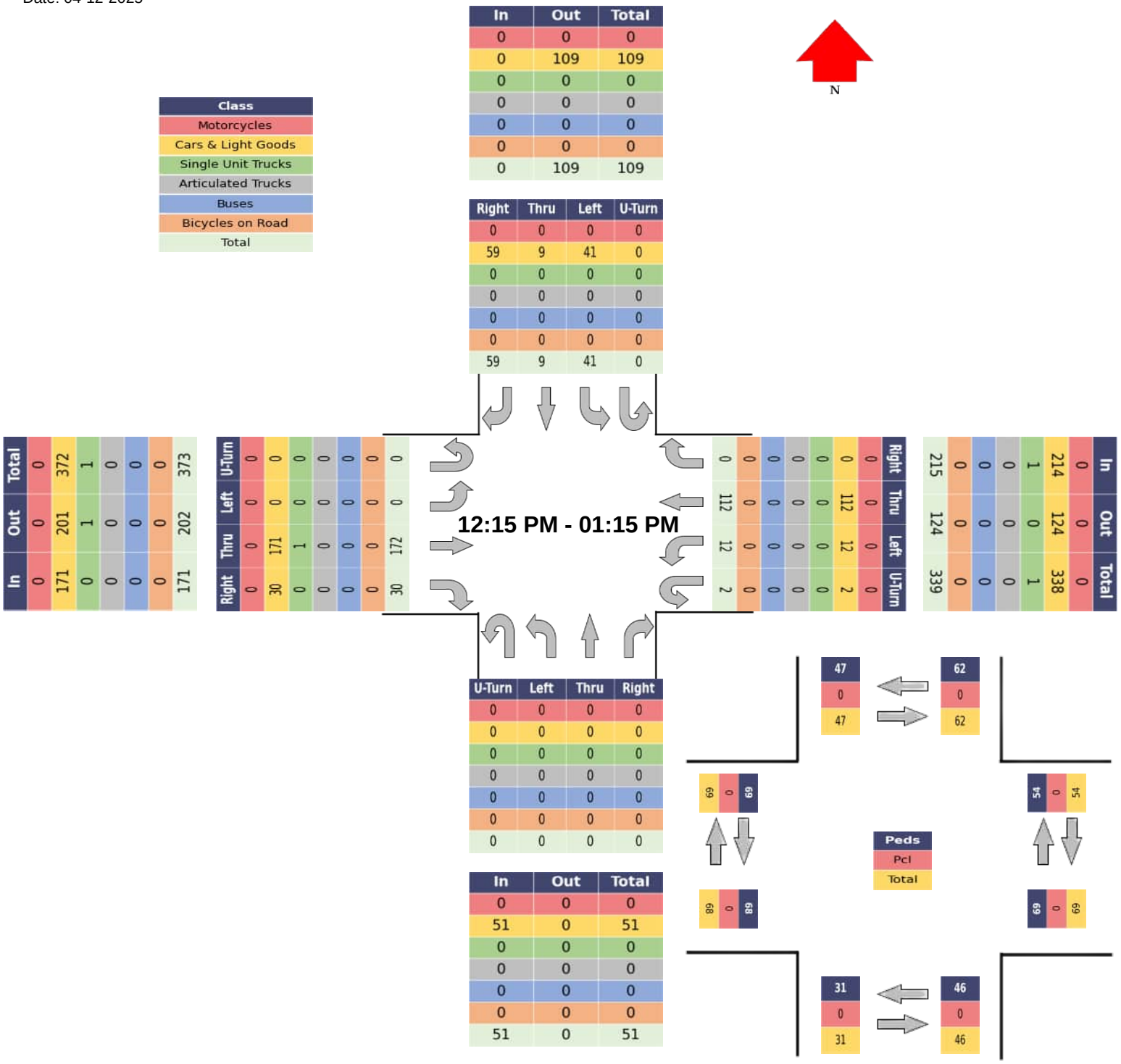
Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Mid Peak Turning Movement Data Summary



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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Motorcycles

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Cars & Light Goods

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	42	6	0	0	0	1	32	0	0	0	0	0	0	0	0	0	0	9	0	12	0	0	0
11:15	0	37	0	0	0	0	2	22	0	0	0	0	0	0	0	0	0	0	10	7	13	0	0	0
11:30	0	33	6	0	0	0	2	25	0	0	0	0	0	0	0	0	0	0	10	1	8	0	0	0
11:45	0	43	10	0	0	0	3	36	0	0	0	0	0	0	0	0	0	0	5	6	9	0	0	0
Hourly Total	0	155	22	0	0	0	8	115	0	0	0	0	0	0	0	0	0	0	34	14	42	0	0	0
12:00	0	41	11	0	0	0	1	19	0	0	0	0	0	0	0	0	0	0	3	3	7	0	0	0
12:15	0	43	8	0	0	0	4	28	0	0	0	0	0	0	0	0	0	0	11	4	14	0	0	0
12:30	0	45	4	0	0	0	3	34	0	0	0	0	0	0	0	0	0	0	9	3	13	0	0	0
12:45	0	42	11	0	0	0	2	26	0	0	0	0	0	0	0	0	0	0	13	0	15	0	0	0
Hourly Total	0	171	34	0	0	0	10	107	0	0	0	0	0	0	0	0	0	0	36	10	49	0	0	0
13:00	0	41	7	0	0	0	3	24	0	2	0	0	0	0	0	0	0	0	8	2	17	0	0	0
13:15	0	40	7	0	0	0	4	17	0	0	0	0	0	0	0	0	0	0	8	5	16	0	0	0
13:30	0	45	8	0	0	0	4	25	0	0	0	0	0	0	0	0	0	0	11	2	21	0	0	0
13:45	0	31	7	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	11	6	18	0	0	0
Hourly Total	0	157	29	0	0	0	11	91	0	2	0	0	0	0	0	0	0	0	38	15	72	0	0	0
Total	0	483	85	0	0	0	29	313	0	2	0	0	0	0	0	0	0	0	108	39	163	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Single Unit Trucks

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
11:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Total	0	5	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Articulated Trucks

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Buses

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-3

Intersection Name: Fore St & Exchange St/Moulton St

GPS: 43.656507, -70.253223

Date: 04-12-2025

Bicycles on Road

Leg	Fore St						Fore St						Moulton St						Exchange St					
Direction	EastBound						WestBound						NorthBound						SouthBound					
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-4
Intersection Name	Union St & Fore St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	15:00
End Time	17:45
Location	12061-4
Latitude and Longitude	(43.65567, -70.255107)

	START	END	PHF
AM PEAK			
PM PEAK	**04-10-2025 17:00:00**	**04-10-2025 18:00:00**	**0.85**
Mid-Day PEAK			
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

TURNING MOVEMENT DATA

Leg	Fore St								Fore St								Union St								Union St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
15:00	9	36	1	0	0	46	5	6	4	30	6	3	0	43	9	7	2	11	8	0	0	21	11	19	9	22	13	9	0	53	8	7	163
15:15	10	42	2	1	0	55	1	8	3	32	12	0	0	47	4	4	7	10	3	9	0	29	6	14	6	21	7	7	0	41	13	4	172
15:30	14	42	4	1	0	61	1	6	5	27	10	2	0	44	6	2	2	15	1	2	0	20	7	14	6	17	9	5	0	37	11	9	162
15:45	17	32	5	1	0	55	7	15	6	29	9	2	0	46	5	3	3	15	0	1	0	19	19	6	7	16	14	4	0	41	4	4	161
Hourly Total	50	152	12	3	0	217	14	35	18	118	37	7	0	180	24	16	14	51	12	12	0	89	43	53	28	76	43	25	0	172	36	24	658
16:00	20	48	4	0	0	72	4	4	9	38	4	0	0	51	13	5	1	15	4	1	0	21	16	16	9	13	18	8	0	48	3	10	192
16:15	18	39	5	0	0	62	0	2	7	28	7	3	0	45	11	11	2	19	5	0	0	26	9	22	5	15	7	8	0	35	3	3	168
16:30	18	30	8	0	0	56	4	13	6	26	6	0	0	38	3	13	4	26	5	6	0	41	14	18	9	18	21	14	0	62	7	5	197
16:45	22	46	1	1	0	70	7	4	5	43	5	2	0	55	11	9	3	8	13	0	0	24	11	12	11	25	10	9	0	55	13	5	204
Hourly Total	78	163	18	1	0	260	15	23	27	135	22	5	0	189	38	38	10	68	27	7	0	112	50	68	34	71	56	39	0	200	26	23	761
17:00	12	34	2	0	0	48	3	4	9	38	9	0	0	56	11	16	0	14	6	8	0	28	18	19	12	19	10	7	0	48	32	7	180
17:15	16	43	12	2	0	73	5	3	3	47	7	1	0	58	6	2	5	19	12	2	0	38	12	17	10	32	22	19	0	83	6	8	252
17:30	18	51	5	0	0	74	2	10	6	44	11	2	0	63	9	10	6	14	11	6	0	37	12	13	3	25	5	6	0	39	14	9	213
17:45	12	54	10	2	0	78	13	8	3	33	5	2	0	43	3	4	3	12	6	4	0	25	8	30	14	28	18	8	0	68	6	9	214
Hourly Total	58	182	29	4	0	273	23	25	21	162	32	5	0	220	29	32	14	59	35	20	0	128	50	79	39	104	55	40	0	238	58	33	859
Grand Total	186	497	59	8	0	750	52	83	66	415	91	17	0	589	91	86	38	178	74	39	0	329	143	200	101	251	154	104	0	610	120	80	2278
approach %	24	66	7	1	0	99	6	11	11	70	15	2	0	100	15	14	11	54	22	11	0	100	43	60	16	41	25	17	0	100	19	13	400
Total %	8	21	2	0	0	32	2	3	2	18	3	0	0	25	3	3	1	7	3	1	0	14	6	8	4	11	6	4	0	26	5	3	100
Motorcycles	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	2	0	0	0	2	0	0	1	1	0	0	0	2	0	0	6
Motorcycles %	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars & Light Goods	181	490	57	8	0	736	0	0	65	403	88	17	0	573	0	0	37	168	74	39	0	318	0	0	98	244	146	100	0	588	0	0	2215
Cars & Light Goods	97	98	96	100	0	0	0	0	98	97	96	100	0	0	0	0	97	94	100	100	0	0	0	0	97	97	94	96	0	0	0	0	97
Single Unit Trucks	2	2	1	0	0	5	0	0	0	4	2	0	0	6	0	0	1	5	0	0	0	6	0	0	2	4	1	2	0	9	0	0	26
Single Unit Trucks	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	3	1	0	0	0	4	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	7	0	0	12
Buses %	1	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	3	1	0	0	0	0	0
Bicycles on Road	0	4	1	0	0	5	0	0	0	6	1	0	0	7	0	0	0	3	0	0	0	3	0	0	0	2	2	0	0	4	0	0	19
Bicycles on Road %	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Peds	0	0	0	0	0	0	52	82	0	0	0	0	0	0	91	85	0	0	0	0	0	0	143	200	0	0	0	0	0	0	120	77	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
Pcl	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Pcl %	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	0

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

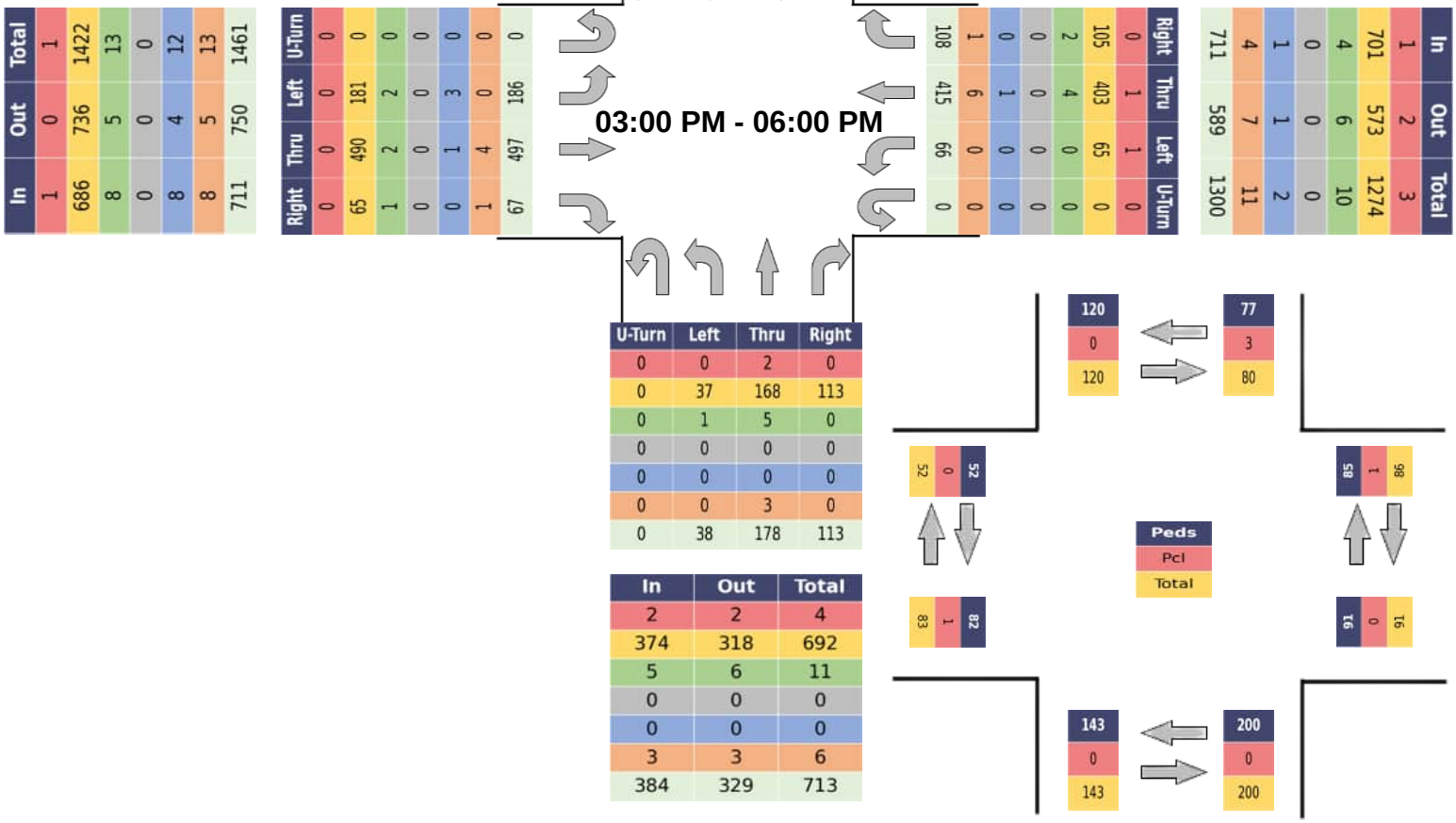
Date: 04-10-2025

Turning Movement Data

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

In	Out	Total
2	2	4
454	588	1042
9	9	18
0	0	0
3	7	10
4	4	8
472	610	1082

Right	Thru	Left	U-Turn
0	1	1	0
246	244	98	0
3	4	2	0
0	0	0	0
7	0	0	0
2	2	0	0
258	251	101	0



U-Turn	Left	Thru	Right
0	0	2	0
0	37	168	113
0	1	5	0
0	0	0	0
0	0	0	0
0	0	3	0
0	38	178	113

In	Out	Total
2	2	4
374	318	692
5	6	11
0	0	0
0	0	0
3	3	6
384	329	713

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

TURNING MOVEMENT PM PEAK HOUR

Leg	Fore St								Fore St								Union St								Union St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
17:00:00	12	34	2	0	0	48	3	4	9	38	9	0	0	56	11	16	0	14	6	8	0	28	18	19	12	19	10	7	0	48	32	7	180
17:15:00	16	43	12	2	0	73	5	3	3	47	7	1	0	58	6	2	5	19	12	2	0	38	12	17	10	32	22	19	0	83	6	8	252
17:30:00	18	51	5	0	0	74	2	10	6	44	11	2	0	63	9	10	6	14	11	6	0	37	12	13	3	25	5	6	0	39	14	9	213
17:45:00	12	54	10	2	0	78	13	8	3	33	5	2	0	43	3	4	3	12	6	4	0	25	8	30	14	28	18	8	0	68	6	9	214
Grand Total	58	182	29	4	0	273	23	25	21	162	32	5	0	220	29	32	14	59	35	20	0	128	50	79	39	104	55	40	0	238	58	33	859
approach %	21	67	11	1	0	100	8	9	10	74	15	2	0	100	13	15	11	46	27	16	0	100	39	62	16	44	23	17	0	100	24	14	400
Total %	7	21	3	0	0	32	3	3	2	19	4	1	0	26	3	4	2	7	4	2	0	15	6	9	5	12	6	5	0	28	7	4	100
Motorcycles	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	1	0	0	0	1	0	0	1
Motorcycles %	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	1	0	0	0	0	0	0	0
Cars & Light Goods	57	180	28	4	0	269	0	0	21	159	31	5	0	216	0	0	14	56	35	20	0	125	0	0	39	98	52	39	0	228	0	0	838
Cars & Light Goods	98	99	97	100	0	0	0	0	100	98	97	100	0	0	0	0	100	95	100	100	0	0	0	0	100	94	95	98	0	0	0	0	98
Single Unit Trucks	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	4	0	0	0	4	0	0	7
Single Unit Trucks	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	3
Buses %	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
Bicycles on Road	0	1	1	0	0	2	0	0	0	3	1	0	0	4	0	0	0	1	0	0	0	1	0	0	0	1	2	0	0	3	0	0	10
Bicycles on Road %	0	1	3	0	0	0	0	0	0	2	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	4	0	0	0	0	0	1
Peds	0	0	0	0	0	0	23	24	0	0	0	0	0	0	29	31	0	0	0	0	0	0	50	79	0	0	0	0	0	0	58	32	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
Pcl	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pcl %	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	0
PHF	0.81	0.84	0.6	0.5	0.0	0.88	0.44	0.62	0.58	0.86	0.73	0.62	0.0	0.87	0.66	0.5	0.58	0.78	0.73	0.62	0.0	0.84	0.69	0.66	0.7	0.81	0.62	0.53	0.0	0.72	0.45	0.92	0.85

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

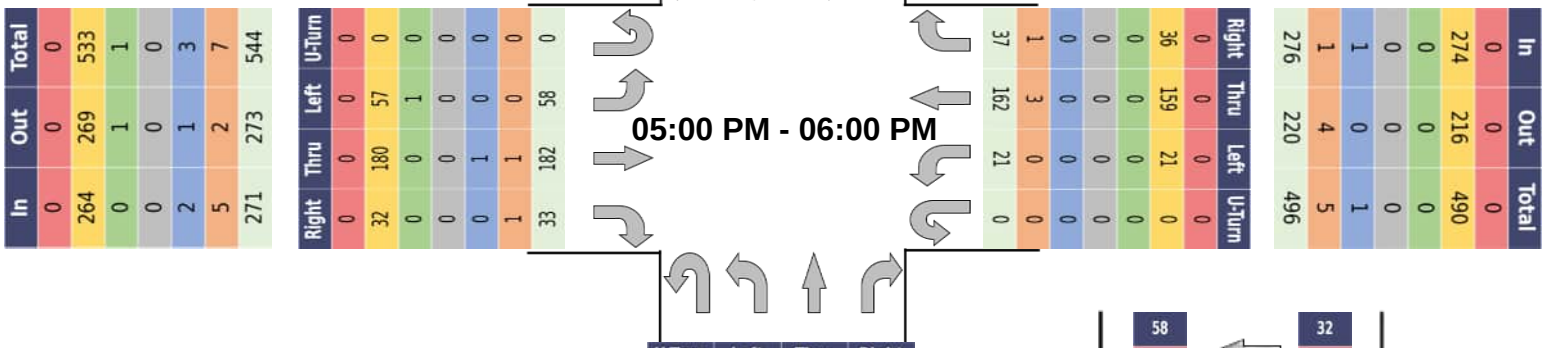
Date: 04-10-2025

PM Peak Turning Movement Data Summary

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

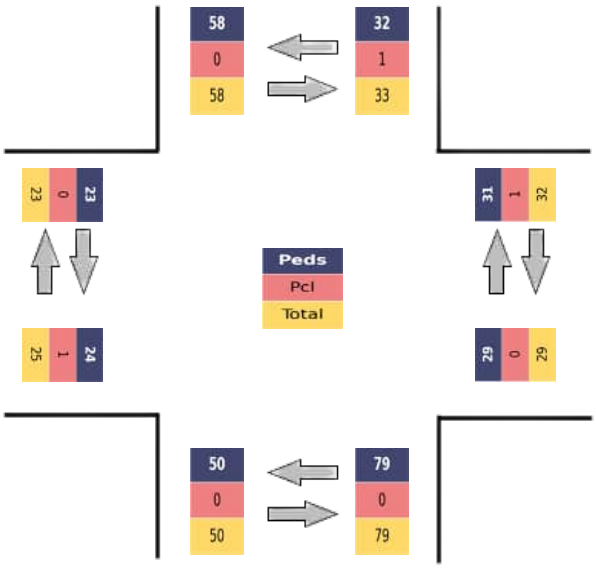
In	Out	Total
0	1	1
149	228	377
3	4	7
0	0	0
0	2	2
2	3	5
154	238	392

Right	Thru	Left	U-Turn
0	1	0	0
91	98	39	0
0	4	0	0
0	0	0	0
2	0	0	0
2	1	0	0
95	104	39	0



U-Turn	Left	Thru	Right
0	0	0	0
0	14	56	55
0	0	2	0
0	0	0	0
0	0	0	0
0	0	1	0
0	14	59	55

In	Out	Total
1	0	1
151	125	276
4	2	6
0	0	0
0	0	0
2	1	3
158	128	286



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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

Motorcycles

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	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
15:15	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
15:30	0	0	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
15:45	0	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	0
Hourly Total	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
16:15	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
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0
17:00	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
17:15	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
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
17:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	0

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

Cars & Light Goods

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	9	36	1	0	0	0	0	4	30	5	3	0	0	0	2	10	8	0	0	0	0	9	22	13	9	0	0	0
15:15	10	40	2	1	0	0	0	3	31	11	0	0	0	0	7	9	3	9	0	0	0	5	21	7	7	0	0	0
15:30	13	42	4	1	0	0	0	5	24	10	2	0	0	0	2	14	1	2	0	0	0	6	17	7	5	0	0	0
15:45	15	32	4	1	0	0	0	5	29	9	2	0	0	0	2	15	0	1	0	0	0	7	16	13	4	0	0	0
Hourly Total	47	150	11	3	0	0	0	17	114	35	7	0	0	0	13	48	12	12	0	0	0	27	76	40	25	0	0	0
16:00	20	47	4	0	0	0	0	9	37	4	0	0	0	0	1	15	4	1	0	0	0	8	13	18	8	0	0	0
16:15	18	38	5	0	0	0	0	7	24	7	3	0	0	0	2	18	5	0	0	0	0	5	15	7	7	0	0	0
16:30	18	29	8	0	0	0	0	6	26	6	0	0	0	0	4	24	5	6	0	0	0	9	17	20	12	0	0	0
16:45	21	46	1	1	0	0	0	5	43	5	2	0	0	0	3	7	13	0	0	0	0	10	25	9	9	0	0	0
Hourly Total	77	160	18	1	0	0	0	27	130	22	5	0	0	0	10	64	27	7	0	0	0	32	70	54	36	0	0	0
17:00	12	34	2	0	0	0	0	9	38	9	0	0	0	0	0	13	6	8	0	0	0	12	16	10	7	0	0	0
17:15	16	43	11	2	0	0	0	3	46	6	1	0	0	0	5	18	12	2	0	0	0	10	32	20	19	0	0	0
17:30	18	50	5	0	0	0	0	6	42	11	2	0	0	0	6	13	11	6	0	0	0	3	22	4	6	0	0	0
17:45	11	53	10	2	0	0	0	3	33	5	2	0	0	0	3	12	6	4	0	0	0	14	28	18	7	0	0	0
Hourly Total	57	180	28	4	0	0	0	21	159	31	5	0	0	0	14	56	35	20	0	0	0	39	98	52	39	0	0	0
Total	181	490	57	8	0	0	0	65	403	88	17	0	0	0	37	168	74	39	0	0	0	98	244	146	100	0	0	0

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

Single Unit Trucks

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	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
15:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
15:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	1	0	0	0	0	0	2	2	0	0	0	0	1	2	0	0	0	0	0	1	0	1	0	0	0	0
16:00	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
16:15	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Hourly Total	1	2	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
17:45	1	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
Hourly Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4	0	0	0	0	0
Total	2	2	1	0	0	0	0	0	4	2	0	0	0	0	1	5	0	0	0	0	0	2	4	1	2	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

Articulated Trucks

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	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
15:15	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
15:30	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
15:45	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
Hourly Total	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
16:00	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
16:15	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
16:30	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
16:45	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
Hourly Total	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
17:00	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
17:15	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
17:30	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
17:45	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
Hourly Total	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
Total	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

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

Buses

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	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
15:15	0	0	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
15:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
15:45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Hourly Total	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
16:00	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
16:15	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
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0
17:00	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
17:15	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
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Total	3	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-10-2025

Bicycles on Road

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	2	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
15:30	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
15:45	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
Hourly Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	1	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
16:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
16:45	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
Hourly Total	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
17:30	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
17:45	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
Hourly Total	0	1	1	0	0	0	0	0	3	1	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	0	0	0
Total	0	4	1	0	0	0	0	0	6	1	0	0	0	0	0	3	0	0	0	0	0	0	2	2	0	0	0	0

SUMMARY	
Project	Barton & Loguidice
Project Code	12061
Site Name	12061-4
Intersection Name	Union St & Fore St
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	11:00
End Time	13:45
Location	12061-4
Latitude and Longitude	(43.65567, -70.255107)

	START	END	PHF
AM PEAK			
PM PEAK			
Mid-Day PEAK	**04-12-2025 11:45:00**	**04-12-2025 12:45:00**	**0.93**
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

TURNING MOVEMENT DATA

Leg	Fore St								Fore St								Union St								Union St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:00	14	35	1	1	0	51	0	2	2	30	7	1	0	40	6	1	0	10	8	0	0	18	9	12	6	23	5	5	0	39	13	7	148
11:15	20	29	3	1	0	53	4	2	7	17	7	3	0	34	6	3	3	11	4	5	0	23	2	9	4	25	12	6	0	47	3	7	157
11:30	18	32	7	0	0	57	2	3	3	20	6	0	0	29	4	0	5	12	3	2	0	22	7	19	5	21	4	8	0	38	6	2	146
11:45	15	30	6	0	0	51	4	9	4	29	11	1	0	45	15	3	8	20	8	3	0	39	9	19	9	21	4	2	0	36	14	7	171
Hourly Total	67	126	17	2	0	212	10	16	16	96	31	5	0	148	31	7	16	53	23	10	0	102	27	59	24	90	25	21	0	160	36	23	622
12:00	11	39	1	1	0	52	4	17	2	16	6	0	0	24	23	1	3	17	6	0	0	26	10	20	9	27	4	6	0	46	25	1	148
12:15	17	38	3	2	0	60	5	6	4	22	7	2	0	35	4	11	2	13	7	0	0	22	8	28	10	17	10	9	0	46	4	6	163
12:30	9	36	3	1	0	49	3	9	3	26	10	5	0	44	8	4	5	13	5	1	0	24	8	25	9	23	20	8	0	60	17	9	177
12:45	15	38	2	0	0	55	2	8	4	24	9	1	0	38	6	10	0	16	7	2	0	25	6	22	9	13	7	10	0	39	15	5	157
Hourly Total	52	151	9	4	0	216	14	40	13	88	32	8	0	141	41	26	10	59	25	3	0	97	32	95	37	80	41	33	0	191	61	21	645
13:00	14	33	3	2	0	52	7	2	6	22	6	2	0	36	5	15	5	16	10	0	0	31	16	19	8	13	8	6	0	35	16	5	154
13:15	12	37	7	0	0	56	3	5	5	22	7	1	0	35	13	6	1	14	4	3	0	22	10	15	3	21	7	7	0	38	15	8	151
13:30	12	38	5	0	0	55	8	9	5	23	13	1	0	42	10	13	5	15	6	4	0	30	10	21	10	27	5	3	0	45	6	10	172
13:45	15	18	5	4	0	42	1	7	4	18	7	1	0	30	9	12	3	16	3	2	0	24	10	16	7	22	9	11	0	49	13	8	145
Hourly Total	53	126	20	6	0	205	19	23	20	85	33	5	0	143	37	46	14	61	23	9	0	107	46	71	28	83	29	27	0	167	50	31	622
Grand Total	172	403	46	12	0	633	43	79	49	269	96	18	0	432	109	79	40	173	71	22	0	306	105	225	89	253	95	81	0	518	147	75	1889
approach %	27	63	7	1	0	100	6	12	11	62	22	4	0	100	25	18	13	56	23	7	0	100	34	73	17	48	18	15	0	100	28	14	400
Total %	9	21	2	0	0	33	2	4	2	14	5	0	0	22	5	4	2	9	3	1	0	16	5	11	4	13	5	4	0	27	7	3	100
Motorcycles	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	0
Motorcycles %	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	0
Cars & Light Goods	170	400	43	12	0	625	0	0	49	266	95	18	0	428	0	0	39	170	71	22	0	302	0	0	87	249	92	78	0	506	0	0	1861
Cars & Light Goods	98	99	93	100	0	0	0	0	100	98	98	100	0	0	0	0	97	98	100	100	0	0	0	0	97	98	96	96	0	0	0	0	98
Single Unit Trucks	2	3	2	0	0	7	0	0	0	3	0	0	0	3	0	0	1	3	0	0	0	4	0	0	2	4	0	1	0	7	0	0	21
Single Unit Trucks	1	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	2	1	0	1	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	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	3	2	0	5	0	0	5
Buses %	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	3	2	0	0	0	0	0
Bicycles on Road	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Bicycles on Road %	0	0	2	0	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	0	0	0
Peds	0	0	0	0	0	0	43	79	0	0	0	0	0	0	109	79	0	0	0	0	0	0	105	224	0	0	0	0	0	0	147	75	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
Pcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Pcl %	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	0

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

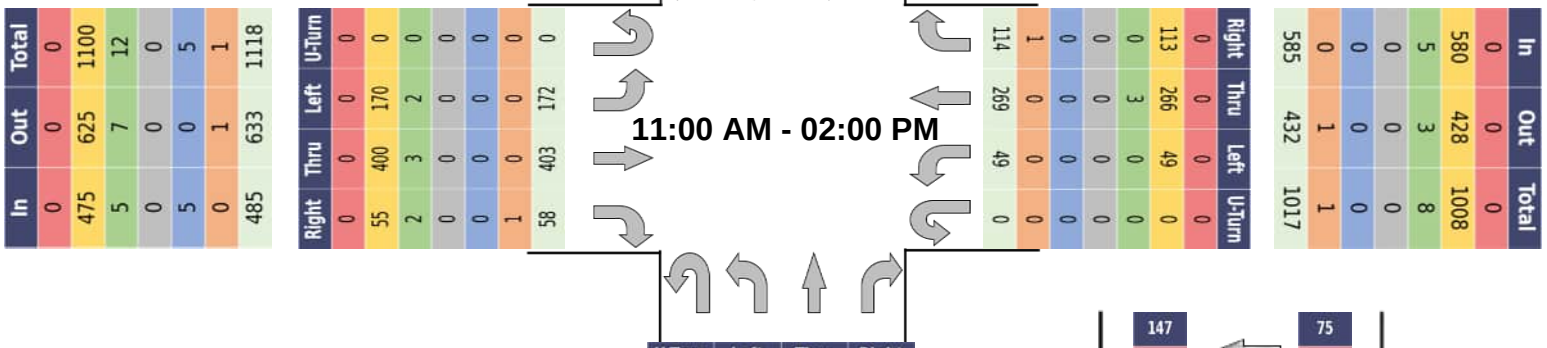
Date: 04-12-2025

Turning Movement Data

Class
Motorcycles
Cars & Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

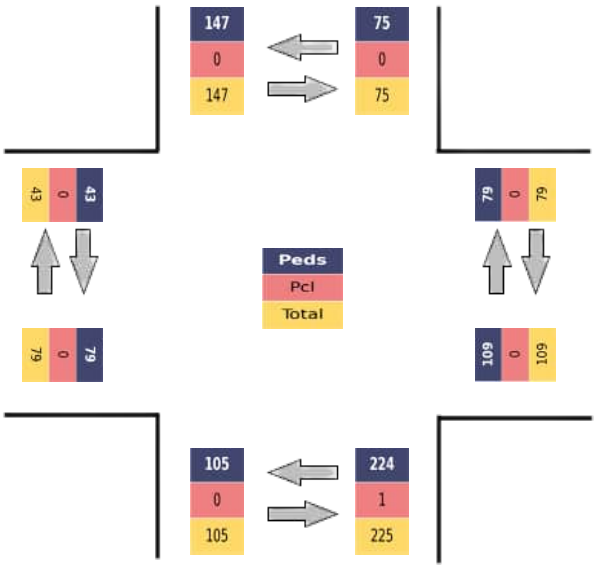
In	Out	Total
0	0	0
453	506	959
5	7	12
0	0	0
0	5	5
1	0	1
459	518	977

Right	Thru	Left	U-Turn
0	0	0	0
170	249	87	0
1	4	2	0
0	0	0	0
5	0	0	0
0	0	0	0
176	253	89	0



U-Turn	Left	Thru	Right
0	0	0	0
0	39	170	93
0	1	3	0
0	0	0	0
0	0	0	0
0	0	0	0
0	40	173	93

In	Out	Total
0	0	0
353	302	655
6	4	10
0	0	0
0	0	0
1	0	1
360	306	666



Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

TURNING MOVEMENT MID PEAK HOUR

Leg	Fore St								Fore St								Union St								Union St								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:45:00	15	30	6	0	0	51	4	9	4	29	11	1	0	45	15	3	8	20	8	3	0	39	9	19	9	21	4	2	0	36	14	7	171
12:00:00	11	39	1	1	0	52	4	17	2	16	6	0	0	24	23	1	3	17	6	0	0	26	10	20	9	27	4	6	0	46	25	1	148
12:15:00	17	38	3	2	0	60	5	6	4	22	7	2	0	35	4	11	2	13	7	0	0	22	8	28	10	17	10	9	0	46	4	6	163
12:30:00	9	36	3	1	0	49	3	9	3	26	10	5	0	44	8	4	5	13	5	1	0	24	8	25	9	23	20	8	0	60	17	9	177
Grand Total	52	143	13	4	0	212	16	41	13	93	34	8	0	148	50	19	18	63	26	4	0	111	35	92	37	88	38	25	0	188	60	23	659
approach %	25	67	6	2	0	100	8	19	9	63	23	5	0	100	34	13	16	57	23	4	0	100	32	83	20	47	20	13	0	100	32	12	400
Total %	8	22	2	1	0	32	2	6	2	14	5	1	0	22	8	3	3	10	4	1	0	17	5	14	6	13	6	4	0	29	9	3	100
Motorcycles	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	0
Motorcycles %	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	0
Cars & Light Goods	52	143	13	4	0	212	0	0	13	90	34	8	0	145	0	0	18	61	26	4	0	109	0	0	37	88	37	25	0	187	0	0	653
Cars & Light Goods	100	100	100	100	0	0	0	0	100	97	100	100	0	0	0	0	100	97	100	100	0	0	0	0	100	100	97	100	0	0	0	0	99
Single Unit Trucks	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
Single Unit Trucks	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	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	1	0	0	1	0	0	1
Buses %	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	3	0	0	0	0	0	0
Bicycles on Road	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	0
Bicycles on Road %	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	0
Peds	0	0	0	0	0	0	16	41	0	0	0	0	0	0	50	19	0	0	0	0	0	0	35	92	0	0	0	0	0	0	60	23	0
Peds %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
Pcl	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	0
Pcl %	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	0
PHF	0.76	0.92	0.54	0.5	0.0	0.88	0.8	0.6	0.81	0.8	0.77	0.4	0.0	0.82	0.54	0.43	0.56	0.79	0.81	0.33	0.0	0.71	0.88	0.82	0.92	0.81	0.48	0.69	0.0	0.78	0.6	0.64	0.93

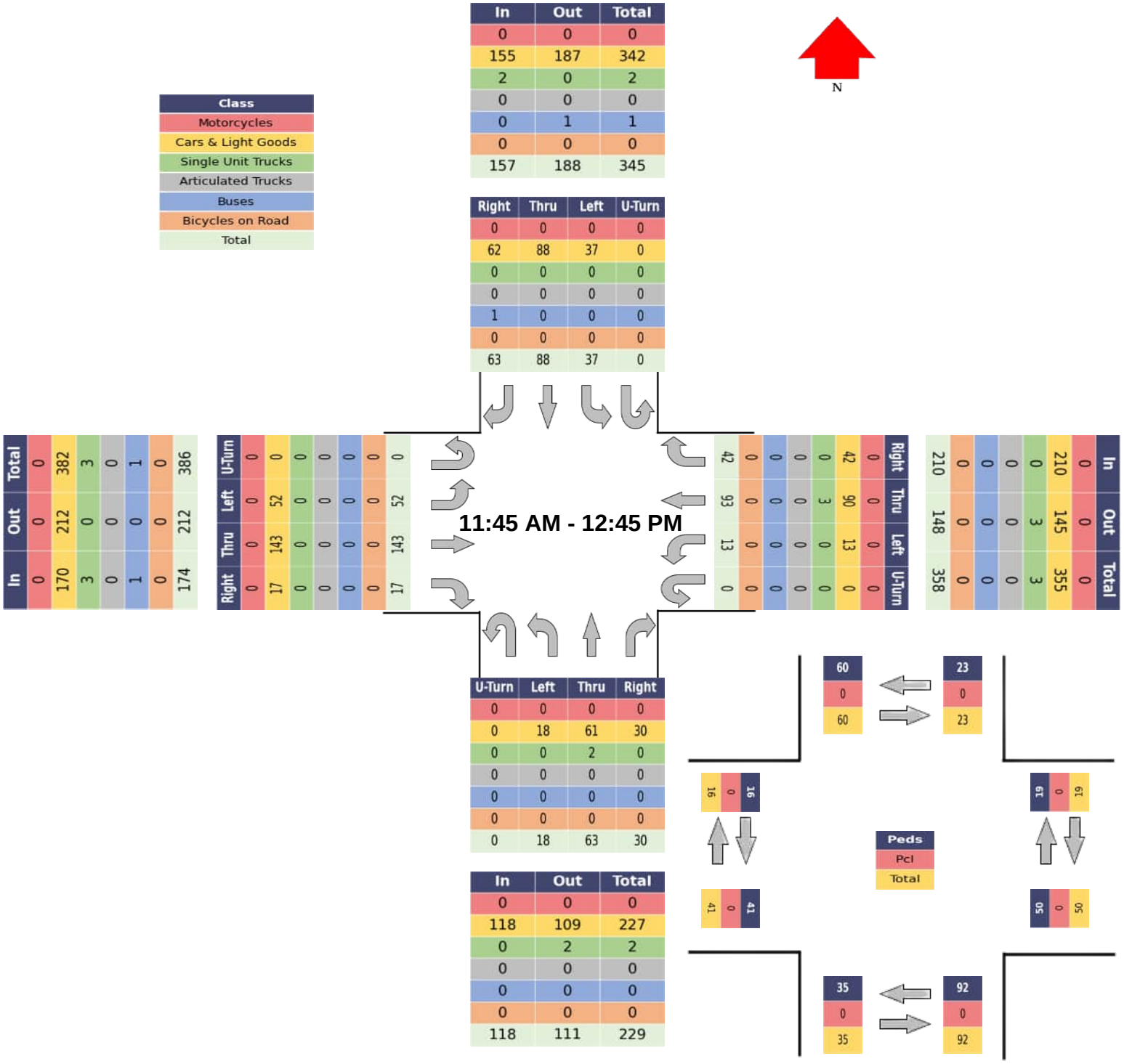
Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Mid Peak Turning Movement Data Summary



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Motorcycles

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	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
13:45	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
Hourly Total	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
Total	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

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Cars & Light Goods

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	13	35	1	1	0	0	0	2	30	7	1	0	0	0	0	10	8	0	0	0	0	5	22	5	4	0	0	0
11:15	20	28	2	1	0	0	0	7	17	7	3	0	0	0	3	11	4	5	0	0	0	4	24	12	6	0	0	0
11:30	18	31	6	0	0	0	0	3	20	6	0	0	0	0	5	11	3	2	0	0	0	5	21	3	8	0	0	0
11:45	15	30	6	0	0	0	0	4	27	11	1	0	0	0	8	20	8	3	0	0	0	9	21	4	2	0	0	0
Hourly Total	66	124	15	2	0	0	0	16	94	31	5	0	0	0	16	52	23	10	0	0	0	23	88	24	20	0	0	0
12:00	11	39	1	1	0	0	0	2	15	6	0	0	0	0	3	17	6	0	0	0	0	9	27	4	6	0	0	0
12:15	17	38	3	2	0	0	0	4	22	7	2	0	0	0	2	11	7	0	0	0	0	10	17	10	9	0	0	0
12:30	9	36	3	1	0	0	0	3	26	10	5	0	0	0	5	13	5	1	0	0	0	9	23	19	8	0	0	0
12:45	15	38	2	0	0	0	0	4	24	9	1	0	0	0	0	16	7	2	0	0	0	8	13	7	9	0	0	0
Hourly Total	52	151	9	4	0	0	0	13	87	32	8	0	0	0	10	57	25	3	0	0	0	36	80	40	32	0	0	0
13:00	14	33	3	2	0	0	0	6	22	6	2	0	0	0	5	16	10	0	0	0	0	8	13	7	6	0	0	0
13:15	12	37	7	0	0	0	0	5	22	7	1	0	0	0	1	14	4	3	0	0	0	3	20	7	7	0	0	0
13:30	11	37	4	0	0	0	0	5	23	12	1	0	0	0	5	15	6	4	0	0	0	10	27	5	2	0	0	0
13:45	15	18	5	4	0	0	0	4	18	7	1	0	0	0	2	16	3	2	0	0	0	7	21	9	11	0	0	0
Hourly Total	52	125	19	6	0	0	0	20	85	32	5	0	0	0	13	61	23	9	0	0	0	28	81	28	26	0	0	0
Total	170	400	43	12	0	0	0	49	266	95	18	0	0	0	39	170	71	22	0	0	0	87	249	92	78	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Single Unit Trucks

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
11:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
11:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	1	2	2	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0
12:00	0	0	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
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
12:30	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
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	0	0
13:00	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
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
13:30	1	1	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
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
Hourly Total	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
Total	2	3	2	0	0	0	0	0	3	0	0	0	0	0	1	3	0	0	0	0	0	2	4	0	1	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Articulated Trucks

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	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
13:45	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
Hourly Total	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
Total	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

Tri-State Traffic Data, Inc.

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Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Buses

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
11:15	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
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
11:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
12:00	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
12:15	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
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
12:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
13:15	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
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
13:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12061-4

Intersection Name: Union St & Fore St

GPS: 43.65567, -70.255107

Date: 04-12-2025

Bicycles on Road

Leg	Fore St							Fore St							Union St							Union St						
Direction	EastBound							WestBound							NorthBound							SouthBound						
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	0	0	1	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
13:45	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
Hourly Total	0	0	1	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
Total	0	0	1	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

SUMMARY	
Project	Barton & Loguidice
Project Code	12251
Site Name	12251-1
Intersection Name	Patton Court & Union Street
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	15:00
End Time	17:45
Location	12251-1
Latitude and Longitude	(43.656306, -70.25559)

	START	END	PHF
AM PEAK			
PM PEAK	**10-21-2025 16:45:00**	**10-21-2025 17:45:00**	**0.96**
Mid-Day PEAK			
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

TURNING MOVEMENT DATA

Leg	Portland Sq							Patton Court							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
15:00	0	0	0	0	0	3	19	8	0	10	0	18	6	16	1	39	2	1	43	2	3	0	49	0	0	49	3	2	110
15:15	1	0	0	0	1	7	18	2	0	5	0	7	23	15	0	37	4	0	41	3	2	2	36	0	0	38	2	2	87
15:30	1	0	3	0	4	8	14	5	0	4	0	9	7	16	0	43	1	0	44	1	1	3	30	0	0	33	1	1	90
15:45	2	0	1	0	3	11	19	4	0	5	0	9	15	16	0	38	5	0	43	5	1	1	30	0	0	31	0	1	86
Hourly Total	4	0	4	0	8	29	70	19	0	24	0	43	51	63	1	157	12	1	171	11	7	6	145	0	0	151	6	6	373
16:00	0	0	0	0	0	8	16	9	0	9	0	18	2	7	0	37	4	0	41	0	0	1	37	0	0	38	1	3	97
16:15	3	0	0	0	3	8	5	5	0	11	0	16	6	17	0	40	5	0	45	3	0	0	34	0	0	34	1	0	98
16:30	3	0	1	0	4	7	10	6	0	9	0	15	13	9	0	40	4	0	44	1	0	0	44	0	0	44	2	0	107
16:45	5	0	0	0	5	17	15	6	0	12	0	18	6	10	1	39	7	0	47	2	1	2	58	1	0	61	3	0	131
Hourly Total	11	0	1	0	12	40	46	26	0	41	0	67	27	43	1	156	20	0	177	6	1	3	173	1	0	177	7	3	433
17:00	0	0	0	0	0	24	14	13	0	19	0	32	15	14	0	30	7	0	37	1	1	3	51	0	0	54	0	5	123
17:15	7	0	0	0	7	9	23	6	0	12	0	18	4	8	0	53	4	0	57	0	2	2	42	0	0	44	1	2	126
17:30	5	0	1	0	6	9	20	12	0	14	0	26	11	20	0	43	6	0	49	1	0	0	40	0	0	40	0	3	121
17:45	1	0	0	0	1	16	19	10	0	11	0	21	8	10	0	46	3	0	49	3	0	1	37	0	0	38	1	2	109
Hourly Total	13	0	1	0	14	58	76	41	0	56	0	97	38	52	0	172	20	0	192	5	3	6	170	0	0	176	2	12	479
Grand Total	28	0	6	0	34	127	192	86	0	121	0	207	116	158	2	485	52	1	540	22	11	15	488	1	0	504	15	21	1285
Approach %	82	0	17	0	100	373	564	41	0	58	0	100	56	76	0	89	9	0	100	4	2	2	96	0	0	100	2	4	400
Total %	2	0	0	0	2	9	14	6	0	9	0	16	9	12	0	37	4	0	42	1	0	1	37	0	0	39	1	1	100
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	3	0	0	3	0	0	9
Motorcycles %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars_Light Goods	27	0	5	0	32	0	0	86	0	120	0	206	0	0	2	461	52	1	516	0	0	14	474	1	0	489	0	0	1243
Cars_Light Goods %	96	0	83	0	0	0	0	100	0	99	0	0	0	0	100	95	100	100	0	0	0	93	97	100	0	0	0	0	96
Single Unit Trucks	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	2	0	0	2	0	0	1	2	0	0	3	0	0	7
Single Unit Trucks	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	5	0	0	5	0	0	7
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Bicycles on Road	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	14	0	0	14	0	0	0	4	0	0	4	0	0	19
Bicycles on Road %	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1
Ped	0	0	0	0	0	127	192	0	0	0	0	0	112	154	0	0	0	0	0	21	11	0	0	0	0	0	15	21	0
Ped %	0	0	0	0	0	100	0	0	0	0	0	0	96	0	0	0	0	0	0	95	0	0	0	0	0	0	100	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Bicycle %	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

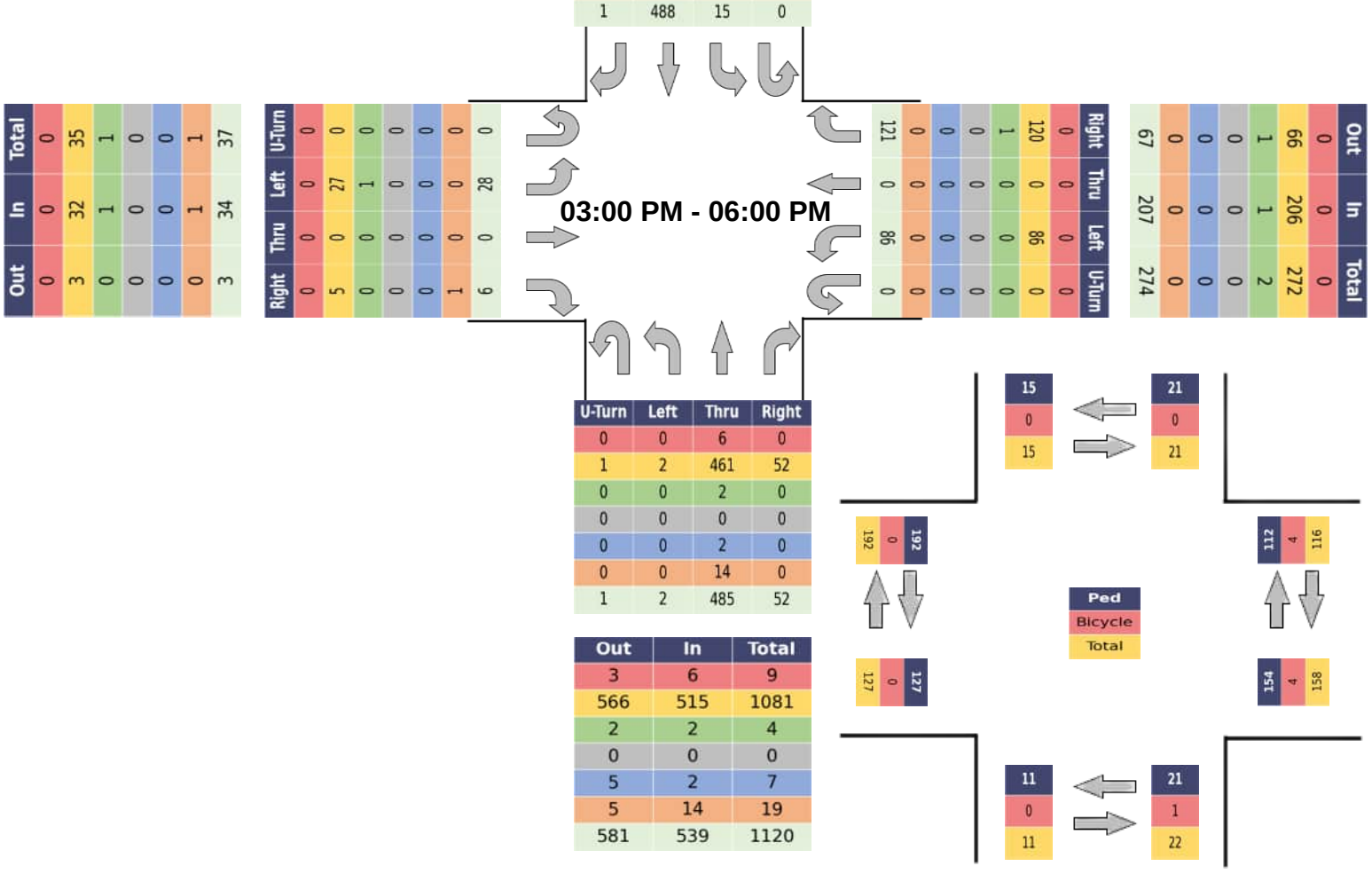
Date: 10-21-2025

Turning Movement Data

Class
Motorcycles
Cars_Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

Out	In	Total
6	3	9
608	489	1097
4	3	7
0	0	0
2	5	7
14	4	18
634	504	1138

Right	Thru	Left	U-Turn
0	3	0	0
1	474	14	0
0	2	1	0
0	0	0	0
0	5	0	0
0	4	0	0
1	488	15	0



U-Turn	Left	Thru	Right
0	0	6	0
1	2	461	52
0	0	2	0
0	0	0	0
0	0	2	0
0	0	14	0
1	2	485	52

Out	In	Total
3	6	9
566	515	1081
2	2	4
0	0	0
5	2	7
5	14	19
581	539	1120

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

TURNING MOVEMENT PM PEAK HOUR

Leg	Portland Sq							Patton Court							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
16:45:00	5	0	0	0	5	17	15	6	0	12	0	18	6	10	1	39	7	0	47	2	1	2	58	1	0	61	3	0	131
17:00:00	0	0	0	0	0	24	14	13	0	19	0	32	15	14	0	30	7	0	37	1	1	3	51	0	0	54	0	5	123
17:15:00	7	0	0	0	7	9	23	6	0	12	0	18	4	8	0	53	4	0	57	0	2	2	42	0	0	44	1	2	126
17:30:00	5	0	1	0	6	9	20	12	0	14	0	26	11	20	0	43	6	0	49	1	0	0	40	0	0	40	0	3	121
Grand Total	17	0	1	0	18	59	72	37	0	57	0	94	36	52	1	165	24	0	190	4	4	7	191	1	0	199	4	10	501
Approach %	94	0	6	0	100	328	400	39	0	61	0	100	38	55	1	87	13	0	100	2	2	4	96	1	0	100	2	5	400
Total %	3	0	0	0	4	12	14	7	0	11	0	19	7	10	0	33	5	0	38	1	1	1	38	0	0	40	1	2	100
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	1	0	0	1	0	0	5
Motorcycles %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	1
Cars_Light Goods	17	0	0	0	17	0	0	37	0	56	0	93	0	0	1	154	24	0	179	0	0	6	184	1	0	191	0	0	480
Cars_Light Goods %	100	0	0	0	0	0	0	100	0	98	0	0	0	0	100	93	100	0	0	0	0	86	96	100	0	0	0	0	96
Single Unit Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	0	0	2	0	0	1	1	0	0	2	0	0	5
Single Unit Trucks	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	14	1	0	0	0	0	0	1
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Bicycles on Road	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	3	0	0	3	0	0	9
Bicycles on Road %	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0	0	0	2
Ped	0	0	0	0	0	59	72	0	0	0	0	0	36	52	0	0	0	0	0	4	4	0	0	0	0	0	4	10	0
Ped %	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Bicycle	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
Bicycle %	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
PHF	0.61	0.0	0.25	0.0	0.64	0.61	0.78	0.71	0.0	0.75	0.0	0.73	0.6	0.65	0.25	0.78	0.86	0.0	0.83	0.5	0.5	0.58	0.82	0.25	0.0	0.82	0.33	0.5	0.96

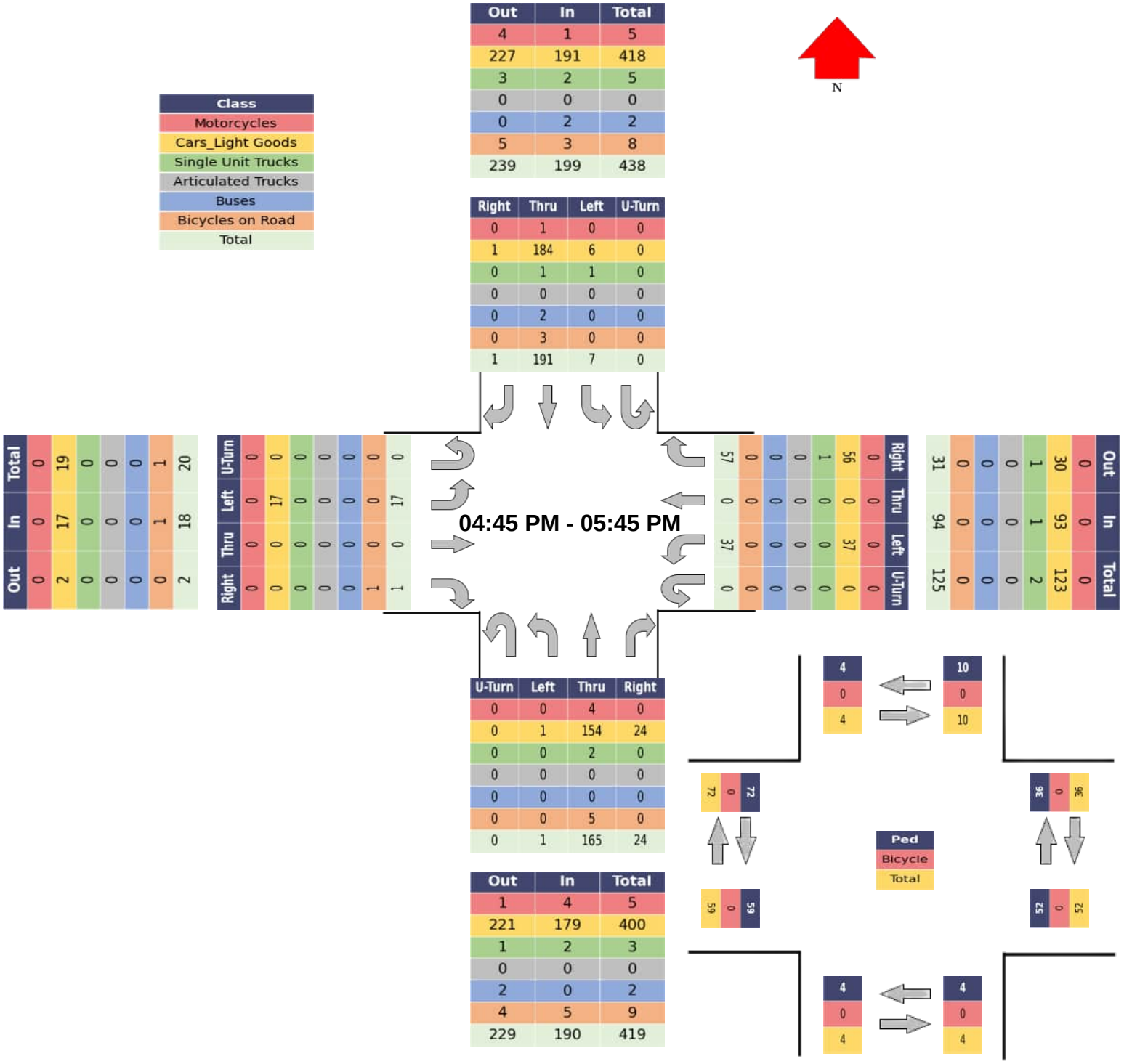
Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

PM Peak Turning Movement Data Summary



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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

Motorcycles

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
15:15	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
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	3
16:00	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
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16:30	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
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
17:30	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
17:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	3	0	0	0	0	9

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

Cars_Light Goods

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
15:00	0	0	0	0	0	0	8	0	10	0	0	0	1	38	2	1	0	0	0	48	0	0	0	0	108
15:15	0	0	0	0	0	0	2	0	5	0	0	0	0	36	4	0	0	0	2	35	0	0	0	0	84
15:30	1	0	3	0	0	0	5	0	4	0	0	0	0	42	1	0	0	0	3	29	0	0	0	0	88
15:45	2	0	1	0	0	0	4	0	5	0	0	0	0	35	5	0	0	0	1	28	0	0	0	0	81
Hourly Total	3	0	4	0	0	0	19	0	24	0	0	0	1	151	12	1	0	0	6	140	0	0	0	0	361
16:00	0	0	0	0	0	0	9	0	9	0	0	0	0	34	4	0	0	0	1	36	0	0	0	0	93
16:15	3	0	0	0	0	0	5	0	11	0	0	0	0	37	5	0	0	0	0	33	0	0	0	0	94
16:30	3	0	1	0	0	0	6	0	9	0	0	0	0	39	4	0	0	0	0	44	0	0	0	0	106
16:45	5	0	0	0	0	0	6	0	12	0	0	0	1	36	7	0	0	0	2	55	1	0	0	0	125
Hourly Total	11	0	1	0	0	0	26	0	41	0	0	0	1	146	20	0	0	0	3	168	1	0	0	0	418
17:00	0	0	0	0	0	0	13	0	18	0	0	0	0	28	7	0	0	0	2	50	0	0	0	0	118
17:15	7	0	0	0	0	0	6	0	12	0	0	0	0	50	4	0	0	0	2	41	0	0	0	0	122
17:30	5	0	0	0	0	0	12	0	14	0	0	0	0	40	6	0	0	0	0	38	0	0	0	0	115
17:45	1	0	0	0	0	0	10	0	11	0	0	0	0	46	3	0	0	0	1	37	0	0	0	0	109
Hourly Total	13	0	0	0	0	0	41	0	55	0	0	0	0	164	20	0	0	0	5	166	0	0	0	0	464
Total	27	0	5	0	0	0	86	0	120	0	0	0	2	461	52	1	0	0	14	474	1	0	0	0	1243

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

Single Unit Trucks

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
15:00	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
15:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
15:30	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
15:45	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
Hourly Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
16:00	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
16:15	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
16:30	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
16:45	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
Hourly Total	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
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
17:15	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
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	3
17:45	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
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	5
Total	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	2	0	0	0	0	7

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

Articulated Trucks

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
15:00	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
15:15	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
15:30	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
15:45	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
Hourly Total	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
16:00	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
16:15	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
16:30	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
16:45	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
Hourly Total	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
17:00	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
17:15	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
17:30	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
17:45	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
Hourly Total	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
Total	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

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

Buses

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
15:00	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
15:15	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
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
16:30	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
16:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
17:15	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
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
17:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0	0	0	0	7

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-21-2025

Bicycles on Road

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
15:30	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
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	3
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	4
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	4	0	0	0	0	9
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
17:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
17:45	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
Hourly Total	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	4	0	0	0	0	19

SUMMARY	
Project	Barton & Loguidice
Project Code	12251
Site Name	12251-1
Intersection Name	Patton Court & Union Street
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	11:00
End Time	13:45
Location	12251-1
Latitude and Longitude	(43.656306, -70.25559)

	START	END	PHF
AM PEAK			
PM PEAK			
Mid-Day PEAK	**10-25-2025 12:45:00**	**10-25-2025 13:45:00**	**0.93**
Forced Peak AM			
Forced Peak PM			



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

TURNING MOVEMENT DATA

Leg	Portland Sq							Patton Court							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
11:00	0	0	0	0	0	4	5	0	0	1	0	1	5	11	0	38	1	0	39	0	0	3	31	0	0	34	0	0	74
11:15	0	0	1	0	1	7	15	1	0	2	0	3	9	5	0	34	0	0	34	0	0	4	29	0	0	33	0	0	71
11:30	0	0	0	0	0	5	27	1	0	1	0	2	8	15	0	34	2	0	36	1	0	0	38	0	0	38	0	0	76
11:45	0	0	0	0	0	7	11	0	0	1	0	1	17	15	0	45	3	0	48	0	0	3	34	0	0	37	0	0	86
Hourly Total	0	0	1	0	1	23	58	2	0	5	0	7	39	46	0	151	6	0	157	1	0	10	132	0	0	142	0	0	307
12:00	2	0	0	0	2	9	19	0	0	2	0	2	21	22	0	39	1	0	40	0	0	0	42	0	0	42	2	0	86
12:15	2	0	0	0	2	8	16	0	0	1	0	1	22	17	0	32	0	0	32	0	0	0	38	0	0	38	0	1	73
12:30	2	0	0	0	2	9	20	1	0	1	0	2	18	17	0	40	1	0	41	2	0	1	42	0	0	43	1	0	88
12:45	1	0	0	0	1	1	27	2	0	1	0	3	13	25	0	35	4	0	39	3	0	2	44	0	0	46	0	0	89
Hourly Total	7	0	0	0	7	27	82	3	0	5	0	8	74	81	0	146	6	0	152	5	0	3	166	0	0	169	3	1	336
13:00	1	0	0	0	1	21	22	1	0	2	0	3	21	11	0	40	2	1	43	0	0	0	41	0	0	41	2	3	88
13:15	0	0	0	0	0	5	36	1	0	0	0	1	33	13	1	52	2	1	56	0	0	2	40	0	0	42	3	1	99
13:30	1	0	1	0	2	10	28	3	0	0	0	3	19	20	0	36	4	1	41	1	0	2	46	0	0	48	0	5	94
13:45	0	0	1	0	1	14	32	0	0	4	0	4	10	46	0	30	3	0	33	0	1	1	37	0	0	38	3	1	76
Hourly Total	2	0	2	0	4	50	118	5	0	6	0	11	83	90	1	158	11	3	173	1	1	5	164	0	0	169	8	10	357
Grand Total	9	0	3	0	12	100	258	10	0	16	0	26	196	217	1	455	23	3	482	7	1	18	462	0	0	480	11	11	1000
Approach %	75	0	25	0	100	833	2150	38	0	61	0	100	753	834	0	94	4	0	100	1	0	3	96	0	0	100	2	2	400
Total %	0	0	0	0	1	10	25	1	0	1	0	2	19	21	0	45	2	0	48	0	0	1	46	0	0	48	1	1	100
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	1	0	0	1	0	0	3
Motorcycles %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars_Light Goods	8	0	2	0	10	0	0	9	0	16	0	25	0	0	0	444	23	3	470	0	0	17	435	0	0	452	0	0	957
Cars_Light Goods %	88	0	66	0	0	0	0	90	0	100	0	0	0	0	0	97	100	100	0	0	0	94	94	0	0	0	0	0	95
Single Unit Trucks	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	1	7	0	0	8	0	0	11
Single Unit Trucks	0	0	33	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	1
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	8	0	0	8	0	0	14
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1
Bicycles on Road	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	11	0	0	11	0	0	15
Bicycles on Road %	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1
Ped	0	0	0	0	0	98	256	0	0	0	0	0	194	212	0	0	0	0	0	7	1	0	0	0	0	0	11	11	0
Ped %	0	0	0	0	0	98	0	0	0	0	0	0	98	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Bicycle	0	0	0	0	0	2	2	0	0	0	0	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle %	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

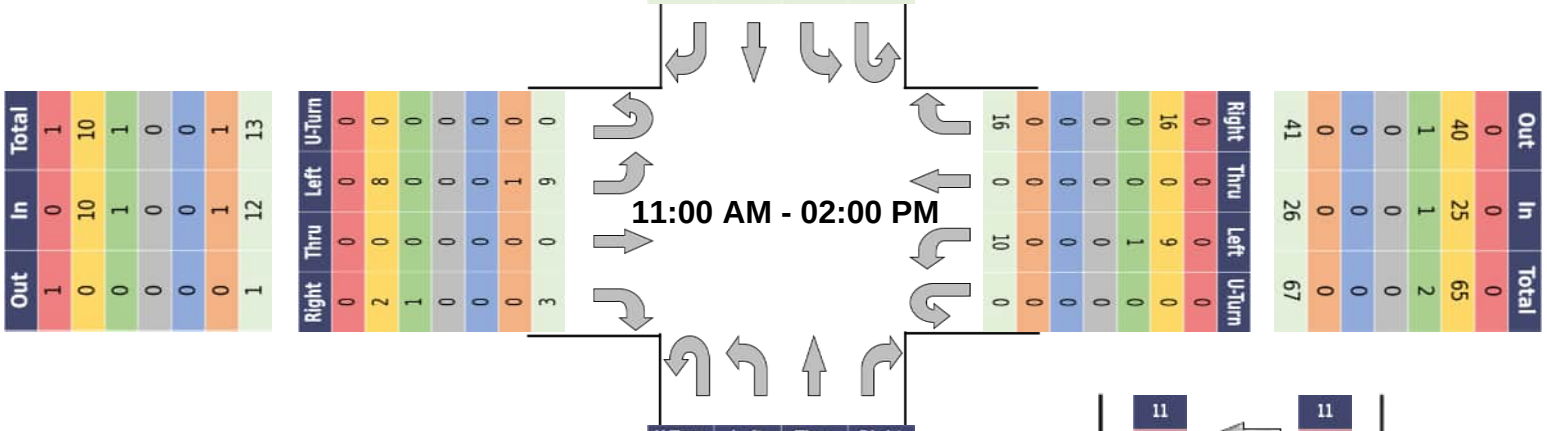
Date: 10-25-2025

Turning Movement Data

Class
Motorcycles
Cars_Light Goods
Single Unit Trucks
Articulated Trucks
Buses
Bicycles on Road
Total

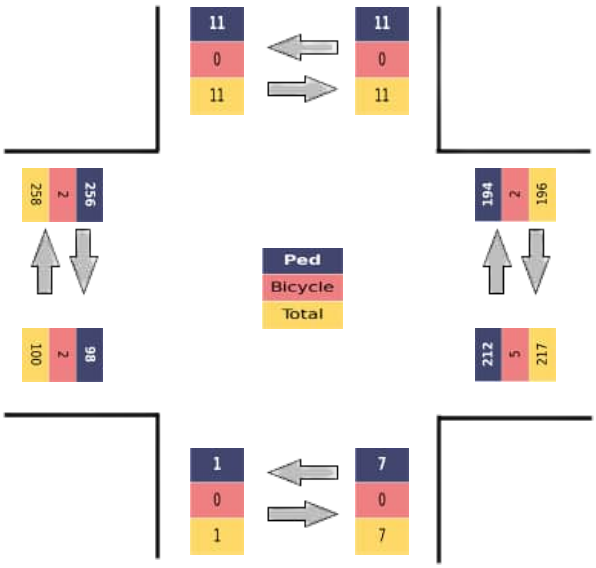
Out	In	Total
1	1	2
468	452	920
1	8	9
0	0	0
6	8	14
4	11	15
480	480	960

Right	Thru	Left	U-Turn
0	1	0	0
0	435	17	0
0	7	1	0
0	0	0	0
0	8	0	0
0	11	0	0
0	462	18	0



U-Turn	Left	Thru	Right
0	1	1	0
3	0	444	23
0	0	1	0
0	0	0	0
0	0	6	0
0	0	3	0
3	1	455	23

Out	In	Total
1	2	3
449	467	916
9	1	10
0	0	0
8	6	14
11	3	14
478	479	957



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

TURNING MOVEMENT MID PEAK HOUR

Leg	Portland Sq							Patton Court							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	App Total	Peds CW	Peds CCW	Int Total
12:45:00	1	0	0	0	1	1	27	2	0	1	0	3	13	25	0	35	4	0	39	3	0	2	44	0	0	46	0	0	89
13:00:00	1	0	0	0	1	21	22	1	0	2	0	3	21	11	0	40	2	1	43	0	0	0	41	0	0	41	2	3	88
13:15:00	0	0	0	0	0	5	36	1	0	0	0	1	33	13	1	52	2	1	56	0	0	2	40	0	0	42	3	1	99
13:30:00	1	0	1	0	2	10	28	3	0	0	0	3	19	20	0	36	4	1	41	1	0	2	46	0	0	48	0	5	94
Grand Total	3	0	1	0	4	37	113	7	0	3	0	10	86	69	1	163	12	3	179	4	0	6	171	0	0	177	5	9	370
Approach %	75	0	25	0	100	925	2825	70	0	30	0	100	860	690	1	91	7	2	100	2	0	3	97	0	0	100	3	5	400
Total %	1	0	0	0	1	10	31	2	0	1	0	3	23	19	0	44	3	1	48	1	0	2	46	0	0	48	1	2	100
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	1	0	0	1	0	0	3
Motorcycles %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	1	0	0	0	0	0	0	1	0	0	0	0	0	1
Cars_Light Goods	2	0	0	0	2	0	0	6	0	3	0	9	0	0	0	159	12	3	174	0	0	5	160	0	0	165	0	0	350
Cars_Light Goods %	67	0	0	0	0	0	0	86	0	100	0	0	0	0	0	98	100	100	0	0	0	83	94	0	0	0	0	0	95
Single Unit Trucks	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3	0	0	4	0	0	6
Single Unit Trucks	0	0	100	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	17	2	0	0	0	0	0	2
Articulated Trucks	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
Articulated Trucks %	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
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	3	0	0	3	0	0	5
Buses %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	1
Bicycles on Road	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0	0	4	0	0	6
Bicycles on Road %	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	2
Ped	0	0	0	0	0	36	112	0	0	0	0	0	85	65	0	0	0	0	0	4	0	0	0	0	0	0	5	9	0
Ped %	0	0	0	0	0	97	0	0	0	0	0	0	99	0	0	0	0	0	0	100	0	0	0	0	0	0	100	0	0
Bicycle	0	0	0	0	0	1	1	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle %	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
PHF	0.75	0.0	0.25	0.0	0.5	0.44	0.78	0.58	0.0	0.38	0.0	0.83	0.65	0.69	0.25	0.78	0.75	0.75	0.8	0.33	0.0	0.75	0.93	0.0	0.0	0.92	0.42	0.45	0.93

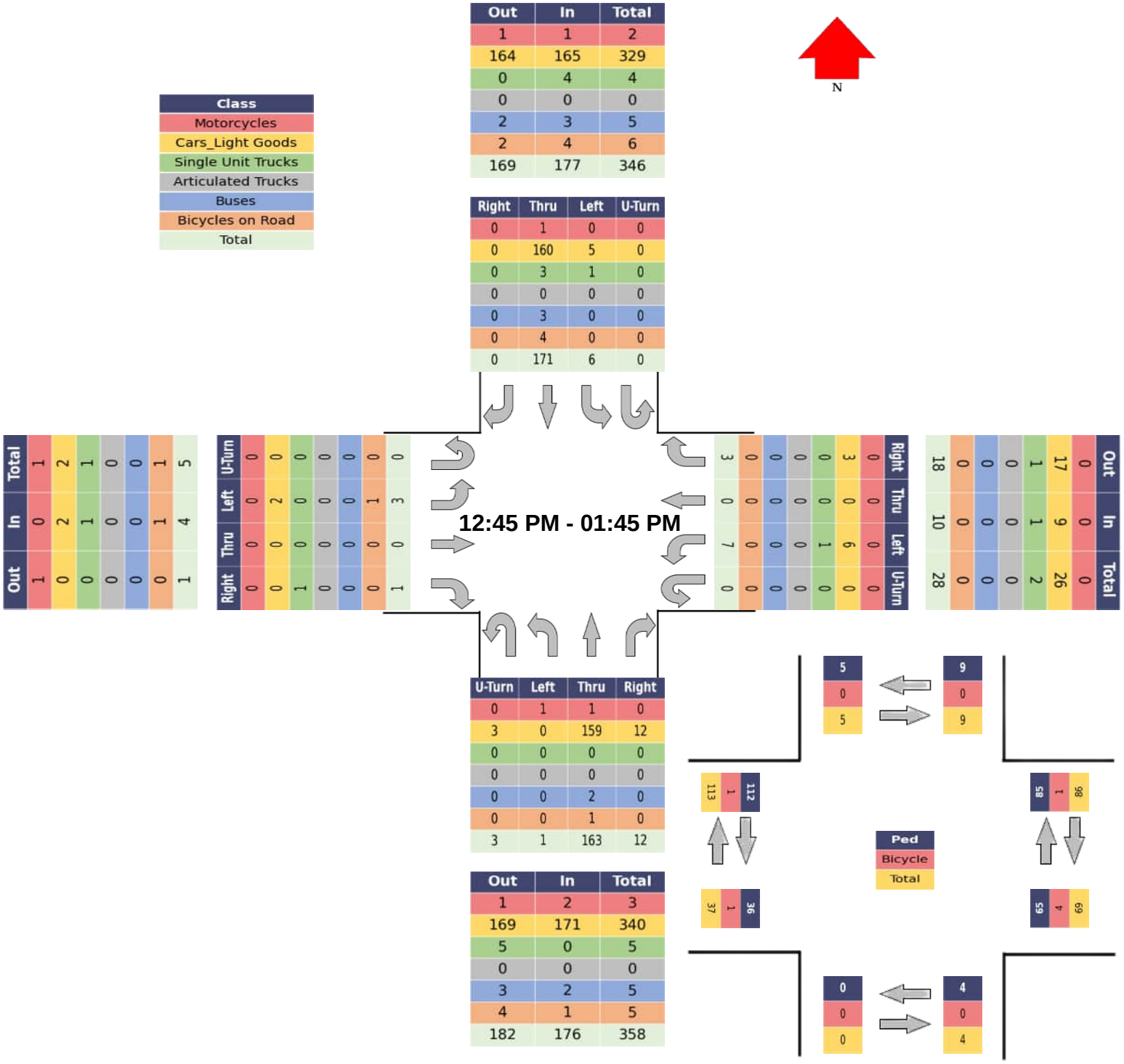
Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Mid Peak Turning Movement Data Summary



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Motorcycles

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
13:30	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
13:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	3

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Cars_Light Goods

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
11:00	0	0	0	0	0	0	0	0	1	0	0	0	0	37	1	0	0	0	3	26	0	0	0	0	68
11:15	0	0	1	0	0	0	1	0	2	0	0	0	0	33	0	0	0	0	4	27	0	0	0	0	68
11:30	0	0	0	0	0	0	1	0	1	0	0	0	0	33	2	0	0	0	0	36	0	0	0	0	73
11:45	0	0	0	0	0	0	0	0	1	0	0	0	0	44	3	0	0	0	3	32	0	0	0	0	83
Hourly Total	0	0	1	0	0	0	2	0	5	0	0	0	0	147	6	0	0	0	10	121	0	0	0	0	292
12:00	2	0	0	0	0	0	0	0	2	0	0	0	0	38	1	0	0	0	0	41	0	0	0	0	84
12:15	2	0	0	0	0	0	0	0	1	0	0	0	0	32	0	0	0	0	0	38	0	0	0	0	73
12:30	2	0	0	0	0	0	1	0	1	0	0	0	0	39	1	0	0	0	1	39	0	0	0	0	84
12:45	1	0	0	0	0	0	2	0	1	0	0	0	0	33	4	0	0	0	2	43	0	0	0	0	86
Hourly Total	7	0	0	0	0	0	3	0	5	0	0	0	0	142	6	0	0	0	3	161	0	0	0	0	327
13:00	1	0	0	0	0	0	1	0	2	0	0	0	0	39	2	1	0	0	0	37	0	0	0	0	83
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	51	2	1	0	0	1	36	0	0	0	0	91
13:30	0	0	0	0	0	0	3	0	0	0	0	0	0	36	4	1	0	0	2	44	0	0	0	0	90
13:45	0	0	1	0	0	0	0	0	4	0	0	0	0	29	3	0	0	0	1	36	0	0	0	0	74
Hourly Total	1	0	1	0	0	0	4	0	6	0	0	0	0	155	11	3	0	0	4	153	0	0	0	0	338
Total	8	0	2	0	0	0	9	0	16	0	0	0	0	444	23	3	0	0	17	435	0	0	0	0	957

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Single Unit Trucks

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
11:00	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
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
11:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	3
12:00	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
12:15	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
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
13:00	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
13:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	4
13:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13:45	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
Hourly Total	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	5
Total	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	7	0	0	0	0	11

Tri-State Traffic Data, Inc.

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Articulated Trucks

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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
13:00	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
13:15	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
13:30	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
13:45	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
Hourly Total	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
Total	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

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Buses

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	4
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
11:30	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
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	0	0	0	0	7
12:00	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
12:15	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
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
12:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
13:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	5
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	8	0	0	0	0	14

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Site: 12251-1

Intersection Name: Patton Court & Union Street

GPS: 43.656306, -70.25559

Date: 10-25-2025

Bicycles on Road

Leg	Portland Sq						Patton Court						Union Street						Union Street						
Direction	EastBound						WestBound						NorthBound						SouthBound						
Start Time	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	U-Turn	Peds CW	Peds CCW	Int Total
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
11:15	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
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
12:15	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
12:30	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
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	3
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
13:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
Hourly Total	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0	7
Total	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	11	0	0	0	0	15

SUMMARY	
Project	Barton & Loguidice
Project Code	12251
Site Name	12251-2
Intersection Name	Fore Street & Union Street
Legs and Movements	All Processed Legs & Movements
Count Interval	15
Start Time	06:00
End Time	18:45
Location	12251-2
Latitude and Longitude	(43.65568, -70.255111)

	START	END	PHF
AM PEAK	**10-21-2025 08:45:00**	**10-21-2025 09:45:00**	**0.93**
PM PEAK	**10-21-2025 16:45:00**	**10-21-2025 17:45:00**	**0.95**
Mid-Day PEAK	**10-21-2025 12:15:00**	**10-21-2025 13:15:00**	**0.86**
Forced Peak AM			
Forced Peak PM			



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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

TURNING MOVEMENT DATA

Leg	Fore Street								Fore Street								Union Street								Union Street								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
06:00	2	5	1	0	0	8	0	0	0	5	0	1	0	6	0	0	0	4	1	1	0	6	1	0	2	1	2	2	0	7	1	0	27
06:15	1	7	1	0	0	9	1	3	0	2	2	0	0	4	0	0	1	4	0	0	0	5	0	2	0	2	2	0	0	4	0	1	22
06:30	6	8	2	0	0	16	0	1	0	0	1	1	0	2	0	0	1	5	2	0	0	8	2	1	1	5	3	1	0	10	0	0	36
06:45	9	11	1	1	0	22	0	2	1	10	1	1	0	13	0	0	2	6	1	0	0	9	1	2	0	14	3	2	0	19	0	0	63
Hourly Total	18	31	5	1	0	55	1	6	1	17	4	3	0	25	0	0	4	19	4	1	0	28	4	5	3	22	10	5	0	40	1	1	148
07:00	5	19	1	2	0	27	0	4	1	11	1	3	0	16	0	0	1	4	0	0	0	5	0	6	1	8	2	4	0	15	0	1	63
07:15	10	18	3	2	0	33	0	0	0	19	1	3	0	23	1	1	3	11	5	1	0	20	0	6	4	6	9	2	0	21	1	6	97
07:30	9	29	5	1	0	44	2	5	0	13	2	1	0	16	0	2	0	10	3	0	0	13	4	8	0	8	11	0	0	19	1	2	92
07:45	20	44	5	2	0	71	1	1	1	21	0	1	0	23	1	0	1	14	1	0	0	16	3	6	2	17	13	1	0	33	2	3	143
Hourly Total	44	110	14	7	0	175	3	10	2	64	4	8	0	78	2	3	5	39	9	1	0	54	7	26	7	39	35	7	0	88	4	12	395
08:00	16	49	3	0	0	68	4	1	1	19	2	0	0	22	7	3	0	18	5	2	0	25	4	5	2	15	10	2	0	29	4	5	144
08:15	19	39	4	2	0	64	0	2	1	19	2	2	0	24	6	0	0	19	3	1	0	23	4	6	7	19	12	6	0	44	3	3	155
08:30	23	46	4	1	0	74	0	9	2	20	2	0	0	24	6	2	0	11	2	0	0	13	0	10	5	11	7	5	0	28	0	1	139
08:45	27	47	5	1	0	80	0	11	6	24	1	0	0	31	4	5	0	15	3	0	0	18	8	18	5	19	11	6	0	41	4	4	170
Hourly Total	85	181	16	4	0	286	4	23	10	82	7	2	0	101	23	10	0	63	13	3	0	79	16	39	19	64	40	19	0	142	11	13	608
09:00	18	46	8	0	0	72	0	6	3	23	1	0	0	27	14	2	0	14	3	2	0	19	9	26	3	33	12	1	0	49	13	1	167
09:15	17	28	4	3	0	52	2	5	5	18	9	3	0	35	3	5	2	9	5	1	0	17	6	28	5	25	16	3	0	49	5	1	153
09:30	20	36	3	1	0	60	8	8	3	30	5	0	0	38	5	5	2	14	4	0	0	20	5	45	4	47	10	2	0	63	4	8	181
09:45	20	35	5	1	0	61	4	5	1	19	4	1	0	25	2	12	3	17	4	0	0	24	4	35	5	39	8	4	0	56	14	5	166
Hourly Total	75	145	20	5	0	245	14	24	12	90	19	4	0	125	24	24	7	54	16	3	0	80	24	134	17	144	46	10	0	217	36	15	667
10:00	12	51	3	0	0	66	8	12	4	20	8	0	0	32	14	17	3	7	8	2	0	20	8	30	8	25	5	5	0	43	25	15	161
10:15	16	34	6	1	0	57	2	13	6	27	7	2	0	42	8	7	4	11	2	2	0	19	15	13	6	27	8	3	0	44	13	6	162
10:30	8	39	4	1	0	52	1	6	5	29	9	1	0	44	14	11	1	14	2	0	0	17	16	31	2	16	11	4	0	33	19	9	146
10:45	12	34	4	1	0	51	12	10	1	28	5	1	0	35	13	14	2	8	5	0	0	15	35	31	9	19	8	5	0	41	9	10	142
Hourly Total	48	158	17	3	0	226	23	41	16	104	29	4	0	153	49	49	10	40	17	4	0	71	74	105	25	87	32	17	0	161	66	40	611
11:00	19	34	5	1	0	59	8	8	3	20	8	1	0	32	4	13	2	5	1	0	0	8	24	38	9	20	10	4	0	43	31	9	142
11:15	19	37	7	3	0	66	3	8	5	31	2	2	0	40	25	6	2	14	3	1	0	20	13	35	7	21	8	1	0	37	21	11	163
11:30	19	32	7	2	0	60	1	29	2	26	8	4	0	40	6	10	5	11	4	1	0	21	24	26	5	15	12	4	0	36	18	16	157
11:45	15	43	8	0	0	66	4	14	6	23	10	2	0	41	29	21	5	11	7	3	0	26	21	39	3	19	10	4	0	36	22	22	169
Hourly Total	72	146	27	6	0	251	16	59	16	100	28	9	0	153	64	50	14	41	15	5	0	75	82	138	24	75	40	13	0	152	92	58	631
12:00	22	26	4	0	0	52	12	17	2	36	8	1	0	47	33	26	7	14	3	0	0	24	17	26	7	19	13	2	0	41	20	15	164
12:15	19	42	4	4	0	69	4	28	6	36	4	2	0	48	19	0	2	16	5	2	0	25	18	18	4	24	21	1	0	50	18	15	192
12:30	23	30	2	0	0	55	9	15	3	33	6	1	0	43	14	1	3	14	3	0	0	20	15	14	8	15	14	2	0	39	30	17	157
12:45	19	58	6	1	0	84	9	9	4	36	9	1	0	50	8	1	4	14	5	3	0	26	23	19	7	27	21	3	0	58	23	8	218
Hourly Total	83	156	16	5	0	260	34	69	15	141	27	5	0	188	74	28	16	58	16	5	0	95	73	77	26	85	69	8	0	188	91	55	731

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

TURNING MOVEMENT DATA

Leg	Fore Street								Fore Street								Union Street								Union Street								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
13:00	6	42	7	0	0	55	22	19	10	40	2	2	0	54	15	16	1	19	13	4	0	37	36	22	9	20	8	4	0	41	39	8	187
13:15	23	31	3	1	0	58	6	21	3	24	7	2	0	36	23	13	2	14	6	1	0	23	21	26	13	13	5	5	0	36	10	7	153
13:30	12	34	5	2	0	53	9	24	5	36	7	2	0	50	33	11	3	11	11	1	0	26	26	26	10	17	16	3	0	46	14	16	175
13:45	15	48	5	0	0	68	1	13	1	21	13	1	0	36	27	20	0	12	4	2	0	18	35	53	3	23	11	11	0	48	20	6	170
Hourly Total	56	155	20	3	0	234	38	77	19	121	29	7	0	176	98	60	6	56	34	8	0	104	118	127	35	73	40	23	0	171	83	37	685
14:00	19	38	6	0	0	63	4	7	8	29	4	4	0	45	9	16	1	18	5	0	0	24	17	22	5	16	8	5	0	34	7	3	166
14:15	10	34	3	4	0	51	3	7	1	29	6	0	0	36	8	4	1	13	2	1	0	17	14	34	6	14	6	2	0	28	4	4	132
14:30	14	41	6	3	0	64	13	11	4	29	5	1	0	39	10	8	5	11	7	1	0	24	18	34	4	26	9	4	0	43	3	5	170
14:45	9	53	6	2	0	70	7	10	8	35	4	0	0	47	5	26	6	11	4	0	0	21	23	36	11	28	10	4	0	53	8	4	191
Hourly Total	52	166	21	9	0	248	27	35	21	122	19	5	0	167	32	54	13	53	18	2	0	86	72	126	26	84	33	15	0	158	22	16	659
15:00	19	35	5	1	0	60	3	8	8	22	5	3	0	38	15	13	3	14	3	1	0	21	24	20	9	25	17	7	0	58	13	9	177
15:15	17	43	3	0	0	63	4	12	5	36	5	3	0	49	21	15	3	13	4	0	0	20	23	13	9	18	12	4	0	43	10	7	175
15:30	23	42	1	1	0	67	1	14	4	41	4	1	0	50	18	12	3	13	5	0	0	21	27	20	3	16	13	5	0	37	6	4	175
15:45	16	31	10	1	0	58	6	13	4	36	6	2	0	48	18	16	7	11	2	2	0	22	19	12	7	16	10	1	0	34	7	7	162
Hourly Total	75	151	19	3	0	248	14	47	21	135	20	9	0	185	72	56	16	51	14	3	0	84	93	65	28	75	52	17	0	172	36	27	689
16:00	19	33	6	2	0	60	7	14	4	44	4	0	0	52	12	12	3	16	8	0	0	27	16	23	8	21	15	5	0	49	5	7	188
16:15	25	37	6	0	0	68	2	3	5	31	5	2	0	43	8	19	1	12	3	3	0	19	25	23	6	11	15	2	0	34	8	8	164
16:30	15	42	3	0	0	60	4	9	3	40	4	2	0	49	34	15	2	19	3	2	0	26	15	13	3	27	13	9	0	52	13	8	187
16:45	19	55	4	0	0	78	3	9	13	27	5	1	0	46	29	16	2	18	4	4	0	28	16	24	8	32	21	2	0	63	17	11	215
Hourly Total	78	167	19	2	0	266	16	35	25	142	18	5	0	190	83	62	8	65	18	9	0	100	72	83	25	91	64	18	0	198	43	34	754
17:00	16	37	3	0	0	56	9	5	11	50	6	2	0	69	15	17	3	5	16	0	0	24	12	21	7	24	18	13	0	62	13	10	211
17:15	24	46	2	0	0	72	2	5	8	38	7	2	0	55	24	7	8	26	5	2	0	41	15	17	6	24	16	10	0	56	16	14	224
17:30	20	48	8	0	0	76	7	7	4	36	5	2	0	47	12	21	2	18	5	1	0	26	14	36	5	28	18	3	0	54	11	9	203
17:45	20	36	3	0	0	59	10	13	6	34	2	2	0	44	18	18	1	24	8	2	0	35	10	33	5	20	15	7	0	47	17	16	185
Hourly Total	80	167	16	0	0	263	28	30	29	158	20	8	0	215	69	63	14	73	34	5	0	126	51	107	23	96	67	33	0	219	57	49	823
18:00	12	46	4	0	0	62	9	8	2	30	6	1	0	39	17	12	4	19	5	0	0	28	17	17	5	18	7	3	0	33	10	6	162
18:15	12	41	5	0	0	58	3	14	2	34	6	2	0	44	17	20	2	9	11	0	0	22	19	32	8	19	13	5	0	45	22	10	169
18:30	14	20	1	0	0	35	0	5	4	23	14	2	0	43	9	15	1	5	3	2	0	11	18	31	7	15	11	3	0	36	14	10	125
18:45	11	19	4	2	0	36	2	10	3	18	6	1	0	28	12	17	5	7	8	1	0	21	24	15	9	15	6	1	0	31	29	29	116
Hourly Total	49	126	14	2	0	191	14	37	11	105	32	6	0	154	55	64	12	40	27	3	0	82	78	95	29	67	37	12	0	145	75	55	572
Grand Total	815	1859	224	50	0	2948	232	493	198	1381	256	75	0	1910	645	523	125	652	235	52	0	1064	764	1127	287	1002	565	197	0	2051	617	412	7973
Approach %	27	63	7	1	0	100	7	16	10	72	13	3	0	100	33	27	11	61	22	4	0	100	71	105	13	48	27	9	0	100	30	20	400
Total %	10	23	2	0	0	36	2	6	2	17	3	0	0	23	8	6	1	8	2	0	0	13	9	14	3	12	7	2	0	25	7	5	100
Motorcycles	5	4	0	1	0	10	0	0	4	5	3	1	0	13	0	0	0	2	0	0	0	2	0	0	1	2	1	2	0	6	0	0	31
Motorcycles %	0	0	0	2	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

TURNING MOVEMENT DATA

Leg	Fore Street								Fore Street								Union Street								Union Street								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
Cars_Light Goods	796	1803	203	37	0	2839	0	0	181	1335	236	72	0	1824	0	0	110	632	226	51	0	1019	0	0	274	952	531	189	0	1946	0	0	7628
Cars_Light Goods %	97	96	90	74	0	0	0	0	91	96	92	96	0	0	0	0	88	96	96	98	0	0	0	0	95	95	93	95	0	0	0	0	95
Single Unit Trucks	3	16	4	9	0	32	0	0	6	12	4	0	0	22	0	0	4	5	8	1	0	18	0	0	4	25	9	2	0	40	0	0	112
Single Unit Trucks	0	0	1	18	0	0	0	0	3	0	1	0	0	0	0	0	3	0	3	1	0	0	0	0	1	2	1	1	0	0	0	0	1
Articulated Trucks	0	2	1	0	0	3	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Articulated Trucks %	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	0
Buses	2	5	8	3	0	18	0	0	4	8	11	2	0	25	0	0	0	2	0	0	0	2	0	0	3	11	21	4	0	39	0	0	84
Buses %	0	0	3	6	0	0	0	0	2	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	2	0	0	0	0	1
Bicycles on Road	9	29	8	0	0	46	0	0	3	20	2	0	0	25	0	0	11	11	1	0	0	23	0	0	5	12	3	0	0	20	0	0	114
Bicycles on Road %	1	1	3	0	0	0	0	0	1	1	0	0	0	0	0	0	8	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Ped	0	0	0	0	0	0	215	484	0	0	0	0	0	0	630	508	0	0	0	0	0	0	743	1112	0	0	0	0	0	0	589	391	0
Ped %	0	0	0	0	0	0	92	0	0	0	0	0	0	0	97	0	0	0	0	0	0	0	97	0	0	0	0	0	0	0	95	0	0
Bicycle	0	0	0	0	0	0	17	9	0	0	0	0	0	0	15	15	0	0	0	0	0	0	21	15	0	0	0	0	0	0	28	21	0
Bicycle %	0	0	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0

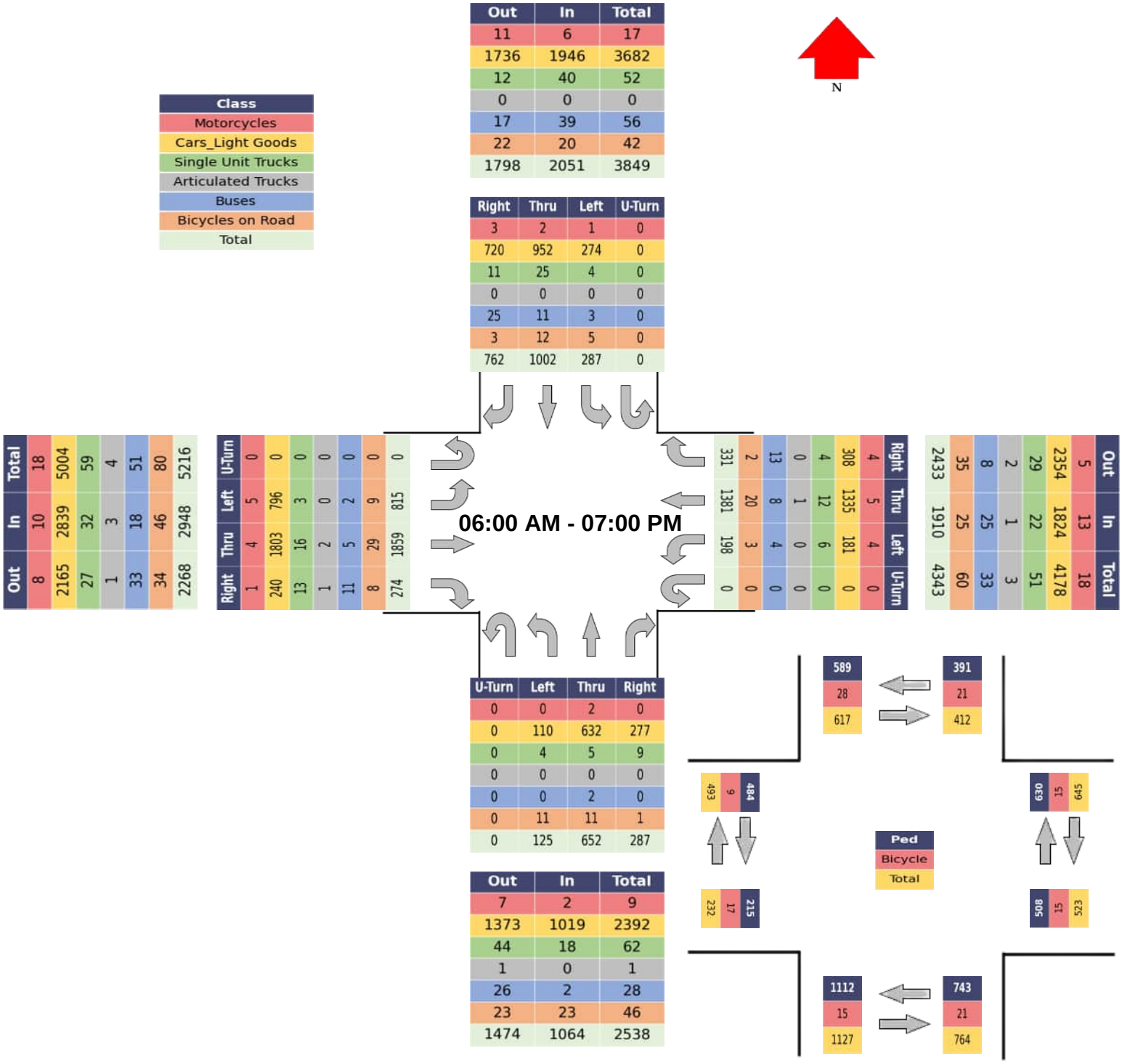
Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Turning Movement Data



Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

TURNING MOVEMENT AM PEAK HOUR

Leg	Fore Street								Fore Street								Union Street								Union Street								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
08:45:00	27	47	5	1	0	80	0	11	6	24	1	0	0	31	4	5	0	15	3	0	0	18	8	18	5	19	11	6	0	41	4	4	170
09:00:00	18	46	8	0	0	72	0	6	3	23	1	0	0	27	14	2	0	14	3	2	0	19	9	26	3	33	12	1	0	49	13	1	167
09:15:00	17	28	4	3	0	52	2	5	5	18	9	3	0	35	3	5	2	9	5	1	0	17	6	28	5	25	16	3	0	49	5	1	153
09:30:00	20	36	3	1	0	60	8	8	3	30	5	0	0	38	5	5	2	14	4	0	0	20	5	45	4	47	10	2	0	63	4	8	181
Grand Total	82	157	20	5	0	264	10	30	17	95	16	3	0	131	26	17	4	52	15	3	0	74	28	117	17	124	49	12	0	202	26	14	671
Approach %	31	59	8	2	0	100	4	11	13	73	12	2	0	100	20	13	5	70	20	4	0	100	38	158	8	61	24	6	0	100	13	7	400
Total %	12	23	3	1	0	39	1	4	3	14	2	0	0	20	4	3	1	8	2	0	0	11	4	17	3	18	7	2	0	30	4	2	100
Motorcycles	0	0	0	1	0	1	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Motorcycles %	0	0	0	20	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars_Light Goods	82	147	20	3	0	252	0	0	14	93	13	3	0	123	0	0	3	50	12	2	0	67	0	0	14	121	45	12	0	192	0	0	634
Cars_Light Goods %	100	94	100	60	0	0	0	0	82	98	81	100	0	0	0	0	75	96	80	67	0	0	0	0	82	98	92	100	0	0	0	0	94
Single Unit Trucks	0	4	0	1	0	5	0	0	2	1	0	0	0	3	0	0	0	2	3	1	0	6	0	0	2	0	2	0	0	4	0	0	18
Single Unit Trucks	0	3	0	20	0	0	0	0	12	1	0	0	0	0	0	0	0	4	20	33	0	0	0	0	12	0	4	0	0	0	0	0	3
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	2	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	0	0	7
Buses %	0	1	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	1
Bicycles on Road	0	4	0	0	0	4	0	0	0	1	1	0	0	2	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	2	0	0	9
Bicycles on Road %	0	3	0	0	0	0	0	0	0	1	6	0	0	0	0	0	25	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	1
Ped	0	0	0	0	0	0	6	28	0	0	0	0	0	0	25	16	0	0	0	0	0	0	28	117	0	0	0	0	0	0	26	14	0
Ped %	0	0	0	0	0	0	60	0	0	0	0	0	0	0	96	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
Bicycle	0	0	0	0	0	0	4	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle %	0	0	0	0	0	0	40	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.76	0.84	0.62	0.42	0.0	0.82	0.31	0.68	0.71	0.79	0.44	0.25	0.0	0.86	0.46	0.85	0.5	0.87	0.75	0.38	0.0	0.92	0.78	0.65	0.85	0.66	0.77	0.5	0.0	0.8	0.5	0.44	0.93

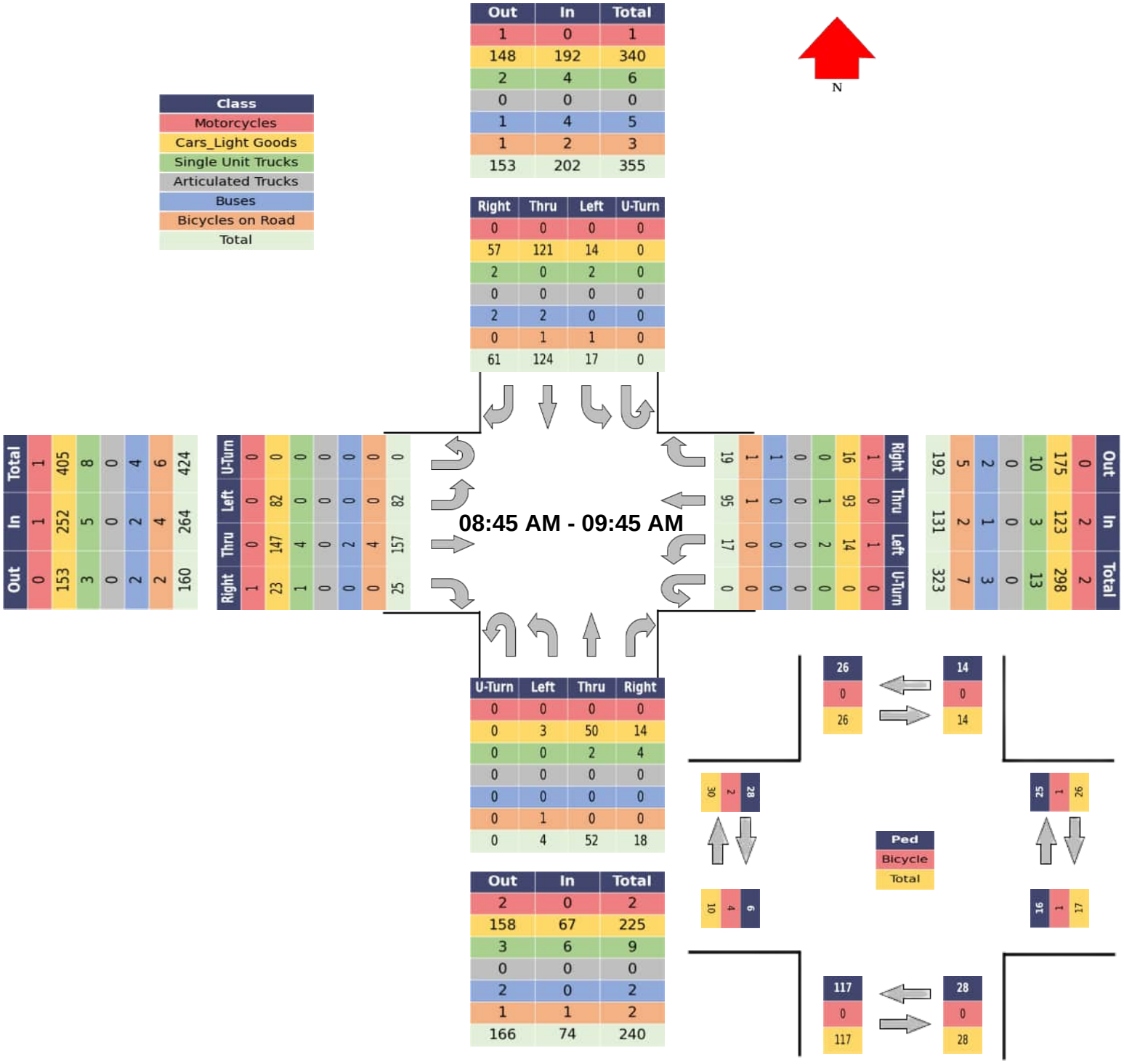
Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

AM Peak Turning Movement Data Summary



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

TURNING MOVEMENT PM PEAK HOUR

Leg	Fore Street								Fore Street								Union Street								Union Street								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
16:45:00	19	55	4	0	0	78	3	9	13	27	5	1	0	46	29	16	2	18	4	4	0	28	16	24	8	32	21	2	0	63	17	11	215
17:00:00	16	37	3	0	0	56	9	5	11	50	6	2	0	69	15	17	3	5	16	0	0	24	12	21	7	24	18	13	0	62	13	10	211
17:15:00	24	46	2	0	0	72	2	5	8	38	7	2	0	55	24	7	8	26	5	2	0	41	15	17	6	24	16	10	0	56	16	14	224
17:30:00	20	48	8	0	0	76	7	7	4	36	5	2	0	47	12	21	2	18	5	1	0	26	14	36	5	28	18	3	0	54	11	9	203
Grand Total	79	186	17	0	0	282	21	26	36	151	23	7	0	217	80	61	15	67	30	7	0	119	57	98	26	108	73	28	0	235	57	44	853
Approach %	28	66	6	0	0	100	7	9	17	70	11	3	0	100	37	28	13	56	25	6	0	100	48	82	11	46	31	12	0	100	24	19	400
Total %	9	22	2	0	0	33	2	3	4	18	3	1	0	25	9	7	2	8	4	1	0	14	7	11	3	13	9	3	0	28	7	5	100
Motorcycles	3	1	0	0	0	4	0	0	2	1	0	0	0	3	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	9
Motorcycles %	4	1	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Cars_Light Goods	72	182	16	0	0	270	0	0	32	147	23	7	0	209	0	0	14	63	30	7	0	114	0	0	26	102	71	28	0	227	0	0	820
Cars_Light Goods %	91	98	94	0	0	0	0	0	89	97	100	100	0	0	0	0	93	94	100	100	0	0	0	0	100	94	97	100	0	0	0	0	96
Single Unit Trucks	1	1	0	0	0	2	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	6
Single Unit Trucks	1	1	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	3
Buses %	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Bicycles on Road	3	2	0	0	0	5	0	0	1	2	0	0	0	3	0	0	1	2	0	0	0	3	0	0	0	4	0	0	0	4	0	0	15
Bicycles on Road %	4	1	0	0	0	0	0	0	3	1	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	2
Ped	0	0	0	0	0	0	21	26	0	0	0	0	0	0	77	59	0	0	0	0	0	0	48	97	0	0	0	0	0	0	53	42	0
Ped %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	96	0	0	0	0	0	0	0	84	0	0	0	0	0	0	0	93	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	9	1	0	0	0	0	0	0	4	2	0
Bicycle %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	7	0	0
PHF	0.82	0.85	0.53	0.0	0.0	0.9	0.58	0.72	0.69	0.76	0.82	0.88	0.0	0.79	0.69	0.73	0.47	0.64	0.47	0.44	0.0	0.73	0.89	0.68	0.81	0.84	0.87	0.54	0.0	0.93	0.84	0.79	0.95

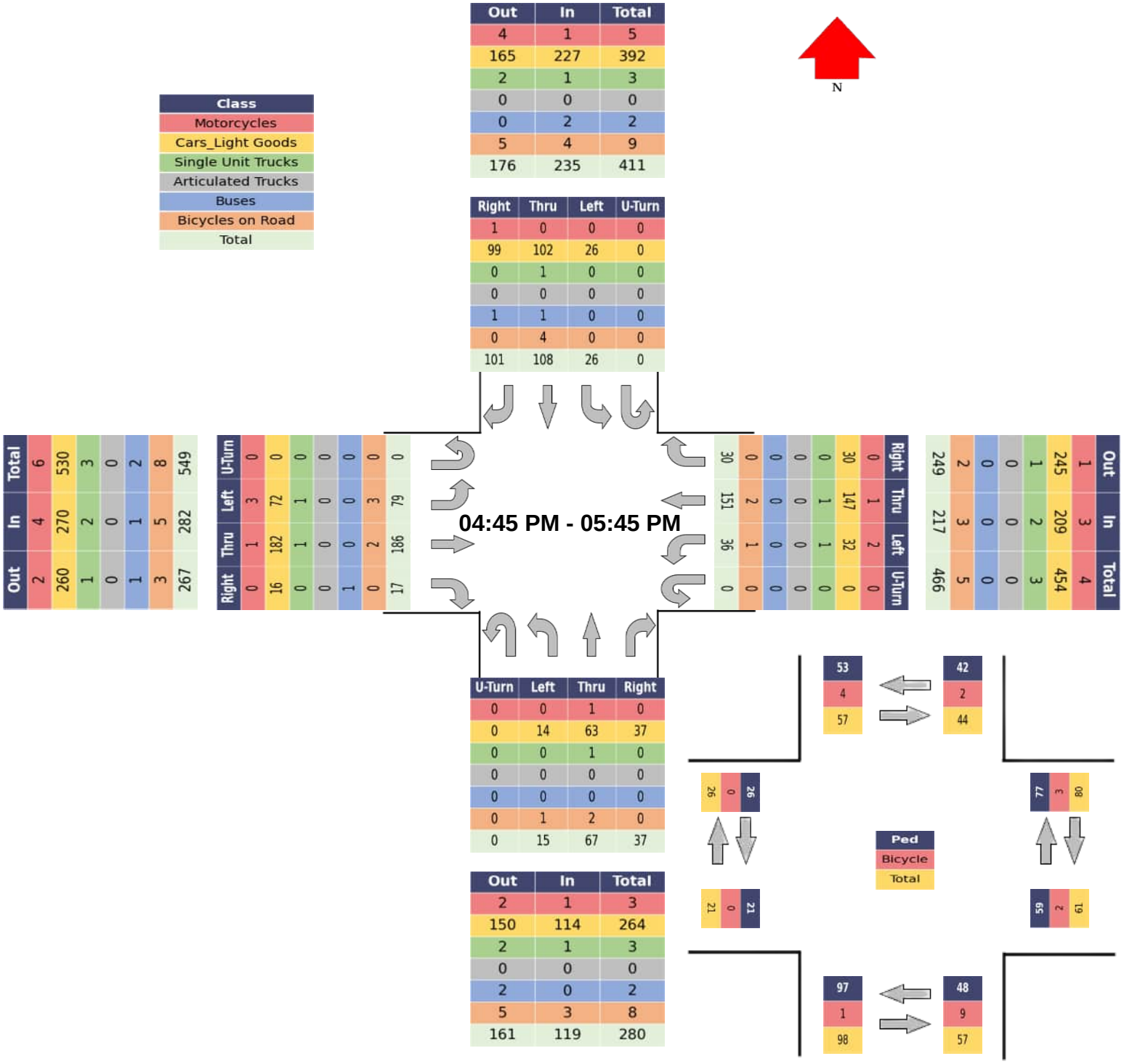
Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

PM Peak Turning Movement Data Summary



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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

TURNING MOVEMENT MID PEAK HOUR

Leg	Fore Street								Fore Street								Union Street								Union Street								
Direction	EastBound								WestBound								NorthBound								SouthBound								
Start Time	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	App Total	Peds CW	Peds CCW	Int Total
12:15:00	19	42	4	4	0	69	4	28	6	36	4	2	0	48	19	0	2	16	5	2	0	25	18	18	4	24	21	1	0	50	18	15	192
12:30:00	23	30	2	0	0	55	9	15	3	33	6	1	0	43	14	1	3	14	3	0	0	20	15	14	8	15	14	2	0	39	30	17	157
12:45:00	19	58	6	1	0	84	9	9	4	36	9	1	0	50	8	1	4	14	5	3	0	26	23	19	7	27	21	3	0	58	23	8	218
13:00:00	6	42	7	0	0	55	22	19	10	40	2	2	0	54	15	16	1	19	13	4	0	37	36	22	9	20	8	4	0	41	39	8	187
Grand Total	67	172	19	5	0	263	44	71	23	145	21	6	0	195	56	18	10	63	26	9	0	108	92	73	28	86	64	10	0	188	110	48	754
Approach %	25	65	7	2	0	100	17	27	12	74	11	3	0	100	29	9	9	58	24	8	0	100	85	68	15	46	34	5	0	100	59	26	400
Total %	9	23	3	1	0	35	6	9	3	19	3	1	0	26	7	2	1	8	3	1	0	14	12	10	4	11	8	1	0	25	15	6	100
Motorcycles	0	1	0	0	0	1	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Motorcycles %	0	1	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars_Light Goods	64	166	18	4	0	252	0	0	22	139	17	6	0	184	0	0	8	63	26	9	0	106	0	0	27	84	62	9	0	182	0	0	724
Cars_Light Goods %	96	97	95	80	0	0	0	0	96	96	81	100	0	0	0	0	80	100	100	100	0	0	0	0	96	98	97	90	0	0	0	0	96
Single Unit Trucks	0	1	0	1	0	2	0	0	0	4	1	0	0	5	0	0	1	0	0	0	0	1	0	0	0	2	1	0	0	3	0	0	11
Single Unit Trucks	0	1	0	20	0	0	0	0	0	3	5	0	0	0	0	0	10	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1
Articulated Trucks	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	0
Articulated Trucks %	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	0
Buses	1	1	1	0	0	3	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	0	0	9
Buses %	1	1	5	0	0	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	10	0	0	0	0	1
Bicycles on Road	2	3	0	0	0	5	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
Bicycles on Road %	3	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ped	0	0	0	0	0	0	41	71	0	0	0	0	0	0	56	16	0	0	0	0	0	0	92	71	0	0	0	0	0	0	110	48	0
Ped %	0	0	0	0	0	0	93	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
Bicycle	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Bicycle %	0	0	0	0	0	0	7	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
PHF	0.73	0.74	0.68	0.31	0.0	0.78	0.5	0.63	0.57	0.91	0.58	0.75	0.0	0.9	0.74	0.28	0.62	0.83	0.5	0.56	0.0	0.73	0.64	0.83	0.78	0.8	0.76	0.62	0.0	0.81	0.71	0.71	0.86

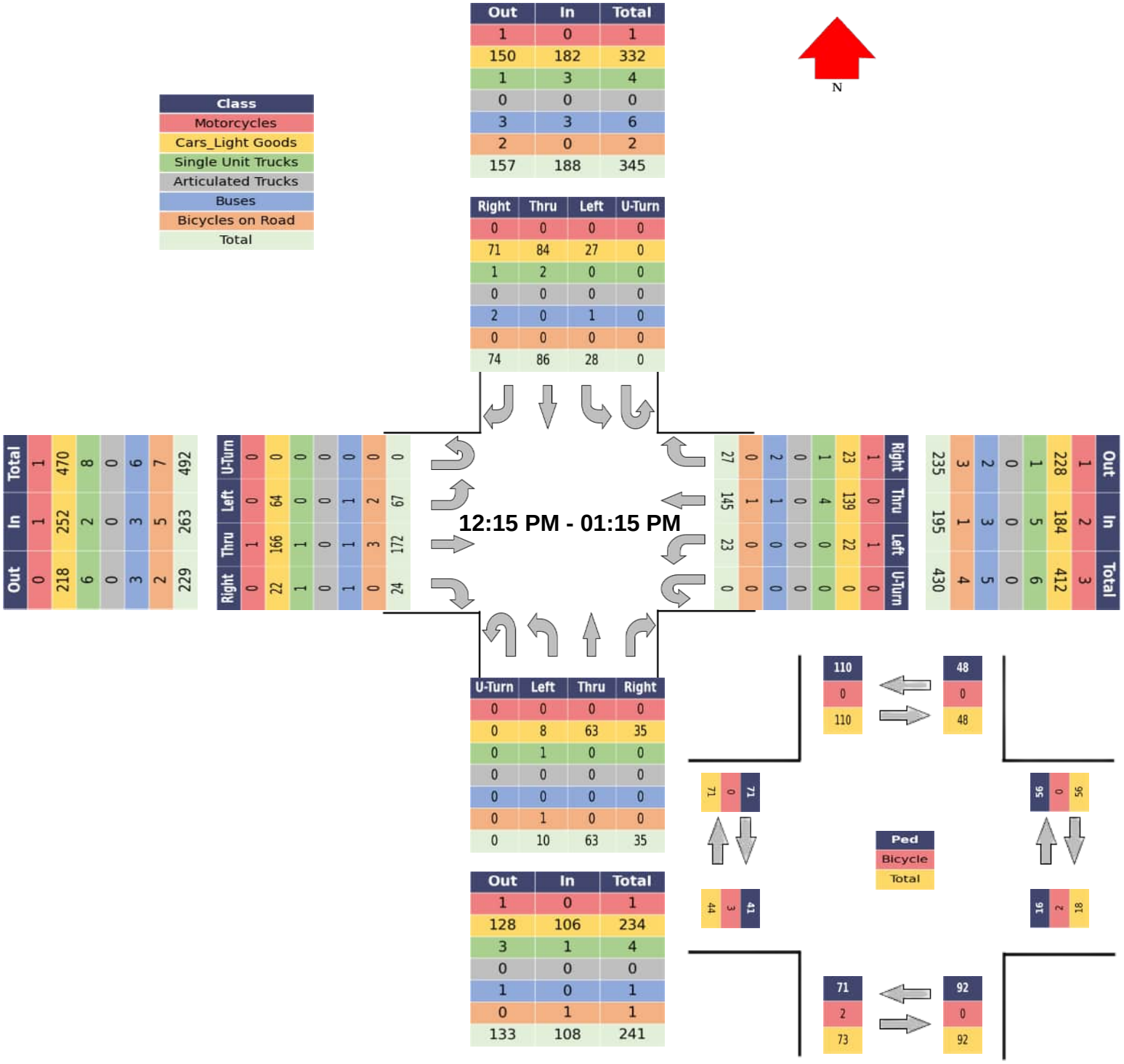
Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Mid Peak Turning Movement Data Summary



Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Motorcycles

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
06:00	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
06:15	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
06:30	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
06:45	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
Hourly Total	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
07:00	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
07:15	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
07:30	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
07:45	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
Hourly Total	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
08:00	0	1	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	1
08:15	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
08:30	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
08:45	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
Hourly Total	0	1	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	1
09:00	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
09:15	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
09:30	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
09:45	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
Hourly Total	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:00	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
10:15	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
10:30	0	0	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	1
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
11:00	1	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	1
11:15	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
11:30	0	0	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	1
11:45	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
Hourly Total	1	0	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	2
12:00	1	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	1
12:15	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
12:30	0	0	0	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	1
12:45	0	1	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	0	2
Hourly Total	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Motorcycles

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
13:00	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
13:15	0	0	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	1
13:30	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
13:45	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
Hourly Total	0	0	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	1
14:00	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
14:15	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
14:30	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
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3
15:00	0	0	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	1
15:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
15:30	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
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4
16:00	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
16:15	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:30	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
16:45	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hourly Total	1	1	0	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6
17:00	1	1	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	3
17:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
17:30	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
17:45	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
Hourly Total	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5
18:00	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
18:15	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
18:30	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
18:45	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
Hourly Total	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
Total	5	4	0	1	0	0	0	4	5	3	1	0	0	0	0	2	0	0	0	0	0	1	2	1	2	0	0	0	31

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Cars_Light Goods

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
06:00	2	5	1	0	0	0	0	0	5	0	1	0	0	0	0	4	1	1	0	0	0	2	1	2	1	0	0	0	26
06:15	1	7	1	0	0	0	0	0	2	1	0	0	0	0	1	4	0	0	0	0	0	0	2	2	0	0	0	0	21
06:30	6	8	1	0	0	0	0	0	0	1	1	0	0	0	0	5	2	0	0	0	0	1	5	2	1	0	0	0	33
06:45	8	10	1	1	0	0	0	1	9	1	1	0	0	0	2	5	1	0	0	0	0	0	14	3	2	0	0	0	59
Hourly Total	17	30	4	1	0	0	0	1	16	3	3	0	0	0	3	18	4	1	0	0	0	3	22	9	4	0	0	0	139
07:00	5	19	1	2	0	0	0	1	11	1	3	0	0	0	1	4	0	0	0	0	0	1	5	2	3	0	0	0	59
07:15	10	18	3	2	0	0	0	0	19	1	3	0	0	0	3	11	3	1	0	0	0	3	5	9	2	0	0	0	93
07:30	9	27	4	1	0	0	0	0	13	2	1	0	0	0	0	10	1	0	0	0	0	0	8	10	0	0	0	0	86
07:45	20	43	5	2	0	0	0	1	21	0	1	0	0	0	1	13	1	0	0	0	0	2	16	12	1	0	0	0	139
Hourly Total	44	107	13	7	0	0	0	2	64	4	8	0	0	0	5	38	5	1	0	0	0	6	34	33	6	0	0	0	377
08:00	15	46	3	0	0	0	0	1	18	2	0	0	0	0	0	18	5	2	0	0	0	2	14	10	2	0	0	0	138
08:15	19	38	3	2	0	0	0	1	19	2	2	0	0	0	0	19	3	1	0	0	0	7	19	12	6	0	0	0	153
08:30	23	45	4	1	0	0	0	2	20	2	0	0	0	0	0	11	2	0	0	0	0	5	11	5	5	0	0	0	136
08:45	27	44	5	0	0	0	0	5	23	1	0	0	0	0	0	15	3	0	0	0	0	5	18	11	6	0	0	0	163
Hourly Total	84	173	15	3	0	0	0	9	80	7	2	0	0	0	0	63	13	3	0	0	0	19	62	38	19	0	0	0	590
09:00	18	42	8	0	0	0	0	2	22	1	0	0	0	0	0	14	2	1	0	0	0	3	31	12	1	0	0	0	157
09:15	17	28	4	2	0	0	0	4	18	6	3	0	0	0	2	8	5	1	0	0	0	4	25	15	3	0	0	0	145
09:30	20	33	3	1	0	0	0	3	30	5	0	0	0	0	1	13	2	0	0	0	0	2	47	7	2	0	0	0	169
09:45	20	32	4	0	0	0	0	1	18	2	1	0	0	0	2	17	3	0	0	0	0	5	39	7	4	0	0	0	155
Hourly Total	75	135	19	3	0	0	0	10	88	14	4	0	0	0	5	52	12	2	0	0	0	14	142	41	10	0	0	0	626
10:00	12	51	3	0	0	0	0	4	19	7	0	0	0	0	3	7	8	2	0	0	0	7	21	4	5	0	0	0	153
10:15	16	34	6	0	0	0	0	5	27	6	2	0	0	0	4	11	2	2	0	0	0	6	25	8	3	0	0	0	157
10:30	7	37	2	1	0	0	0	5	26	9	0	0	0	0	0	14	2	0	0	0	0	2	14	8	4	0	0	0	131
10:45	12	34	3	0	0	0	0	1	27	5	1	0	0	0	2	8	5	0	0	0	0	8	15	8	4	0	0	0	133
Hourly Total	47	156	14	1	0	0	0	15	99	27	3	0	0	0	9	40	17	4	0	0	0	23	75	28	16	0	0	0	574
11:00	18	32	4	1	0	0	0	3	20	8	1	0	0	0	2	5	1	0	0	0	0	9	17	9	4	0	0	0	134
11:15	19	37	6	1	0	0	0	5	31	2	2	0	0	0	2	13	3	1	0	0	0	7	19	8	1	0	0	0	157
11:30	19	32	7	2	0	0	0	1	25	7	4	0	0	0	5	11	4	1	0	0	0	5	15	9	4	0	0	0	151
11:45	15	40	7	0	0	0	0	6	23	9	2	0	0	0	5	11	7	3	0	0	0	3	18	10	4	0	0	0	163
Hourly Total	71	141	24	4	0	0	0	15	99	26	9	0	0	0	14	40	15	5	0	0	0	24	69	36	13	0	0	0	605
12:00	21	26	3	0	0	0	0	2	35	8	0	0	0	0	7	13	3	0	0	0	0	6	15	13	2	0	0	0	154
12:15	19	42	4	3	0	0	0	6	35	3	2	0	0	0	2	16	5	2	0	0	0	4	24	21	1	0	0	0	189
12:30	21	28	2	0	0	0	0	3	30	4	1	0	0	0	3	14	3	0	0	0	0	8	15	13	2	0	0	0	147
12:45	18	54	6	1	0	0	0	3	35	8	1	0	0	0	3	14	5	3	0	0	0	6	26	20	2	0	0	0	205
Hourly Total	79	150	15	4	0	0	0	14	135	23	4	0	0	0	15	57	16	5	0	0	0	24	80	67	7	0	0	0	695

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Cars_Light Goods

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
13:00	6	42	6	0	0	0	0	10	39	2	2	0	0	0	0	19	13	4	0	0	0	9	19	8	4	0	0	0	183
13:15	23	30	2	0	0	0	0	3	20	6	2	0	0	0	1	14	6	1	0	0	0	13	12	5	5	0	0	0	143
13:30	12	34	3	2	0	0	0	4	32	7	2	0	0	0	2	11	11	1	0	0	0	9	16	15	3	0	0	0	164
13:45	14	46	4	0	0	0	0	1	19	12	1	0	0	0	0	12	4	2	0	0	0	3	22	9	10	0	0	0	159
Hourly Total	55	152	15	2	0	0	0	18	110	27	7	0	0	0	3	56	34	8	0	0	0	34	69	37	22	0	0	0	649
14:00	18	38	6	0	0	0	0	7	26	4	4	0	0	0	1	18	5	0	0	0	0	5	15	7	4	0	0	0	158
14:15	10	34	3	2	0	0	0	0	26	6	0	0	0	0	1	12	2	1	0	0	0	5	13	6	2	0	0	0	123
14:30	14	41	6	2	0	0	0	4	28	5	1	0	0	0	4	11	7	1	0	0	0	3	24	9	4	0	0	0	164
14:45	9	51	6	1	0	0	0	6	35	3	0	0	0	0	4	10	4	0	0	0	0	9	26	8	4	0	0	0	176
Hourly Total	51	164	21	5	0	0	0	17	115	18	5	0	0	0	10	51	18	2	0	0	0	22	78	30	14	0	0	0	621
15:00	19	30	5	1	0	0	0	8	19	4	3	0	0	0	3	14	3	1	0	0	0	9	25	17	7	0	0	0	168
15:15	17	42	2	0	0	0	0	4	36	4	3	0	0	0	3	12	4	0	0	0	0	9	17	12	3	0	0	0	168
15:30	23	41	1	1	0	0	0	4	41	4	1	0	0	0	3	12	5	0	0	0	0	3	16	12	5	0	0	0	172
15:45	16	30	9	1	0	0	0	3	34	6	2	0	0	0	7	10	2	2	0	0	0	7	15	9	1	0	0	0	154
Hourly Total	75	143	17	3	0	0	0	19	130	18	9	0	0	0	16	48	14	3	0	0	0	28	73	50	16	0	0	0	662
16:00	18	33	6	2	0	0	0	4	44	3	0	0	0	0	2	15	8	0	0	0	0	8	21	14	5	0	0	0	183
16:15	24	36	4	0	0	0	0	5	31	5	1	0	0	0	1	11	3	3	0	0	0	6	11	15	2	0	0	0	158
16:30	15	42	3	0	0	0	0	3	39	4	2	0	0	0	1	18	3	2	0	0	0	3	27	12	9	0	0	0	183
16:45	18	55	4	0	0	0	0	10	27	5	1	0	0	0	2	16	4	4	0	0	0	8	29	21	2	0	0	0	206
Hourly Total	75	166	17	2	0	0	0	22	141	17	4	0	0	0	6	60	18	9	0	0	0	25	88	62	18	0	0	0	730
17:00	14	34	3	0	0	0	0	11	47	6	2	0	0	0	3	5	16	0	0	0	0	7	23	18	13	0	0	0	202
17:15	21	46	2	0	0	0	0	7	38	7	2	0	0	0	7	26	5	2	0	0	0	6	24	15	10	0	0	0	218
17:30	19	47	7	0	0	0	0	4	35	5	2	0	0	0	2	16	5	1	0	0	0	5	26	17	3	0	0	0	194
17:45	20	34	3	0	0	0	0	6	34	2	2	0	0	0	1	24	8	2	0	0	0	5	20	15	7	0	0	0	183
Hourly Total	74	161	15	0	0	0	0	28	154	20	8	0	0	0	13	71	34	5	0	0	0	23	93	65	33	0	0	0	797
18:00	12	46	4	0	0	0	0	2	30	6	1	0	0	0	4	18	5	0	0	0	0	5	18	6	3	0	0	0	160
18:15	12	41	5	0	0	0	0	2	33	6	2	0	0	0	2	9	10	0	0	0	0	8	19	12	4	0	0	0	165
18:30	14	19	1	0	0	0	0	4	23	14	2	0	0	0	1	5	3	2	0	0	0	7	15	11	3	0	0	0	124
18:45	11	19	4	2	0	0	0	3	18	6	1	0	0	0	4	6	8	1	0	0	0	9	15	6	1	0	0	0	114
Hourly Total	49	125	14	2	0	0	0	11	104	32	6	0	0	0	11	38	26	3	0	0	0	29	67	35	11	0	0	0	563
Total	796	1803	203	37	0	0	0	181	1335	236	72	0	0	0	110	632	226	51	0	0	0	274	952	531	189	0	0	0	7628

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Single Unit Trucks

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
06:00	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
06:15	0	0	0	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	1
06:30	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
06:45	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
07:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hourly Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	5	0	0	0	0	0	10
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
08:15	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
08:30	0	1	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	1
08:45	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5
09:00	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	3
09:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0	1	0	0	0	0	7
09:45	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	6
Hourly Total	0	3	1	1	0	0	0	1	1	1	0	0	0	0	1	2	4	1	0	0	0	2	0	3	0	0	0	0	21
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	0	0	0	0	5
10:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3
10:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	5
Hourly Total	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	7	2	0	0	0	0	14
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
11:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
11:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
Hourly Total	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	11
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
12:15	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	4
Hourly Total	0	1	0	1	0	0	0	0	3	1	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	0	10

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Single Unit Trucks

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
13:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3
13:15	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
13:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
13:45	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	1	1	1	0	0	0	0	5	1	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	13
14:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
14:15	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
14:45	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hourly Total	1	1	0	2	0	0	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	11
15:00	0	2	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	2
15:15	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
15:30	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
15:45	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
Hourly Total	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	6
16:00	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
16:15	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
16:30	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
16:45	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
Hourly Total	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
17:00	0	1	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	2
17:15	0	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	0	1
17:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3
17:45	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
Hourly Total	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	6
18:00	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
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
18:30	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
18:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	3	16	4	9	0	0	0	6	12	4	0	0	0	0	4	5	8	1	0	0	0	4	25	9	2	0	0	0	112

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Articulated Trucks

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
06:00	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
06:15	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
06:30	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
06:45	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
Hourly Total	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
07:00	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
07:15	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
07:30	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
07:45	0	1	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	1
Hourly Total	0	1	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	1
08:00	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
08:15	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
08:30	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
08:45	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
Hourly Total	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
09:00	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
09:15	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
09:30	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
09:45	0	1	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	1
Hourly Total	0	1	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	1
10:00	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
10:15	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
10:30	0	0	1	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	1
10:45	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
Hourly Total	0	0	1	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	1
11:00	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
11:15	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
11:30	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
11:45	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
Hourly Total	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
12:00	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
12:15	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
12:30	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
12:45	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
Hourly Total	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

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Articulated Trucks

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
13:00	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
13:15	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
13:30	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
13:45	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
Hourly Total	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
14:00	0	0	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	1
14:15	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
14:30	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
14:45	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
Hourly Total	0	0	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	1
15:00	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
15:15	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
15:30	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
15:45	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
Hourly Total	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
16:00	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
16:15	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
16:30	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
16:45	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
Hourly Total	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
17:00	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
17:15	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
17:30	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
17:45	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
Hourly Total	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
18:00	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
18:15	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
18:30	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
18:45	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
Hourly Total	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
Total	0	2	1	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	4

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Buses

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
06:15	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
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
06:45	0	0	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	1
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	1	0	0	0	5
08:00	0	0	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	1
08:15	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
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
08:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Hourly Total	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	5
09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
09:15	0	0	0	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	1
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
09:45	0	0	0	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	1
Hourly Total	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	6
10:00	0	0	0	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	1
10:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
10:30	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	6
10:45	0	0	1	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	2
Hourly Total	0	1	1	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	11
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
11:15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
11:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	4
11:45	0	1	0	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	2
Hourly Total	0	1	1	1	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	0	0	0	10
12:00	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
12:15	0	0	0	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	1
12:30	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4
12:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3
Hourly Total	1	1	1	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	11

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Buses

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
13:00	0	0	1	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	1
13:15	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
13:30	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	3
Hourly Total	0	0	3	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	9
14:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
14:15	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
14:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
14:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3
Hourly Total	0	0	0	2	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	11
15:00	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
15:15	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
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
15:45	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4
Hourly Total	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	5
16:00	0	0	0	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	1
16:15	1	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	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
16:45	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
Hourly Total	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:15	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
17:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
17:45	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
Hourly Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
18:30	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
18:45	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
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Total	2	5	8	3	0	0	0	4	8	11	2	0	0	0	0	2	0	0	0	0	0	3	11	21	4	0	0	0	84

Tri-State Traffic Data, Inc.

www.TSTData.com

Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

Date: 10-21-2025

Bicycles on Road

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
06:00	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
06:15	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
06:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
06:45	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
Hourly Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:00	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
07:15	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
07:30	0	1	1	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	2
07:45	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
Hourly Total	0	1	1	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	2
08:00	1	2	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	3
08:15	0	1	1	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	2
08:30	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
08:45	0	1	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	2
Hourly Total	1	4	1	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	7
09:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
09:15	0	0	0	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	1
09:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3
09:45	0	2	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	3
Hourly Total	0	5	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	10
10:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
10:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
10:30	1	1	1	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	4
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Hourly Total	1	1	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	9
11:00	0	2	1	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	3
11:15	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
11:30	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
11:45	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
Hourly Total	0	2	1	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	3
12:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	4
12:15	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
12:30	1	1	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	3
12:45	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hourly Total	2	3	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	11

Tri-State Traffic Data, Inc.

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Site: 12251-2

Intersection Name: Fore Street & Union Street

GPS: 43.65568, -70.255111

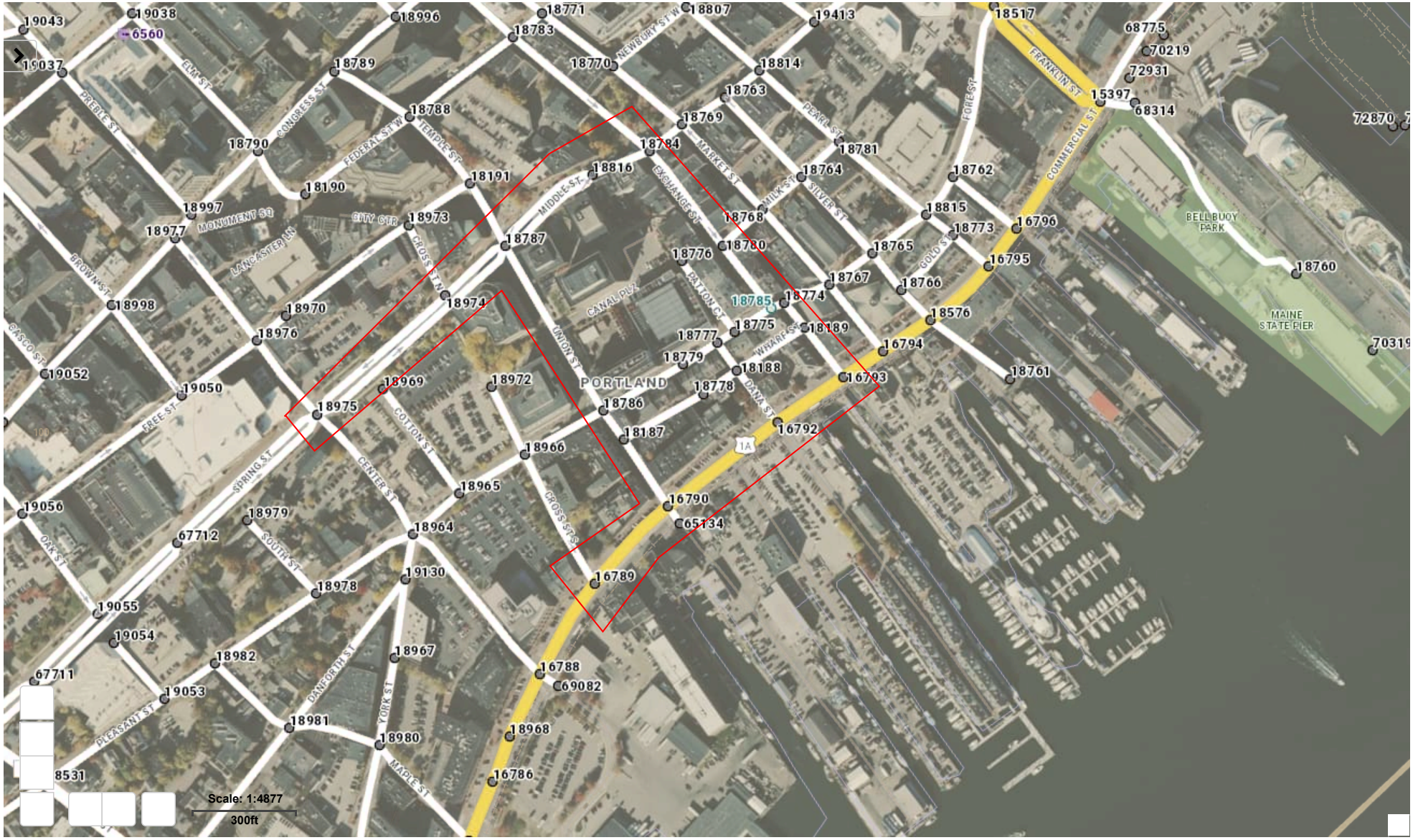
Date: 10-21-2025

Bicycles on Road

Leg	Fore Street							Fore Street							Union Street							Union Street							
Direction	EastBound							WestBound							NorthBound							SouthBound							
Start Time	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Left	Thru	Right	RTOR	U-Turn	Peds CW	Peds CCW	Int Total
13:00	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
13:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
13:30	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	6
13:45	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5
Hourly Total	1	2	1	0	0	0	0	0	4	0	0	0	0	0	2	0	0	0	0	0	0	1	1	1	0	0	0	0	13
14:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
14:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	4
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14:45	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	5
Hourly Total	0	1	0	0	0	0	0	1	3	0	0	0	0	0	2	1	0	0	0	0	0	1	2	1	0	0	0	0	12
15:00	0	3	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
15:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
15:45	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	5	0	0	0	0	0	0	3	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	12
16:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	4
16:15	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3
16:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	5
Hourly Total	1	0	2	0	0	0	0	1	1	0	0	0	0	0	2	4	0	0	0	0	0	0	3	1	0	0	0	0	15
17:00	1	1	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	3
17:15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:30	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	4
17:45	0	2	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	2
Hourly Total	3	4	0	0	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	12
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
18:30	0	1	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	1
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	6
Total	9	29	8	0	0	0	0	3	20	2	0	0	0	0	11	11	1	0	0	0	0	5	12	3	0	0	0	0	114

APPENDIX B

- **MAINEDOT CRASH DATA**


19043
19038
6560
19037
18996
18771
18783
18807
19413
18517
68775
70219
72931
15397
68314
72870
18789
18770
18814
18763
18788
18769
18790
18784
18781
18816
18764
18762
18191
18190
18997
18977
18973
18768
18815
18773
16796
18787
18780
18765
16795
18760
18776
18767
18766
18998
18970
18974
18785
18774
18576
18976
18775
18189
18777
16794
70319
19052
18779
18188
16793
18761
19050
18969
18972
18778
18975
18786
16792
18187
18966
18965
16790
19056
18979
65134
67712
18964
19130
16789
18978
19055
19054
18982
18967
16788
67711
69082
19053
18981
18968
18980
16786
8531
Scale: 1:4877
300ft
PORTLAND
BELL BUOY PARK
MAINE STATE PIER
ELM ST
PREBLE ST
CONGRESS ST
FEDERAL ST W
TEMPLE ST
NEWBURY ST W
MIDDLE ST
EXCHANGE ST
MARKET ST
MILK ST
SILVER ST
PEARL ST
FORE ST
FRANKLIN ST
COMMERCIAL ST
GOLD ST
MONUMENT SQ
CITY CTR
LANCASTER LN
BROWN ST
CROSS ST N
CANAL PLZ
PATTON CT
WHARF ST
DANA ST
UNION ST
GASCO ST
FREE ST
SPRING ST
COTTON ST
CENTER ST
CROSS ST S
OAK ST
SOUTH ST
DANFORTH ST
YORK ST
PLEASANT ST
MAPLE ST
1A

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Portland
Spring St-Middle St-Exchange St-Moulton St-Union St-Commercial St area

REPORT PARAMETERS

Year 2022, Start Month 1 through Year 2024 End Month: 12

Route: 3209786	Start Node: 18975	Start Offset: 0	☐ Exclude First Node
	End Node: 18816	End Offset: 0	☑ Exclude Last Node
Route: 0560505	Start Node: 18816	Start Offset: 0	☐ Exclude First Node
	End Node: 18784	End Offset: 0	☐ Exclude Last Node
Route: 0560505	Start Node: 18787	Start Offset: 0	☑ Exclude First Node
	End Node: 18816	End Offset: 0	☑ Exclude Last Node
Route: 0560672	Start Node: 18974	Start Offset: 0	☑ Exclude First Node
	End Node: 18787	End Offset: 0	☑ Exclude Last Node
Route: 0560672	Start Node: 18975	Start Offset: 0	☑ Exclude First Node
	End Node: 18974	End Offset: 0	☑ Exclude Last Node
Route: 0560258	Start Node: 18785	Start Offset: 0	☑ Exclude First Node
	End Node: 18784	End Offset: 0	☑ Exclude Last Node
Route: 0560523	Start Node: 16793	Start Offset: 0	☑ Exclude First Node
	End Node: 18774	End Offset: 0	☑ Exclude Last Node
Route: 0560569	Start Node: 18775	Start Offset: 0	☑ Exclude First Node
	End Node: 18776	End Offset: 0	☐ Exclude Last Node
Route: 0560188	Start Node: 16792	Start Offset: 0	☑ Exclude First Node
	End Node: 18777	End Offset: 0	☑ Exclude Last Node
Route: 0560719	Start Node: 16790	Start Offset: 0	☑ Exclude First Node
	End Node: 18787	End Offset: 0	☑ Exclude Last Node
Route: 3201882	Start Node: 16790	Start Offset: 0	☑ Exclude First Node

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Portland
Spring St-Middle St-Exchange St-Moulton St-Union St-Commercial St area

REPORT PARAMETERS

Year 2022, Start Month 1 through Year 2024 End Month: 12

	End Node: 65134	End Offset: 0	☐ Exclude Last Node
Route: 0560286	Start Node: 18774	Start Offset: 0	☐ Exclude First Node
	End Node: 18786	End Offset: 0	☑ Exclude Last Node
Route: 0560742	Start Node: 18187	Start Offset: 0	☑ Exclude First Node
	End Node: 18189	End Offset: 0	☑ Exclude Last Node
Route: 0001A	Start Node: 16789	Start Offset: 0	☐ Exclude First Node
	End Node: 16793	End Offset: 0	☐ Exclude Last Node

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
18975	3209786 - 0.27	Int of CENTER ST SPRING ST	9	5	0	0	0	2	3	40.0	4.010	0.42	1.27	0.00
												Statewide Crash Rate:	0.69	
18787	3209786 - 0.41	Int of SPRING ST TEMPLE ST UNION ST	9	5	0	0	1	1	3	40.0	3.649	0.46	1.29	0.00
												Statewide Crash Rate:	0.69	
18784	0560505 - 0.09	Int of EXCHANGE ST MIDDLE ST SPRING ST	2	3	0	0	1	0	2	33.3	2.379	0.42	0.41	1.03
												Statewide Crash Rate:	0.13	
18816	0560505 - 0.06	Non Int SPRING ST	2	0	0	0	0	0	0	0.0	2.119	0.00	0.42	0.00
												Statewide Crash Rate:	0.13	
18780	0560258 - 0.04	Int of EXCHANGE ST MILK ST	2	0	0	0	0	0	0	0.0	0.625	0.00	0.54	0.00
												Statewide Crash Rate:	0.13	
18189	0560523 - 0.03	Int of MOULTON ST WHARF ST	2	0	0	0	0	0	0	0.0	0.324	0.00	0.56	0.00
												Statewide Crash Rate:	0.13	
18776	0560569 - 0.05	End of PATTON CT	2	0	0	0	0	0	0	0.0	0.025	0.00	-3.18	0.00
												Statewide Crash Rate:	0.13	
18188	0560188 - 0.04	Int of DANA ST WHARF ST	2	0	0	0	0	0	0	0.0	0.195	0.00	0.49	0.00
												Statewide Crash Rate:	0.13	
18187	0560719 - 0.04	Int of UNION ST WHARF ST	2	0	0	0	0	0	0	0.0	1.065	0.00	0.49	0.00
												Statewide Crash Rate:	0.13	
18786	0560719 - 0.06	Int of FORE ST UNION ST	9	5	0	0	0	1	4	20.0	2.620	0.64	1.39	0.00
												Statewide Crash Rate:	0.69	
65134	3201882 - 0.01	End of UNION WHARF Z RD	2	0	0	0	0	0	0	0.0	0.262	0.00	0.54	0.00
												Statewide Crash Rate:	0.13	
18777	0560286 - 0.83	Int of DANA ST FORE ST	2	2	0	0	0	0	2	0.0	0.939	0.71	0.51	1.40
												Statewide Crash Rate:	0.13	
18779	0560286 - 0.85	Non Int FORE ST	2	0	0	0	0	0	0	0.0	0.959	0.00	0.50	0.00
												Statewide Crash Rate:	0.13	
18775	0560286 - 0.82	Int of FORE ST PATTON CT	2	4	0	0	1	0	3	25.0	0.946	1.41	0.51	2.79
												Statewide Crash Rate:	0.13	
P18774	0560286 - 0.79	Int of FORE ST MOULTON ST	2	0	0	0	0	0	0	0.0	1.525	0.00	0.45	0.00
												Statewide Crash Rate:	0.13	
A18785	0560286 - 0.80	Int of EXCHANGE ST FORE ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.13	
18778	0560742 - 0.05	Non Int WHARF ST	2	0	0	0	0	0	0	0.0	0.092	0.00	0.09	0.00
												Statewide Crash Rate:	0.13	
18188	0560742 - 0.07	Int of DANA ST WHARF ST	2	0	0	0	0	0	0	0.0	0.195	0.00	0.49	0.00
												Statewide Crash Rate:	0.13	
16793	0001A - 11.60	Int of COMMERCIAL ST MOULTON ST	2	1	0	0	0	1	0	100.0	3.754	0.09	0.40	0.00
												Statewide Crash Rate:	0.15	
16792	0001A - 11.56	Int of COMMERCIAL ST DANA ST	2	3	0	0	0	1	2	33.3	3.594	0.28	0.41	0.00
												Statewide Crash Rate:	0.15	
16789	0001A - 11.43	Int of COMMERCIAL ST CROSS ST S	2	0	0	0	0	0	0	0.0	4.415	0.00	0.39	0.00
												Statewide Crash Rate:	0.15	
16790	0001A - 11.49	Int of COMMERCIAL ST UNION ST UNION WHARF Z RD	9	3	0	0	0	1	2	33.3	4.444	0.23	1.24	0.00
												Statewide Crash Rate:	0.69	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
Study Years:	3.00	NODE TOTALS:		31	0	0	3	7	21	32.3	38.136	0.27	0.49	0.55

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18975	18787	3417148	0 - 0.14	3209786 - 0.27	0.14	2	5	0	2	0	0	3	40.0	0.00147	1133.28	528.05	2.15
Int of CENTER ST SPRING ST				RD INV 3209786											Statewide Crash Rate: 156.39		
18787	18816	3417149	0 - 0.06	3209786 - 0.41	0.06	2	1	0	0	0	0	1	0.0	0.00065	511.79	629.28	0.00
Int of SPRING ST TEMPLE ST UNION ST				RD INV 3209786											Statewide Crash Rate: 156.39		
18784	18816	3129296	0 - 0.03	0560505 - 0.06	0.03	2	1	0	0	0	0	1	0.0	0.00062	537.64	634.53	0.00
Int of EXCHANGE ST MIDDLE ST SPRING ST				RD INV 05 60505											Statewide Crash Rate: 156.39		
18787	18816	3123997	0 - 0.06	0560505 - 0	0.06	2	3	0	0	0	0	3	0.0	0.00059	1699.37	639.88	2.66
Int of SPRING ST TEMPLE ST UNION ST				RD INV 05 60505											Statewide Crash Rate: 156.39		
18787	18974	194373	0 - 0.04	0560672 - 1.13	0.04	2	1	0	0	0	0	1	0.0	0.00042	785.38	666.50	1.18
Int of SPRING ST TEMPLE ST UNION ST				RD INV 05 60672											Statewide Crash Rate: 156.39		
18974	18975	3119282	0 - 0.10	0560672 - 1.03	0.10	2	1	0	0	0	0	1	0.0	0.00197	169.40	490.97	0.00
Int of CROSS ST N SPRING ST				RD INV 05 60672											Statewide Crash Rate: 156.39		
18780	18785	194362	0 - 0.04	0560258 - 0	0.04	2	3	0	0	0	0	3	0.0	0.00018	5707.76	1561.32	3.66
Int of EXCHANGE ST MILK ST				RD INV 05 60258											Statewide Crash Rate: 365.24		
18780	18784	5080251	0 - 0.06	0560258 - 0.04	0.06	2	8	0	0	0	0	8	0.0	0.00034	7876.17	1417.69	5.56
Int of EXCHANGE ST MILK ST				RD INV 05 60258											Statewide Crash Rate: 365.24		
16793	18189	192474	0 - 0.03	0560523 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00011	0.00	1554.79	0.00
Int of COMMERCIAL ST MOULTON ST				RD INV 05 60523											Statewide Crash Rate: 365.24		
18189	18774	5080241	0 - 0.02	0560523 - 0.03	0.02	2	1	0	0	0	0	1	0.0	0.00006	5809.43	1212.86	4.79
Int of MOULTON ST WHARF ST				RD INV 05 60523											Statewide Crash Rate: 365.24		
18775	18776	5206226	0 - 0.05	0560569 - 0	0.05	2	7	0	0	0	0	7	0.0	0.00002	94010.21	-644.54	0.00
Int of FORE ST PATTON CT				RD INV 05 60569											Statewide Crash Rate: 365.24		
16792	18188	5918548	0 - 0.04	0560188 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00007	0.00	1336.84	0.00
Int of COMMERCIAL ST DANA ST				RD INV 05 60188											Statewide Crash Rate: 365.24		
18188	18777	5080243	0 - 0.02	0560188 - 0.04	0.02	2	0	0	0	0	0	0	0.0	0.00003	0.00	135.29	0.00
Int of DANA ST WHARF ST				RD INV 05 60188											Statewide Crash Rate: 365.24		
16790	18187	3131647	0 - 0.04	0560719 - 0	0.04	2	5	0	0	0	0	5	0.0	0.00039	4315.89	671.26	6.43
Int of COMMERCIAL ST UNION ST UNION WHARF Z RD				RD INV 05 60719											Statewide Crash Rate: 156.39		
18187	18786	3122284	0 - 0.02	0560719 - 0.04	0.02	2	1	0	0	0	1	0	100.0	0.00020	1700.64	634.55	2.68
Int of UNION ST WHARF ST				RD INV 05 60719											Statewide Crash Rate: 156.39		
18786	18787	3106806	0 - 0.10	0560719 - 0.06	0.10	2	3	0	0	0	0	3	0.0	0.00150	667.25	525.62	1.27
Int of FORE ST UNION ST				RD INV 05 60719											Statewide Crash Rate: 156.39		
16790	65134	2783199	0 - 0.01	3201882 - 0	0.01	2	0	0	0	0	0	0	0.0	0.00005	0.00	1110.58	0.00
Int of COMMERCIAL ST UNION ST UNION WHARF Z RD				RD INV 3201882											Statewide Crash Rate: 365.24		
18774	18785	3121699	0 - 0.01	0560286 - 0.79	0.01	2	0	0	0	0	0	0	0.0	0.00024	0.00	663.20	0.00
Int of FORE ST MOULTON ST				RD INV 05 60286											Statewide Crash Rate: 156.39		
18775	18785	5206225	0 - 0.02	0560286 - 0.80	0.02	2	6	0	0	0	0	6	0.0	0.00018	10828.96	622.55	17.39
Int of FORE ST PATTON CT				RD INV 05 60286											Statewide Crash Rate: 156.39		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
18775	18777	5206224	0 - 0.01	0560286 - 0.82	0.01	2	0	0	0	0	0	0	0.0	0.00009	0.00	282.69	0.00
Int of FORE ST PATTON CT				RD INV 05 60286											Statewide Crash Rate: 156.39		
18777	18779	3106803	0 - 0.02	0560286 - 0.83	0.02	2	6	0	0	1	0	5	16.7	0.00019	10429.11	630.37	16.54
Int of DANA ST FORE ST				RD INV 05 60286											Statewide Crash Rate: 156.39		
18779	18786	3106804	0 - 0.05	0560286 - 0.85	0.05	2	8	0	1	0	0	7	12.5	0.00048	5562.19	658.18	8.45
Non Int FORE ST				RD INV 05 60286											Statewide Crash Rate: 156.39		
18187	18778	5080242	0 - 0.05	0560742 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00005	0.00	932.51	0.00
Int of UNION ST WHARF ST				RD INV 05 60742											Statewide Crash Rate: 365.24		
18188	18778	5095052	0 - 0.02	0560742 - 0.05	0.02	2	0	0	0	0	0	0	0.0	0.00002	0.00	-2067.77	0.00
Int of DANA ST WHARF ST				RD INV 05 60742											Statewide Crash Rate: 365.24		
18188	18189	193776	0 - 0.04	0560742 - 0.07	0.04	2	0	0	0	0	0	0	0.0	0.00003	0.00	-22.46	0.00
Int of DANA ST WHARF ST				RD INV 05 60742											Statewide Crash Rate: 365.24		
16789	16790	3120311	0 - 0.06	0001A - 11.43	0.06	2	7	0	0	1	0	6	14.3	0.00237	983.25	571.58	1.72
Int of COMMERCIAL ST CROSS ST S				US 1A											Statewide Crash Rate: 204.85		
16790	16792	3943906	0 - 0.07	0001A - 11.49	0.07	2	11	0	0	0	0	11	0.0	0.00241	1521.52	569.31	2.67
Int of COMMERCIAL ST UNION ST UNION WHARF Z RD				US 1A											Statewide Crash Rate: 204.85		
16792	16793	3131648	0 - 0.04	0001A - 11.56	0.04	2	7	0	0	0	0	7	0.0	0.00137	1707.27	658.69	2.59
Int of COMMERCIAL ST DANA ST				US 1A											Statewide Crash Rate: 204.85		
Study Years: 3.00				Section Totals:	1.25		85	0	3	2	1	79	7.1	0.01609	1761.02	337.27	5.22
				Grand Totals:	1.25		116	0	3	5	8	100	13.8	0.01609	2403.28	474.43	5.07

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
18975	18787	3417148	0 - 0.14	3209786 - 0.27	5	0	2	0	0	3	2024-36721	12/19/2024	0.29	PD
											2023-29265	10/07/2023	0.32	A
											2024-26494	09/25/2024	0.33	A
											2022-27985	10/01/2022	0.34	PD
											2023-35877	12/02/2023	0.39	PD
18787	18816	3417149	0 - 0.06	3209786 - 0.41	1	0	0	0	0	1	2024-34652	12/04/2024	0.44	PD
18784	18816	3129296	0 - 0.03	0560505 - 0.06	1	0	0	0	0	1	2023-17556	06/21/2023	0.08	PD
18787	18816	3123997	0 - 0.06	0560505 - 0	3	0	0	0	0	3	2022-14389	05/25/2022	0.03	PD
											2024-6079	02/01/2024	0.05	PD
											2022-20298	07/20/2022	0.05	PD
18787	18974	194373	0 - 0.04	0560672 - 1.13	1	0	0	0	0	1	2023-33058	11/11/2023	1.15	PD
18974	18975	3119282	0 - 0.10	0560672 - 1.03	1	0	0	0	0	1	2022-8020	03/10/2022	1.11	PD
18780	18785	194362	0 - 0.04	0560258 - 0	3	0	0	0	0	3	2024-16101	06/17/2024	0.01	PD
											2024-26537	09/24/2024	0.01	PD
											2024-36415	12/18/2024	0.02	PD
18780	18784	5080251	0 - 0.06	0560258 - 0.04	8	0	0	0	0	8	2024-25086	09/11/2024	0.05	PD
											2022-35399	11/29/2022	0.06	PD
											2023-25585	09/01/2023	0.06	PD
											2024-35134	12/07/2024	0.07	PD
											2023-21714	07/29/2023	0.08	PD
											2022-18117	06/28/2022	0.08	PD
											2022-11163	04/15/2022	0.09	PD
											2024-25017	09/11/2024	0.09	PD
16793	18189	192474	0 - 0.03	0560523 - 0	0	0	0	0	0	0				
18189	18774	5080241	0 - 0.02	0560523 - 0.03	1	0	0	0	0	1	2024-35471	11/09/2024	0.04	PD
18775	18776	5206226	0 - 0.05	0560569 - 0	7	0	0	0	0	7	2024-18230	07/06/2024	0.03	PD
											2023-8059	03/13/2023	0.03	PD
											2023-21475	07/27/2023	0.03	PD
											2023-21115	07/23/2023	0.03	PD
											2022-30166	10/20/2022	0.04	PD
											2024-11072	04/26/2024	0.04	PD
											2024-23712	04/05/2024	0.04	PD
16792	18188	5918548	0 - 0.04	0560188 - 0	0	0	0	0	0	0				

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
18188	18777	5080243	0 - 0.02	0560188 - 0.04	0	0	0	0	0	0				
16790	18187	3131647	0 - 0.04	0560719 - 0	5	0	0	0	0	5	2024-21466	08/06/2024	0.01	PD
											2022-5887	02/20/2022	0.03	PD
											2022-3789	02/04/2022	0.03	PD
											2023-29413	10/09/2023	0.03	PD
											2022-9164	03/16/2022	0.03	PD
18187	18786	3122284	0 - 0.02	0560719 - 0.04	1	0	0	0	1	0	2022-24072	08/24/2022	0.05	C
18786	18787	3106806	0 - 0.10	0560719 - 0.06	3	0	0	0	0	3	2023-18910	07/05/2023	0.07	PD
											2023-22603	07/30/2023	0.13	PD
											2022-5611	02/18/2022	0.14	PD
16790	65134	2783199	0 - 0.01	3201882 - 0	0	0	0	0	0	0				
18774	18785	3121699	0 - 0.01	0560286 - 0.79	0	0	0	0	0	0				
18775	18785	5206225	0 - 0.02	0560286 - 0.80	6	0	0	0	0	6	2023-12132	04/27/2023	0.81	PD
											2023-16871	06/16/2023	0.81	PD
											2024-18300	07/08/2024	0.81	PD
											2022-4551	02/09/2022	0.81	PD
											2024-5292	02/20/2024	0.81	PD
											2022-38899	12/23/2022	0.81	PD
18775	18777	5206224	0 - 0.01	0560286 - 0.82	0	0	0	0	0	0				
18777	18779	3106803	0 - 0.02	0560286 - 0.83	6	0	0	1	0	5	2022-28010	10/02/2022	0.84	B
											2023-7962	03/10/2023	0.84	PD
											2022-28910	10/09/2022	0.84	PD
											2023-6678	03/02/2023	0.84	PD
											2022-27369	09/16/2022	0.84	PD
											2024-20050	07/23/2024	0.85	PD
18779	18786	3106804	0 - 0.05	0560286 - 0.85	8	0	1	0	0	7	2024-23935	08/31/2024	0.86	PD
											2024-14355	06/02/2024	0.86	PD
											2023-20241	07/17/2023	0.87	PD
											2024-18786	07/12/2024	0.88	A
											2022-19218	07/10/2022	0.88	PD
											2022-9305	03/24/2022	0.88	PD
											2023-21106	06/13/2023	0.89	PD
											2024-30000	10/26/2024	0.89	PD
18187	18778	5080242	0 - 0.05	0560742 - 0	0	0	0	0	0	0				

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
18188	18778	5095052	0 - 0.02	0560742 - 0.05	0	0	0	0	0	0				
18188	18189	193776	0 - 0.04	0560742 - 0.07	0	0	0	0	0	0				
16789	16790	3120311	0 - 0.06	0001A - 11.43	7	0	0	1	0	6	2022-29787	10/17/2022	11.46	PD
											2024-31304	11/08/2024	11.46	PD
											2023-21476	07/27/2023	11.48	B
											2023-24048	08/19/2023	11.48	PD
											2023-19865	07/13/2023	11.48	PD
											2023-28294	08/27/2023	11.48	PD
											2024-24714	09/06/2024	11.48	PD
16790	16792	3943906	0 - 0.07	0001A - 11.49	11	0	0	0	0	11	2024-18234	07/07/2024	11.50	PD
											2023-36965	12/08/2023	11.50	PD
											2023-29378	10/10/2023	11.50	PD
											2024-35335	12/09/2024	11.51	PD
											2023-21094	07/25/2023	11.51	PD
											2024-71	01/03/2024	11.52	PD
											2023-27642	09/17/2023	11.52	PD
											2023-40007	12/24/2023	11.53	PD
											2024-23574	08/27/2024	11.54	PD
											2024-20700	07/27/2024	11.54	PD
											2023-9821	03/30/2023	11.55	PD
16792	16793	3131648	0 - 0.04	0001A - 11.56	7	0	0	0	0	7	2024-9748	03/30/2024	11.58	PD
											2023-32403	11/04/2023	11.58	PD
											2023-11862	04/17/2023	11.58	PD
											2023-22604	08/02/2023	11.59	PD
											2023-784	01/11/2023	11.59	PD
											2023-17787	06/25/2023	11.59	PD
											2024-1089	01/13/2024	11.59	PD
				Totals:	85	0	3	2	1	79				

Crash Summary II - Characteristics

Crashes by Day and Hour

	AM												PM												
	Hour of Day																								
Day Of Week	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Un	Tot
SUNDAY	2	7	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1	0	0	0	0	0	15
MONDAY	1	2	0	0	0	0	0	0	0	1	1	2	2	0	0	0	1	0	0	0	0	0	1	1	0	12
TUESDAY	0	0	0	0	0	0	0	1	0	2	0	1	1	0	2	1	1	1	0	1	0	1	0	1	0	13
WEDNESDAY	0	0	0	0	0	0	0	0	0	2	0	2	1	1	2	1	3	2	0	0	1	1	0	2	0	18
THURSDAY	1	0	0	0	0	0	0	0	2	0	1	2	0	2	1	1	0	1	1	2	0	0	1	0	0	15
FRIDAY	1	1	0	0	0	0	0	0	0	1	1	1	0	2	3	0	2	2	3	1	1	1	0	2	0	22
SATURDAY	1	4	0	0	0	1	0	0	0	0	0	1	1	0	1	2	1	0	0	2	2	0	1	4	0	21
Totals	6	14	0	0	0	1	0	1	2	6	3	10	6	6	9	5	8	7	5	7	4	3	3	10	0	116

Vehicle Counts by Type

Unit Type	Total
1-Passenger Car	94
2-(Sport) Utility Vehicle	65
3-Passenger Van	2
4-Cargo Van (10K lbs or Less)	4
5-Pickup	33
6-Motor Home	0
7-School Bus	0
8-Transit Bus	1
9-Motor Coach	0
10-Other Bus	0
11-Motorcycle	1
12-Moped	0
13-Low Speed Vehicle	0
14-Autocycle	0
15-Experimental	0
16-Other Light Trucks (10,000 lbs or Less)	0
17-Medium/Heavy Trucks (More than 10,000 lbs)	7
18-ATV - (4 wheel)	0
20-ATV - (2 wheel)	0
21-Snowmobile	0
22-Pedestrian	8
23-Bicyclist	3
24-Witness	22
25-Other	11
26-Construction	0
27-Farm Vehicle	0
28-Horse and Buggy	0
Total	251

Crash Summary II - Characteristics

Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	10	50	2	1	0	0	63
Ran Off Roadway	1	0	0	0	0	0	1
Failed to Yield Right-of-Way	14	0	0	0	0	0	14
Ran Red Light	1	0	0	0	0	0	1
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	1	0	0	0	0	0	1
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	1	0	0	0	0	0	1
Improper Turn	9	0	0	0	0	0	9
Improper Backing	23	0	0	0	0	0	23
Improper Passing	3	0	0	0	0	0	3
Wrong Way	1	0	0	0	0	0	1
Followed Too Closely	11	1	0	0	0	0	12
Failed to Keep in Proper Lane	4	0	0	0	0	0	4
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	2	0	0	0	0	0	2
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	1	0	0	0	0	0	1
Over-Correcting/Over-Steering	0	1	0	0	0	0	1
Other Contributing Action	8	2	0	0	0	0	10
Unknown	2	2	0	0	0	0	4
Total	92	56	2	1	0	0	151

Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	82	57	2	1	0	6	148
Physically Impaired	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	1	0	0	0	0	1	2
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	7	0	0	0	0	4	11
Other	2	0	0	0	0	0	2
Total	92	57	2	1	0	11	163

Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	0	0	0	0	0	0
10-14	0	0	0	0	0	0
15-19	8	0	0	0	0	8
20-24	21	0	0	0	0	21
25-29	19	0	0	0	0	19
30-39	48	0	0	0	0	48
40-49	33	0	0	0	0	33
50-59	21	0	0	0	0	21
60-69	13	0	0	0	0	13
70-79	12	0	0	0	0	12
80-Over	3	0	0	0	0	3
Unknown	40	3	0	8	0	51
Total	218	3	0	8	0	229

Crash Summary II - Characteristics

Most Harmful Event

Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	0	38-Other Fixed Object (wall, building, tunnel, etc.)	1
2-Fire / Explosion	0	39-Unknown	0
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	Total	201
6-Fell / Jumped from Motor Vehicle	0		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	2		
10-Pedalcycle	1		
11-Railway Vehicle - Train, Engine	0		
12-Animal	0		
13-Motor Vehicle in Transport	161		
14-Parked Motor Vehicle	34		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0		
16-Work Zone / Maintenance Equipment	0		
17-Other Non-Fixed Object	0		
18-Impact Attenuator / Crash Cushion	0		
19-Bridge Overhead Structure	0		
20-Bridge Pier or Support	0		
21-Bridge Rail	0		
22-Cable Barrier	0		
23-Culvert	0		
24-Curb	0		
25-Ditch	0		
26-Embankment	0		
27-Guardrail Face	0		
28-Guardrail End	0		
29-Concrete Traffic Barrier	1		
30-Other Traffic Barrier	0		
31-Tree (Standing)	1		
32-Utility Pole / Light Support	0		
33-Traffic Sign Support	0		
34-Traffic Signal Support	0		
35-Fence	0		
36-Mailbox	0		
37-Other Post, Pole, or Support	0		

Injury Data

Severity Code	Injury Crashes	Number Of Injuries
K	0	0
A	3	3
B	5	6
C	8	10
PD	100	0
Total	116	19

Road Character

Road Grade	Total
1-Level	101
2-On Grade	14
3-Top of Hill	0
4-Bottom of Hill	1
5-Other	0
Total	116

Traffic Control Devices

Traffic Control Device	Total
1-Traffic Signals (Stop & Go)	31
2-Traffic Signals (Flashing)	1
3-Advisory/Warning Sign	0
4-Stop Signs - All Approaches	4
5-Stop Signs - Other	6
6-Yield Sign	0
7-Curve Warning Sign	0
8-Officer, Flagman, School Patrol	0
9-School Bus Stop Arm	0
10-School Zone Sign	0
11-R.R. Crossing Device	0
12-No Passing Zone	1
13-None	72
14-Other	1
Total	116

Light

Light Condition	Total
1-Daylight	62
2-Dawn	0
3-Dusk	1
4-Dark - Lighted	51
5-Dark - Not Lighted	1
6-Dark - Unknown Lighting	1
7-Unknown	0
Total	116

Crash Summary II - Characteristics

Crashes by Year and Month

Month	2022	2023	2024	Total
JANUARY	1	1	3	5
FEBRUARY	5	1	2	8
MARCH	3	6	1	10
APRIL	1	3	2	6
MAY	2	0	0	2
JUNE	2	6	2	10
JULY	3	9	7	19
AUGUST	1	6	4	11
SEPTEMBER	3	2	5	10
OCTOBER	5	3	3	11
NOVEMBER	3	4	4	11
DECEMBER	2	5	6	13
Total	31	46	39	116

Report is limited to the last 10 years of data.

Crash Summary II - Characteristics

Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Traffic Circle-Roundabout	Total
Object in Road	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Rear End - Sideswipe	68	1	6	7	0	1	0	0	0	0	0	0	0	0	83
Head-on - Sideswipe	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Intersection Movement	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
Pedestrians	2	0	0	4	0	0	0	0	0	0	0	0	0	0	6
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	7	0	0	3	0	1	0	0	0	0	0	0	0	0	11
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Other	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	84	1	8	21	0	2	0	0	0	0	0	0	0	0	116

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather / Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Blowing Sand, Soil, Dirt												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Blowing Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Clear												
Dark - Lighted	37	0	0	0	0	0	0	0	0	0	3	40
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	1	0	0	0	0	0	0	0	0	0	0	1
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	46	0	0	0	0	0	0	0	0	0	2	48
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	3	0	0	0	0	0	0	0	0	0	1	4
Dark - Not Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	6	1	0	0	0	0	0	0	0	0	3	10
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather / Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Fog, Smog, Smoke												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Other												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Rain												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	5	5
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	1	1
Dusk	0	0	0	0	0	0	0	0	0	0	1	1
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Severe Crosswinds												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather / Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Sleet, Hail (Freezing Rain or Drizzle)												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	1	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	1	0	0	0	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Snow												
Dark - Lighted	0	0	0	0	0	0	0	1	0	0	0	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	1	0	0	1	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	94	1	0	0	0	0	0	3	0	0	18	116

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

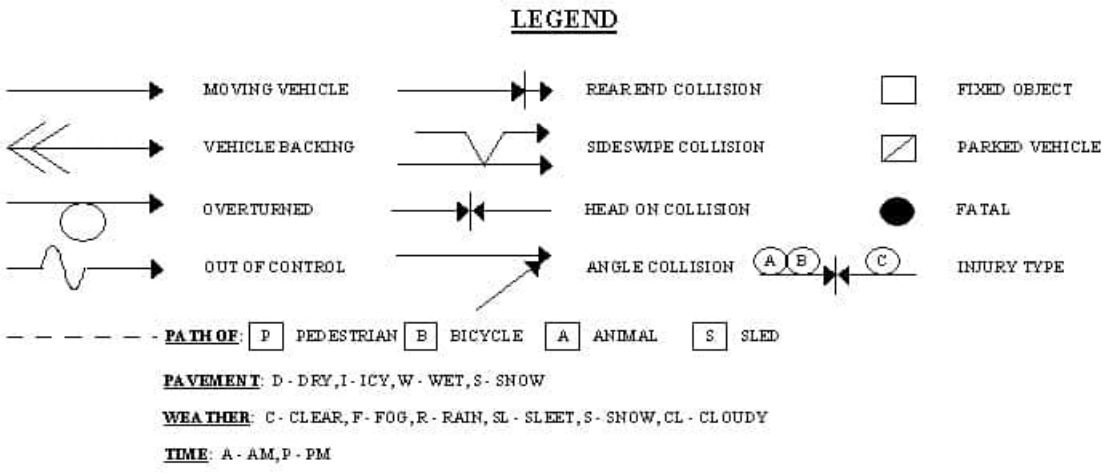
LOW NODE: **18780** HIGH NODE: **18784** REGION: **1** U/R: **URBAN**

DESCRIPTION: **Exchange St from Milk St to Middle St**

RTE # / RD #: **0560258** DATE DRAWN: **4/4/2025** DRAWN BY: **Duncan**

STUDY FROM: **1/1/2021** STUDY TO: **12/31/2023**

CRASH RATE: **7876.17** CRF: **5.56** % INJURY: **0** TOTAL CRASHES: **8**



Portland

Link: 18780-18784

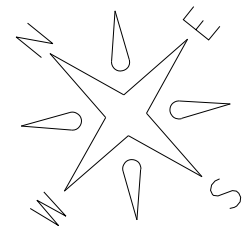
Element: 19436

Study Period: 2022-2024

of Crashes: 8 / CRF: 5.56

Prepared by Office of Safety & Mobility

(DS 4/4/25)



18784

Key Bank

18780

Exchange St

ONE WAY

25017 9-11-24 9:22A D/C Improper Backing

18117 6-28-22 12:39P D/C Improper Backing

35134 12-7-24
12:50A D/C OUI

25585 9-1-23 1:01P D/C Fail to Keep in Lane
struck open door

25086 9-11-24 1:20P D/C
Improper Turn

11163 4-15-22 10:36A D/C
Fail to Yield

21714 7-29-23 10:37P D/C Improper Turn

35399 11-29-22 9:30A D/CL Improper Turn

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

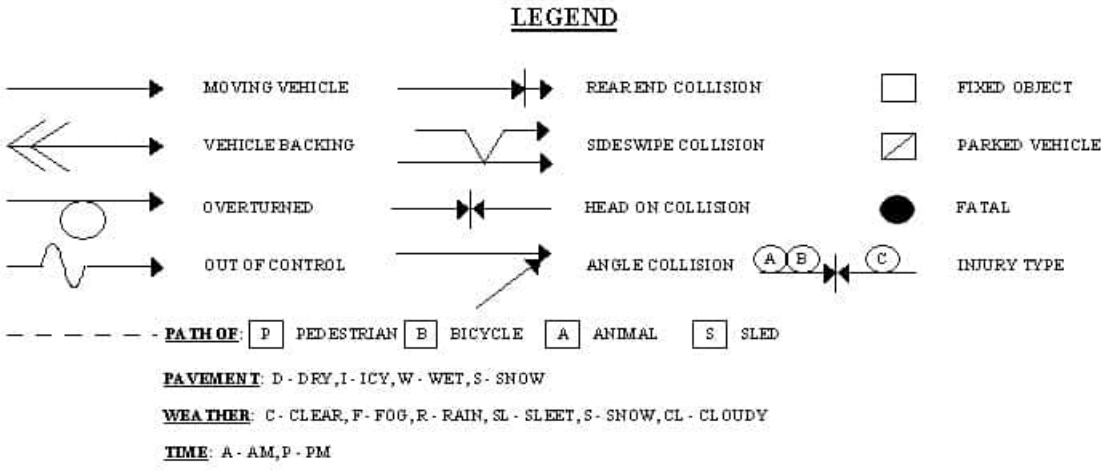
LOW NODE: **18779** HIGH NODE: **18786** REGION: **1** U/R: **URBAN**

DESCRIPTION: **Fore St from Non Int Fore St to Union St**

RTE # / RD #: **0560286** DATE DRAWN: **4/4/2025** DRAWN BY: **Duncan**

STUDY FROM: **1/1/2021** STUDY TO: **12/31/2023**

CRASH RATE: **5562.19** CRF: **8.45** % INJURY: **12.5** TOTAL CRASHES: **8**



Portland

Link: 18779-18786

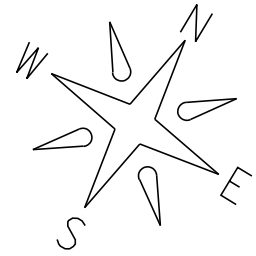
Element: 3106804

Study Period: 2022-2024

# of Crashes: 8 / CRF: 8.45

Prepared by Office of Safety & Mobility

(DS 4/4/25)



18786

18779

Fore St.

C A 18786 7-12-24 1:32A
D/C OUI

20241 7-17-23 11:05A D/C
Hit & Run

23935 8-31-24 1:32A
D/C Hit & Run

21106 6-13-23 11:00P W/R
Improper Backing

19218 7-10-22 1:19A D/C
Improper Backing

9305 3-24-22 12:53A D/C
Fail To Keep In Lane

30000 10-26-24 5:00A D/C
Improper Backing

light pole

14355 6-2-24 12:05P D/C
Fail to Yield

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

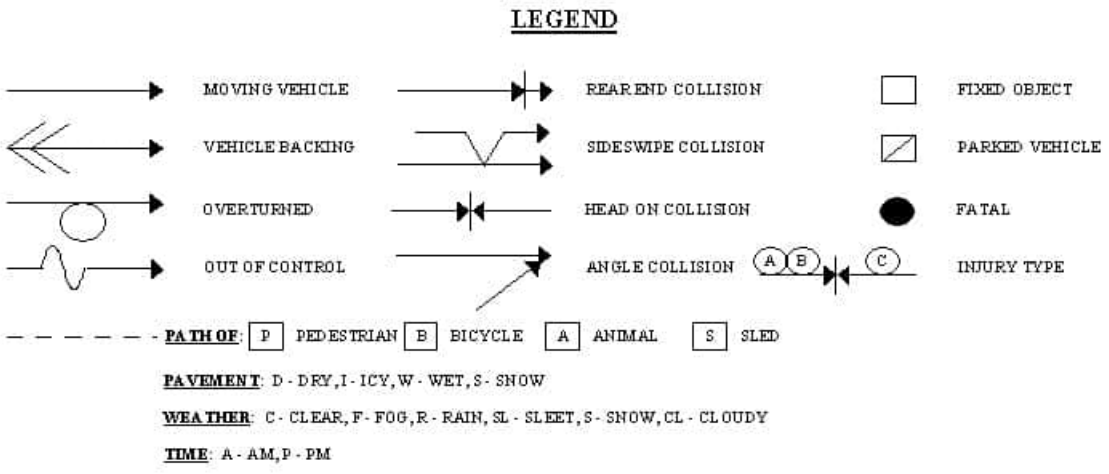
LOW NODE: **16790** HIGH NODE: **16792** REGION: **1** U/R: **URBAN**

DESCRIPTION: **Commercial St from Union St to Dana St**

RTE # / RD #: **0001A** DATE DRAWN: **4/7/2025** DRAWN BY: **Duncan**

STUDY FROM: **1/1/2021** STUDY TO: **12/31/2023**

CRASH RATE: **1521.52** CRF: **2.67** % INJURY: **0** TOTAL CRASHES: **11**



Portland

Link: 16790-16792

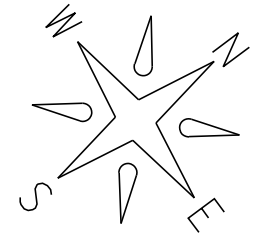
Element: 3943906

Study Period: 2022-2024

of Crashes: 11 / CRF: 2.67

Prepared by Office of Safety & Mobility

(DS 4-7-25)



16790

16792

36965 12-8-23 6:24P D/C
Improper backing

7111-3-24 3:20P D/C
Improper Backing

40007 12-24-23 6:45P
D/C Hit & Run

27642 9-17-23 7:45P D/C Fail to yield

18234 7-7-24 1:00A D/C
Fail to Keep in Lane

21094 7-25-23 9:02A D/C Improper backing

9821 3-30-23 1:02P D/C
Improper backing

20700 7-27-24 1:30A
D/C Hit & Run

29378 10-10-23 2:28P D/CL
Improper backing

Commercial St.
Rte. 1A

23574 8-27-24 3:02P D/C Hit & Run

35335 12-9-24 11:56P S/S Road Conditions
tire struck curb, side airbags deployed

Motorcycle Parking Spots

Widgery Wharf/MSRC

APPENDIX C

- **DEED**

Book 35559, Page 67
4/4/2019 10:27 a.m.

SHORT FORM QUITCLAIM DEED WITHOUT COVENANT

DLN: 1001940053979

COW PLAZA 1 LLC, a Maine limited liability company with a place of business at Portland, Maine ("Grantor"), FOR CONSIDERATION PAID, grants to **KOWTOWER LLC**, a Maine limited liability company with a mailing address of 100 Commercial Street, Portland, Maine 04101 ("Grantee"), certain real property, together with any improvements thereon, located in the City of Portland, Cumberland County, Maine and more particularly described on Exhibit A attached hereto and made a part hereof.

Being a portion of the premises conveyed to the Grantor by deed from GRE Congress Canal LLC dated December 22, 2009 and recorded in the Cumberland County Registry of Deeds in Book 27480, Page 310.

IN WITNESS WHEREOF, Cow Plaza 1 LLC has caused this instrument to be executed by J. Tim Soley, Manager of East Brown Cow Holdings II LLC, the Sole Member of Cow Plaza 1 LLC thereunto duly authorized, as of this 3rd day of April, 2019.

WITNESS:

Name:

COW PLAZA 1 LLC

By: East Brown Cow Holdings II LLC
Its Sole Member

By: _____
J. Tim Soley
Its Manager

State of Maine
County of Cumberland, ss.

April 2nd, 2019

Personally appeared before me the above named J. Tim Soley, Manager of East Brown Cow Holdings II LLC, the Sole Member of Cow Plaza 1 LLC, as aforesaid, and acknowledged the above instrument to be his free act and deed in his said capacity and the free act and deed of said Cow Plaza 1 LLC.

MARINA WAISMAN
NOTARY PUBLIC
CUMBERLAND COUNTY
MAINE
MY COMMISSION EXPIRES JUNE 9, 2023

Before me,

Name: Marina Waisman
Notary Public / Attorney at Law

1

EXHIBIT A

A certain lot or parcel of land, with the buildings and other improvements thereon, located on the southwesterly side of Exchange Street, in the City of Portland, County of Cumberland, State of Maine, being bound and described as follows:

BEGINNING on the southwesterly side of Exchange Street at the easterly corner of land now or formerly (N/F) of Fitzgibbons Family Trust, as described in Book 26232, Page 250, recorded in the Cumberland County Registry of Deeds;

THENCE: S 37°49'46" E, along said Exchange Street, 23.55', to the northerly corner of land N/F of 44 Exchange Street, LLC, as described in Book 25643, Page 195;

THENCE: S 51°16'00" W, along said 44 Exchange Street, LLC, 43.00', to a point;

THENCE: S 60°12'30" W, along said 44 Exchange Street, LLC, 37.84', to the westerly corner of said 44 Exchange Street, LLC;

THENCE: S 37°23'00" E, along said 44 Exchange Street, LLC, 26.57', to a point;

THENCE: S 13°55'30" E, along said 44 Exchange Street, LLC, 19.71', to a point;

THENCE: S 59°00'30" W, along said 44 Exchange Street, LLC, 12.59', to a point;

THENCE: S 37°00'30" E, along said 44 Exchange Street, LLC, 26.00', to the northwesterly end of Patton Court;

THENCE: continuing S 37°00'30" E, along said Patton Court, 57.94', to the northerly corner of land of Cow Plaza Garage LLC, as described in Book 27480, Page 325;

THENCE: S 59°56'30" W, along said Cow Plaza Garage LLC, 139.44', to a point;

THENCE: N 29°47'06" W, through land of the Grantor, 64.50', to a point;

THENCE: N 60°12'54" E, through land of said Grantor, 10.00', to a point;

THENCE: N 29°47'06" W, through land of said Grantor, 24.00', to a point;

THENCE: S 60°12'54" W, through land of said Grantor, 10.00', to a point;

THENCE: N 29°47'06" W, through land of said Grantor, 52.00', to a point;

THENCE: N 60°12'54" E, through land of said Grantor, 12.82', to a point;

THENCE: N 29°47'06" W, through land of said Grantor, 28.00', to a point on the southeasterly line of land of Cow Plaza 3 LLC, as described in Book 27480, Page 335;

THENCE: N 60°12'54" E, along said Cow Plaza 3 LLC, 25.00', to a point;

THENCE: N 30°34'30" W, along said Cow Plaza 3 LLC, 3.62', to the southerly corner of land N/F of Middle Street Holdings, LLC, as described in Book 31724, Page 277;

THENCE: N 59°03'34" E, along said Middle Street Holdings, LLC, 21.89', to a point;

THENCE: S 30°56'26" E, along said Middle Street Holdings, LLC, 1.00', to a point;

THENCE: N 59°18'12" E, along said Middle Street Holdings, LLC, 27.42', to a point;

THENCE: S 30°41'48" E, along said Middle Street Holdings, LLC, 1.77', to a point;

THENCE: N 59°42'35" E, along said Middle Street Holdings, LLC, 17.31', to a point;

THENCE: S 29°57'00" E, along said Middle Street Holdings, LLC, 1.13', to a point;

THENCE: N 59°27'00" E, along said Middle Street Holdings, LLC, 20.88', to a point;

THENCE: N 69°43'00" E, along said Middle Street Holdings, LLC, 21.60', to a point;

THENCE: N 79°11'00" E, along said Middle Street Holdings, LLC, 27.13', to the southerly corner of said Fitzgibbons Family Trust;

THENCE: continuing N 79°11'00" E, along said Fitzgibbons Family Trust, 5.61', to a point;

THENCE: S 37°49'00" E, along said Fitzgibbons Family Trust, 2.45', to a point;

THENCE: N 51°21'00" E, along said Fitzgibbons Family Trust, 42.96', to the POINT of BEGINNING.

The above described parcel contains 25,159 square feet.

Bearings for the above described parcel are based on the Maine State Coordinate System, West Zone 1813, Grid North.

The above described parcel is shown on plan entitled "Mortgage Release/Retention Plan, Canal Plaza, Portland, Maine, prepared by Northeast Civil Solutions, Inc., dated December 7, 2018, NCS Project No. 29696.14.

This conveyance is made together with the benefit of and subject to the rights of Grantor and others which are expressly reserved hereby, and the terms and conditions of, that certain Reciprocal Easement Agreement among Grantor, Cow Plaza 2 LLC, Cow Plaza 3 LLC and Cow Plaza Garage LLC dated December 22, 2009 and recorded in the Cumberland County Registry of Deeds in Book 27481, Page 1, as affected by Partial Releases recorded in said Registry of Deeds in Book 30060, Page 93, Book 30060, Page 95, Book 30361, Page 232, and Book 30361, Page 234.

APPENDIX D

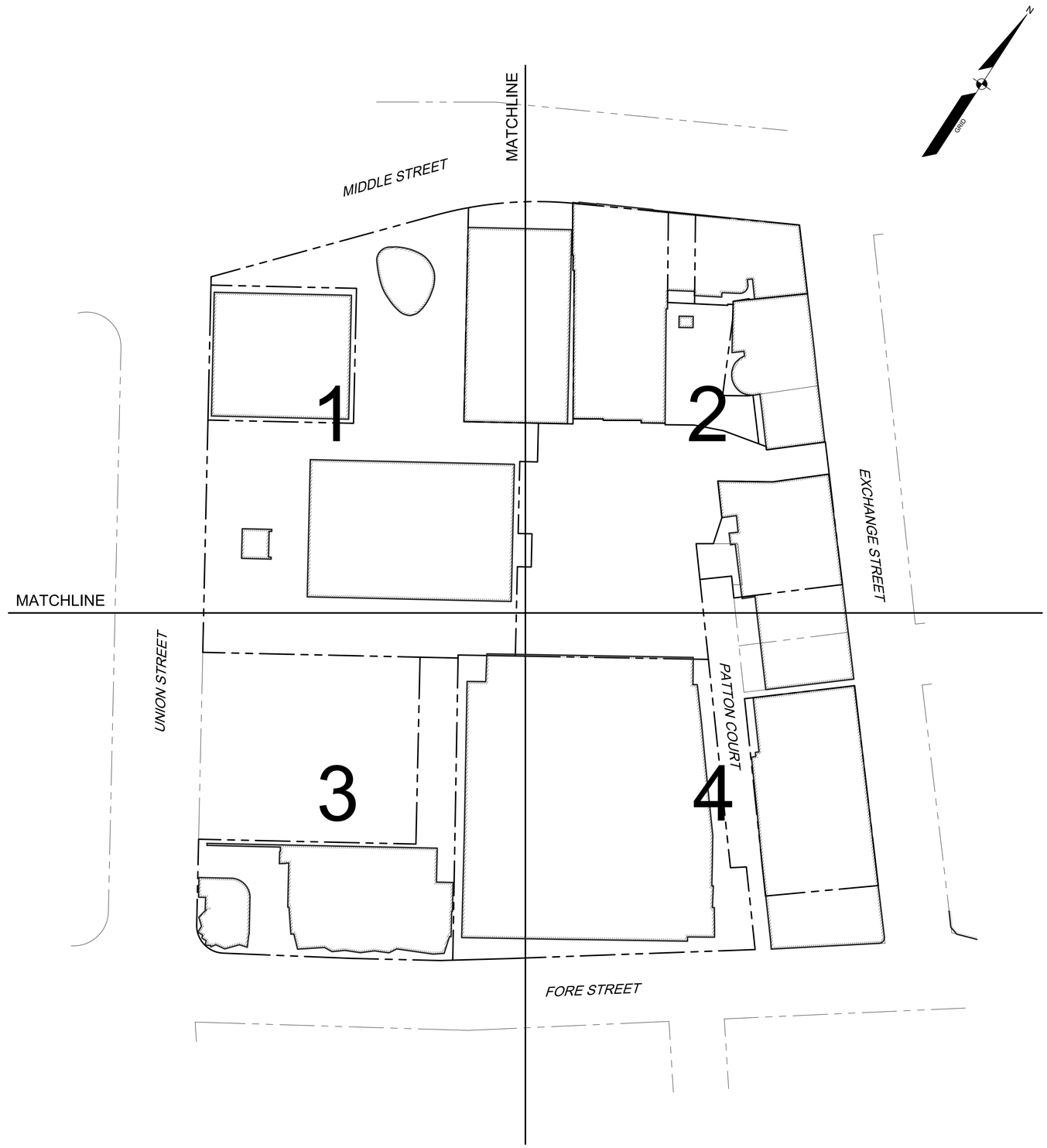
- SURVEY PLAN
- SITE PLAN

SHEET INDEX:

SH. 1	COVER SHEET & NOTES
SH. 2	BOUNDARY SURVEY - 1
SH. 3	BOUNDARY SURVEY - 2
SH. 4	BOUNDARY SURVEY - 3
SH. 5	BOUNDARY SURVEY - 4
SH. 6	TOPOGRAPHY PLAN - 1
SH. 7	TOPOGRAPHY PLAN - 2
SH. 8	TOPOGRAPHY PLAN - 3
SH. 9	TOPOGRAPHY PLAN - 4
SH. 10	UTILITY PLAN - 1
SH. 11	UTILITY PLAN - 2
SH. 12	UTILITY PLAN - 3
SH. 13	UTILITY PLAN - 4
SH. 14	STRUCTURE TABLE

LEGEND

EXISTING	DESCRIPTION
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	EASEMENT
	MONUMENT (FOUND)
	IRON MARKER (FOUND)
N / F	NOW OR FORMERLY
32(I)-33	TAX MAP (BLOCK), LOT NUMBER
	BUILDING
	DECK/STEPS
	OVERHANG
	LEDGE
	EDGE OF PAVEMENT
	EDGE OF CONCRETE
	EDGE OF BRICK
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
120 118	CONTOURS
	CHAIN LINK FENCE
	STOCKADE FENCE
	RETAINING WALL
	DECIDUOUS TREE
	SHRUB
	STUMP
	MULCH LINE
	BOLLARD
	SIGN
G	GAS
	GAS GATE VALVE
GM	GAS METER
G	GAS MANHOLE
W	WATER
	WATER GATE VALVE
	WATER SHUT OFF
	HYDRANT
W	WATER MANHOLE
	IRRIGATION BOX
	IRRIGATION VALVE
	YARD DRAIN (YD)
	FIRE SPIGGOT
MW	MONITORING WELL
MH	MANHOLE
S	SANITARY SEWER
S	SANITARY MANHOLE
	SANITARY CLEAN OUT
SD	STORM DRAIN
D	DRAINAGE MANHOLE
	CATCH BASIN
	DRAINAGE CLEAN OUT
OHU	OVERHEAD UTILITY
UGT	UNDERGROUND COMMUNICATIONS
UGE	UNDERGROUND ELECTRIC
UGU	UNKNOWN UNDERGROUND UTILITY
T	TRANSFORMER PAD
C	COMMUNICATIONS BOX
E	ELECTRICAL MANHOLE
EM	ELECTRIC METER
H	HVAC UNIT
C	COMMUNICATIONS MANHOLE
	HANDHOLE
	LIGHT POLE
	MAILBOX
	PARKING METER



GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

GENERAL NOTES:

1. BOOK AND PAGE NUMBERS ARE REFERENCED TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS UNLESS NOTED OTHERWISE. VAULT AND VOLUME NUMBERS ARE REFERENCED TO THE CITY OF PORTLAND ENGINEERING DIVISION ARCHIVES.
2. BASIS OF BEARING IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, GEOID18, IN U.S. SURVEY FEET, BASED ON DUAL FREQUENCY GNSS OBSERVATIONS. ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND VERTICAL DATUM, BASED UPON A LEVEL RUN FROM THE CITY OF PORTLAND BENCHMARK AT CITY HALL BUILDING, CARD REFERENCE L.B. 786/188.
3. AREA AS NOTED WITHIN EACH PROPERTY (SHOWN ON THE BOUNDARY SHEETS).
4. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. IN MARCH AND APRIL OF 2025.
5. PLAN REFERENCES:
   A. ALTA/ASCM LAND TITLE SURVEY MADE FOR COW PLAZA 1, LLC BY NORTHEAST CIVIL SOLUTIONS, DATED NOVEMBER 30, 2009, VAULT #1018-011.
   B. PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR CITY OF PORTLAND, MAINE "SITE PLAN" BY H.I. & E.C. JORDAN, DATED MAY 22, 1979, VAULT #738-003.
   C. STREET LINE RETRACEMENT PLAN "SPRING / MIDDLE ARTERIAL" MADE BY THE CITY OF PORTLAND, DATED FEBRUARY 10, 2014, VAULT #882-037A.
   D. PLAN OF PATTON COURT MADE BY THE CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, DATED THROUGH JANUARY 9, 1939, VAULT #598-009.
   E. PLAN OF PROPOSED FORE STREET PARKING GARAGE SITE MADE FOR THE CITY OF PORTLAND BY OWEN HASKELL, INC. DATED NOVEMBER 5, 1979, VAULT #500-006.
   F. STREET LINE DRAWING OF EXCHANGE STREET DATED NOVEMBER 1925, VOLUME 2, PAGE 117.
   G. STREET LINE DRAWING OF FORE STREET DATED JULY 1925, VOLUME 1, PAGE 27.
   H. STREET LINE DRAWING OF UNION STREET DATED NOVEMBER 1925, VOLUME 2, PAGE 121.
   I. PLAN OF EXCHANGE STREET DATED NOVEMBER 1855, VAULT #363-003.
   J. RIGHT OF WAY PLAN OF SPRING-MIDDLE ARTERIAL MADE FOR THE CITY OF PORTLAND BY OWEN HASKELL, INC. DATED OCTOBER 18, 1977, VAULT #595-010.
   K. EXISTING CONDITIONS PLAN ON UNION STREET MADE FOR CENTRAL MAINE POWER COMPANY BY TRC, DATED THROUGH JUNE 10, 2013, VAULT #1018-011A.
   L. PLAN OF CANAL PLAZA MADE FOR CANAL NATIONAL BANK-PLAZA REALTY TRUST BY H.I. & E.C. JORDAN, DATED AUGUST 1972, RECORDED IN PLAN BOOK 109, PAGE 108.
   M. ALTA/NSPS LAND TITLE SURVEY MADE FOR COW PLAZA HOTEL LLC BY NORTHEAST CIVIL SOLUTIONS DATED DECEMBER 9, 2016.
   N. DESIGN PLANS AND DRAWINGS OF CANAL PLAZA SHOWING PROPOSED UTILITIES PROVIDED BY WOODARD AND CURRAN.
6. EASEMENT/ENCUMBRANCES:
   A. SUBJECT TO A RECIPROCAL EASEMENT AGREEMENT BETWEEN COW PLAZA 1 LLC, COW PLAZA 2 LLC, COW PLAZA 3 LLC, COW PLAZA GARAGE LLC, COW PLAZA HOTEL LLC, AND KOWTOWER LLC RECORDED IN BOOK 27481, PAGE 1 AND AMENDED IN BOOK 35559, PAGE 70.
   B. SUBJECT TO A DRAINAGE AND STORMWATER RUNOFF EASEMENT RECORDED IN BOOK 30060, PAGE 87.
   C. SUBJECT TO A DECLARATION OF RESTRICTIONS RECORDED IN BOOK 30361, PAGE 242.
   D. SUBJECT TO A PARKING AGREEMENT RECORDED IN BOOK 37636, PAGE 111.
   E. SUBJECT TO AN ELECTRICAL EASEMENT RECORDED IN BOOK 30282, PAGE 57.
   F. SUBJECT TO AN EASEMENT FOR SEWER PURPOSES OVER THE DISCONTINUED PORTION OF PLUM STREET RESERVED BY THE CITY OF PORTLAND RECORDED IN BOOK 3231, PAGE 337.
   G. SUBJECT TO ACCESS AND MAINTENANCE RIGHTS RECORDED IN BOOK 3495, PAGE 183.
   H. SUBJECT TO AND BENEFITING FROM RIGHTS AND RESERVATIONS RECORDED IN BOOK 3519, PAGE 165.
   I. SUBJECT TO AND BENEFITING FROM RIGHTS AND RESERVATIONS RECORDED IN BOOK 3344, PAGE 45.
   J. SUBJECT TO A RIGHT OF WAY TO ACCESS THE PARKING GARAGE RECORDED IN BOOK 30060. PAGE 82.
   K. SUBJECT TO AN EASEMENT AGREEMENT AND BUILDING RESTRICTIONS RECORDED IN BOOK 30438, PAGE 253.
   L. BENEFITS FROM A LICENSE AGREEMENT WITH THE CITY OF PORTLAND OVER PORTIONS OF UNION STREET AND FORE STREET RECORDED IN BOOK 30393, PAGE 133.
   M. SUBJECT TO BUILDING RESTRICTIONS RECORDED IN BOOK 2074, PAGE 269.
   N. SUBJECT TO A DECLARATION OF 10 EXCHANGE STREET CONDOMINIUM RECORDED IN BOOK 33536, PAGE 85 AS AMENDED IN BOOK 34266, PAGE 17; BOOK 34289, PAGE 325; BOOK 34493, PAGE 255; AND BOOK 37244, PAGE 295.
   O. SUBJECT TO A PARTY WALL AND RECIPROCAL EASEMENT AGREEMENT RECORDED IN BOOK 37715, PAGE 80.
7. BENCHMARKS:
   BM-1: PAINT BOX ON CONCRETE TRAFFIC SIGNAL BASE
   ELEVATION: 49.96 (CITY OF PORTLAND VERTICAL DATUM)
   BM-2: HYDRANT FLANGE BOLT FACING FORE & UNION INTERSECTION
   ELEVATION: 27.13 (CITY OF PORTLAND VERTICAL DATUM)
   BM-3: HYDRANT FLANGE BOLT FACING FACING FORE ST
   ELEVATION: 21.19 (CITY OF PORTLAND VERTICAL DATUM)
8. UTILITY NOTES:
   A. INFORMATION DEPICTED HEREON IS OF QUALITY LEVEL D PER AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARD CI/ASCE 38-02. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION. PROMARK UTILITY LOCATING, INC. MARKED THE UNDERGROUND UTILITIES SHOWN HEREON IN MARCH OF 2025, AND WERE FIELD-LOCATED BY SEBAGO TECHNICS, INC.
   B. UTILITIES SHOWN IN BROWN ON UTILITY PLANS 1-4 ARE BASED ON PLAN REFERENCE N AND HAVE NOT BEEN FIELD VERIFIED.
   C. SEWER STUBS SHOWN ON UTILITY PLANS 1-4 ARE BASED ON CCTV REPORTS PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT.
9. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, PANEL NUMBER 23005C0692F, HAVING AN EFFECTIVE DATE OF 06/20/2024 . THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE "X", AREAS OF MINIMAL FLOODING.
10. AREAS ADJACENT TO COW PLAZA 4 LLC AND KOWTOWER LLC (INDICATED AS SHADED AREAS WITHIN THIS PLAN SET) WERE UNDER CONSTRUCTION AT THE DATE OF THIS SURVEY. SOME FEATURES MAY HAVE BEEN OBSCURED AND NOT SHOWN ON THIS PLAN SET.

OWNERS OF RECORD:

COW PLAZA 1 LLC
TAX MAP 32(I), LOTS 7, 36 AND 43
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 310

COW PLAZA HOTEL LLC
TAX MAP 32(I), LOT 42
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 29745, PAGE 82

ABATSOBE LLC
TAX MAP 32(I), LOT 22
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 38454, PAGE 17

COW PLAZA 2 LLC
TAX MAP 32(I), LOT 33
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 330

COW PLAZA GARAGE LLC
TAX MAP 32(I), LOT 41
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 325

FRESNELL LLC
TAX MAP 32(I), LOT 1
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 37832, PAGE 239

COW PLAZA 3 LLC
TAX MAP 32(I), LOT 23
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 335

KOWTOWER LLC
TAX MAP 32(I), LOT 40
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 35559, PAGE 67

10 EXCHANGE PROPERTIES, LLC
TAX MAP 32(I), LOTS 12, 13 AND 17
P.O. BOX 4894
PORTLAND, ME 04112
BOOK 18001, PAGE 336

COW PLAZA 4 LLC
TAX MAP 32(I), LOT 21
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 37832, PAGE 235

COW EXCHANGE LLC
TAX MAP 32(I), LOTS 8 AND 9
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 39725, PAGE 172

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE:	STATUS
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AS INDICATED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

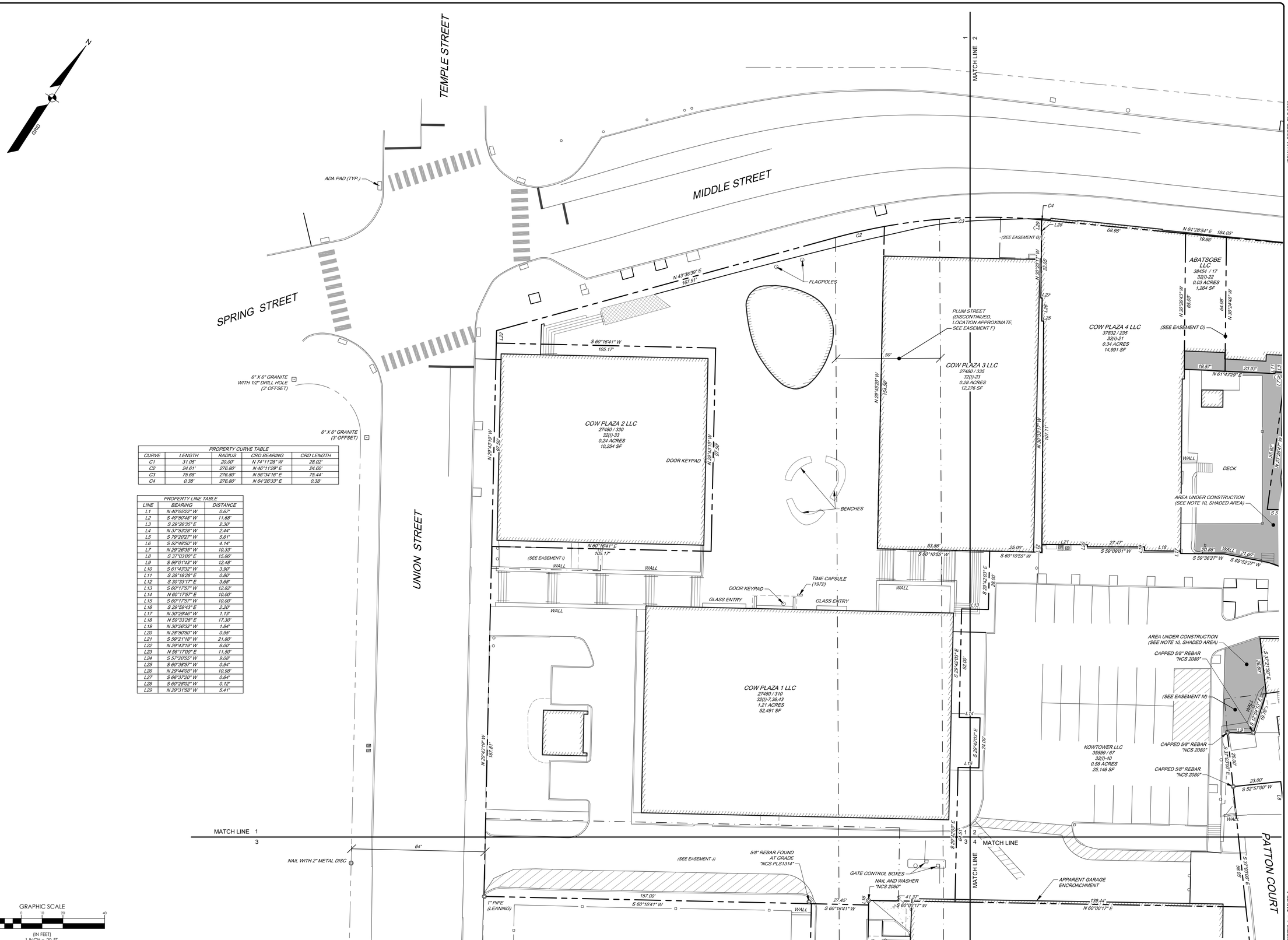
COVER SHEET & NOTES
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

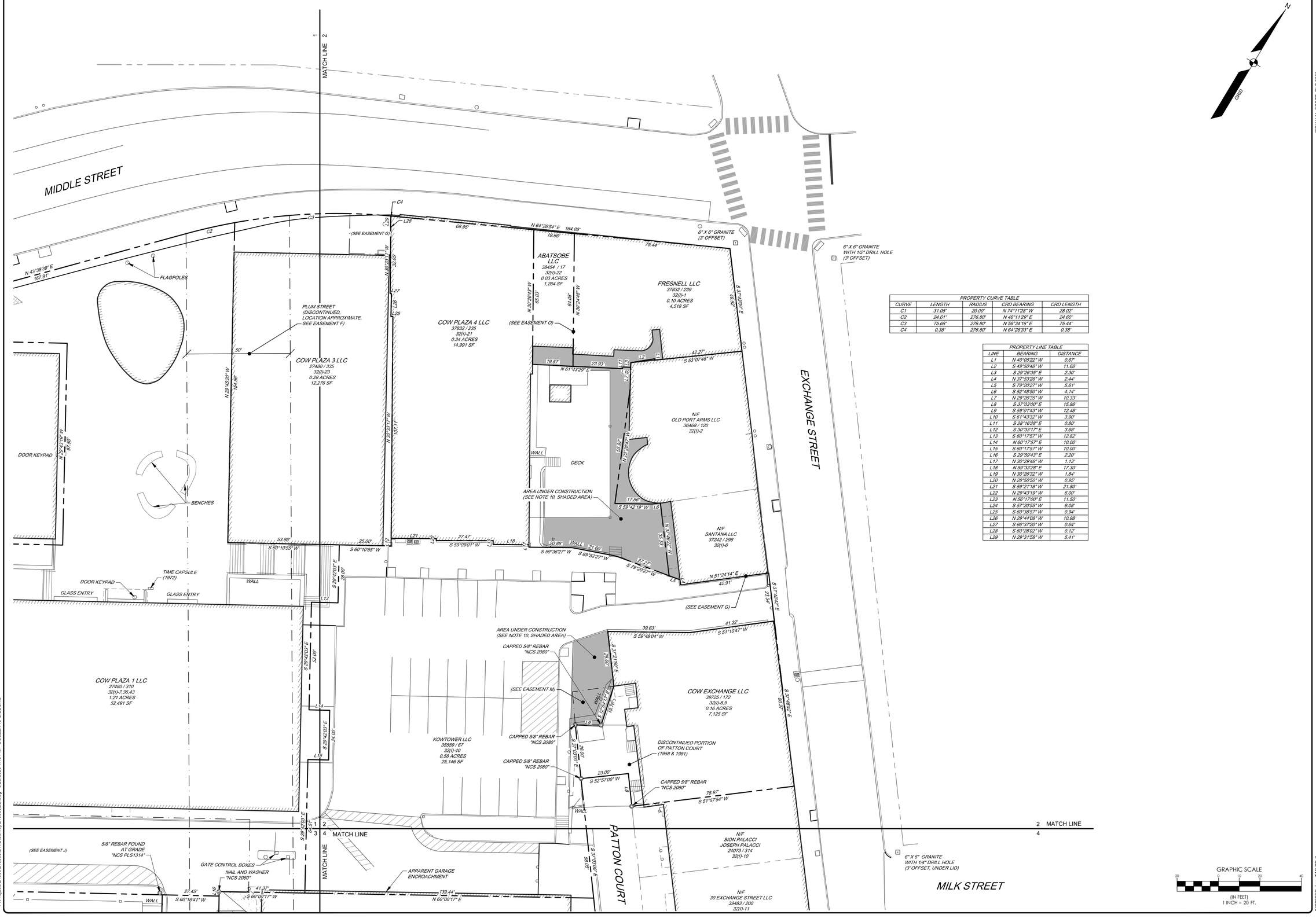
-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 40'
PROJECT	240988

SHEET 1 OF 14

F:\Projects\240000\240988\DWG\Survey\240988EC.dwg - 5/28/2025 1:46 PM - COLEEN N. GIBBONS

240988EC.dwg - TAB:Cover Sheet


N
GRID
TEMPLE STREET
MIDDLE STREET
SPRING STREET
UNION STREET
PATTON COURT
MATCH LINE
ADA PAD (TYP.)
6" X 6" GRANITE WITH 1/2" DRILL HOLE (3' OFFSET)
6" X 6" GRANITE (3' OFFSET)
FLAGPOLES
BENCHES
PLUM STREET (DISCONTINUED, LOCATION APPROXIMATE, SEE EASEMENT F)
(SEE EASEMENT O)
(SEE EASEMENT I)
(SEE EASEMENT J)
(SEE EASEMENT M)
COW PLAZA 1 LLC
27480 / 310
32(I)-7,36,43
1.21 ACRES
52,491 SF
COW PLAZA 2 LLC
27480 / 330
32(I)-33
0.24 ACRES
10,254 SF
COW PLAZA 3 LLC
27480 / 335
32(I)-23
0.28 ACRES
12,276 SF
COW PLAZA 4 LLC
37832 / 235
32(I)-21
0.34 ACRES
14,991 SF
ABATSOBE LLC
38454 / 17
32(I)-22
0.03 ACRES
1,264 SF
KOWTOWER LLC
35559 / 67
32(I)-40
0.58 ACRES
25,146 SF
DOOR KEYPAD
TIME CAPSULE (1972)
GLASS ENTRY
WALL
DECK
AREA UNDER CONSTRUCTION (SEE NOTE 10, SHADED AREA)
CAPPED 5/8" REBAR "NCS 2080"
5/8" REBAR FOUND AT GRADE "NCS PLS1314"
1" PIPE (LEANING)
NAIL WITH 2" METAL DISC
GATE CONTROL BOXES
NAIL AND WASHER "NCS 2080"
APPARENT GARAGE ENCROACHMENT
S 60°16'41" W 105.17'
N 29°43'19" W 70.50'
N 29°42'19" W 67.39'
N 43°38'39" E 167.91'
N 64°28'54" E 164.05'
N 30°23'11" W 32.08'
N 29°45'20" W 154.56'
N 30°23'11" W 167.11'
N 30°24'46" W 64.08'
N 30°29'43" W 65.03'
N 61°43'29" E 23.93'
S 29°42'03" E 82.69'
S 29°42'03" E 28.00'
S 29°42'03" E 24.00'
S 29°42'03" E 64.31'
S 37°07'00" E 20.56'
S 37°07'00" E 20.56'
S 37°07'00" E 20.56'
S 52°57'00" W 23.00'
S 59°36'27" W 71.60'
S 59°09'01" W 27.47'
S 60°10'55" W 53.86'
S 60°10'35" W 25.00'
S 60°16'41" W 157.00'
S 60°16'41" W 27.45'
S 60°00'17" W 41.37'
N 60°00'17" E 139.44'
N 61°43'29" E 55.82'
N 23°28'47" W 71.11'
N 60°16'41" E 105.17'
S 60°16'41" W 105.17'
S 60°16'41" W 105.17'
S 60°16'41" W



PROPERTY CURVE TABLE				
CURVE	LENGTH	RADIUS	CRD BEARING	CRD LENGTH
C1	31.05'	20.00'	N 74°11'28" W	28.02'
C2	24.61'	276.80'	N 46°11'29" E	24.60'
C3	75.68'	276.80'	N 56°34'16" E	75.44'
C4	0.38'	276.80'	N 64°26'33" E	0.38'

PROPERTY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 40°05'22" W	0.67'
L2	S 49°50'48" W	11.68'
L3	S 29°26'35" E	2.30'
L4	N 37°53'28" W	2.44'
L5	S 79°20'27" W	5.61'
L6	S 52°48'50" W	4.14'
L7	N 29°26'35" W	10.33'
L8	S 37°03'00" E	15.86'
L9	S 59°01'43" W	12.48'
L10	S 61°43'32" W	3.90'
L11	S 28°16'28" E	0.80'
L12	S 30°33'17" E	3.68'
L13	S 60°17'57" W	12.82'
L14	N 60°17'57" E	10.00'
L15	S 60°17'57" W	10.00'
L16	S 29°59'43" E	2.20'
L17	N 30°29'46" W	1.13'
L18	N 59°33'28" E	17.30'
L19	N 30°26'32" W	1.84'
L20	N 28°50'50" W	0.95'
L21	S 59°21'18" W	21.80'
L22	N 29°43'19" W	6.00'
L23	N 56°17'00" E	11.50'
L24	S 57°20'55" W	9.08'
L25	S 60°38'57" W	0.94'
L26	N 29°44'08" W	10.98'
L27	S 66°37'20" W	0.64'
L28	S 60°28'02" W	0.12'
L29	N 29°31'58" W	5.41'

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL
LAND SURVEYOR

REV.	BY	DATE:	STATUS:
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

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SEBAGO TECHNICS
TECHNICS, INC.
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

BOUNDARY SURVEY - 2
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST., & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 3 OF 14

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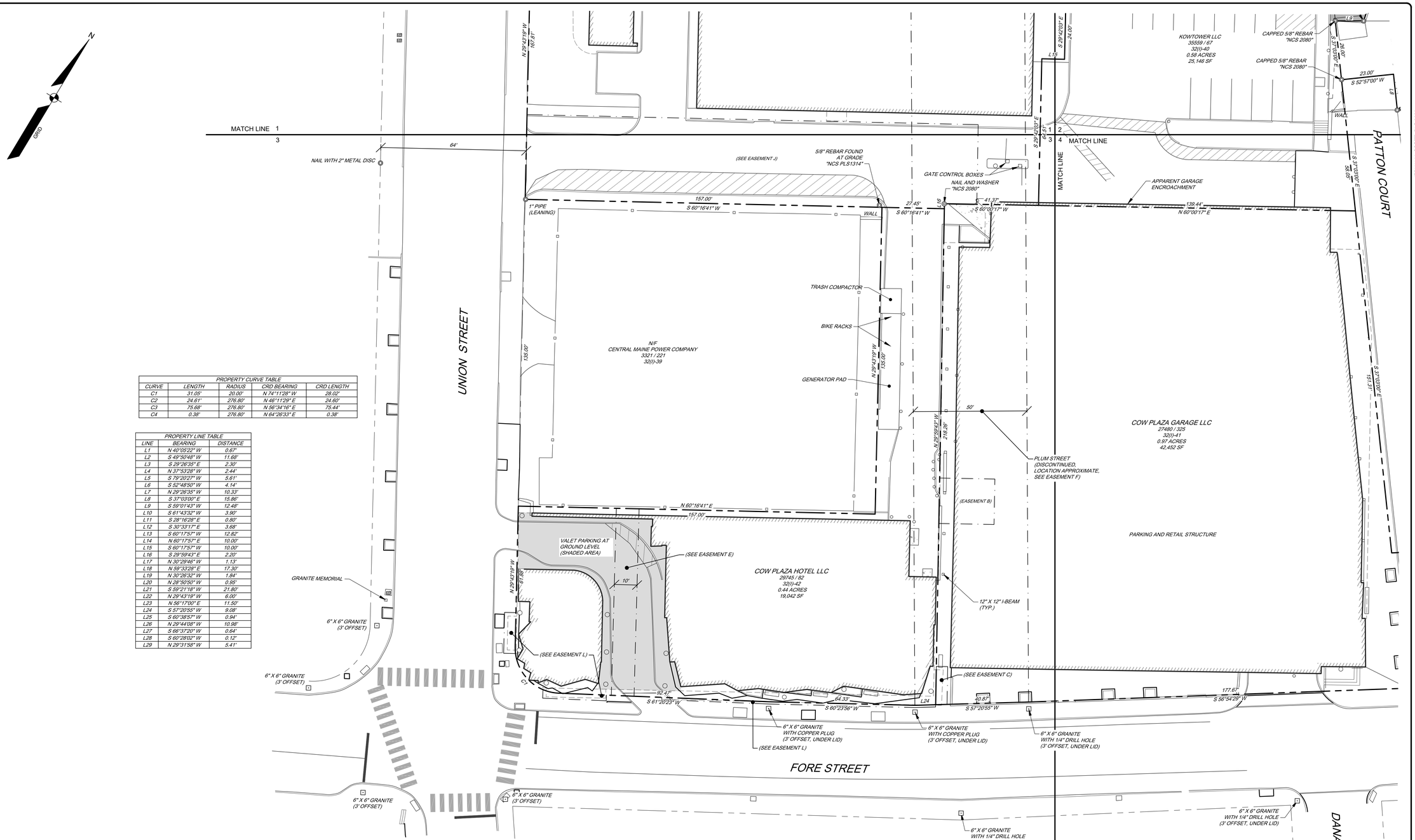
240988EC.dwg, TAB:BD-2



PROPERTY CURVE TABLE				
CURVE	LENGTH	RADIUS	CRD BEARING	CRD LENGTH
C1	31.05'	20.00'	N 74°11'28" W	28.02'
C2	24.61'	276.80'	N 46°11'29" E	24.60'
C3	75.68'	276.80'	N 56°34'16" E	75.44'
C4	0.38'	276.80'	N 64°26'33" E	0.38'

PROPERTY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 40°05'22" W	0.67'
L2	S 49°50'48" W	11.68'
L3	S 29°26'35" E	2.30'
L4	N 37°53'28" W	2.44'
L5	S 79°20'27" W	5.61'
L6	S 52°48'50" W	4.14'
L7	N 29°26'35" W	10.33'
L8	S 37°03'00" E	15.86'
L9	S 89°01'43" W	12.48'
L10	S 61°43'32" W	3.90'
L11	S 28°16'28" E	0.80'
L12	S 30°33'17" E	3.68'
L13	S 60°17'57" W	12.82'
L14	N 60°17'57" E	10.00'
L15	S 60°17'57" W	10.00'
L16	S 29°59'43" E	2.20'
L17	N 30°29'46" W	1.13'
L18	N 59°33'28" E	17.30'
L19	N 30°26'32" W	1.84'
L20	N 28°50'50" W	0.95'
L21	S 59°21'18" W	21.80'
L22	N 29°43'19" W	6.00'
L23	N 56°17'00" E	11.50'
L24	S 57°20'55" W	9.08'
L25	S 60°38'57" W	0.94'
L26	N 29°44'08" W	10.98'
L27	S 66°37'26" W	0.64'
L28	S 60°28'02" W	0.12'
L29	N 29°31'58" W	5.41'

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE	STATUS
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

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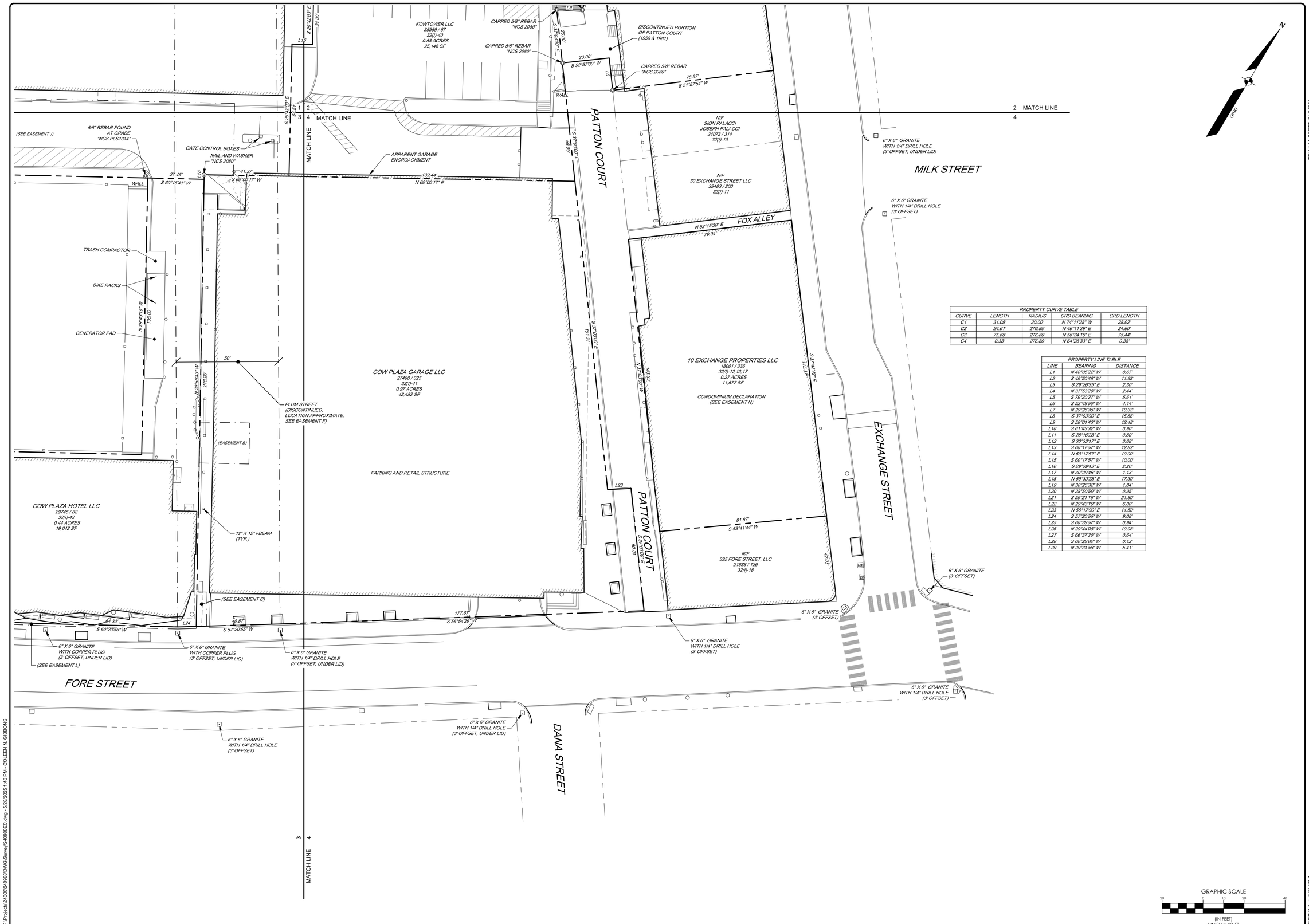
207-200-2100
South Portland, Bridgton, and Sanford

BOUNDARY SURVEY - 3
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

240988EC.dwg, TAB:BD-3

SHEET 4 OF 14



PROPERTY CURVE TABLE				
CURVE	LENGTH	RADIUS	CRD BEARING	CRD LENGTH
C1	31.05'	20.00'	N 74°11'28" W	28.03'
C2	24.61'	276.80'	N 46°11'29" E	24.60'
C3	75.68'	276.80'	N 56°34'16" E	75.44'
C4	0.38'	276.80'	N 64°26'33" E	0.38'

PROPERTY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 40°05'22" W	0.67'
L2	S 49°50'48" W	11.68'
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L7	N 29°26'35" W	10.33'
L8	S 37°03'00" E	15.86'
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L10	S 61°43'32" W	3.90'
L11	S 28°16'28" E	0.80'
L12	S 30°33'17" E	3.68'
L13	S 60°17'57" W	12.82'
L14	N 60°17'57" E	10.00'
L15	S 60°17'57" W	10.00'
L16	S 29°59'43" E	2.20'
L17	N 30°29'46" W	1.13'
L18	N 59°33'28" E	17.30'
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L26	N 29°44'08" W	10.98'
L27	S 66°37'20" W	0.64'
L28	S 60°28'02" W	0.12'
L29	N 29°31'58" W	5.41'

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE:	STATUS:
2.	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1.	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

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SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

BOUNDARY SURVEY - 4

OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE

FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 5 OF 14

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NOT FOR CONSTRUCTION

LEGEND

PROPERTY LINE

LIMIT OF WORK

SCHEDULE KEY NOTES

PAVEMENTS, RAMPS, CURBS

1.1 BRICK PAVERS
1.2 BRICK RAMP
1.3 GRANITE PAVERS
1.4 GRANITE SETTS
1.5 GRANITE STEPS
1.6 GRANITE CURBING
1.7 SLOPED WALKWAY

SITE WALLS/ EMBANKMENTS

3.1 STONE VENEER WALL
3.2 GRANITE FEATURE WALL

SITE FURNITURE

4.1 STONE BENCH

RAILINGS, BARRIERS, FENCING

5.1 HANDRAIL
5.2 GUARDRAIL AT RETAINING WALL

PLANTING AND LANDSCAPE

6.1 PROPOSED TREE IN PLANTING BED
6.2 PROPOSED TREE IN PAVEMENT
6.3 PLANTING BED

MISCELLANEOUS SITE FEATURES

8.1 SECURITY BOLLARD
8.2 CURB CUT

ALIGN TREES WITH BUILDING COLUMNS, TYP.

ALIGN

ALIGN

STORAGE

IT/ DATA

1 SITE PLAN
1"=20'

mbla
michael boucher landscape architecture
457 US Route 1 Suite 2
Freeport, ME 04032
t 207.865.1080
www.boucherlandscape.com
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Client
East Brown Cow - Kowtower LLC
100 Commercial St
Suite 300
Portland ME 04101

45 Union St

PORTLAND, ME

LICENSED LANDSCAPE ARCHITECT
JEFFREY PELLETIER
No. 3192
STATE OF MAINE

REVISION:

1	DATE
2	DATE
3	DATE
4	DATE
5	DATE
6	DATE

DATE OF ISSUE: 08.11.2025
STATUS: SCHEMATIC DESIGN
SCALE: AS NOTED

L1.0

SITE PLAN

APPENDIX E

- **SIMTRAFFIC REPORTS**

Summary of All Intervals

Run Number	1	3	5	6	7	Avg
Start Time	3:55	3:55	3:55	3:55	3:55	3:55
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1724	1675	1638	1691	1669	1679
Vehs Exited	1729	1681	1626	1684	1666	1677
Starting Vehs	25	20	12	16	16	15
Ending Vehs	20	14	24	23	19	18
Travel Distance (mi)	307	299	292	301	297	299
Travel Time (hr)	20.9	20.1	19.8	20.5	20.8	20.4
Total Delay (hr)	8.0	7.5	7.6	7.9	8.2	7.8
Total Stops	1487	1473	1433	1449	1489	1465
Fuel Used (gal)	15.3	14.6	14.6	14.9	14.9	14.8

Interval #0 Information Seeding

Start Time	3:55
End Time	4:00
Total Time (min)	5

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	3	5	6	7	Avg
Vehs Entered	489	493	478	502	491	489
Vehs Exited	495	482	466	490	477	482
Starting Vehs	25	20	12	16	16	15
Ending Vehs	19	31	24	28	30	23
Travel Distance (mi)	87	83	84	88	84	85
Travel Time (hr)	6.3	5.9	6.0	6.2	6.1	6.1
Total Delay (hr)	2.6	2.3	2.4	2.5	2.6	2.5
Total Stops	454	426	452	429	437	438
Fuel Used (gal)	4.4	4.1	4.3	4.4	4.3	4.3

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	3	5	6	7	Avg
Vehs Entered	411	397	381	362	397	387
Vehs Exited	421	410	382	379	404	400
Starting Vehs	19	31	24	28	30	23
Ending Vehs	9	18	23	11	23	16
Travel Distance (mi)	74	72	69	67	72	71
Travel Time (hr)	4.9	4.8	4.5	4.3	5.0	4.7
Total Delay (hr)	1.7	1.7	1.6	1.5	2.0	1.7
Total Stops	347	362	314	321	351	335
Fuel Used (gal)	3.6	3.5	3.3	3.3	3.6	3.5

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	3	5	6	7	Avg
Vehs Entered	411	392	375	391	390	391
Vehs Exited	406	397	385	379	396	392
Starting Vehs	9	18	23	11	23	16
Ending Vehs	14	13	13	23	17	15
Travel Distance (mi)	72	72	69	69	71	71
Travel Time (hr)	4.8	4.8	4.6	4.6	4.7	4.7
Total Delay (hr)	1.8	1.8	1.7	1.7	1.7	1.8
Total Stops	339	361	332	323	355	340
Fuel Used (gal)	3.6	3.5	3.5	3.3	3.5	3.5

Interval #4 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	3	5	6	7	Avg
Vehs Entered	413	393	404	436	391	404
Vehs Exited	407	392	393	436	389	404
Starting Vehs	14	13	13	23	17	15
Ending Vehs	20	14	24	23	19	18
Travel Distance (mi)	74	71	71	77	70	73
Travel Time (hr)	5.0	4.6	4.8	5.4	4.9	4.9
Total Delay (hr)	1.9	1.6	1.8	2.1	1.9	1.9
Total Stops	347	324	335	376	346	343
Fuel Used (gal)	3.6	3.4	3.5	3.9	3.5	3.6

3: Spring St/Middle St & Union St/Temple St Performance by lane

Lane	NB	NB	SB	SB	NE	NE	SW	SW	All
Movements Served	L	TR	L	TR	LT	R	LT	R	
Denied Del/Veh (s)									0.7
Total Del/Veh (s)	25.2	10.1	24.6	11.8	15.6	3.3	13.7	3.1	13.0

9: Union St & Fore St Performance by lane

Lane	EB	EB	WB	NB	SB	SB	All
Movements Served	L	TR	LTR	LTR	LT	R	
Denied Del/Veh (s)							1.1
Total Del/Veh (s)	12.4	5.8	11.5	9.6	14.0	3.2	9.4

13: Union St & Portland Square/Site Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	7.7	7.0	0.9	1.3	2.3

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	15.5

Intersection: 3: Spring St/Middle St & Union St/Temple St

Movement	NB	NB	SB	SB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	164	80	93	160	154	92	171	46
Average Queue (ft)	41	58	28	71	67	31	70	17
95th Queue (ft)	113	88	64	129	121	74	126	42
Link Distance (ft)	198			350	611		297	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		55	80			70		110
Storage Blk Time (%)	1	11	1	5	8	0	1	
Queuing Penalty (veh)	2	4	2	2	4	0	1	

Intersection: 9: Union St & Fore St

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	LT	R
Maximum Queue (ft)	86	113	159	108	166	76
Average Queue (ft)	28	50	81	49	65	46
95th Queue (ft)	61	92	139	91	125	83
Link Distance (ft)	429		264	214	197	
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)		100				50
Storage Blk Time (%)	0	1			13	2
Queuing Penalty (veh)	0	0			15	3

Intersection: 13: Union St & Portland Square/Site

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	71	33	40
Average Queue (ft)	14	36	1	2
95th Queue (ft)	40	61	13	16
Link Distance (ft)	204	314	197	198
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 33

Intersection: 3: Spring St/Middle St & Union St/Temple St

Phase	2	3	4	6	7	8
Movement(s) Served	NETL	SBL	NBT	SWTL	NBL	SBT
Maximum Green (s)	45.0	10.0	35.0	45.0	15.0	30.0
Minimum Green (s)	10.0	5.0	5.0	10.0	5.0	5.0
Recall	None	None	None	None	None	None
Avg. Green (s)	-1.3	7.9	-3.0	-1.3	7.9	-2.6
g/C Ratio	NA	NA	NA	NA	NA	NA
Cycles Skipped (%)	3	60	8	3	64	7
Cycles @ Minimum (%)	13	23	6	13	19	7
Cycles Maxed Out (%)	0	4	3	0	3	6
Cycles with Peds (%)	34	0	25	23	0	21

Controller Summary
Average Cycle Length (s): -7.6
Number of Complete Cycles : 69

Intersection: 9: Union St & Fore St

Phase	1	2	4	6	8
Movement(s) Served	EBL	WBTL	NBTL	EBTL	SBTL
Maximum Green (s)	15.0	28.0	20.0	48.0	20.0
Minimum Green (s)	6.0	8.0	6.0	8.0	6.0
Recall	None	None	None	None	None
Avg. Green (s)	7.7	-1.7	-2.5	2.5	-2.5
g/C Ratio	NA	NA	NA	NA	NA
Cycles Skipped (%)	67	11	9	4	9
Cycles @ Minimum (%)	19	13	13	11	13
Cycles Maxed Out (%)	2	1	6	0	6
Cycles with Peds (%)	0	20	28	33	12

Controller Summary
Average Cycle Length (s): -5.5
Number of Complete Cycles : 91
Average All-Red Dwell (s): 4.2
Cycles with All-Red Dwell (%): 3

Summary of All Intervals

Run Number	2	3	5	6	7	Avg
Start Time	3:55	3:55	3:55	3:55	3:55	3:55
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1371	1378	1288	1306	1325	1333
Vehs Exited	1370	1369	1298	1304	1327	1334
Starting Vehs	13	12	19	18	16	14
Ending Vehs	14	21	9	20	14	12
Travel Distance (mi)	249	247	234	235	242	242
Travel Time (hr)	16.7	16.1	15.4	15.2	16.2	15.9
Total Delay (hr)	6.2	5.7	5.6	5.3	5.9	5.7
Total Stops	1213	1130	1087	1067	1172	1134
Fuel Used (gal)	12.2	11.8	11.3	11.4	11.7	11.7

Interval #0 Information Seeding

Start Time	3:55
End Time	4:00
Total Time (min)	5

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	2	3	5	6	7	Avg
Vehs Entered	435	387	364	370	395	390
Vehs Exited	428	379	369	366	387	386
Starting Vehs	13	12	19	18	16	14
Ending Vehs	20	20	14	22	24	19
Travel Distance (mi)	77	68	65	67	70	69
Travel Time (hr)	5.2	4.5	4.5	4.4	4.8	4.7
Total Delay (hr)	2.0	1.7	1.8	1.6	1.9	1.8
Total Stops	389	317	330	328	345	343
Fuel Used (gal)	3.8	3.3	3.3	3.2	3.4	3.4

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	2	3	5	6	7	Avg
Vehs Entered	316	324	348	339	284	321
Vehs Exited	318	328	345	340	294	325
Starting Vehs	20	20	14	22	24	19
Ending Vehs	18	16	17	21	14	15
Travel Distance (mi)	58	59	64	60	54	59
Travel Time (hr)	3.8	3.8	4.3	3.9	3.6	3.9
Total Delay (hr)	1.3	1.3	1.6	1.4	1.3	1.4
Total Stops	276	276	305	267	257	277
Fuel Used (gal)	2.8	2.8	3.1	2.9	2.6	2.8

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	2	3	5	6	7	Avg
Vehs Entered	301	325	292	290	327	306
Vehs Exited	311	326	294	299	326	312
Starting Vehs	18	16	17	21	14	15
Ending Vehs	8	15	15	12	15	11
Travel Distance (mi)	56	59	53	53	59	56
Travel Time (hr)	3.7	3.7	3.3	3.4	4.0	3.6
Total Delay (hr)	1.3	1.2	1.1	1.2	1.5	1.3
Total Stops	259	250	233	219	289	248
Fuel Used (gal)	2.7	2.8	2.5	2.6	2.9	2.7

Interval #4 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	2	3	5	6	7	Avg
Vehs Entered	319	342	284	307	319	317
Vehs Exited	313	336	290	299	320	311
Starting Vehs	8	15	15	12	15	11
Ending Vehs	14	21	9	20	14	12
Travel Distance (mi)	59	61	53	55	58	57
Travel Time (hr)	4.1	4.1	3.3	3.5	3.8	3.7
Total Delay (hr)	1.6	1.5	1.1	1.2	1.3	1.3
Total Stops	289	287	219	253	281	267
Fuel Used (gal)	2.9	3.0	2.5	2.6	2.8	2.8

3: Spring St/Middle St & Union St/Temple St Performance by lane

Lane	NB	NB	SB	SB	NE	NE	SW	SW	All
Movements Served	L	TR	L	TR	LT	R	LT	R	
Denied Del/Veh (s)									0.9
Total Del/Veh (s)	37.4	10.0	18.8	10.2	13.6	2.8	11.6	3.1	11.5

9: Union St & Fore St Performance by lane

Lane	EB	EB	WB	NB	SB	SB	All
Movements Served	L	TR	LTR	LTR	LT	R	
Denied Del/Veh (s)							1.0
Total Del/Veh (s)	10.1	5.6	9.4	9.3	11.1	2.6	8.2

13: Union St & Portland Square/Site Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	5.3	7.2	0.8	1.2	1.2

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	14.2

Intersection: 3: Spring St/Middle St & Union St/Temple St

Movement	NB	NB	SB	SB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	131	80	88	130	165	83	101	52
Average Queue (ft)	23	54	31	61	67	16	43	22
95th Queue (ft)	80	84	65	104	124	50	79	48
Link Distance (ft)	198			350	611		297	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		55	80			70		110
Storage Blk Time (%)	0	7	0	2	7	0	0	
Queuing Penalty (veh)	0	1	0	1	3	0	0	

Intersection: 9: Union St & Fore St

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	LT	R
Maximum Queue (ft)	57	95	127	95	147	75
Average Queue (ft)	22	38	56	43	56	36
95th Queue (ft)	46	75	99	83	104	76
Link Distance (ft)	429		264	214	197	
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)		100				50
Storage Blk Time (%)	0	0			8	1
Queuing Penalty (veh)	0	0			6	1

Intersection: 13: Union St & Portland Square/Site

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	40	12	40
Average Queue (ft)	4	10	1	2
95th Queue (ft)	21	35	8	18
Link Distance (ft)	204	314	197	198
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 13

Intersection: 3: Spring St/Middle St & Union St/Temple St

Phase	2	3	4	6	7	8
Movement(s) Served	NETL	SBL	NBT	SWTL	NBL	SBT
Maximum Green (s)	45.0	10.0	35.0	45.0	15.0	30.0
Minimum Green (s)	10.0	5.0	5.0	10.0	5.0	5.0
Recall	None	None	None	None	None	None
Avg. Green (s)	-1.1	6.9	-5.6	-1.1	7.2	-2.5
g/C Ratio	NA	NA	NA	NA	NA	NA
Cycles Skipped (%)	7	57	15	7	79	11
Cycles @ Minimum (%)	23	24	10	23	13	8
Cycles Maxed Out (%)	0	3	0	0	1	3
Cycles with Peds (%)	22	0	16	8	0	3

Controller Summary
Average Cycle Length (s): -5.9
Number of Complete Cycles : 85
Average All-Red Dwell (s): 1.7
Cycles with All-Red Dwell (%): 2

Intersection: 9: Union St & Fore St

Phase	1	2	4	6	8
Movement(s) Served	EBL	WBTL	NBTL	EBTL	SBTL
Maximum Green (s)	15.0	28.0	20.0	48.0	20.0
Minimum Green (s)	6.0	8.0	6.0	8.0	6.0
Recall	None	None	None	None	None
Avg. Green (s)	7.5	-2.2	-2.7	1.8	-2.7
g/C Ratio	NA	NA	NA	NA	NA
Cycles Skipped (%)	69	15	12	9	12
Cycles @ Minimum (%)	17	27	22	21	22
Cycles Maxed Out (%)	2	0	5	0	5
Cycles with Peds (%)	0	18	13	23	11

Controller Summary
Average Cycle Length (s): -4.6
Number of Complete Cycles : 105
Average All-Red Dwell (s): 4.6
Cycles with All-Red Dwell (%): 8

Summary of All Intervals

Run Number	1	4	5	6	7	Avg
Start Time	3:55	3:55	3:55	3:55	3:55	3:55
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1869	1889	1836	1852	1868	1866
Vehs Exited	1875	1878	1845	1850	1870	1863
Starting Vehs	27	28	22	18	24	23
Ending Vehs	21	39	13	20	22	17
Travel Distance (mi)	333	336	328	332	334	332
Travel Time (hr)	24.2	24.2	23.7	24.2	24.0	24.1
Total Delay (hr)	10.0	9.9	9.7	10.1	9.8	9.9
Total Stops	1762	1780	1705	1750	1753	1750
Fuel Used (gal)	17.2	17.2	16.6	17.2	17.0	17.0

Interval #0 Information Seeding

Start Time	3:55
End Time	4:00
Total Time (min)	5

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	4	5	6	7	Avg
Vehs Entered	573	563	518	552	532	550
Vehs Exited	562	567	519	531	533	542
Starting Vehs	27	28	22	18	24	23
Ending Vehs	38	24	21	39	23	29
Travel Distance (mi)	99	98	91	94	95	95
Travel Time (hr)	7.7	7.4	6.7	6.9	7.1	7.2
Total Delay (hr)	3.5	3.3	2.8	2.9	3.0	3.1
Total Stops	532	549	490	507	537	522
Fuel Used (gal)	5.3	5.2	4.6	4.9	4.9	5.0

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	4	5	6	7	Avg
Vehs Entered	433	427	460	424	432	434
Vehs Exited	451	430	456	444	429	441
Starting Vehs	38	24	21	39	23	29
Ending Vehs	20	21	25	19	26	20
Travel Distance (mi)	78	77	82	78	76	78
Travel Time (hr)	5.6	5.3	6.1	5.8	5.4	5.6
Total Delay (hr)	2.3	2.0	2.6	2.4	2.2	2.3
Total Stops	423	388	442	406	383	407
Fuel Used (gal)	4.0	3.8	4.3	4.1	3.8	4.0

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	4	5	6	7	Avg
Vehs Entered	434	445	419	406	450	429
Vehs Exited	439	443	429	396	447	430
Starting Vehs	20	21	25	19	26	20
Ending Vehs	15	23	15	29	29	23
Travel Distance (mi)	78	80	76	72	81	78
Travel Time (hr)	5.5	5.9	5.2	5.1	5.9	5.5
Total Delay (hr)	2.2	2.4	2.0	2.0	2.4	2.2
Total Stops	405	427	379	366	420	397
Fuel Used (gal)	4.0	4.1	3.8	3.6	4.1	3.9

Interval #4 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	4	5	6	7	Avg
Vehs Entered	429	454	439	470	454	448
Vehs Exited	423	438	441	479	461	449
Starting Vehs	15	23	15	29	29	23
Ending Vehs	21	39	13	20	22	17
Travel Distance (mi)	77	81	79	88	81	81
Travel Time (hr)	5.4	5.6	5.7	6.5	5.7	5.8
Total Delay (hr)	2.1	2.1	2.3	2.7	2.2	2.3
Total Stops	402	416	394	471	413	420
Fuel Used (gal)	3.9	4.0	4.0	4.5	4.1	4.1

3: Spring St/Middle St & Union St/Temple St Performance by lane

Lane	NB	NB	SB	SB	NE	NE	SW	SW	All
Movements Served	L	TR	L	TR	LT	R	LT	R	
Denied Del/Veh (s)									0.7
Total Del/Veh (s)	35.6	10.5	26.2	14.6	18.5	3.8	15.9	3.5	15.5

9: Union St & Fore St Performance by lane

Lane	EB	EB	WB	NB	SB	SB	All
Movements Served	L	TR	LTR	LTR	LT	R	
Denied Del/Veh (s)							1.1
Total Del/Veh (s)	12.7	6.4	12.2	10.3	15.5	3.0	10.1

13: Union St & Portland Square/Site Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	9.3	9.6	1.1	2.4	3.8

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	17.8

Intersection: 3: Spring St/Middle St & Union St/Temple St

Movement	NB	NB	SB	SB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	198	80	104	227	202	94	173	80
Average Queue (ft)	59	60	31	89	74	33	80	19
95th Queue (ft)	152	91	69	168	142	79	144	53
Link Distance (ft)	198			350	611		297	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	1							
Storage Bay Dist (ft)		55	80			70		110
Storage Blk Time (%)	3	13	0	9	11	0	3	
Queuing Penalty (veh)	8	6	0	4	7	0	1	

Intersection: 9: Union St & Fore St

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	LT	R
Maximum Queue (ft)	121	119	157	124	169	76
Average Queue (ft)	34	55	78	51	75	52
95th Queue (ft)	74	97	131	95	136	90
Link Distance (ft)	429		264	214	197	
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)		100				50
Storage Blk Time (%)	0	1			17	2
Queuing Penalty (veh)	0	0			23	4

Intersection: 13: Union St & Portland Square/Site

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	130	38	92
Average Queue (ft)	15	52	3	23
95th Queue (ft)	40	96	19	66
Link Distance (ft)	204	314	197	198
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 57

Intersection: 3: Spring St/Middle St & Union St/Temple St

Phase	2	3	4	6	7	8
Movement(s) Served	NETL	SBL	NBT	SWTL	NBL	SBT
Maximum Green (s)	45.0	10.0	35.0	45.0	15.0	30.0
Minimum Green (s)	10.0	5.0	5.0	10.0	5.0	5.0
Recall	None	None	None	None	None	None
Avg. Green (s)	-1.8	6.9	-1.9	-1.8	7.5	-2.4
g/C Ratio	NA	NA	NA	NA	NA	NA
Cycles Skipped (%)	2	54	5	2	54	5
Cycles @ Minimum (%)	10	29	5	10	21	5
Cycles Maxed Out (%)	0	3	5	0	2	6
Cycles with Peds (%)	37	0	29	24	0	29

Controller Summary
Average Cycle Length (s): -9.5
Number of Complete Cycles : 61

Intersection: 9: Union St & Fore St

Phase	1	2	4	6	8
Movement(s) Served	EBL	WBTL	NBTL	EBTL	SBTL
Maximum Green (s)	15.0	28.0	20.0	48.0	20.0
Minimum Green (s)	6.0	8.0	6.0	8.0	6.0
Recall	None	None	None	None	None
Avg. Green (s)	7.6	-2.4	-2.0	2.6	-2.0
g/C Ratio	NA	NA	NA	NA	NA
Cycles Skipped (%)	58	9	6	5	6
Cycles @ Minimum (%)	23	17	7	13	7
Cycles Maxed Out (%)	1	1	12	0	12
Cycles with Peds (%)	0	23	28	32	11

Controller Summary
Average Cycle Length (s): -6.0
Number of Complete Cycles : 86
Average All-Red Dwell (s): 3.7
Cycles with All-Red Dwell (%): 2

Summary of All Intervals

Run Number	2	4	5	6	7	Avg
Start Time	3:55	3:55	3:55	3:55	3:55	3:55
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1527	1498	1512	1460	1486	1496
Vehs Exited	1524	1491	1511	1463	1494	1497
Starting Vehs	13	17	20	18	23	16
Ending Vehs	16	24	21	15	15	16
Travel Distance (mi)	274	273	276	264	270	271
Travel Time (hr)	18.8	18.8	18.9	18.3	18.7	18.7
Total Delay (hr)	7.1	7.1	7.1	7.0	7.1	7.1
Total Stops	1361	1370	1410	1392	1373	1382
Fuel Used (gal)	13.7	13.6	13.7	13.3	13.5	13.6

Interval #0 Information Seeding

Start Time	3:55
End Time	4:00
Total Time (min)	5

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	2	4	5	6	7	Avg
Vehs Entered	472	438	418	403	461	440
Vehs Exited	461	434	416	405	469	437
Starting Vehs	13	17	20	18	23	16
Ending Vehs	24	21	22	16	15	17
Travel Distance (mi)	83	80	76	72	83	79
Travel Time (hr)	5.8	5.6	5.3	5.0	6.2	5.6
Total Delay (hr)	2.3	2.2	2.1	1.9	2.6	2.2
Total Stops	421	409	413	384	440	413
Fuel Used (gal)	4.2	4.1	3.8	3.6	4.3	4.0

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	2	4	5	6	7	Avg
Vehs Entered	349	365	373	347	357	359
Vehs Exited	359	366	375	348	357	360
Starting Vehs	24	21	22	16	15	17
Ending Vehs	14	20	20	15	15	12
Travel Distance (mi)	64	68	67	63	64	65
Travel Time (hr)	4.5	4.6	4.5	4.3	4.4	4.4
Total Delay (hr)	1.7	1.7	1.6	1.5	1.7	1.7
Total Stops	323	349	335	320	327	332
Fuel Used (gal)	3.2	3.3	3.3	3.2	3.2	3.2

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	2	4	5	6	7	Avg
Vehs Entered	345	313	356	347	361	343
Vehs Exited	347	322	352	348	359	346
Starting Vehs	14	20	20	15	15	12
Ending Vehs	12	11	24	14	17	14
Travel Distance (mi)	62	58	66	63	66	63
Travel Time (hr)	4.2	4.0	4.6	4.4	4.5	4.3
Total Delay (hr)	1.5	1.5	1.8	1.7	1.6	1.6
Total Stops	298	273	328	343	352	318
Fuel Used (gal)	3.1	2.9	3.3	3.2	3.3	3.1

Interval #4 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	2	4	5	6	7	Avg
Vehs Entered	361	382	365	363	307	355
Vehs Exited	357	369	368	362	309	353
Starting Vehs	12	11	24	14	17	14
Ending Vehs	16	24	21	15	15	16
Travel Distance (mi)	65	67	67	65	56	64
Travel Time (hr)	4.4	4.6	4.5	4.7	3.6	4.3
Total Delay (hr)	1.6	1.7	1.6	1.9	1.2	1.6
Total Stops	319	339	334	345	254	319
Fuel Used (gal)	3.2	3.4	3.3	3.3	2.7	3.2

3: Spring St/Middle St & Union St/Temple St Performance by lane

Lane	NB	NB	SB	SB	NE	NE	SW	SW	All
Movements Served	L	TR	L	TR	LT	R	LT	R	
Denied Del/Veh (s)									0.8
Total Del/Veh (s)	36.3	9.6	23.3	13.1	14.5	3.3	13.4	3.4	13.1

9: Union St & Fore St Performance by lane

Lane	EB	EB	WB	NB	SB	SB	All
Movements Served	L	TR	LTR	LTR	LT	R	
Denied Del/Veh (s)							1.0
Total Del/Veh (s)	10.3	5.6	9.4	8.5	11.7	3.0	8.3

13: Union St & Portland Square/Site Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	7.3	9.5	1.0	2.6	3.1

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	15.7

Intersection: 3: Spring St/Middle St & Union St/Temple St

Movement	NB	NB	SB	SB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	168	80	104	164	183	95	118	52
Average Queue (ft)	39	54	36	74	72	30	50	19
95th Queue (ft)	108	89	81	130	135	72	89	46
Link Distance (ft)	198			350	611		297	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		55	80			70		110
Storage Blk Time (%)	1	9	0	5	8	0	0	
Queuing Penalty (veh)	1	3	0	3	5	0	0	

Intersection: 9: Union St & Fore St

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	LT	R
Maximum Queue (ft)	78	101	144	105	137	74
Average Queue (ft)	28	39	58	45	59	40
95th Queue (ft)	60	76	108	83	111	76
Link Distance (ft)	429		264	214	197	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		100				50
Storage Blk Time (%)	0	0			11	1
Queuing Penalty (veh)	0	0			10	2

Intersection: 13: Union St & Portland Square/Site

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	93	39	94
Average Queue (ft)	4	41	3	30
95th Queue (ft)	19	75	19	76
Link Distance (ft)	204	314	197	198
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 25

Intersection: 3: Spring St/Middle St & Union St/Temple St

Phase	2	3	4	6	7	8
Movement(s) Served	NETL	SBL	NBT	SWTL	NBL	SBT
Maximum Green (s)	45.0	10.0	35.0	45.0	15.0	30.0
Minimum Green (s)	10.0	5.0	5.0	10.0	5.0	5.0
Recall	None	None	None	None	None	None
Avg. Green (s)	-1.3	7.1	-3.9	-1.3	7.0	-3.4
g/C Ratio	NA	NA	NA	NA	NA	NA
Cycles Skipped (%)	5	57	9	5	61	8
Cycles @ Minimum (%)	17	24	10	17	24	9
Cycles Maxed Out (%)	0	3	1	0	3	3
Cycles with Peds (%)	26	0	16	9	0	5

Controller Summary
Average Cycle Length (s): -6.9
Number of Complete Cycles : 75
Average All-Red Dwell (s): 3.9
Cycles with All-Red Dwell (%): 3

Intersection: 9: Union St & Fore St

Phase	1	2	4	6	8
Movement(s) Served	EBL	WBTL	NBTL	EBTL	SBTL
Maximum Green (s)	15.0	28.0	20.0	48.0	20.0
Minimum Green (s)	6.0	8.0	6.0	8.0	6.0
Recall	None	None	None	None	None
Avg. Green (s)	8.2	-2.7	-2.5	1.7	-2.5
g/C Ratio	NA	NA	NA	NA	NA
Cycles Skipped (%)	67	17	11	9	11
Cycles @ Minimum (%)	17	25	17	20	17
Cycles Maxed Out (%)	3	0	5	0	5
Cycles with Peds (%)	0	17	13	22	12

Controller Summary
Average Cycle Length (s): -4.7
Number of Complete Cycles : 102
Average All-Red Dwell (s): 4.4
Cycles with All-Red Dwell (%): 8

Summary of All Intervals

Run Number	1	3	4	5	6	Avg
Start Time	3:55	3:55	3:55	3:55	3:55	3:55
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1834	1957	1944	1893	1916	1908
Vehs Exited	1835	1959	1937	1907	1907	1911
Starting Vehs	29	24	25	34	20	24
Ending Vehs	28	22	32	20	29	25
Travel Distance (mi)	329	351	349	341	344	343
Travel Time (hr)	30.0	35.1	30.8	31.9	34.3	32.4
Total Delay (hr)	16.0	20.2	15.9	17.5	19.7	17.8
Total Stops	2198	2267	2272	2197	2266	2241
Fuel Used (gal)	18.6	20.4	19.3	19.5	20.0	19.6

Interval #0 Information Seeding

Start Time	3:55
End Time	4:00
Total Time (min)	5

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	3	4	5	6	Avg
Vehs Entered	547	575	552	568	574	562
Vehs Exited	526	550	540	557	515	538
Starting Vehs	29	24	25	34	20	24
Ending Vehs	50	49	37	45	79	49
Travel Distance (mi)	94	100	95	99	95	97
Travel Time (hr)	9.1	13.5	9.6	9.9	10.6	10.6
Total Delay (hr)	5.1	9.2	5.5	5.7	6.6	6.4
Total Stops	672	665	652	653	666	662
Fuel Used (gal)	5.5	6.6	5.6	5.8	5.7	5.9

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	3	4	5	6	Avg
Vehs Entered	445	460	451	471	435	451
Vehs Exited	466	480	453	486	494	476
Starting Vehs	50	49	37	45	79	49
Ending Vehs	29	29	35	30	20	28
Travel Distance (mi)	81	84	82	87	85	84
Travel Time (hr)	7.7	7.7	6.7	9.6	10.5	8.4
Total Delay (hr)	4.2	4.1	3.2	5.9	6.8	4.9
Total Stops	516	520	523	557	525	530
Fuel Used (gal)	4.7	4.7	4.4	5.3	5.4	4.9

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	3	4	5	6	Avg
Vehs Entered	400	454	452	433	424	434
Vehs Exited	406	458	465	435	416	436
Starting Vehs	29	29	35	30	20	28
Ending Vehs	23	25	22	28	28	22
Travel Distance (mi)	72	82	82	79	76	78
Travel Time (hr)	5.8	6.6	6.4	6.4	6.2	6.3
Total Delay (hr)	2.7	3.1	2.8	3.1	2.9	2.9
Total Stops	466	525	524	505	496	498
Fuel Used (gal)	3.9	4.4	4.4	4.3	4.1	4.2

Interval #4 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	3	4	5	6	Avg
Vehs Entered	442	468	489	421	483	458
Vehs Exited	437	471	479	429	482	460
Starting Vehs	23	25	22	28	28	22
Ending Vehs	28	22	32	20	29	25
Travel Distance (mi)	81	85	88	76	88	84
Travel Time (hr)	7.4	7.3	8.1	6.0	7.0	7.1
Total Delay (hr)	4.0	3.7	4.3	2.8	3.3	3.6
Total Stops	544	557	573	482	579	545
Fuel Used (gal)	4.6	4.7	4.9	4.1	4.8	4.6

3: Spring St/Middle St & Union St/Temple St Performance by lane

Lane	NB	NB	SB	SB	NE	NE	SW	SW	All
Movements Served	L	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)									1.6
Total Del/Veh (s)	40.9	12.7	29.7	17.9	41.4	13.0	38.3	16.9	19.7

9: Union St & Fore St Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					1.7
Total Del/Veh (s)	35.8	18.6	14.2	27.6	26.0

13: Union St & Portland Square/Site Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.3
Total Del/Veh (s)	10.1	19.6	1.5	3.6	6.7

Total Network Performance

Denied Del/Veh (s)	2.1
Total Del/Veh (s)	31.1

Intersection: 3: Spring St/Middle St & Union St/Temple St

Movement	NB	NB	SB	SB	NE	NE	SW	SW
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	208	80	93	239	188	95	192	135
Average Queue (ft)	64	65	33	100	65	69	46	80
95th Queue (ft)	161	89	80	183	150	105	121	131
Link Distance (ft)	204			355	612		297	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	1							
Storage Bay Dist (ft)		55	80			70		110
Storage Blk Time (%)	2	18	0	13	3	13	0	4
Queuing Penalty (veh)	6	9	1	6	6	8	0	2

Intersection: 9: Union St & Fore St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	372	191	135	207
Average Queue (ft)	151	85	60	123
95th Queue (ft)	328	149	104	213
Link Distance (ft)	441	264	221	203
Upstream Blk Time (%)	2	0		3
Queuing Penalty (veh)	0	0		9
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Union St & Portland Square/Site

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	183	52	144
Average Queue (ft)	14	69	3	32
95th Queue (ft)	42	162	20	93
Link Distance (ft)	204	314	203	204
Upstream Blk Time (%)		2		0
Queuing Penalty (veh)		0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 47

Intersection: 3: Spring St/Middle St & Union St/Temple St

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SWL	NET	SBL	NBT	NEL	SWT	NBL	SBT
Maximum Green (s)	6.7	21.8	6.0	23.0	8.6	19.9	6.0	23.0
Minimum Green (s)	5.0	10.0	5.0	5.0	5.0	10.0	5.0	5.0
Recall	None	None	None	None	None	None	None	None
Avg. Green (s)	7.5	-4.6	6.2	-4.0	8.6	-6.4	6.9	-4.6
g/C Ratio	NA	NA	NA	NA	NA	NA	NA	NA
Cycles Skipped (%)	45	5	48	4	39	7	46	5
Cycles @ Minimum (%)	0	11	32	4	0	12	29	2
Cycles Maxed Out (%)	25	39	18	39	19	42	23	44
Cycles with Peds (%)	0	39	0	21	0	26	0	30

Controller Summary
Average Cycle Length (s): -10.3
Number of Complete Cycles : 55

APPENDIX F

- TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS
- 12-HOUR AVERAGE CONDITION TRAFFIC VOLUMES

Table 7.1 2025 Average Condition Traffic Volumes																				
Collected 10/21/2025	Fore Street Eastbound					Fore Street Westbound					Union Street Northbound					Union Street Southbound				
Begin Hour	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**
6:00 AM	18	31	5	1	54	1	17	4	3	22	4	19	4	1	27	3	22	10	5	35
7:00 AM	44	110	14	7	168	2	64	4	8	70	5	39	9	1	53	7	39	35	7	81
8:00 AM	85	181	16	4	282	10	82	7	2	99	0	63	13	3	76	19	64	40	19	123
9:00 AM	75	145	20	5	240	12	90	19	4	121	7	54	16	3	77	17	144	46	10	207
10:00 AM	48	158	17	3	223	16	104	29	4	149	10	40	17	4	67	25	87	32	17	144
11:00 AM	72	146	27	6	245	16	100	28	9	144	14	41	15	5	70	24	75	40	13	139
12:00 PM	83	156	16	5	255	15	141	27	5	183	16	58	16	5	90	26	85	69	8	180
1:00 PM	56	155	20	3	231	19	121	29	7	169	6	56	34	8	96	35	73	40	23	148
2:00 PM	52	166	21	9	239	21	122	19	5	162	13	53	18	2	84	26	84	33	15	143
3:00 PM	75	151	19	3	245	21	135	20	9	176	16	51	14	3	81	28	75	52	17	155
4:00 PM	78	167	19	2	264	25	142	18	5	185	8	65	18	9	91	25	91	64	18	180
5:00 PM	80	167	16	0	263	29	158	20	8	207	14	73	34	5	121	23	96	67	33	186
6:00 PM	49	126	14	2	189	11	105	32	6	148	12	40	27	3	79	29	67	37	12	133
TOTAL Volume	815	1859	224	50	2898	198	1381	256	75	1835	125	652	235	52	1012	287	1002	565	197	1854

Annual Adjustment = 1.051

Table 7.2 2030 Average Condition Traffic Volumes (PRE-DEVELOPMENT)																				
Collected 10/21/2025	Fore Street Eastbound					Fore Street Westbound					Union Street Northbound					Union Street Southbound				
Begin Hour	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**	**Left**	**Thru**	**Right**	**RTOR**	**TOTAL (w/o RTOR)**
6:00 AM	19	33	5	1	57	1	18	4	3	23	4	20	4	1	28	3	23	11	5	37
7:00 AM	46	116	15	7	177	2	67	4	8	74	5	41	9	1	56	7	41	37	7	85
8:00 AM	89	190	17	4	296	11	86	7	2	104	0	66	14	3	80	20	67	42	20	129
9:00 AM	79	152	21	5	252	13	95	20	4	127	7	57	17	3	81	18	151	48	11	218
10:00 AM	50	166	18	3	234	17	109	30	4	157	11	42	18	4	70	26	91	34	18	151
11:00 AM	76	153	28	6	257	17	105	29	9	151	15	43	16	5	74	25	79	42	14	146
12:00 PM	87	164	17	5	268	16	148	28	5	192	17	61	17	5	95	27	89	73	8	189
1:00 PM	59	163	21	3	243	20	127	30	7	178	6	59	36	8	101	37	77	42	24	156
2:00 PM	55	174	22	9	251	22	128	20	5	170	14	56	19	2	88	27	88	35	16	150
3:00 PM	79	159	20	3	257	22	142	21	9	185	17	54	15	3	85	29	79	55	18	163
4:00 PM	82	176	20	2	277	26	149	19	5	194	8	68	19	9	96	26	96	67	19	189
5:00 PM	84	176	17	0	276	30	166	21	8	218	15	77	36	5	127	24	101	70	35	195
6:00 PM	51	132	15	2	199	12	110	34	6	156	13	42	28	3	83	30	70	39	13	140
TOTAL Volume	857	1954	235	53	3046	208	1451	269	79	1929	131	685	247	55	1064	302	1053	594	207	1949

TOWN: PORTLAND ENG: JWS

ROUTE: N/A DATE: 10/31/2025

LOCATION: FORE ST AT UNION ST - 2025 EXISTING CONDITIONS (RTOR VOL. DISCOUNTED)

AREA TYPE (URBAN=U, RURAL OR 85TH PERCENTILE SPEED>40=R): U

	MAJOR STREET #OF LANES: 1			MINOR STREET #OF LANES: 1			MININUM VEH. VOLUME WARRANT			80% Combo	INTERRUPTION OF TRAFFIC WARRANT			80% Combo
TIME BEG HR	EB APP.	WB APP.	TOTAL	SB APP:	APP.	HIGHER	Major Rd 500	Minor Rd 150	Met?	Warrant Met?	Major Rd 750	Minor Rd 75	Met?	Warrant Met?
12 AM			0			0	0%	0%			0%	0%		
1 AM			0			0	0%	0%			0%	0%		
2 AM			0			0	0%	0%			0%	0%		
3 AM			0			0	0%	0%			0%	0%		
4 AM			0			0	0%	0%			0%	0%		
5 AM			0			0	0%	0%			0%	0%		
6 AM	54	22	76	35		35	15%	23%			10%	47%		
7 AM	168	70	238	81		81	48%	54%			32%	108%		
8 AM	282	99	381	123		123	76%	82%			51%	164%		
9 AM	240	121	361	207		207	72%	138%			48%	276%		
10 AM	223	149	372	144		144	74%	96%			50%	192%		
11 AM	245	144	389	139		139	78%	93%			52%	185%		
12 PM	255	183	438	180		180	88%	120%		YES	58%	240%		
1 PM	231	169	400	148		148	80%	99%		YES	53%	197%		
2 PM	239	162	401	143		143	80%	95%		YES	53%	191%		
3 PM	245	176	421	155		155	84%	103%		YES	56%	207%		
4 PM	264	185	449	180		180	90%	120%		YES	60%	240%		
5 PM	263	207	470	186		186	94%	124%		YES	63%	248%		
6 PM	189	148	337	133		133	67%	89%			45%	177%		
7 PM			0			0	0%	0%			0%	0%		
8 PM			0			0	0%	0%			0%	0%		
9 PM			0			0	0%	0%			0%	0%		
10 PM			0			0	0%	0%			0%	0%		
11 PM			0			0	0%	0%			0%	0%		
TOTAL HOURS MET:									0	6			0	0

TOWN: PORTLAND ENG: JWS

ROUTE: N/A DATE: 10/31/2025

LOCATION: FORE ST AT UNION ST - 2025 EXISTING CONDITIONS (WITH RTOR VOL.)

AREA TYPE (URBAN=U, RURAL OR 85TH PERCENTILE SPEED>40=R): U

	MAJOR STREET			MINOR STREET			MININUM VEH. VOLUME WARRANT			80%	INTERRUPTION OF TRAFFIC WARRANT			80%
	#OF LANES:		1	#OF LANES:		1				Combo				Combo
TIME	EB	WB			SB		Major Rd	Minor Rd		Warrant	Major Rd	Minor Rd		Warrant
BEG HR	APP.	APP.	TOTAL	APP:	APP.	HIGHER	500	150	Met?	Met?	750	75	Met?	Met?
12 AM			0			0	0%	0%			0%	0%		
1 AM			0			0	0%	0%			0%	0%		
2 AM			0			0	0%	0%			0%	0%		
3 AM			0			0	0%	0%			0%	0%		
4 AM			0			0	0%	0%			0%	0%		
5 AM			0			0	0%	0%			0%	0%		
6 AM	55	25	80		40	40	16%	27%			11%	53%		
7 AM	175	78	253		88	88	51%	59%			34%	117%		
8 AM	286	101	387		142	142	77%	95%			52%	189%		
9 AM	245	125	370		217	217	74%	145%			49%	289%		
10 AM	226	153	379		161	161	76%	107%			51%	215%		
11 AM	251	153	404		152	152	81%	101%		YES	54%	203%		
12 PM	260	188	448		188	188	90%	125%		YES	60%	251%		
1 PM	234	176	410		171	171	82%	114%		YES	55%	228%		
2 PM	248	167	415		158	158	83%	105%		YES	55%	211%		
3 PM	248	185	433		172	172	87%	115%		YES	58%	229%		
4 PM	266	190	456		198	198	91%	132%		YES	61%	264%		
5 PM	263	215	478		219	219	96%	146%		YES	64%	292%		
6 PM	191	154	345		145	145	69%	97%			46%	193%		
7 PM			0			0	0%	0%			0%	0%		
8 PM			0			0	0%	0%			0%	0%		
9 PM			0			0	0%	0%			0%	0%		
10 PM			0			0	0%	0%			0%	0%		
11 PM			0			0	0%	0%			0%	0%		
TOTAL HOURS MET:									0	7			0	0

TOWN: PORTLAND ENG: JWS

ROUTE: N/A DATE: 10/31/2025

LOCATION: FORE ST AT UNION ST - 2030 FUTURE CONDITIONS

AREA TYPE (URBAN=U, RURAL OR 85TH PERCENTILE SPEED>40=R): U

	MAJOR STREET			MINOR STREET			MININUM VEH. VOLUME WARRANT			80%	INTERRUPTION OF TRAFFIC WARRANT			80%
	#OF LANES:		1	#OF LANES:		1				Combo				Combo
TIME	EB	WB			SB		Major Rd	Minor Rd		Warrant	Major Rd	Minor Rd		Warrant
BEG HR	APP.	APP.	TOTAL	APP:	APP.	HIGHER	500	150	Met?	Met?	750	75	Met?	Met?
12 AM			0			0	0%	0%			0%	0%		
1 AM			0			0	0%	0%			0%	0%		
2 AM			0			0	0%	0%			0%	0%		
3 AM			0			0	0%	0%			0%	0%		
4 AM			0			0	0%	0%			0%	0%		
5 AM			0			0	0%	0%			0%	0%		
6 AM	57	23	80		37	37	16%	25%			11%	49%		
7 AM	177	74	250		85	85	50%	57%			33%	114%		
8 AM	296	104	400		129	129	80%	86%		YES	53%	172%		
9 AM	252	127	379		218	218	76%	145%			51%	290%		
10 AM	234	157	391		151	151	78%	101%			52%	202%		
11 AM	257	151	409		146	146	82%	97%		YES	55%	195%		
12 PM	268	192	460		189	189	92%	126%		YES	61%	252%		
1 PM	243	178	420		156	156	84%	104%		YES	56%	207%		
2 PM	251	170	421		150	150	84%	100%		YES	56%	200%		
3 PM	257	185	442		163	163	88%	109%		YES	59%	217%		
4 PM	277	194	472		189	189	94%	126%		YES	63%	252%		
5 PM	276	218	494		195	195	99%	130%		YES	66%	261%		
6 PM	199	156	354		140	140	71%	93%			47%	186%		
7 PM			0			0	0%	0%			0%	0%		
8 PM			0			0	0%	0%			0%	0%		
9 PM			0			0	0%	0%			0%	0%		
10 PM			0			0	0%	0%			0%	0%		
11 PM			0			0	0%	0%			0%	0%		
TOTAL HOURS MET:									0	8			0	0

TOWN: PORTLAND ENG: JWS

ROUTE: N/A DATE: 10/31/2025

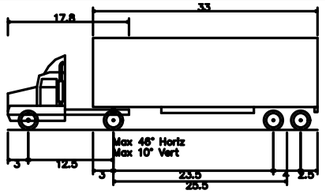
LOCATION: FORE ST AT UNION ST - 2030 FUTURE CONDITIONS (WITH RTOR VOL)

AREA TYPE (URBAN=U, RURAL OR 85TH PERCENTILE SPEED>40=R): U

	MAJOR STREET #OF LANES: 1			MINOR STREET #OF LANES: 1			MININUM VEH. VOLUME WARRANT			80% Combo	INTERRUPTION OF TRAFFIC WARRANT			80% Combo
TIME BEG HR	EB APP.	WB APP.	TOTAL	SB APP:	APP.	HIGHER	Major Rd 500	Minor Rd 150	Met?	Warrant Met?	Major Rd 750	Minor Rd 75	Met?	Warrant Met?
12 AM			0			0	0%	0%			0%	0%		
1 AM			0			0	0%	0%			0%	0%		
2 AM			0			0	0%	0%			0%	0%		
3 AM			0			0	0%	0%			0%	0%		
4 AM			0			0	0%	0%			0%	0%		
5 AM			0			0	0%	0%			0%	0%		
6 AM	58	26	84	42		42	17%	28%			11%	56%		
7 AM	184	82	266	92		92	53%	62%			35%	123%		
8 AM	301	106	407	149		149	81%	99%		YES	54%	199%		
9 AM	257	131	389	228		228	78%	152%			52%	304%		
10 AM	238	161	398	169		169	80%	113%			53%	226%		
11 AM	264	161	425	160		160	85%	107%		YES	57%	213%		
12 PM	273	198	471	198		198	94%	132%		YES	63%	263%		
1 PM	246	185	431	180		180	86%	120%		YES	57%	240%		
2 PM	261	176	436	166		166	87%	111%		YES	58%	221%		
3 PM	261	194	455	181		181	91%	121%		YES	61%	241%		
4 PM	280	200	479	208		208	96%	139%		YES	64%	277%		
5 PM	276	226	502	230		230	100%	153%	YES	YES	67%	307%		
6 PM	201	162	363	152		152	73%	102%			48%	203%		
7 PM			0			0	0%	0%			0%	0%		
8 PM			0			0	0%	0%			0%	0%		
9 PM			0			0	0%	0%			0%	0%		
10 PM			0			0	0%	0%			0%	0%		
11 PM			0			0	0%	0%			0%	0%		
TOTAL HOURS MET:									1	8			0	0

APPENDIX G

- **TURNING TEMPLATE**



WB-40 – Intermediate Semi-Trailer

Overall Length	45.499ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Track Width	8.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	20.30°

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

Woodard & Curran

12 Mountfort Street
Portland, Maine 04101
800.426.4262 | www.woodardcurran.com

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PE SEAL:

NOT FOR CONSTRUCTION

CLIENT INFO:

EAST BROWN COW - KOWTOWER LLC
PORTLAND, MAINE

45 UNION STREET

JOB NO:	0232191.08
DATE:	AUGUST 2025
SCALE:	AS NOTED
DESIGNED BY:	ANG
DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:
VEHICLE MOVEMENTS
WB-40

DRAWING NO:
C-5

\\woodardcurran.net\shared\Projects\0232191.08 Kowtower LLC Kowtower Hotel\wip\Drawings\Civil\0232191.08 Vehicle Figs.dwg, Oct 08, 2025 - 4:19pm BMCDEVITT

45 Union Street - Valet Operations Plan

Objectives

Provide an operational plan to support the arrival and departure vehicular experience for residents, hotel guests, and visitors at 45 Union Street—a 30-story mixed-use building (88 hotel rooms, 73 residences, and amenity uses such as a ground level café, restaurant level, wellness level, residential club level, and sky lobby with hotel check-in, viewing area, and a bar/lounge). Since no on-site parking is provided, operations will rely on the Old Port Square Garage (423 spaces). The plan ensures seamless guest service, a positive resident and visitor experience, and minimal disruption to downtown Portland traffic.

Operations Plan Fundamentals

The plan is structured around three components: Personnel, Policy, and Execution. It will remain preliminary and evolve during advanced project design, site construction and permitting, and final Certificate of Occupancy with input from the project team including ownership and management as well as the municipal authority, the City of Portland.

Personnel

Any parking plan for this type of mixed-use development must incorporate a model that addresses two primary logistical challenges:

- Limited Pick-Up/Drop-Off Capacity: The motor court, which is accessed via a private 2-way drive aisle off of Union Street, requires a defined and coordinated curbside pick-up and drop-off zone, allowing for no greater than 5 full-sized stationary vehicles to be present at any time. This upper limit will ensure smooth valet operations even during peak hours when the overlapping demand of hotel guests, residential owners, and public visitors will be the most elevated.
- Off-Site Parking Utilization: Beyond the maximum of 5 full-size stationary vehicles being present on the site, all other vehicles will be staged in the Old Port Square Garage, which adjoins the property. A dedicated allocation of spaces within the garage will be utilized for residents and hotel guests, while Towne Park's valet operations team will actively manage overflow, ensuring that surge demand during peak periods can be absorbed via other nearby Towne Park parking facilities without disruption. The valet operations team will also be mindful of the shared nature of the private 2-way drive aisle, maintaining a speed limit of less than 15 MPH and prioritizing customer access into the garage and tenant access into 200 Middle Street.

With more than 800 properties nationwide, Towne Park has developed a proven approach for addressing these challenges by combining limited curbside operations with flexible off-site

garage capacity. Our experience shows that financial performance and guest service delivery must be aligned, and that efficient personnel deployment is critical to maintaining a seamless arrival and departure experience. Many of our clients lack on-site parking assets altogether; as such, Towne Park routinely manages right-of-way alignment, overflow capacity, and neighborhood traffic impact as part of our market evaluations.

In the case of this project, proper staffing and right-of-way management will be central to success and therefore are the top priority. Our typical operating model would include:

- Account Manager: Assigned full-time to oversee daily valet operations, quality control, and client service.
- Base Staffing: Three attendants per shift to support normal activity levels across uses.
- Peak Surge Coverage: Swing shift staff activated during restaurant dinner hours, weekend bar crowds, and hotel check-in/check-out periods.
- Traffic Director: A dedicated attendant deployed at Union Street during peak times to keep the drop-off zone clear and ensure steady traffic flow.

Guest, Resident, & Visitor Policy

To maintain flow and avoid congestion, the following project-tailored policies are recommended:

Arrival Staging Policy

- Traditional Policy: Guests are permitted to leave vehicles on the driveway while they register at the front desk.
- Proposed Policy: Guests may not leave vehicles idle in the motor court while checking in. Vehicles must be unloaded immediately with support from level 1 (ground) bellman and concierge and handed off to valet prior to checking in at the Sky Lobby on level 30. This will be the same requirement for residents and visitors.
- Training Implication: Arrival script will be altered to support the property's objectives. The valet team will be required to notify the guest, resident, or visitor of the unloading policy upon arrival and offer support to ensure a positive arrival experience.

Vehicle Retrieval Policy

- Traditional Policy: Guests are permitted to request their vehicle via text message or telephone.
- Proposed Policy: Due to the 5 full-size stationary vehicle limit within the motor court, vehicle retrieval requests will be queued via digital app based on submission time for guests, residents, and visitors. Additional vehicles will be staged in the Old Port Square Garage to maximize turnover and minimize wait times.

- Training Implication: Arrival script and digital interface will be altered to support the property's objectives. The valet team must inform the guests, residents, or visitors that they will need to be present to retrieve their vehicle(s).

Grace Period Policy

- Traditional Policy: Guests, visitors, and guest deliveries are allowed 10-15 minutes of complimentary vehicle staging.
- Proposed Policy: Vehicle staging will not be permitted. All guests, residents, visitors, or small-scale deliveries will be required to either valet park for a fee or be directed to alternative self-park options.
- Training Implication: Arrival script to be altered to support property's objectives. When guests, residents, visitors, or small-scale deliveries are identified they will be given both options and will be required to choose one before leaving their vehicle.

Execution

- Dedicated Drop-Off Zone: Utilize the motor court at the hotel/public and residential main entrances for arrivals; provide clear signage for hotel guests, residents, and visitors.

- Dedicated Pick-Up Zone: When space feasible, stage 3–5 vehicles at motor court for immediate retrieval. Additional vehicles staged in the Old Port Square Garage.

- Garage Routing: Vehicles to be transported directly into Old Port Square Garage via shortest/least disruptive path (Union Street → Motor Court → North Garage Entry/Egress).

- Safety: Identify clear pedestrian paths, always maintain 15 MPH maximum speed, and coordinate with City of Portland for temporary traffic control during peak events as necessary.

Ensuring Smooth Traffic Flow

- Our proposed valet operations for 45 Union Street are designed to maintain uninterrupted traffic flow and avoid congestion, even during peak demand. A dedicated traffic director will be positioned during high-volume periods to ensure continuous curbside movement and prevent blockages.

- Recognizing the shared use of this location, with residents, hotel guests, amenity users/building visitors, and adjacent retail, food and beverage, office, and parking garage users all overlapping, particularly in the mornings, evenings, and on weekends, Towne Park has designed a model that balances mixed-use activity without compromising accessibility.

- As a comparative benchmark, Towne Park has successfully integrated similar valet operations at properties under residential and hospitality brands such as Four Seasons, The Ritz-Carlton, and St. Regis, where seamless service delivery coexists with active city traffic corridors and emergency access routes. This experience demonstrates our ability to replicate proven best practices at 45 Union Street, ensuring smooth operations without disruption.

Parking Options & Capacity – Old Port Square Garage (423 spaces). Allocation Priorities from 45 Union Street: Hotel guests and residents first, then amenity users/building visitors. Contingency: Additional parking lots and garages may be evaluated if capacity is reached.

Operational Policies

Ensuring Smooth Traffic Flow and Efficient Operations

Our proposed valet parking service for 45 Union Street is designed to prevent congestion and ensure uninterrupted traffic flow on Union Street and the private 2-way drive aisle to the motor court. This plan outlines a structured approach to staffing, logistics, and parking to demonstrate that valet operations will enhance accessibility without creating blockages.

Operational Efficiency

- Dedicated Pick-Up Drop-Off Zones: The valet service will utilize the motor court in front of the hotel/public and residential entrances, ensuring continuous movement without interference in the motor court and drive aisle.
- Strategic Staffing: To maintain smooth operation, valet staffing will be adjusted based on residential, hospitality, and commercial occupancy data, scheduled events, and peak demand hours.
- Peak Demand Hours: A dedicated staff member will direct arriving vehicles to prevent backups.

Staffing Requirements

- 2:00 AM staff, 2:00 PM staff, 1 overnight, swing shift in the middle. AM will be scheduled for 3 active swing shifts and present most days to assist team.
- Standard Shifts: Three valet attendants will always be present, with an additional swing shift activated when demand requires extra coverage.

Traffic Flow and Safety Measures

- No Blockage to Motor Court & Private Drive Aisle: The valet pick-up and drop-off zone will be structured to allow seamless arrivals and departures without obstructing any loading/delivery entrances or causing traffic obstruction for adjacent users.
- Use of Old Port Square Garage: All valet-parked vehicles will be housed in the Old Port Square Garage, or other nearby parking garages or lots depending on available capacity, reducing curbside congestion.
- Reference for Existing Success: The Hyatt Place Portland Downtown - Old Port Square, located at 433 Fore Street at the corner of Fore and Union Street, operates with a similar setup also managed by Towne Park, successfully utilizing valet operations without disrupting area traffic flow.
- Proven Capability: Our existing team has extensive experience of managing many similar urban curbside conditions with limited to no staging. The team has maintained uninterrupted vehicle movement and will bring the same expertise to 45 Union Street.

This valet plan prioritizes efficiency, safety, and convenience, ensuring 45 Union Street remains open and accessible while enhancing service for all.

Our preliminary evaluation indicates that there is ample parking opportunity within the adjacent garage and other nearby options. The noteworthy observation is that the Old Port Square Garage is within immediate proximity to the planned mixed-use building, which can satisfy many of the necessary requirements. Given that this is a preliminary assessment, it should be noted that with 10+ operations in Portland employing 100+ employees with expertise in parking management, Towne Park has also acquired UPP, which gives us more opportunities for parking solutions in the area for overflow. Our expertise with these parking facilities, the staffing, and the knowledge of traffic flow will be used to optimize the parking for the mixed-use project.

We hope that this operational outline provides directionally useful information in your planning efforts. There are no obvious concerns or issues associated with the number of vehicles to be parked based upon the parking density and range of options in reasonable proximity to the development site. We look forward to continuing the dialog and being of service to you and your guests, tenants, residents, and visitors.

Sincerely,

Lisa Grant
District Manager-New England Towne Park
207.956.2900
lgrant@townepark.com

Old Port Square Garage – Fore Street (South) Vehicular Entrance/Egress



Old Port Square Garage – Motor Court (North) & Union Street (Northwest) Vehicular Entrance/Egress



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MEMORANDUM

TO: Eric Freeman, Planner, City of Portland

CC: Jacob Soley, East Brown Cow – Kowtower LLC

FROM: Caitlin Suhr, PE, Woodard & Curran

DATE: November 11, 2025

RE: 45 Union Street – Bicycle Parking Summary

Purpose

The purpose of this memorandum is to summarize the revised bicycle parking strategy for the 45 Union Street project.

Existing Bicycle Parking & Project Requirements

Currently, throughout the larger Old Port Square area, there are 43 existing bike rack parking spaces. Twenty-nine of those are on private property owned by related-party entities to East Brown Cow – Kowtower LLC. Pursuant to the Land Use Code, the mixed-use development at 45 Union Street is required to provide 43 bicycle parking spaces. A minimum of 10% of these spaces (≥5 spaces) must be located within 50 feet of a primary building entrance.

10% Proximity Requirement

Six outdoor bicycle parking spaces, provided via three Dero Bike Hitches (see Landscape Drawing L5.3), are located immediately west of 45 Union Street, within the required 50-foot distance.

Indoor Bicycle Storage

During review, Planning Staff and the Planning Board expressed concern about the absence of indoor bicycle parking as part of the project. To address this, the applicant intends to provide a new, approximately 225-square-foot indoor bike room at the Old Port Square Garage (see Figure 1 below), which will accommodate 20 vertical bike parking spaces. The room will be accessible to cyclists and pedestrians through a dedicated entrance directly from the sidewalk on Patton Court and will be architecturally integrated into the existing building façade.

Access will be secured using RFID/Bluetooth technology, and security cameras will monitor both the interior and exterior of the space. The room will also feature climate control and code-compliant lighting to ensure user safety and comfort.

Public Sidewalk/Right of Way

By providing this additional indoor parking area, the number of bicycle parking spaces proposed to be installed within the public sidewalk/right-of-way along Union, Middle, and Exchange Streets has been reduced to 30. As previously discussed with City staff, locating a portion of the required bicycle parking within the public sidewalk makes the spaces more visible and accessible to cyclists, improving overall safety and usability.

Bicycle Parking Summary

In total, 56 new bicycle parking spaces are proposed, supplementing the 43 existing spaces within Old Port Square. Of the new spaces, 20 will be located indoors within the Old Port Square Garage.

This total exceeds the project's minimum requirement to provide 43 additional spaces and offers a meaningful benefit to 45 Union Street guests, residents, and visitors, as well as the broader Old Port Square and Old Port community.



Figure 1: Old Port Square Garage Indoor Bicycle Parking (Location & Circulation Noted in Red)

CPP WIND ENGINEERING CONSULTANTS

45 Union Street Development

Portland, ME
CPP #21227

Pedestrian Wind Consultation

17 November 2025

Prepared For
East Brown Cow – Kowtower LLC
100 Commercial Street – Suite 300
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Document Control

REVISION HISTORY			
DATE	REVISION	PREPARED	CHECKED / APPROVED
10 September 2025	Interim Report R00D00	Albert Brooks, M.A.Sc., P.Eng. Associate Principal abrooks@cppwind.com	Chris Oreskovic, M.E.Sc., P.Eng. Project Engineer coreskovic@cppwind.com
23 September 2025	Final Report R01D01	Albert Brooks, M.A.Sc., P.Eng. Associate Principal abrooks@cppwind.com	Chris Oreskovic, M.E.Sc., P.Eng. Project Engineer coreskovic@cppwind.com
14 November 2025	Final Report R01D02	Chris Oreskovic, M.E.Sc., P.Eng. Project Engineer coreskovic@cppwind.com	Timothy Wiechers, M.Sc. Project Scientist twiechers@cppwind.com
17 November 2025	Final Report R01D03	Chris Oreskovic, M.E.Sc., P.Eng. Project Engineer coreskovic@cppwind.com	Timothy Wiechers, M.Sc. Project Scientist twiechers@cppwind.com

Executive Summary

CPP was retained to assess wind conditions around the proposed 45 Union Street development in Portland, ME.

Principal findings of this assessment include:

- Wind conditions at the main entrance to the building are expected to be appropriate, as the current design includes several features that are expected to provide shelter to this space.
- The current design of the development includes several features that are expected to reduce wind speeds at grade. These include the use of large corner chamfers, the Level 2 undercut / void space, and the large canopy structure above the main entrance. We recommend these features be retained as the design matures.
- Wind conditions throughout the current, existing site are generally expected to be comfortable for the intended use. However, existing, strong winds are anticipated along the walkways between the existing 200 Middle Street and both 220 and 190 Middle Street, where northwesterly winds are redirected and channeled.
- When winds are from the south, higher wind speeds are also expected to occur near the southeast and southwest corners of the existing 200 Middle Street building due to downwashing winds.
- The introduction of the proposed 45 Union Street development is not expected to have a significant impact on off-site sidewalk wind conditions.
- Prevailing northwesterly and southerly winds are expected to channel between the proposed 45 Union Street development and the existing 200 Middle Street and 190 Middle Street buildings, potentially leading to an increase in local wind speed near the west, and north side of the proposed building. These wind conditions are expected to be suitable for transient pedestrian use.
- The project team has incorporated trees and landscaping elements at grade, that will generally be of benefit from a wind comfort perspective. As the design of the proposed development and site landscaping continues to mature, the project team may wish to investigate and potentially incorporate additional design features to further enhance wind comfort within this plaza space.

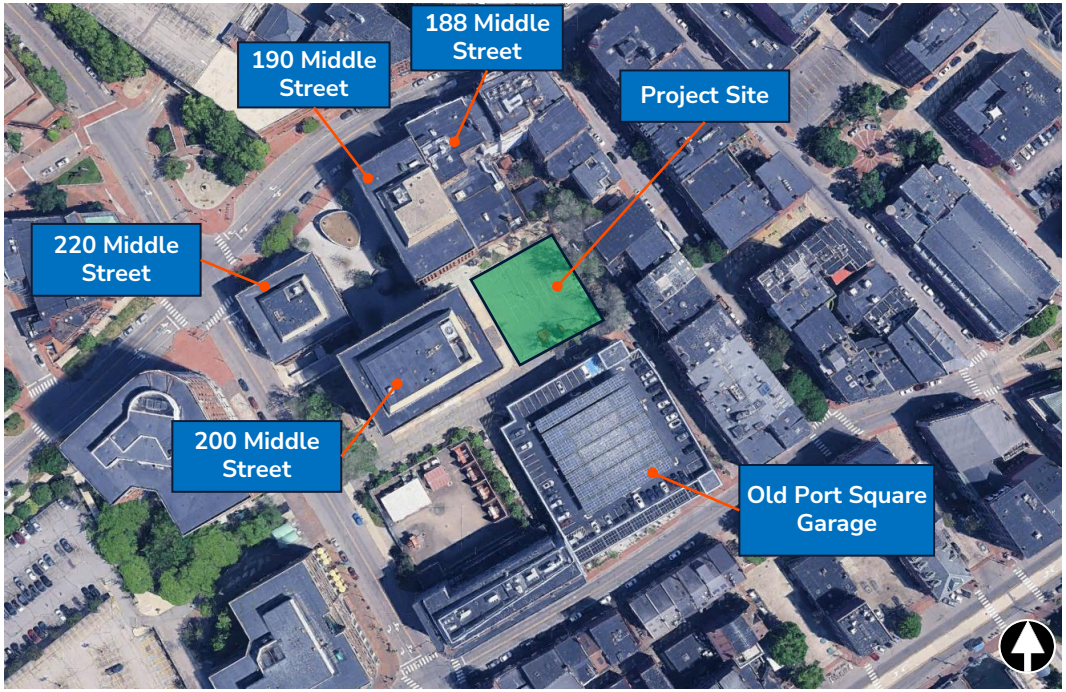
Introduction

Cermak Peterka Petersen (CPP) was retained to assess wind conditions for the proposed 45 Union development in Portland, ME.

An assessment of the acceptability of the wind environment around a development can inform designers about the suitability of outdoor areas for their intended uses and to inform good design. This assessment of pedestrian wind conditions has been conducted in support of the City of Portland Land Use Code Site Design standards for the project.

The intention of this assessment is to:

- Identify the wind flow mechanisms that may result in more frequent strong winds than desired for passive pedestrian use spaces, such as near building entrances, patio / dining and amenity spaces; and,
- Evaluate the proposed design of the development and suggest further concepts that could be used to enhance the wind environment at pedestrian areas around the site, if necessary.



Aerial View of Project Site (Google Earth ™)

Site and Building Information

The proposed 45 Union Street building is 365’ in height to top of occupiable level and features a Sky Lobby at the top of the building at level 30. The main entrance to the building is located along the south façade of the building, under a large canopy structure.

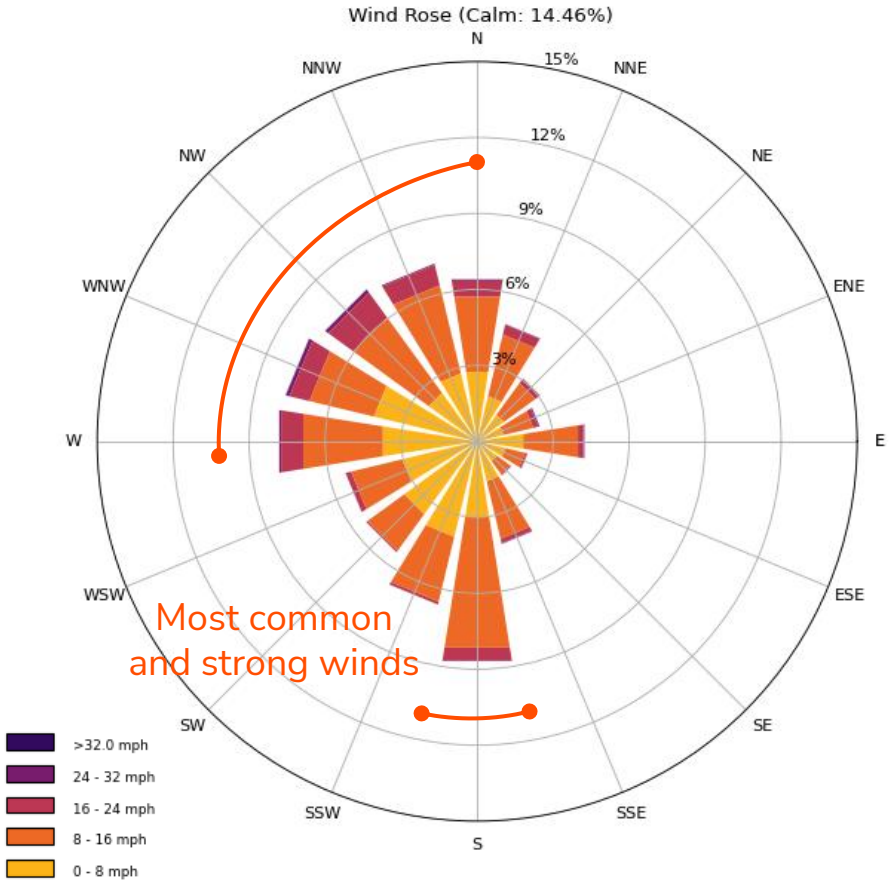
Areas of primary interest from a pedestrian wind comfort perspective include sidewalks and plaza spaces surrounding the proposed development, and the main entrances to the building.



3D View of the Proposed Development (Received 27 August 2025)

Meteorological Data

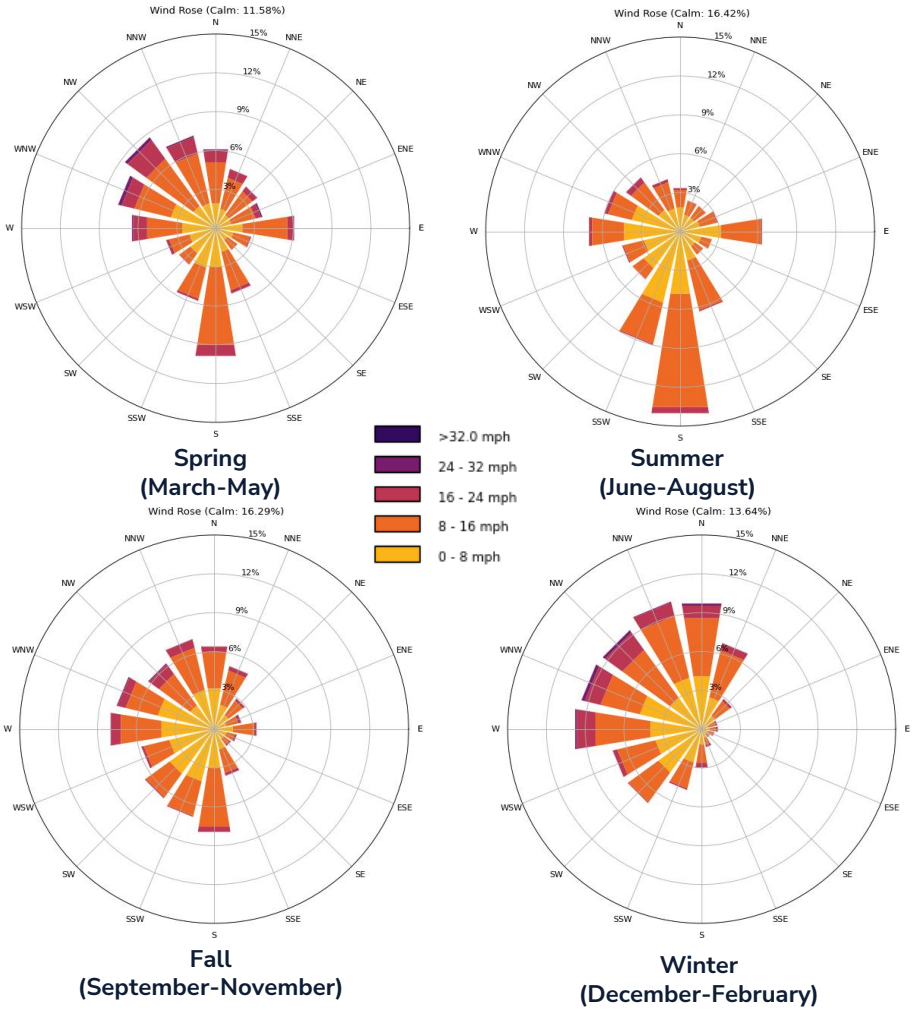
- Meteorological data recorded at Portland International Jetport from 1995 – 2022 was used for this assessment. This wind data is depicted in the adjacent wind rose shown.
- The Portland International Jetport is located approximately 2 miles west of the project site and provides the best source of historical wind data for the project.
- The arms of the wind roses point in the direction from where the wind is blowing, the width and color of the arms represent the wind speed, and the length of the arms indicate the percent of the time that the wind blows for that combination of speed and direction.
- As can be seen, predominant winds occur from the south, and west through north directions. Stronger winds (depicted by the yellow bands) are also associated with winds from the west through north.
- CPP's analysis of the predicted wind conditions will focus on these aforementioned directions as these winds have the greatest likelihood to result in the most adverse wind conditions at the project site.



Probability of Occurrence of Wind Speed by Direction
Portland International Jetport (All Seasons, All Hours, 1995-2022)

Seasonal Winds

- The meteorological data was further analyzed to investigate the frequency of winds that occur throughout the various seasons, as the use of various amenity spaces will vary with season and ambient air temperature.
- Most significantly, there is a distinct directional shift in the winds between the winter, and summer seasons.
- Most winds occur from the west through north in the winter, with strong winds occurring from these directions.
- During the summer winds are most frequently from the south.



Probability of Occurrence of Wind Speed by Direction by Season
Portland International Jetport (All Hours, 1995-2022)

Methodology

WIND ASSESSMENT CRITERIA

- CPP uses the widely-accepted pedestrian-level wind criteria developed by Lawson (1990). Lawson's criteria are divided into separate categories of comfort and distress (safety).
- The comfort criteria allow planners to assess the usability, with respect to the wind environment, of different locations for various purposes, such as for long-duration activities (e.g., sitting at an outdoor café) or casual walking on sidewalks.
- The perception of wind speeds within these comfort categories can vary by individual, so opinions regarding the local wind environment should be always be taken into account.
- The distress (safety) criteria help to identify locations where wind speeds may be hazardous to pedestrians and based on wind speeds that occur approximately twice per year or once per season.
- The wind safety criterion is associated with excessive gust wind speeds that affect a pedestrian's balance and footing and are considered severe.

Comfort Rating	Wind Speed	Description
Sitting	≤ 9 mph	Calm or light breezes suitable for long duration seating areas, and other amenities.
Standing	≤ 13 mph	Gentle breezes suitable for sitting for shorter periods, main entrances and bus stops where pedestrians may linger.
Casual Walking	≤ 18 mph	Moderate winds appropriate for window shopping and strolling along a downtown street, or park.
Business Walking	≤ 22 mph	Relatively high speeds that can be tolerated if one's objective is to walk, run, or cycle.
Uncomfortable	> 22 mph	Strong winds unacceptable for all pedestrian activities; wind mitigation is typically required.

Safety Rating	Wind Speed	Description
Pass	< 34 mph	Meets wind safety criterion
Exceeds	≥ 34 mph	Excessive wind speeds that can adversely affect a pedestrian's balance and footing.

Predicted Wind Conditions

SIDEWALKS (EXISTING SITE)

- The existing site is exposed to the prevailing northwesterly, and southerly winds, resulting in moderate wind speeds suitable for active pedestrian use on and around the site.
- Higher winds speeds, rated as suitable for Walking are expected along the stairs between 190 and 200 Middle Street, where winds from the northwest quadrant channel, and accelerate through this area. Similar, higher winds speeds are expected near the northwest, and southeast corners of the existing 200 Middle Street building.
- These are likely existing areas of higher wind speeds that are the result of the broad façade of the 200 Middle Street, and the proximity of the other surrounding buildings.
- Although higher wind speeds are expected in these areas in the existing, current site – the wind safety criteria is not likely exceeded on an annual basis.



Predicted Wind Comfort Conditions – Existing Site and Surrounding Area (Annual)

Predicted Wind Conditions

SIDEWALKS (PROJECT SITE)

- With the addition of the proposed development, wind conditions on the nearby sidewalks are expected to remain the same throughout the year compared to the existing site.
- No areas around the proposed site are expected to exceed the wind safety criteria on an annual basis.

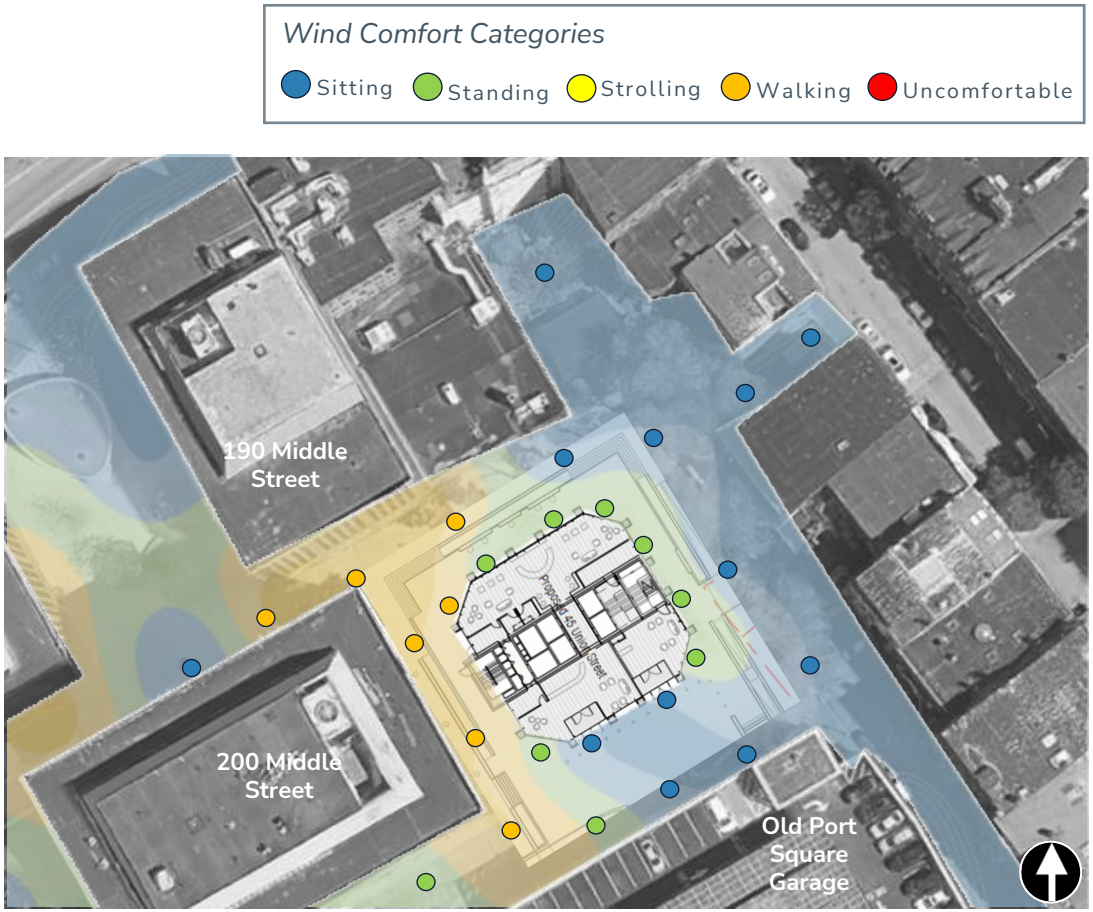


Predicted Wind Comfort Conditions – Project Site and Surrounding Area (Annual)

Predicted Wind Conditions

PROPOSED SITE CONDITIONS

- With the addition of the proposed development, local wind conditions on the site are expected to increase throughout the year compared to the existing site.
- The sidewalk along the west side of the proposed 45 Union development and the existing 200 Middle Street are expected to increase from being comfortable for Standing, to a Walking rating on an annual basis.
- These wind conditions may be perceived as Uncomfortable from time to time during the winter.
- No areas around the proposed site are expected to exceed the wind safety criteria on an annual basis.

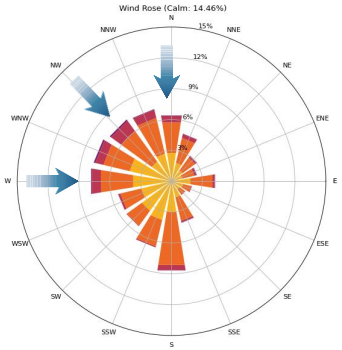


Predicted Wind Comfort Conditions – Project Site and Surrounding Area (Annual)

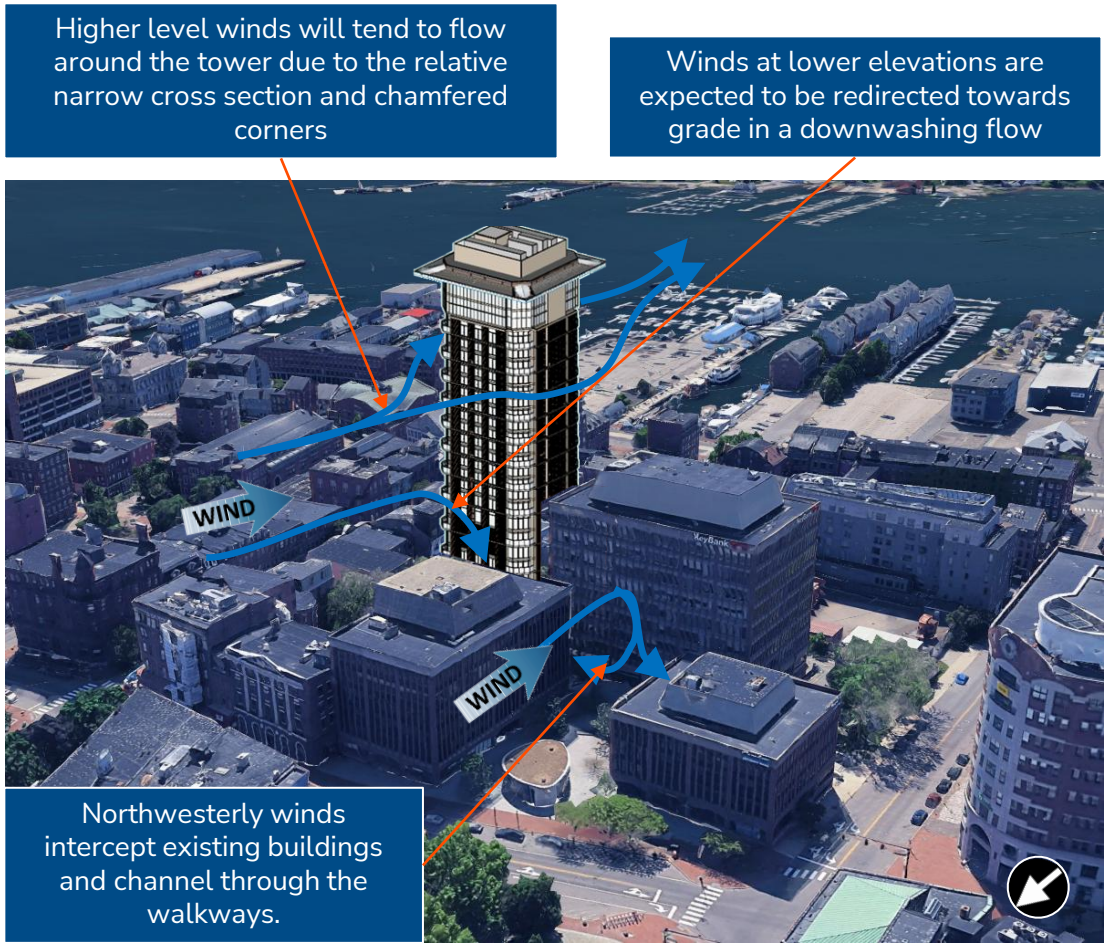
Predicted Wind Conditions

WESTERLY WINDS

- The project site is generally exposed to winds from the northwesterly quadrant.
- These prevailing winds will tend to be redirected by the façade of the tower and flow around the building, due to the large chamfered corners and relatively narrow cross section of the tower.
- However, some lower winds are expected to be redirected towards grade in a down-washing flow.
- These downashing winds are expected to increase wind speeds at grade between 200 Middle Street and the proposed building.



Annual Winds – All Hours

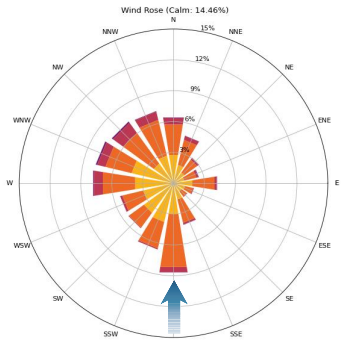


View from the East with Approximate Placement of the Proposed 45 Union Street Building

Predicted Wind Conditions

SOUTHERLY WINDS

- The south façade of the tower is also relatively exposed to southerly winds, which occur more commonly in the summer.
- These prevailing winds will tend to be redirected by the façade of the building and be re-directed towards grade in a down-washing flow.
- The existing 200 Middle Street building, however, is expected to redirect more wind towards the grade level due to the larger area of the south facing façade. These winds are expected to channel between the 45 Union building.



Annual Winds – All Hours

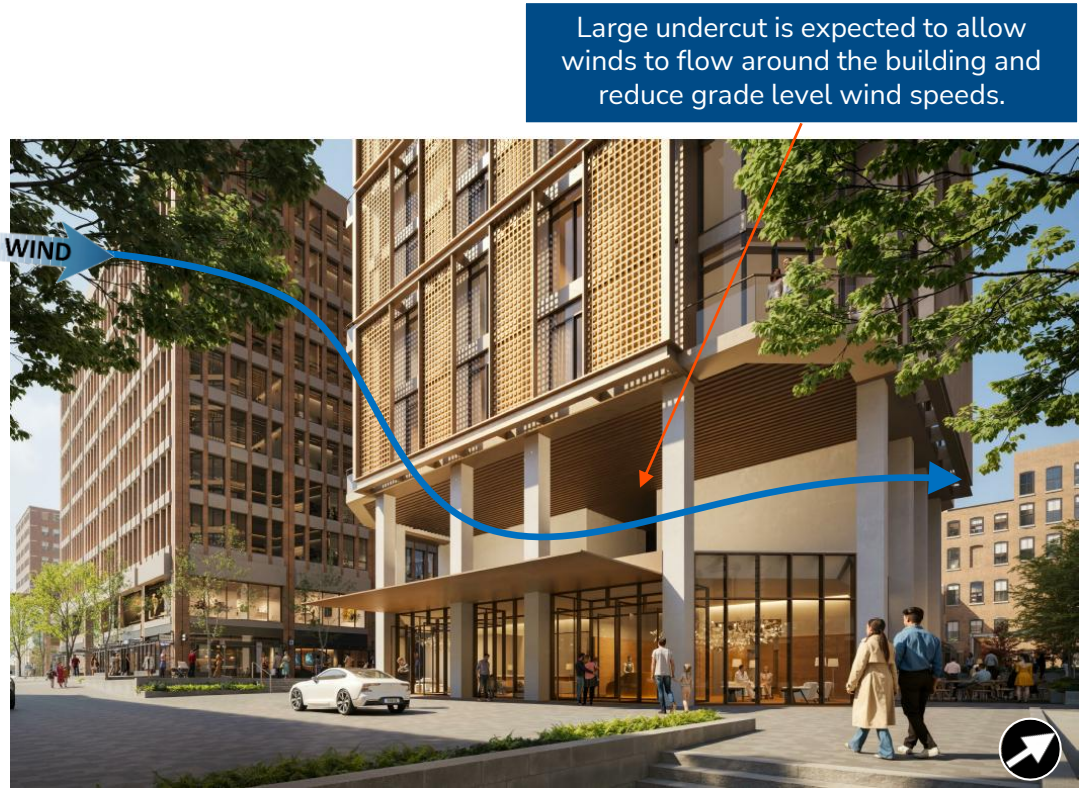


View from the East with Approximate Placement of the Proposed 45 Union Street Building

Predicted Wind Conditions

SOUTHERLY WINDS

- The design of the tower includes several design features that are expected to dramatically reduce grade level wind speeds.
- The large corner chamfers is an effective strategy for reducing downwashing wind flows and reducing the peak wind speeds that would otherwise occur near the building corners.
- The project team has also included a large void space at the second level, and a large canopy structure above the main entrance location.
- This large undercut structure is expected to provide a large space for wind to flow through, reducing wind speeds at grade level.
- It is recommended that these building design features be retained as the design progresses.

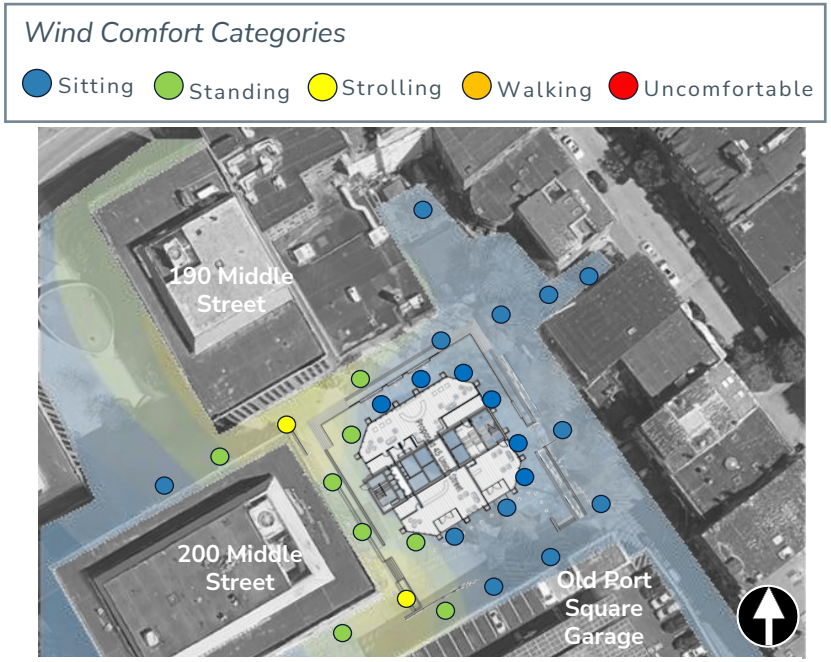


Main Entrance View of the Proposed 45 Union Development

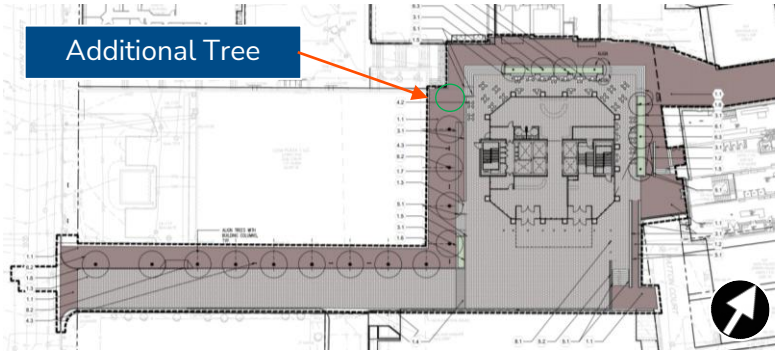
Predicted Wind Conditions

SUMMER CONDITIONS AND SITE LANDSCAPING

- Seasonal wind data for Portland indicates that wind speeds during the summer months are typically lower, resulting in conditions that are, on average, one comfort category more moderate than those observed annually.
- These calmer summer winds will contribute to more favorable pedestrian conditions across the site, particularly at areas intended for passive use, such as the seating area on the north side of the development.
- To further improve local conditions, enhancing the proposed landscaping along the west side of the site is recommended. The addition of a fifth tree near the northwest corner in line with the four trees already reflected on the Level 1 site plan and combined with the use of species with denser foliage, would provide greater wind diffusion and screening benefits.
- With these landscaping enhancements, overall wind conditions across the Level 1 areas are expected to improve further, supporting the intended pedestrian use of the spaces.
- To enhance the wind mitigating performance of the landscaping, it is recommended to select local tree species that retain their foliage throughout the winter, such as various Oak, Hornbeam or Beech species.



Predicted Wind Comfort Conditions – Project Site and Surrounding Area (Summer)



Level 1 Site Plan – Received 11 November 2025

Applicability

CPP was retained to assess wind conditions around the proposed 45 Union Street development, located in Portland, ME.

The evaluation of the wind conditions around the development are based on a qualitative assessment leveraging CPP's extensive knowledge of wind flows within the built environment, the local wind climate and wind studies for other developments conducted throughout the region.

The assessment of the development is based on the 3D design information received on 27 August 2025, as well as the updated landscaping plan provided on 11 November 2025. In the event of any significant changes to the design, use, or operation of the building or surrounds, it is the responsibility of others to contact CPP to initiate a review process.

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MEMORANDUM

TO: Eric Freeman, Planner, City of Portland

CC: Jacob Soley, East Brown Cow – Kowtower LLC

FROM: Caitlin Suhr, PE, Woodard & Curran

DATE: October 8, 2025
Revised November 11, 2025

RE: 45 Union Street – Waste Management Operations Summary

Purpose

The purpose of this memorandum is to summarize the waste management operations for the 45 Union Street project.

Waste Collection Operations

The 45 Union Street building will utilize two chutes that are accessible at each level of the building, one for trash and one for recycling. Staff and building users will collect waste materials from the applicable residential units, hotel rooms, and amenity spaces and deposit them to the chute entrance within the service lobby at each building level.

All materials deposited through the chutes will be conveyed to bins located in the centralized service lobby at Level B1. On a daily basis (or more frequently as needed), staff will transport these bins approximately 150 feet from the building to the existing trash compactor and recycling container.

Equipment and Facilities

The project intends to use the existing Wastequip Pak-Man self-contained trash compactor (model PM6FS) located on the adjacent Hyatt Place Portland Downtown - Old Port Square property at 431-443 Fore Street, (owned by related-party Cow Plaza Hotel LLC).

The compactor provides a 6:1 compaction ratio and accommodates up to 162 cubic feet of compacted waste. It currently serves a portion of the tenants and users at all 10 related-party properties within the larger Old Port Square area.

East Brown Cow prefers the centralized compactor system to multiple dumpsters, as it:

- Consolidates waste in one location,
- Reduces visual and special impacts associated with 3-6 separate dumpsters,
- Ensures prompt waste removal, minimizing odors and pest concerns.

Solid waste is presently collected five days per week, and the compactor is not operating at full capacity.

Capacity and Contingencies

To evaluate the adequacy of the existing on-site compactor to accommodate waste generated by the 45 Union Street project, the applicant reviewed historical compactor pickup data collected between October

10, 2024, and September 2, 2025. The objective of this analysis was to determine the average utilization of the existing Wastequip Pak-Man trash compactor and assess available remaining capacity.

Based on the data review, the average trash weight per pickup during this period was 487.72 pounds. The Wastequip Pak-Man compactor has a total capacity of 162 cubic feet (6 cubic yards) of compacted waste. Using the industry average density for mixed commercial waste of 550 pounds per cubic yard, the compactor can hold approximately 3,300 pounds of trash at full capacity. Therefore, the average pickup represents approximately 14.8 percent of the compactor's total capacity, indicating substantial unused capacity.

The existing compactor currently serves multiple buildings with a combined total floor area of over 400,000 square feet, which include ~~and uses including~~ office, hospitality, residential hospitality, retail, and food and beverage uses. While the precise waste generation rate for the proposed 45 Union Street project is not yet known, the project's total floor area of approximately 200,000 square feet is roughly half that of the existing served area and has primary uses (residential, hospitality, and food and beverage) that are already understood in terms of waste generation. Based on this comparison and the available capacity analysis, the existing compactor has sufficient capacity to accommodate waste from 45 Union Street without requiring additional equipment or modifications.

If, after occupancy of 45 Union Street, waste volumes are observed to approach or exceed the existing compactor's available capacity, East Brown Cow would evaluate potential operational adjustments. These could include increasing collection frequency (up to daily service), and if needed, replacing the existing Pak-Man with a larger Wastequip compactor in the same location.

~~Should the additional waste volume generated by 45 Union Street exceed the current compactor's capacity, East Brown Cow will implement the following measures, in order of priority:~~

1. ~~Increase solid waste collection frequency to six or seven days per week.~~
2. ~~Replace the existing Pak-Man unit with a larger Wastequip compactor installed in the same location.~~

Recycling Operations

Recycling will be managed via a covered container adjacent to the compactor. The container currently serves all ten related-party properties and is collected five days per week. The existing capacity is anticipated to accommodate the additional recycling generated by 45 Union Street. If post-occupancy operations indicate additional capacity is needed, the frequency of pickup could be increased as necessary, or secondarily, the covered container size could be increased.

Environmental sustainability, including effective waste management and diversion, is a core priority for East Brown Cow, and the goal is always to divert as much trash to recycling as possible. Maximizing recycling reduces solid waste volume and demand on waste storage and processing. Operational practices will continue to support high diversion rates and alignment with East Brown Cow's sustainability objectives.

45 UNION STREET

SHADOW STUDY

SafdieArchitects

6 October 2025

OVERVIEW | SITE + SCOPE OF STUDY



AN EVALUATION OF ADDITIONAL PUBLIC SPACES CONFIRMED THE FOLLOWING:

- MONUMENT SQUARE: THERE IS NO SHADOW IMPACT DURING THE CRITICAL HOURS OF USE (10AM-3PM).

- CITY HALL PLAZA: THERE IS NO SHADOW IMPACT DURING THE CRITICAL HOURS OF USE (10AM-2PM) FROM MARCH 21-SEPTEMBER 21. THERE IS A MINIMAL SHADOW IMPACT IN DECEMBER.

- LINCOLN PARK: THERE IS NO SHADOW IMPACT DURING THE CRITICAL HOURS OF USE (10AM-2PM) FROM MARCH 21-SEPTEMBER 21. THERE IS A MINIMAL SHADOW IMPACT IN DECEMBER.

- BOOTHBY SQUARE : THERE IS NO SHADOW IMPACT BEFORE 4PM.

- BELL BUOY PARK: THERE IS NO SHADOW IMPACT BEFORE 4PM.

PER 'THE CITY OF PORTLAND DESIGN MANUAL', THE SHADOW CAST ON THESE PUBLIC SPACES IS DEEMED INSUBSTANTIAL, REQUIRING NO FURTHER ANALYSIS.

SCOPE OF STUDY

PUBLIC OPEN SPACES

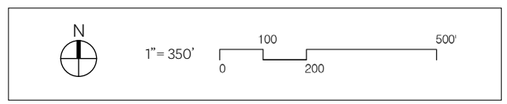
45 UNION STREET PROJECT

1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



MARCH 21 | SHADOWS CAST AT 9 AM



DAY	MARCH 21	
	SUNRISE	6:41 AM
	SUNSET	6:54 PM
TIME	9 AM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

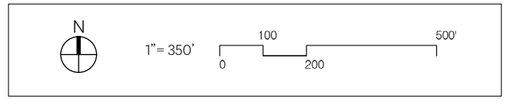
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



MARCH 21 | SHADOWS CAST AT NOON



DAY	MARCH 21	
	SUNRISE	6:41 AM
	SUNSET	6:54 PM
TIME	NOON	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

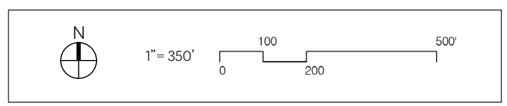
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



MARCH 21 | SHADOWS CAST AT 3 PM



DAY	MARCH 21	
	SUNRISE	6:41 AM
	SUNSET	6:54 PM
TIME	3 PM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

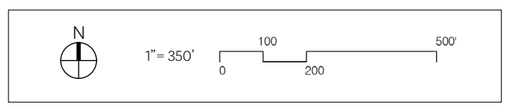
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

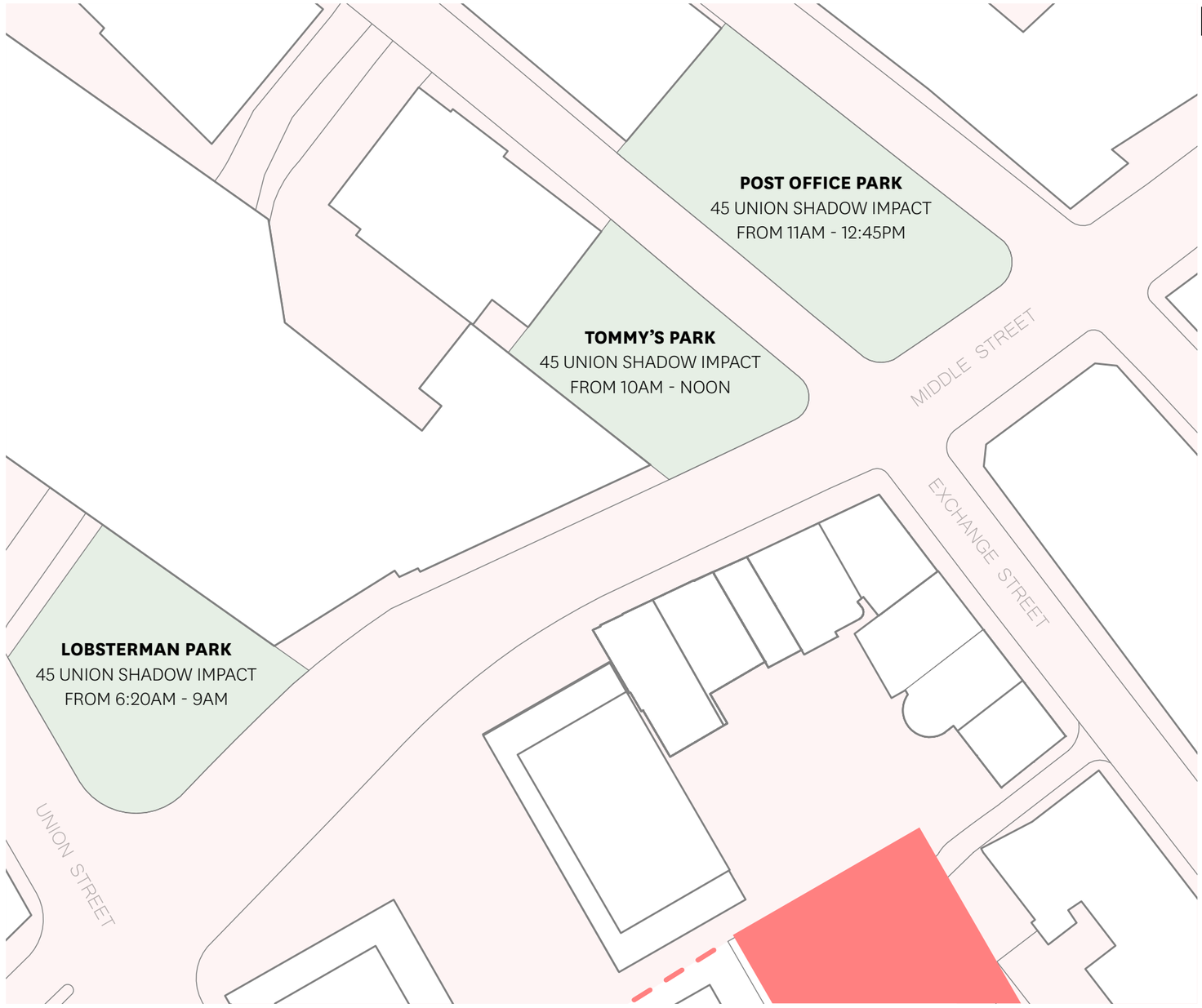
2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



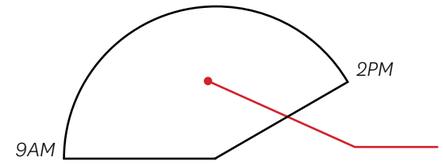
MARCH 21 | IMPACT ON PUBLIC SPACES



DAY	MARCH 21
SUNRISE	6:41 AM
SUNSET	6:54 PM

* *CRITICAL HOURS DEFINED BY 'THE CITY OF PORTLAND DESIGN MANUAL'*

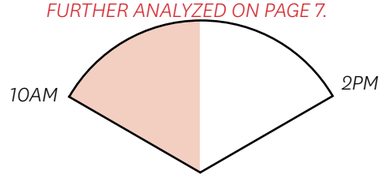
HOURS OF SHADOW IMPACT DURING CRITICAL HOURS*



NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

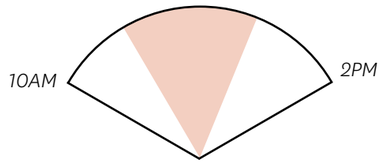
LOBSTERMAN PARK
9AM - 2 PM

SHADOW IMPACT FROM 10AM-NOON FURTHER ANALYZED ON PAGE 7.

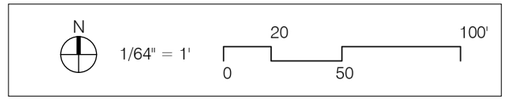


TOMMY'S PARK
10AM - 2 PM

SHADOW IMPACT FROM 11AM-12:45PM FURTHER ANALYZED ON PAGE 7.

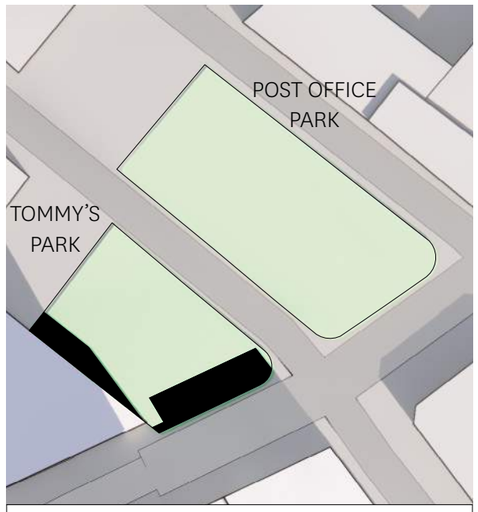


POST OFFICE PARK
10AM - 2 PM



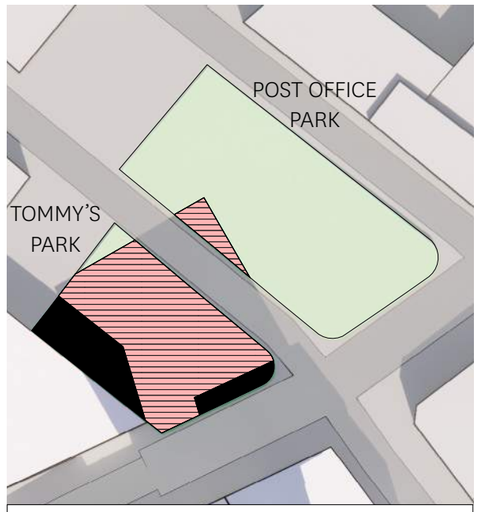
MARCH 21 | IMPACT ON TOMMY'S PARK AND POST OFFICE PARK

SHADOW CAST ON TOMMY'S PARK AND POST OFFICE PARK ON MARCH 21ST



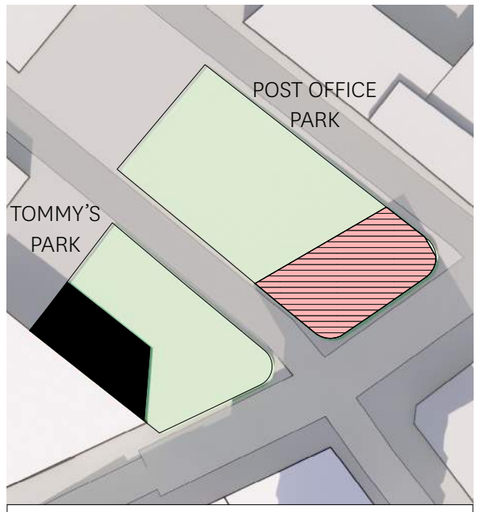
10 AM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	2,773	26%	0	0%
PROPOSED	2,773	26%	0	0%



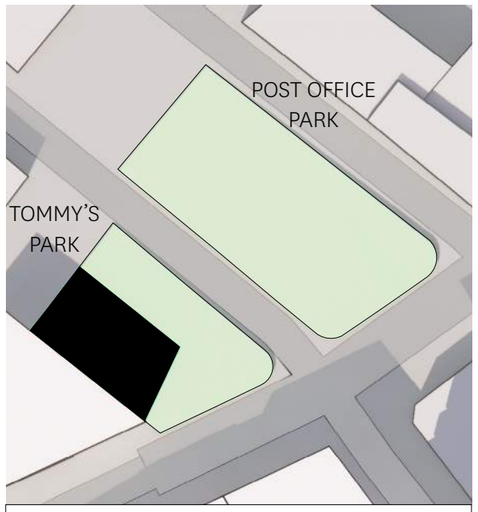
11 AM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	2,652	25%	0	0%
PROPOSED	10,340	97%	635	4%



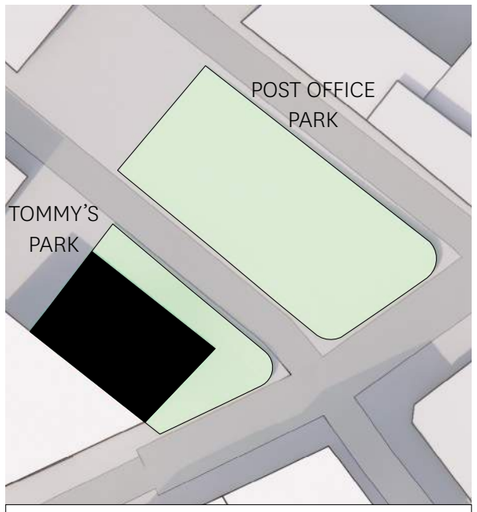
12 PM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	3,197	30%	0	0%
PROPOSED	3,197	30%	5,132	30%



1 PM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	4,526	42%	0	0%
PROPOSED	4,526	42%	0	0%



2 PM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	6,343	59%	0	0%
PROPOSED	6,343	59%	0	0%

PROPOSED SHADOW

CURRENT SHADOW

DAY	MARCH 21
SUNRISE	6:41 AM
SUNSET	6:54 PM

CONCLUSION:

TOMMY'S PARK	
AVERAGE % OF AREA IN SHADOW	
CURRENT SHADOW	36.4%
PROPOSED SHADOW	50.8%

THE AREA IN SHADOW IN TOMMY'S PARK INCREASES BY **14.4%** FROM 10AM - 2PM ON MARCH 21ST.

POST OFFICE PARK	
AVERAGE % OF AREA IN SHADOW	
CURRENT SHADOW	0%
PROPOSED SHADOW	6.8%

THE AREA IN SHADOW IN POST OFFICE PARK INCREASES BY **6.8%** FROM 10AM - 2PM ON MARCH 21ST.

MAY 6 | SHADOWS CAST AT 9 AM



DAY	MAY 6	
	SUNRISE	5:26 AM
	SUNSET	7:49 PM
TIME	9 AM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

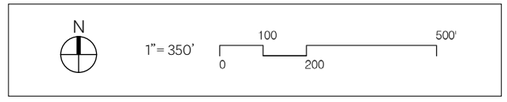
PUBLIC OPEN SPACES

45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

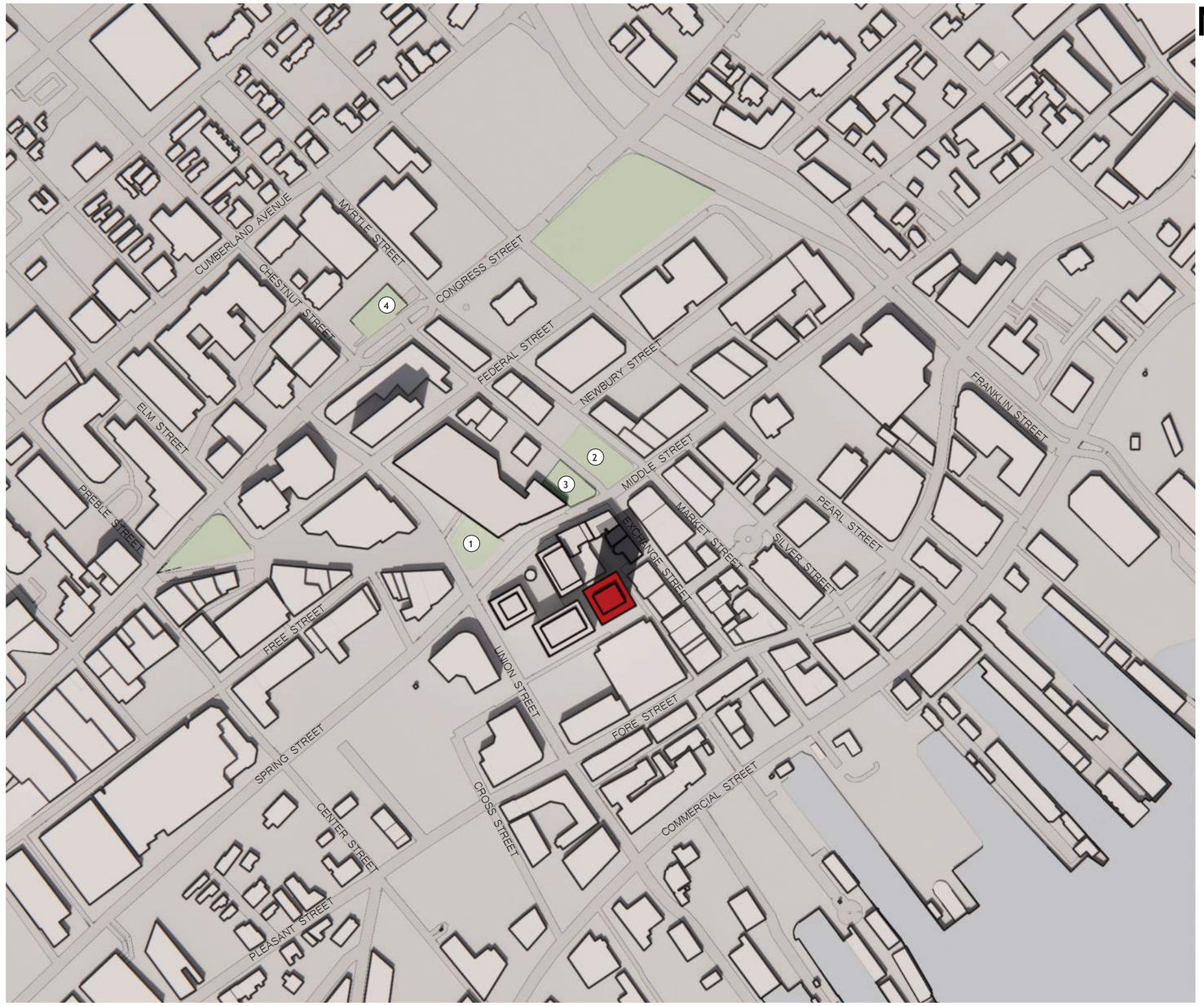
1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK



MAY 6 | SHADOWS CAST AT NOON



DAY	MAY 6	
	SUNRISE	5:26 AM
	SUNSET	7:49 PM
TIME	NOON	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA

N

1"= 350'

100 500'

0 200

MAY 6 | SHADOWS CAST AT 3 PM



DAY	MAY 6	
	SUNRISE	5:26 AM
	SUNSET	7:49 PM
TIME	3 PM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

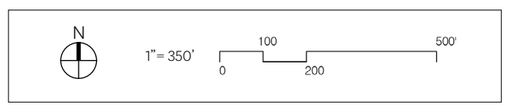
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

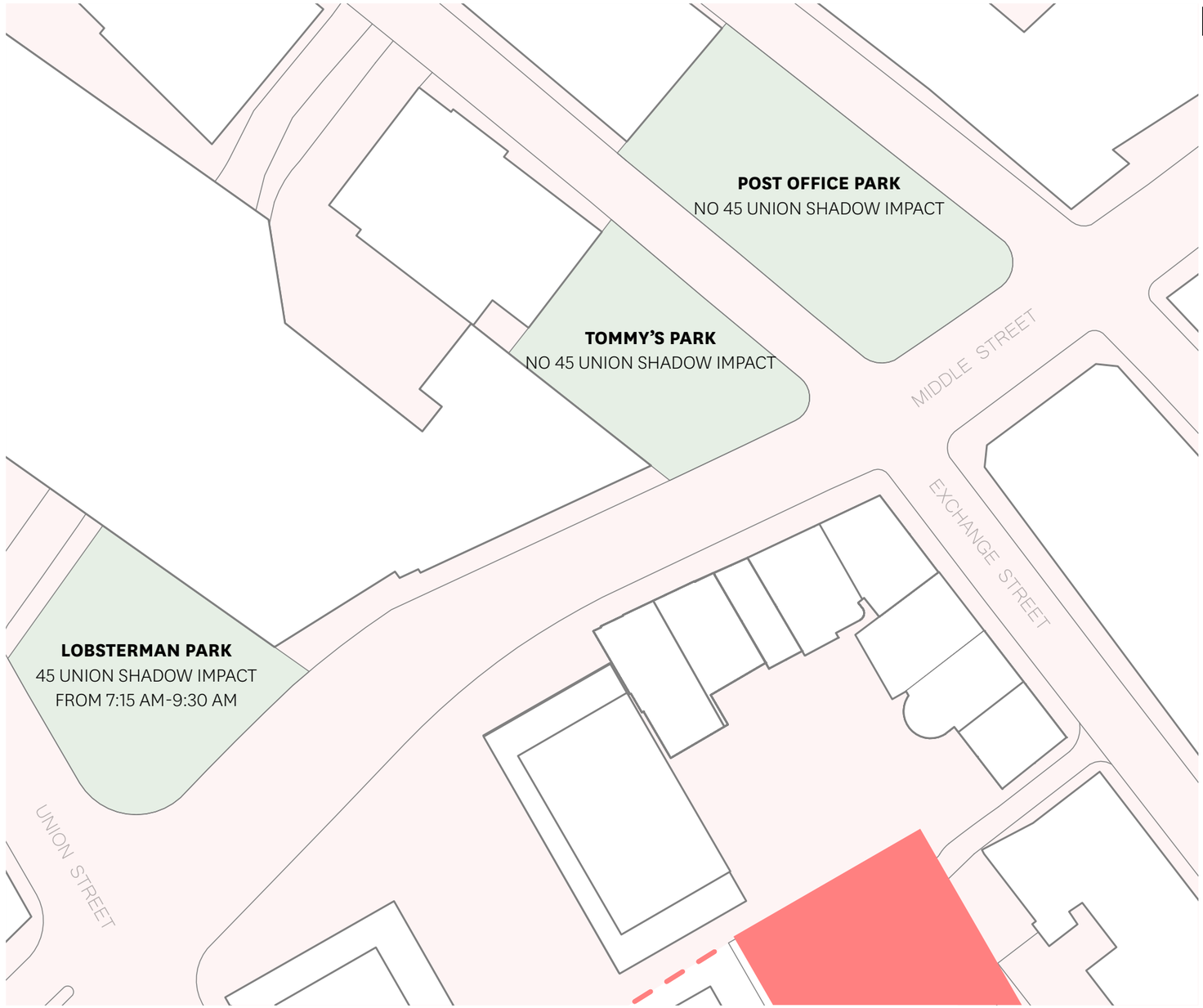
2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



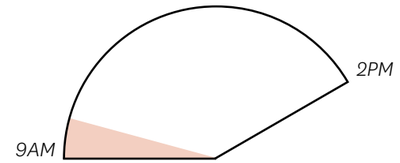
MAY 6 | IMPACT ON PUBLIC SPACES



DAY	MAY 6
SUNRISE	5:26 AM
SUNSET	7:49 PM

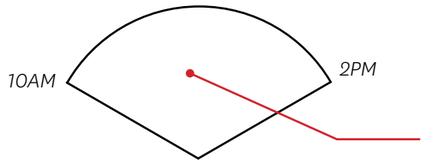
** CRITICAL HOURS DEFINED BY 'THE CITY OF PORTLAND DESIGN MANUAL'*

HOURS OF SHADOW IMPACT DURING CRITICAL HOURS*



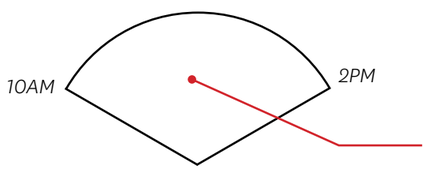
LOBSTERMAN PARK
9AM - 2 PM

SHADOW IMPACT FROM 9AM-9:30AM FURTHER ANALYZED ON PAGE 12.



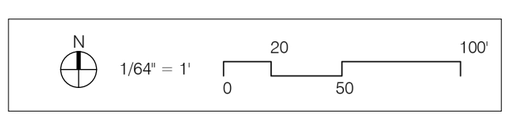
NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

TOMMY'S PARK
10AM - 2 PM



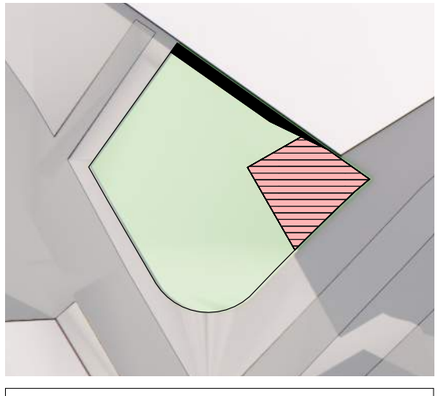
NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

POST OFFICE PARK
10AM - 2 PM

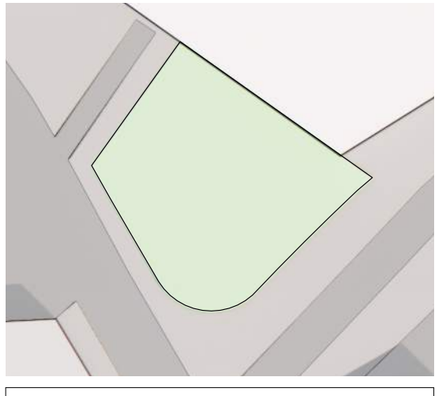


MAY 6 | IMPACT ON LOBSTERMAN PARK

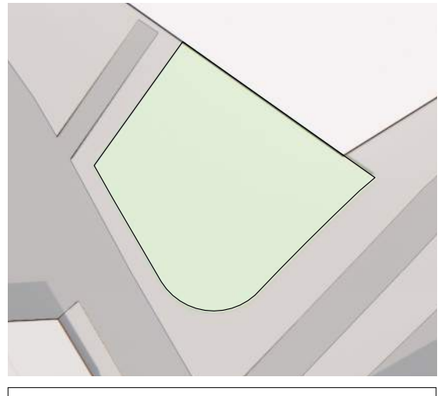
SHADOW CAST ON LOBSTERMAN PARK ON MAY 6TH



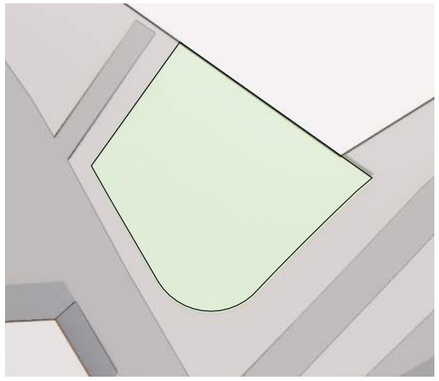
9 AM		
	AREA	
CURRENT SHADOW	500	4%
PROPOSED SHADOW	2649	21%



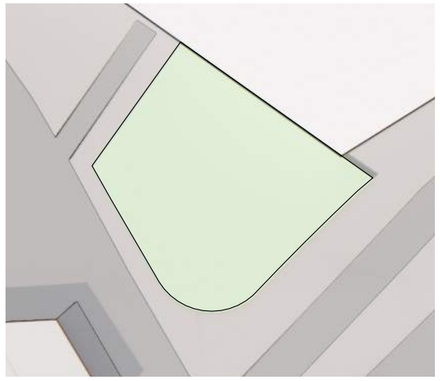
10 AM		
	AREA	
CURRENT SHADOW	0	0%
PROPOSED SHADOW	0	0%



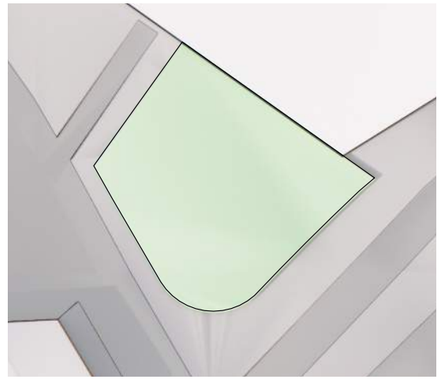
11 AM		
	AREA	
CURRENT SHADOW	0	0%
PROPOSED SHADOW	0	0%



12 PM		
	AREA	
CURRENT SHADOW	0	0%
PROPOSED SHADOW	0	0%



1 PM		
	AREA	
CURRENT SHADOW	0	0%
PROPOSED SHADOW	0	0%



2 PM		
	AREA	
CURRENT SHADOW	0	0%
PROPOSED SHADOW	0	0%

PROPOSED SHADOW

CURRENT SHADOW

DAY	MAY 6
SUNRISE	5:26 AM
SUNSET	7:49 PM

CONCLUSION:

AVERAGE % OF AREA IN SHADOW	
CURRENT SHADOW	0.7%
PROPOSED SHADOW	3.5%

THE AREA IN SHADOW INCREASES BY **2.8%** FROM 9AM - 2PM ON MAY 6TH.

JUNE 21 | SHADOWS CAST AT 9 AM



DAY	JUNE 21	
	SUNRISE	4:59 AM
	SUNSET	8:26 PM
TIME	9 AM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

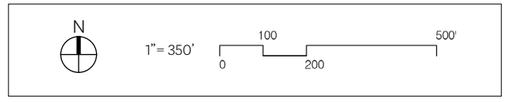
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

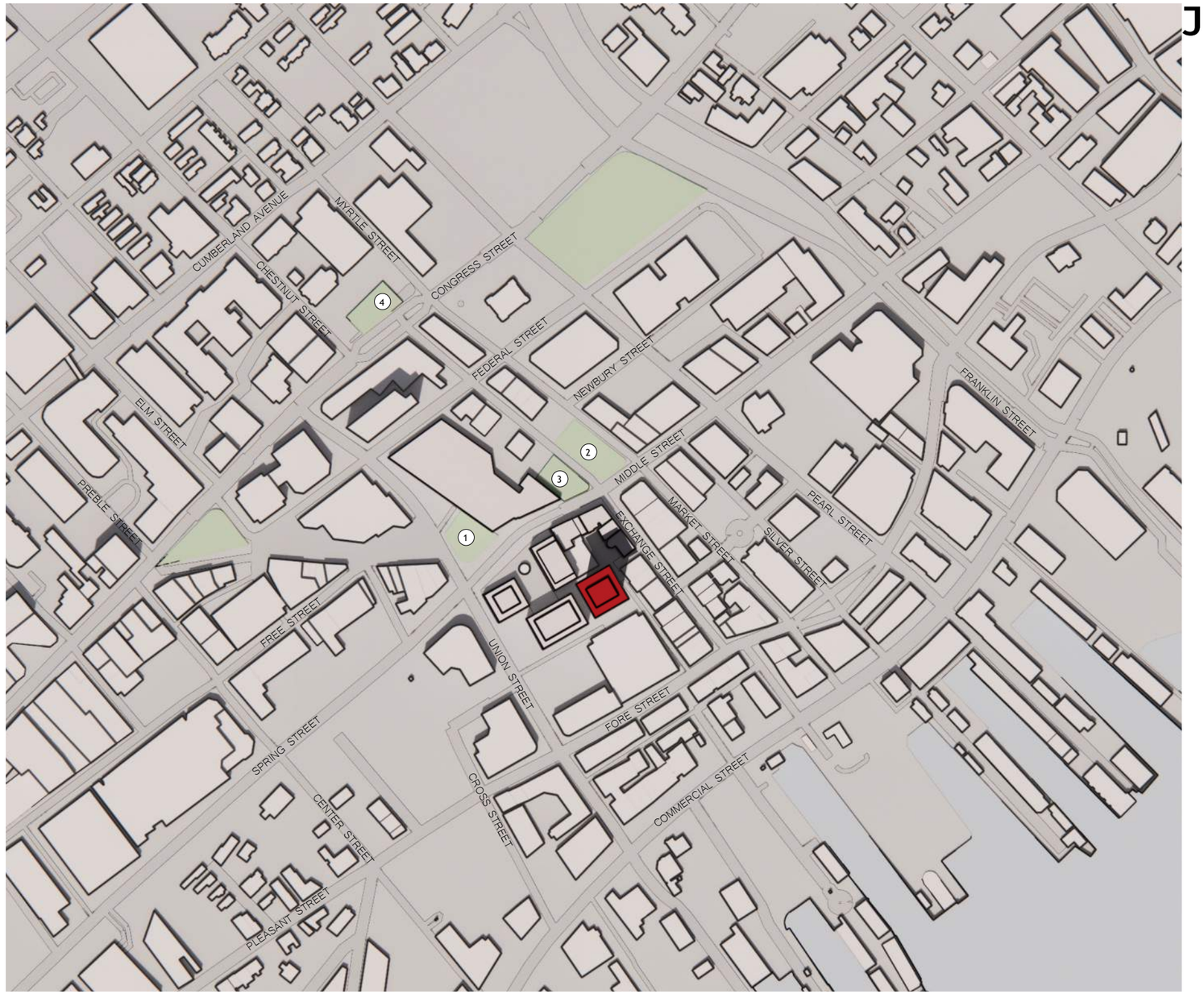
2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



JUNE 21 | SHADOWS CAST AT NOON



DAY	JUNE 21	
	SUNRISE	4:59 AM
	SUNSET	8:26 PM
TIME	NOON	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

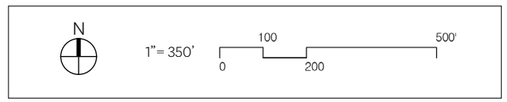
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



JUNE 21 | SHADOWS CAST AT 3 PM



DAY	JUNE 21	
	SUNRISE	4:59 AM
	SUNSET	8:26 PM
TIME	3 PM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

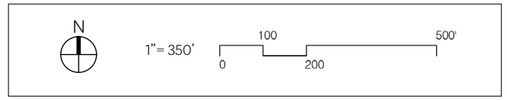
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

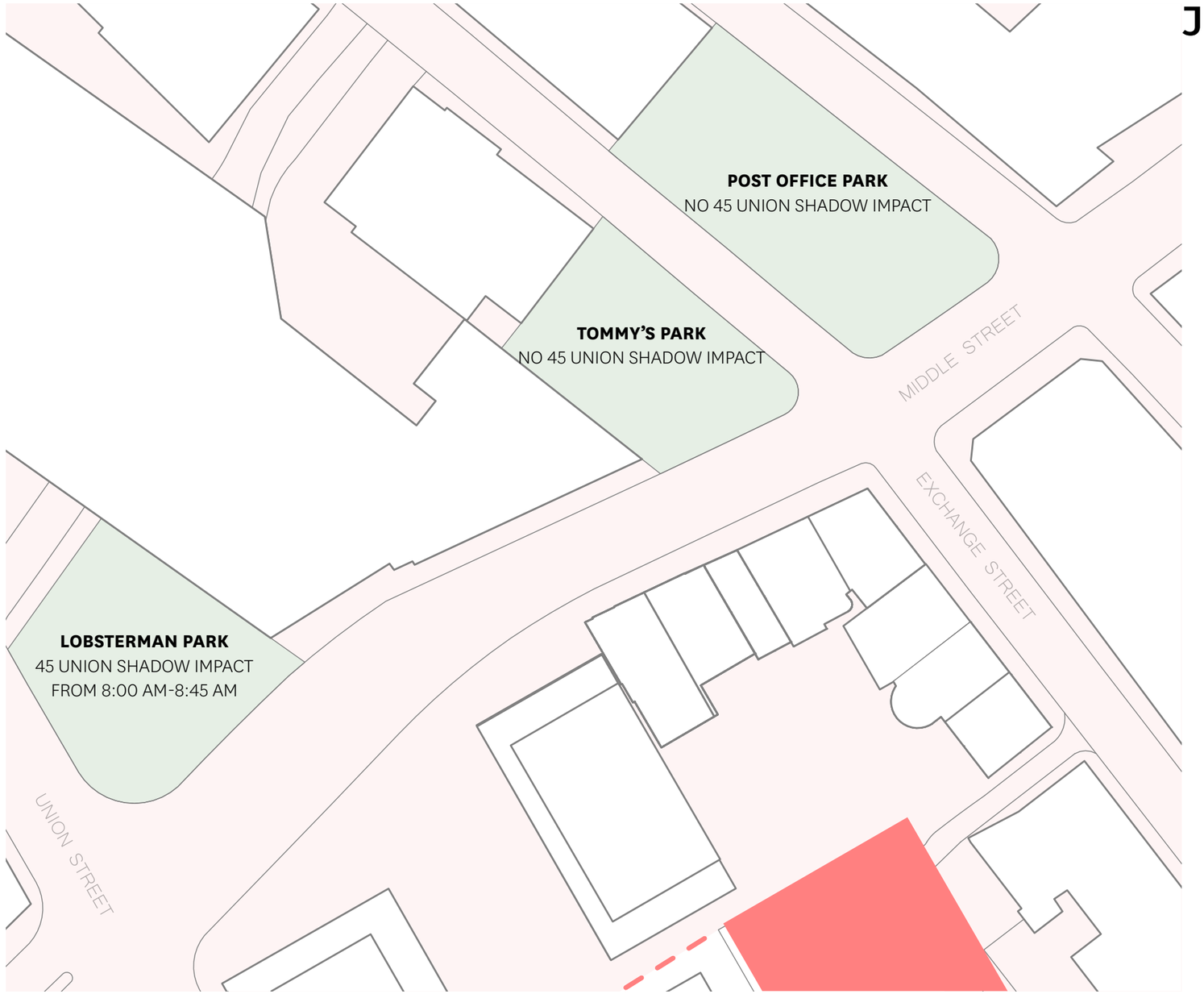
2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



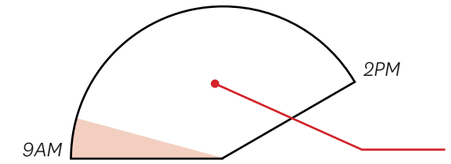
JUNE 21 | IMPACT ON PUBLIC SPACES



DAY	JUNE 21
SUNRISE	4:59 AM
SUNSET	8:26 PM

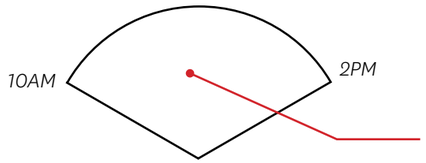
** CRITICAL HOURS DEFINED BY 'THE CITY OF PORTLAND DESIGN MANUAL'*

HOURS OF SHADOW IMPACT DURING CRITICAL HOURS*



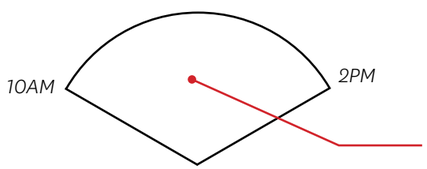
NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

LOBSTERMAN PARK
9AM - 2 PM



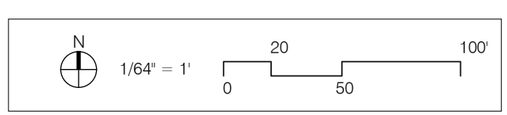
NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

TOMMY'S PARK
10AM - 2 PM



NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

POST OFFICE PARK
10AM - 2 PM



DEC 21 | SHADOWS CAST AT 9 AM



DAY	DECEMBER 21	
	SUNRISE	7:11 AM
	SUNSET	4:07 PM
TIME	9 AM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

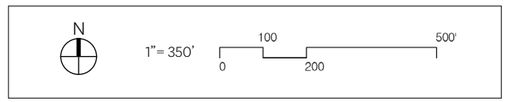
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

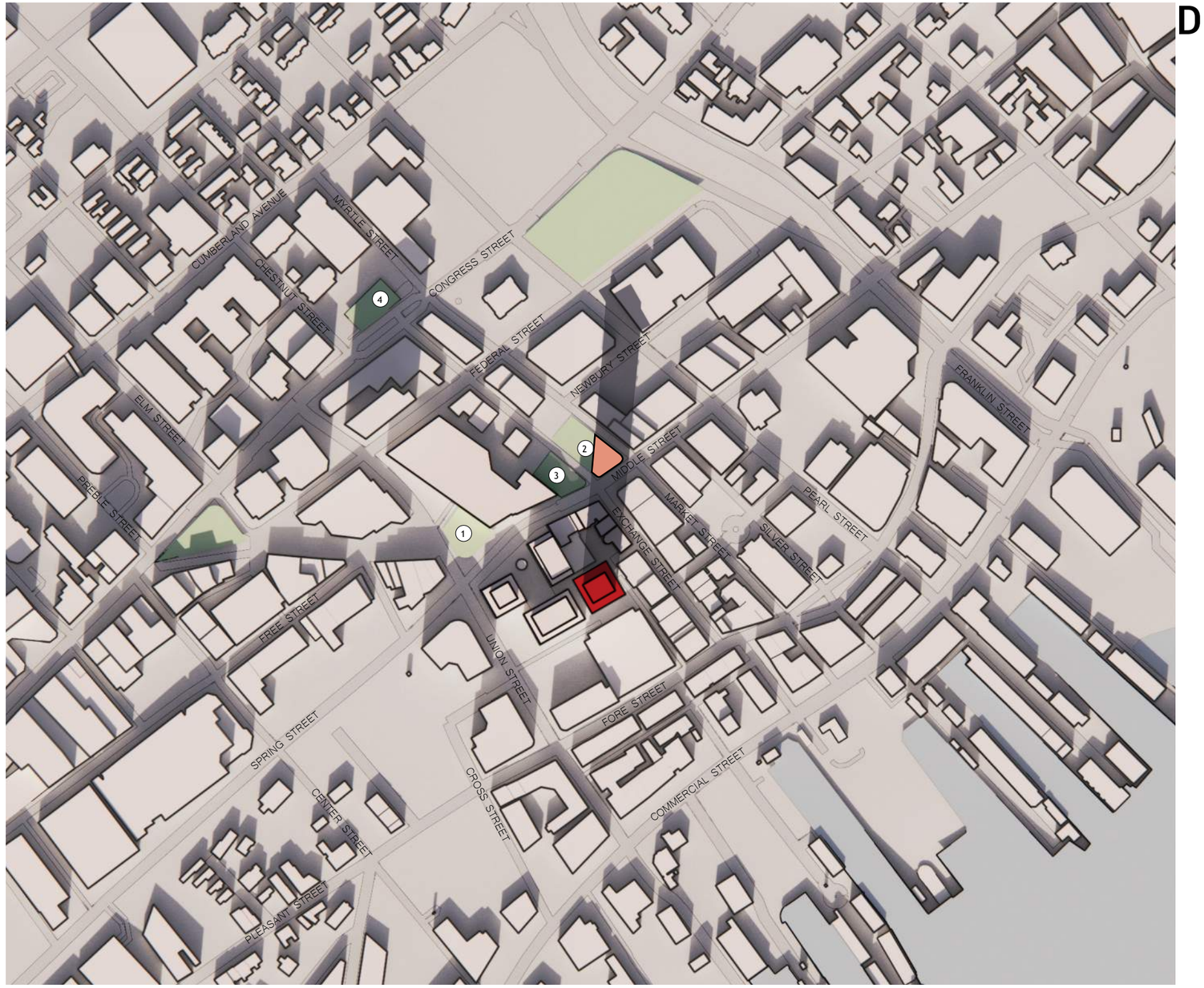
2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



DEC 21 | SHADOWS CAST AT NOON



DAY	DECEMBER 21	
	SUNRISE	7:11 AM
	SUNSET	4:07 PM
TIME	NOON	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

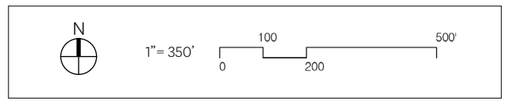
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



DEC 21 | SHADOWS CAST AT 3 PM



DAY	DECEMBER 21	
	SUNRISE	7:11 AM
	SUNSET	4:07 PM
TIME	3 PM	

45 UNION STREET PROJECT

EXISTING SHADOWS

45 UNION SHADOW

PUBLIC OPEN SPACES

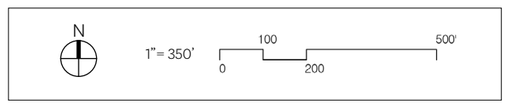
45 UNION SHADOW IMPACT ON PUBLIC OPEN SPACES

1. LOBSTERMAN PARK

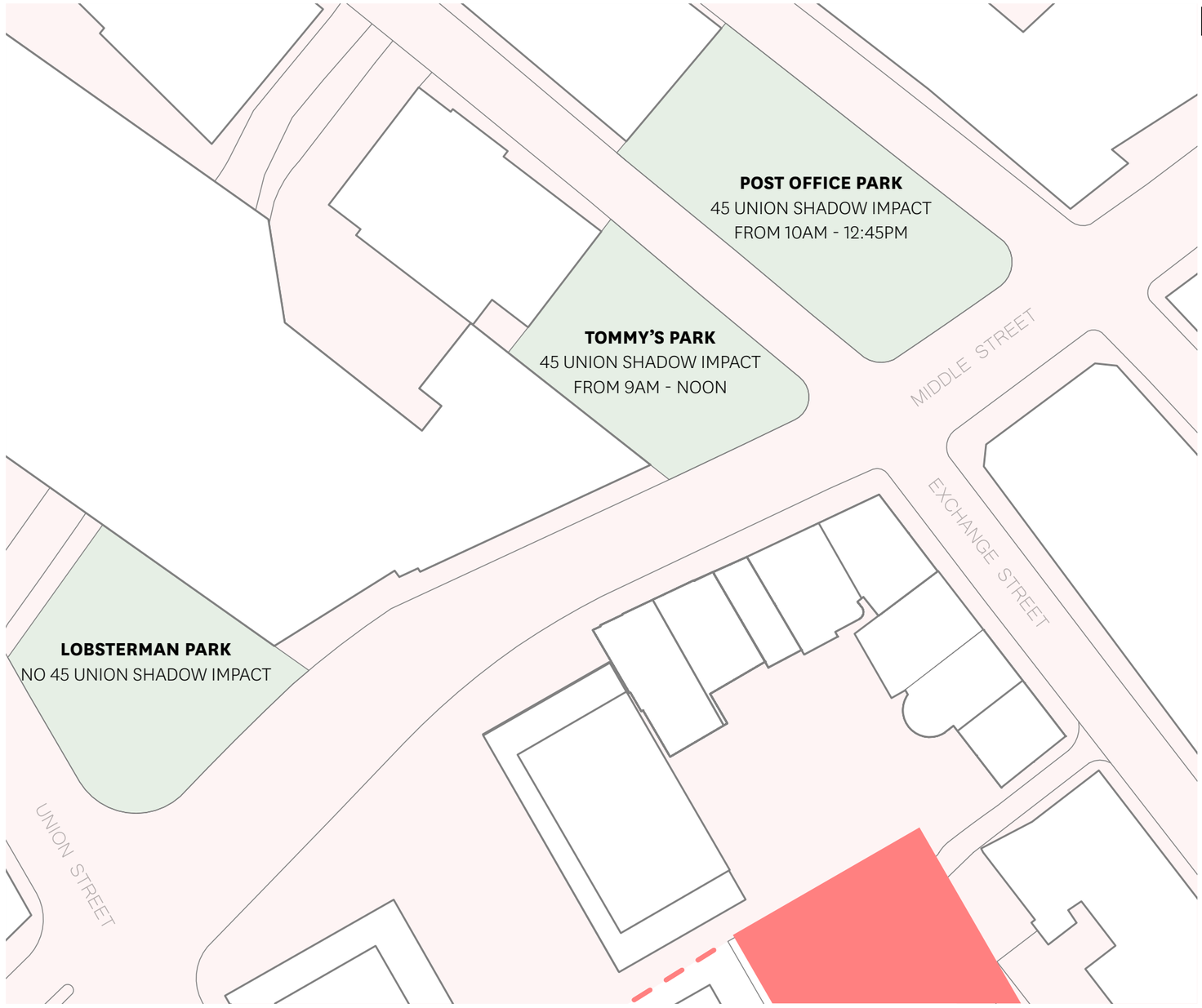
2. POST OFFICE PARK

3. TOMMY'S PARK

4. CITY HALL PLAZA



DEC 21 | IMPACT ON PUBLIC SPACES**

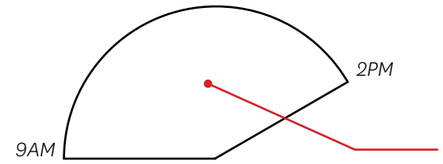


DAY	DECEMBER 21
SUNRISE	7:11 AM
SUNSET	4:07 PM

** CRITICAL HOURS DEFINED BY 'THE CITY OF PORTLAND DESIGN MANUAL'*

*** DECEMBER 21ST FALLS OUTSIDE THE DESIGNATED PERIOD OF STUDY FROM MARCH 21-SEPTEMBER 21, PER 'THE CITY OF PORTLAND DESIGN MANUAL'*

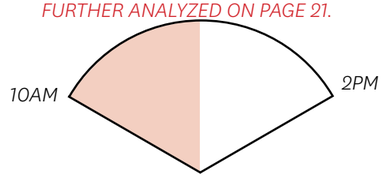
HOURS OF SHADOW IMPACT DURING CRITICAL HOURS*



NO IMPACT DURING CRITICAL HOURS. NO FURTHER STUDY NECESSARY.

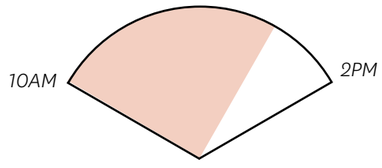
LOBSTERMAN PARK
9AM - 2 PM

SHADOW IMPACT FROM 10AM-NOON FURTHER ANALYZED ON PAGE 21.

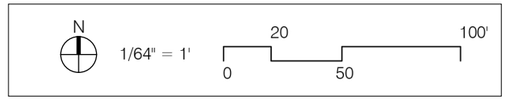


TOMMY'S PARK
10AM - 2 PM

SHADOW IMPACT FROM 10AM-12:45PM FURTHER ANALYZED ON PAGE 21.

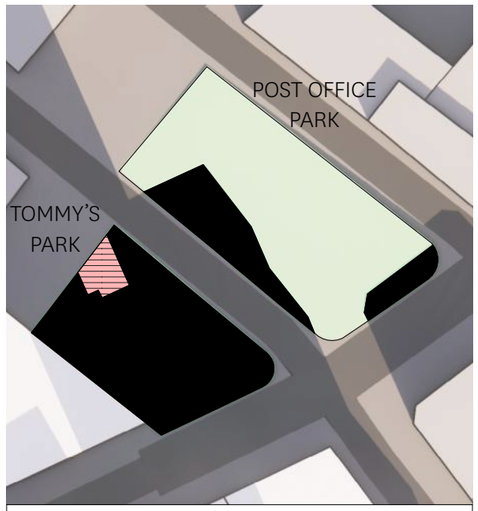


POST OFFICE PARK
10AM - 2 PM



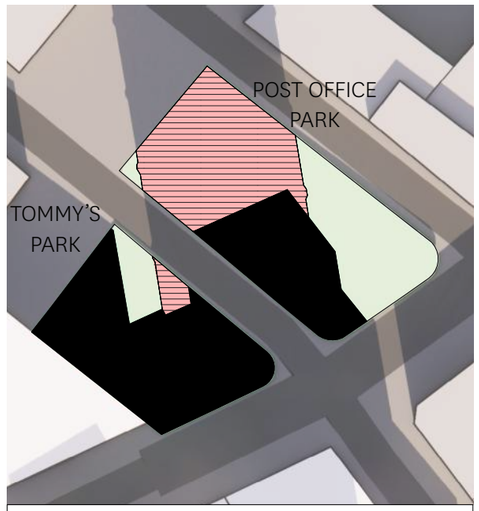
DECEMBER 21 | IMPACT ON TOMMY'S PARK AND POST OFFICE PARK**

SHADOW CAST ON TOMMY'S PARK AND POST OFFICE PARK ON DECEMBER 21ST



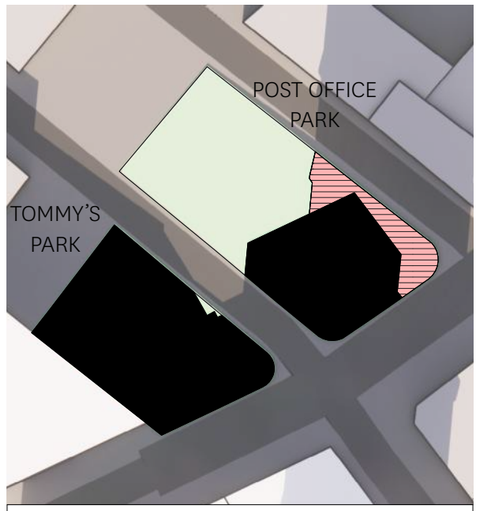
10 AM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	9,981	93%	3,681	22%
PROPOSED	10,696	100%	3,681	22%



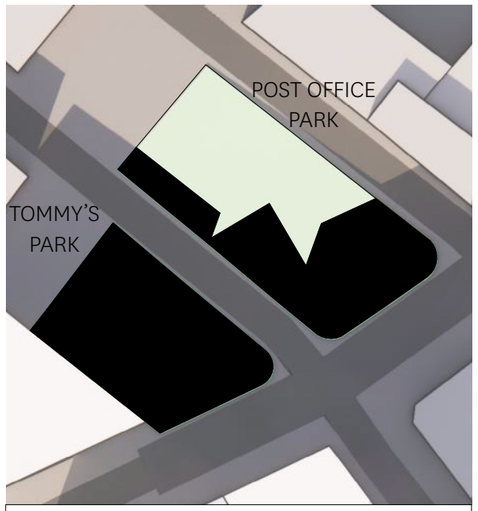
11 AM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	9,114	85%	4,869	29%
PROPOSED	9,566	89%	11,864	70%



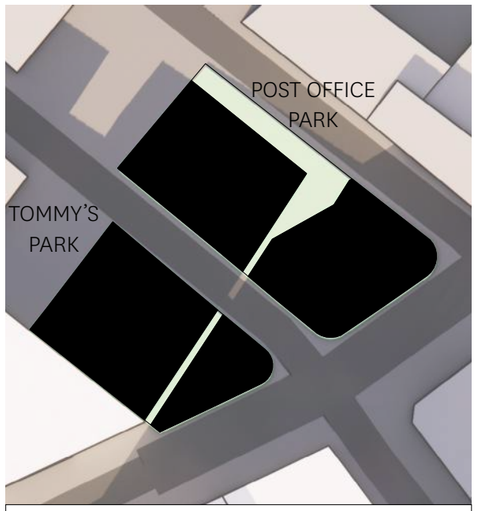
12 PM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	10,629	99%	6,084	36%
PROPOSED	10,629	99%	7,973	47%



1 PM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	10,696	100%	8,607	51%
PROPOSED	10,696	100%	8,607	51%



2 PM

	AREA CAST IN SHADOW (SF)			
	TOMMY'S PARK		POST OFFICE	
CURRENT	10,297	96%	14,182	84%
PROPOSED	10,297	96%	14,182	84%

PROPOSED SHADOW

CURRENT SHADOW

DAY	DECEMBER 21
SUNRISE	7:11 AM
SUNSET	4:07 PM

*** DECEMBER 21ST FALLS OUTSIDE THE DESIGNATED PERIOD OF STUDY FROM MARCH 21-SEPTEMBER 21, PER 'THE CITY OF PORTLAND DESIGN MANUAL'*

CONCLUSION:

TOMMY'S PARK	
AVERAGE % OF AREA IN SHADOW	
CURRENT SHADOW	94.8%
PROPOSED SHADOW	97.0%

THE AREA IN SHADOW IN TOMMY'S PARK INCREASES BY **2.2%** FROM 10AM - 2PM ON MARCH 21ST.

POST OFFICE PARK	
AVERAGE % OF AREA IN SHADOW	
CURRENT SHADOW	44.4%
PROPOSED SHADOW	55.0%

THE AREA IN SHADOW IN POST OFFICE PARK INCREASES BY **10.5%** FROM 10AM - 2PM ON MARCH 21ST.

SafdieArchitects

45 Union Street

Stormwater Management Plan

Portland, Maine

12 Mountfort Street
Portland, ME 04101
800.426.4262

woodardcurran.com

0232191.08

Kowtower LLC

August 15, 2025

(REV. November 2025)

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Appendix A: Stormwater Calculations
Appendix B: Pre- and Post-Development HydroCAD Model
Appendix C: Watershed Figures
Appendix D: Stormwater Inspection and Maintenance Plan
Appendix E: Manufacturer Approval of R-Tank System

1. INTRODUCTION AND BACKGROUND

This narrative report is in support of a Major Site Plan Application on behalf of East Brown Cow - Kowtower LLC (Applicant) for the development of 45 Union Street in Portland, Maine (the Site). This Stormwater Management Plan (SWMP) describes existing site conditions, the proposed development, compliance with applicable stormwater standards, and inspection and maintenance requirements for the proposed stormwater management system.

The project is required to manage stormwater on the Site in accordance with the applicable Maine Department of Environmental Protection (DEP) and City of Portland regulations. The project will disturb less than one acre and therefore will not require a DEP stormwater permit. The following report demonstrates how the development of the Site meets the stormwater standards outlined in Section 5 of the City of Portland's Technical Manual.

2. EXISTING CONDITIONS

The approximately 0.84-acre Site is located north of the Old Port Square Parking Garage and east of 200 Middle Street, internal to the city block bounded by Middle Street to the north, Exchange Street to the east, Fore Street to the south and Union Street to the west. The Site is currently used for surface parking, which is accessed via a driveway from Union Street. A dead-end public way, Patton Court, borders the Old Port Square Parking Garage and terminates in the southeast corner of the Site. Parking area landscape islands are the only pervious areas; otherwise, the Site is completely impervious.

A small portion of the driveway drains to the separated storm system in Union Street. The majority of the Site drains to stormwater drainage basins that discharge to an on-site 15-inch cement combined sewer main that drains through the Old Port Square Parking Garage to Fore Street combined sewer main. No stormwater treatment systems exist on the Site.

The western section of the driveway, herein referred to as Area 1, drains southwest to a catch basin that discharges to the separated storm system in Union Street. The central section of the driveway, herein referred to as Area 2, drains overland to an existing Filterra unit in the service alley behind the hotel, which ultimately discharges to the on-site 15-inch combined sewer main. Runoff from the parking lot and plaza areas internal to the Site, herein referred to as Area 3, generally flows in a southeasterly direction toward Patton Court and is managed via a series of catch basins that drain into the on-site 15-inch combined sewer main. A small area in the southeastern corner of the Site discharges via overland flow to Patton Court.

3. PROPOSED DEVELOPMENT

The proposed development will result in approximately 0.84 acres of disturbance and approximately 0.83-acres of impervious area. The project will result in a net change in impervious area of less than 0.2 acres. Work includes construction of a building, redevelopment of the surrounding plaza and driveway, and associated site and utility improvements. A description of the proposed improvements in each of the Site's drainage areas are described in the following sections.

3.1 Redevelopment Area 1 – Western Driveway to Union Street

The primary uses of the Site's access drive from Union Street, including driveway, sidewalk, and tree planters, will be maintained. Grading adjustments are proposed to reduce the drive aisle width, expand the sidewalk and smooth grades to improve pedestrian safety. Tree box planters are proposed along the driveway. Additionally, the driveway and sidewalk will be resurfaced to paver units, consistent with the rest of the Site. The access drive will continue to be used as a utility corridor.

3.2 Redevelopment Area 2 – Central Driveway to Service Alley

The central section of the accessway, characterized by a flattened slope and a descending alley leading to Fore Street, will undergo no substantive changes in grading or use.

3.3 Redevelopment Area 3 – Building and Surrounding Plaza

The parking lot and surrounding plazas will be redeveloped to accommodate the proposed building. The existing drainage infrastructure northwest of the building will be intercepted and bypass the Site's stormwater treatment system, and the existing stormwater infrastructure under the proposed building footprint will be removed.

Site grades will be modified to provide a flat pad for the building, resulting in stairs, walls, and ramps throughout the Site to accommodate pedestrians of all abilities. Stormwater from the plaza around the building will be managed via trench train and catch basin inlets that discharge to the on-site subsurface stormwater treatment system and ultimately to the same 15-inch cement combined sewer main as in the existing condition. Due to vertical constraints, connection to the separated storm drain in Union Street is not practicable.

A section of ramp and stairs in the eastern portion of the site is unable to be captured by the drainage system on site and will continue to discharge via overland flow to Patton Court.

4. STORMWATER STANDARDS

The project is subject to the City of Portland Technical Manual Section 5 Stormwater Standards. The project will disturb less than one acre and therefore will not require a DEP stormwater permit. The project is not located within the watershed of an Urban Impaired Stream and is therefore not subject to the Urban Impaired Stream Standard. The following sections describe the project's compliance with the applicable stormwater standards.

4.1 Basic Standard (Soil Erosion & Sediment Control)

A variety of erosion and sediment control measures will be utilized during construction, including but not limited to the following:

- Stabilized construction entrance;
- Up-gradient runoff diversion barriers;
- Downgradient sediment barriers;
- Catch basin inlet protection devices;
- Temporary stabilization of disturbed areas to be exposed for more than seven days;
- Permanent stabilization of final graded areas;
- Controls for fugitive dust, debris, and other materials; and
- Inspection of all measures until the Site is permanently stabilized.

All measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices", latest edition. All temporary measures will be installed prior to any earth-disturbing activities and will be removed upon permanent stabilization of the Site. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures in an effective operating condition during construction. Permanent erosion control measures will include vegetation and pavement. After construction, the Owner will be responsible for inspecting and maintaining the Site as described in Section 5 of this Report.

4.2 General & Redevelopment Standards (Stormwater Quality)

The project disturbs greater than 10,000 square feet and therefore is required to provide treatment of 95% of non-roof redeveloped impervious area per Section 5.2.2 of the City of Portland's Technical Manual. The Technical Manual allows reduction in treatment requirements for linear portions of projects, as defined and allowed in Chapter 500. The access drive in redevelopment Areas 1 and 2 meets this definition. Stormwater treatment may be reduced to no less than 75% of impervious areas and 50% of developed areas for linear portions of the project in accordance with Chapter 500. Calculations demonstrating compliance with the treatment standards and BMP sizing guidelines are provided in **Appendix A.** The treatment strategy for each of the three redevelopment areas is described in the following Sections.

4.2.1 Treatment of Redevelopment Area 1

Redevelopment Area 1 meets the definition of a linear portion of a project and is required to provide treatment for 75% of the impervious areas and 50% of developed areas. The proposed stormwater management system for Area 1 is constrained horizontally by underground utilities throughout the width

of the access drive, and vertically by the steep grading down to Union Street, downstream inverts, and proximity to the adjacent property to the South. The site constraints make stormwater treatment of Area 1 impractical. To compensate for the inability to provide stormwater treatment in Area 1, the treatment system proposed in Area 3 has been upsized to provide treatment for an equivalent volume from the upgradient drainage area, in excess of the treatment volume required for Area 3.

4.2.2 Treatment of Redevelopment Area 2

Currently Area 2 is served by a Filterra treatment system, which was installed during the development of the Hyatt Place Portland Downtown - Old Port Square in 2019. The drainage area is being reduced slightly as a result of the proposed development. The Filterra unit is sized to accommodate the drainage area, is in good condition and will continue to be utilized to treat Area 2. No additional stormwater treatment measures are proposed.

4.2.3 Treatment of Redevelopment Area 3

Area 3 is required to provide treatment of 95% of the non-roof redeveloped area. Stormwater quality treatment will be provided via a subsurface sand filter with overlying water quality volume storage provided in a proprietary R-Tank storage system.

Due to significant grade change from the building down to Patton court, only 94.8% of non-roof redeveloped area in Area 3 can be captured and treated. The remaining non-roof redeveloped area is comprised of ramps and stairs at the southern corner of the site to make up several feet of grade change between the proposed building (FFE 38.70) and Patton Court (Elev. 33.5). Connection to the stormwater treatment system is not practicable as the ground surface elevation of Patton Court is lower than the top of the R-Tank storage system (Elev. 35.67), and surface flooding resulting from backflow from the stormwater system is not acceptable. The building roof area is also conveyed to the stormwater treatment system, which provides additional treatment area in excess of the 0.2% of non-roof redeveloped area from Area 3 and 75% of the redeveloped area from Area 1. This calculation is included with the treatment calculations provided in **Appendix A**. Pre-Treatment is provided by pre-treatment rows in the system and has been reviewed and verified by Ferguson, the product manufacturer. The verification of the design is included in **Appendix E.**

The subsurface sand filter is designed based on Volume III of the DEP Stormwater BMP Manual. This system is designed to detain the minimum stormwater detention volume (see Section 4.4), which exceeds the water quality volume of the upgradient area. Pretreatment rows and a hydrodynamic separator will be utilized to reduce sediment loading upgradient of the stormwater filtration system. The pretreatment rows are sized in accordance with the Maine DEP BMP Manual for non-roof impervious drainage area. The system is designed to drain the design volume within 24 to 48 hours in accordance with the Maine Stormwater Best Management Practices Manual Chapter 7.3.

4.3 Flooding Standard

The proposed project is subject to comply with the Chapter 500 DEP Flooding Standard, per Section 5.2.3 of the City of Portland's Technical Manual. Adequate provisions have been made to collect and control stormwater via the subsurface detention system. The following sections describe the stormwater modeling methodology and the results of the HydroCAD analysis.

4.3.1 Stormwater Modelling Methodology

Stormwater modeling was completed using the HydroCAD 10.20-5c Stormwater Modeling System by HydroCAD Software Solutions, LLC., which uses TR-20 runoff calculation methodology. The HydroCAD output for both the pre- and post-development models are provided in **Appendix B**. A 24-hour duration and Type III rainfall distribution was applied to the rainfall depths for the 2-year, 5-year, 10-year, and 25-year storm events from Appendix H of the DEPs Chapter 500 Rules.

HydroCAD provides a lookup table for curve number (CN), which is a measure of the retention and runoff properties of various surfaces based on the Hydrological Soil Group (HSG) and land cover type using TR-55 methodology. The project site is predominately impervious area, and we have conservatively assumed poor infiltration of landscaped areas due to the urban environment, modeling them with as Hydrologic Soils Group of D.

The Time of Concentration (Tc) is the time required for runoff to travel from the most hydrologically distant point of a watershed to the point of discharge. The longest hydraulic flow path is partitioned into segments based on flow types, land cover, and slopes. A minimum Tc of six minutes is typically utilized for urban developed areas that are predominantly impervious. This Tc has been used in our analysis.

As previously described, the project area ultimately discharges runoff in three locations; these three discharge points have been utilized as the Study Points for the analysis:

- Study Point A (SP-A): Separated storm system in Union Street.
- Study Point B (SP-B): Combined sewer system in Fore Street.
- Study Point C (SP-C): Overland flow to Patton Court.

Existing and proposed drainage patterns and features are shown in the watershed figures provided in **Appendix C**.

4.3.2 Stormwater Modelling Results

The following table provides a summary of the peak runoff rates for the 24-hour, 2-, 10-, and 25-year Type III storm events in accordance with the DEP Chapter 500 Flooding Standard.

Design Point		Peak Runoff Rate		
		2-Year Storm	10-Year Storm	25-Year Storm
SP-A	Pre-Development	0.30	0.45	0.57
	Post-Development	0.29	0.44	0.55
	Net Change	-0.01	-0.01	-0.02
SP-B	Pre-Development	2.13	3.21	4.06
	Post-Development	0.49	1.81	3.38
	Net Change	-1.64	-1.40	-0.68
SP-C	Pre-Development	0.17	0.26	0.33
	Post-Development	0.05	0.08	0.10
	Net Change	-0.12	-0.18	-0.23

The project will result in a reduction in peak runoff rates from the Site during the 2-, 10- and 25-year storm event for all study points evaluated.

4.4 Minimum Stormwater Detention Volume Standard

The proposed project is required to comply with Section 5.2.4 of the City of Portland's Technical Manual. As described in Section 4.2, a detention system is not practicable in Area 1 due to site constraints, and Area 2 is largely being maintained and will continue to utilize the existing treatment system. Therefore, the minimum stormwater detention volume for the full Site will be applied to Area 3. The proposed sanitary sewer connection is proposed to connect to the on-site 15-inch combined sewer main fifteen feet upgradient of the Area 3 stormwater drainage connection. An evaluation of the Site's impervious area and anticipated average daily sanitary sewer flows revealed the Site will be required to provide a minimum on-site stormwater detention volume equal to the average daily sewer flow being added to the combined system. Calculations demonstrating compliance with this standard are provided in **Appendix A.**

The orifice on the underdrain pipe below the sand filter is sized to convey a maximum flow rate of 0.1 CFS until the detention system reaches its design capacity. An internal bypass system is provided at the design capacity elevation to convey any flows in excess of the design volume through the system.

5. INSPECTION AND MAINTENANCE REQUIREMENTS

General inspection and maintenance of stormwater systems will take place during and after construction. During construction, the Contractor will be responsible for inspecting and maintaining the Site, as described in Section 4.1 of this Report. Upon completion of construction, the property owner will be responsible for implementing the Inspection and Maintenance Plan for the proposed stormwater system, which is provided in **Appendix D** of this Report. A Stormwater Maintenance Agreement will also be provided and will be signed and recorded following approval.

APPENDIX A: STORMWATER CALCULATIONS

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT:	East Brown Cow - Kowtower LLC
PROJECT:	45 Union Street
CALCS BY:	AWG/ANG
DATE:	8/15/2025 (REV 10/17/25)
PROJECT NO.:	232191.08

Water Quality Treatment Requirements - Per Section 5.2.2 of the City of Portland Technical Manual

Total Disturbed Area (acres) = 0.84 AC

Area 1: Driveway draining to Union Street ***(Per Section 5 of the City of Portland Technical Manual - linear portion of the site may be reduced as allowed by Chapter 500 Section 4c Subsection 5c)***

Treatment Requirement: No less than 75% of Impervious Area / 50% of Developed Area

Total Redeveloped Area (square feet) =	4,215	
Treatment Required (square feet) =	3,161	75%
Treatment Provided (square feet) =	0	0%

Treatment of this area is not feasible due to space constraints in the driveway and sidewalk, which are being utilized as a utility corridor, and site grading. An equivalent amount of treatment capacity has been added to the stormwater system treating Area 3.

Area 2: Driveway draining to Service Alley ***(Redeveloped area, currently treated by Filterra Unit)***

Treatment Requirement: No less than 75% of Impervious Area / 50% of Developed Area

Total Redeveloped Area (square feet) =	4,590	
Redeveloped Area Treated by Existing Filter Unit (square feet) =	4,590	100%

This area will continue to be treated by the existing Filterra Unit in the service alley. The Filterra is in good condition.

Area 3: Proposed Building and Surrounding area

Treatment Requirement: No less than 95% of New Impervious Area and 95% of Non-roof Redeveloped Impervious Area

Total Redeveloped Area (square feet) =	27,305	
Total Non-roof Redeveloped Impervious Area (square feet) =	15,020	
Treatment Required for Non-roof Redeveloped Area (square feet) =	14,269	95.0%
Treatment Provided (square feet) =	**14,235**	94.8%

Area 3 will be treated by a subsurface sand filter. Sizing calculations are provided below.

Flooding Standard - Per Section 5.2.3 of the City of Portland Technical Manual

The enclosed HydroCAD model output demonstrates compliance with this Section.

Stormwater Detention Volume - Per Section 5.2.4 of the City of Portland Technical Manual

The project will discharge to the City's combined sewer system.

Total Impervious Area (square feet) =	37,580	SF
Stormwater Detention Volume Required (cubic feet) =	3,132	CF
Existing Average Daily Sewer Flow (cubic feet / day) =	0	CF/day
Proposed Average Daily Sewer Flow (cubic feet / day) =	3,975	CF/day
Required Minimum On-Site Detention Volume (cubic feet) =	3,975	CF
Provided On-Site Detention Volum (cubic feet) =	**3,980**	CF

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT:	East Brown Cow - Kowtower LLC
PROJECT:	45 Union Street
CALCS BY:	AWG/ANG
DATE:	8/15/2025 (REV 10/2/25)
PROJECT NO.:	232191.08

Sizing Calculations

Water Quality Volume for Subsurface Sand Filter 1 (Area 3)

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Non-Roof Impervious Area (Area 3) =	14,235	SF
Roof Area Treated (Equivalent to Area 1+Remainder Area 3) =	3,161	SF
Pervious Area =	390	SF
WQV Required =	1,463	CF
Minimum On-Site Stormwater Detention Volume Required =	3,975	CF
WQV Provided =	**3,980**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	879	SF
Filter Surface Area Provided=	**1,170**	SF

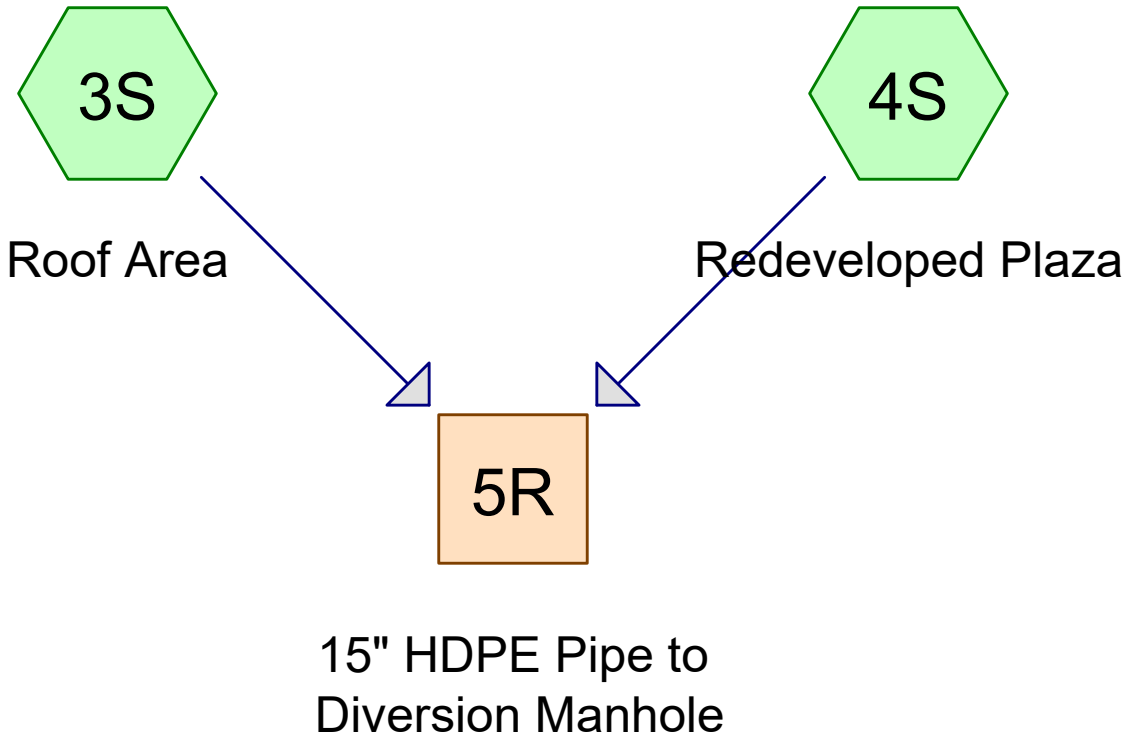
Sediment Pre-Treatment = (0.02 CFS) * (# of pre-treatment modules) < 1-year 24-hour CFS

Watershed area modelled 1-year 24-hour storm (2.61 in.) CFS =	1.52	CFS
Total Pre-Treatment Modules Required =	**76**	modules
Total Pre-Treatment Modules Provided =	84	modules

Method: Pretreatment Row

Stage-Area-Storage for Pond 3P: R-Tank Sand Filter

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
29.65	0	32.25	1,152	34.85	3,627
29.70	23	32.30	1,200	34.90	3,675
29.75	47	32.35	1,247	34.95	3,722
29.80	70	32.40	1,295	35.00	3,770
29.85	94	32.45	1,342	35.05	3,818
29.90	117	32.50	1,390	35.10	3,865
29.95	140	32.55	1,438	35.15	3,913
30.00	164	32.60	1,485	35.20	3,960
30.05	187	32.65	1,533	35.25	4,008
30.10	211	32.70	1,580	35.30	4,056
30.15	234	32.75	1,628	35.35	4,103
30.20	257	32.80	1,676	35.40	4,151
30.25	281	32.85	1,723	35.45	4,198
30.30	304	32.90	1,771	35.50	4,246
30.35	328	32.95	1,818	35.55	4,294
30.40	349	33.00	1,866	35.60	4,341
30.45	368	33.05	1,914	35.65	4,389
30.50	387	33.10	1,961	35.70	4,422
30.55	406	33.15	2,009	35.75	4,445
30.60	426	33.20	2,056	35.80	4,469
30.65	445	33.25	2,104	35.85	4,492
30.70	464	33.30	2,152	35.90	4,516
30.75	484	33.35	2,199	35.95	4,539
30.80	503	33.40	2,247	36.00	4,562
30.85	522	33.45	2,294	36.05	4,586
30.90	542	33.50	2,342	36.10	4,609
30.95	561	33.55	2,390	36.15	4,633
31.00	580	33.60	2,437	36.20	4,656
31.05	600	33.65	2,485	36.25	4,679
31.10	619	33.70	2,532	36.30	4,703
31.15	638	33.75	2,580	36.35	4,726
31.20	657	33.80	2,628	36.40	4,750
31.25	677	33.85	2,675	36.45	4,773
31.30	696	33.90	2,723	36.50	4,796
31.35	715	33.95	2,770	36.55	4,820
31.40	735	34.00	2,818	36.60	4,843
31.45	754	34.05	2,866	36.65	**4,867**
31.50	773	34.10	2,913		
31.55	793	34.15	2,961		
31.60	812	34.20	3,008		
31.65	831	34.25	3,056		
31.70	850	34.30	3,104		
31.75	870	34.35	3,151		
31.80	889	34.40	3,199		
31.85	908	34.45	3,246		
31.90	930	34.50	3,294		
31.95	954	34.55	3,342		
32.00	977	34.60	3,389		
32.05	1,000	34.65	3,437		
32.10	1,024	34.70	3,484		
32.15	1,057	34.75	3,532		
32.20	1,104	34.80	3,580		



Subcat Reach Pond Link

Routing Diagram for 45 Union St. - Proposed Condition
Prepared by Woodard & Curran, Inc, Printed 10/17/2025
HydroCAD® 10.20-5c s/n 01204 © 2023 HydroCAD Software Solutions LLC

Summary for Reach 5R: 15" HDPE Pipe to Diversion Manhole

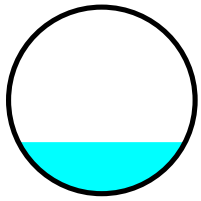
[52] Hint: Inlet/Outlet conditions not evaluated

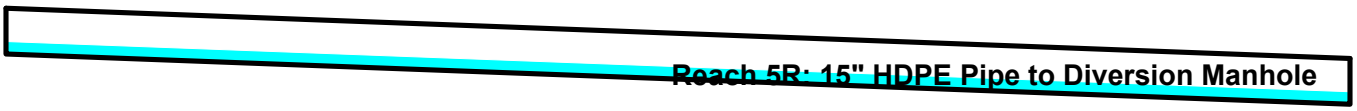
Inflow Area = 26,910 sf, 98.55% Impervious, Inflow Depth = 4.49" for 10-yr event
Inflow = 2.79 cfs @ 12.09 hrs, Volume= 10,077 cf
Outflow = 2.79 cfs @ 12.09 hrs, Volume= 10,077 cf, Atten= 0%, Lag= 0.1 min

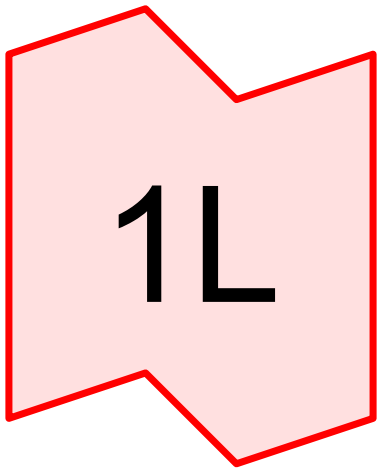
Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.16 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.37 fps, Avg. Travel Time= 0.1 min

Peak Storage= 5 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 1.12'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 16.91 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 20.0' Slope= 0.0685 '/'
Inlet Invert= 33.77', Outlet Invert= 32.40'







Pretreatment Check - 1-year storm

Subcat Reach Pond Link

Routing Diagram for 45 Union St. - Proposed Condition
Prepared by Woodard & Curran, Inc, Printed 10/7/2025
HydroCAD® 10.20-5c s/n 01204 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

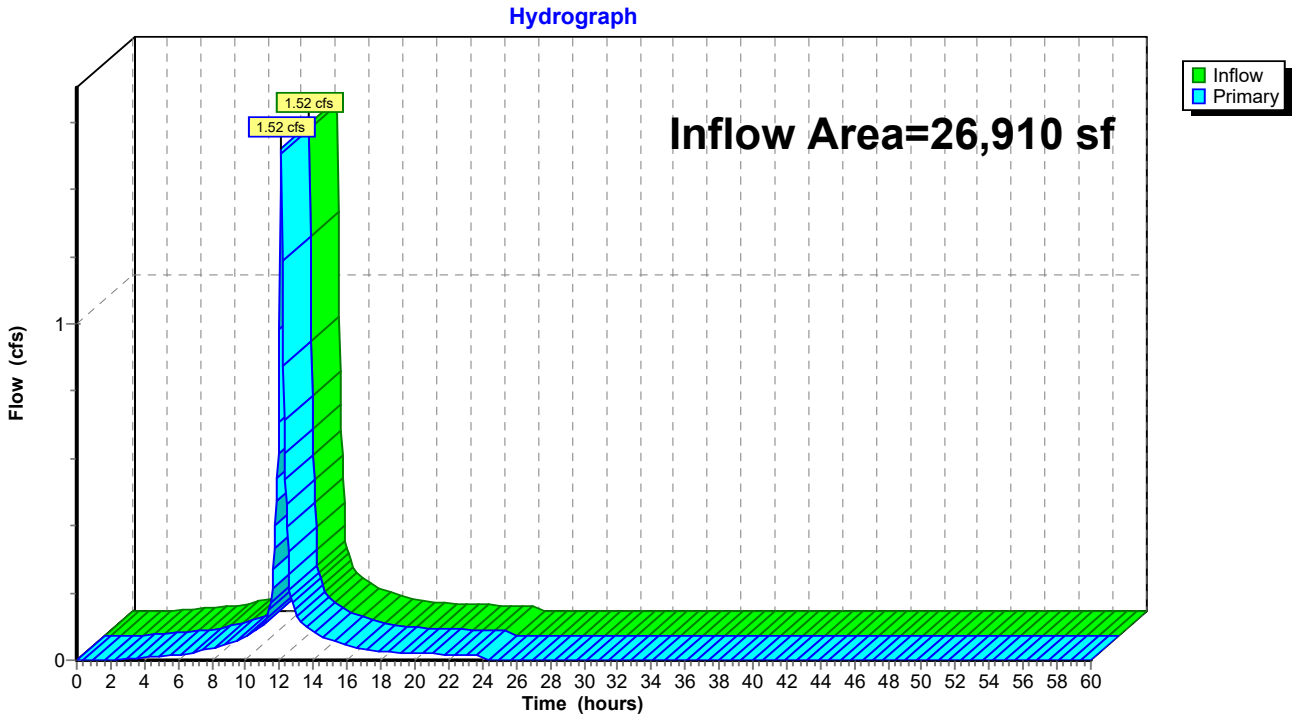
Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type III 24-hr		Default	24.00	1	2.61	2

Summary for Link 1L: Pretreatment Check - 1-year storm

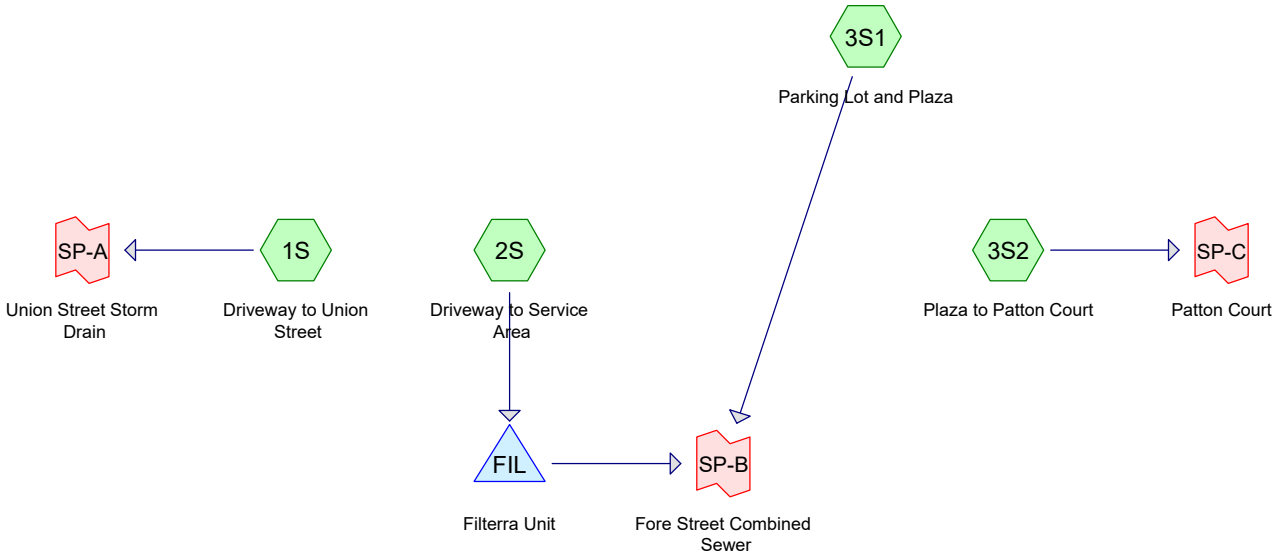
Inflow Area = 26,910 sf, 98.55% Impervious, Inflow Depth = 2.38" for 1-yr event
Inflow = 1.52 cfs @ 12.09 hrs, Volume= 5,337 cf
Primary = 1.52 cfs @ 12.09 hrs, Volume= 5,337 cf, Atten= 0%, Lag= 0.0 min

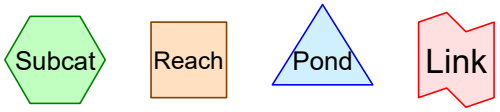
Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 1L: Pretreatment Check - 1-year storm



APPENDIX B: PRE- AND POST-DEVELOPMENT HYDROCAD MODEL





Routing Diagram for 45 Union St. - Existing Condition
Prepared by Woodard & Curran, Inc, Printed 8/13/2025
HydroCAD® 10.20-5c s/n 01204 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,295	80	>75% Grass cover, Good, HSG D (1S, 3S1, 3S2)
36,760	98	Impervious (1S, 2S, 3S1, 3S2)
38,055	**97**	**TOTAL AREA**

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

Subcatchment1S: Driveway to Union Street Runoff Area=4,355 sf 92.08% Impervious Runoff Depth>2.83"
Tc=6.0 min CN=97 Runoff=0.30 cfs 1,025 cf

Subcatchment2S: Driveway to Service Runoff Area=6,175 sf 100.00% Impervious Runoff Depth>2.94"
Tc=6.0 min CN=98 Runoff=0.43 cfs 1,511 cf

Subcatchment3S1: Parking Lot and Plaza Runoff Area=25,025 sf 96.56% Impervious Runoff Depth>2.83"
Tc=6.0 min CN=97 Runoff=1.70 cfs 5,891 cf

Subcatchment3S2: Plaza to Patton Court Runoff Area=2,500 sf 96.40% Impervious Runoff Depth>2.83"
Tc=6.0 min CN=97 Runoff=0.17 cfs 589 cf

Pond FIL: Filterra Unit Inflow=0.43 cfs 1,511 cf
Primary=0.43 cfs 1,511 cf

Link SP-A: Union Street Storm Drain Inflow=0.30 cfs 1,025 cf
Primary=0.30 cfs 1,025 cf

Link SP-B: Fore Street Combined Sewer Inflow=2.13 cfs 7,402 cf
Primary=2.13 cfs 7,402 cf

Link SP-C: Patton Court Inflow=0.17 cfs 589 cf
Primary=0.17 cfs 589 cf

Total Runoff Area = 38,055 sf Runoff Volume = 9,016 cf Average Runoff Depth = 2.84"
3.40% Pervious = 1,295 sf 96.60% Impervious = 36,760 sf

Summary for Subcatchment 1S: Driveway to Union Street

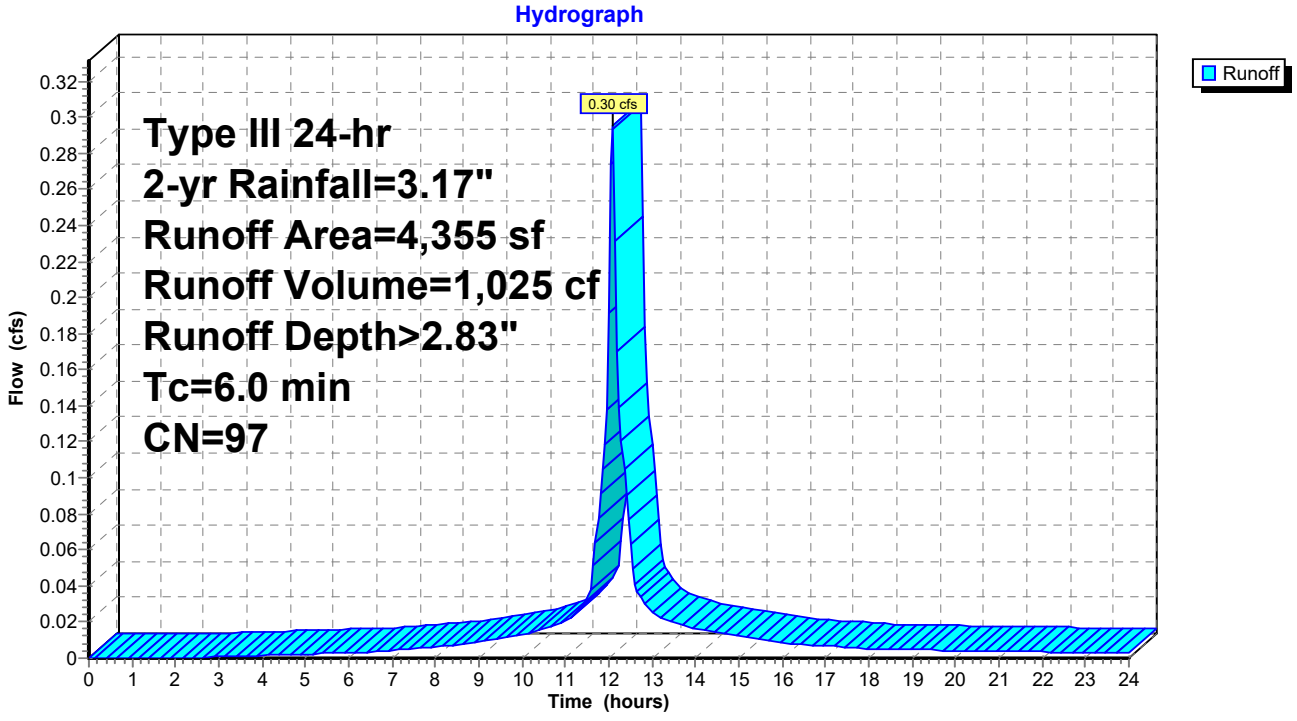
Runoff = 0.30 cfs @ 12.09 hrs, Volume= 1,025 cf, Depth> 2.83"
Routed to Link SP-A : Union Street Storm Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	4,010	98	Impervious
	345	80	>75% Grass cover, Good, HSG D
	4,355	97	Weighted Average
	345		7.92% Pervious Area
	4,010		92.08% Impervious Area

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

Subcatchment 1S: Driveway to Union Street



Summary for Subcatchment 2S: Driveway to Service Area

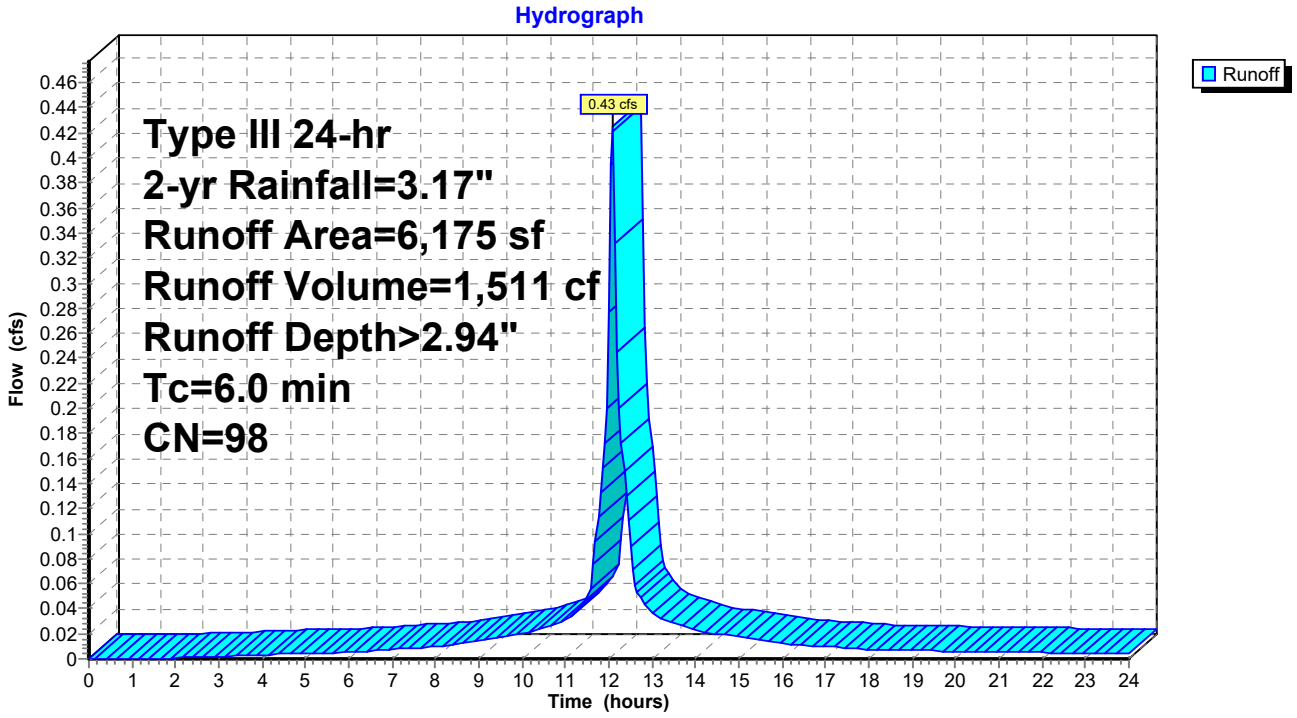
Runoff = 0.43 cfs @ 12.09 hrs, Volume= 1,511 cf, Depth> 2.94"
Routed to Pond FIL : Filterra Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	6,175	98	Impervious
	6,175		100.00% Impervious Area

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

Subcatchment 2S: Driveway to Service Area



Summary for Subcatchment 3S1: Parking Lot and Plaza

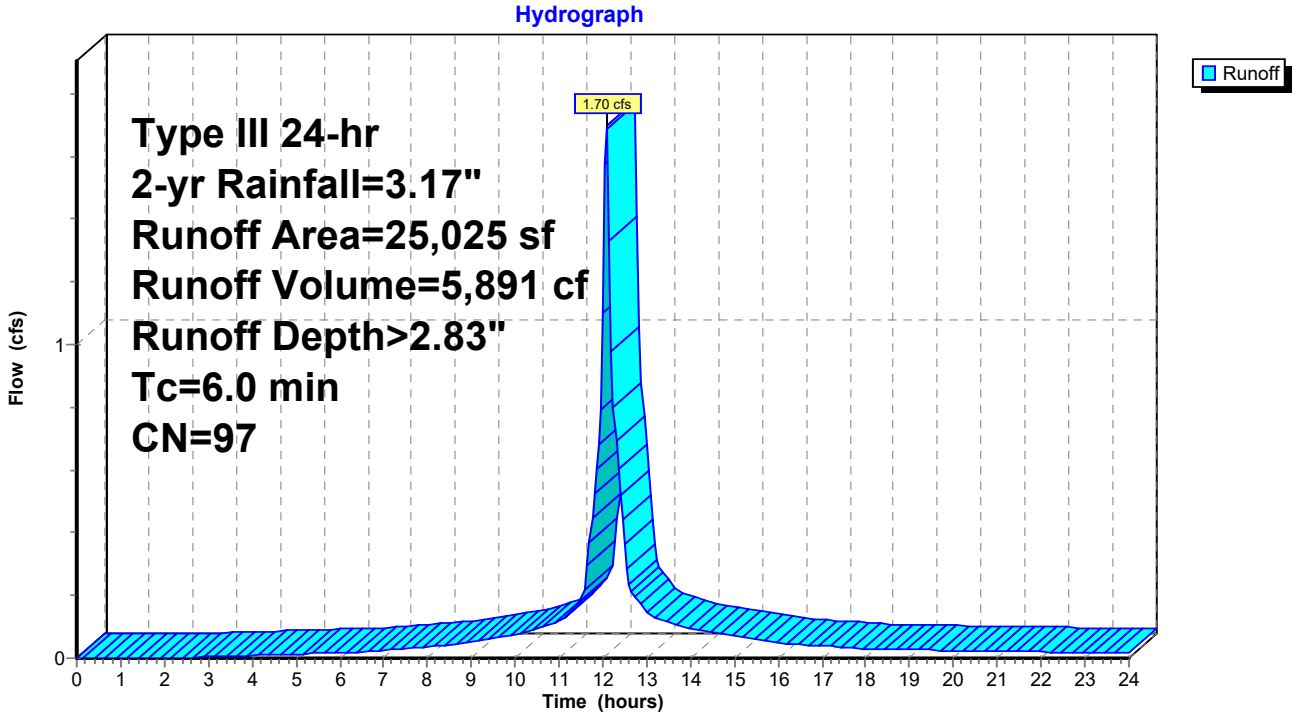
Runoff = 1.70 cfs @ 12.09 hrs, Volume= 5,891 cf, Depth> 2.83"
Routed to Link SP-B : Fore Street Combined Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	24,165	98	Impervious
	860	80	>75% Grass cover, Good, HSG D
	25,025	97	Weighted Average
	860		3.44% Pervious Area
	24,165		96.56% Impervious Area

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

Subcatchment 3S1: Parking Lot and Plaza



Summary for Subcatchment 3S2: Plaza to Patton Court

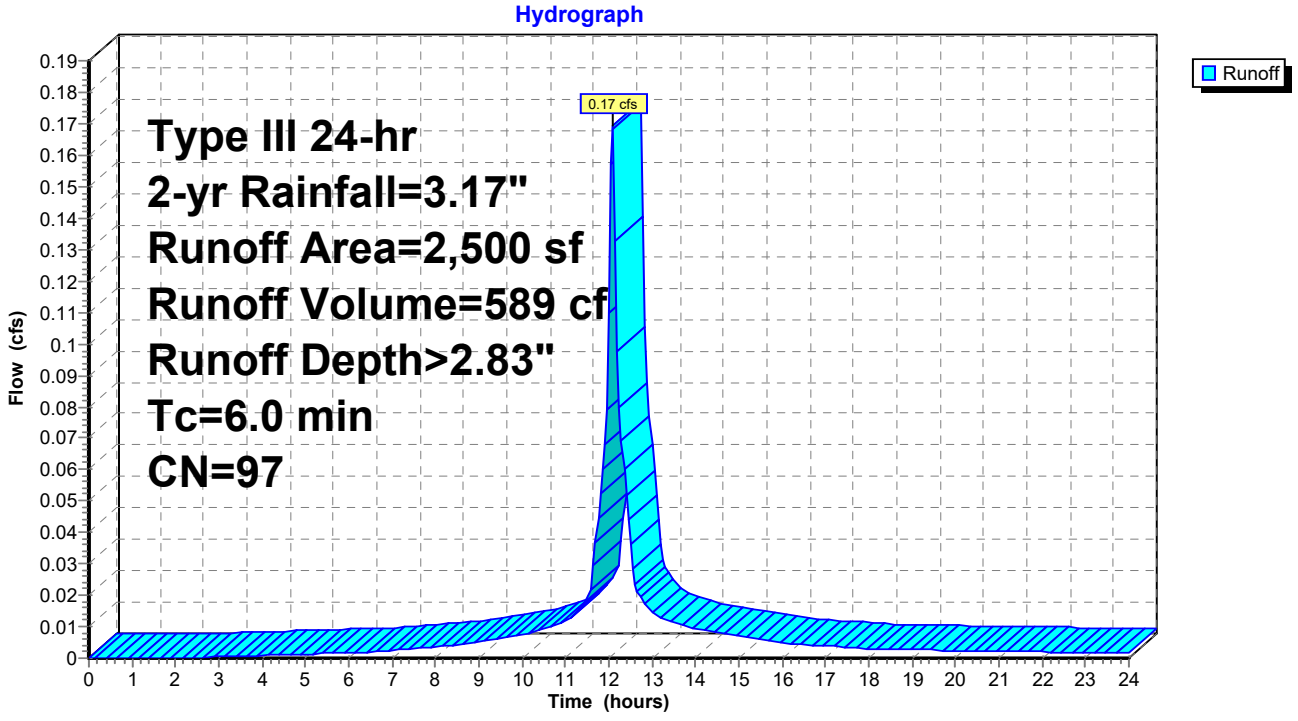
Runoff = 0.17 cfs @ 12.09 hrs, Volume= 589 cf, Depth> 2.83"
Routed to Link SP-C : Patton Court

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	2,410	98	Impervious
	90	80	>75% Grass cover, Good, HSG D
	2,500	97	Weighted Average
	90		3.60% Pervious Area
	2,410		96.40% Impervious Area

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

Subcatchment 3S2: Plaza to Patton Court

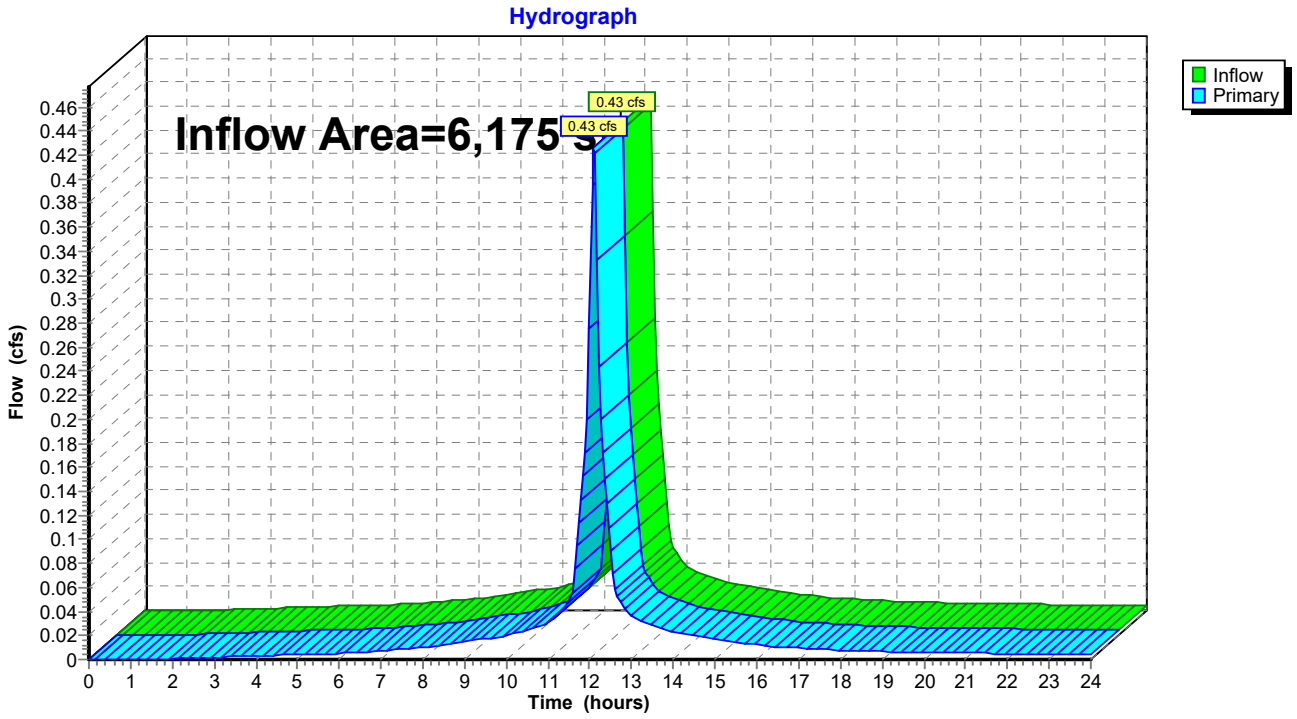


Summary for Pond FIL: Filterra Unit

Inflow Area = 6,175 sf,100.00% Impervious, Inflow Depth > 2.94" for 2-yr event
Inflow = 0.43 cfs @ 12.09 hrs, Volume= 1,511 cf
Primary = 0.43 cfs @ 12.09 hrs, Volume= 1,511 cf, Atten= 0%, Lag= 0.0 min
Routed to Link SP-B : Fore Street Combined Sewer

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

Pond FIL: Filterra Unit

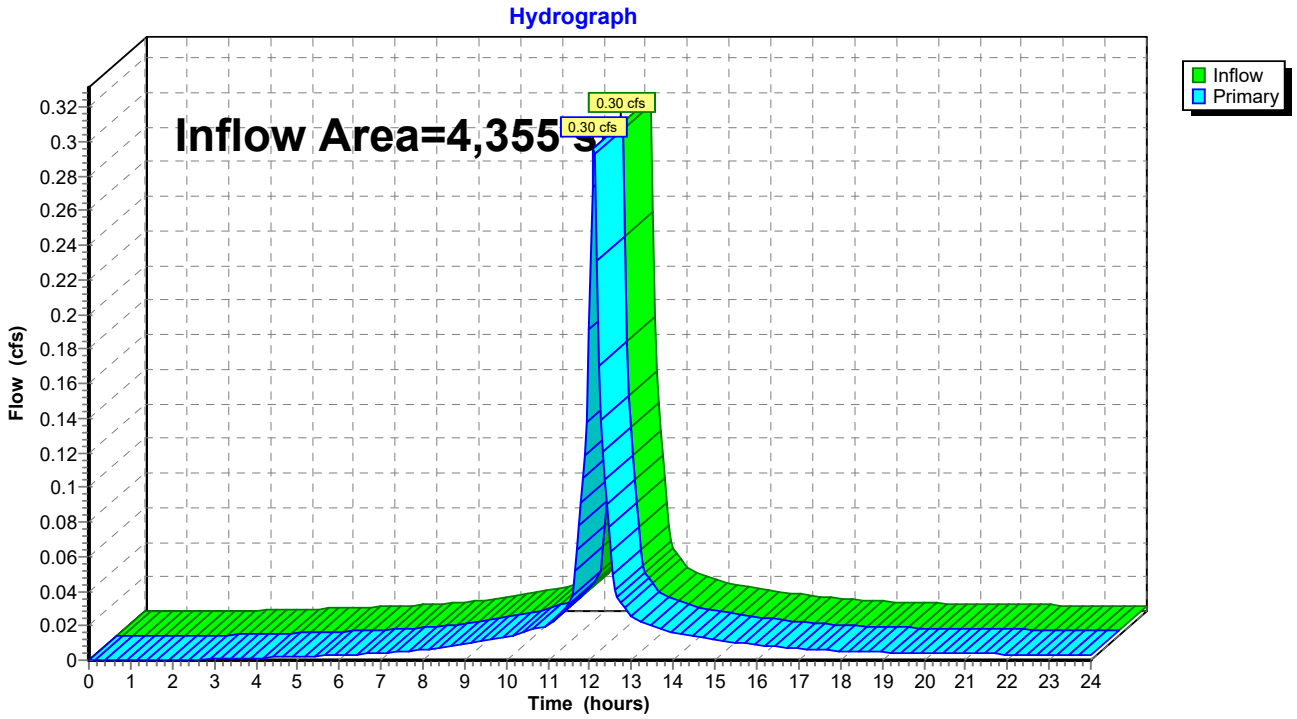


Summary for Link SP-A: Union Street Storm Drain

Inflow Area = 4,355 sf, 92.08% Impervious, Inflow Depth > 2.83" for 2-yr event
Inflow = 0.30 cfs @ 12.09 hrs, Volume= 1,025 cf
Primary = 0.30 cfs @ 12.09 hrs, Volume= 1,025 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-A: Union Street Storm Drain

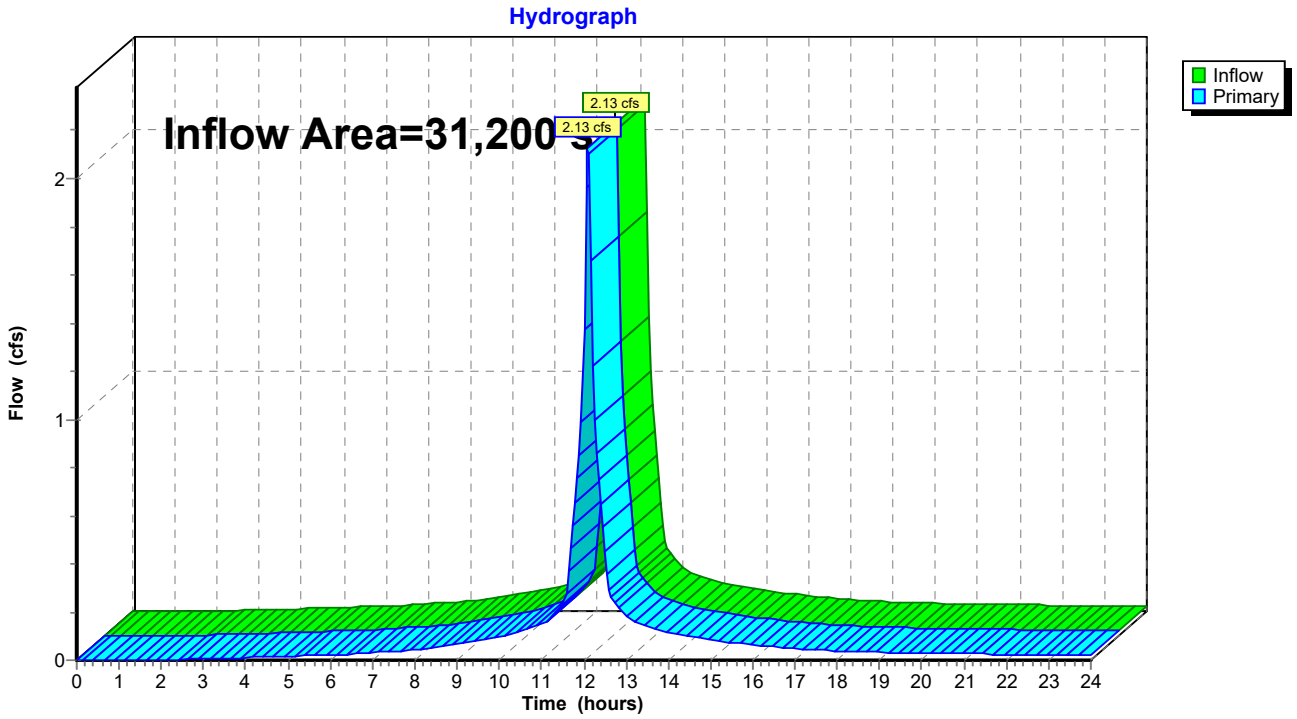


Summary for Link SP-B: Fore Street Combined Sewer

Inflow Area = 31,200 sf, 97.24% Impervious, Inflow Depth > 2.85" for 2-yr event
Inflow = 2.13 cfs @ 12.09 hrs, Volume= 7,402 cf
Primary = 2.13 cfs @ 12.09 hrs, Volume= 7,402 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-B: Fore Street Combined Sewer

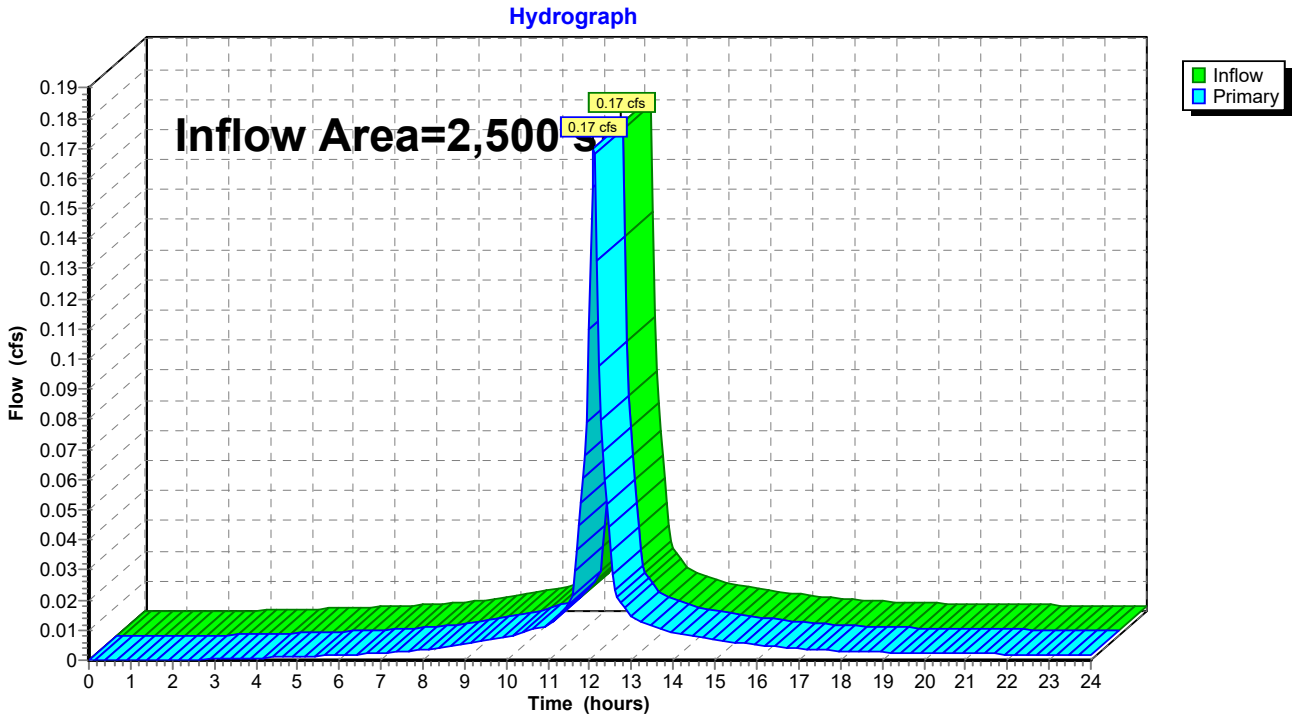


Summary for Link SP-C: Patton Court

Inflow Area = 2,500 sf, 96.40% Impervious, Inflow Depth > 2.83" for 2-yr event
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 589 cf
Primary = 0.17 cfs @ 12.09 hrs, Volume= 589 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-C: Patton Court



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

Subcatchment1S: Driveway to Union Street Runoff Area=4,355 sf 92.08% Impervious Runoff Depth>4.38"
Tc=6.0 min CN=97 Runoff=0.45 cfs 1,588 cf

Subcatchment2S: Driveway to Service Runoff Area=6,175 sf 100.00% Impervious Runoff Depth>4.49"
Tc=6.0 min CN=98 Runoff=0.64 cfs 2,311 cf

Subcatchment3S1: Parking Lot and Plaza Runoff Area=25,025 sf 96.56% Impervious Runoff Depth>4.38"
Tc=6.0 min CN=97 Runoff=2.57 cfs 9,124 cf

Subcatchment3S2: Plaza to Patton Court Runoff Area=2,500 sf 96.40% Impervious Runoff Depth>4.38"
Tc=6.0 min CN=97 Runoff=0.26 cfs 912 cf

Pond FIL: Filterra Unit Inflow=0.64 cfs 2,311 cf
Primary=0.64 cfs 2,311 cf

Link SP-A: Union Street Storm Drain Inflow=0.45 cfs 1,588 cf
Primary=0.45 cfs 1,588 cf

Link SP-B: Fore Street Combined Sewer Inflow=3.21 cfs 11,435 cf
Primary=3.21 cfs 11,435 cf

Link SP-C: Patton Court Inflow=0.26 cfs 912 cf
Primary=0.26 cfs 912 cf

Total Runoff Area = 38,055 sf Runoff Volume = 13,935 cf Average Runoff Depth = 4.39"
3.40% Pervious = 1,295 sf 96.60% Impervious = 36,760 sf

Summary for Subcatchment 1S: Driveway to Union Street

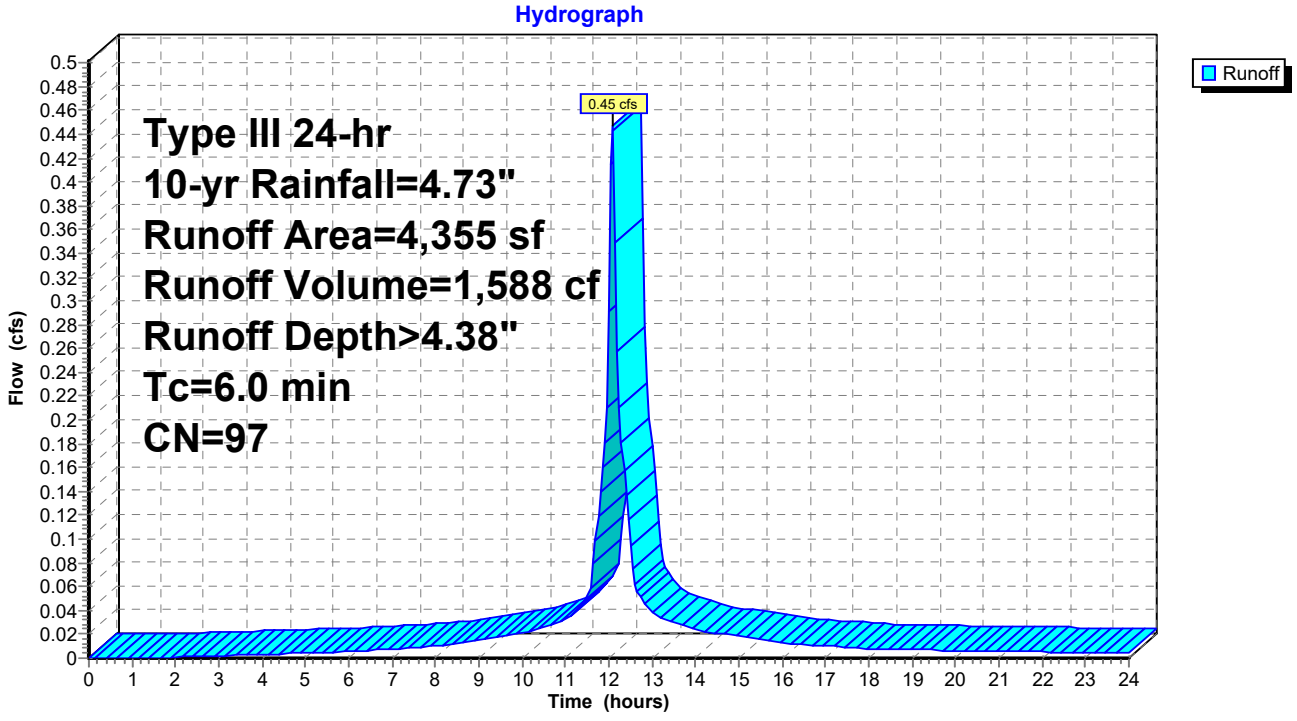
Runoff = 0.45 cfs @ 12.09 hrs, Volume= 1,588 cf, Depth> 4.38"
Routed to Link SP-A : Union Street Storm Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	4,010	98	Impervious
	345	80	>75% Grass cover, Good, HSG D
	4,355	97	Weighted Average
	345		7.92% Pervious Area
	4,010		92.08% Impervious Area

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

Subcatchment 1S: Driveway to Union Street



Summary for Subcatchment 2S: Driveway to Service Area

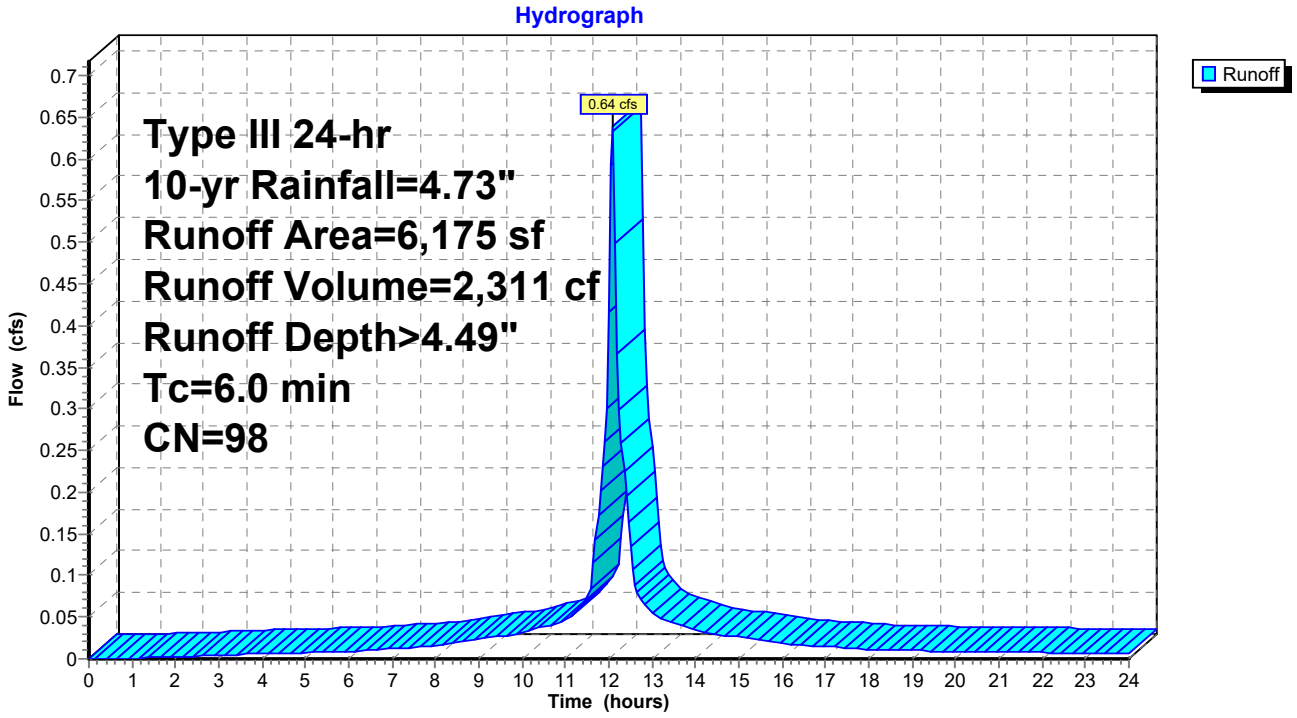
Runoff = 0.64 cfs @ 12.09 hrs, Volume= 2,311 cf, Depth> 4.49"
Routed to Pond FIL : Filterra Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	6,175	98	Impervious
	6,175		100.00% Impervious Area

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

Subcatchment 2S: Driveway to Service Area



Summary for Subcatchment 3S1: Parking Lot and Plaza

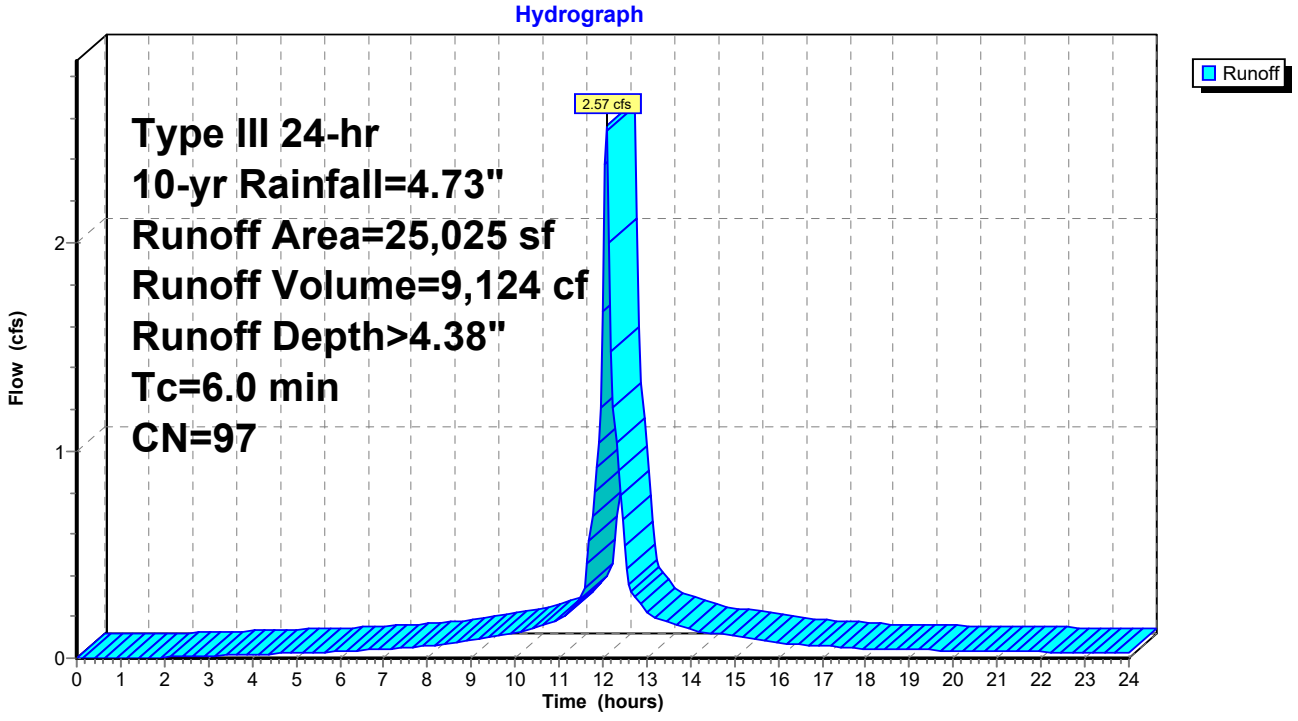
Runoff = 2.57 cfs @ 12.09 hrs, Volume= 9,124 cf, Depth> 4.38"
Routed to Link SP-B : Fore Street Combined Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	24,165	98	Impervious
	860	80	>75% Grass cover, Good, HSG D
	25,025	97	Weighted Average
	860		3.44% Pervious Area
	24,165		96.56% Impervious Area

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

Subcatchment 3S1: Parking Lot and Plaza



Summary for Subcatchment 3S2: Plaza to Patton Court

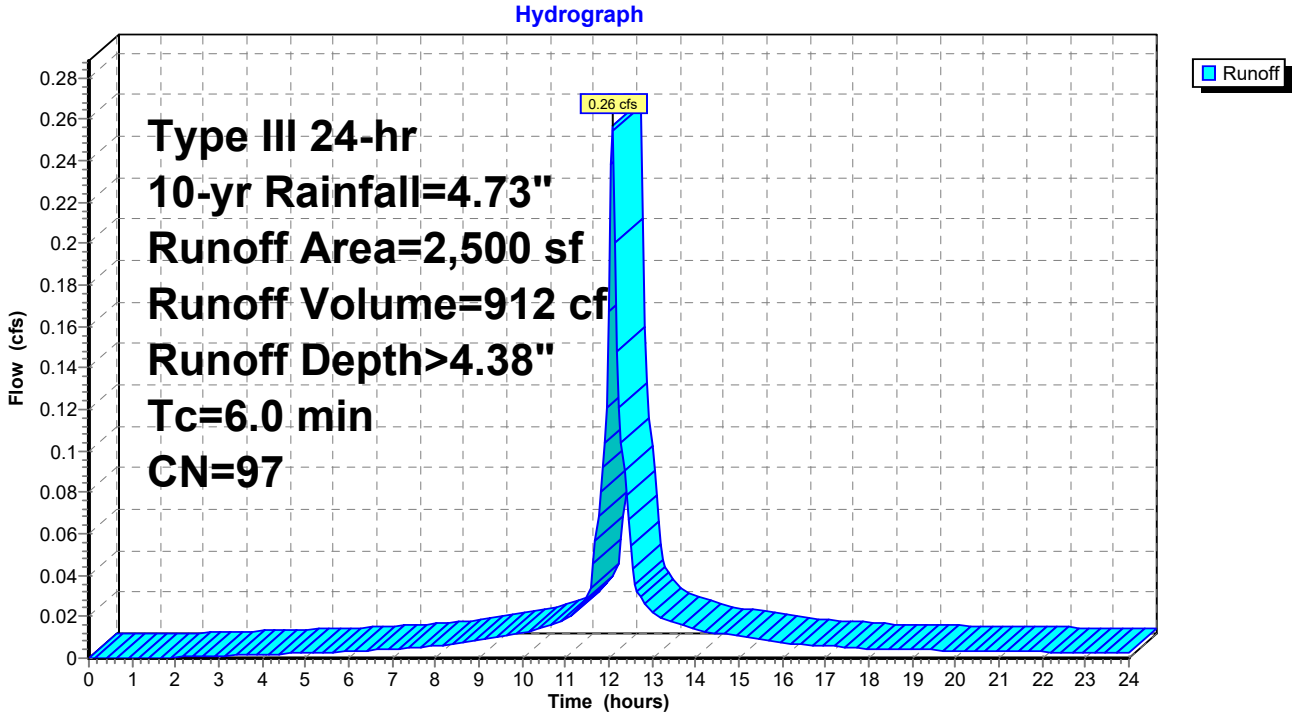
Runoff = 0.26 cfs @ 12.09 hrs, Volume= 912 cf, Depth> 4.38"
Routed to Link SP-C : Patton Court

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	2,410	98	Impervious
	90	80	>75% Grass cover, Good, HSG D
	2,500	97	Weighted Average
	90		3.60% Pervious Area
	2,410		96.40% Impervious Area

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

Subcatchment 3S2: Plaza to Patton Court

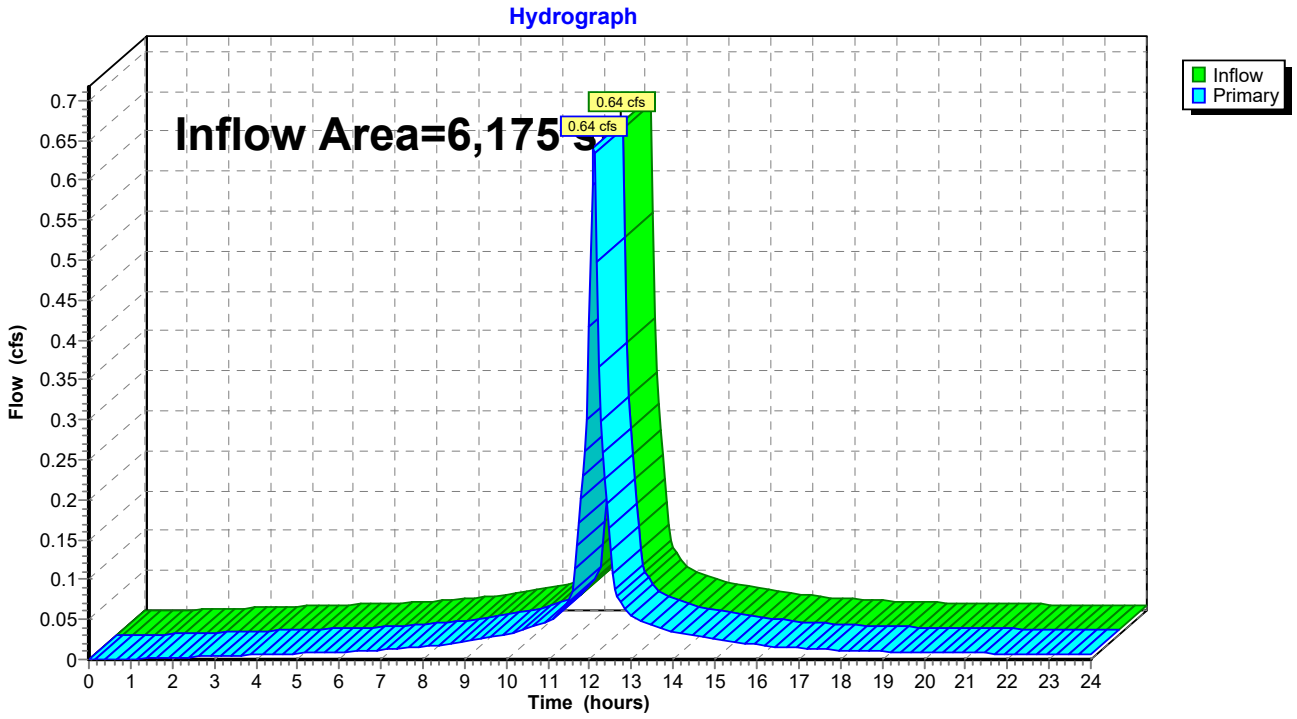


Summary for Pond FIL: Filterra Unit

Inflow Area = 6,175 sf,100.00% Impervious, Inflow Depth > 4.49" for 10-yr event
Inflow = 0.64 cfs @ 12.09 hrs, Volume= 2,311 cf
Primary = 0.64 cfs @ 12.09 hrs, Volume= 2,311 cf, Atten= 0%, Lag= 0.0 min
Routed to Link SP-B : Fore Street Combined Sewer

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

Pond FIL: Filterra Unit

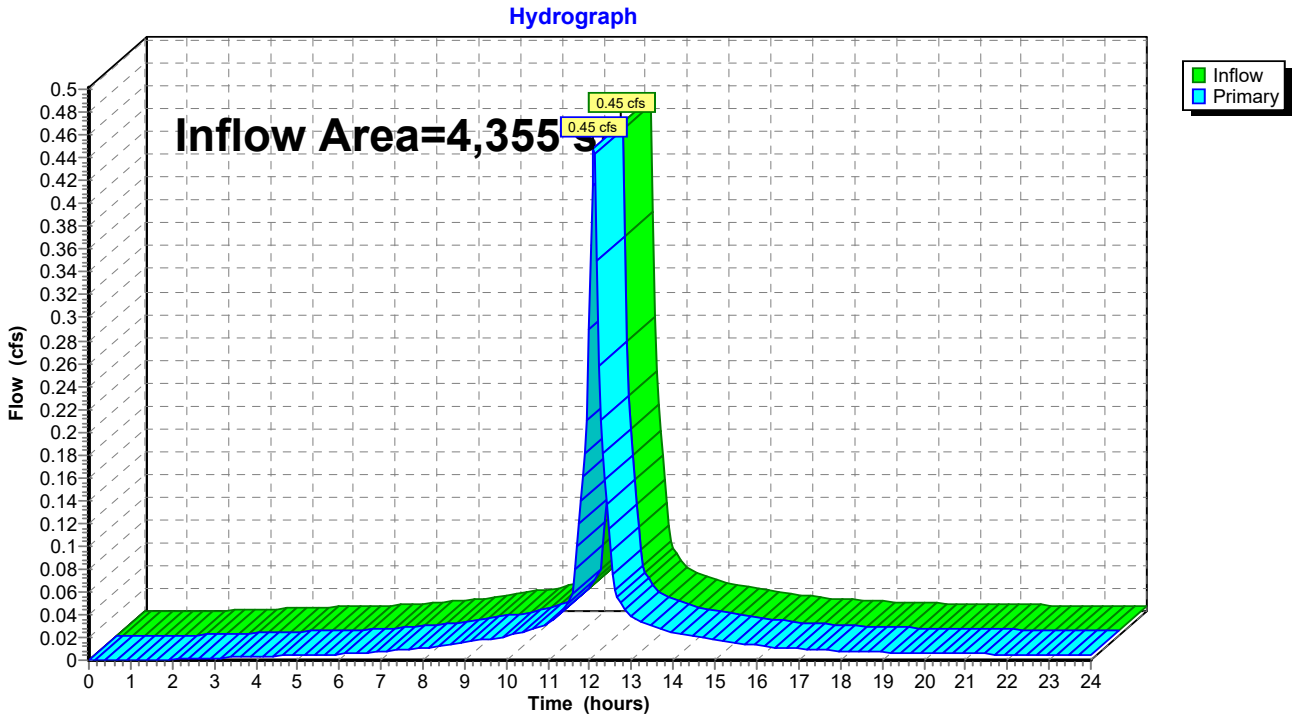


Summary for Link SP-A: Union Street Storm Drain

Inflow Area = 4,355 sf, 92.08% Impervious, Inflow Depth > 4.38" for 10-yr event
Inflow = 0.45 cfs @ 12.09 hrs, Volume= 1,588 cf
Primary = 0.45 cfs @ 12.09 hrs, Volume= 1,588 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-A: Union Street Storm Drain

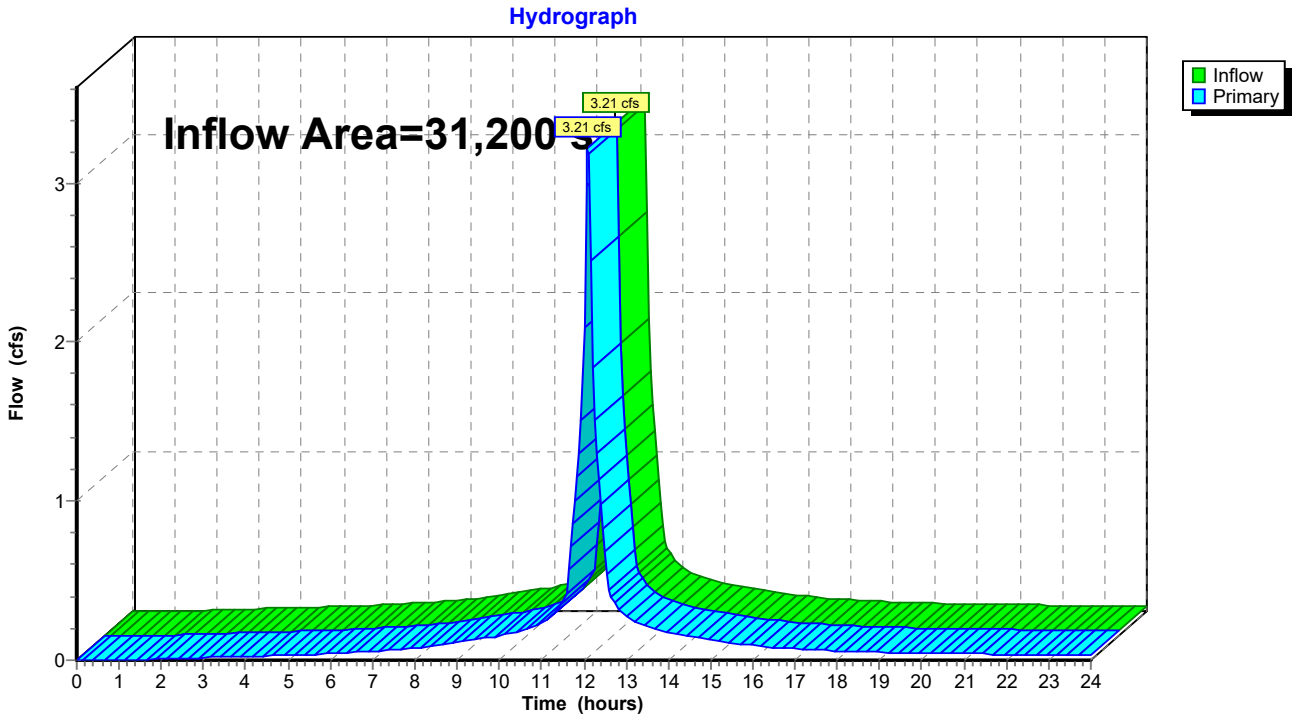


Summary for Link SP-B: Fore Street Combined Sewer

Inflow Area = 31,200 sf, 97.24% Impervious, Inflow Depth > 4.40" for 10-yr event
Inflow = 3.21 cfs @ 12.09 hrs, Volume= 11,435 cf
Primary = 3.21 cfs @ 12.09 hrs, Volume= 11,435 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-B: Fore Street Combined Sewer

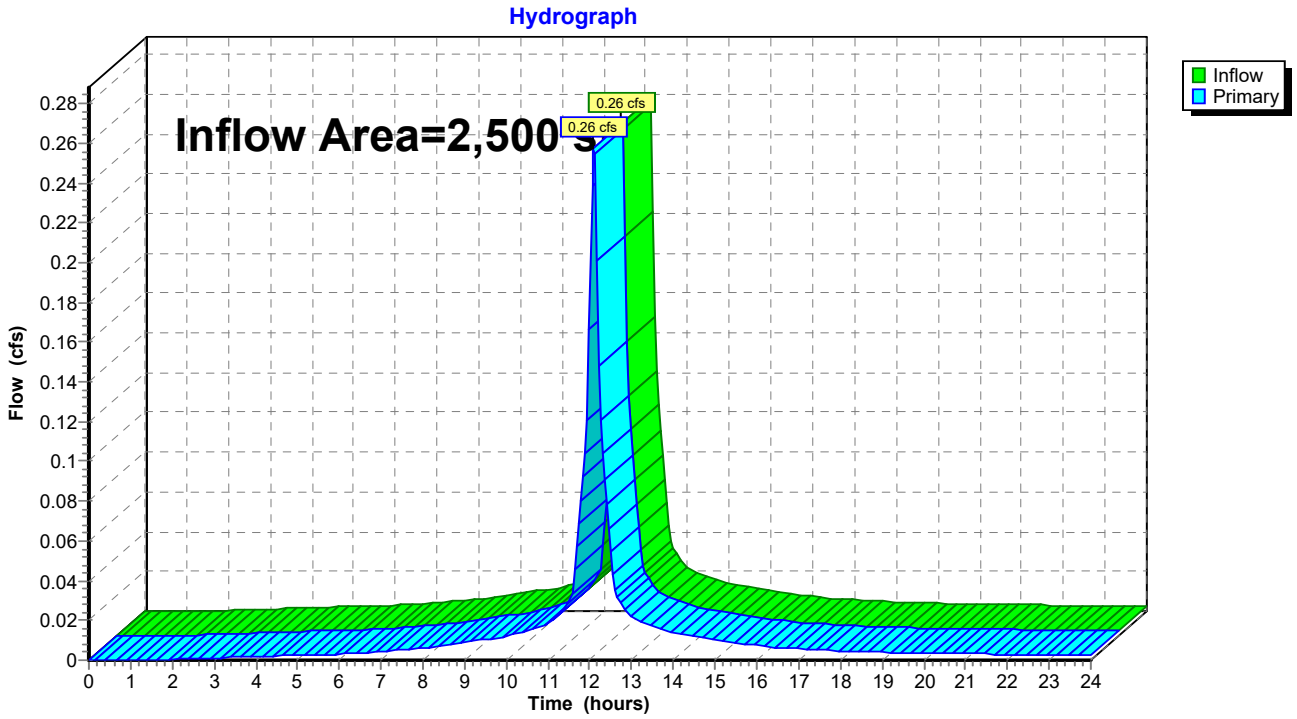


Summary for Link SP-C: Patton Court

Inflow Area = 2,500 sf, 96.40% Impervious, Inflow Depth > 4.38" for 10-yr event
Inflow = 0.26 cfs @ 12.09 hrs, Volume= 912 cf
Primary = 0.26 cfs @ 12.09 hrs, Volume= 912 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-C: Patton Court



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

Subcatchment1S: Driveway to Union Street Runoff Area=4,355 sf 92.08% Impervious Runoff Depth>5.59"
Tc=6.0 min CN=97 Runoff=0.57 cfs 2,029 cf

Subcatchment2S: Driveway to Service Runoff Area=6,175 sf 100.00% Impervious Runoff Depth>5.71"
Tc=6.0 min CN=98 Runoff=0.81 cfs 2,937 cf

Subcatchment3S1: Parking Lot and Plaza Runoff Area=25,025 sf 96.56% Impervious Runoff Depth>5.59"
Tc=6.0 min CN=97 Runoff=3.25 cfs 11,659 cf

Subcatchment3S2: Plaza to Patton Court Runoff Area=2,500 sf 96.40% Impervious Runoff Depth>5.59"
Tc=6.0 min CN=97 Runoff=0.33 cfs 1,165 cf

Pond FIL: Filterra Unit Inflow=0.81 cfs 2,937 cf
Primary=0.81 cfs 2,937 cf

Link SP-A: Union Street Storm Drain Inflow=0.57 cfs 2,029 cf
Primary=0.57 cfs 2,029 cf

Link SP-B: Fore Street Combined Sewer Inflow=4.06 cfs 14,597 cf
Primary=4.06 cfs 14,597 cf

Link SP-C: Patton Court Inflow=0.33 cfs 1,165 cf
Primary=0.33 cfs 1,165 cf

Total Runoff Area = 38,055 sf Runoff Volume = 17,791 cf Average Runoff Depth = 5.61"
3.40% Pervious = 1,295 sf 96.60% Impervious = 36,760 sf

Summary for Subcatchment 1S: Driveway to Union Street

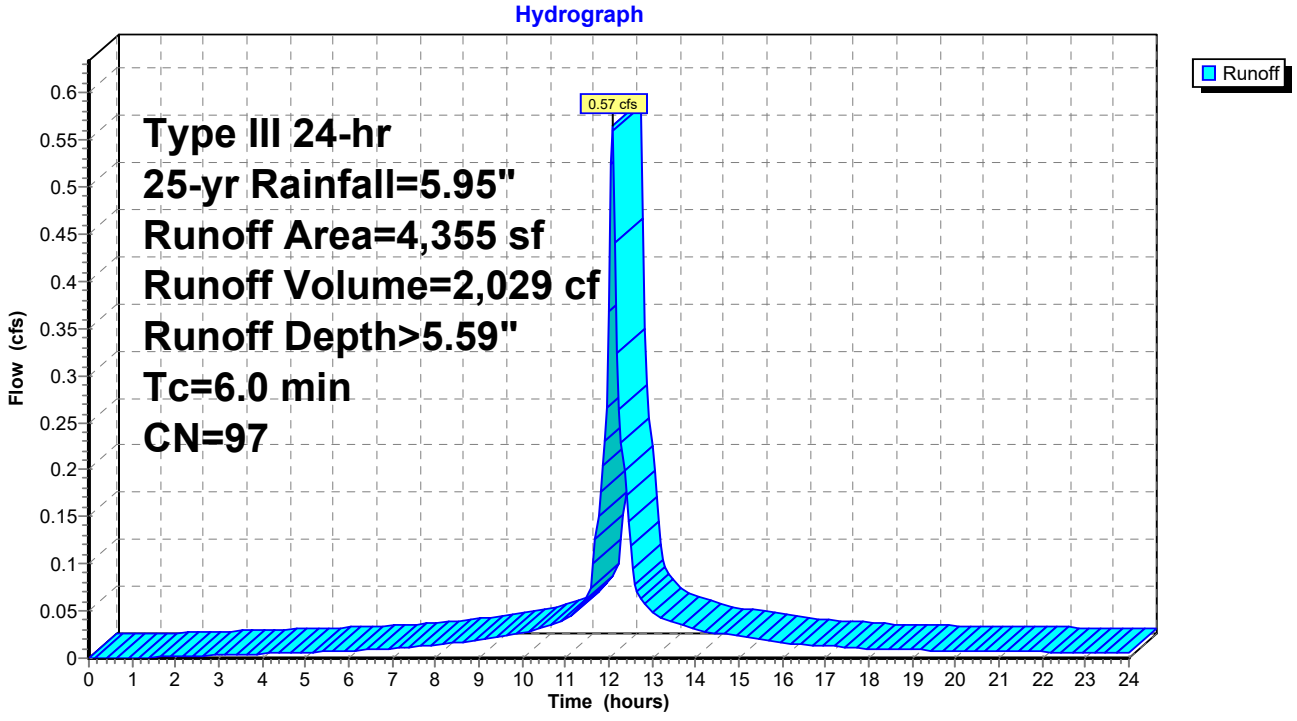
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 2,029 cf, Depth> 5.59"
Routed to Link SP-A : Union Street Storm Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	4,010	98	Impervious
	345	80	>75% Grass cover, Good, HSG D
	4,355	97	Weighted Average
	345		7.92% Pervious Area
	4,010		92.08% Impervious Area

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

Subcatchment 1S: Driveway to Union Street



Summary for Subcatchment 2S: Driveway to Service Area

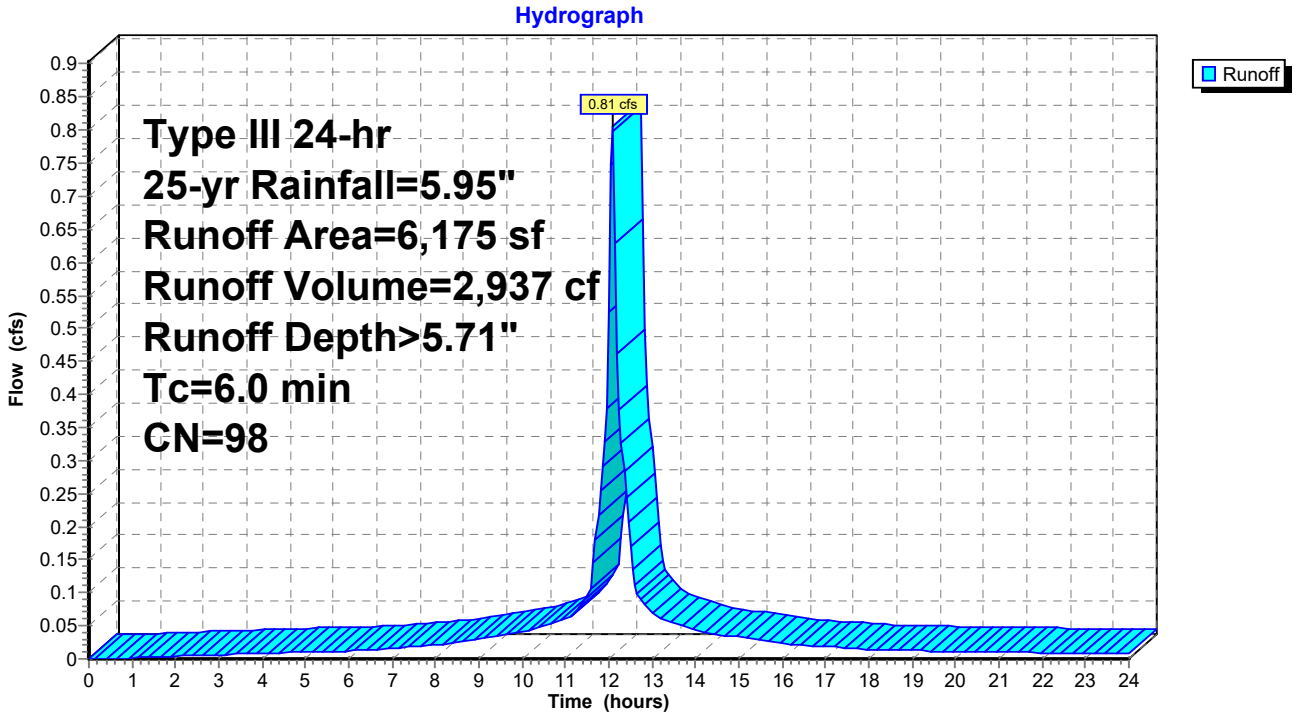
Runoff = 0.81 cfs @ 12.09 hrs, Volume= 2,937 cf, Depth> 5.71"
Routed to Pond FIL : Filterra Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	6,175	98	Impervious
	6,175		100.00% Impervious Area

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

Subcatchment 2S: Driveway to Service Area



Summary for Subcatchment 3S1: Parking Lot and Plaza

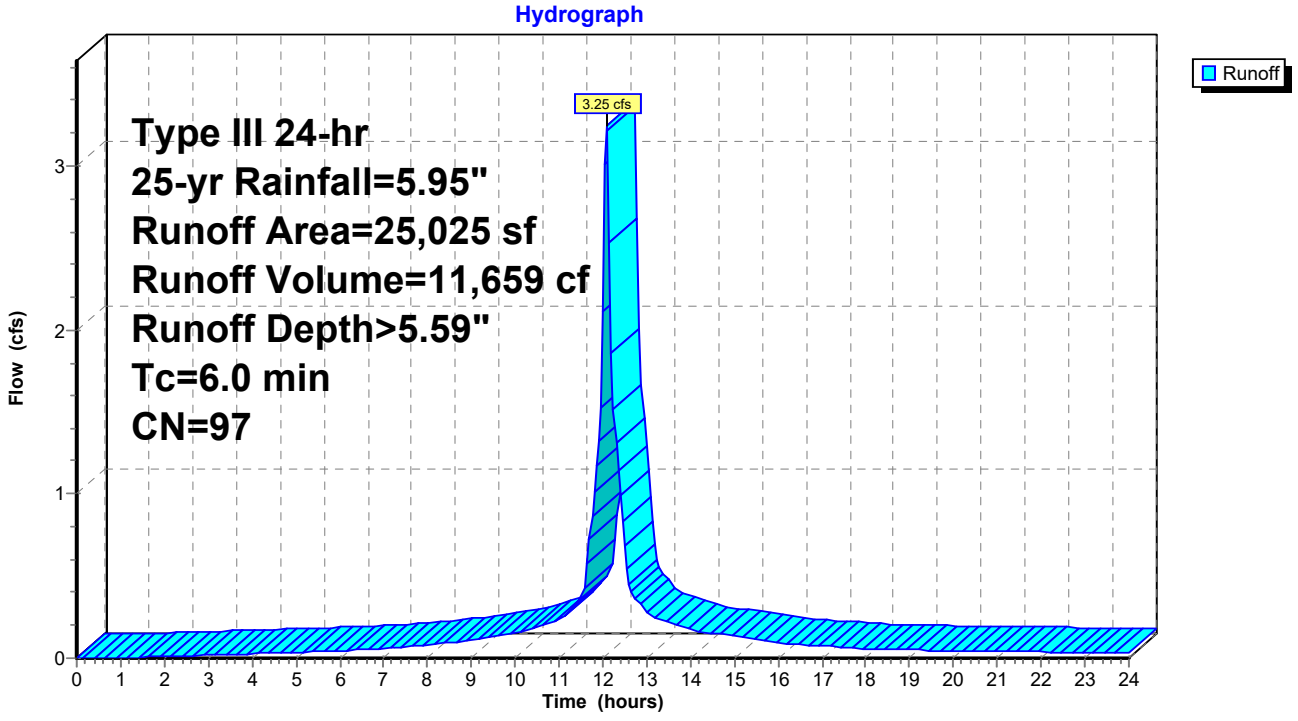
Runoff = 3.25 cfs @ 12.09 hrs, Volume= 11,659 cf, Depth> 5.59"
Routed to Link SP-B : Fore Street Combined Sewer

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	24,165	98	Impervious
	860	80	>75% Grass cover, Good, HSG D
	25,025	97	Weighted Average
	860		3.44% Pervious Area
	24,165		96.56% Impervious Area

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

Subcatchment 3S1: Parking Lot and Plaza



Summary for Subcatchment 3S2: Plaza to Patton Court

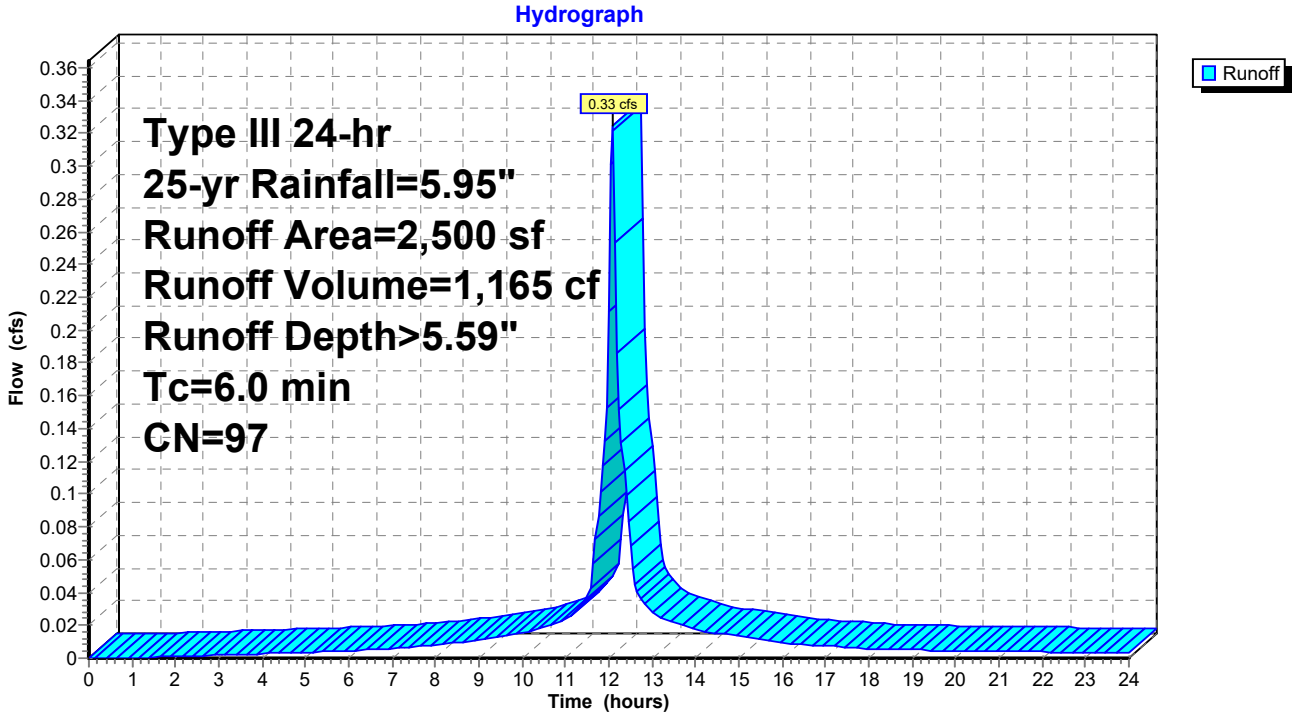
Runoff = 0.33 cfs @ 12.09 hrs, Volume= 1,165 cf, Depth> 5.59"
Routed to Link SP-C : Patton Court

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	2,410	98	Impervious
	90	80	>75% Grass cover, Good, HSG D
	2,500	97	Weighted Average
	90		3.60% Pervious Area
	2,410		96.40% Impervious Area

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

Subcatchment 3S2: Plaza to Patton Court

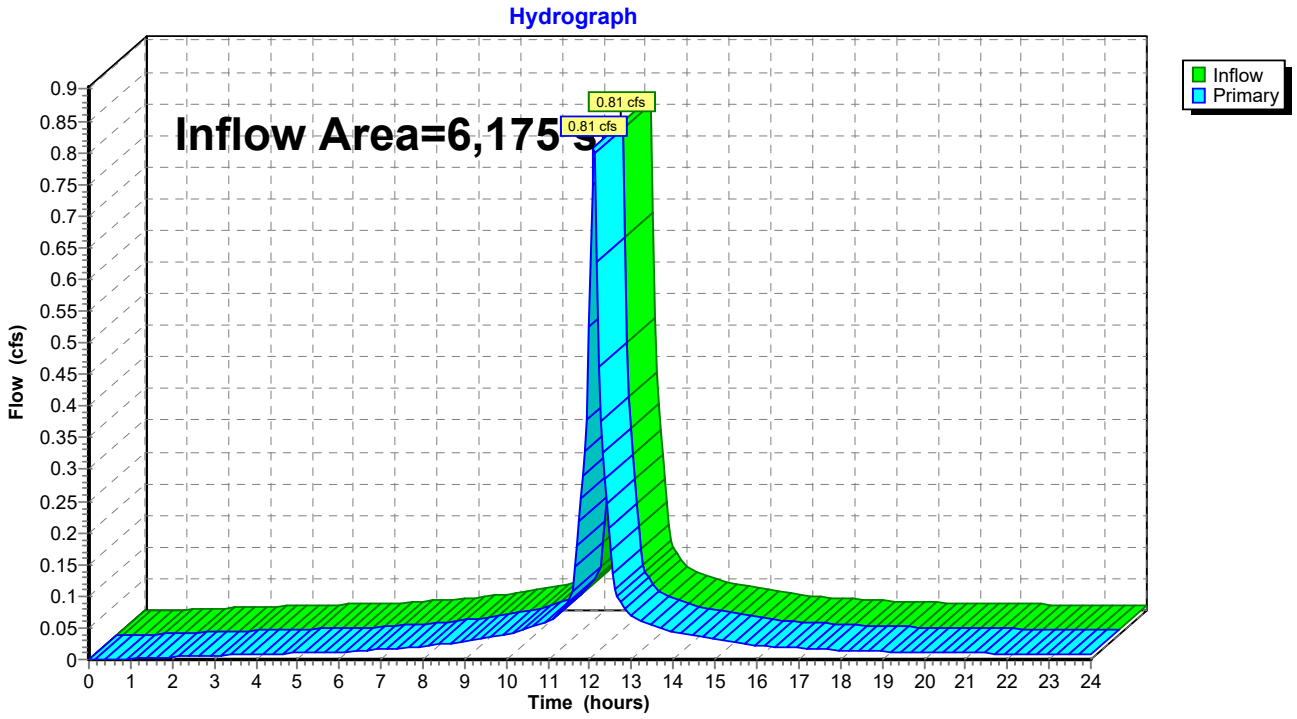


Summary for Pond FIL: Filterra Unit

Inflow Area = 6,175 sf,100.00% Impervious, Inflow Depth > 5.71" for 25-yr event
Inflow = 0.81 cfs @ 12.09 hrs, Volume= 2,937 cf
Primary = 0.81 cfs @ 12.09 hrs, Volume= 2,937 cf, Atten= 0%, Lag= 0.0 min
Routed to Link SP-B : Fore Street Combined Sewer

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

Pond FIL: Filterra Unit

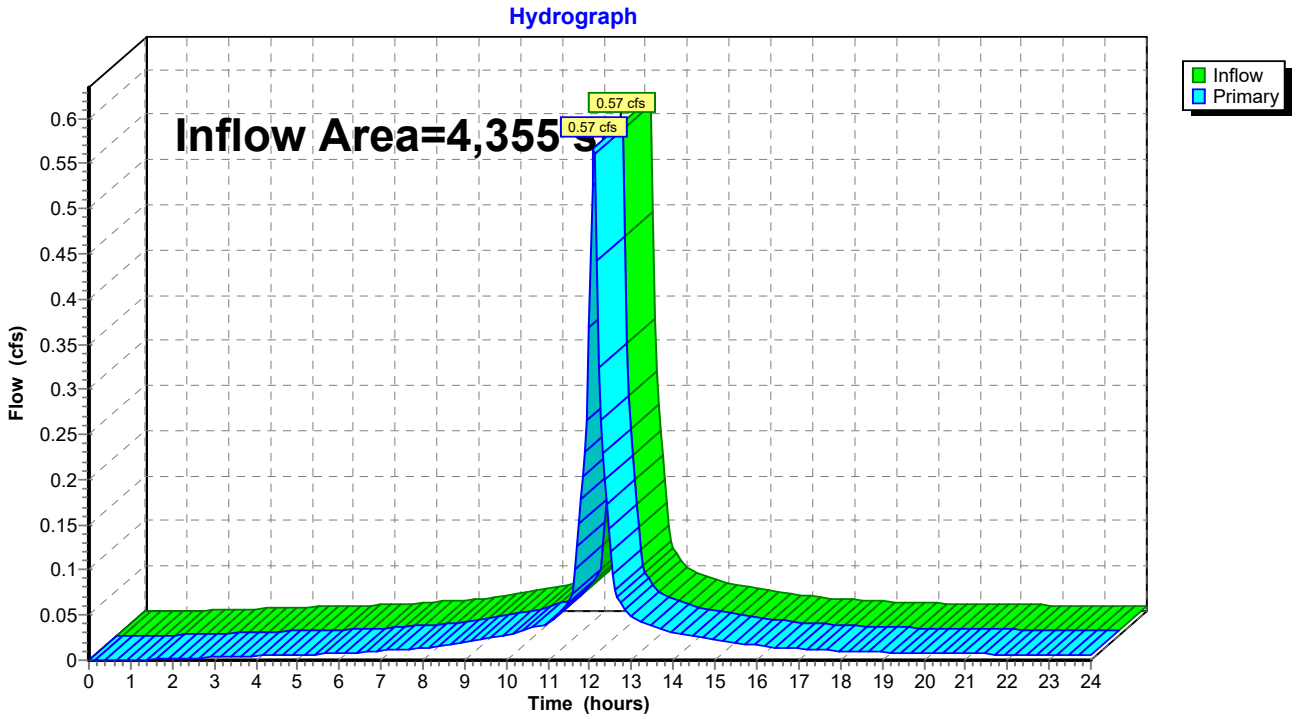


Summary for Link SP-A: Union Street Storm Drain

Inflow Area = 4,355 sf, 92.08% Impervious, Inflow Depth > 5.59" for 25-yr event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 2,029 cf
Primary = 0.57 cfs @ 12.09 hrs, Volume= 2,029 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-A: Union Street Storm Drain

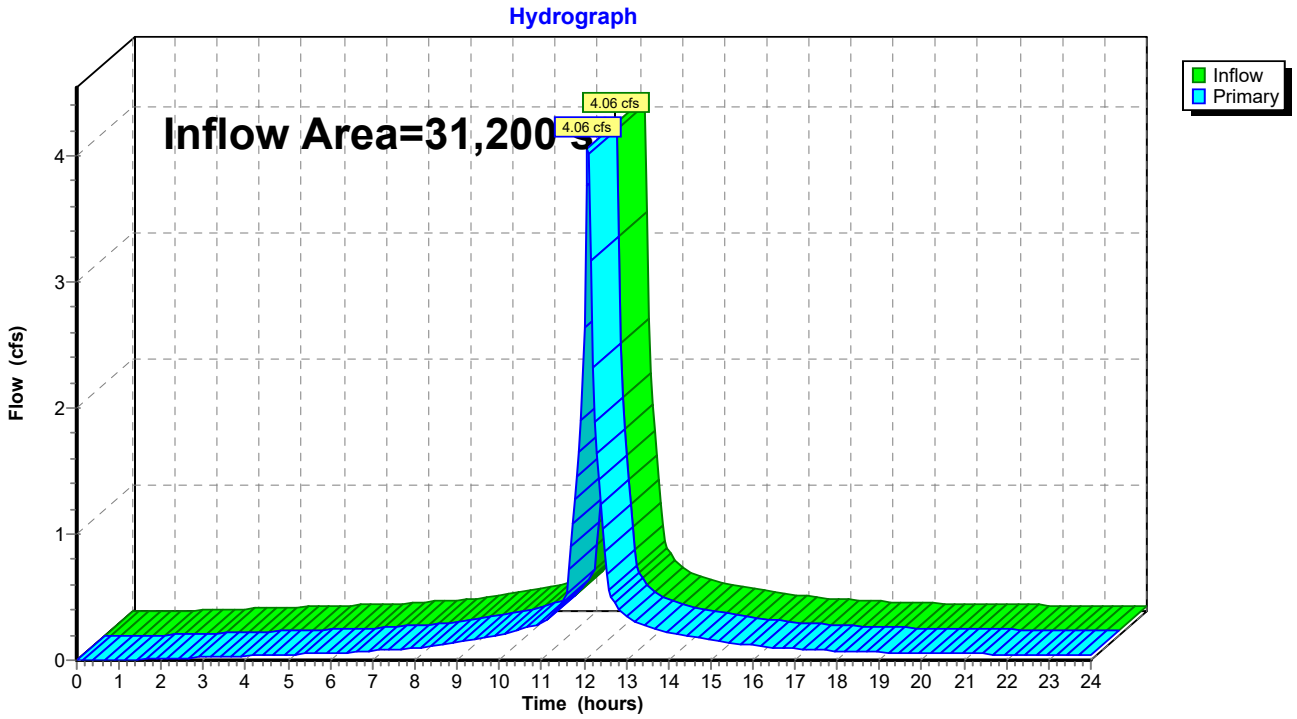


Summary for Link SP-B: Fore Street Combined Sewer

Inflow Area = 31,200 sf, 97.24% Impervious, Inflow Depth > 5.61" for 25-yr event
Inflow = 4.06 cfs @ 12.09 hrs, Volume= 14,597 cf
Primary = 4.06 cfs @ 12.09 hrs, Volume= 14,597 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-B: Fore Street Combined Sewer

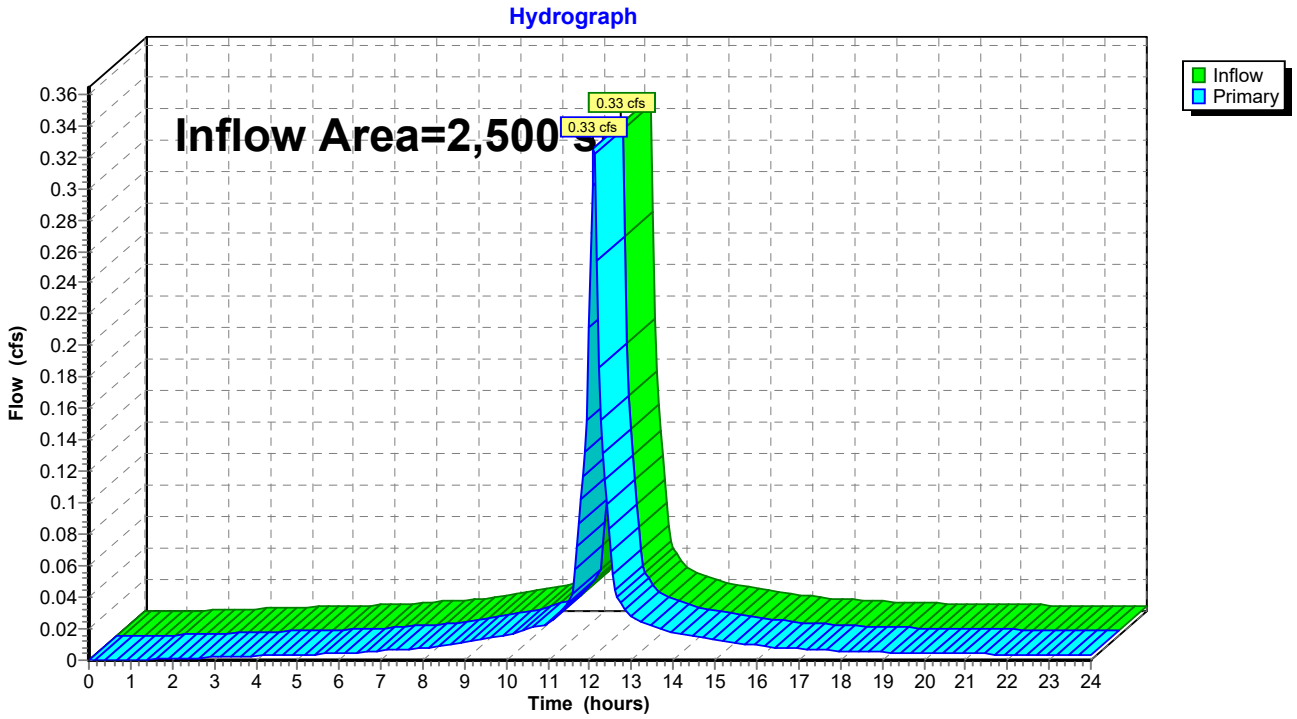


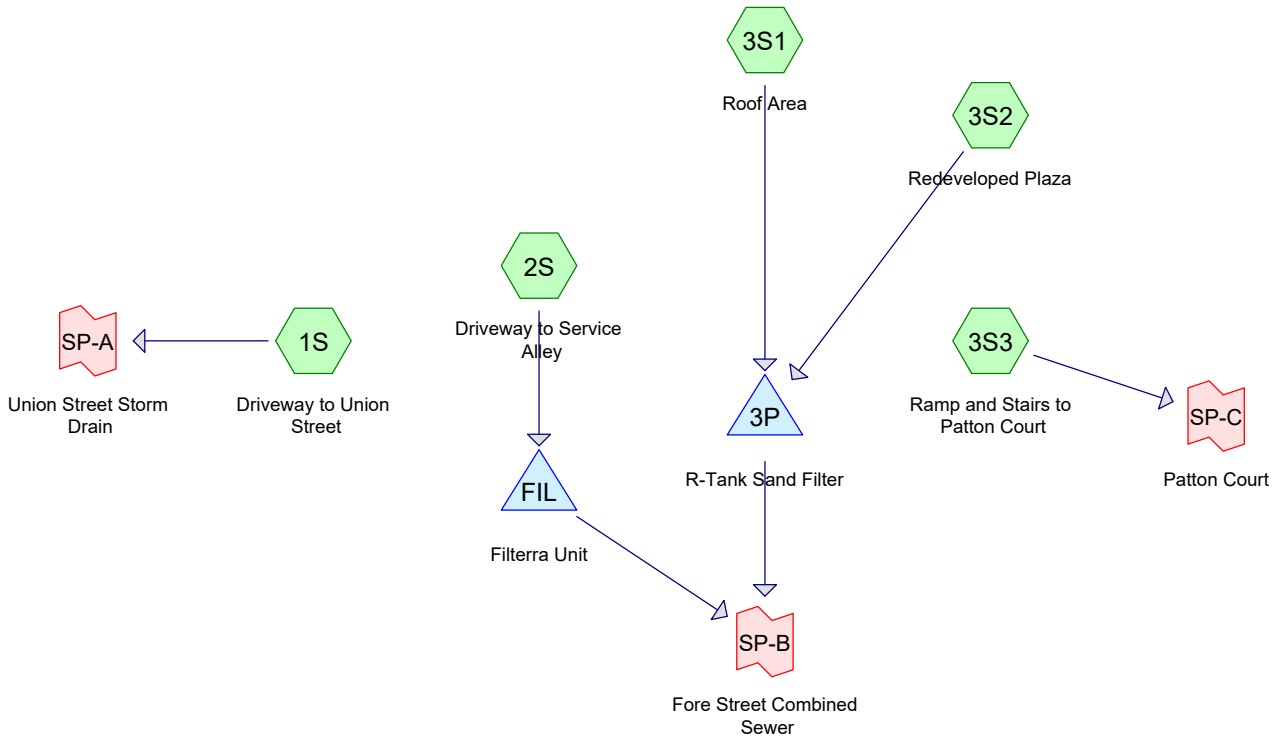
Summary for Link SP-C: Patton Court

Inflow Area = 2,500 sf, 96.40% Impervious, Inflow Depth > 5.59" for 25-yr event
Inflow = 0.33 cfs @ 12.09 hrs, Volume= 1,165 cf
Primary = 0.33 cfs @ 12.09 hrs, Volume= 1,165 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP-C: Patton Court





Subcat Reach Pond Link

Routing Diagram for 45 Union St. - Proposed Condition
Prepared by Woodard & Curran, Inc, Printed 10/20/2025
HydroCAD® 10.20-5c s/n 01204 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
470	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S2)
25,295	98	Impervious (1S, 2S, 3S2, 3S3)
12,285	98	Roof (3S1)
38,050	**98**	**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Driveway to Union Street Runoff Area=4,215 sf 98.81% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=98 Runoff=0.29 cfs 1,032 cf

Subcatchment2S: Driveway to Service Alley Runoff Area=6,140 sf 99.51% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=98 Runoff=0.42 cfs 1,503 cf

Subcatchment3S1: Roof Area Runoff Area=12,285 sf 100.00% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=98 Runoff=0.85 cfs 3,007 cf

Subcatchment3S2: Redeveloped Plaza Runoff Area=14,625 sf 97.33% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=98 Runoff=1.01 cfs 3,580 cf

Subcatchment3S3: Ramp and Stairs to Runoff Area=785 sf 100.00% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=98 Runoff=0.05 cfs 192 cf

Pond 3P: R-Tank Sand Filter Peak Elev=35.18' Storage=3,941 cf Inflow=1.86 cfs 6,588 cf
Outflow=0.10 cfs 6,588 cf

Pond FIL: Filterra Unit Inflow=0.42 cfs 1,503 cf
Primary=0.42 cfs 1,503 cf

Link SP-A: Union Street Storm Drain Inflow=0.29 cfs 1,032 cf
Primary=0.29 cfs 1,032 cf

Link SP-B: Fore Street Combined Sewer Inflow=0.49 cfs 8,091 cf
Primary=0.49 cfs 8,091 cf

Link SP-C: Patton Court Inflow=0.05 cfs 192 cf
Primary=0.05 cfs 192 cf

Total Runoff Area = 38,050 sf Runoff Volume = 9,315 cf Average Runoff Depth = 2.94"
1.24% Pervious = 470 sf 98.76% Impervious = 37,580 sf

Summary for Subcatchment 1S: Driveway to Union Street

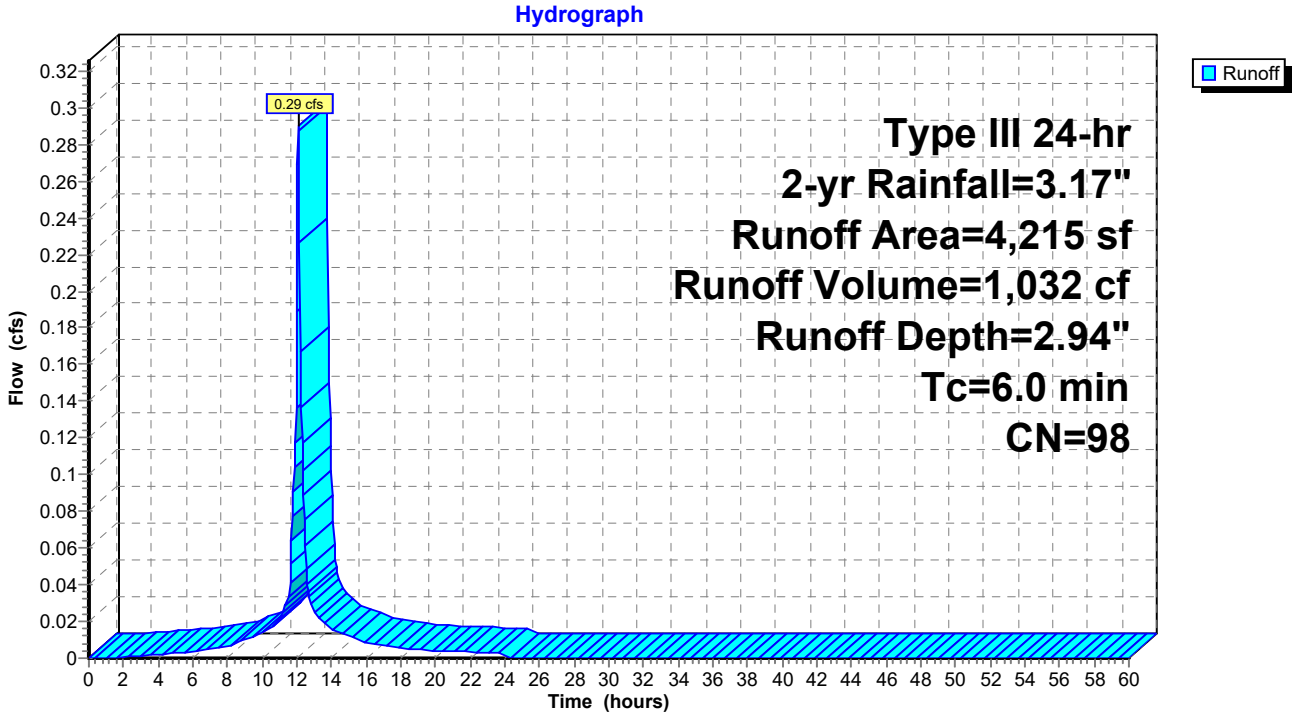
Runoff = 0.29 cfs @ 12.09 hrs, Volume= 1,032 cf, Depth= 2.94"
Routed to Link SP-A : Union Street Storm Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	4,165	98	Impervious
	50	80	>75% Grass cover, Good, HSG D
	4,215	98	Weighted Average
	50		1.19% Pervious Area
	4,165		98.81% Impervious Area

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

Subcatchment 1S: Driveway to Union Street



Summary for Subcatchment 2S: Driveway to Service Alley

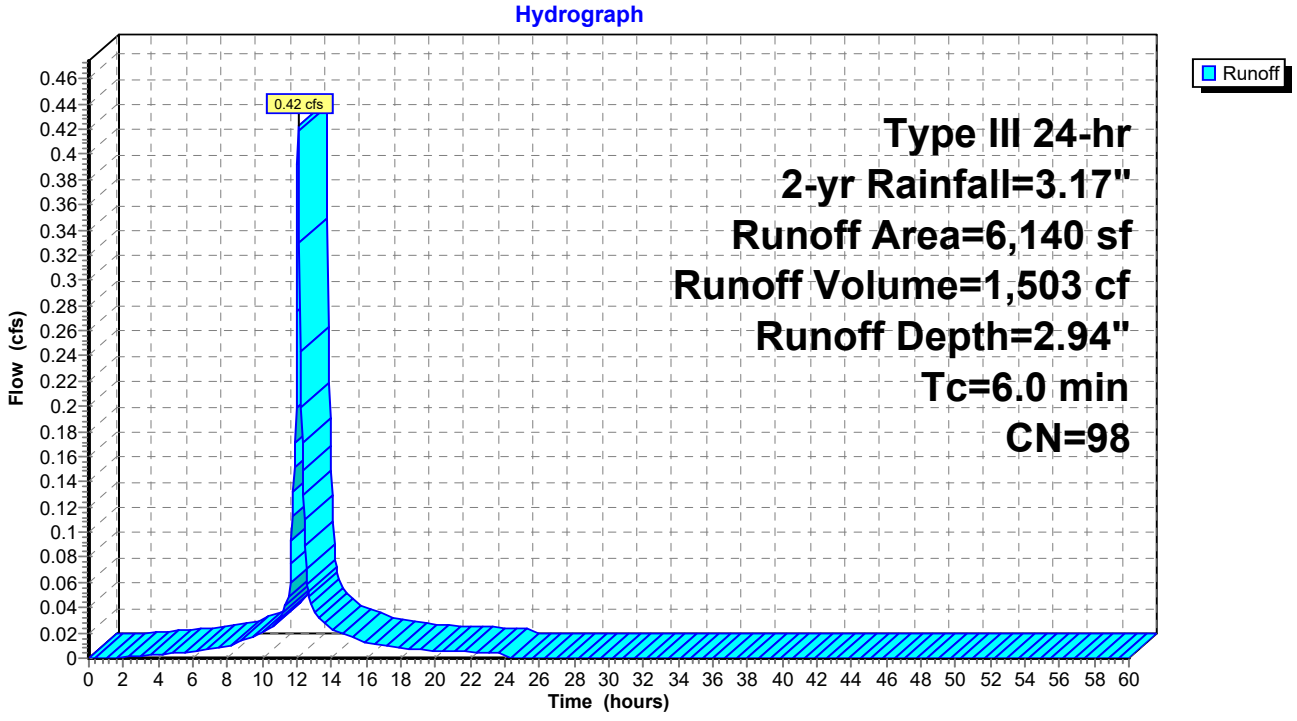
Runoff = 0.42 cfs @ 12.09 hrs, Volume= 1,503 cf, Depth= 2.94"
Routed to Pond FIL : Filterra Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	6,110	98	Impervious
	30	80	>75% Grass cover, Good, HSG D
	6,140	98	Weighted Average
	30		0.49% Pervious Area
	6,110		99.51% Impervious Area

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

Subcatchment 2S: Driveway to Service Alley



Summary for Subcatchment 3S1: Roof Area

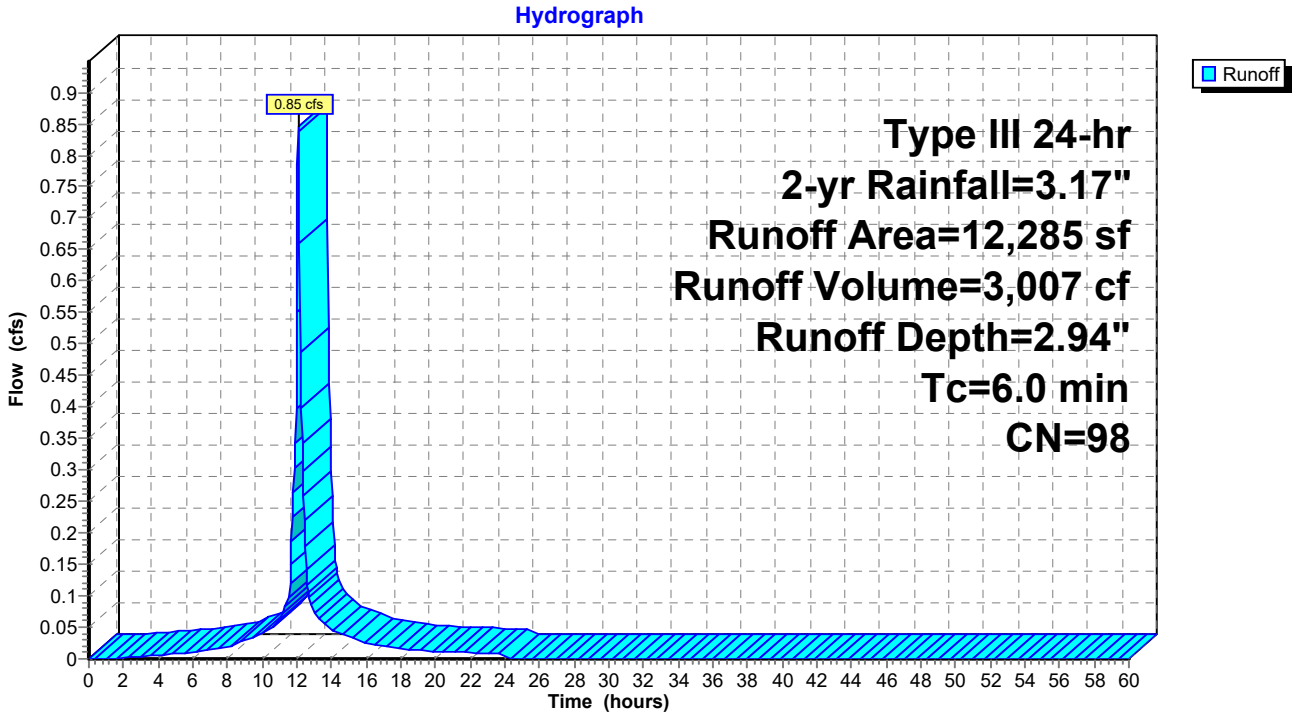
Runoff = 0.85 cfs @ 12.09 hrs, Volume= 3,007 cf, Depth= 2.94"
Routed to Pond 3P : R-Tank Sand Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	12,285	98	Roof
	12,285		100.00% Impervious Area

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

Subcatchment 3S1: Roof Area



Summary for Subcatchment 3S2: Redeveloped Plaza

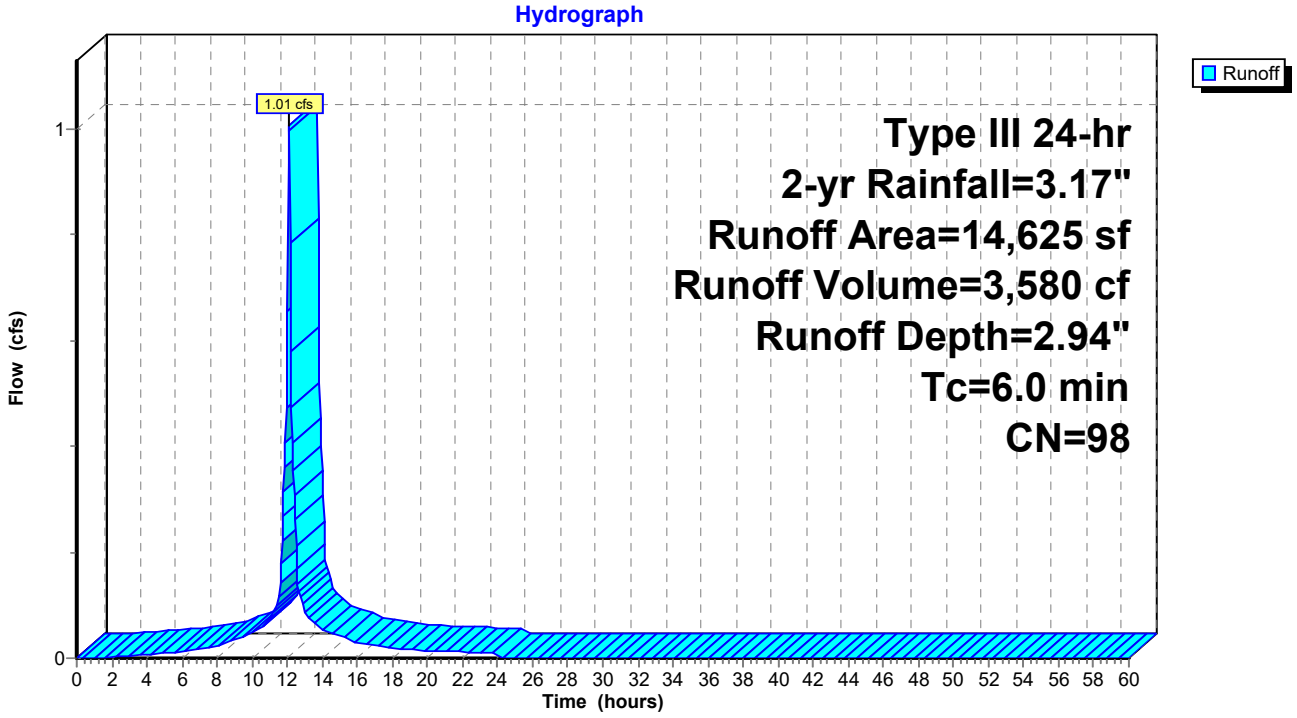
Runoff = 1.01 cfs @ 12.09 hrs, Volume= 3,580 cf, Depth= 2.94"
Routed to Pond 3P : R-Tank Sand Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	14,235	98	Impervious
	390	80	>75% Grass cover, Good, HSG D
	14,625	98	Weighted Average
	390		2.67% Pervious Area
	14,235		97.33% Impervious Area

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

Subcatchment 3S2: Redeveloped Plaza



Summary for Subcatchment 3S3: Ramp and Stairs to Patton Court

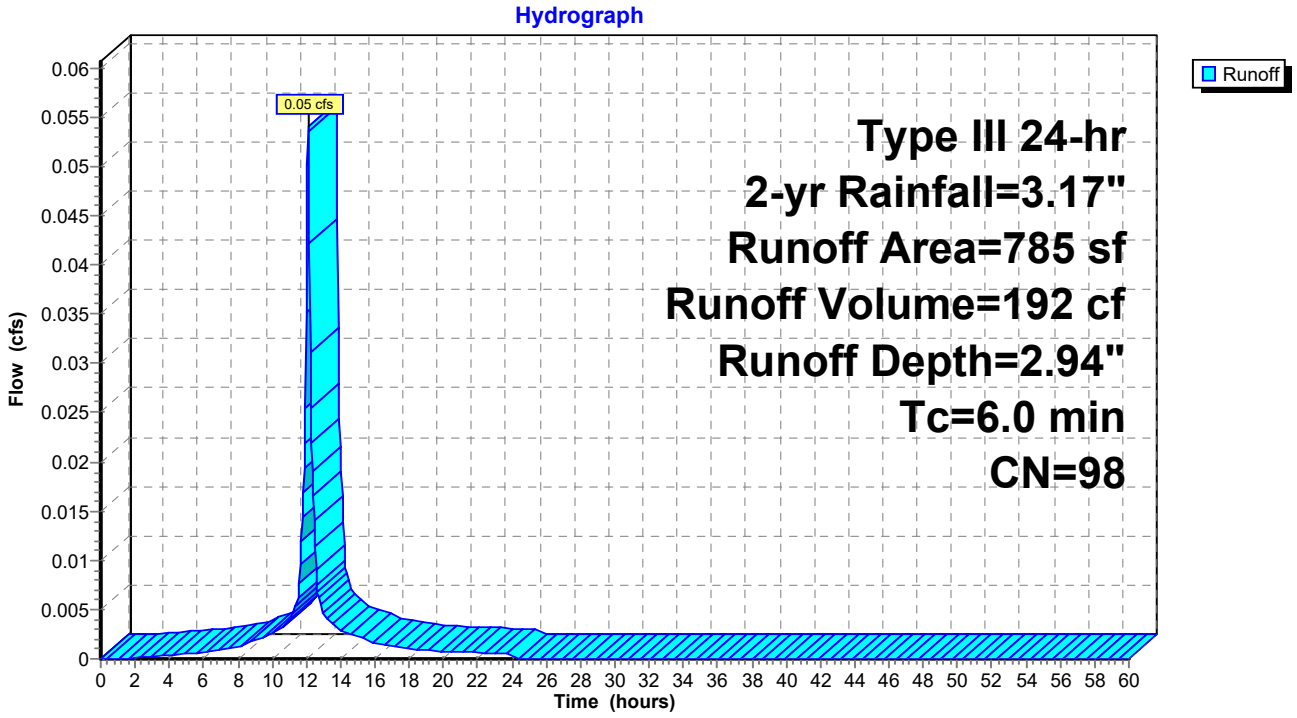
Runoff = 0.05 cfs @ 12.09 hrs, Volume= 192 cf, Depth= 2.94"
Routed to Link SP-C : Patton Court

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.17"

	Area (sf)	CN	Description
*	785	98	Impervious
	785		100.00% Impervious Area

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

Subcatchment 3S3: Ramp and Stairs to Patton Court



Summary for Pond 3P: R-Tank Sand Filter

Inflow Area = 26,910 sf, 98.55% Impervious, Inflow Depth = 2.94" for 2-yr event
Inflow = 1.86 cfs @ 12.09 hrs, Volume= 6,588 cf
Outflow = 0.10 cfs @ 13.92 hrs, Volume= 6,588 cf, Atten= 94%, Lag= 109.9 min
Primary = 0.10 cfs @ 13.92 hrs, Volume= 6,588 cf
Routed to Link SP-B : Fore Street Combined Sewer

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.18' @ 13.92 hrs Surf.Area= 3,510 sf Storage= 3,941 cf

Plug-Flow detention time= 575.5 min calculated for 6,588 cf (100% of inflow)
Center-of-Mass det. time= 575.3 min (1,331.9 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	29.65'	337 cf	**Underdrain Layer (Prismatic)** Listed below (Recalc) 842 cf Overall x 40.0% Voids
#2	30.37'	579 cf	**Sand Filter (Prismatic)** Listed below (Recalc) 1,755 cf Overall x 33.0% Voids
#3	31.87'	1,000 cf	**Stone Envelope (Prismatic)** Listed below (Recalc) 5,616 cf Overall - 3,115 cf Embedded = 2,501 cf x 40.0% Voids
#4	32.13'	2,959 cf	**R-TankHD Double-Mini (Prismatic)** Listed below (Recalc) Inside #3 3,115 cf Overall x 95.0% Voids
		4,876 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.65	1,170	0	0
30.37	1,170	842	842

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.37	1,170	0	0
31.87	1,170	1,755	1,755

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.87	1,170	0	0
36.67	1,170	5,616	5,616

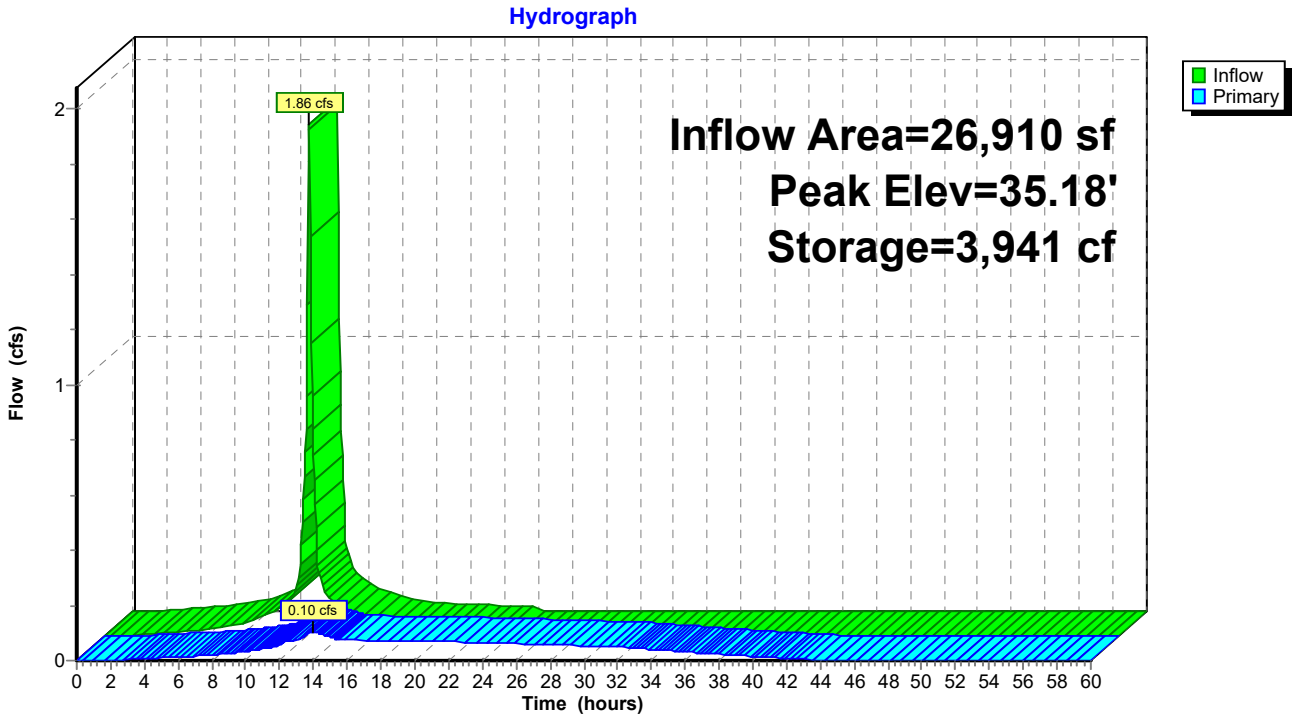
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.13	880	0	0
35.67	880	3,115	3,115

Device	Routing	Invert	Outlet Devices
#1	Primary	29.47'	**15.0" Round SD Connection to CS** L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 29.47' / 29.24' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	29.65'	**1.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #1** C= 0.600 Limited to weir flow at low heads
#4	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #2** C= 0.600 Limited to weir flow at low heads
#5	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #3** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 13.92 hrs HW=35.18' (Free Discharge)
└─**1=SD Connection to CS** (Passes 0.10 cfs of 10.52 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 11.28 fps)
  ├─**3=6" Dia Bypass #1** (Orifice Controls 0.01 cfs @ 0.76 fps)
  ├─**4=6" Dia Bypass #2** (Orifice Controls 0.01 cfs @ 0.76 fps)
  └─**5=6" Dia Bypass #3** (Orifice Controls 0.01 cfs @ 0.76 fps)

Pond 3P: R-Tank Sand Filter

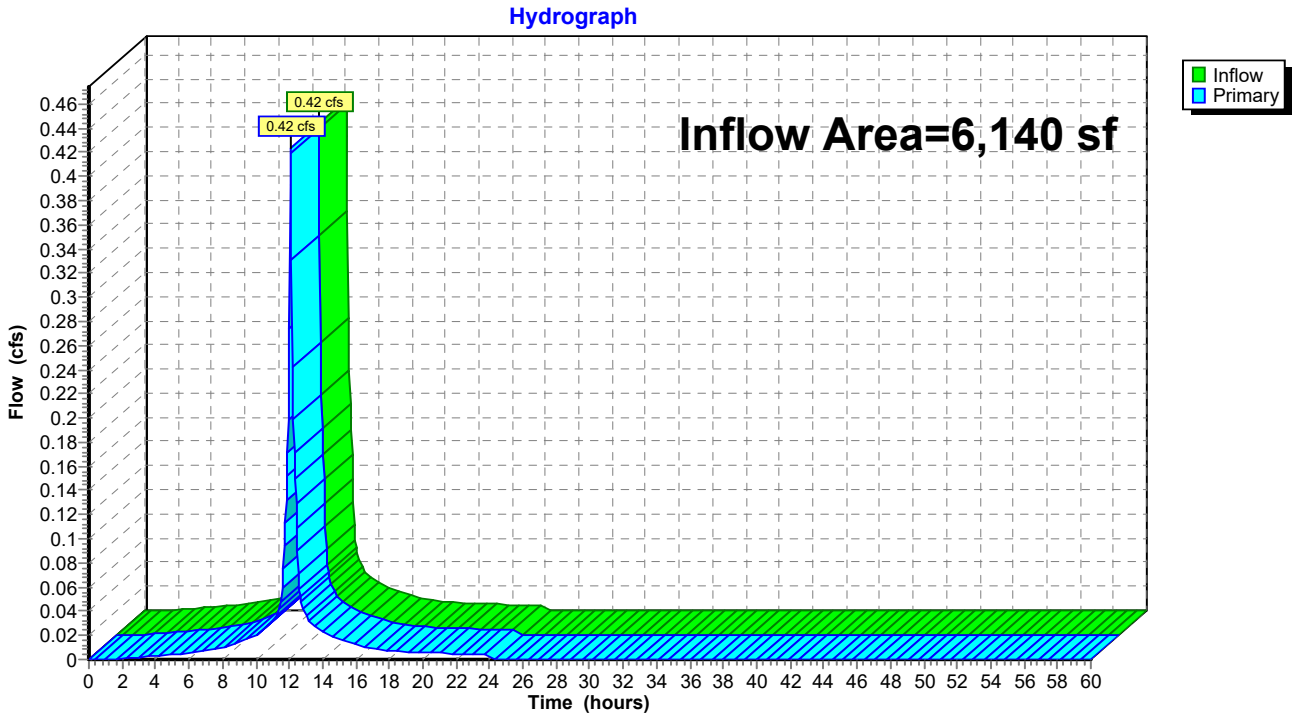


Summary for Pond FIL: Filterra Unit

Inflow Area = 6,140 sf, 99.51% Impervious, Inflow Depth = 2.94" for 2-yr event
Inflow = 0.42 cfs @ 12.09 hrs, Volume= 1,503 cf
Primary = 0.42 cfs @ 12.09 hrs, Volume= 1,503 cf, Atten= 0%, Lag= 0.0 min
Routed to Link SP-B : Fore Street Combined Sewer

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Pond FIL: Filterra Unit

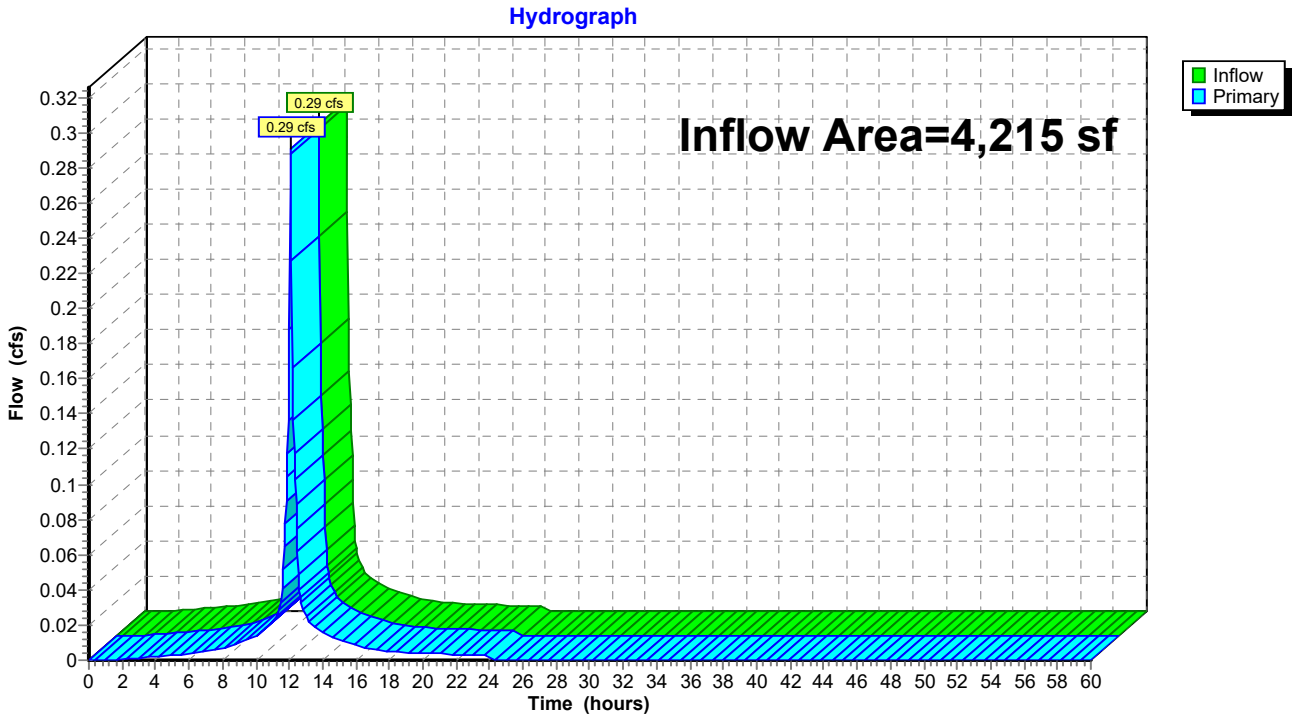


Summary for Link SP-A: Union Street Storm Drain

Inflow Area = 4,215 sf, 98.81% Impervious, Inflow Depth = 2.94" for 2-yr event
Inflow = 0.29 cfs @ 12.09 hrs, Volume= 1,032 cf
Primary = 0.29 cfs @ 12.09 hrs, Volume= 1,032 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-A: Union Street Storm Drain

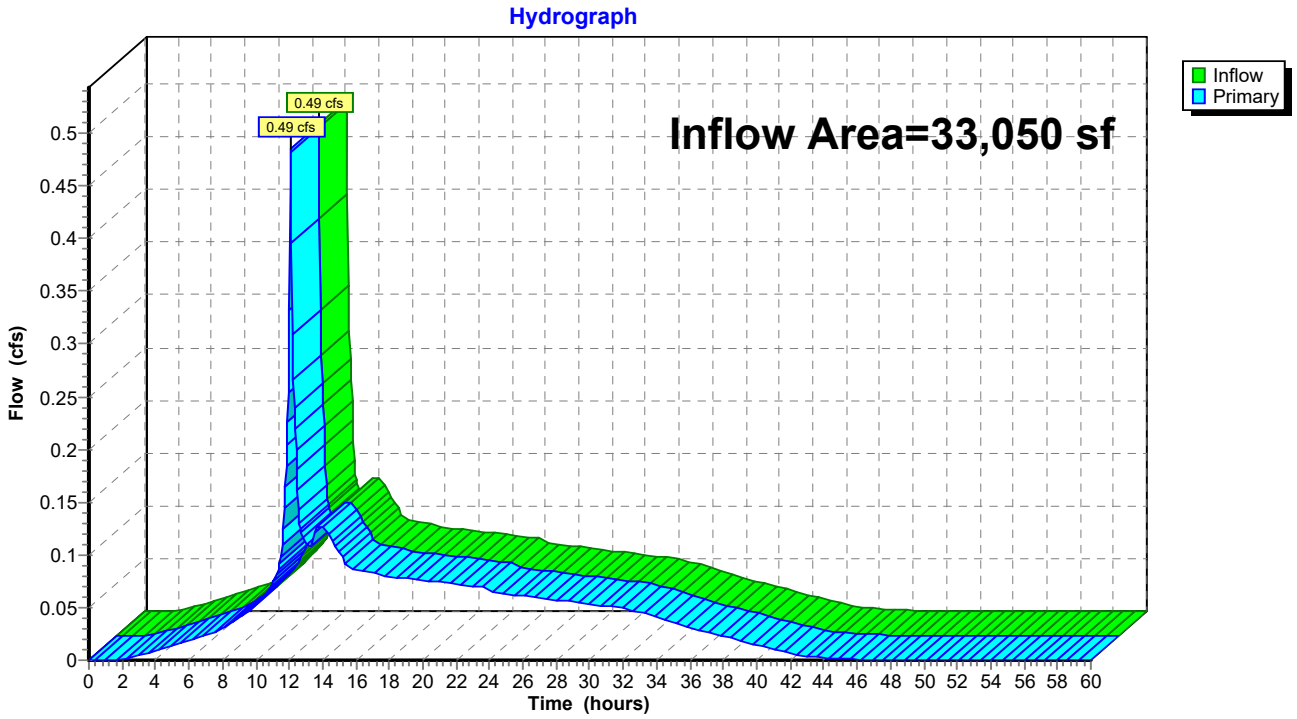


Summary for Link SP-B: Fore Street Combined Sewer

Inflow Area = 33,050 sf, 98.73% Impervious, Inflow Depth = 2.94" for 2-yr event
Inflow = 0.49 cfs @ 12.09 hrs, Volume= 8,091 cf
Primary = 0.49 cfs @ 12.09 hrs, Volume= 8,091 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-B: Fore Street Combined Sewer

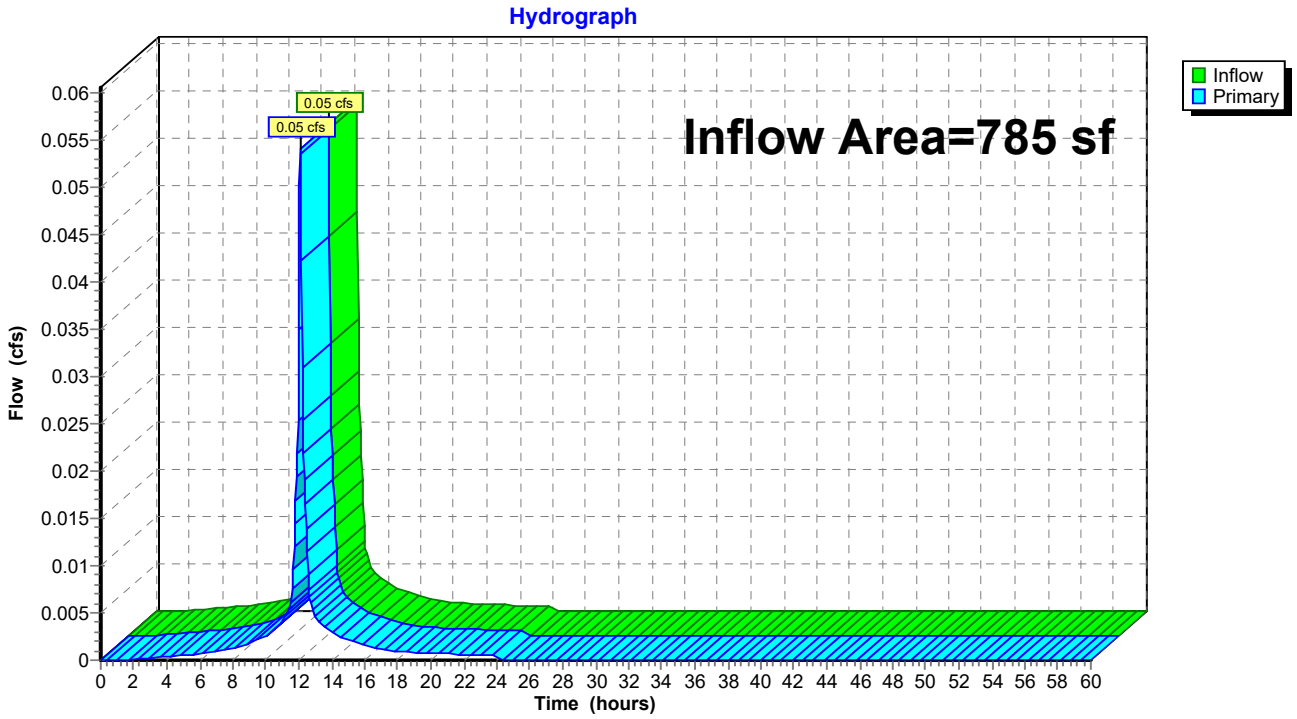


Summary for Link SP-C: Patton Court

Inflow Area = 785 sf,100.00% Impervious, Inflow Depth = 2.94" for 2-yr event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 192 cf
Primary = 0.05 cfs @ 12.09 hrs, Volume= 192 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-C: Patton Court



Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Driveway to Union Street Runoff Area=4,215 sf 98.81% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=98 Runoff=0.44 cfs 1,578 cf

Subcatchment2S: Driveway to Service Alley Runoff Area=6,140 sf 99.51% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=98 Runoff=0.64 cfs 2,299 cf

Subcatchment3S1: Roof Area Runoff Area=12,285 sf 100.00% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=98 Runoff=1.27 cfs 4,600 cf

Subcatchment3S2: Redeveloped Plaza Runoff Area=14,625 sf 97.33% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=98 Runoff=1.52 cfs 5,477 cf

Subcatchment3S3: Ramp and Stairs to Runoff Area=785 sf 100.00% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=98 Runoff=0.08 cfs 294 cf

Pond 3P: R-Tank Sand Filter Peak Elev=35.61' Storage=4,348 cf Inflow=2.79 cfs 10,077 cf
Outflow=1.44 cfs 10,077 cf

Pond FIL: Filterra Unit Inflow=0.64 cfs 2,299 cf
Primary=0.64 cfs 2,299 cf

Link SP-A: Union Street Storm Drain Inflow=0.44 cfs 1,578 cf
Primary=0.44 cfs 1,578 cf

Link SP-B: Fore Street Combined Sewer Inflow=1.81 cfs 12,376 cf
Primary=1.81 cfs 12,376 cf

Link SP-C: Patton Court Inflow=0.08 cfs 294 cf
Primary=0.08 cfs 294 cf

Total Runoff Area = 38,050 sf Runoff Volume = 14,248 cf Average Runoff Depth = 4.49"
1.24% Pervious = 470 sf 98.76% Impervious = 37,580 sf

Summary for Subcatchment 1S: Driveway to Union Street

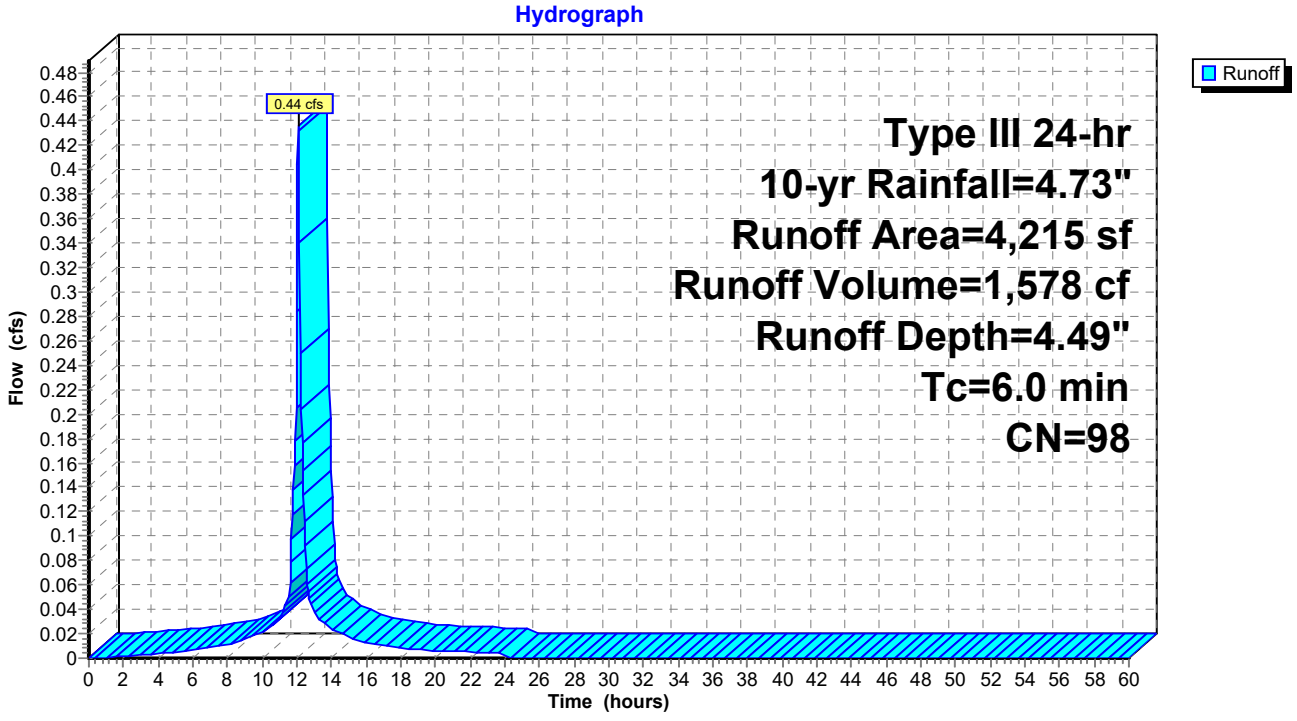
Runoff = 0.44 cfs @ 12.09 hrs, Volume= 1,578 cf, Depth= 4.49"
Routed to Link SP-A : Union Street Storm Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	4,165	98	Impervious
	50	80	>75% Grass cover, Good, HSG D
	4,215	98	Weighted Average
	50		1.19% Pervious Area
	4,165		98.81% Impervious Area

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

Subcatchment 1S: Driveway to Union Street



Summary for Subcatchment 2S: Driveway to Service Alley

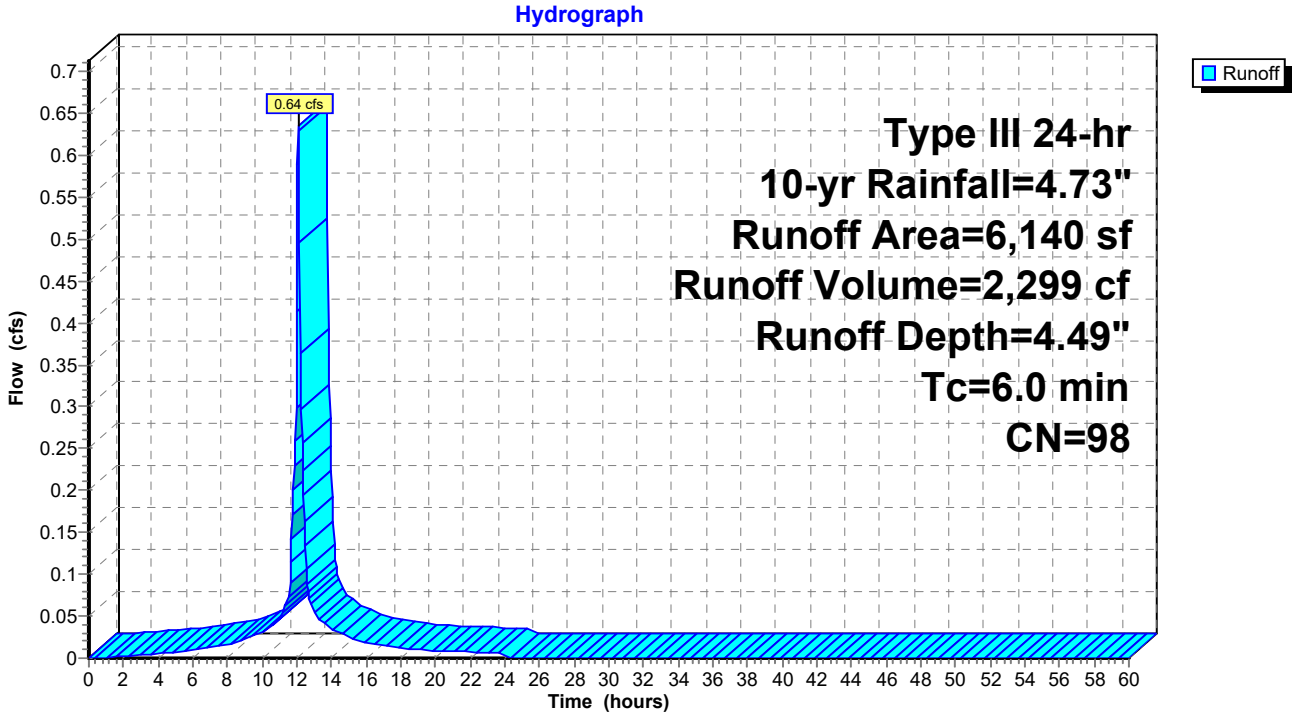
Runoff = 0.64 cfs @ 12.09 hrs, Volume= 2,299 cf, Depth= 4.49"
Routed to Pond FIL : Filterra Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	6,110	98	Impervious
	30	80	>75% Grass cover, Good, HSG D
	6,140	98	Weighted Average
	30		0.49% Pervious Area
	6,110		99.51% Impervious Area

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

Subcatchment 2S: Driveway to Service Alley



Summary for Subcatchment 3S1: Roof Area

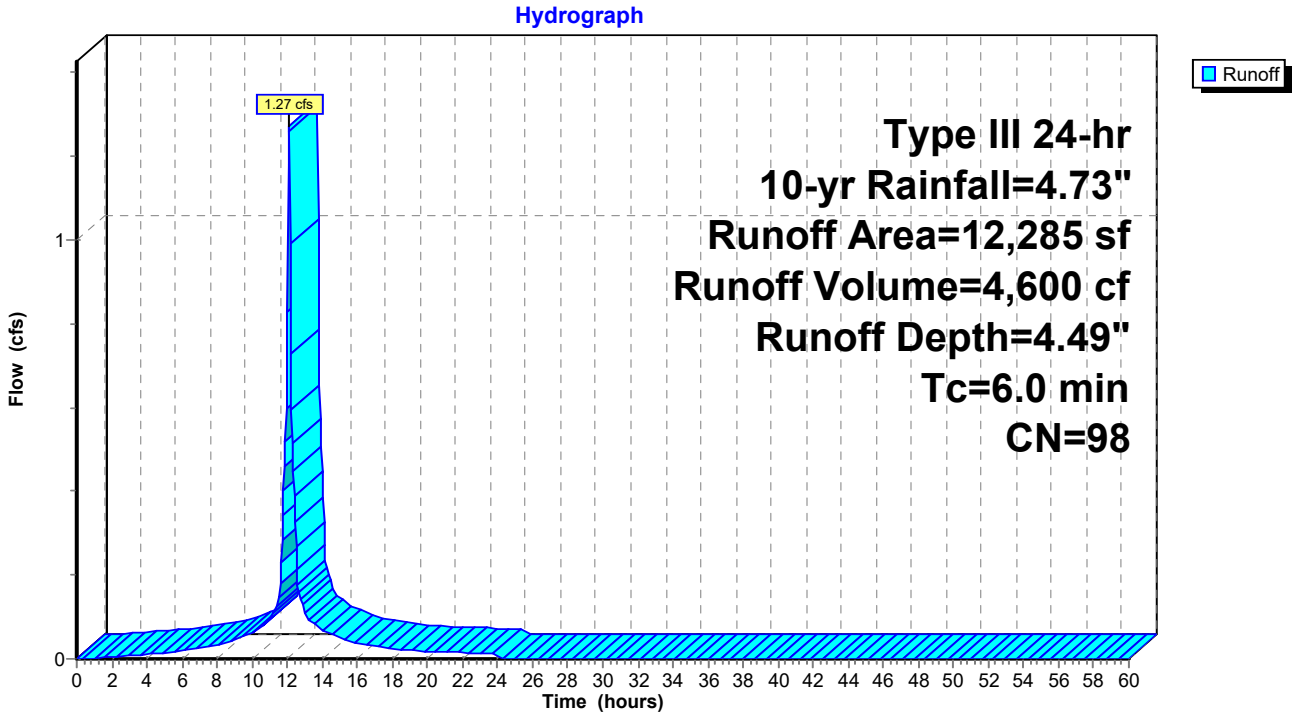
Runoff = 1.27 cfs @ 12.09 hrs, Volume= 4,600 cf, Depth= 4.49"
Routed to Pond 3P : R-Tank Sand Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	12,285	98	Roof
	12,285		100.00% Impervious Area

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

Subcatchment 3S1: Roof Area



Summary for Subcatchment 3S2: Redeveloped Plaza

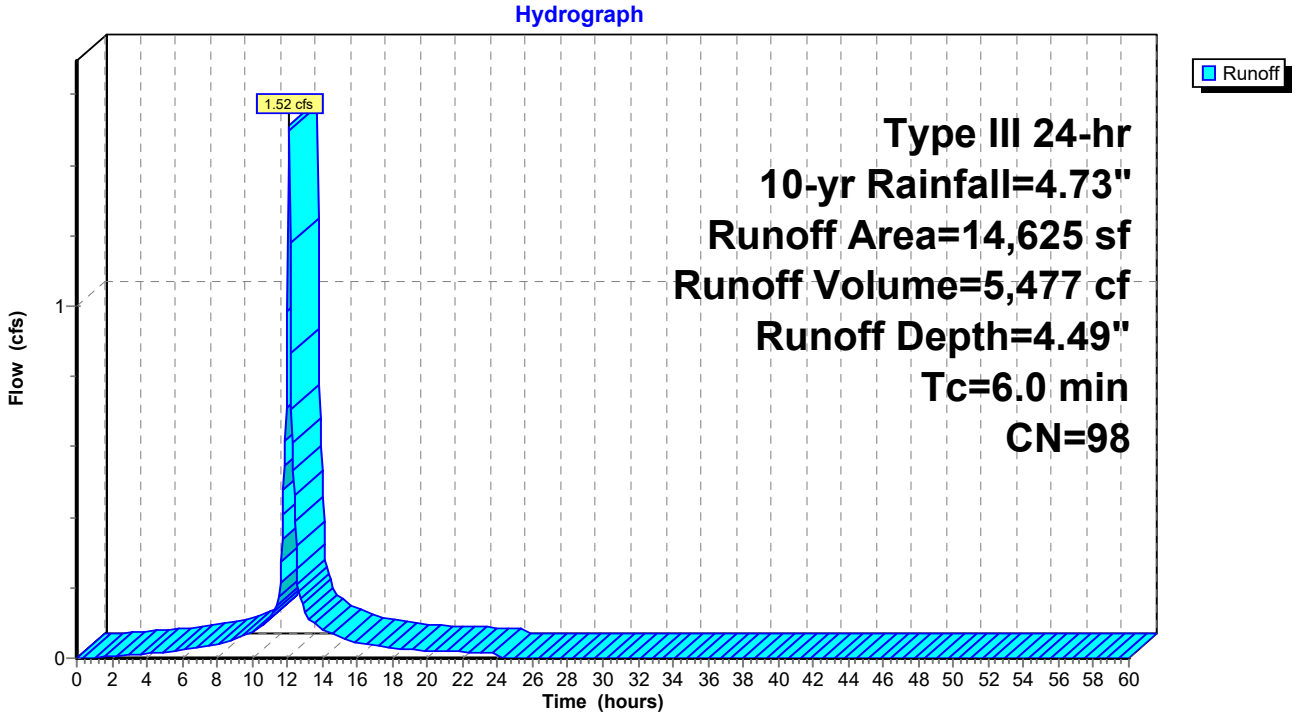
Runoff = 1.52 cfs @ 12.09 hrs, Volume= 5,477 cf, Depth= 4.49"
Routed to Pond 3P : R-Tank Sand Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	14,235	98	Impervious
	390	80	>75% Grass cover, Good, HSG D
	14,625	98	Weighted Average
	390		2.67% Pervious Area
	14,235		97.33% Impervious Area

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

Subcatchment 3S2: Redeveloped Plaza



Summary for Subcatchment 3S3: Ramp and Stairs to Patton Court

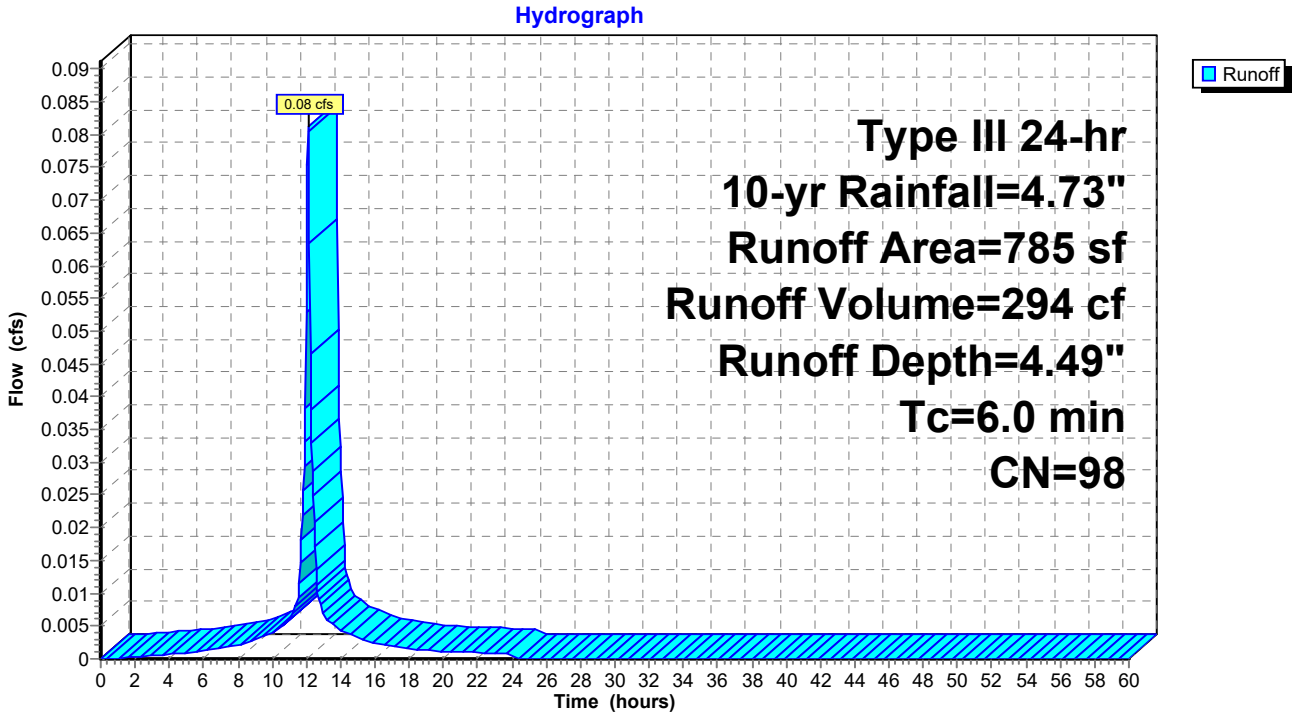
Runoff = 0.08 cfs @ 12.09 hrs, Volume= 294 cf, Depth= 4.49"
Routed to Link SP-C : Patton Court

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.73"

	Area (sf)	CN	Description
*	785	98	Impervious
	785		100.00% Impervious Area

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

Subcatchment 3S3: Ramp and Stairs to Patton Court



Summary for Pond 3P: R-Tank Sand Filter

Inflow Area = 26,910 sf, 98.55% Impervious, Inflow Depth = 4.49" for 10-yr event
Inflow = 2.79 cfs @ 12.09 hrs, Volume= 10,077 cf
Outflow = 1.44 cfs @ 12.23 hrs, Volume= 10,077 cf, Atten= 49%, Lag= 8.8 min
Primary = 1.44 cfs @ 12.23 hrs, Volume= 10,077 cf
Routed to Link SP-B : Fore Street Combined Sewer

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.61' @ 12.23 hrs Surf.Area= 3,510 sf Storage= 4,348 cf

Plug-Flow detention time= 435.4 min calculated for 10,077 cf (100% of inflow)
Center-of-Mass det. time= 435.2 min (1,184.1 - 749.0)

Volume	Invert	Avail.Storage	Storage Description
#1	29.65'	337 cf	**Underdrain Layer (Prismatic)** Listed below (Recalc) 842 cf Overall x 40.0% Voids
#2	30.37'	579 cf	**Sand Filter (Prismatic)** Listed below (Recalc) 1,755 cf Overall x 33.0% Voids
#3	31.87'	1,000 cf	**Stone Envelope (Prismatic)** Listed below (Recalc) 5,616 cf Overall - 3,115 cf Embedded = 2,501 cf x 40.0% Voids
#4	32.13'	2,959 cf	**R-TankHD Double-Mini (Prismatic)** Listed below (Recalc) Inside #3 3,115 cf Overall x 95.0% Voids
		4,876 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.65	1,170	0	0
30.37	1,170	842	842

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.37	1,170	0	0
31.87	1,170	1,755	1,755

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.87	1,170	0	0
36.67	1,170	5,616	5,616

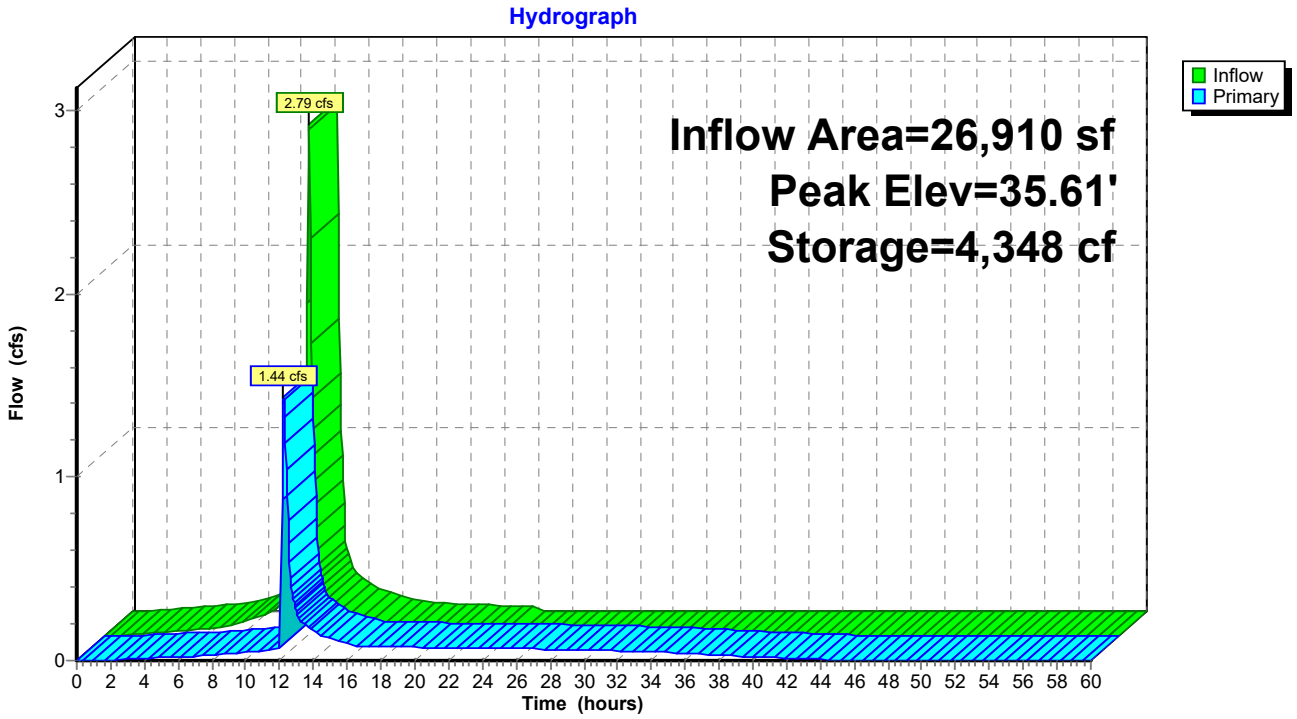
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.13	880	0	0
35.67	880	3,115	3,115

Device	Routing	Invert	Outlet Devices
#1	Primary	29.47'	**15.0" Round SD Connection to CS** L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 29.47' / 29.24' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	29.65'	**1.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #1** C= 0.600 Limited to weir flow at low heads
#4	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #2** C= 0.600 Limited to weir flow at low heads
#5	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #3** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.43 cfs @ 12.23 hrs HW=35.60' (Free Discharge)
└─**1=SD Connection to CS** (Passes 1.43 cfs of 10.95 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.08 cfs @ 11.70 fps)
  ├─**3=6" Dia Bypass #1** (Orifice Controls 0.45 cfs @ 2.34 fps)
  ├─**4=6" Dia Bypass #2** (Orifice Controls 0.45 cfs @ 2.34 fps)
  └─**5=6" Dia Bypass #3** (Orifice Controls 0.45 cfs @ 2.34 fps)

Pond 3P: R-Tank Sand Filter

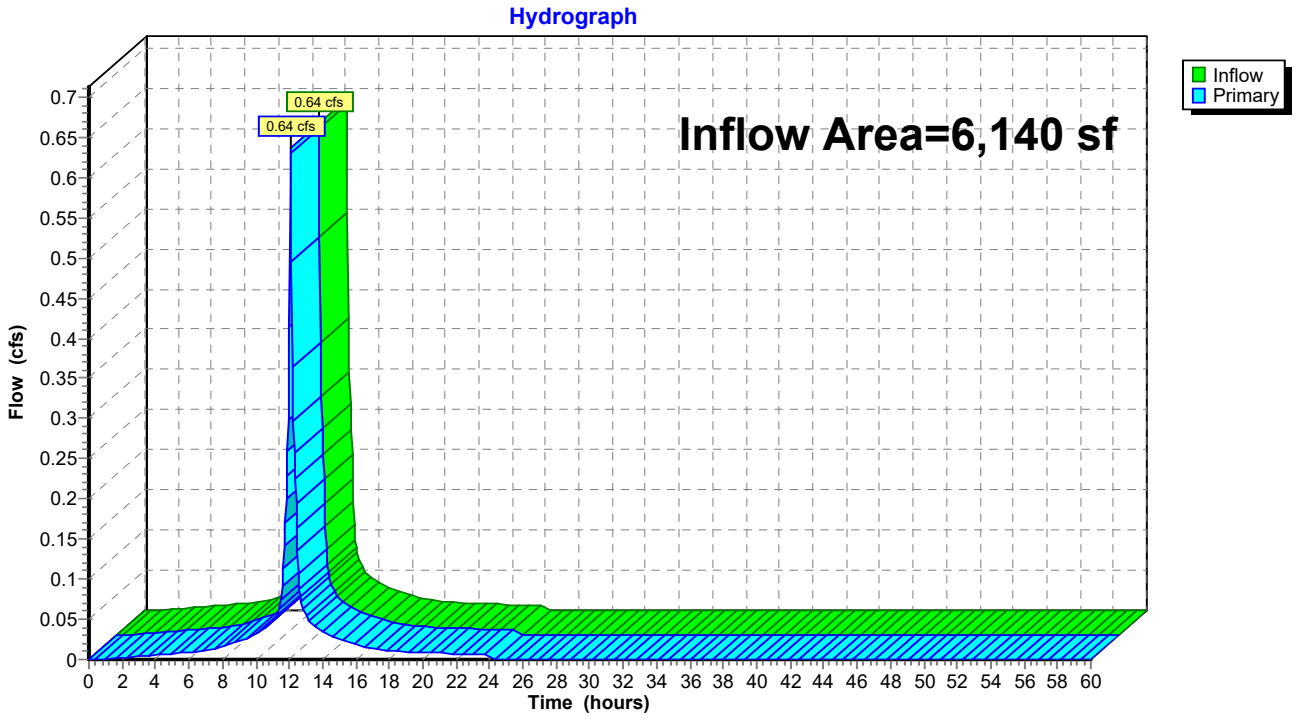


Summary for Pond FIL: Filterra Unit

Inflow Area = 6,140 sf, 99.51% Impervious, Inflow Depth = 4.49" for 10-yr event
Inflow = 0.64 cfs @ 12.09 hrs, Volume= 2,299 cf
Primary = 0.64 cfs @ 12.09 hrs, Volume= 2,299 cf, Atten= 0%, Lag= 0.0 min
Routed to Link SP-B : Fore Street Combined Sewer

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Pond FIL: Filterra Unit

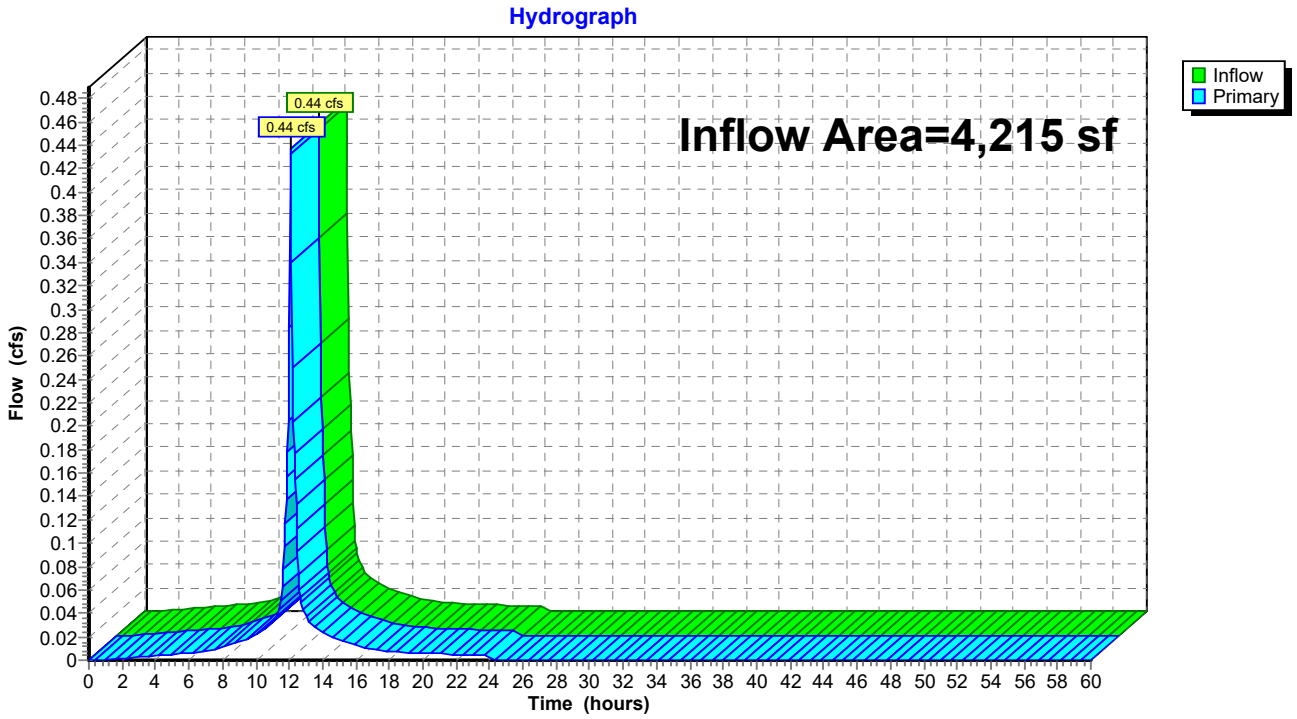


Summary for Link SP-A: Union Street Storm Drain

Inflow Area = 4,215 sf, 98.81% Impervious, Inflow Depth = 4.49" for 10-yr event
Inflow = 0.44 cfs @ 12.09 hrs, Volume= 1,578 cf
Primary = 0.44 cfs @ 12.09 hrs, Volume= 1,578 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-A: Union Street Storm Drain

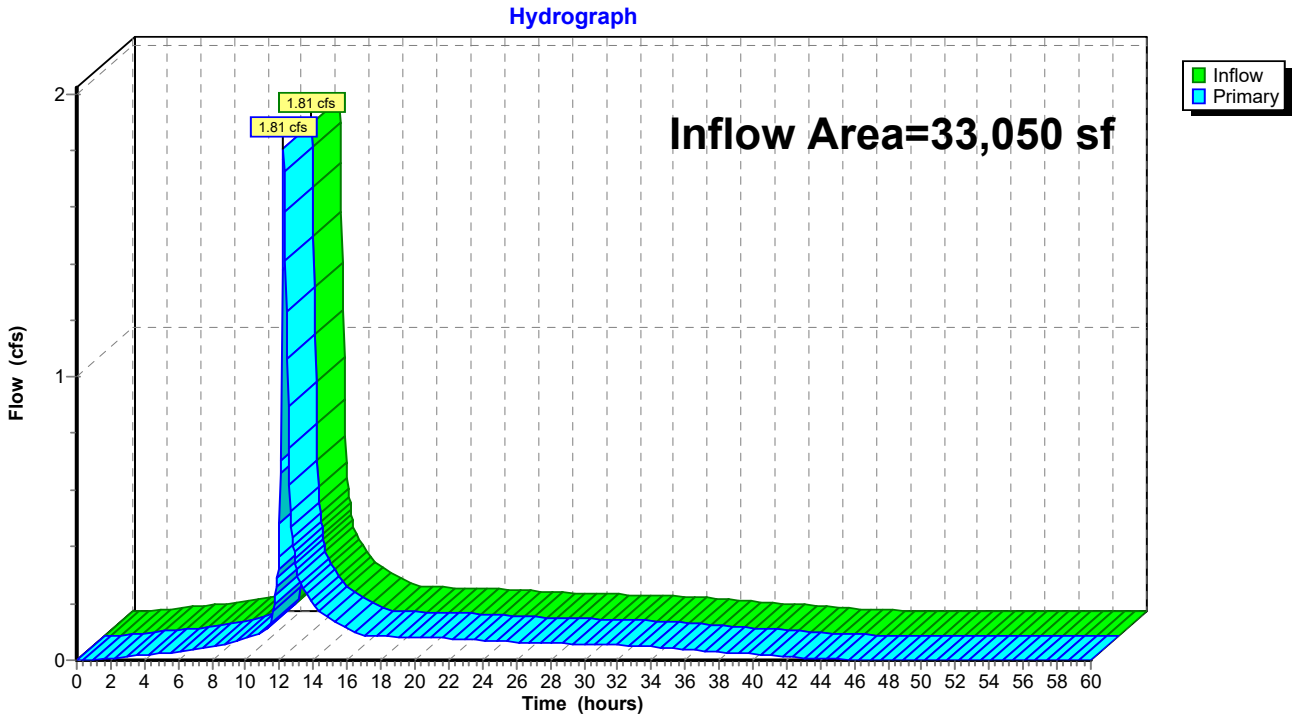


Summary for Link SP-B: Fore Street Combined Sewer

Inflow Area = 33,050 sf, 98.73% Impervious, Inflow Depth = 4.49" for 10-yr event
Inflow = 1.81 cfs @ 12.22 hrs, Volume= 12,376 cf
Primary = 1.81 cfs @ 12.22 hrs, Volume= 12,376 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-B: Fore Street Combined Sewer

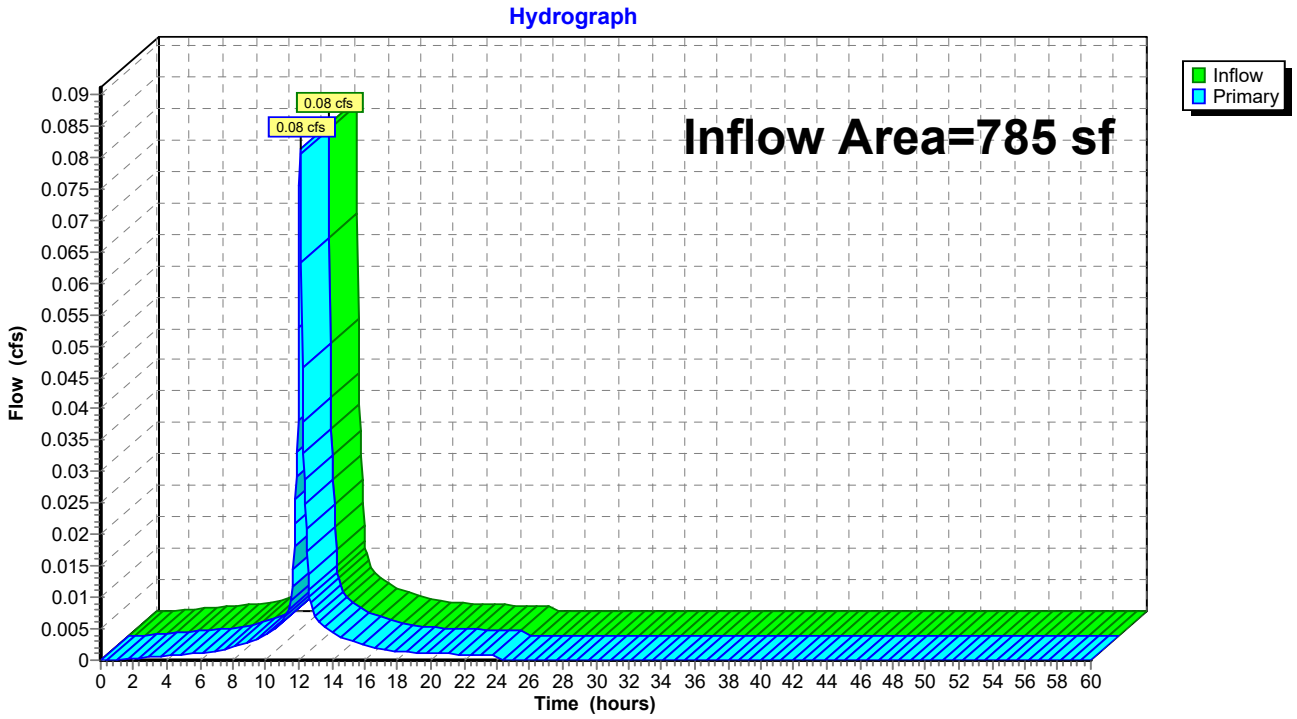


Summary for Link SP-C: Patton Court

Inflow Area = 785 sf,100.00% Impervious, Inflow Depth = 4.49" for 10-yr event
Inflow = 0.08 cfs @ 12.09 hrs, Volume= 294 cf
Primary = 0.08 cfs @ 12.09 hrs, Volume= 294 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-C: Patton Court



Time span=0.00-60.00 hrs, dt=0.05 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Driveway to Union Street Runoff Area=4,215 sf 98.81% Impervious Runoff Depth=5.71"
Tc=6.0 min CN=98 Runoff=0.55 cfs 2,006 cf

Subcatchment2S: Driveway to Service Alley Runoff Area=6,140 sf 99.51% Impervious Runoff Depth=5.71"
Tc=6.0 min CN=98 Runoff=0.80 cfs 2,923 cf

Subcatchment3S1: Roof Area Runoff Area=12,285 sf 100.00% Impervious Runoff Depth=5.71"
Tc=6.0 min CN=98 Runoff=1.61 cfs 5,848 cf

Subcatchment3S2: Redeveloped Plaza Runoff Area=14,625 sf 97.33% Impervious Runoff Depth=5.71"
Tc=6.0 min CN=98 Runoff=1.91 cfs 6,961 cf

Subcatchment3S3: Ramp and Stairs to Runoff Area=785 sf 100.00% Impervious Runoff Depth=5.71"
Tc=6.0 min CN=98 Runoff=0.10 cfs 374 cf

Pond 3P: R-Tank Sand Filter Peak Elev=36.27' Storage=4,687 cf Inflow=3.52 cfs 12,809 cf
Outflow=2.75 cfs 12,809 cf

Pond FIL: Filterra Unit Inflow=0.80 cfs 2,923 cf
Primary=0.80 cfs 2,923 cf

Link SP-A: Union Street Storm Drain Inflow=0.55 cfs 2,006 cf
Primary=0.55 cfs 2,006 cf

Link SP-B: Fore Street Combined Sewer Inflow=3.38 cfs 15,732 cf
Primary=3.38 cfs 15,732 cf

Link SP-C: Patton Court Inflow=0.10 cfs 374 cf
Primary=0.10 cfs 374 cf

Total Runoff Area = 38,050 sf Runoff Volume = 18,112 cf Average Runoff Depth = 5.71"
1.24% Pervious = 470 sf 98.76% Impervious = 37,580 sf

Summary for Subcatchment 1S: Driveway to Union Street

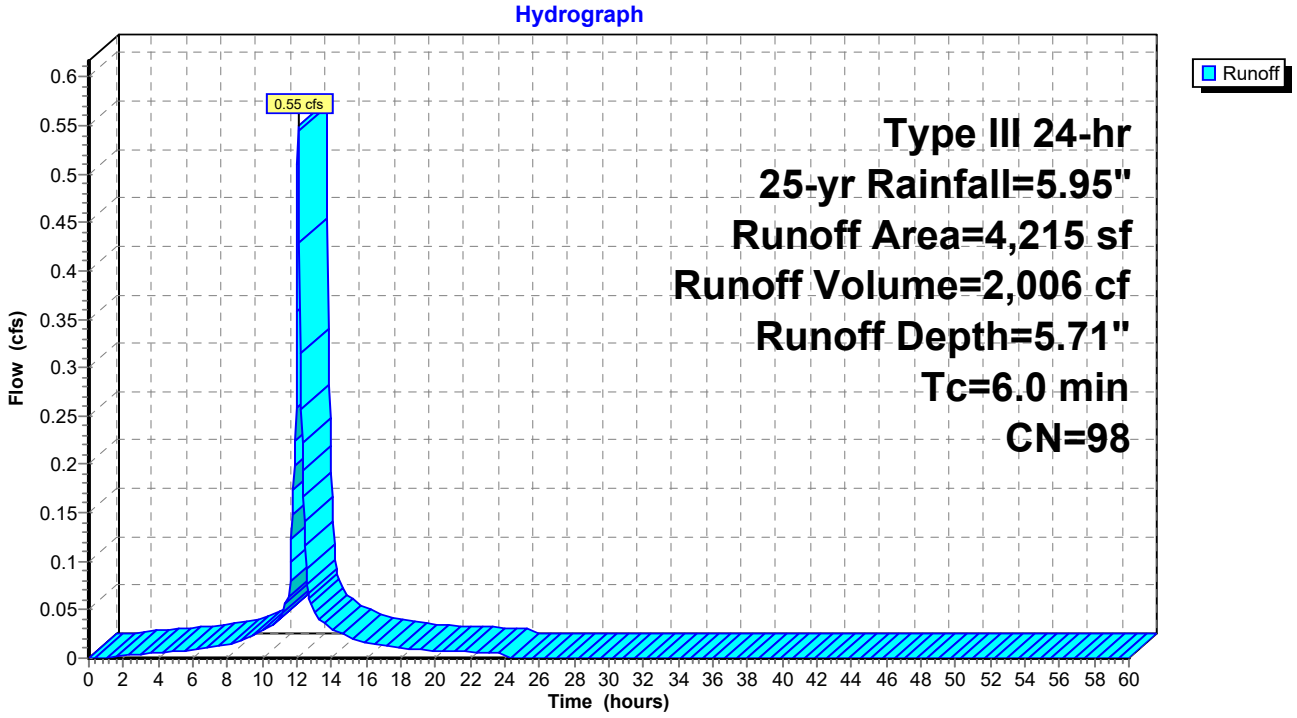
Runoff = 0.55 cfs @ 12.09 hrs, Volume= 2,006 cf, Depth= 5.71"
Routed to Link SP-A : Union Street Storm Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	4,165	98	Impervious
	50	80	>75% Grass cover, Good, HSG D
	4,215	98	Weighted Average
	50		1.19% Pervious Area
	4,165		98.81% Impervious Area

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

Subcatchment 1S: Driveway to Union Street



Summary for Subcatchment 2S: Driveway to Service Alley

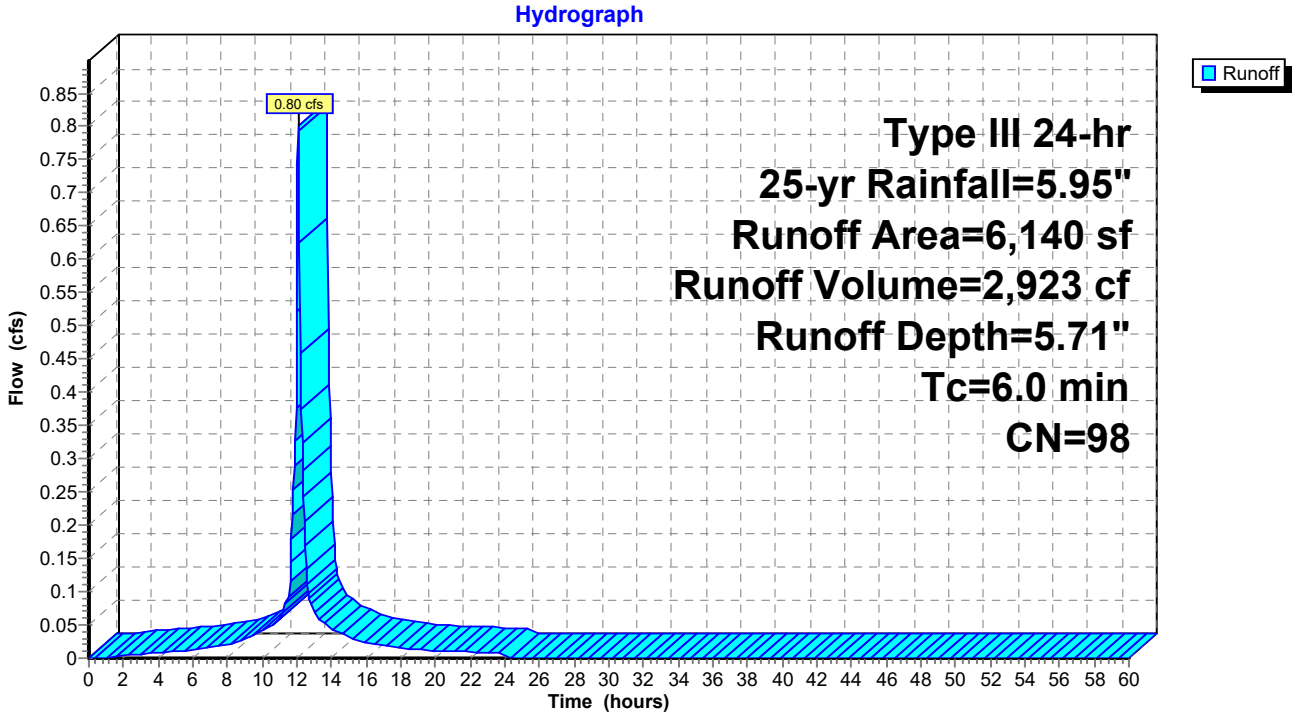
Runoff = 0.80 cfs @ 12.09 hrs, Volume= 2,923 cf, Depth= 5.71"
Routed to Pond FIL : Filterra Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	6,110	98	Impervious
	30	80	>75% Grass cover, Good, HSG D
	6,140	98	Weighted Average
	30		0.49% Pervious Area
	6,110		99.51% Impervious Area

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

Subcatchment 2S: Driveway to Service Alley



Summary for Subcatchment 3S1: Roof Area

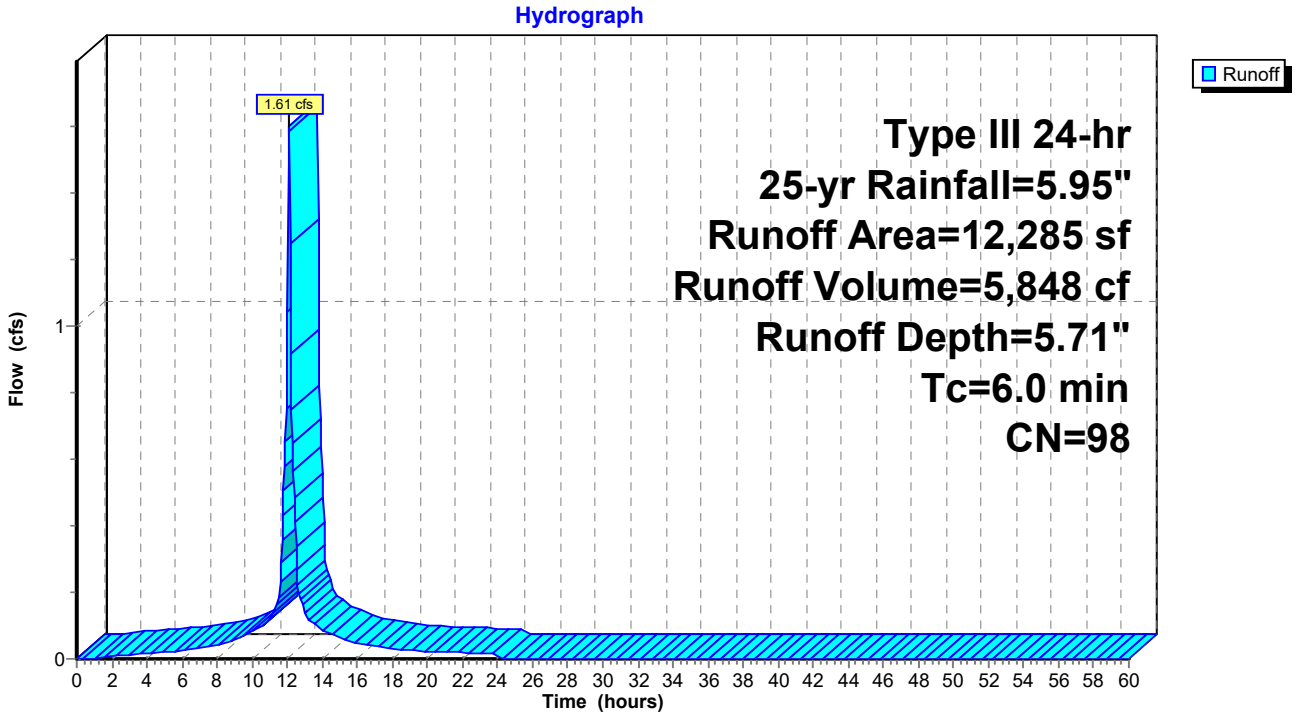
Runoff = 1.61 cfs @ 12.09 hrs, Volume= 5,848 cf, Depth= 5.71"
Routed to Pond 3P : R-Tank Sand Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	12,285	98	Roof
	12,285		100.00% Impervious Area

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

Subcatchment 3S1: Roof Area



Summary for Subcatchment 3S2: Redeveloped Plaza

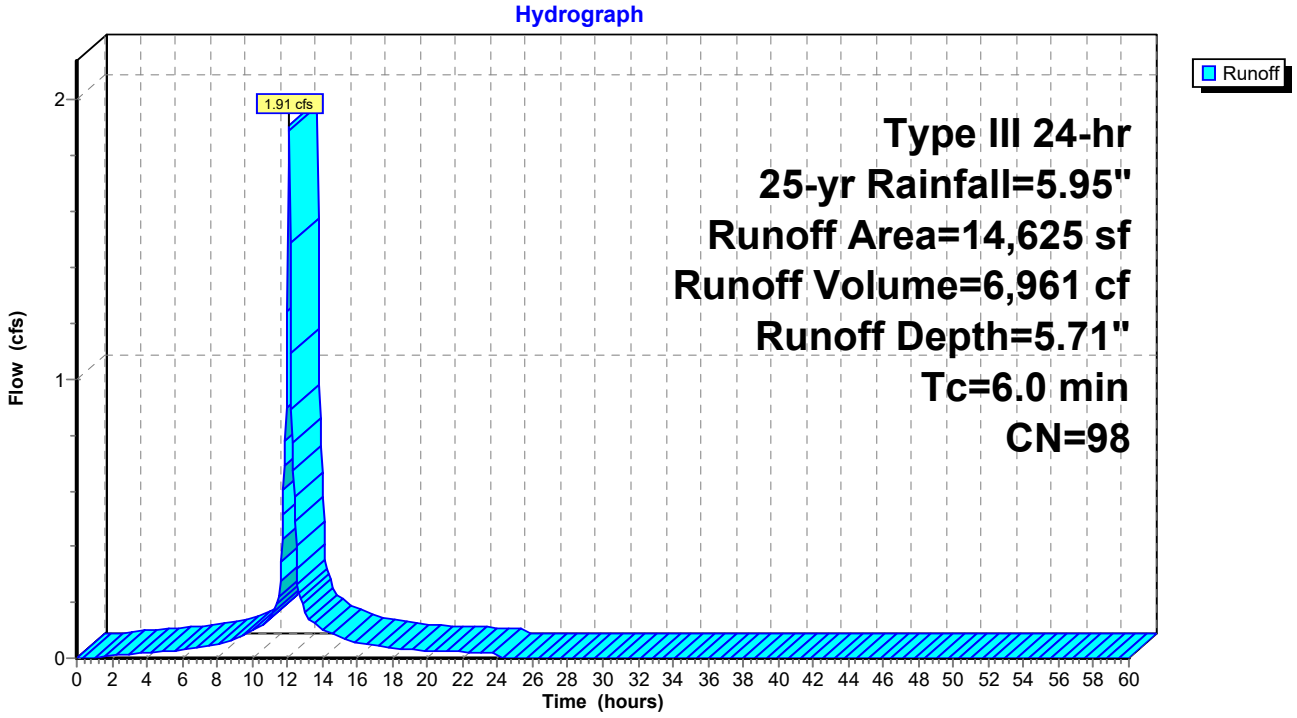
Runoff = 1.91 cfs @ 12.09 hrs, Volume= 6,961 cf, Depth= 5.71"
Routed to Pond 3P : R-Tank Sand Filter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	14,235	98	Impervious
	390	80	>75% Grass cover, Good, HSG D
	14,625	98	Weighted Average
	390		2.67% Pervious Area
	14,235		97.33% Impervious Area

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

Subcatchment 3S2: Redeveloped Plaza



Summary for Subcatchment 3S3: Ramp and Stairs to Patton Court

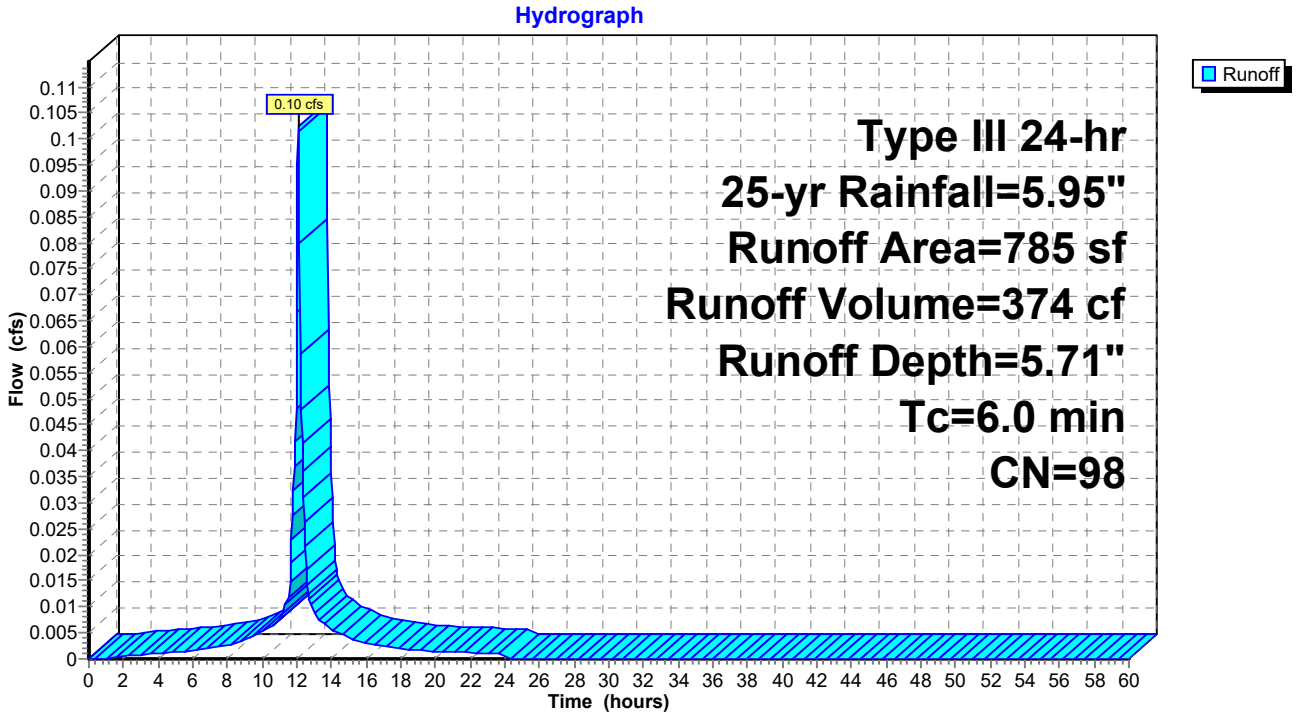
Runoff = 0.10 cfs @ 12.09 hrs, Volume= 374 cf, Depth= 5.71"
Routed to Link SP-C : Patton Court

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.95"

	Area (sf)	CN	Description
*	785	98	Impervious
	785		100.00% Impervious Area

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

Subcatchment 3S3: Ramp and Stairs to Patton Court



Summary for Pond 3P: R-Tank Sand Filter

Inflow Area = 26,910 sf, 98.55% Impervious, Inflow Depth = 5.71" for 25-yr event
Inflow = 3.52 cfs @ 12.09 hrs, Volume= 12,809 cf
Outflow = 2.75 cfs @ 12.16 hrs, Volume= 12,809 cf, Atten= 22%, Lag= 4.3 min
Primary = 2.75 cfs @ 12.16 hrs, Volume= 12,809 cf
Routed to Link SP-B : Fore Street Combined Sewer

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.27' @ 12.16 hrs Surf.Area= 3,510 sf Storage= 4,687 cf

Plug-Flow detention time= 371.2 min calculated for 12,798 cf (100% of inflow)
Center-of-Mass det. time= 372.1 min (1,117.4 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	29.65'	337 cf	**Underdrain Layer (Prismatic)** Listed below (Recalc) 842 cf Overall x 40.0% Voids
#2	30.37'	579 cf	**Sand Filter (Prismatic)** Listed below (Recalc) 1,755 cf Overall x 33.0% Voids
#3	31.87'	1,000 cf	**Stone Envelope (Prismatic)** Listed below (Recalc) 5,616 cf Overall - 3,115 cf Embedded = 2,501 cf x 40.0% Voids
#4	32.13'	2,959 cf	**R-TankHD Double-Mini (Prismatic)** Listed below (Recalc) Inside #3 3,115 cf Overall x 95.0% Voids
		4,876 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.65	1,170	0	0
30.37	1,170	842	842

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.37	1,170	0	0
31.87	1,170	1,755	1,755

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.87	1,170	0	0
36.67	1,170	5,616	5,616

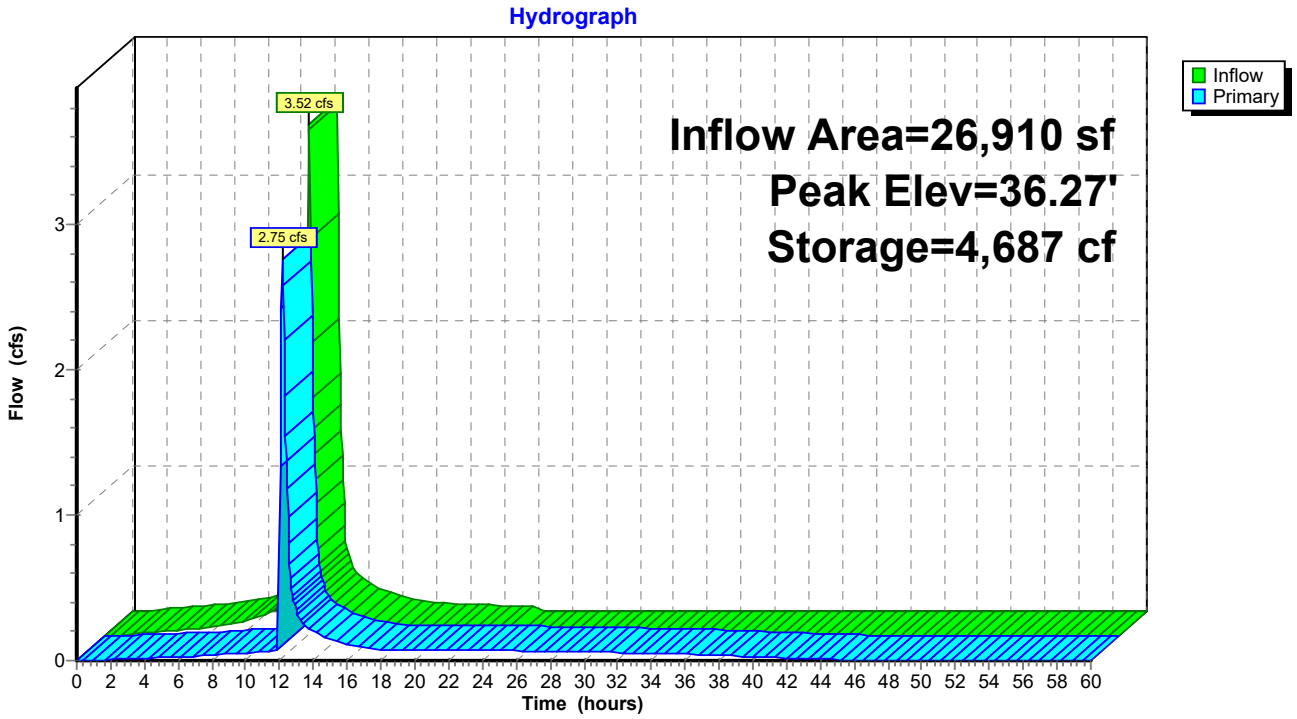
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.13	880	0	0
35.67	880	3,115	3,115

Device	Routing	Invert	Outlet Devices
#1	Primary	29.47'	**15.0" Round SD Connection to CS** L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 29.47' / 29.24' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	29.65'	**1.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #1** C= 0.600 Limited to weir flow at low heads
#4	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #2** C= 0.600 Limited to weir flow at low heads
#5	Device 1	35.13'	**6.0" Vert. 6" Dia Bypass #3** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.72 cfs @ 12.16 hrs HW=36.25' (Free Discharge)
- **1=SD Connection to CS** (Passes 2.72 cfs of 11.57 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.08 cfs @ 12.32 fps)
  - **3=6" Dia Bypass #1** (Orifice Controls 0.88 cfs @ 4.48 fps)
  - **4=6" Dia Bypass #2** (Orifice Controls 0.88 cfs @ 4.48 fps)
  - **5=6" Dia Bypass #3** (Orifice Controls 0.88 cfs @ 4.48 fps)

Pond 3P: R-Tank Sand Filter

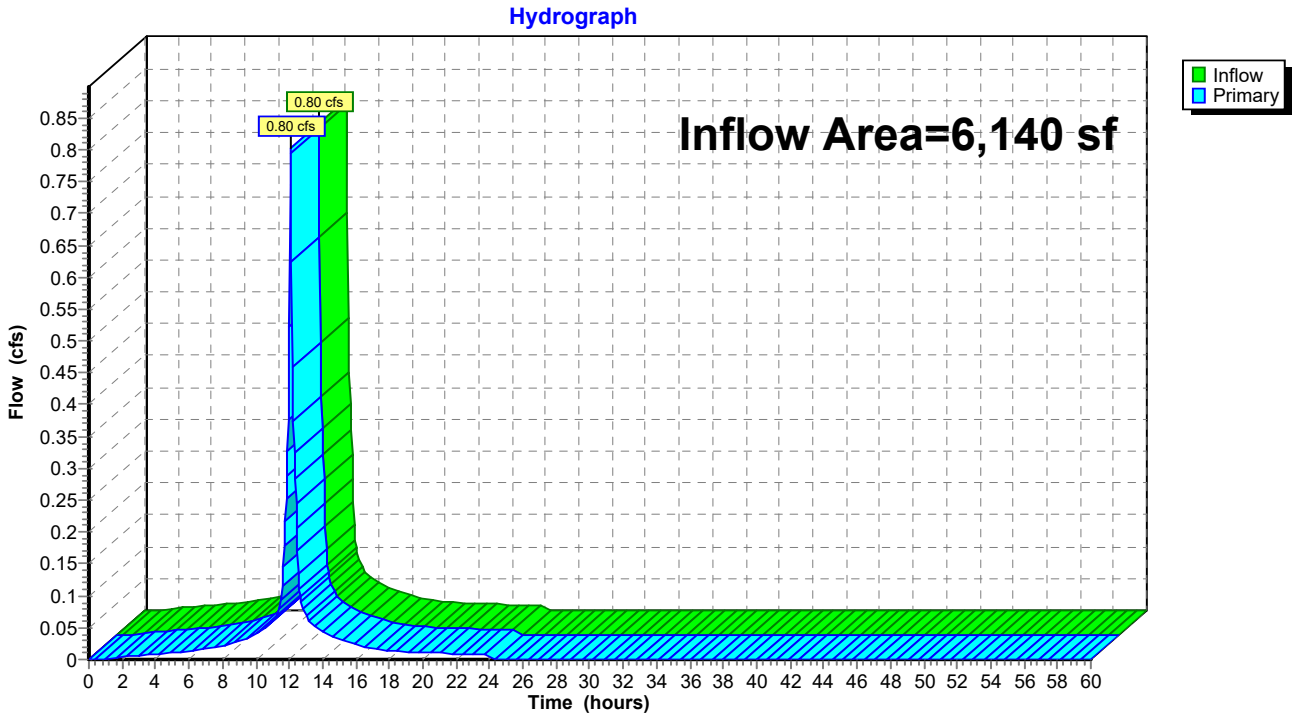


Summary for Pond FIL: Filterra Unit

Inflow Area = 6,140 sf, 99.51% Impervious, Inflow Depth = 5.71" for 25-yr event
Inflow = 0.80 cfs @ 12.09 hrs, Volume= 2,923 cf
Primary = 0.80 cfs @ 12.09 hrs, Volume= 2,923 cf, Atten= 0%, Lag= 0.0 min
Routed to Link SP-B : Fore Street Combined Sewer

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Pond FIL: Filterra Unit

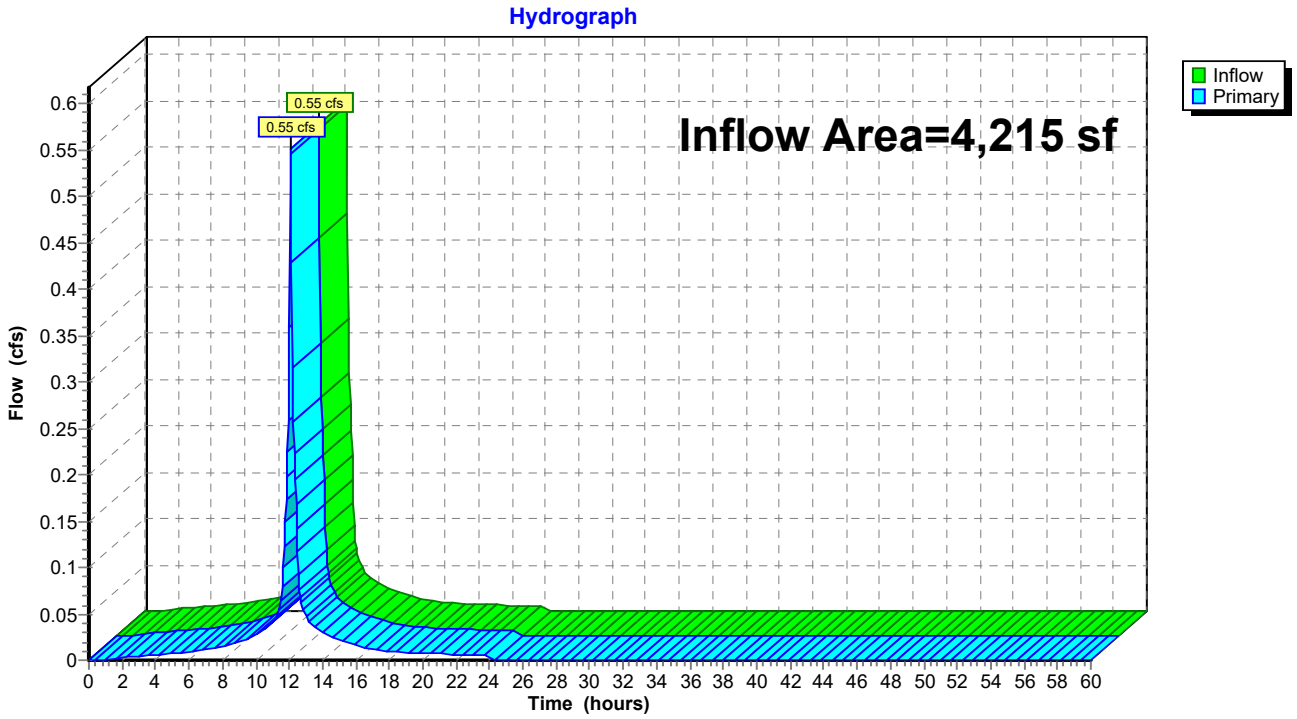


Summary for Link SP-A: Union Street Storm Drain

Inflow Area = 4,215 sf, 98.81% Impervious, Inflow Depth = 5.71" for 25-yr event
Inflow = 0.55 cfs @ 12.09 hrs, Volume= 2,006 cf
Primary = 0.55 cfs @ 12.09 hrs, Volume= 2,006 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-A: Union Street Storm Drain

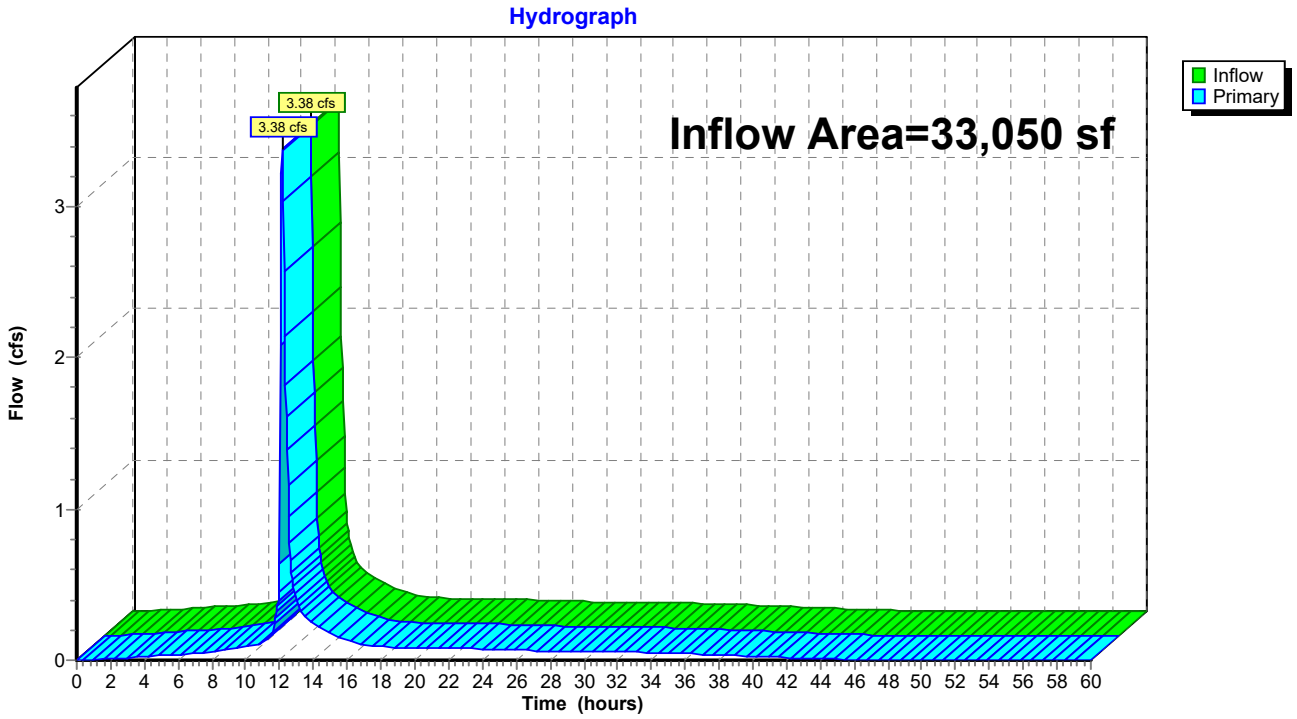


Summary for Link SP-B: Fore Street Combined Sewer

Inflow Area = 33,050 sf, 98.73% Impervious, Inflow Depth = 5.71" for 25-yr event
Inflow = 3.38 cfs @ 12.14 hrs, Volume= 15,732 cf
Primary = 3.38 cfs @ 12.14 hrs, Volume= 15,732 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-B: Fore Street Combined Sewer

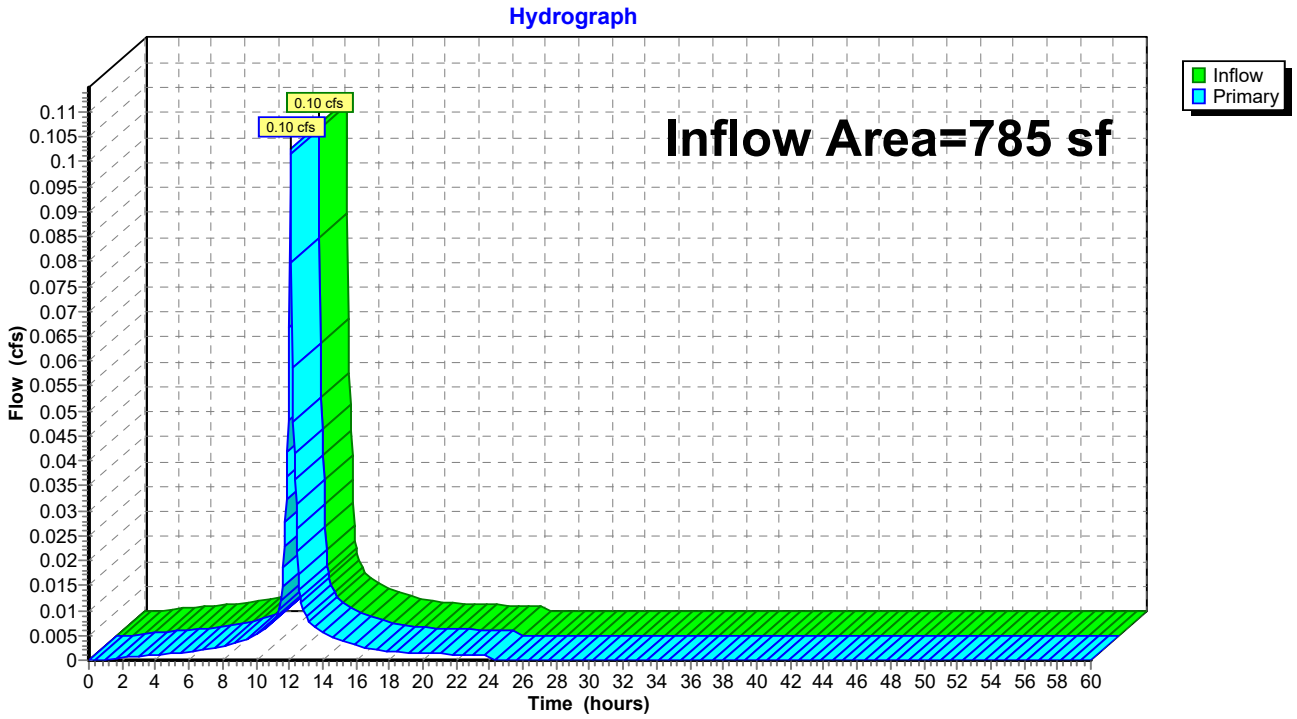


Summary for Link SP-C: Patton Court

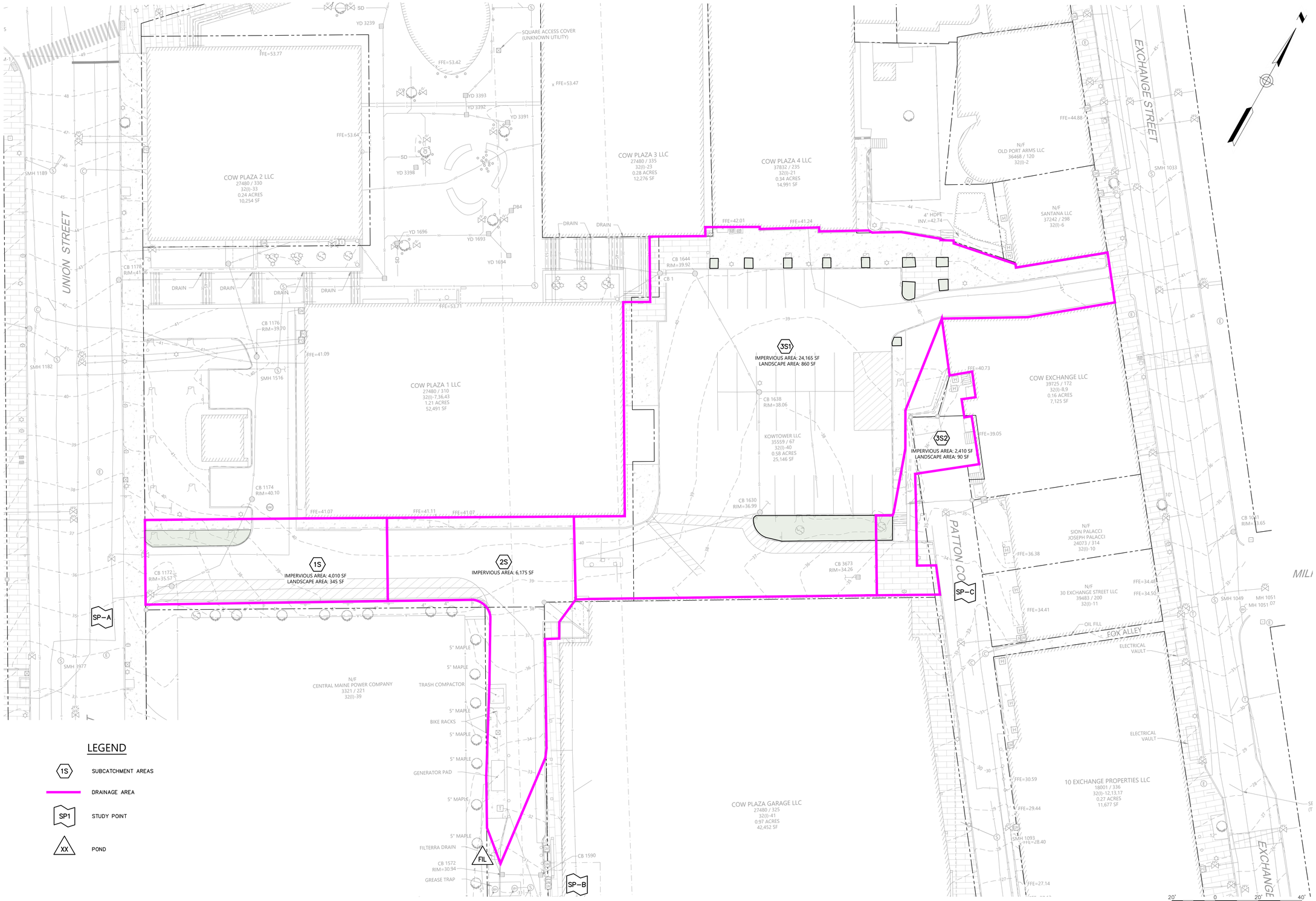
Inflow Area = 785 sf,100.00% Impervious, Inflow Depth = 5.71" for 25-yr event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 374 cf
Primary = 0.10 cfs @ 12.09 hrs, Volume= 374 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link SP-C: Patton Court



APPENDIX C: WATERSHED FIGURES



LEGEND

- 1S — SUBCATCHMENT AREAS
- DRAINAGE AREA
- SP1 — STUDY POINT
- XX — POND

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Portland, Maine 04101
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PE SEAL:

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CLIENT INFO:

EAST BROWN COW - KOWTOWER LLC
PORTLAND, MAINE
45 UNION STREET

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0232191.08
DATE:	AUGUST 2025
SCALE:	AS NOTED
DESIGNED BY:	AWG
DRAWN BY:	BCM
CHECKED BY:	ANG
FILENAME:	0232191.08 SW FIGS.dwg

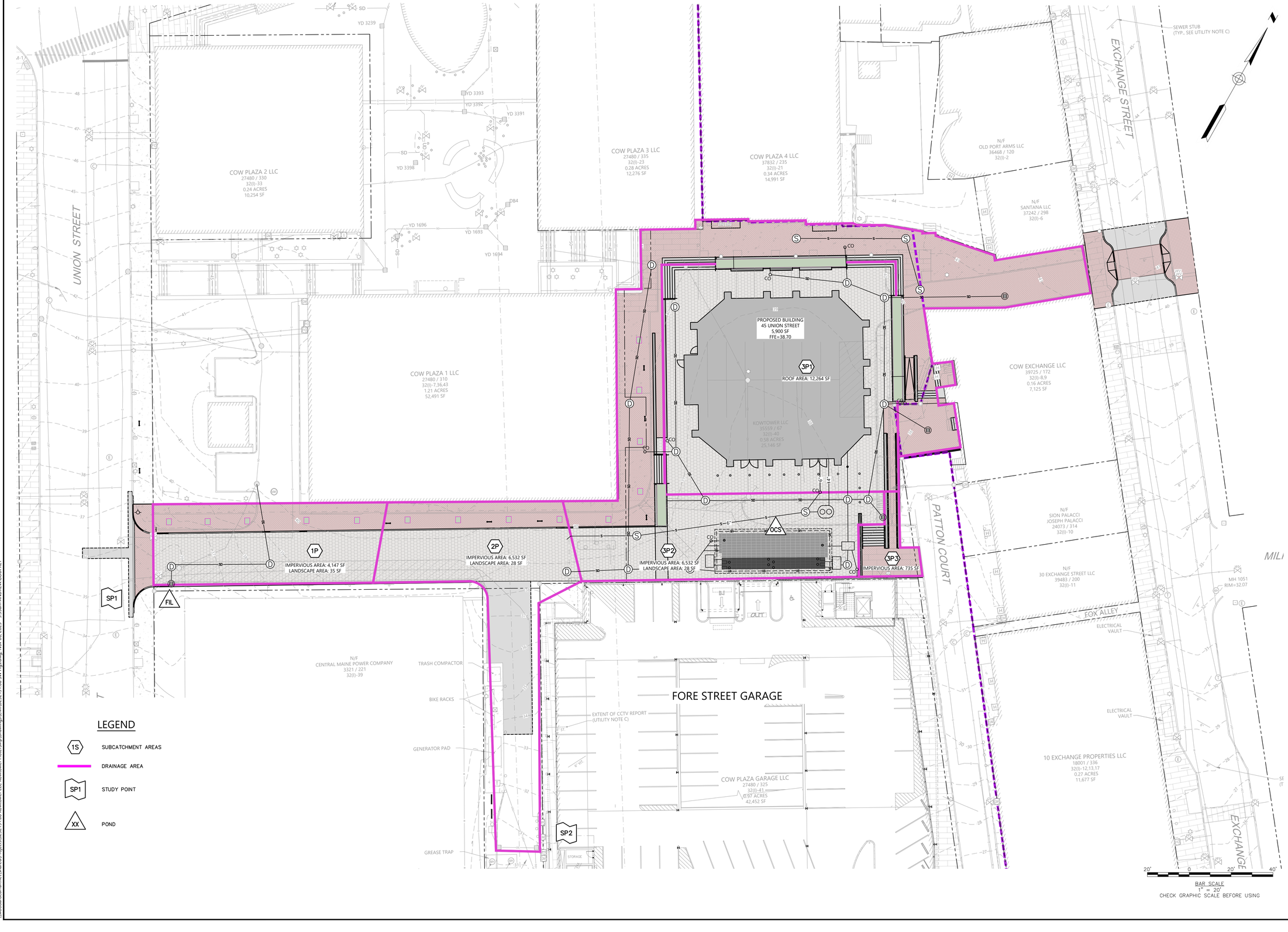
DRAWING TITLE:

FIGURES
PRE-DEVELOPMENT WATERSHED FIGURE

DRAWING NO:

PRE

\\woodardcurran.net\shared\Projects\0232191.08 Kowtower LLC Kowtower Hotel\wip\Drawings\Civil\0232191.08 SW Figs.dwg, Aug 13, 2025 - 3:25pm ACEHHARD



LEGEND

- 1S — SUBCATCHMENT AREAS
- DRAINAGE AREA
- SP1 — STUDY POINT
- XX — POND

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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CHECKED BY:	CS
FILENAME:	0232191.08 SW FIGS.dwg

DRAWING TITLE:
POST-DEVELOPMENT WATERSHED FIGURE

DRAWING NO:
POST

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APPENDIX D: STORMWATER INSPECTION AND MAINTENANCE PLAN

STORMWATER INSPECTION & MAINTENANCE PLAN

45 Union Street

Portland, Maine

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Appendix B of the Maine Department of Environmental Protection (MaineDEP) Chapter 500 Rules. Upon completion of the project, the Owner will assume responsibility for overseeing the property, including the inspection and maintenance of the Site's stormwater drainage system and treatment measures outlined herein. A person with knowledge of stormwater management and erosion and sediment control, including the standards and conditions in the permit, shall conduct the inspections and perform maintenance of the facilities.

Inspection and maintenance activities will be performed per the attached checklist, schedule, and manufacturer guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached.

INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

General BMP Inspection Information

Trash, debris, and sediment shall be removed from storm drainage pipes and catch basins as needed on a semi-annual basis. In addition to the inspection and maintenance of stormwater systems, paved areas will be inspected annually each spring. These areas will be kept clean and clear through periodic sweeping and winter plowing as required. Inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

Annual BMP Inspections

The owner or operator shall hire a professional qualified to perform Post-Construction BMP Annual Inspections (as defined in Section 32-1 of the City ordinance), to provide on or by June 30 of each year, a completed and signed certification to the DPW in a form provided by the DPW, certifying that the person has inspected the BMP(s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan. If, at the time of inspection, the BMP(s) required maintenance or repair, the professional Qualified to perform Post Construction BMP Annual Inspections (as defined in Section 32-1 of this ordinance) hired by that person shall provide of the deficiency and corrective action(s) taken to the DPW in no later than 60 days following the date the deficiency was identified.

Subsurface Sand Filter

The subsurface sand filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified. The proprietary subsurface detention component of the sand filter (R-Tank modules) and sediment pretreatment rows must be inspected and maintained per the manufacturer's guidelines, which are outlined in the attached guidance document.

Hydrodynamic Separator

The Hydrodynamic Separator should be inspected after every major storm in the first year to be sure it is functioning properly. The inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. The system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated.

EROSION & SEDIMENT CONTROL WEEKLY INSPECTIONS

All areas of disturbance, impervious areas, erosion and sediment control best management practices, materials storage areas exposed to precipitation, and locations where vehicles enter or exit the Site shall be inspected:

1. Before any disturbance begins and after all Erosion and Sedimentation Control BMPs specified in the Erosion and Sedimentation Control Plan are in place;
2. At least once a week as well as before and within 24 hours after a storm event (rainfall); and
3. Once at project completion to ensure the Site has reached permanent stabilization and all temporary erosion and sedimentation controls have been removed.

The inspector will submit weekly written reports to the Stormwater Coordinator(s) in the Water Resources Division of Public Works and the Development Review Coordinator(s) in Planning. Reports must include project ID, project address, the date(s) and time(s) of inspection(s), site photographs of areas under construction, and the date(s) and approximate duration(s) of any rainfall events in the prior week. The report will identify and describe any erosion problems or discharge of pollutants and what actions will be taken to address these issues and repair any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.

STORMWATER INSPECTION CHECKLIST

Inspection by: _____ Date: _____

Stormwater Feature	Condition						Comments
Vegetative cover	no bare spots, no evidence of rill erosion		some bare spots, some rill erosion		large bare areas, extensive erosion		
Subsurface Drainage System	no siltation		some siltation		heavily silted in		
Subsurface Drainage System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Drainage System	inlet/outlet clear		some debris		completely blocked		
Trench Drain	no siltation		some siltation		heavily silted in		
Trench Drain	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Sand Filter*	no siltation		some siltation		heavily silted in		
Subsurface Sand Filter*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Sand Filter*	inlet/outlet clear		some debris		completely blocked		
Hydrodynamic Separator*	no siltation		some siltation		heavily silted in		
Hydrodynamic Separator*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Hydrodynamic Separator*	inlet/outlet clear		some debris		completely blocked		

**See attached manufacturer's guidelines for system maintenance and inspection.*

Recommended Actions: _____

_____

_____

Actions Completed: _____ Date: _____

STORMWATER MANAGEMENT MAINTENANCE TASKS AND RECOMMENDED SCHEDULE

TASKS	TRENCH DRAIN	VEGETATIVE COVER	OUTLET CONTROL STRUCTURE	SUBSURFACE SAND FILTER	STORM DRAIN PIPES	HYDRODYNAMIC SEPARATOR	SCHEDULE
Inspect for sediment accumulation	X	X	X	X	X	X	Spring and Fall
Remove sediment accumulation	X	X	X	X	X	X	As needed
Clean debris	X	X	X	X	X	X	As needed
Inspect for erosion		X					As needed
Reestablish vegetation in erosion areas		X					Early spring
Replace mulch		X					Annually
Inspect structural elements during wet weather and compare to as-built plans			X	X	X	X	Annually
Keep records of all inspections and maintenance activities	X	X	X	X	X	X	Annually
Make adjustments or replacements as determined by wet weather observations	X	X	X	X	X	X	As needed
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	X	X	X	As needed

Stormwater BMP Maintenance Log

45 Union Street

BMP Structure	Inspector	Date	Work Performed	Comments
Pavement Sweeping				
Trench Drains				
Catch Basins				
Subsurface Sand Filter				
Hydrodynamic Separator				
Other				
Additional Comments:				

R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

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Richmond, Virginia, 23234
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Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

Phone Number:_____

Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

CONTECH®
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CDS® Inspection and Maintenance Guide



CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

APPENDIX E: MANUFACTURER APPROVAL OF R-TANK SYSTEM

Ferguson Waterworks
94 Pleasant Ave
South Portland, ME 04106

Andrew Godfrey, E.I.
Woodard & Curran
11 Mountfort Street
Portland, ME 04101
207-558-3836

October 2nd, 2025

SUBJECT: 45 Union Street – Portland, ME
R-Tank - Plan Review and Construction Oversight Commitment

Dear Andrew,

Thank you for forwarding the permit plans for the 45 Union Street project in Portland, ME to Ferguson Waterworks for review of the proposed sand filter system with R-Tank modules.

Our team has reviewed the grading & drainage plan with the latest revision on August 2025, as well as a Hydrocad file, which identifies one R-Tank system utilizing a sand filter beneath the R-Tank units:

- R-Tank Sand Filter: 198 R-Tank^{HD} Double+Mini modules, 84 R-Tank^{HD} Double+Mini Access modules

Per Maine DEP regulations, the systems appear to be sized appropriately to the minimum Sand Filter sizing requirements according to the impervious and pervious area each system is responsible for treating.

The R-Tank system includes a Treatment Row at each inflow point to accommodate the flow rate for the 1yr 24hr storm event. It is recommended that the Treatment Row sizing is reviewed to ensure the proper number of R-Tank units has been provided at each inlet location (accounting for 0.02 cfs per module per DEP regulations).

R-Tanks are designed with 3” stone base, 2 ft stone sides, and a sectional build-up over the system that meets the min. cover guidance for R-Tank^{HD} systems designed in traffic loaded locations. Min. cover requirement for these systems are 20” total cover (includes 12” on top of the tanks). The cover over the system fits within the allowable cover limits.

The tanks are to be wrapped with an N080 Non-Woven Geotextile fabric and the excavation is to be wrapped with Non-Woven Geotextile fabric as well. Additional separation fabrics are

recommended to be used between each layer transition. See Ferguson layout sheets, or engineer plans, for more specific information as to which fabrics should be placed in between each layer.

An appropriate number of inspection ports have been provided for proper maintenance and inspection of the R-Tank systems.

Overall, Ferguson takes no exceptions to the current location and application of the R-Tank system for this project.

With regard to the installation, Ferguson will host a preconstruction meeting with the site contractor and will visit the site several times during the installation to ensure the installation is being conducted in accordance with our standard installation procedures and specifications.

Please review and contact me with any questions from your office. We look forward to working with you on this project.

Sincerely,
Brett Keszczyk,
Green Stormwater Infrastructure (GSI) Engineer
Ferguson Waterworks

Cc: Rob Woodman– Director of Engineering & Green Stormwater Infrastructure
Sam Wojichowski – Engineered Solutions Specialist (New England)

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Att. U

November 10, 2025

Eric Freeman, Planner
City of Portland
389 Congress Street, 4th Floor
Portland, Maine 04101

Re: Response to City Staff Comments – 45 Union Street
Project ID PL-003157-2024

Dear Eric:

Thank you for coordinating the review of the Major Site Plan Application for the 45 Union Street redevelopment. The following document provides written responses and supplemental documentation to the peer review comments submitted by Wright Pierce on September 17, 2025.

The following materials have been provided:

Documents

- Revised Stormwater Report

Drawings

- Revised Civil Drawings

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3708 or csuhr@woodardcurran.com.

Sincerely,

WOODARD & CURRAN, INC.

Caitlin Suhr, P.E.
Project Manager

cc: Jacob Soley, East Brown Cow – Kowtower LLC

ATTACHMENT 1: PEER REVIEW COMMENT RESPONSES

Peer Review Comments		
Wright-Pierce Chapter 500 Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Basic Standard	*It appears that CB 1644 within the perimeter barrier does not have temporary inlet protection. We recommend the applicant confirm and revise as necessary.* *It appears the perimeter barrier may need to extend to CB-1572 and CB-1590 due to the area being down gradient of proposed improvements on this road. We recommend the applicant confirm and revise as necessary.* *There is a proposed soil stockpile located directly on top of CB 3673. While there is inlet protection proposed in the catch basin, we would recommend relocating the stockpile to another location on site, if possible, to avoid potential sediment migration into the storm drain. It is not clear where the existing storm drain discharges and whether the existing pipe is abandoned or ties into infrastructure within Union Street.* *In section I of the General Notes, the start date for permanent seeding is listed as April 1 whereas the start date for permanent seeding specified in the "Permanent Erosion Control" table on the same sheet is listed as April 15. We recommend the applicant confirm dates and revise as necessary.* *There does not appear to be any inspection or maintenance requirements listed for the proposed hydrodynamic separator in the Stormwater Inspection & Maintenance Plan. We would recommend the applicant includes requirements specific to the hydrodynamic separator.* *It's stated in the Stormwater Inspection & Maintenance Plan that an example BMP Maintenance Log is attached, however the Maintenance Log does not appear to be included.*	Please see the updated plans for revisions of items relating to the Basic Standards including inlet protection, perimeter barriers, soil stockpile, and dates for permanent seeding. I&M requirements for the hydrodynamic separator and example BMP maintenance logs have been added to the Stormwater Inspection & Maintenance Plan appended to Stormwater Management Report.

General Standard	*It is recommended the applicant verify if the drainage from Union Street and the existing combined sewer main are within the same watershed as runoff to Union Street will still not be receiving any treatment.*	The existing drain line within the access drive ties into the combined sewer within Union Street. We are in on-going discussions with the Public Works Department regarding this condition and the potential to tie into the City's separated storm system.
Flooding Standard	*Maine DEP Chapter 500 Section 4.F.(2)(b) requires that piped systems meet the 10-year, 24-hour storm without overloading. We would recommend the applicant verify that the proposed storm drain have adequate capacity for the 10-year, 24-hour storm.*	We have verified that the proposed drains have adequate capacity for the 10-year, 24-hour storm. The maximum flow within the drainage system for the 10-year storm is 2.79 cubic feet per second for the plaza area for which the 15" pipe has adequate capacity. These calculations have been added to Appendix A of the Stormwater Management Report.
Wright Pierce - General Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
a.	*We recommend the applicant provide proposed storm drain pipe material.*	Storm drainage pipe material is specified on the revised plans on Sheet C-300.
b.	*Civil detail Sheet C-400 notes that any dewatering flow that's directed to the City's combined sewer system will be reviewed and approved by the Department of Public Services or Portland Water District. The Construction Management Plan does not include reference to dewatering. We would recommend the applicant verify if dewatering is anticipated for the project.*	The Construction Management Plan has been updated to include provisions for dewatering.

c.	*The City of Portland's Code Section 32-38 requires an annual report for BMP inspections be submitted to the Department of Public Works. We recommend the applicant includes this requirement as part of the Inspection and Maintenance Plan.*	The Stormwater Inspection and Maintenance Plan appended to the Stormwater Management Report has been updated to include information regarding the annual BMP inspection report found in Code Section 32-38.
d.	*The City of Portland's Code Section 32-45 requires weekly inspection reports be submitted to the Stormwater Coordinator in the Water Resources Division of Public Works and the Development Review Coordinator in Planning. We would recommend the applicant include these inspection requirements as part of the Civil Detail Sheet C-400 or in the Inspection & Maintenance Plan.*	The Stormwater Inspection and Maintenance Plan and Civil Detail Sheet C-400 have been updated to include information regarding the required weekly inspection reports found in Code Section 32-45.
e.	*The City of Portland's Code Section 32-45 requires additional erosion and sedimentation control inspections occur before disturbance but after all erosion control BMPs have been installed and at completion of the project. We would recommend the applicant include these inspection requirements as part of the Civil Detail Sheet C-400.*	Civil Detail Sheet C-400 has been updated to include information regarding the required ESC BMP inspection reporting found in Code Section 32-45.
Wright Pierce - Stormwater Management Plan Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
a.	*i. Area 1 must provide a minimum stormwater detention of 1" times the total impervious area and stormwater outflow rates must not exceed 0.1 CFS until the detention system has reached design capacity. It's understood that due to site constraints, a detention system is not practicable within Area 1. As this does not meet the City's Technical Standards, it's recommended the applicant request a waiver from this requirement or receive approval from the City.*	We are in on-going discussions with the City regarding potential waivers or approval for this condition.

	ii. For a combined sewer system, Area 2 must provide a minimum stormwater detention equal to the greater of 1" times the total impervious area within the project's disturbed area or the proposed increase in average daily sewer flow added to the combined sewer system, and stormwater outflow rates must not exceed 0.1 CFS until the detention system has reached design capacity. It's recommended the applicant provide previous stormwater models for the Filterra unit or confirmation Area 2 has previously met Section 5.2.4.	Work being performed as part of this project within Area 2 will amount to modifications to above-ground utility services, underground utilities and re-surfacing at approximate existing grade. It is our understanding this work is considered "maintenance" and will not be required to meet the standards of Section 5.2.4.
	iii. It's unclear how the total impervious area provided under the Stormwater Detention Volume calculations in Appendix A of the Stormwater Management Plan was calculated based on the provided site plan. The sum of all provided impervious areas calculates to 37,580 SF. We request the applicant verify the impervious area.	The Detention Volume calculations in Appendix A have been corrected to show 37,580 square feet of impervious area. However, the controlling quantity for the detention volume calculation continues to be 3,975 cubic feet, the proposed average daily sewer flow (ADSF).
b.	*It's understood the proposed average daily sewer flow is 3,975 CF/day. We recommend the applicant clarify how this flow value was obtained.*	The proposed ADSF was calculated using State of Maine Subsurface Wastewater Disposal Rules, latest edition (September 23, 2023). Refer to Table A at the end of this document.
c.	*In the water quality volume calculations for subsurface sand filter 1, the applicant is using a roof area treated value of 3,161 SF which aligns with the required treatment for Area 1 on the previous page. However, the note for the roof area treated value includes Area 1 and remainder of Area 3. We would recommend the applicant verify the values included in the water quality calculations are correct and revise as appropriate.*	The "roof area treated value" in this calculation is intended to represent only the additional treated amount of runoff equal to Area 1, captured by providing treatment to that amount of equivalent roof area. The actual roof area in Area 3 is not required to be included in the water quality volume calculation. However, there was an error in the "WQV Required" portion of the spreadsheet that did

		not include the additional 3,161 square feet of area. The required WQV has increased from 1,200 cubic feet to 1,463 cubic feet, still well under the provided WQV (3,980 cubic feet). Updated calculations are included in Appendix A of the revised Stormwater Management Report.
d.	*We recommend the applicant provide calculations for the provided on-site detention volume of 3,980 CF. It's unclear based on the HydroCAD model how the WQV Provided volume was obtained.*	The HydroCAD stage-area-storage output function was utilized to calculate the on-site detention volume (i.e. the "provided" WQV). The provided WQV value was obtained from the amount of storage volume held in the system below the outlet pipes at elevation 35.13. Calculations are included in Appendix A of the revised Stormwater Management Report.
e.	*The R-Tank Approval Letter in Appendix B of Maine DEP's Stormwater Best Management Practices Manual requires review and approval by the manufacturer for the proposed use and sizing of the system. It's recommended the applicant provide approval from the manufacturer.*	The manufacturer has reviewed the design and provided their approval, included in Appendix E of the revised Stormwater Management Report.
f.	*It's recommended the applicant verify pretreatment requirements listed in the R-Tank Approval Letter (Provision #2.B.) in Appendix B of Maine DEP's Stormwater Best Management Practices Manual are met. Furthermore, the total pre-treatment volume required is provided as 18 CF, but the volume provided is not stated. We recommend the applicant confirm the pre-treatment volume provided to verify pre-treatment requirements are met.*	The R-Tank schematic has been updated to show pre-treatment isolation rows to accommodate the 1-year 24-hour storm at 0.02 cfs per module. The pre-treatment calculation in Appendix A of the revised Stormwater Management Report has been updated to clarify the provided pre-treatment volume.

g.	*The 15" storm drain inlet invert from the outlet control structure differs between the HydroCAD model and Sheet C-300. We would recommend the applicant verify the inverts at the outlet control structure.*	The 15" outlet pipe invert from the outlet control structure has been updated in the HydroCAD model to match the elevation on Sheet C-300.
Wright Pierce – Plan Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
a.	*Proposed DMH-6 on Sheet C-300 appears to only have an outlet pipe. We request the applicant verify if the existing storm drains will connect to DMH-6 or if they are to be abandoned.*	The plan note has been updated to reference the three existing inlet pipes connecting to proposed DMH-6.
b.	*We would recommend the applicant verify the bottom elevations of the proposed trench drain to verify the direction of runoff and tie ins to the proposed drainage system.*	The plans have been updated to provide elevations to the trench drains and proposed tie-in points. The trench drain system allows for 0.5% sloped drains that drain to in-line drop catch basins and outlet to the stormwater system.
c.	*We would recommend the application provide spot elevations on the east side of the building to ensure runoff is draining away from the building.*	The plans have been updated to provide spot elevations on the east side of the building and curbing. Positive drainage is provided away from the building.
d.	*We would recommend the applicant verify if the gate control boxes will be maintained or demolished and update the civil plans accordingly.*	The gate control boxes will be demolished.

e.	*We would recommend the applicant include a detail for the diversion manhole.*	A detail for the rectangular concrete vault (previously called out as "diversion manhole") is provided on Sheet C-404.
f.	*On Sheet C-300, DMH-8 appears to be missing one invert. We would recommend that applicant verify inverts and update the plan accordingly.*	The plans have been updated accordingly.
g.	*On Sheet C-300, DMH-3 is shown over an existing combined sewer overflow main with an 18" invert out. However, the existing sewer main is shown as a 15" cement pipe. We recommend the applicant provide detail on how the connection between the 18" invert out from DMH-3 and the 15" cement sewer main will be made.*	The plans have been corrected to show 15" drainage pipe connection. We are in on-going discussions with the Public Works Department regarding the potential to tie into the City's separated storm system on Union Street.
h.	*On Sheet C-300, DMH-12 calls for a 15" pipe as the invert out and connects to the diversion manhole. However, the invert in at the diversion manhole calls for a 12" pipe. It is unclear where this change in pipe size occurs on the plan set. We would recommend the applicant provide detail on this change.*	The plans have been corrected to show the 15" drainage pipe in connection to the diversion manhole.
i.	*On Sheet C-403, the catch basin and manhole details do not specify a diameter. Additionally, structure sizes are not seen in the General Notes (Sheet G-001), on the Utility Plan (C-200), or on the Grading & Drainage Plan (C-300). We would recommend the applicant verify structure sizes and update the plans accordingly.*	Drainage structures are proposed as 4-foot diameter, this specification has been updated on the detail sheets.

Table A. Average Daily Sewer Flow (ADSF) Calculation

45 Union Street Anticipated Wastewater Flows				
Facility	Unit	Design Flow/Unit	Quantity	Design Flow (GPD)
Hotel (Rooms with private baths)	Room w/ kitchen	160	8	1,280
	Room w/o kitchen	100	80	8,000
	Employee	12	60	714
Restaurant (Eating place, 3 meals/day)	Seat	30	200	6,000
	Employee	12	50	600
Residential (single-family dwelling unit w/ 2 or less bedrooms)	Dwelling Unit	180	73	13,140
			Total	**29,734**
			Total CFS	**3,975**

*Values based on State of Maine: Subsurface Wastewater Disposal Rules, latest edition (September 23, 2023).

City of Portland ME: Low-Impact Design Requirements				
Owner / applicant name:	East Brown Cow			
Representative name:	Woodard & Curran			
Project address:	45 Union Street			
Project CBL:	032 I040001			
Application ID (if known):	PL-003157-2024			
	Maximum Points	**How to Apply**	**Points Awarded**	**LID Standard / Approach**
CORE METHODS: Wetlands, Streams, & Drainage				
Protect natural drainage paths	Required			
Shoreland Zoning	Required			
Meeting DEP and ACOE standards for stream crossings	Required			
Protect wetlands	**12**	Select one option	**12**	Select a site that does not have wetlands or vernal pools = 12pts
				Project maintains a 50' set-back / no-disturb buffer to all wetlands = 10pts
				Project maintains a 25' set-back / no-disturb buffer to all wetlands = 7pts
				Project does not place structures in wetlands and avoids wetlands impacts from construction and stormwater discharges = 5pts
				Project replicates impacted wetlands elsewhere on site or within watershed = 3pt
				Project pays wetlands impact fee = 0pts
Permanently protect stream (intermittent and perennial) and riparian buffers *(exclusive of approved stream crossings; must include a no-disturb zone with markers installed and deed restriction recorded at registry of deeds)*	**12**	Select one option	**12**	Select a site with no streams = 12pts
				Permanently protect all 100ft shoreline buffers = 10pts
				Permanently protect all 75ft shoreline buffers = 7pts
				Permanently protect all 50ft shoreline buffers (intermittent streams) = 6pts
				Permanently protect all 50ft shoreline buffers (required minimum for perennial streams) = 5pts
				Permanently protect all 25ft shoreline buffers (required minimum for intermittent streams) = 5pts
Stream crossings	**12**	Select one option	**12**	Select a site with no streams = 12pts
				Avoid any stream crossings = 10pts
				All stream crossings use a bridge or open bottom culvert structure sized at 1.2 times the bank full width of the stream = 10pts
				All stream crossings use Maine Stream Smart Principles to preserve natural pre-development drainage pathways = 6pts
CORE METHODS: Natural Areas & Habitat				
Preserve threatened or endangered species habitat	Required (Beginning with Habitat Maps at a minimum)			
Protect 30% of trees over 10" DBH	Required (Tree survey required)			
Protect intact, contiguous forests and native trees over 10" DBH	**8**	Select one option	**8**	All development and land disturbance outside of existing wooded/forested areas (no site clearing in prior 10 years) = 8pts
				Protect 50% of trees over 10" DBH = 6pts
				Protect 40% of trees over 10" DBH = 4pt

CORE METHODS: Soils & Slopes				
USDA Web Soil Survey	Required (provide details how soil limitations will be mitigated)			
Avoid steep slope disturbance	5	Select one option	5	Selecting a site without slopes 15% or greater = 5pts
				Maintain >20' undisturbed vegetated buffer to all slopes 15% or greater = 3pts
				Maintain 10-20' undisturbed vegetated buffer to all slopes 15% or greater = 2pts
				Maintain 1-10' undisturbed vegetated buffer to all slopes 15% or greater = 1pt
				Disturbance of any slope 15% or greater = 0pts
Protect soils	5	Select one option	5	Redevelopment sites = 5pts
				Detailed, site-specific soil survey; preparation of a Soil Management and Protection Plan; protect highly permeable soils = 5pts
Limit site disturbance and earthwork	8	Select one option	8	Redevelopment limits disturbance to existing footprint = 8pts
				New development disturbs less than 50% of existing undeveloped site area = 8pts
				New development disturbs less than 75% of existing undeveloped site area = 6pts
				New development disturbs greater than 75% of existing undeveloped site area = 0pts
Soil preparation & minimizing compaction	6	Select all options that apply	3	Till soils to a depth of at least 10" prior to revegetation = 3pts
			3	Organic matter amendments as needed based on soil tests = 3pts
CORE METHODS: Landscaping				
Low-Impact Landscaping	6	Select all options that apply		Redevelopment sites reduce lawn area by 50%, provided no increase in impervious area (lawn becomes landscaping) = 2pt
			2	New development results in >50% non-impervious developed area is landscaping = 2pt
			2	Use only native vegetation for landscaped areas = 2pts
			2	Using only locally-sourced landscape materials = 2pt
CORE METHODS: Impervious Area & SW Management				
Meeting City's stormwater management standards	Required			
Reduce impervious and increase permeable surfaces	10	Select all options that apply, up to a maximum of 10 points		50% or more of proposed hard surfaces are permeable (porous pavers, permeable concrete, porous asphalt) = 6pts
			4	Minimize parking impervious area by using only the minimum required number of parking spaces, the minimum required parking lot dimensions, maximizing compact spaces and utilizing low-turnover standard parking space width reductions = 4pt
				25% or more of proposed hard surfaces are permeable (porous pavers, permeable concrete, porous asphalt) = 3pts
			2	Minimize roadway impervious area by developing roadways and driveways at the minimum width and using minimum number of curb cuts = 2pt
			2	Reducing the number of driveways by using a shared driveway design = 2pt
			2	Providing transportation alternatives (such as bike share, car share, or similar) = 2pt
Use GI / natural stormwater treatment systems	12	Select all options that apply		Treatment requirements and conveyance achieved through vegetated systems = 6pts
			3	No more than 1-acre of drainage per treatment system = 3pts
				Increase time of concentration on site (1" 25 year storm event) = 3pts
Limit / eliminate salt use	4	Select one option		Detailed winter maintenance agreement, with annual reporting requirement, limiting chloride use (required in UIS watersheds) = 4pts

Bonus Points				
Bonus points are offered for strategies that may go above and beyond typical approaches; may offer particularly innovative site design or engineering ; or may help achieve the larger goal of low-impact development on a regional scale.	10		10	Utilizing structured parking = 10pts
	10			Utilizing a green roof for at least 50% of a newly developed or redeveloped building roof = 10pts
	10			Restoration of previously disturbed natural resources (minimum 500 square feet of restoration) = 10pts
	10			BMPs designed for known water quality impairment within watershed = 10pts
	10			Connecting to City sewer from a site >200 ft from existing City infrastructure = 10pts
	6			Detention of 1.5 times the required volume = 6pts
	6			Treatment for 1.5 times the required water quality volume = 6pts
	6			Innovative LID site design and/or stormwater improvement - 6pts
	10			Establishing a Traffic Demand Management plan for projects under 50,000ft = 10pts
	Total Possible Points **178**		**Total Points Awarded** **97**	**Minimum points required for approval of LID strategies and techniques** **80**

Safdie Architects

45 Union Street

Fire & Life Safety Strategy Narrative
Major Site Plan

Issue | August 12, 2025

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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 307069

Arup US, Inc.
60 State Street
Boston, MA 02109
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ARUP

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1. Introduction

This report outlines the building and fire code compliance options and key issues of the 45 Union Street, designed by Safdie Architects for East Brown Cow. The project will be located in downtown Portland, Maine. This report has been developed to inform the Basis of Design for the project from a fire and building code perspective and will be further developed in subsequent stages of the design process.

2. Project Description

45 Union Street is a proposed mixed-use high-rise tower rising approximately 380 ft above grade and approximately 420 ft above sea level. The tower will feature nine stories of hotel floors and thirteen stories of residential floors, starting at approximately 40 ft and 170 ft above grade, respectively. The top two amenity stories will include a restaurant level, and the Sky Lobby which will serve as the hotel check-in floor. Additionally, there will be a one-story wellness floor, two stories of mechanical and back-of-house floors, rooftop mechanical penthouses, and a ground level lobby with a cafe. Six elevators will provide floor access.

The footprint of the tower is approximately 86ft x 88ft, nestled in between existing buildings fronting Exchange, Fore, Union, and Middle Streets.

Primary fire department vehicle access will be from Union Street. An access lane is also provided from Exchange Street on the opposite side, which will normally be prohibited from vehicular traffic and is unlikely suitable for a large fire apparatus but may serve as access for smaller rescue and emergency response vehicles.

3. Applicable codes

The State of Maine adopts the statewide Maine Uniform Building and Energy Code (MUBEC). At the time of building permitting, it is expected that the applicable MUBEC will be based on the 2021 International Building Code (IBC) with Maine Amendments since full adoption of those codes are anticipated for April, 2025. Other applicable codes, including the Portland City Codes are as follows.

Maine Uniform Building and Energy Code (MUBEC), based on:

- 2021 International Building Code (IBC)
- 2021 International Existing Building Code (IEBC)
- 2021 International Energy and Conservation Code (IECC)
- 2021 International Mechanical Code (IMC)
- 2021 International Swimming Pool and Spa Code (ISPSC)
- 2021 Uniform Plumbing Code (UPC)
- ASHRAE 62.1 – 2016 Edition
- ASHRAE 62.2 – 2016 Edition
- ASHRAE 90.1 – 2016 Edition

- City of Portland Municipal Code Chapter 6 Buildings & Building Regulations.
- City of Portland Municipal Code Chapter 10 Fire Prevention and Protection
- NFPA 1 Fire Code – 2018 Edition
- NFPA 101 Life Safety Code – 2018 Edition
- 32 M.R.S. §1153-A, NFPA 70 – National Electrical Code – 2020 Edition
- 32 M.R.S. §3403-B, Uniform Plumbing Code – 2021 Edition
- Elevator Standards pursuant to 32 M.R.S. §15206, ASME A17.1, 2019 Ed.
- 2010 ADA Standards for Accessible Design
- Maine Human Rights Act adopted pursuant to 5 M.R.S Chapter 4 Fair Housing and Chapter 5 Public Accommodations.
- 62.1 – 2016, Ventilation for Acceptable Indoor Air Quality
- 90.1 – 2016, Energy Standard for Buildings except Low-Rise Residential
- Fire Safety Codes pursuant to 25 M.R.S 2452 and 2465.
- Applicable National Fire Protection Association Standards for specific systems will include the following. This list may expand as the project develops.
    - NFPA #10, Standard for Portable Fire Extinguishers, 2021 edition

- NFPA #13 Standard for the Installation of Sprinkler Systems, 2019 edition
- NFPA #14 Standard for the Installation of Standpipe, Private Hydrants and Hose Systems, 2019 edition
- NFPA #20 Standard for the Installation of Stationary Fire Pumps for Fire Protection, 2019 edition
- NFPA #25 Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, 2014 edition
- NFPA #72, National Fire Alarm Code, 2019 edition

The MUBEC Administrative procedures, Chapter 1, Section 14 outlines the procedures for identifying and resolving conflicts between the MUBEC and the Fire Safety Codes and Standards. The process requires submission of such conflicts to the Board for consideration.

4. Key Issues

4.1 High-rise fire protection requirements

As a high-rise building, special provisions of MUBEC Chapter 403 and Chapter 11.8 of the Life Safety code will be applied. As a trade-off, the fire-resistance ratings of the building elements (primary structure except columns supporting floors, and floor and ceiling assemblies) may follow those for Type IB construction.

4.2 Post-fire salvage smoke removal system

A post-fire salvage smoke removal system is required for this building to facilitate smoke removal in post-fire salvage and overhaul operations. This is a manually operated system and not meant for life safety. The system will be designed in compliance with MUBEC 403.4.7.

4.3 Stair pressurization

The two primary stairs will be pressurized in accordance with MUBEC Chapter 909.20.5. The pressurization system will be designed to achieve a minimum pressure differential between the stair and adjacent spaces of at least 0.1” w.c. (25Pa) under maximum stack effect.

4.4 Structural integrity of interior exit stairways and elevator hoistway enclosures

It is anticipated that the building will be a Risk Category II. Refer to Section 5.2 of this report. Risk Category II assumes the buildings primary occupancy is not Public Assembly. Since the vast majority of the building is residential, the primary occupancy is R-1/R-2. If Public Assembly spaces over 300 each total, in the aggregate, 2,500 assembly occupants, the Risk Category would climb to Category III which has structural design and cost implications.

High-rise buildings of Risk Category III or IV will comply with the wall assembly and materials requirements of MUBEC Chapter 403.2.2. These are more rigorous provisions for integrity of the essential shafts in the building, requiring compliance with Soft Body and Hard Body Impact Classifications tested in accordance with ASTM C1629/C1629M

4.5 Proximity to Neighboring Structures

45 Union Street will be positioned such that it is surrounded by existing buildings. Exterior wall protection and allowable percentage of wall openings will be determined based on the fire separation distance measured between the exterior walls of 45 Union Street and the adjacent property lines, assumed property lines where two buildings are on the same lot, or the centerline of street or public way.

Where assumed property lines are positioned in the case where two buildings are built upon a common lot, where no real property line exits, the assumed property line is placed such that any existing building remains in compliance related to exterior wall fire resistance ratings and allowable opening protection. The new building, 45 Union Street, will then be protected in accordance with the MUBEC based on the fire separation distance to that assumed property line placement.

The intent is to provide a fire separation around 45 Union Street Tower such that maximum flexibility to the envelope is provided: non-rated and unlimited unprotected openings.

4.6 Rooftop penthouses

The roof of the Sky Lobby (top floor) will serve as MEP plant space. The area of the roof is approximately 7,800ft^2 (counting only the roof above the building footprint). The aggregate area of all enclosed areas and penthouses will not exceed 1/3rd of the roof area, or 2,580 ft^2, and will therefore be considered rooftop structures in accordance with Chapter 1511 of the MUBEC. Exceeding the 1/3rd area rule would result in the roof being classified as a story which would impact the desire to use heavy timber in the roof construction, as heavy timber would not be allowed in the floor construction of a story.

4.7 Fire Service Access Elevators

Buildings 120ft or more in height require two fire service access elevators to (each) serve all levels to assist in fire department response to fire events. These elevators will comply with MUBEC Chapter 3007 and Section 5.15.1 of this report.

Fire service access elevators are not required to serve the basement level in the 2021 Edition of the IBC. This permits the elevator pits to be located in the basement rather than below the basement.

Fire service access elevators are not be required to serve the top floor of a building where that floor is utilized only for equipment for building systems.

4.8 Fire Service Access Elevator Lobbies

Fire service access elevators are required to open to an enclosed fire service access elevator lobby for all levels except street level and are required to have direct access to the enclosure for an interior exit stairway. These lobbies will comply with MUBEC Chapter 3007 and Section 5.15.1 of this report.

It is proposed that the Sky Lobby (top floor) does not include a protected lobby for the fire service access elevators as it presents a difficulty to include. The 2021 IBC Code Commentary suggests that fire service elevators are used to stage below the fire floor and the lobby introduces additional protection from secondary smoke or heat conditions. As the top floor, a protected

lobby would not add value for a fire on this floor, as the fire department is expected to respond to a fire by going to the floor below.

The elevators will still service the floor but not in a protected lobby for other emergency situations.

This approach would be required to be supported by a variance or Alternate Means or Method of compliance and will require input and support by the Portland Department of Fire Prevention.

4.9 Tower Stairs and Number of Means of Egress

The stair capacity is designed in compliance with NFPA 101 – Life Safety Code, as amended by the State of Maine. The two 5'-0" stairs would have a capacity of 400 occupants in aggregate. This maximum occupant load will need to be enforced on the upper amenity levels. In addition, the exit doors will have a required width of at least 40'' to achieve the same capacity as the stairs.

Increasing stair width will allow increased capacity. However, once the occupant load reaches 500, a third exit stair will be required. To satisfy the maximum 500 occupants, two stairs sized at minimum 50" width would be required under the MUBEC and not require a center handrail. Under NFPA 101, the stair widths would be increased to 67" to serve 500 occupants and this would also avoid the center handrail. .

All floors will require at least two independent and sufficiently separated means of egress. Tower interior exit stairs will be separated by at least 30ft, or ¼ the maximum diagonal measurement of the building. The basement level is permitted to have a single means of egress, provided the single stair can be reached within 100ft of travel from the most remote location on the floor.

4.10 Hotel "Flag"

Depending on the eventual 'flag' that occupies and runs this hotel, there may be additional requirements. For example, if a 'flag' is insured by FM Global, some of the design becomes more onerous in terms of fire and life safety. This carries a premium.

Marriott is a particular hotel chain that carries additional design requirements. In Marriott's case, they enforce the Module 14 provisions. Module 14 requires smoke management and control for assembly spaces, hotel lobbies, and hotel corridors. The system is typically designed as a purge system, requiring exhaust and make-up air which will require additional risers and smoke control equipment. This level of protection exceeds the minimum level of protection required by MUBEC. It would benefit the project design to understand the flag by the Design Development phase.

HEATING, VENTILATION, & AIR CONDITIONING BASIS OF DESIGN NARRATIVE

MAJOR SITE PLAN

45 Union Street, Portland, ME

Cosentini Associates

August 12, 2025

1 MEP/FP Design

1.1 General

1.1.1 This narrative summarizes system for 45 Union Street building in Portland, ME. This building compromises of the following:

- Hotel – 88 keys – 37,501 SF
- Residential – 73 Units – 63,992 SF
- Amenity:
  - Café – 1,495 SF
  - Hotel Lobby – 1,194 SF
  - Residential Lobby – 799 SF
  - Residential Club – Club Lobby – 291 SF
  - Great Room – 533 SF
  - Open Kitchen – 525 SF
  - Private Dining – 262 SF
  - Secret Garden – 576 SF
  - Fitness Center – 1,020 SF
  - Pool and Spa – 2,307 SF
  - Treatment Room A – 155 SF
  - Wellness Reception – 121 SF
  - Kitchen – 1,292 SF
  - Restaurant – 3,401 SF
  - Bar/Lounge – 3,271 SF
  - Reception / Lounge – 1,309 SF

1.2 Heating, Ventilation, and Air Conditioning

1.2.1 Heating, Ventilation, and Air Conditioning Design Criteria

1.2.1.1 Design Criteria

- The design of the HVAC systems will be based on the following conditions:
    - Summer Environmental Conditions:
        - Outside Design Condition: 87F db and 71F wb
        - Interior Conditions: 75F db and 60% RH maximum
    - Winter Environmental Conditions:
        - Outside Design Conditions: -1F db
        - Interior conditions: 70F db, no humidity control provided
    - Ventilation Rates:
        - Mechanical Ventilation Rates per applicable edition of IMC

1.2.1.2 Codes and Standards

- All work will meet or exceed the latest requirements of all national, state, county, municipal, and other authorities exercising jurisdiction over mechanical construction at the project.
- Materials, equipment, and systems installed will meet all pertinent requirements of all nationally recognized approval agencies as well as applicable local codes.
- Applicable Codes include:
    - IBC 2015 with Maine Amendments
    - 2023 Maine Electrical Code which adapts and amends NFPA 70, National Electrical Code, 2023 Edition.
    - NFPA 72, National Fire Alarm Code, 2019 Edition
    - IMC 2015 with Maine Amendments
    - IECC 2021 and MUBEC Stretch Code
    - ASHRAE Standards
    - SMACNA Standards
- All required permits and inspections certificates will be obtained, paid for, and made available at the completion of the work.

1.2.2 HVAC Loads & Systems

1.2.2.1 HVAC Loads

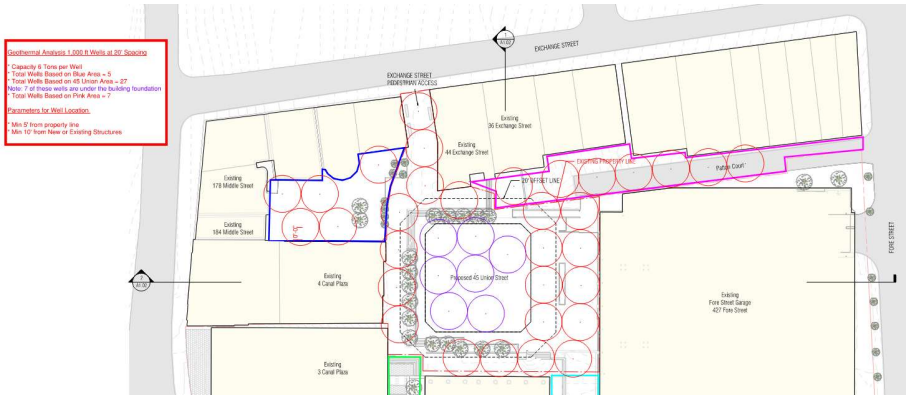
Metric	Hotel and Hotel Amenity	Residential and Residential Amenity	Restaurant and Beacon Level
Space Cooling (tons)	105	175	25
Space Heating (MBH)	820	1,400	190
Ventilation (CFM)	6,000	10,000	8,500
Ventilation Cooling Load (tons)	35	60	50
Ventilation Heating Load (MBH)	435	770	680

1.2.2.2 Heating and Cooling Systems [BASIS OF DESIGN - WATER SOURCE HEAT PUMPS]

- The mechanical system options are based on an all-electric building approach.
    - The building will be provided with a central condenser water loop that will provide simultaneous heating and cooling to the building.
        - The condenser water loop will consist of main vertical riser location(s) with horizontal distribution loops located at select intermediate floor(s) within the building.
        - The horizontal loops will further distribute to individual vertical condenser water supply and return risers that feed vertically-stacked water source heat pumps (WSHP) in each residence or key.
        - The in-unit WSHPs will have direct or ducted air distribution to provide heating and cooling for each residence or key.
        - Base building condenser water will be extended to horizontal type WSHPs in all amenity spaces for heating and cooling.
        - Each water source heat pump will consist of an insulated casing, supply fan, heat/cool refrigerant coil, refrigerant compressors with reversing valve, water cooled condenser with two-way isolation valve, EC fan motor, acoustical treatment and controls. Condenser water and condensate piping will be extended to each unit. The occupants will be able to select heating or cooling on a year-round basis.
        - The water temperature in the house side condenser water piping distribution system will be maintained between 88F in the cooling mode and 70F in heating mode.
    - Condenser Water Loop Heat Injection and Heat Rejection
        - The residential and hotel programs will be provided with a condenser water plant. Heat injection and rejection for the condenser water plant will be provided by an air-to-water heat pump plant. Heating redundancy for low outdoor ambient temperature conditions will be provided by electric resistance boilers. Each plant will consist of:

- Main house side condenser water circulating pumps
- Air-to-Water Heat Pumps (Primary) - to be located on the roof.
- Glycol side heat injection/rejection loop Pumps with VFDs
- Plate and frame heat exchangers to decouple house side hydronic systems from glycol side heat injection/rejection loop)
- House side heat injection/rejection pumps with VFDs
- Supplemental Electric Resistance Boilers
- HW pumps with VFDs associated with supplemental electric boilers
- House side condenser water piping distribution system between the plate and frame heat exchangers and all terminal water-source cooling and heating equipment located throughout the building. Condenser water risers will be fed from horizontal distribution loops located at select intermediate floors within the building
- Separately metered CW loops will be provided for residential program and hotel program
- Condenser water will also be used as heating source for heat pump type domestic hot water heaters
- Expansion tanks, air separators, chemical water treatment, controls, buffer tank is required, etc. for all hydronic systems.

- Alternate: The condenser water plant will incorporate a closed loop geothermal ground source heat pump system as a primary stage of heating and cooling (before air-source heat pump plant and backup electric resistance boiler). The geothermal system will comprise closed loop geothermal wells with circulating pumps (Primary) – assumes 1,000-foot wells on 30-foot centers with 6 Tons output per well. If the footprint of the building can be used for wells underneath, then 162 Tons of output is estimated. If other adjacent portions of the site can be used, then 234 Tons of output can be produced. A 5’ separation from the property line and 10’ separation from structures is assumed.



- Specialty Amenity
    - Swimming Pool

      The swimming pool will be provided with a packaged heating, cooling, dehumidification, and ventilation unit dedicated for the pool and spa area. Unit will be located on the mechanical level below the pool. Unit will be package water cooled heat pump type.

    - Kitchen
        - Commercial cooking kitchen program will be provided with commercial grease exhaust fans, black iron welded ductwork distribution with cleanouts, odor scrubbers, and makeup air units.
        - Run-around coils located within the grease exhaust pathway to facilitate energy recovery will be considered for the commercial cooking exhaust and makeup air-handling equipment (subject to meeting local codes and budget and space constraints).
        - Dedicated Make-up air handling unit (packaged air source heat pump with auxiliary electric heat) located on the roof will provide tempered air for hood make-up.

    - Restaurant and Beacon Level
        - Dedicated 100% outside air energy recovery type AHU (packaged air source heat pump with auxiliary electric heat) located on the roof will provide ventilation air to the Bacon Lounge and Restaurant.
        - Part of the return from these spaces air will be transferred to the kitchen for the balance of hood make-up, the rest of the return/exhaust air will be delivered back to the unit for energy recovery via enthalpy wheel.
        - Space heating and cooling will be provided by water source heat pumps.

    - Miscellaneous Amenities
        - All further building amenities will be provided space heating and cooling from the building plant with terminal unit configurations coordinated around the space program. Ventilation will be extended from the central energy recovery units.

1.2.2.3 Ventilation Systems [DEDICATED ERU FOR RESIDENTIAL PROGRAM AND DEDICATED ERU FOR HOTEL PROGRAM]

- Residential / Hotel
    - The residential program will be served by dedicated energy recovery units (ERU) located at the roof with horizontal distribution at the top of the building. The hotel program will be served by a dedicated ERU at an intermediate floor with horizontal distribution at at that level.

    - The Resi ERU will be outdoor type 100% outside air energy recovery units. The Hotel ERU will be indoor type 100% outside air energy recovery units Units will include
        - supply fans, enthalpy energy recovery wheel, MERV 13 supply filters, exhaust fans and exhaust air pre-filters.

        - Heating and Cooling Systems: The residential ERU will be all-electric air source

heat pump with auxiliary electric heat and the hotel ERU will be water-cooled heat pump type. Alternatively, both units will be change-over hot/chilled water with heating/cooling media extended directly from ASHP glycol loop.

- Hotel and residential unit bathroom exhaust air will be exhausted through the energy recovery units and discharge to the outdoors. System will consist of exhaust register and horizontal ducts connected to vertical exhaust risers with 22" boot. Exhaust ductwork will be directed to the energy recovery units.

- Dedicated exhaust riser will be provided for trash rooms, laundry rooms, and BOH areas.

- Ventilation air will be ducted from the ERU units to the multiple risers in the corridor, hotel room and/or residential unit supply air risers. Horizontal supply air branches from the shafts (protected with fire/smoke dampers) will be extended to each unit (in case of ductless equipment), or closet type terminal equipment serving the units. Corridor supply riser will also be used for the Code required smoke purge after a fire.

- Amenity ventilation air from the ERUs will be ducted to the amenity space terminal unit to suffice the code-minimum ventilation requirements of each space.

- Select spaces identified by the architect may incorporate natural ventilation through dampered openings in the envelope as an alternate source of ventilation to the ERUs, when the outdoor ambient temperature permits. Local mechanical ventilation terminal units will be interlocked with the natural ventilation dampered openings to turn down or turn off when natural ventilation is engaged.

1.2.2.4 Miscellaneous HVAC Systems

- Building MEP spaces including electrical rooms, fire pump rooms, water service rooms, fire water service rooms, fuel oil tank room, fuel oil storage room, and other miscellaneous MEP/FP spaces will be provided with ventilation. Systems will be provided for each space and will generally consist of a supply and exhaust air fans, associated duct distribution, and controls. The transformer vault will be provided with a smoke control exhaust fan system in accordance with the code and as required by Eversource.

- Elevator machine rooms (or elevator control rooms for machine-less elevators) will be air conditioned by ductless split systems or equipped with exhaust for heat removal. Elevator hoistways will have a dampered air-relief vent at the top for heat removal and temperature control, which will be controlled by a temperature sensor within the hoistway.

- Electric unit and cabinet heaters will provide heating for miscellaneous spaces (electric rooms, mechanical rooms, loading docks, stairs – including those extending below-grade, etc.) located throughout the building.

- Telephone equipment rooms, electric rooms, etc. located on the residential floors will be provided with passive ventilation only. Main telecommunications rooms (MDF Rooms) will be provided with ductless split systems.

- Each stairwell in the building that exceeds 70 feet in height will be provided with a stair pressurization system. Each system will consist of a supply fan with a variable frequency drive on the main roof level and vertical duct riser behind the stair with supply registers (one per three or four floors) to pressurize the stair. All ductwork located indoors and not in a fire-rated shaft will be encased in a 2-hour fire-rated enclosure. Fan equipment will be

located outdoors or within a 2-hour rated mechanical room.

- The building will be provided with a post-fire smoke purge systems that will utilize the energy recovery unit supply air distribution ducts and dedicated smoke purge fans sized to provide required (4) air changes per hour for the largest residential apartment volume plus the total volume of the residential common corridor.

- Controls: Building Management System (BMS) will be provided to control and monitor all mechanical systems serving the building, locate above-grade or below-grade. The system will be of the electronic Direct Digital Control (DDC) type.

- Emergency Generator Fuel System: A diesel fuel oil storage and transfer system will provide fuel for the emergency generator. The system will include an indoor storage tank within a 3-hour rated room, duplex fuel oil transfer system, oil supply and return lines in a containment pipe, fuel oil fill line in a containment pipe, vent piping, leak detection system, tank gauges, appurtenances, and room ventilation. All fuel oil piping running through the building must be enclosed within a dedicate fire rated assembly, separated from all other systems, in accordance with all applicable codes. Alternatively , if the generator is located outside the building on grade, or in a below-grade vault, or on elevated structure, or any other locateion where it can be fueled directly, the generator will be provided with integral belly tank and no fuel storage/transfer system will be required.

- Laundry mechanical exhaust will not be provided as the hotel program will have offsite laundry and the residential unit will have condensing dryers.

- Residential units and hotel keys to have recirculating hoods. Vented hoods and the exhaust / ductwork required for them are not intended to be a part of this buildings scope.

- Residential dryers will be ventless type and the exhaust / ductwork required for them are not intended to be a part of this buildings scope

October 15, 2025

45 Union Street
Construction Management Plan

Prepared For: 45 Union Street – Major Site Plan Application

Project Applicant: East Brown Cow – Kowtower LLC

Construction Manager: Consigli Construction

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Construction Principles

The purpose of this Construction Management plan is to identify, mitigate and plan for all potential impacts throughout the duration of building 45 Union Street. East Brown Cow – Kowtower LLC and Consigli Construction Co., Inc. will strive for a seamless, incident-free project by means of typical practices used to ensure that public safety and community are at the forefront of priorities.

Throughout this CM plan we will refer to specific examples of potential construction practices, traffic control scenarios, neighboring building considerations and public safety; as well as measures in which these items will be managed throughout the project to accommodate the community as much as possible. While we will take the necessary precautions to meet City and State requirements for traffic, noise, dust, vibration, etc., this project will be disruptive to adjacent properties compared to the current condition. Along with our subcontractor team members, it is imperative that we have complete participation from all parties affiliated with the project to maintain our strict safety requirements and ensure a quality building.

Consigli Construction has been commissioned to construct a new mixed-use development located at the existing surface lot off Union St between Fore St and Middle St. The building's footprint is approximately 6,373 GSF at a total height 365'0" to roof of top occupiable level above grade. The structure will be primarily comprised of cast- in-place concrete with a curtainwall façade.

Consigli has begun to plan the project's schedule, site logistics and safety protocols that will be generally covered in this report with graphics and narratives. This CM plan will continually be updated to meet the needs of the project, community and the city as the project progresses. We aim to deliver a safe and quality project to East Brown Cow – Kowtower LLC, their guests and the City of Portland by means of communication, teamwork and stewardship.

Construction Administration and Communication

Consigli Construction will be the Construction Manager on site throughout the duration of the project. As such, there will be a dedicated team of individuals tasked with managing quality, schedule, site logistics and safety. These personnel will manage and enforce the proposed CMP with all associated subcontractors and material vendors.

Dave Thomas – Regional Director
207-650-8665, dthomas@consigli.com

Travis Kirby – Project Executive
207-272-6980, tkirby@consigli.com

Site Communication

With the proximity to occupied buildings, community outreach and communication will be imperative throughout construction to keep the public informed of the expected turbulences caused by the project. Site signage will be prominently displayed to show pedestrian access around the site and any updates to the proposed CMP.

Quarterly reporting and updating of the CMP will be required to update the City and community of the following activities:

1) Construction schedule updates.
2) Material deliveries, including notice of any oversized loads that may impact public traffic.
3) Requests for upcoming off-hours work including weekends and holidays.
4) Notice of any upcoming activities that may produce strong noise, vibration or dust that could adversely affect the neighboring communities.
5) Requests for any street openings or public sidewalk work to be completed as part of the construction contract.

In addition, East Brown Cow has elected to develop a Tenant & Neighbor Construction Communications Plan that is further described on page 11.

Construction Schedule & Logistics

Project Work Hours

Construction work hours will be in accordance with section 17-18.

The project site is located within zoning group B3 – Downtown Business but is within 500 feet of buildings used for residential purposes. As such, work hours will be limited to Monday – Friday 7:00am – 6:00pm. Should work extend into Saturdays, the use of heavy equipment will be kept within the time constraints of 8:00am – 4:00pm.

Project Schedule/Logistics

A full construction schedule shall be provided following completion of the project design documents and prior to the preconstruction meeting.

Regarding scheduled work to take place within public streets and sidewalks, this work will comply with Section 25-129 – Noise, dust and debris. Work associated with connections to public utilities, traffic lane reconfigurations, and sidewalk construction will require work to be executed within Union St, Exchange St and Fore St. This work will be scheduled and planned with the City of Portland prior to the execution. All logistical concerns will be addressed with the City prior to starting the work. Temporary barricades, ramps and signage will be required during the installation to control pedestrian/vehicle movements around the work.

Material Storage and Laydown Area

The construction of the building will require careful planning and management of the daily occurrences within the site limits. The logistical plan that is currently outlined is intended to keep all construction staging, laydown and temporary storage within the project limits and secured by temporary fencing. With designated areas delegated to subcontractors the site will remain accessible by incoming trucks without causing a queueing affect outside of the fence. A material staging area will be set up in the existing 55 Union Street site, to the west of 200 Middle Street, area to mitigate truck traffic on Union and allow materials to enter the site safely. Offsite storage will also be utilized by the general contractor and subcontractors until the project is ready to receive such materials. Consigli will manage LEAN practices to assist with site organization and just-in- time deliveries.

Material Deliveries

The construction of the building will require coordination of material deliveries throughout the duration of the project. Logistics plans will show the planned lay-down areas, truck routes and

safety protocols that will be in place prior to the start of construction and reviewed at the preconstruction meeting. See page 11 for the initial site plan.

Contractor/Public Parking

The current constraints of the project site do not allow for parking of subcontractors within the project limits. As such, contractor parking will be delegated to offsite areas via parking garages, parking lots or on-street parking meters.

Existing & Historic Building Protection

45 Union St will be constructed adjacent to several existing, occupied buildings including a number of 19th century structures in the adjacent Portland Waterfont/Old Port Historic District. As a precaution during the subsurface work, an engineered support of excavation (SOE) system will be installed to allow for safe excavation without the need to slope or bench the slope. The SOE will retain the unimpacted areas to ensure that existing foundations are not undermined. The working area within the SOE will be 5'-10' beyond the edge of the foundation wall and will be coordinated and reviewed with the locations of each building surrounding the site.

Site Dewatering

Managing site dewatering during a construction project is critical to maintaining safe, efficient, and compliant operations. A well-planned dewatering program ensures that groundwater and surface water are properly controlled to provide dry, stable conditions for excavation, foundation work, and utility installation. This involves evaluating soil and groundwater conditions, selecting the appropriate method—such as wellpoints, sump pumps, or deep wells—and continuously monitoring discharge for environmental compliance. Effective dewatering minimizes the risk of soil instability, equipment delays, and water-related damage while protecting adjacent structures and natural resources. By integrating dewatering into the overall project logistics and safety plan, contractors can maintain productivity and uphold regulatory standards throughout construction.

Tower Crane Management

This project will require the use of a weathervaning tower crane, which is designed to rotate freely with the wind when not in use to reduce structural stress and maintain safety. Because the crane's jib may swing over adjacent properties during operation or weathervaning, abutter agreements may be needed to establish secure temporary legal access to the air rights above neighboring buildings. These agreements help protect both the contractor and the property owner by clearly defining responsibilities, safety protocols, and liability coverage for the duration of crane operations. Consigli and East Brown Cow – Kowtower LLC will communicate directly on this item with adjacent property owners.

Fire Protection for Construction Activities

The 2013 Standard for Safeguarding Construction, Alteration and Demolition Operations will be enforced on this project by utilizing best management practices to mitigate the fire risks associated with the construction of the high-rise building. Consigli and its subcontractors will execute the following measures to provide a safe and secure workplace:

1) PFD Fire Command Center: This centralized location will hold all current project information and will act as the first responders meeting point to obtain the most up to date information of construction. The following documents will be found at this location:
    a. Hot Work Permits: To be filled out daily by any person performing work that will generate a spark or create a potential fire risk on the job site. The permits are to be completed and approved by Consigli prior to work starting.
    b. Updated Construction Schedule
    c. Updated Construction Logistics Plan
    d. Pre-Incident Fire Plan

2) On Site Fuel Storage: Different flammable liquids will be required throughout construction. A free standing, 30-minute fire-rated enclosure will be built to safely and securely store all flammable liquids and gases. Fueling trucks will be used as needed but under no circumstances be allowed to be parked or stored on site for any extended period.

3) Means of Egress: The building will be permanently equipped with (2) 2-way stair assemblies for means of egress. During construction it is the intent to provide temporary stairs until the permanent stairs are installed and conform to code. These stairs will be identified with temporary signage throughout construction indicating the floor level and exit path direction

4) Good Housekeeping: Consigli Construction will provide necessary dumpsters for the removal of debris from the site. All subcontractors are responsible for the daily clean-up of their work areas to ensure that no materials or tools are left out over night that could pose a hazard to the building. Daily safety walks by the Construction Superintendent will be utilized to ensure that all working floors are equipped with an inspected fire extinguisher and clear means of egress in the event of an emergency. Trash chutes and material hoists may be utilized to safely and efficiently remove all debris from the project.

5) On-site Security: The project site will be secured everyday by means of a temporary, post driven construction fence and scrim. Lockable gates will be located at (2) locations for site access.

6) Rapid Communication: Evacuation notification will be provided by means of 2-way radios/cellular devices as well as strategically positioned air horns. Upon evacuation of the building all project personnel will report to the muster point location where the Construction Manager and all subcontractor foremen will perform accountability checks. The General Contractor field staff will then be dispatched to all project entry points and the PFD Command Center. Upon arrival of the first responders to the PFD Command Center the General Contractor will provide an accountability and incident briefing.

Public Safety

The construction of the new 45 Union Street will be near pedestrian right of way and will interact with public traffic throughout the duration of the project. Material deliveries, the use of cranes, lifts and other heavy machinery all have the potential to impact typical public activity. As a member of the Portland community, Consigli will strive to limit, mitigate and avoid these potential impacts as much as possible by means of controlling noise, on site dust, vibrations and traffic. By educating and informing the neighborhoods to the construction activities taking place we will aim to build to a project that produces the minimal of impacts to the Old Port Square and Old Port communities.

Noise

Construction activities throughout the project will create noise that leaves the project site. It is the intent of the project team to limit the exposure to the noise by following section 17-18 of the City of Portland Code of Ordinances. This project site is located within 500 feet of buildings classified as residential. As such, the project hours will be limited the 7:00am – 6:00pm, Monday – Friday. Should any weekend or holiday work be required the use of heavy machinery will not commence before 8:00am. When this work is required, no less than 2 weeks' advanced notice will be provided to East Brown Cow – Kowtower LLC and the neighboring users, tenants and property owners.

Dust Control/Air Quality

Maintaining an environmentally conscious project site will be a major priority for the project team to ensure safety not only for the neighboring communities but also for the construction workers on site day after day. All soils and debris will be kept within the project limits following the State of Maine Department of Environmental Protection erosion control Best Management Practices:

1) Erosion controlled construction entrances
2) Tarped dump trucks leaving the site with soil/debris
3) On-going sidewalk and street cleaning activities
4) The installation of temporary, compacted roads within the job site
5) Using wetting agents to control dust
6) Covering stock piles when material is to be piled for long periods of time
7) Smoking will not be allowed on the job site

Vibration Monitoring

Some of the construction practices required for this project will result in ground vibration waves that may transmit to nearby buildings. Prior to any potential vibration causing activities taking place a pre-construction survey will be conducted to review and

document existing conditions. The survey will encompass all properties immediately abutting the proposed project site to include the following addresses:

- 30 Exchange Street – 30 Exchange Street LLC
- 34 Exchange Street – Joseph & Sion Palacci
- 36 Exchange Street – Cow Exchange LLC
- 44 Exchange Street – Cow Exchange LLC
- 50 Exchange Street – Fifty Exchange LLC
- 56 Exchange Street – Old Port Arms LLC
- 188 Middle Street – Cow Plaza 4 LLC
- 190 Middle Street – Cow Plaza 3 LLC
- 200 Middle Street – Cow Plaza 1 LLC
- 427 Fore St – Old Port Square Garage – Cow Plaza Garage LLC

Pavement removal, vibratory compaction and temporary shoring will be employed on this project and will be monitored by a third-party monitoring company. A pre-construction meeting will be planned with abutting property owners to discuss geological conditions, construction specifications and methods of installation that create vibration.

Traffic Control

Throughout the construction process Union St will experience increased traffic due to construction activities. Material deliveries, contractor access and public utility integration will be encountered and mitigated through coordinated logistics plans (starting on page 11), on site safety personnel, way-finding signage and well-organized traffic control devices. East Brown Cow – Kowtower LLC & Consigli will strive to inform and direct the neighborhood to the activities taking place in public areas as they progress through completion. All traffic management and phasing plans affecting vehicles will be submitted to the City for approval prior to commencement of the work.

The main entrance point to the construction project will be through the Union St entrance, west of the project site. To navigate deliveries to the project site a flagger will be stationed at Union St, as needed, to usher the trucks into the right of way. Trucks and trailers will exit the project site through the same right of way to Union St. Due to the large turn radius of some of these trucks, it will be necessary to temporarily close parking spaces on Union St.

Proximity to Neighboring Businesses

During the process of construction great attention will be required to ensure that homes and places of business are not overly impacted by construction activities or traffic. While the logistics of the CMP does not require work associated with or access through the adjacent properties, certain measures will be taken to minimize the potential for a disturbance. Erosion control, physical barriers, temporary shoring and staged material deliveries will be coordinated during construction.

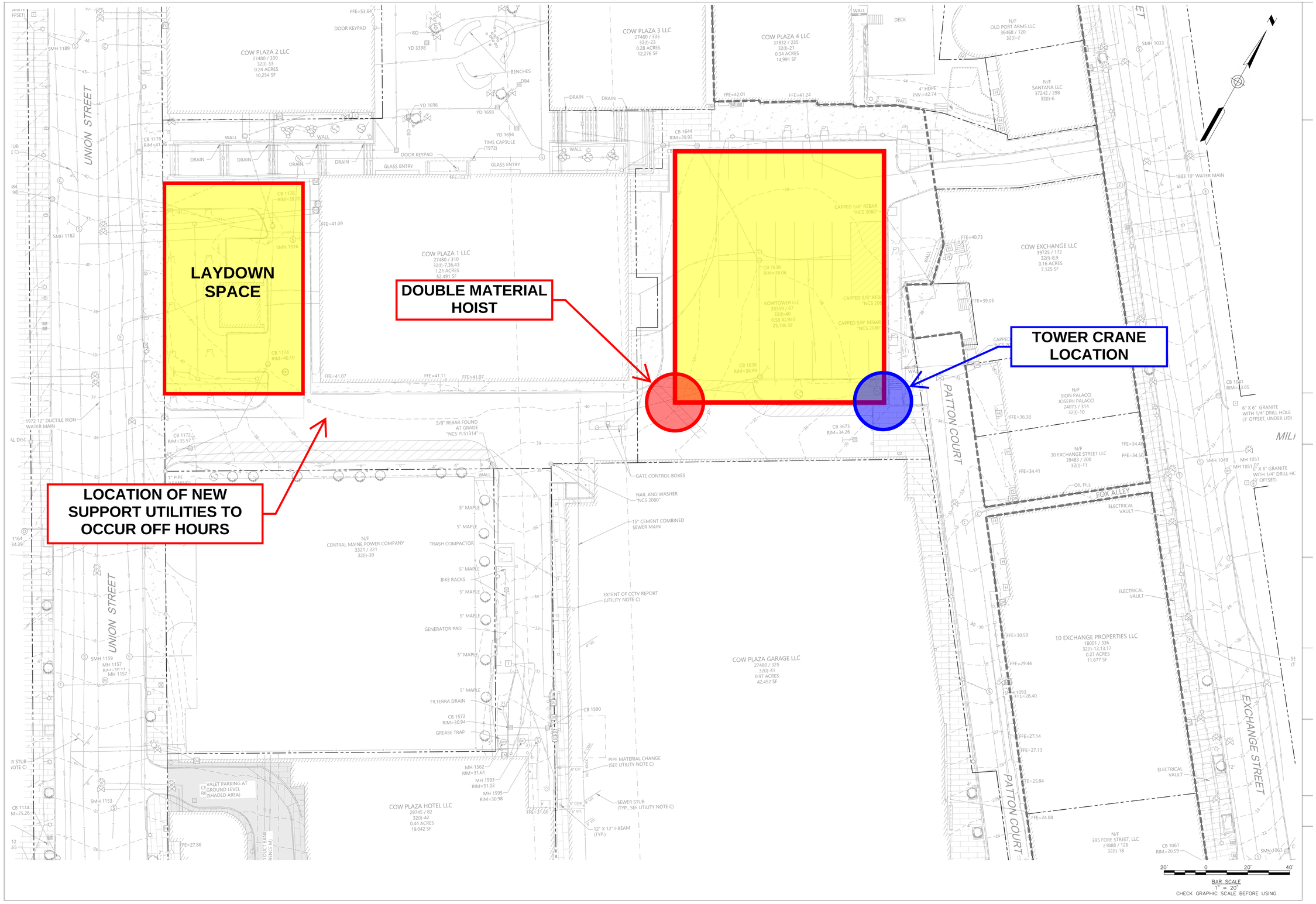
Consigli and East Brown Cow – Kowtower LLC are committed to working through logistical challenges with the neighbors and providing adequate and reasonable measures to accommodate their requests.

Tenant & Neighbor Construction Communications Plan

Clear and consistent communication is an important part of managing a high-rise construction project. Because these projects often span multiple years and can create impacts such as noise, traffic disruptions, and changes to pedestrian access, maintaining transparency with the surrounding users, tenants, and property owners helps build trust and reduce concerns.

Consigli and East Brown Cow – Kowtower LLC will develop a Tenant & Neighbor Construction Communications Plan that will provide regular updates through potentially some or all of the following avenues: letters, a project website, and/or community meetings. This will keep everyone informed about upcoming activities, milestones, and potential disruptions.

Establishing a dedicated point of contact for questions or issues also ensures timely responses and demonstrates accountability. By prioritizing proactive communication, the project team fosters positive relationships with users, tenants, and property owners and supports smoother project execution within the urban environment.



45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
100 Properzi Way
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CIVIL ENGINEERING
Woodard & Curran
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LANDSCAPE ARCHITECT
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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CS

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

1"=20'

DRAWING TITLE

EXISTING CONDITIONS

SHEET NUMBER

C-001

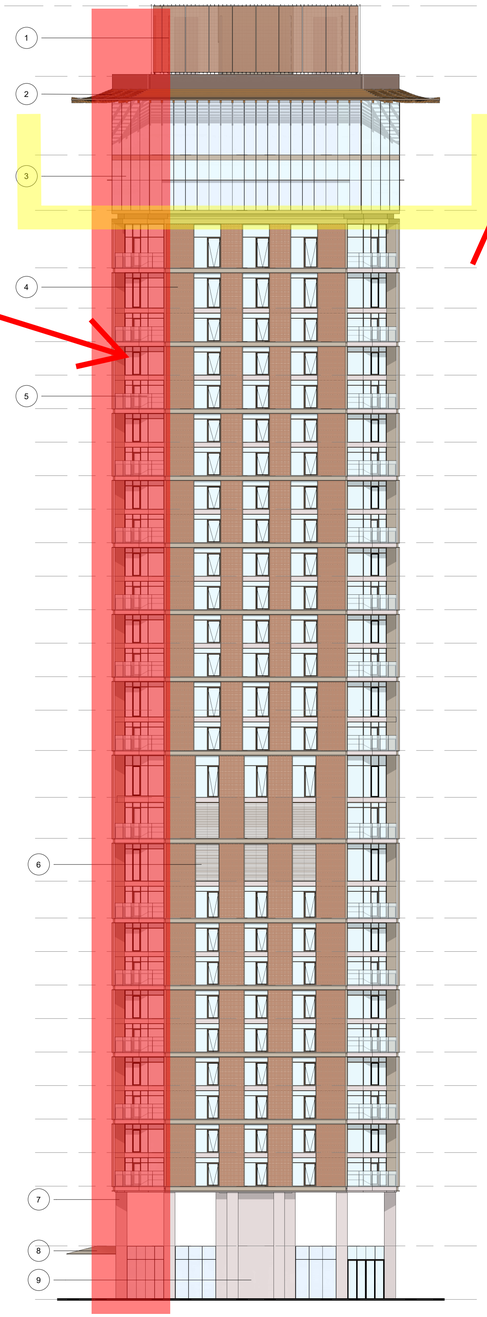
3/19/2025 9:54:17 AM

Material Legend

Key Value	Keynote Text				
1	Metallic Equipment Screen	5	Glass Railing	9	Exterior Wall Panels
2	Mass Timber Roof Trellis	6	Metallic Mechanical Louvers		
3	Low Reflectivity Glass with High Performance Coatings	7	Concrete Column		
4	Metallic Screen	8	Canopy with Metallic Finish		

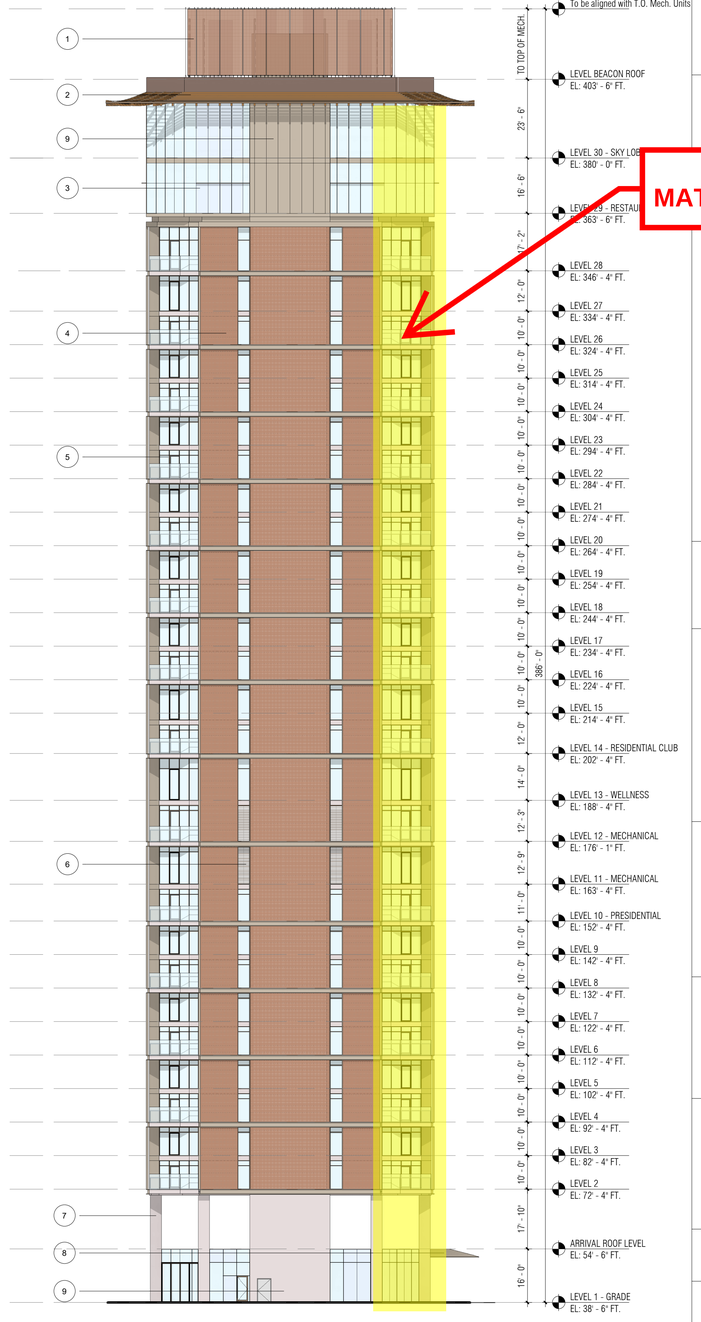
TOWER CRANE ATTACHED TO BUILDING STRUCTURE

CANTELEVERED STAGING FOR ROOF INSTALLATION



2 EAST-ELEVATION
3/64" = 1'-0"

DOUBLE MATERIAL HOIST



4 WEST-ELEVATION
3/64" = 1'-0"

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN



NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	
DATE	CHECKED BY
10/03/25	
PHASE	
SCHEMATIC DESIGN	

SCALE
As indicated

DRAWING TITLE
OVERALL ELEVATIONS

SHEET NUMBER
A40.03

10/6/2025 2:47:35 PM

SafdieArchitects

via electronic mail

October 01, 2025

Eric Freeman, Planner
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101
efreeman@portlandmaine.gov

Re: Major Site Plan Application – 45 Union Street, Bird Friendly Design

Dear Eric:

In support of the Site Plan Application for the above referenced project, please find below our summary of the applicable requirements and proposed design approach.

Reference Code:

City of Portland, Buildings and Building Regulations
Code of Ordinances
Chapter 6, Sec. 6-176
Rev. 06-17-2024

Summary of applicable Requirements:

- Applicable to new construction or additions greater than 10,000 SF in floor area.
- Facades up to 75 feet above grade shall be constructed with bird friendly materials (maximum threat factor of 30).
- Non bird-friendly materials may be used if they total no more than 10 square feet within any 10-by-10 foot area (i.e. 10% in any 100 sf area).
- Any exterior feature with a clear line of sight (e.g. awnings, glass railings, windbreaks, or glass fins more than 10 inches from the façade) must be made of bird-friendly materials, regardless of height.
- See-through glass near corners or in parallel panels must be bird-friendly up to 75'.
- Adjacent to a green roof on the same building shall be constructed with bird friendly materials up to 12 feet above the horizontal surface of the green roof.

Exemptions:

- Residential buildings (requirements do apply to hotel projects).
- Operable sash windows including: casement, awning, sliders, and tilt turns.
- Glazing on ground floor for retail storefronts or F&B including bars and restaurants.

Proposed Bird-Friendly Design approaches

- Ground level glazing will be designed to have maximum threat factor of 30, except as exempted for retail and food & beverage establishments such as the café located on the northern half of the ground level.
- Above ground level up to 75 feet above grade, facades employ multiple measures:
    - Metallic screens with translucent glazing located behind, or solid walls account for approximately 60% of the façade.
    - Transparent glazing is recessed back approximately 12 inches from the metallic screens.
    - Transparent glazing will be designed to have maximum threat factor of 30, except as exempted for operable windows.
    - Transom windows may also use non–bird-friendly glass, provided the area does not exceed 10 square feet within any 10-by-10-foot section of wall. (This is in addition to operable windows, which are already permitted.)
- Transparent glass railings will be designed to have maximum threat factor of 30.
- See-through glass near corners is avoided, except at levels 29 and 30 which are from 325 to 365 feet above grade, significantly above the 75 ft. requirements.
- Green roof areas are not included in the design.
- Glass specifications have not been finalized; however, “Bird Friendly” glass included in the design is anticipated to be a product, such as Guardian’s Birdfirst UV.

Additional measures:

Although not required by City Code, the project incorporates the following additional measures, consistent with industry standard bird-friendly design guidelines.

- Building facades are articulated with horizontal bands of solid material to break down the zones of vision glass
- Glass included in the design is anticipated to be a product with a high-performance, low reflectivity coating to limit reflection of the sky and external vegetation.
- Lighting will be designed to minimize light pollution, trespass, and glare.

Sincerely,



David Orens, AIA
Principal
Safdie Architects

12 Mountfort Street
Portland, Maine 04101
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

Att. AA

Via Electronic Mail

September 17, 2025

Eric Freeman, Planner
City of Portland
389 Congress Street, 4th Floor
Portland, ME 04101
efreeman@portlandmaine.gov

Re: 45 Union Street Major Site Plan Application (PL-003157-2024)
Neighborhood Meeting Certification

Dear Eric:

I, Caitlin Suhr, consultant for East Brown Cow – Kowtower LLC, hereby certify that a Neighborhood Meeting was held at 5:30 PM on Tuesday, September 2, at 200 Middle Street, for the proposed mixed-use development located at 45 Union Street.

I also certify that on August 21, 2025, notices were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes owners within 500 feet of the project site.

2. Residents on the "interested parties" list.

Sincerely,

Woodard & Curran, Inc.

Caitlin Suhr, PE
Project Manager

Attachments:
1. Copy of the notice sent
2. Sign-in sheets
3. Record of Feedback

12 Mountfort Street
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August 21, 2025

Dear Neighbor,

Woodard & Curran, acting as the agent for East Brown Cow – Kowtower LLC (Applicant), has submitted a Major Site Plan Application to the City of Portland for a proposed mixed-use development at 45 Union Street in Portland, Maine. We invite you to join us and others from the project team for a Neighborhood Meeting to discuss the project. The meeting will include a presentation providing an overview of the project and City review process. An opportunity to provide feedback and ask questions will follow.

Neighborhood Meeting

Meeting Location: 200 Middle Street, Suite 202, Portland, ME 04101

Meeting Date: Tuesday, September 2, 2025

Meeting Time: 5:30 PM

The City of Portland's Land Use Code requires that property owners within 500 feet of the proposed development and residents on the City's "interested parties list" be invited to participate in a Neighborhood Meeting. Your contact information has been provided to us by the City of Portland as part of these lists. A sign-in sheet will be circulated at the meeting, and a record of the meeting will be taken. Both the sign-in sheet and record will be submitted to the Planning Board as part of the Major Site Plan application process.

If you have any questions, please contact me at 207-558-3707 or via email at csuhr@woodardcurran.com. We hope to see you.

Sincerely,

Woodard & Curran, Inc.

Caitlin Suhr, PE
Project Manager

Note:
Note: Under the City of Portland land use code, an applicant for a major site plan is required to hold a neighborhood meeting no less than 21 calendar days before a workshop, or, in the case that no workshop is required, a public hearing on the application. Should you wish to offer additional comments on this proposed development, you may forward them by e-mail to planning@portlandmaine.gov or by mail to the Planning and Urban Development Department, Planning Division, 4th Floor, 389 Congress Street Portland, ME 04101.

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Portland, Maine 04101
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NEIGHBORHOOD MEETING

Woodard & Curran

DATE: **September 2, 2025**

RE: **45 Union Street**
Neighborhood Meeting Attendance List

Thank you for attending tonight's public Neighborhood Meeting for the proposed mixed-use development at 45 Union Street in Portland, Maine. Please sign in below. This attendance list will be provided to the City of Portland as part of the Site Plan Permitting process.

Thank you,
45 Union Street Project Team

Name:	Email Address:
Mariagrazia Zanardi	MARIAGRAZIA.ZANARDI@TISCALI.IT
Irwin Gratz	igratz@mainepublic.org
Wendy Cherubini	wcherubini@gmail.com
John Kaminski	jKmaine@gmail.com
PATRICK CARROLL	PCARROLL@TCCO.COM
Sheri Evans	Christye93@hotmail.com
Thora Easton	tteaston@gmail.com
Tom Colby	TOM.COLBY@BANGOR.COM
Alison Frazee	afrazee@portlandlandmarks.org
Steu Parker	steu@daggetparker.com

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NEIGHBORHOOD MEETING

Woodard & Curran

DATE: **September 2, 2025**

RE: **45 Union Street**
Neighborhood Meeting Attendance List

Thank you for attending tonight's public Neighborhood Meeting for the proposed mixed-use development at 45 Union Street in Portland, Maine. Please sign in below. This attendance list will be provided to the City of Portland as part of the Site Plan Permitting process.

Thank you,
45 Union Street Project Team

Name:	Email Address:
David Thomas	dthomas@consrgl.com
Jane Lee	janeleeatty@aol.
Tina Schneider	Tina.Schneider@mgine.edu
Drew Anderson	danderson@mpmlaw.com
Jim Brady	jamesjbrady@gmail.com
Sydney Pfeffer	sydpfeffer@gmail.com
Richard Pfeffer	richard@griffys.com
John Sterling	ALWAYS2@AOL.COM
Jann Sterling	BOZE88@aol.com
Michaela Spannaus	MLSPANNAUS@gmail.com

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NEIGHBORHOOD MEETING

Woodard & Curran

DATE: **September 2, 2025**

RE: **45 Union Street**
Neighborhood Meeting Attendance List

Thank you for attending tonight's public Neighborhood Meeting for the proposed mixed-use development at 45 Union Street in Portland, Maine. Please sign in below. This attendance list will be provided to the City of Portland as part of the Site Plan Permitting process.

Thank you,
45 Union Street Project Team

Name:	Email Address:
SONIA ROBERTSON	robertsonsonia@hotmail.com

12 Mountfort Street
Portland, Maine 04101
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

NEIGHBORHOOD MEETING

DATE: **September 2, 2025**

RE: **45 Union Street**
Neighborhood Meeting – Record of Feedback

The Neighborhood Meeting for 45 Union Street was held on Tuesday, September 2, 2025, starting at 5:30 PM. The meeting had 21 signed in attendees (see attached sign in sheets) as well as representatives from East Brown Cow – Kowtower LLC, Longfellow Communications, and Woodard & Curran.

The meeting began with a presentation by Caitlin Suhr, PE, Project Manager at Woodard & Curran, which included the following agenda items:

- Purpose of meeting
- Project overview
- Project location, zoning, and land use code considerations
- Existing conditions, site plan, and utility plan
- Architectural renderings
- Overview of City review process

After the presentation, at 5:47 PM, the floor was opened to questions and discussion. The following notes provide a summary of the discussion including questions asked, and responses provided.

- Q: What will the parking demand be for the hotel and residential uses, and what impact will this have on the public?
    - A: Though not required by the City's Site Plan process, a parking study will be completed for the project, which is currently underway. Preliminary analysis indicates that the applicant will not convert the Old Port Square garage from public use as a result of the project.
- Q: When is the earliest possible ground breaking for construction?
    - A: Applicant anticipates construction starting somewhere within the window of 2027-2035.
- Q: What is the motivation behind maximizing the allowable height?
    - A: The building height is largely driven by the small footprint (roughly 6,000 SF), and the need to accommodate the desired programming.
- Q: How many residential units?

- A: The current programming includes 88 hotel rooms and 73 condos, with a mix of 1- and 2- bedroom condos.

- Q: What is the tallest building currently in Portland?
  - A: We understand that The Casco at 210 Federal Street is the currently tallest building in Portland (and tallest residential building in Maine), at around 210 feet, and 18 stories.
- Q: What were the considerations for the number of hotel and residential units?
  - A: The project has undergone a number of iterations to identify the programming that works for the project, and is somewhat driven by the size of the building footprint and required floor layouts for the different uses. The smallest hotel room is around 290 square feet, and the smallest residential unit is around 600 square feet.
- Q: What will the construction impact be on surrounding buildings?
  - A: A preliminary Construction Management Plan has been developed for the project to address construction items such as phasing, vibration monitoring, dust control, and so forth. This plan was submitted with the Site Plan Application. As the project advances through design, the Construction Management Plan will continue to be refined.
- Q: How will the parking be handled and what will the impact be on residents?
  - A: Applicant appreciates the concern around parking and understands that serving residential parkers is important. The parking study currently in progress will help inform the parking approach, and will be shared with the City.
- Q: What were the sustainability considerations for the site and building design?
  - The site design will include native local plants for landscaping and locally sourced hardscape to the extent practicable. The applicant is working with Trend Solar for sustainability on the project and the intent is to at a minimum meet building code requirements.
- Q: What is the project's address and why was it selected?
  - The project's address is 45 Union Street. It was determined through a year-long readdressing process with the City, including the Department of Public Works, and is a result of fire code and emergency access requirements.
- Q: Will the tower have another name other than 45 Union Street?
  - At this time, the project is identified as 45 Union Street. There is potential for it to have another name, based on branding, which is ongoing.
- Q: In 2019, EBC imagined this building to be 20 stories; why is now 30 stories?

- A: The building design has been refined through the evolution of design and changes to ReCode that now allow the project to move forward.

- Q: Is there room in the Old Port Square Garage to accommodate the parking? How frequently in the past year has the Old Port Square Garage been full?
    - The garage has been full only 1-2 times within the last 2 years. As previously noted, a parking study is currently underway and will help inform the parking approach.

- Q: When will the traffic impact study be done?
    - The scoping document for the traffic impact study is currently in progress and will be submitted to the City for review. After the City's review of the scoping document and their feedback, the traffic impact study will be completed and submitted to the City for review.

- Q: Will the parking study consider bike, transit, and other modes of transportation?
    - A: The parking study considers alternative modes of transportation. Additionally, a Traffic Demand Management Plan has been developed for the project, which includes strategies to encourage the use of alternative modes of transportation other than single-occupancy vehicles.

- Q: Can you clarify the project's overlap with the historic district?
    - A: A small portion of the site, the existing walkway from Exchange Street, is located within the Waterfront (Old Port) Historic District. The majority of the site, including the building, is not located within the Historic District. The applicant has coordinated with the City and confirmed that the building design will not be subject to Historic Preservation review, however the portion of the site located within the Historic District will be.

- Q: Will improvements or changes to the CMP substation be incorporated to the project?
    - A: The applicant and its design team have had ongoing coordination with CMP related to the electrical upgrades required for the project, however at this time there are no changes to the CMP substation that are included in the project.

- Q: Will the hotel operations extend to other buildings within Old Port Square?
    - A: There is no immediate intent to directly connect the hotel uses with other existing buildings in Old Port Square.

- Q: How will the site be accessed for construction? Will Fox Court be used?
    - Construction access is anticipated to be through Union Street. It is not anticipated that construction vehicles will access the site through Fox Court.

- Q: When are the traffic counts completed?

- Traffic counts are completed within the allowable windows per the City guidelines and requirements, and will be described in the traffic study.

- Q: How long is the site plan approval valid for?
  - The site plan approval is valid for one year, and the City may grant up to two 1-year extensions.
- Q: What is the traffic impact study and does it consider construction vehicles?
  - The traffic impact study considers the post-construction occupancy of the building. The Construction Management Plan considers vehicle access during construction.
- Q: Has Greater Portland Landmarks (GPL) provided input on the project?
  - A: Alison Frazee, Director of Advocacy with GPL, was at the meeting and confirmed that the applicant has had ongoing coordination with GPL.

The meeting was closed at 6:30 PM, after it was confirmed that there were no remaining questions from the attendees.

Caitlin Suhr

From: COUGH, JAMES <jcough@cmpco.com>
Sent: Thursday, September 25, 2025 3:30 PM
To: Caitlin Suhr; Todd Dominski
Cc: MITCHELL, JOSHUA; BOUCHER BOUCHER, ANTHONY
Subject: 45 Union Street Portland, ME (formerly Canal Plaza) CMP Three Phase Service Process and Ability to Serve Letter
Attachments: Easement_Information_Worksheet.doc; Standard Easement Sample.pdf; blank W9.pdf; CMP EDET January 2025.xlsx; 905-5579.pdf

Caitlin Suhr
Woodard & Curran
12 Mountfort Street
Portland, ME 04101

RE: 45 Union Street Portland, ME (formerly Canal Plaza)

Letter of Ability to Serve Request

10301098989 801000645705 Transformer for CP 2 East Brown Cow 1500 kva 277/480v padmount transformer
10301099012 801000645704 Transformer for CP 1 East Brown Cow 1000 kva 277/480v submersible transformer
10301098999 801000645702 Underground primary loop from 645D3. Note this was the last draft we had and will need to update if loads and layouts have changed.

The 45 Union Street project includes construction of a new 30-level, mixed-use building that is approximately 365 feet tall, with a roughly 6,400 square foot footprint, totally approximately 200,000 gross square feet floor area. The building will be constructed on the land identified as parcel ID 032 I040001, which is currently a 32-space surface parking lot. The project will include 73 new one- and two-bedroom residential units, 88 hotel rooms, publicly accessible interior amenity spaces including an observatory in the top floor sky lobby, restaurant, café, and other complimentary uses. Note this project will NOT be on the CMP Intown network but rather on our Fore Street loop.

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Handbook of Standard Requirements. If you have any questions on the process, or need help in completion of the documents, please contact CMP at 800-565-3181

Here is our typical process for getting your three phase or CT rated single phase service installed. If you have any questions, please let us know. The underlined links will redirect you to the appropriate site for additional information.

Service Milestones for Three Phase Services and CT Rated Single Phase Services:

- Call 800-750-4000 option 4 to establish a new account (if needed) and an SAP work order. Please provide both of these to me. We can reuse the above notifications if needed, but if the project is now under 45 Union Street then you will need to call in and change the new accounts and ownership over from EAST BROWN COW HOLDINGS II LLC.
- Submit Load information. Please complete the attached EDET (excel file) using load information (we do have prelim loads but need these finalized) Please complete this and email back to me. If the loads are over 500 kw,

more in depth load studies may be required with our Distribution Planning and Transmission Planning Departments. Be advised that these may involve more detailed load information, a load study agreement (signed contract), as well as other items. This additional study process may add up to two additional months to completion of the job.

- Submit the easement information worksheet, including where any CMP structures may be on ANY private property (Poles, Wires, Anchors). You are responsible for obtaining all information for all required easements. Please complete this form and either email or fax back to me.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections.
- For Primary Metered installations (including PV), please have the access road in for pole staking.
- Preliminary meetings with CMP Advisor and Engineer to determine details of job (I will need to schedule with your electrician/contractor-please let me know who this is)
- Field planner design appointment scheduled once the preliminary information is complete. This will allow us to cost out the job and develop a CMP Invoice. The invoice is typically generated 5-6 weeks after the design appointment. This expires after 90 days from the invoice date.
- Submit completed W9 so that your bill can be properly processed. This is a new CMP process.
- CMP submits invoice to the customer for payment (typically via email). Payment received from customer.
- Easements (based on easement information worksheet) sent out, signed and originals returned to CMP.
- Job scheduled for completion after payment, easements and the electrical inspection have been received.

There are additional requirements for primary metered Solar Service Installations listed in the Chapter 324 Interconnections section below. Please refer to CMP Installation Checklists for other installations.

This process can take several months, depending upon several factors including transformer or materials delivery, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

As you may be aware, there are global supply chain issues impacting the utility industry. CMP is closely monitoring and managing their inventory in order to serve our customers. Larger padmount transformers may not be readily available for the date that you will need to be energized. Please consider this as part of your construction plan. The energy service advisor will continue to work closely with you and let you know as soon as the transformer becomes available. Should you have any questions or concerns throughout this process, please do not hesitate to contact your ESA directly at the number or email provided.

Please complete the attached forms (the specific instructions are on each form). Please email them at your earliest convenience. If you are returning an Easement Form, a 1190 or State Permit please be sure to send those documents to lineclerknewservice@cmpco.com, All W9's should be sent to gettingconnected@cmpco.com. All other forms including the EDET (load sheet) and technical information should be sent to me.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements: CMP Handbook of Standard Requirements Additional resources include our CMP Metering Supplement is our Distribution Construction Standards: CMP Distribution Construction Standards CMP Distribution Construction Standards.

You will be responsible for installing the customer connections, conduits, and metering in accordance with the CMP Handbook of Standard Requirements The transformer will be sized based on your submitted load sheets.

Your deposit amount will be typically based on an estimated two month bill, calculated from your completed load sheet unless otherwise determined by CMP.

In addition, we have recently added on an online map that shows single phase and three phase power locations within CMP. Here is that link: CMP ArcGIS Information

Metering:

All metering (including locations) must be preapproved by CMP. If you have any questions, please consult the CMP Handbook of Standard Requirements and our CMP Metering Supplement.

Chapter 324 Interconnections:

Please be advised that if you plan to install solar/wind/hydro generation, you must complete an application under the MPUC mandated Chapter 324 Interconnection Standards. If you go to Chapter 324 Interconnection Standards and follow the instructions for the Small Generator Interconnection Procedures, CMP can do this work in parallel to your service request that will be handled by me. If you project is under 660 KW You will be able to have a Customer Net Energy Billing contract. Information concerning Customer Net Energy Billing can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing

Reallocation/Line Extensions:

Recently, changes were made to the three-phase construction policy, which require CMP to reallocate construction costs paid by customers. If applicable, those projects identified as "developments" do not qualify for reallocation of funds. Please see this document at our website for details about the reallocation conditions. Any reallocation charges will be specifically denoted on your invoice. The website address for this is: Polyphase Line Extension.

This line extension will be part of Central Maine Power's distribution system. In the event the property served under this Agreement is sold or otherwise conveyed, all rights and obligations of the Agreement shall stay with the property. Please note that if you rent or lease this property to another and you want to receive the reimbursement payments, you must make special arrangements with the Central Maine Power Company. Otherwise, any reimbursement payments will be sent to the "Customer" taking service at the service location.

Electricity Supplier Information:

Central Maine Power Company (CMP) will provide your facility with electric delivery service. If you don't already have a provider, you will need to make arrangements with a competitive electricity provider in order to receive electricity supply for your facility. In the event you fail to choose a competitive electricity provider, you will receive Standard Offer service arranged by the Maine Public Utilities Commission. If you wish to be served by a competitive electricity provider immediately upon establishment of delivery service, you must arrange for this service directly through your chosen competitive electricity provider, who must enroll your account no later than 5 PM on the business day prior initiation of delivery service by CMP. An up-to-date list of competitive suppliers can be found at the:

1. Maine Public Utilities Commission (MPUC) web site- **Maine PUC**
2. By calling the MPUC at (207) 287-3831

Attachments:

Easement Worksheet and Sample Standard Easement
W9
CMP EDET (Load Sheet)

Regards,

Jamie

Jamie Cough
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-610-0055

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Old Port Square

1 message

Siana Emery <sianaemery@gmail.com>
Reply-To: sianaemery@gmail.com
To: planningboard@portlandmaine.gov

Thu, May 8, 2025 at 11:48 AM

Hello,

As a lifelong Mainer, I am writing to express strong opposition for the proposed Old Port Square project from Brown Cow Development and partners.

While it is true Portland needs development, this is exactly the kind of out of touch project that catapulted the city into its current cost of living crisis.

Aside from being a visual monstrosity that is a slap in the face to the remaining character the makes Portland unique (and business owners who have had to abide by strict aesthetic rules), but this development is clearly by the uber wealthy, for the uber wealthy. While a growing number of people are pushed onto the streets due to absentee landlords, the thought that something like this is even being considered is beyond infuriating.

Portland needs developments that actually target the needs of the people already here. Affordable/Workforce Housing, for example, should be top priority. Not whatever this is. And as we can see in cities across the globe, buildings like this often remain largely vacant, due to the exorbitant prices. If a company wants to spend this much money on a project, why not renovate the time and temperature building?

Portland, and Maine as a whole, is rapidly losing its soul. Many of the industries that we are known for are in peril, due to things like climate change, but also due to the working class being pushed further and further out.

Approving a project like this would be completely tone-deaf to the needs of the community. Keep Boston in Boston.

I hope you will consider listening to your constituents.

-Siana

Carter Frank <cfrank@portlandmaine.gov>

Old Port Square Skyscraper Proposal

1 message

Jason Rubinoff <jasonrubinoff11@gmail.com> Thu, May 15, 2025 at 5:15 PM
Reply-To: jasonrubinoff11@gmail.com
To: planningboard@portlandmaine.gov

Hello all,

My name is Jason Rubinoff and I am a 30 year old lifelong Portlander.

I am reaching out to voice my concern and disapproval of the Old Port Square Skyscraper scale, as well as my general concern of an ever growing number of impervious surfaces in the city with no plans to deal with the extra run off and degradation of water sources.

I work in construction, and growing up here see how badly we need more buildings to go up. I also believe this building is not going to add anything of significance to address the multiple crises the city faces today and will face in the future.This building is simply too tall and it's proposed uses will not do anything to help our affordability crisis, transportation issues, or climate resiliency.

Please consider reducing the height, and also how to make this building into something that will actually benefit the community rather than just East Brown Cow, the architects, and their investors. There is a scenario where everyone can win.

Best,

Jason Rubinoff

Old Port Square

1 message

Amy Lawrence <amylawrence68@gmail.com>
Reply-To: amylawrence68@gmail.com
To: planningboard@portlandmaine.gov

Fri, May 16, 2025 at 10:54 AM

Dear Planning Board,

I am writing to express my disapproval of the proposed building of Old Port Square. At 380 feet, the height of the building would be too drastic of a contrast to the area's historical buildings. Furthermore, it will change the charm of the city. It will be an eyesore for a few years until other similarly tall buildings will be built up around it and at which point the whole charm of Old Port will be lost.

We need only look to the Seaport District of Boston to see what can happen to a working waterfront. Once we go down that slippery slope, there is no turning back.

Sincerely,

Amy Lawrence
30 Merrill Street, Unit 5
Portland

Problem development

1 message

'Stephen Greene' via Planning and Urban Development <planning@portlandmaine.gov> Tue, May 27, 2025 at 10:32 AM
Reply-To: Stephen Greene <sgreene1@mac.com>
To: planning@portlandmaine.gov

This development proposal, Old Port Square, is a nightmare. Coming from Boston we have seen how this plays out, people with money push these projects through and the community pays the price. This is a major reason we left Boston and have lived and loved Portland. There is so many empty buildings that can be rehabbed into livable spaces in Portland that developers could invest in versus this phalanx symbol of some developers ego and greed.

Stephen Greene
30 Merrill st
Unit 5
Portland, ME
Sent from my iPhone

Disapproval of Old Port Square Plan

0 views

Subscribe



Ellinor Couchman <ellinorcouchman@gmail.com> Aug 17, 2025, 4:19:41 PM (16 hours ago)

to planning@portlandmaine.gov

Hello, this is a Portland local mailing to raise concerns about East Brown Cow's proposed luxury hotel. Since moving to Portland, I've grown an honest affinity for how the skyline is pedestrian-oriented. The modest stature of Portland feels natural for an eye-level experience. It's a welcome departure compared to my frame-of-reference of growing up in the Midwest--a place where nearly every building hearkens to the post-automobile world. Towns should be designed for humans, not cars.

Keep Old Port old! The influx of traffic a 380 foot tall hotel would bring might ruin the fragile and unique character which Portland has fostered for hundreds of years.

Gregory Bronn <gregbronn@gmail.com> Aug 19, 2025, 2:54:55 PM (17 hours ago)
to planning@portlandmaine.gov

Dear Portland Planning Board,

I am a resident of Portland, and I am writing to express my enthusiastic support for the Old Port Square project, currently under consideration. This development will bring much-needed residential and retail space to our city, in a dense development within the urban core. I believe this development will contribute positively to Portland's growth and economy, and make our city more dynamic and attractive.

I urge the planning board to approve the Old Port Square project, as it represents a visionary step forward for our city's future.

Thank you for your time and consideration.

Best regards,

Greg Bronn
33 Howard St.
Portland, ME 04101

Old Port Square

1 message

Siana Emery <sianaemery@gmail.com>
Reply-To: sianaemery@gmail.com
To: planningboard@portlandmaine.gov

Wed, Aug 20, 2025 at 2:43 PM

Hello,

I am writing to express concern over the proposed Old Port Square development that I hope you will consider before moving into this project. These are perspectives I share with nearly every commenter on social media and news articles about the project.

First, I am incredibly concerned by the design of the building itself. I fully acknowledge that Portland needs to start building up rather than out/ needs to rework the footprint it already has, as it continues to grow. However, this project is not the way to do it. The Old Port region claims to have regulations on external facades, in order to maintain a certain historical image. Businesses like Papi have even had to remove certain decorative features to adhere to these regulations. If you're concerned with aesthetics, this building blows those regulations out of the water. It is not just the tallest building in the state, but it is such an immense jump that it feels like a slap in the face to those who have been working so hard to maintain Portland's heritage.

More problematic, however, is the purpose of the building and its targeted audience. Portland (and honestly, the entire state) has seen rapid gentrification in recent years, especially the last decade. The cost of living has soared to the point where it is practically unlivable for the average individual. Statewide, a lack of regulations on short-term and seasonal rentals have added fuel to the fire of the housing crisis. What Portland needs to be prioritizing is workforce housing. A city, a community, cannot exist without locals. This building claims to be part hotel, part housing, but who exactly will live in those units? I will put money on it being more uber-wealthy, seasonal residents. Maine has the highest quantity of vacant homes -- largely due to the percentage of which are part-time/second homes. This project would create more units that will remain vacant for the majority of the year, and remain out of reach for locals. Nearly every project in Southern Maine in recent years has been geared toward "luxury" housing that puts profit over people. Some claim that any housing will help alleviate the problem, but what we are seeing in this region is that these units simply attract more people to move into the area, rather than housing those who are already here. A project like this would only contribute toward continuing to raise already skyhigh housing costs.

Anyone who has been in Maine longer than 5-10 years can see: the soul of Portland, of Maine itself, is dying. We don't want Boston north, we want investment into what makes Portland unique.

Thank you.

Eli Dale <elidaleportland@gmail.com> Aug 26, 2025, 3:19:01 PM (17 hours ago)
to planningboard@portlandmaine.gov

Dear Planning Board,

The height limit for Portland is 15 stories, so a proposal for a 30 story building should be thrown in the trash right away.

This is not Chicago, Los Angeles, or Chicago. This is town where the best buildings were contributed by local people who were proud to put their names on the fascade, built with taste and care. Now anyone can build anything. If you want Portland to remain attractive to tourists, don't wreck it. Institute some standards. If developers can't meet the standards, send them packing.

Eli Dale

40 Salem Street, Portland

Neil Greenzweig <neilzweig44@gmail.com> Sep 2, 2025, 5:41:53 PM (15 hours ago)
to planningboard@portlandmaine.gov

Portland is a peninsula and the Old Port is the draw. Historical Preservation is expensive and successful. I own a 1 bedroom condo at 150 Middle Street and my unit gets sunlight in the afternoon.

I understand how real estate investment works and I am sure that East Brown Cow Mgt means well but the investment only makes sense if the property has a high valuation. The way you get to high valuation is find buyers and tenants who can afford the rent. How many low income units are to be set aside for residential?

Who can afford to buy a condo in the Tower? Weekenders from NYC & Boston?

200 Middle Street is like putting up a wall around the Old Port. Take Paradise and put up a parking lot. It's obviously wrong. Too close to the Old Port.

Neil Greenzweig

Jacqueline Demeter <jacquidemeter@gmail.com> 10:31 AM (1 hour ago)
to planning@portlandmaine.gov

I am writing to express my disapproval of the proposed building of Old Port Square by East Brown Cow. The height of the building would be way out of place with the surrounding area and change the historical charm of the city. I also do not think we need additional retail and housing that is aimed at the wealthy. Portland, and much of Cumberland and York counties, has an affordability problem that this building will only serve to exasperate. Let's focus our building efforts on structures that retain the character of our charming city while solving important issues that it faces.

Sincerely,
Jacqueline Demeter
34 Owls Nest Road, Portland

mlesko enclaveinteriors.com <mlesko@enclaveinteriors.com> Sep 22, 2025, 6:38:03 PM (13 hours ago)
to planningboard@portlandmaine.gov

To whom it may concern,

I am an owner and live in a historical home on Munjoy Hill. I find the possibility of having a 30 story tower in Portland incongruent to the aesthetics of our city. It would interfere with the skyline even more so than seeing one of the large cruise ships docked in the harbor.
I can't help to compare it to the Montparnasse Tower in Paris that was built between 1969-1973. The tower construction was followed by a law that banned skyscrapers within city limits. Let’s not make the same mistake as Paris!

Sincerely,
Marianne Hubert
147 Congress St
Portland, ME
04101

Helen Hanson <hkhanson@gmail.com> Sep 22, 2025, 7:21:37 PM (13 hours ago)
to planningboard@portlandmaine.gov

Hello,
As a resident of Portland for nearly 30 years, I have seen the city change. Some of that change has been good. More has been bad. But this looks like the worst.
Portland has a skyline that should not be changed to such a large extent. The entire feel of the city will change with that monstrosity looming over everything else.
Where and how will residents or visitors find parking? There isn't enough as it is. And the parking we do have is cost prohibitive.
Everyone wants housing that is affordable. Paying a fee and creating a hotel and residential spaces that local workers can't afford just doesn't solve the problem.
Portland won't be a tourist destination if this building disgraces the area.
This is just plain wrong.
Sincerely,
Helen Hanson
36 Wolcott St
Portland, Me 04102

Steel <jnsteel@gmail.com> Sep 22, 2025, 7:46:41 PM (12 hours ago)

to planningboard@portlandmaine.gov

Hello. My name is Jenson Steel, I live at 30 West St, Portland. I am writing the Board Members about the project. I am strongly in support of rejecting the decision to approve. We have an abundance of over four story buildings in Portland. Please think wisely in your decisions.
Sincerely,
Jenson Steel
30 West Street
Portland, Me 04102

J.N. Steel LMT Notary Public Portland, ME

Lisa Reed <lreed1024@gmail.com> 7:27 AM (1 hour ago)

to planningboard@portlandmaine.gov

I am opposed to the building of a 30 story building in Portland. This tower will decrease sunlight to the neighboring streets and parks. The height is proportionally out of place for the area. It will stick out like a sore thumb and instead of being a "beacon" will become an eyesore.

I am not opposed to a building there, but something more in line with our current city would be much better.

Lisa Reed
340 Eastern Promenade, Portland, ME 04101
unit 258

Jaye van Dussen <vandussenjaye@gmail.com> Sep 22, 2025, 8:32:24 PM (12 hours ago)
to planningboard@portlandmaine.gov

My name is Jody van Dussen, I live at 48 High St #1 in Portland ME and I am writing to oppose the proposed development called 45 Union Street in its current form.

The building of a proposed 30 story building in the heart of historic Portland, although it may be allowed due to zoning changes,should not be approved. **There certainly is room for a conversation for taller buildings in Portland, but for projects that are scaled down and proportionally suitable for this city and for projects that don't only serve luxury and corporate needs.**

- The images of the proposed project show how completely out of character and place it is in our small city. Portland can not lose or dilute its historic character. A smaller scale project, in keeping with current heights is a better alternative. It may not be as profitable to the developer but it is much more suitable for our city.
- This type of high density development can inflate real estate prices, drive out long-term residents and make affordable housing even more difficult.
- The scale of the proposed development would place a strain on Portland's already strained infrastructure and emergency services.

Our small city is not designed or ready to accommodate this.

Proposing to build 88 hotel rooms and 73 apartments without offering parking is poor urban planning and will negatively impact current city residents and businesses. I live on the edge of the Arts District and the West End and finding parking is nearly impossible as many people working in and visiting Portland park in residential areas to avoid parking fees, leaving residents without parking. Where does the developer and the city anticipate that over 160 hotel guests and residents will park? What does the traffic survey say? Retaining staff to work in Portland is already a challenge with out adding the cost of having to pay for parking.

Thank you for the opportunity to provide comment and voice my opposition to the proposed project at 45 Union Street.

Sincerely,

Jody van Dussen

Old Port Square

1 message

Siana Emery <sianaemery@gmail.com>
Reply-To: sianaemery@gmail.com
To: planningboard@portlandmaine.gov

Thu, May 8, 2025 at 11:48 AM

Hello,

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Portland needs developments that actually target the needs of the people already here. Affordable/Workforce Housing, for example, should be top priority. Not whatever this is. And as we can see in cities across the globe, buildings like this often remain largely vacant, due to the exorbitant prices. If a company wants to spend this much money on a project, why not renovate the time and temperature building?

Portland, and Maine as a whole, is rapidly losing its soul. Many of the industries that we are known for are in peril, due to things like climate change, but also due to the working class being pushed further and further out.

Approving a project like this would be completely tone-deaf to the needs of the community. Keep Boston in Boston.

I hope you will consider listening to your constituents.

-Siana

Carter Frank <cfrank@portlandmaine.gov>

Old Port Square Skyscraper Proposal

1 message

Jason Rubinoff <jasonrubinoff11@gmail.com> Thu, May 15, 2025 at 5:15 PM
Reply-To: jasonrubinoff11@gmail.com
To: planningboard@portlandmaine.gov

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I am reaching out to voice my concern and disapproval of the Old Port Square Skyscraper scale, as well as my general concern of an ever growing number of impervious surfaces in the city with no plans to deal with the extra run off and degradation of water sources.

I work in construction, and growing up here see how badly we need more buildings to go up. I also believe this building is not going to add anything of significance to address the multiple crises the city faces today and will face in the future.This building is simply too tall and it's proposed uses will not do anything to help our affordability crisis, transportation issues, or climate resiliency.

Please consider reducing the height, and also how to make this building into something that will actually benefit the community rather than just East Brown Cow, the architects, and their investors. There is a scenario where everyone can win.

Best,

Jason Rubinoff

Old Port Square

1 message

Amy Lawrence <amylawrence68@gmail.com>
Reply-To: amylawrence68@gmail.com
To: planningboard@portlandmaine.gov

Fri, May 16, 2025 at 10:54 AM

Dear Planning Board,

I am writing to express my disapproval of the proposed building of Old Port Square. At 380 feet, the height of the building would be too drastic of a contrast to the area's historical buildings. Furthermore, it will change the charm of the city. It will be an eyesore for a few years until other similarly tall buildings will be built up around it and at which point the whole charm of Old Port will be lost.

We need only look to the Seaport District of Boston to see what can happen to a working waterfront. Once we go down that slippery slope, there is no turning back.

Sincerely,

Amy Lawrence
30 Merrill Street, Unit 5
Portland

Problem development

1 message

'Stephen Greene' via Planning and Urban Development <planning@portlandmaine.gov> Tue, May 27, 2025 at 10:32 AM
Reply-To: Stephen Greene <sgreene1@mac.com>
To: planning@portlandmaine.gov

This development proposal, Old Port Square, is a nightmare. Coming from Boston we have seen how this plays out, people with money push these projects through and the community pays the price. This is a major reason we left Boston and have lived and loved Portland. There is so many empty buildings that can be rehabbed into livable spaces in Portland that developers could invest in versus this phalanx symbol of some developers ego and greed.

Stephen Greene
30 Merrill st
Unit 5
Portland, ME
Sent from my iPhone

Disapproval of Old Port Square Plan

0 views

Subscribe



Ellinor Couchman <ellinorcouchman@gmail.com> Aug 17, 2025, 4:19:41 PM (16 hours ago)

to planning@portlandmaine.gov

Hello, this is a Portland local mailing to raise concerns about East Brown Cow's proposed luxury hotel. Since moving to Portland, I've grown an honest affinity for how the skyline is pedestrian-oriented. The modest stature of Portland feels natural for an eye-level experience. It's a welcome departure compared to my frame-of-reference of growing up in the Midwest--a place where nearly every building hearkens to the post-automobile world. Towns should be designed for humans, not cars.

Keep Old Port old! The influx of traffic a 380 foot tall hotel would bring might ruin the fragile and unique character which Portland has fostered for hundreds of years.

Gregory Bronn <gregbronn@gmail.com> Aug 19, 2025, 2:54:55 PM (17 hours ago)
to planning@portlandmaine.gov

Dear Portland Planning Board,

I am a resident of Portland, and I am writing to express my enthusiastic support for the Old Port Square project, currently under consideration. This development will bring much-needed residential and retail space to our city, in a dense development within the urban core. I believe this development will contribute positively to Portland's growth and economy, and make our city more dynamic and attractive.

I urge the planning board to approve the Old Port Square project, as it represents a visionary step forward for our city's future.

Thank you for your time and consideration.

Best regards,

Greg Bronn
33 Howard St.
Portland, ME 04101

Old Port Square

1 message

Siana Emery <sianaemery@gmail.com>
Reply-To: sianaemery@gmail.com
To: planningboard@portlandmaine.gov

Wed, Aug 20, 2025 at 2:43 PM

Hello,

I am writing to express concern over the proposed Old Port Square development that I hope you will consider before moving into this project. These are perspectives I share with nearly every commenter on social media and news articles about the project.

First, I am incredibly concerned by the design of the building itself. I fully acknowledge that Portland needs to start building up rather than out/ needs to rework the footprint it already has, as it continues to grow. However, this project is not the way to do it. The Old Port region claims to have regulations on external facades, in order to maintain a certain historical image. Businesses like Papi have even had to remove certain decorative features to adhere to these regulations. If you're concerned with aesthetics, this building blows those regulations out of the water. It is not just the tallest building in the state, but it is such an immense jump that it feels like a slap in the face to those who have been working so hard to maintain Portland's heritage.

More problematic, however, is the purpose of the building and its targeted audience. Portland (and honestly, the entire state) has seen rapid gentrification in recent years, especially the last decade. The cost of living has soared to the point where it is practically unlivable for the average individual. Statewide, a lack of regulations on short-term and seasonal rentals have added fuel to the fire of the housing crisis. What Portland needs to be prioritizing is workforce housing. A city, a community, cannot exist without locals. This building claims to be part hotel, part housing, but who exactly will live in those units? I will put money on it being more uber-wealthy, seasonal residents. Maine has the highest quantity of vacant homes -- largely due to the percentage of which are part-time/second homes. This project would create more units that will remain vacant for the majority of the year, and remain out of reach for locals. Nearly every project in Southern Maine in recent years has been geared toward "luxury" housing that puts profit over people. Some claim that any housing will help alleviate the problem, but what we are seeing in this region is that these units simply attract more people to move into the area, rather than housing those who are already here. A project like this would only contribute toward continuing to raise already skyhigh housing costs.

Anyone who has been in Maine longer than 5-10 years can see: the soul of Portland, of Maine itself, is dying. We don't want Boston north, we want investment into what makes Portland unique.

Thank you.

Eli Dale <elidaleportland@gmail.com> Aug 26, 2025, 3:19:01 PM (17 hours ago)
to planningboard@portlandmaine.gov

Dear Planning Board,

The height limit for Portland is 15 stories, so a proposal for a 30 story building should be thrown in the trash right away.

This is not Chicago, Los Angeles, or Chicago. This is town where the best buildings were contributed by local people who were proud to put their names on the fascade, built with taste and care. Now anyone can build anything. If you want Portland to remain attractive to tourists, don't wreck it. Institute some standards. If developers can't meet the standards, send them packing.

Eli Dale

40 Salem Street, Portland

Neil Greenzweig <neilzweig44@gmail.com> Sep 2, 2025, 5:41:53 PM (15 hours ago)
to planningboard@portlandmaine.gov

Portland is a peninsula and the Old Port is the draw. Historical Preservation is expensive and successful. I own a 1 bedroom condo at 150 Middle Street and my unit gets sunlight in the afternoon.

I understand how real estate investment works and I am sure that East Brown Cow Mgt means well but the investment only makes sense if the property has a high valuation. The way you get to high valuation is find buyers and tenants who can afford the rent. How many low income units are to be set aside for residential?

Who can afford to buy a condo in the Tower? Weekenders from NYC & Boston?

200 Middle Street is like putting up a wall around the Old Port. Take Paradise and put up a parking lot. It's obviously wrong. Too close to the Old Port.

Neil Greenzweig

Jacqueline Demeter <jacquidemeter@gmail.com> 10:31 AM (1 hour ago)
to planning@portlandmaine.gov

I am writing to express my disapproval of the proposed building of Old Port Square by East Brown Cow. The height of the building would be way out of place with the surrounding area and change the historical charm of the city. I also do not think we need additional retail and housing that is aimed at the wealthy. Portland, and much of Cumberland and York counties, has an affordability problem that this building will only serve to exasperate. Let's focus our building efforts on structures that retain the character of our charming city while solving important issues that it faces.

Sincerely,
Jacqueline Demeter
34 Owls Nest Road, Portland

mlesko enclaveinteriors.com <mlesko@enclaveinteriors.com> Sep 22, 2025, 6:38:03 PM (13 hours ago)
to planningboard@portlandmaine.gov

To whom it may concern,

I am an owner and live in a historical home on Munjoy Hill. I find the possibility of having a 30 story tower in Portland incongruent to the aesthetics of our city. It would interfere with the skyline even more so than seeing one of the large cruise ships docked in the harbor.
I can't help to compare it to the Montparnasse Tower in Paris that was built between 1969-1973. The tower construction was followed by a law that banned skyscrapers within city limits. Let’s not make the same mistake as Paris!

Sincerely,
Marianne Hubert
147 Congress St
Portland, ME
04101

Helen Hanson <hkhanson@gmail.com> Sep 22, 2025, 7:21:37 PM (13 hours ago)
to planningboard@portlandmaine.gov

Hello,
As a resident of Portland for nearly 30 years, I have seen the city change. Some of that change has been good. More has been bad. But this looks like the worst.
Portland has a skyline that should not be changed to such a large extent. The entire feel of the city will change with that monstrosity looming over everything else.
Where and how will residents or visitors find parking? There isn't enough as it is. And the parking we do have is cost prohibitive.
Everyone wants housing that is affordable. Paying a fee and creating a hotel and residential spaces that local workers can't afford just doesn't solve the problem.
Portland won't be a tourist destination if this building disgraces the area.
This is just plain wrong.
Sincerely,
Helen Hanson
36 Wolcott St
Portland, Me 04102

Steel <jnsteel@gmail.com> Sep 22, 2025, 7:46:41 PM (12 hours ago)

to planningboard@portlandmaine.gov

Hello. My name is Jenson Steel, I live at 30 West St, Portland. I am writing the Board Members about the project. I am strongly in support of rejecting the decision to approve. We have an abundance of over four story buildings in Portland. Please think wisely in your decisions.
Sincerely,
Jenson Steel
30 West Street
Portland, Me 04102

J.N. Steel LMT Notary Public Portland, ME

Lisa Reed <lreed1024@gmail.com> 7:27 AM (1 hour ago)
to planningboard@portlandmaine.gov

I am opposed to the building of a 30 story building in Portland. This tower will decrease sunlight to the neighboring streets and parks. The height is proportionally out of place for the area. It will stick out like a sore thumb and instead of being a "beacon" will become an eyesore.

I am not opposed to a building there, but something more in line with our current city would be much better.

Lisa Reed
340 Eastern Promenade, Portland, ME 04101
unit 258

Jaye van Dussen <vandussenjaye@gmail.com> Sep 22, 2025, 8:32:24 PM (12 hours ago)
to planningboard@portlandmaine.gov

My name is Jody van Dussen, I live at 48 High St #1 in Portland ME and I am writing to oppose the proposed development called 45 Union Street in its current form.

The building of a proposed 30 story building in the heart of historic Portland, although it may be allowed due to zoning changes,should not be approved. **There certainly is room for a conversation for taller buildings in Portland, but for projects that are scaled down and proportionally suitable for this city and for projects that don't only serve luxury and corporate needs.**

- The images of the proposed project show how completely out of character and place it is in our small city. Portland can not lose or dilute its historic character. A smaller scale project, in keeping with current heights is a better alternative. It may not be as profitable to the developer but it is much more suitable for our city.
- This type of high density development can inflate real estate prices, drive out long-term residents and make affordable housing even more difficult.
- The scale of the proposed development would place a strain on Portland's already strained infrastructure and emergency services.

Our small city is not designed or ready to accommodate this.

Proposing to build 88 hotel rooms and 73 apartments without offering parking is poor urban planning and will negatively impact current city residents and businesses. I live on the edge of the Arts District and the West End and finding parking is nearly impossible as many people working in and visiting Portland park in residential areas to avoid parking fees, leaving residents without parking. Where does the developer and the city anticipate that over 160 hotel guests and residents will park? What does the traffic survey say? Retaining staff to work in Portland is already a challenge with out adding the cost of having to pay for parking.

Thank you for the opportunity to provide comment and voice my opposition to the proposed project at 45 Union Street.

Sincerely,

Jody van Dussen

Abby Gordon <abby.gordon@gmail.com>
to planningboard@portlandmaine.gov

Oct 28, 2025, 5:36:38 PM (15 hours ago)

Dear Planning Board,

My name is Abigail Gordon and I am a resident of 10 Exchange Street in Portland. I also have a monthly parking pass to the Fore Street/Old Port Square parking lot managed/owned by East Brown Cow. I just attended by Zoom the Hybrid Planning Board Meeting 10-28-2025.

Overall, I think this project could be very interesting for the Old Port. I understand that there will be inconveniences, perhaps extreme inconvenience, during the construction phase (I do walk around Old Port Square and walk my dog frequently each day so I am concerned about the construction vehicles). However, I know we all have to make compromises to move forward with new developments.

My main concern is the lack of parking in the proposed new building. With a hotel and numerous condo units, where are all these new people going to park? I understand that as an environmental policy matter, we want to encourage people to drive less. But I don't think it's reasonable to expect people to purchase condos in Maine and not have parking. Or to expect tourists to travel around Maine by public transportation. There is so much talk about bicycle parking and none about car parking. I walk almost everywhere in Portland. I leave my car for days at a time. But I have other properties in Maine not accessible by public transportation so I have no choice but to own and park a car near my condo on Exchange Street. There are also services not walkable from the Old Port--my doctor, dentist, my dog's vet, dry cleaning, etc.

Is it true that there is no additional parking contemplated by this plan? Does East Brown Cow plan to make parking spots in the current garage accessible to the new development? On a personal level, I am worried that they will take away our access to the parking garage. I gave up my monthly pass to a Unified Parking lot about 5 years ago and the waiting list to get back into a garage in the Old Port would be 5-7 years, I'm told, so I rely on my monthly parking at the Old Port Square Garage. In addition to general concerns about access to parking (for friends and family visiting me in the Old Port, for example), I would like some assurances that other residents not associated with the new development will be able to maintain our parking access.

Again, I agree that we need to move to a society less reliant on cars. But until Maine has adequate public transportation, it is just not realistic to expect people to forgo car travel. There are other measures the city could have taken to improve the parking situation in the Old Port that they did not take--for example, requiring Wex and the other new buildings in town to require parking off the peninsula and a shuttle to the office. They actually took over the Ocean Gateway parking garage and I was forced to move parking garages at that time. We cannot allow the largest development in the history of Portland to avoid any accomodation for car parking.

Thank you for your attention to my concerns.

Best,
Abigail

From: Owner Phone <mysmartphoneemail1@gmail.com>
Date: Monday, October 27, 2025 at 3:03:09 PM UTC-4
Subject: citizen comment
To: planning@portlandmaine.gov <planning@portlandmaine.gov>

Hello Planning Board,

Please do not ok a thirty story building in Portland. I am strongly against this dramatic increase in building size here. I think it will strongly impact the feel of living in Portland in a negative way. Portland is a very picturesque little city - walkable, fresh air, open sky everywhere, views of the rest of the city from every location. A two times as tall monolith of a building in the middle of it will be really ugly, out of place, and negatively impacting on the quality of life.

I also feel it will be detrimental to our image, brand, and marketing. We are a beautiful little city. This is what we can and do obtain geographically and what we do offer visitors. A livable scale. Any other city anywhere can offer big towering construction to no unique avail. This will be a loss to our identity not a gain. It will probably be a loss to our marketing and attractiveness as a location for people to visit as well.

Please do not okay or permit the building of a thirty story building in Portland.

Thank you,
Karl Rawstron
5 Mayo st
Portland Me
04101

Kevin Gardella <kgarde61@gmail.com> Nov 7, 2025, 1:30:12 PM (3 days ago)

to planningboard@portlandmaine.gov

Hello members of the planning board,
I hope you're having a great day so far. I just was catching up on City news and found out about this 30-story building the Soleys have proposed for downtown. I wanted to find out more about how this got through since it is such a huge departure from our usual Portland buildings and how to go about fighting this.
Many of my friends are very concerned that this is going to go through and if it doesn't the Soleys will sue the city when we push back on it.
Thank you so much,
Kevin Gardella

patrick@goodhumanhabitat.org <patrick@goodhumanhabitat.... Nov 11, 2025, 9:38:12 PM (11 hours ago)
to planningboard@portlandmaine.gov

Hello Portland Planning Commission-

My name is Patrick Moan. I'm a former municipal planner based who has worked in the U.S. and Canada. I wanted to reach out regarding the 30-story high-rise proposed for the edge of the Old Port.

As a former resident of Halifax, Nova Scotia, I come from Portland's plausible future.

As recently as 2010, Halifax shared much in common with Portland in that both cities were primarily human-scale cities that offered a relatively high quality of life. Over the past 15 years, Halifax has aspired to become more like Dubai, while Portland has become a better version of itself.

The divergent paths these two maritime cities have taken led me to spend 12 months working on a series of articles examining them through the lens of climate rhetoric and reality. Links to the series appear below this email. One learns a great deal about Portland by way of contrast with its closest comparable Canadian neighbor.

With the 30-story development proposal in mind, the two most relevant points are these:

1. Research consistently shows that high-rise development produces worst-case outcomes for the climate in terms of both operational and embodied carbon relative to human-scale development.

2. Research going back to 1970 consistently shows that it's possible to accommodate high-rise densities with human-scale development using the courtyard-type buildings.

In the interest of brevity, I'll end by saying the series below appears at Good Human Habitat, which is a non-profit initiative that preparing to launch in 2026. If interested, you can **learn more here.**

I'd welcome any opportunity for a conversation around the research and its implications for Portland in terms of emissions and quality of life.

Best to you,

Patrick

GOOD HUMAN HABITAT

Patrick Moan

Good Human Habitat

m: 902.452.0001

goodhumanhabitat.org





DRAWING LIST

Sheet No.	Sheet Name	Issue Date
A00.00	TITLE SHEET	08/12/25
A00.01	PROGRAM + CALCULATIONS	08/12/25
A00.02	GFA CALCULATIONS	08/12/25
A10.00	SITE & CONTEXT INFORMATION	08/12/25
A10.01	SETTING OUT PLAN	08/12/25
A20.01	FLOOR PLAN - LEVEL 1 GRADE	08/12/25
A20.04	FLOOR PLAN - LEVEL 4 TYP. HOTEL LOBBY	08/12/25
A20.18	FLOOR PLAN - LEVEL 18 TYP. RESIDENTIAL	08/12/25
A20.29	FLOOR PLAN - LEVEL 29 RESTAURANT	08/12/25
A20.30	FLOOR PLAN - LEVEL 30 SKY LOBBY	08/12/25
A20.31	FLOOR PLAN - LEVEL BEACON ROOF	08/12/25
A40.01	OVERALL ELEVATIONS	08/12/25
A50.01	OVERALL BUILDING SECTIONS	08/12/25

45 Union Street

CLIENT:
East Brown Cow - Kowtower LLC

PROJECT ADDRESS:
45 Union Street, Portland, Maine

SAFDIE ARCHITECTS PROJECT NUMBER:
1083.00

ISSUED FOR MAJOR SITE PLAN

08/12/2025

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
100 Properzi Way
Somerville, MA 02143-3740 USA
T 617.629.2100 F 617.629.2406

CIVIL ENGINEERING
Woodard & Curran
12 Mountfort Street
Portland, ME 04101 USA
T 800.426.4262

LANDSCAPE ARCHITECT
Michael Boucher Landscape Architecture
457 US Route 1 Suite 2
Freeport, ME 04032 USA
T 207.865.1080 x7044

CODE CONSULTANT
ARUP
60 State Street
Boston, MA 02109 USA
T 617.864.2987

STRUCTURAL ENGINEERING
ARUP
77 Water Street
New York, NY 10005 USA
T 212.896.3000

MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION
Cosentini
101 Federal Street, 6th Floor
Boston, MA 02110 USA
T 617.748.7800

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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	
DATE	CHECKED BY
05/30/25	
PHASE	
SCHEMATIC DESIGN	

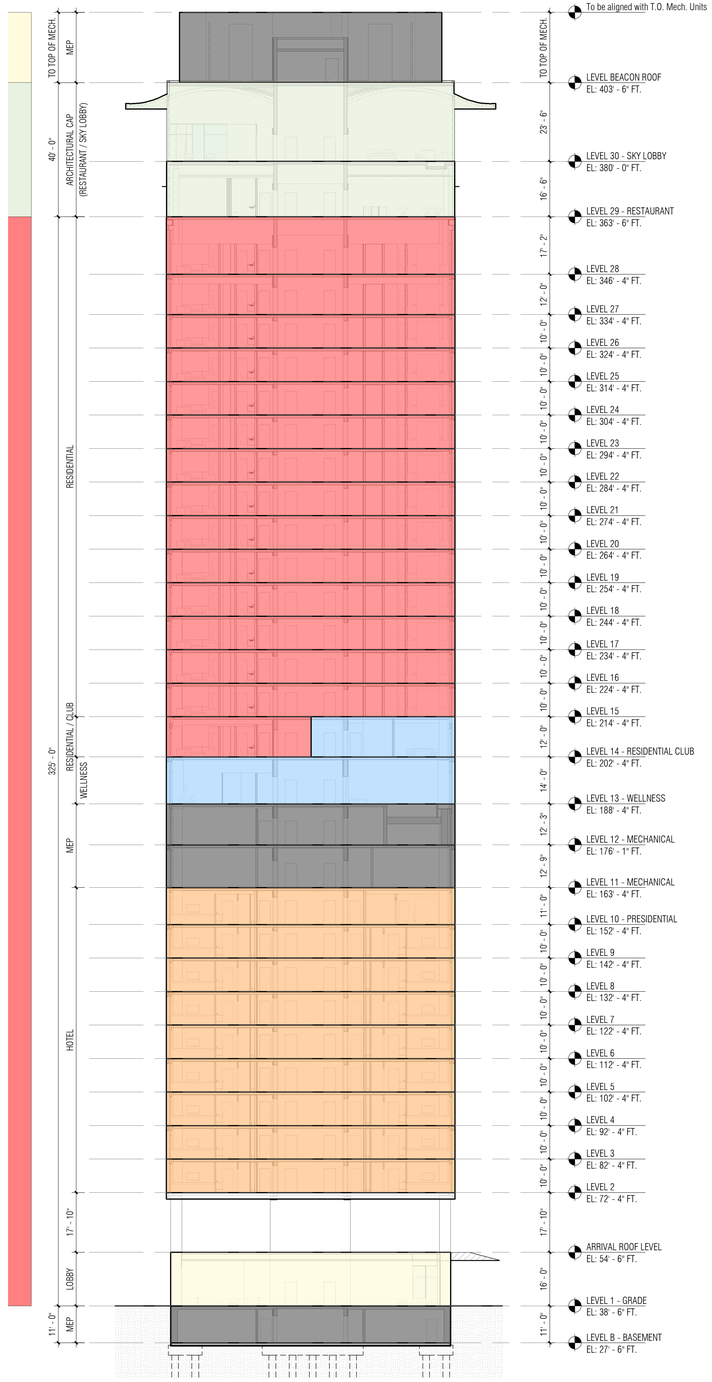
SCALE

DRAWING TITLE
TITLE SHEET

SHEET NUMBER
A00.00

5/2/2025 7:08:46 PM

OVERALL PROGRAM AND UNIT CALCULATIONS



6 NS OVERALL SECTION - PROGRAM

3/64" = 1'-0"

RESIDENTIAL UNIT NET AREA	
Name	Area
JR RESIDENTIAL UNIT	7,715 SF
2 BR RESIDENTIAL UNIT	33,129 SF
1.5 BR RESIDENTIAL UNIT	12,950 SF
1 BR RESIDENTIAL UNIT	10,198 SF
TOTAL RESIDENTIAL NET AREA	63,992 SF

5 RESIDENTIAL UNIT NET AREA

HOTEL UNIT NET AREA	
Name	Area
LOCK OFF	806 SF
2 QUEEN BD ROOM	10,447 SF
1 KING BD ROOM	8,362 SF
1 KING BD PRESIDENTIAL SUITE	1,482 SF
1 KING BD CORNER SUITE	5,643 SF
1 KING BD CORNER ROOM	10,761 SF
TOTAL HOTEL NET AREA	37,501 SF

4 HOTEL UNIT NET AREA

AMENITY NET AREA	
Name	Area
LEVEL 30 - SKY LOBBY	
RECEPTION / LOUNGE	1,309 SF
RESTROOM	263 SF
SERVICE LOBBY	109 SF
SKY BAR	3,271 SF
LEVEL 29 - RESTAURANT	
KITCHEN	1,292 SF
RESTAURANT	3,401 SF
RESTROOM	235 SF
SERVICE LOBBY	109 SF
LEVEL 14 - RESIDENTIAL CLUB	
BOH / SERVICES	145 SF
CLUB LOBBY	291 SF
GREAT ROOM	533 SF
OPEN KITCHEN	525 SF
PRIVATE DINNING	262 SF
RESTROOM	105 SF
SECRET GARDEN	576 SF
SERVICE LOBBY	109 SF
LEVEL 13 - WELLNESS	
BOH / SERVICES	287 SF
FITNESS	1,020 SF
LOCKER ROOM	212 SF
POOL	2,307 SF
RESTROOM	403 SF
SERVICE LOBBY	109 SF
TREATMENT	155 SF
WELLNESS RECEPTION	121 SF
LEVEL 1 - GRADE	
CAFE	1,495 SF
HOTEL LOBBY	1,194 SF
LUGGAGE STORAGE	115 SF
MAIL ROOM	197 SF
RESIDENTIAL LOBBY	799 SF
RESTROOM	109 SF
SERVICE ENTRY	112 SF
SERVICE LOBBY	109 SF
TOTAL AMENITY NET AREA	21,282 SF

3 AMENITY NET AREA

RESIDENTIAL UNIT COUNT	
Name	Count
LEVEL 28	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 27	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 26	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 25	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 24	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 23	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 22	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 21	
1 BR RESIDENTIAL UNIT	1

RESIDENTIAL UNIT COUNT	
Name	Count
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 20	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 19	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 18	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 17	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 16	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 15	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
2 BR RESIDENTIAL UNIT	2
JR RESIDENTIAL UNIT	1
LEVEL 14 - RESIDENTIAL CLUB	
1 BR RESIDENTIAL UNIT	1
1.5 BR RESIDENTIAL UNIT	1
JR RESIDENTIAL UNIT	1
TOTAL RESIDENTIAL UNITS	73

2 RESIDENTIAL UNIT COUNTS

HOTEL UNIT COUNT	
Name	Count
LEVEL 10 - PRESIDENTIAL	
1 KING BD CORNER ROOM	3
1 KING BD PRESIDENTIAL SUITE	1
1 KING BD ROOM	2
2 QUEEN BD ROOM	2
LEVEL 9	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 8	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 7	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 6	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1

HOTEL UNIT COUNT	
Name	Count
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 5	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 4	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 3	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
LEVEL 2	
1 KING BD CORNER ROOM	3
1 KING BD CORNER SUITE	1
1 KING BD ROOM	3
2 QUEEN BD ROOM	3
TOTAL RESIDENTIAL UNITS	88

1 HOTEL UNIT COUNTS

ANNOTATIONS AND SYMBOLS

DETAIL KEY — 1 / A61.01

GRID LINE KEY — 1

PARTITION TYPE KEY — A3

LEVEL LINE

BENCHMARK / FLOOR ELEVATION MARK — EL: 0 m

ELEVATION KEY — 1 / A45.06

BUILDING SECTION KEY — 4 / A55.09

WALL SECTION KEY — 4 / A55.09

INTERIOR ELEVATION KEY — 1 ELEVATION NUMBER; 4 / A45.06 / 2; 3 DRAWING SHEET SHOWING ELEVATION

DOOR TYPE KEY
FOR MORE INFORMATION, SEE DOOR SCHEDULE — A305

WINDOW TYPE KEY
FOR MORE INFORMATION, SEE WINDOW TYPES DRAWINGS — 1t

GLASS TYPE KEY
FOR MORE INFORMATION, SEE SPECIFICATIONS — 1t

ROOM NAME AND NUMBER — 100 ROOM NAME

PROPERTY LINE

MATCH LINE

OBJECTS OVERHEAD (PLAN)
OR BEHIND (SECTION/ELEVATION)

OBJECTS BEYOND

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
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Portland, ME 04101 USA
T 800.426.4262

LANDSCAPE ARCHITECT
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Freeport, ME 04032 USA
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Boston, MA 02109 USA
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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER 1083.00

DRAWN BY

DATE 10/03/25

CHECKED BY

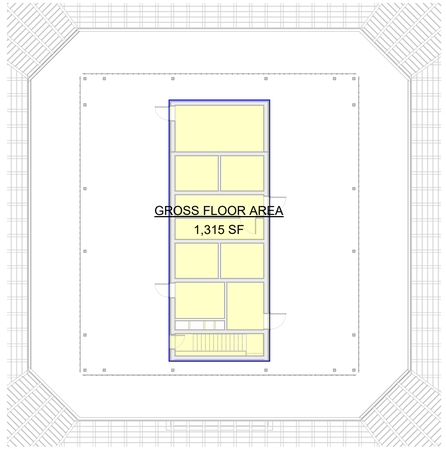
PHASE SCHEMATIC DESIGN

SCALE As indicated

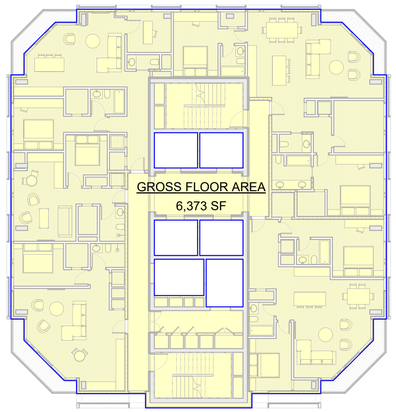
DRAWING TITLE
PROGRAM + CALCULATIONS

SHEET NUMBER
A00.01

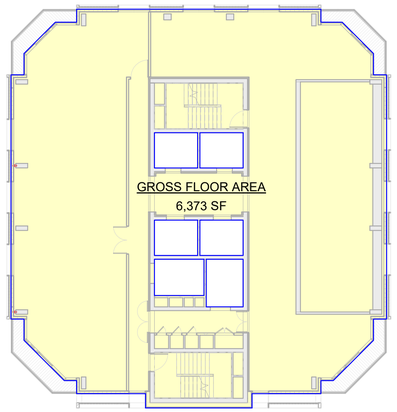
10/6/2025 2:46:30 PM



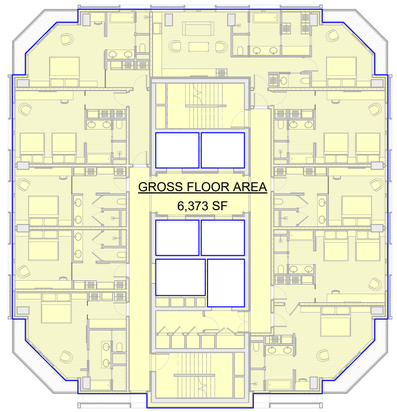
12 LEVEL BEACON ROOF
1/16" = 1'-0"



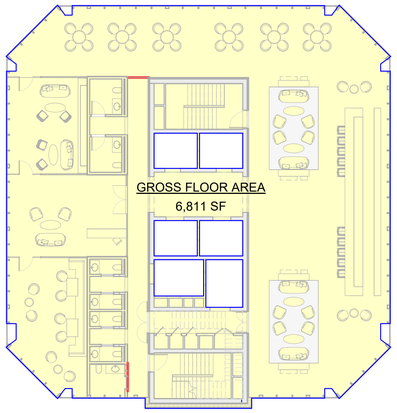
9 LEVEL 16 - TYP. RESIDENTIAL
1/16" = 1'-0"



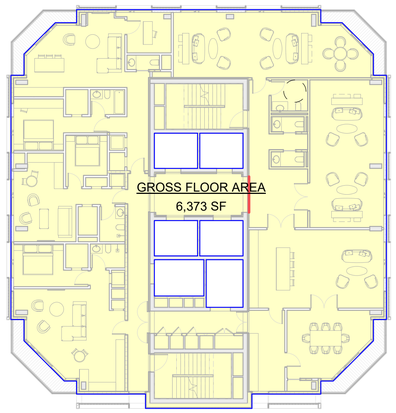
6 LEVEL 12 - MECHANICAL
1/16" = 1'-0"



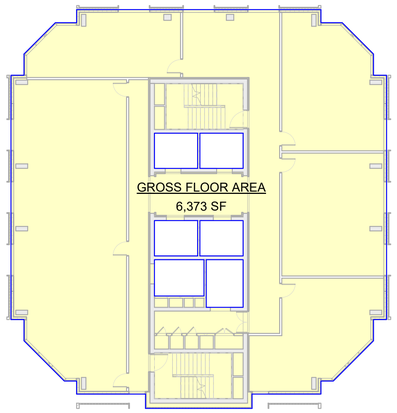
3 LEVEL 2 - TYP. HOTEL
1/16" = 1'-0"



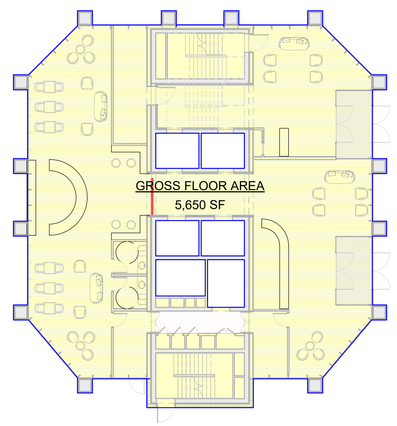
11 LEVEL 30 - SKY LOBBY
1/16" = 1'-0"



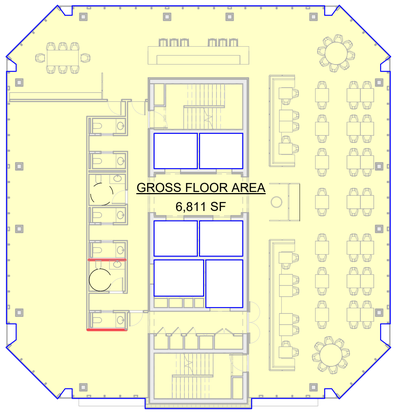
8 LEVEL 14 - RESIDENTIAL CLUB
1/16" = 1'-0"



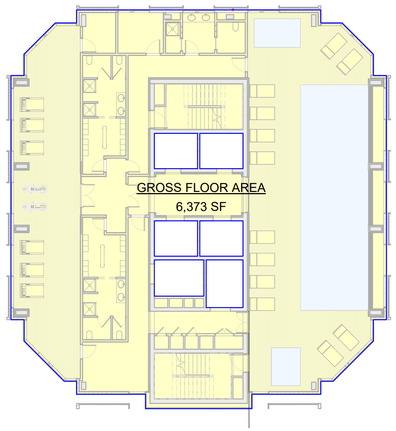
5 LEVEL 11 - MECHANICAL
1/16" = 1'-0"



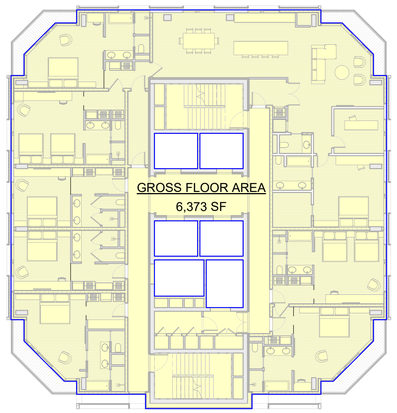
2 LEVEL 1 - GRADE
1/16" = 1'-0"



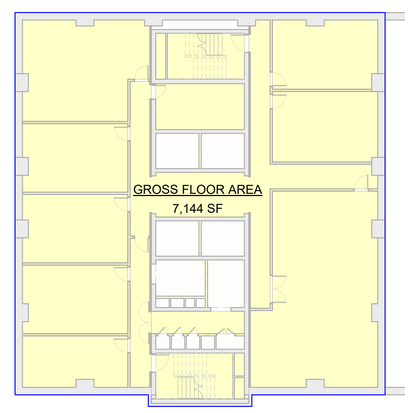
10 LEVEL 29 - RESTAURANT
1/16" = 1'-0"



7 LEVEL 13 - WELLNESS
1/16" = 1'-0"



4 LEVEL 10 - PRESIDENTIAL
1/16" = 1'-0"



1 LEVEL B - BASEMENT
1/16" = 1'-0"

NOTES

FLOOR AREA CALCULATION METHODOLOGY

Gross Floor Area:

- Includes exterior wall assembly to exterior face of glass
- Includes egress stairs
- Excludes major shafts (elevator, mechanical)
- Includes window frame projections beyond wall
- Includes basement
- Includes mechanical penthouse on roof

GROSS FLOOR AREA	
Level	Area
LEVEL BEACON ROOF	1,315 SF
LEVEL 30 - SKY LOBBY	6,811 SF
LEVEL 29 - RESTAURANT	6,811 SF
LEVEL 28	6,373 SF
LEVEL 27	6,373 SF
LEVEL 26	6,373 SF
LEVEL 25	6,373 SF
LEVEL 24	6,373 SF
LEVEL 23	6,373 SF
LEVEL 22	6,373 SF
LEVEL 21	6,373 SF
LEVEL 20	6,373 SF
LEVEL 19	6,373 SF
LEVEL 18	6,373 SF
LEVEL 17	6,373 SF
LEVEL 16	6,373 SF
LEVEL 15	6,373 SF
LEVEL 14 - RESIDENTIAL CLUB	6,373 SF
LEVEL 13 - WELLNESS	6,373 SF
LEVEL 12 - MECHANICAL	6,373 SF
LEVEL 11 - MECHANICAL	6,373 SF
LEVEL 10 - PRESIDENTIAL	6,373 SF
LEVEL 9	6,373 SF
LEVEL 8	6,373 SF
LEVEL 7	6,373 SF
LEVEL 6	6,373 SF
LEVEL 5	6,373 SF
LEVEL 4	6,373 SF
LEVEL 3	6,373 SF
LEVEL 2	6,373 SF
LEVEL 1 - GRADE	5,650 SF
LEVEL B - BASEMENT	7,144 SF
TOTAL GROSS FLOOR AREA	199,803 SF

GENERAL FINISH NOTES

The following notes are intended to help establish the level of finish and detail throughout the project in order to best capture associated costs for budgeting. These are not intended to be final selections and will be revised according to further design development.

1. Hotel guest rooms: pricing to include full interior fitout. EBC to provide guidance on level of quality.
2. Residential units: pricing to include full interior fitout. EBC to provide guidance on level of quality.
3. Public space finishes to be wood or stone flooring, Level 5 finish painted GWB walls, acoustical plaster ceiling, recessed metal base. Room doors to be wood veneer with metal panels at either side of doors. Provide allowance for acoustical wall treatments (wood or fabric) at corridors. See plans for additional finish notes.
4. Back of house spaces to be Nora Uni rolled rubber flooring (solid colur with textured finish, 3mm thick), painted GWB walls, and rubber base. Doors and frames to be painted with Scuffmaster Scrubtough paint.
5. Front of house elevators to have stone flooring, mirror-backed ribbed art glass walls with stainless steel reveals, metal panel ceiling, and integrated light cove. Elevator doors, frame, and header to be bronze.
6. Service elevator to have Nora Uni rolled rubber flooring (textured finish, 3mm thick), laminate wall panels with stainless steel reveals, metal panel ceiling, and integrated light cove.
7. Steel egress stairs for stairs and landings, sealed, with painted GWB walls, recessed painted wood base with Scuffmaster Scrubtough paint, GWB ceiling, and stainless steel handrail. Price to include public-level finishes between levels 19 and 21.
8. All corridor ceilings to be acoustical PL.

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45 Union Street, Portland, Maine

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KEY PLAN



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SCALE
1/16" = 1'-0"

DRAWING TITLE
GFA CALCULATIONS

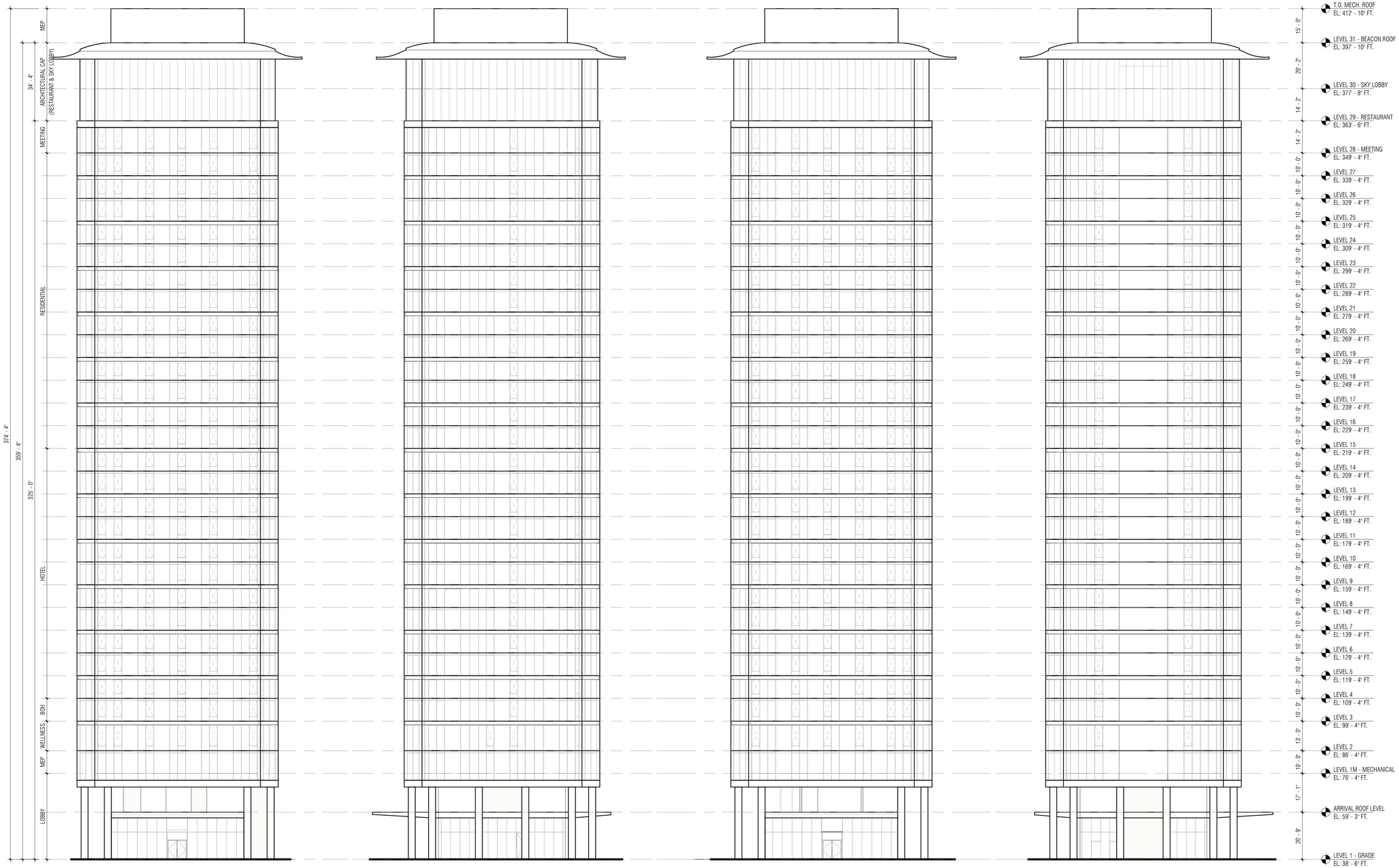
SHEET NUMBER
A00.02

5/2/2025 7:11:12 PM

374'-4"
(Measured to Top of Mechanical Roof)

359'-4"
40'-0" Max Architectural Cap Allowance
(Measured to Top of Occupied Roof)

325'-0"
Allowed On Site per Downtown Height Overlay Map
(Measured to Architectural Cap)



4 NORTH ELEVATION DIAGRAM
3/64" = 1'-0"

3 EAST ELEVATION DIAGRAM
3/64" = 1'-0"

2 SOUTH ELEVATION DIAGRAM
3/64" = 1'-0"

1 WEST ELEVATION DIAGRAM
3/64" = 1'-0"

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ISSUE

NO.	DESCRIPTION	DATE
	Major Site Plan Application	2024-12-02

KEY PLAN



NOTES

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SCALE
3/64" = 1'-0"

DRAWING TITLE
Overall Elevations Diagrams

SHEET NUMBER
A4.02

12/2/2024 6:53:11 PM

Material Legend

Key Value	Keynote Text				
1	Metallic Equipment Screen	5	Glass Railing	9	Exterior Wall Panels
2	Mass Timber Roof Trellis	6	Metallic Mechanical Louvers		
3	Low Reflectivity Glass with High Performance Coatings	7	Concrete Column		
4	Metallic Screen	8	Canopy with Metallic Finish		



1 NORTH-ELEVATION
3/64" = 1'-0"

2 EAST-ELEVATION
3/64" = 1'-0"

3 SOUTH-ELEVATION
3/64" = 1'-0"

4 WEST-ELEVATION
3/64" = 1'-0"

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SCALE
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OVERALL ELEVATIONS

SHEET NUMBER
A40.03

10/6/2025 2:47:35 PM

Department Legend

- CIRCULATION
- PUBLIC
- SERVICES
- SUPPORT
- TOILET

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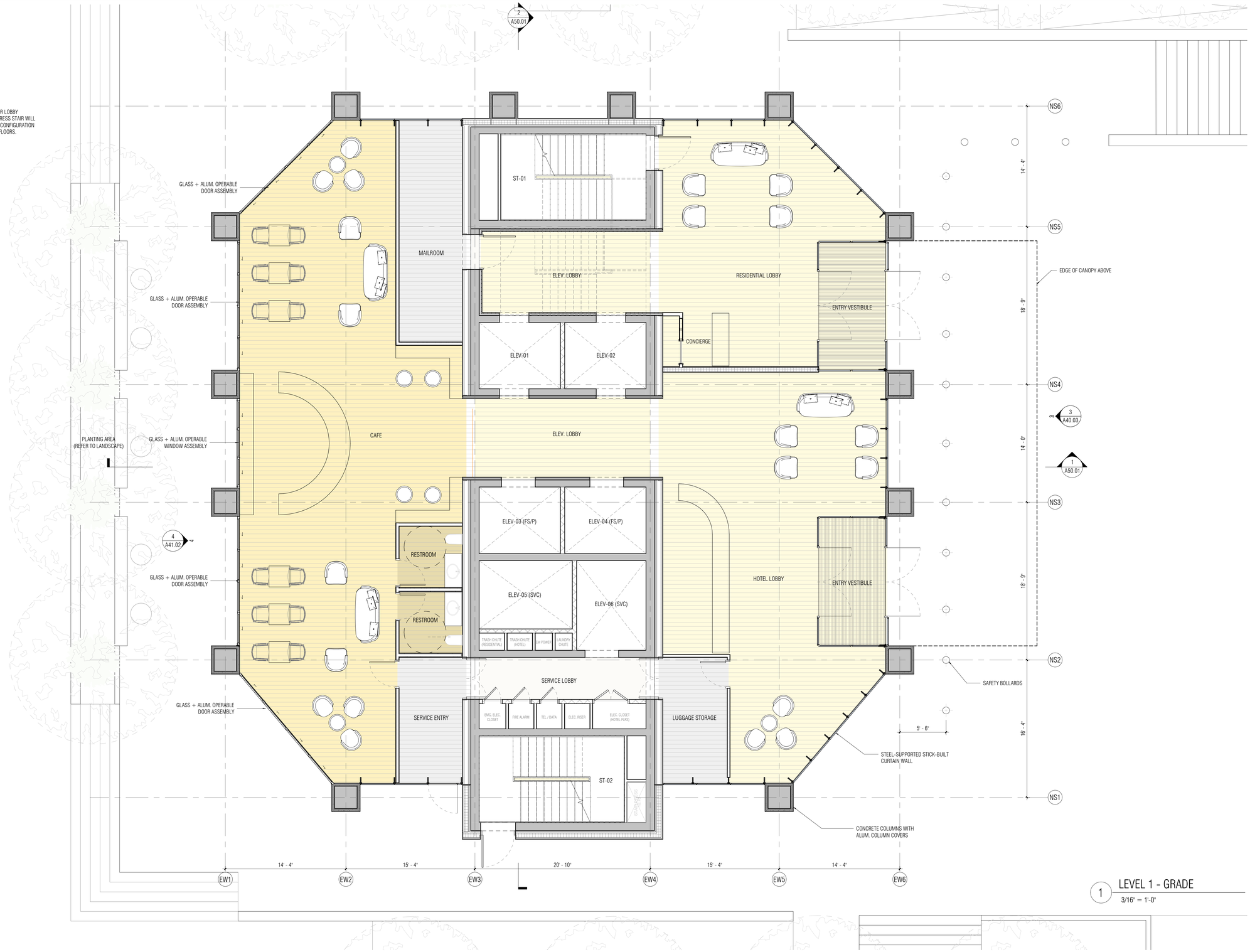

1 LEVEL 1 - GRADE
3/16" = 1'-0"

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45 Union Street, Portland, Maine

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DRAWING TITLE
FLOOR PLAN - LEVEL 1 GRADE

SHEET NUMBER
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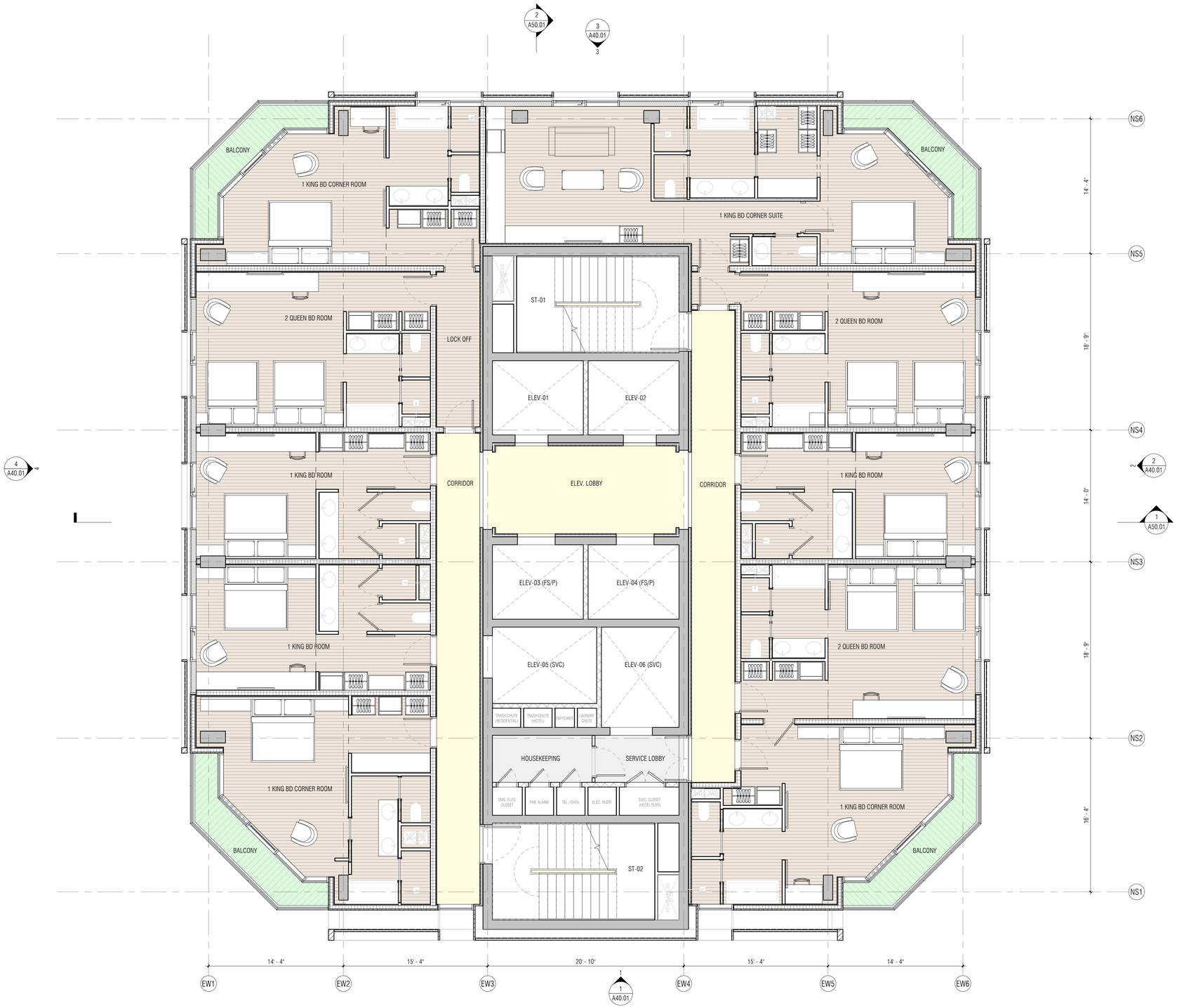

Department Legend

- BALCONY
- CIRCULATION
- HOTEL
- SERVICES
- SUPPORT

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1 LEVEL 4 - TYP. HOTEL_BALCONY W/ BALCONY
3/16" = 1'-0"

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SCALE
3/16" = 1'-0"

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FLOOR PLAN - LEVEL 4 TYP. HOTEL

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Department Legend

- BALCONY
- CIRCULATION
- RESIDENTIAL
- SERVICES

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1 LEVEL 18 - TYP. RESIDENTIAL_W/ BALCONY
3/16" = 1'-0"

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FLOOR PLAN - LEVEL 18 TYP. RESIDENTIAL

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A20.18

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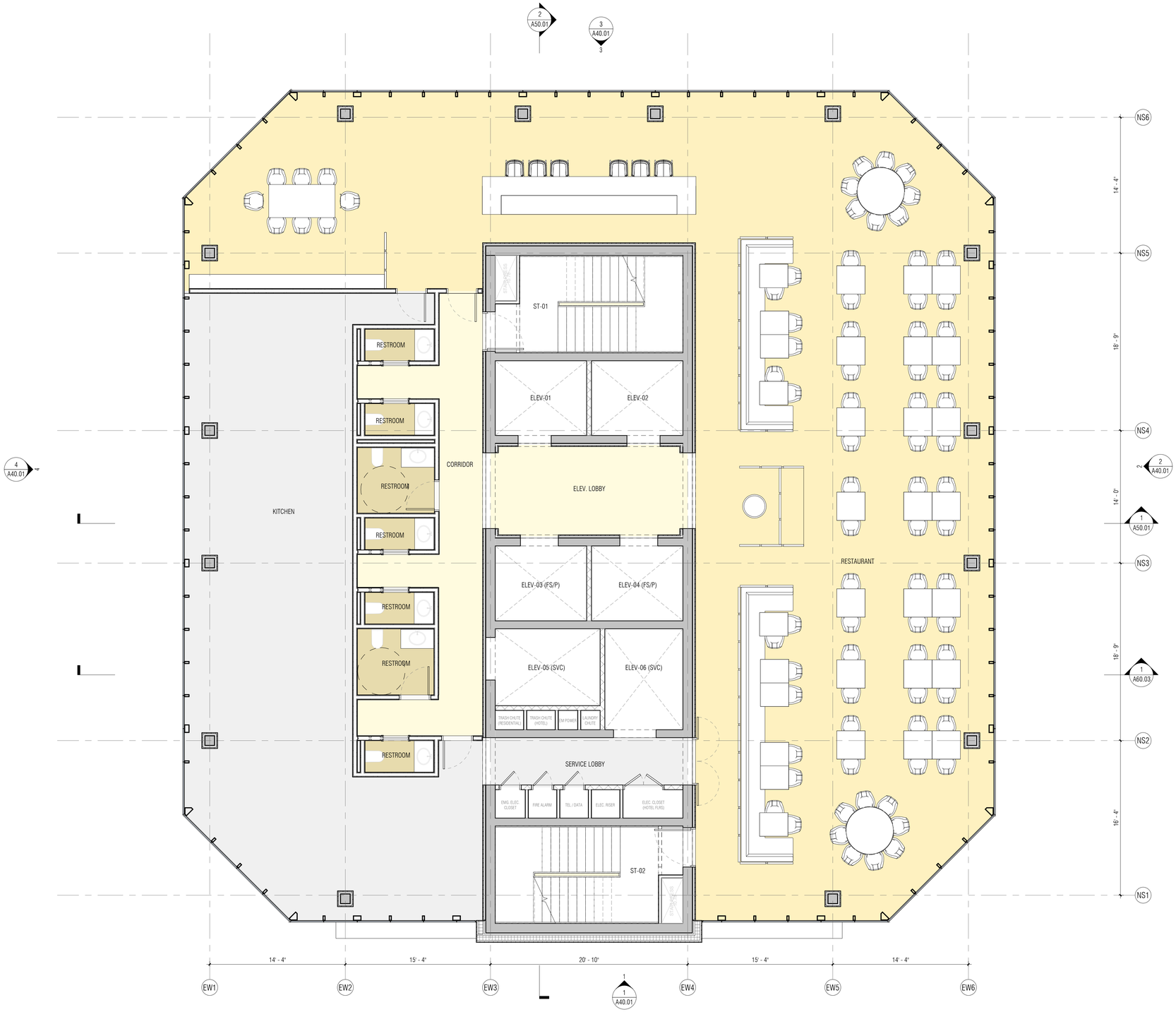

Department Legend

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- PUBLIC
- SERVICES
- SUPPORT
- TOILET

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1 LEVEL 29 - RESTAURANT
3/16" = 1'-0"

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45 Union Street, Portland, Maine

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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN

NOTES

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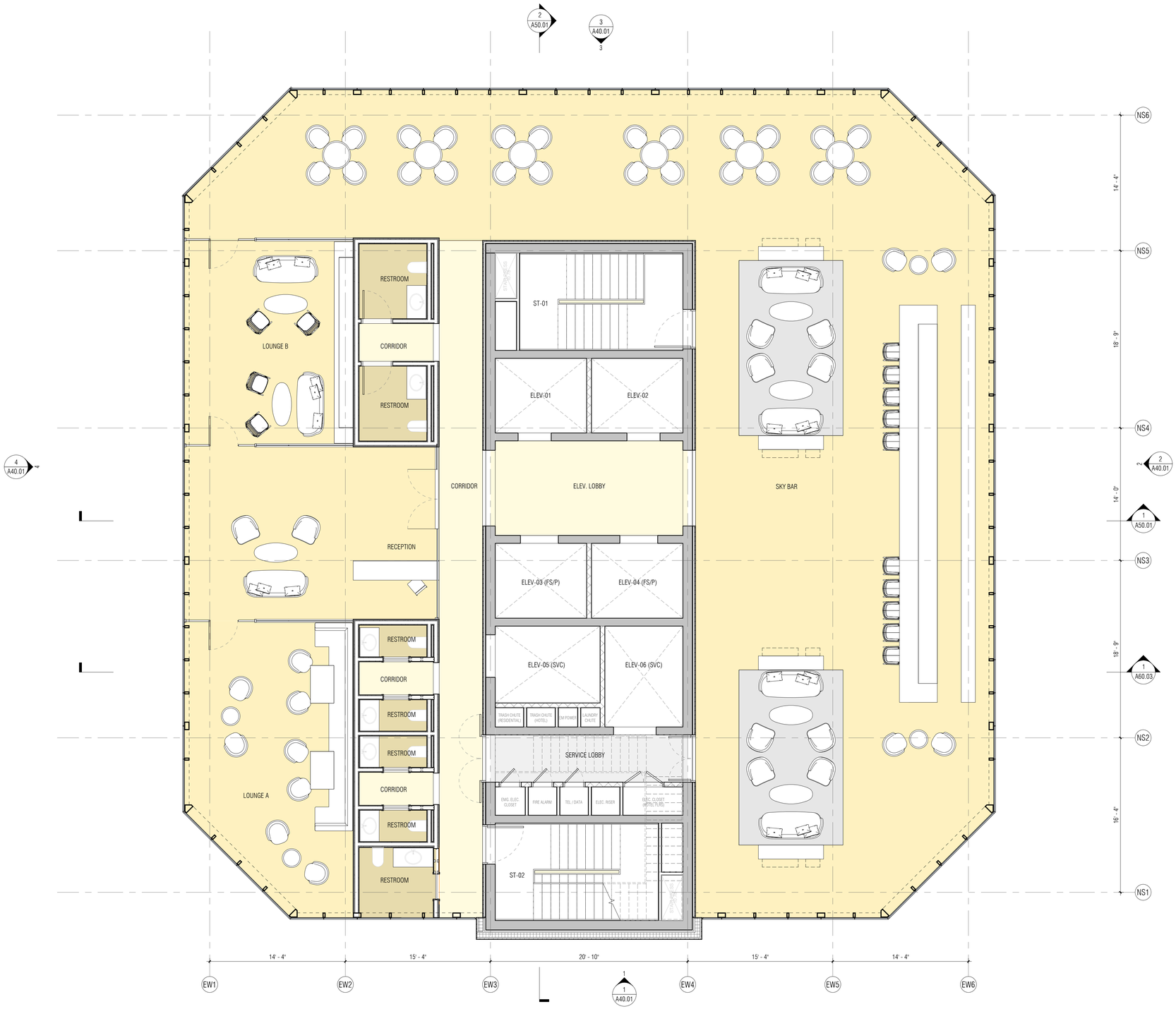
PROJECT NUMBER	DRAWN BY
1083.00	
DATE	CHECKED BY
05/30/25	
PHASE	
SCHEMATIC DESIGN	

SCALE
3/16" = 1'-0"

DRAWING TITLE
FLOOR PLAN - LEVEL 29
RESTAURANT

SHEET NUMBER
A20.29

5/2/2025 7:16:36 PM



Department Legend

- CIRCULATION
- PUBLIC
- SERVICES
- TOILET

GENERAL NOTE: FIRE SERVICE ACCESS ELEVATOR LOBBY ENCLOSURES = PROTECTED CORRIDORS TO EGRESS STAIR WILL APPLY TO ALL LEVELS EXCEPT GROUND FLOOR. CONFIGURATION WILL VARY AT DIFFERNT LEVELS AND AMENITY FLOORS.

1 LEVEL 30 - SKY LOBBY
3/16" = 1'-0"

45 Union Street

45 Union Street, Portland, Maine

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East Brown Cow - Kowtower LLC
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100 Properzi Way
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DRAWING TITLE
FLOOR PLAN - LEVEL 30 SKY LOBBY

SHEET NUMBER
A20.30

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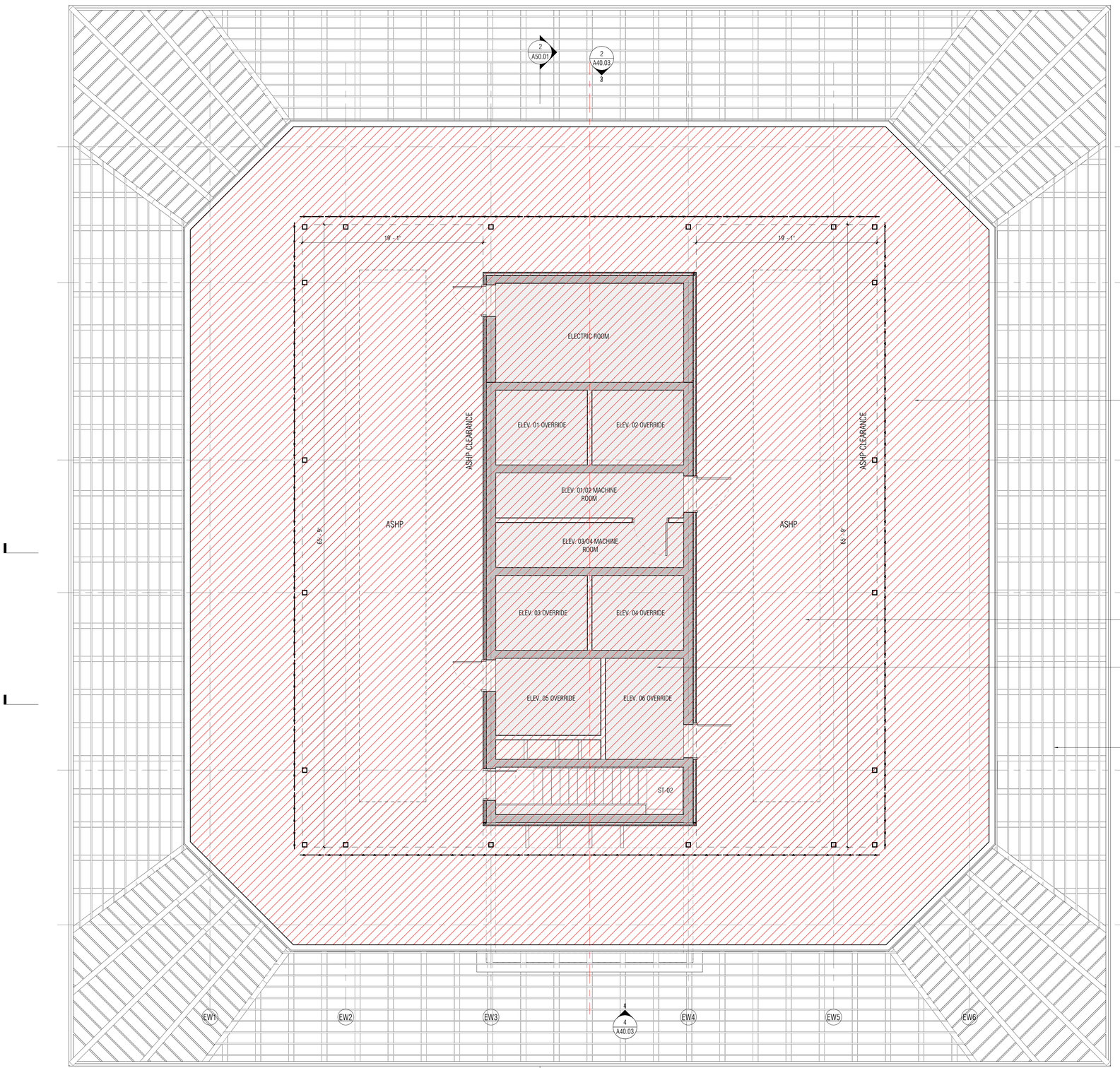

1 LEVEL BEACON ROOF
3/16" = 1'-0"

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45 Union Street, Portland, Maine

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SCALE
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DRAWING TITLE
FLOOR PLAN - LEVEL BEACON ROOF

SHEET NUMBER
A20.31

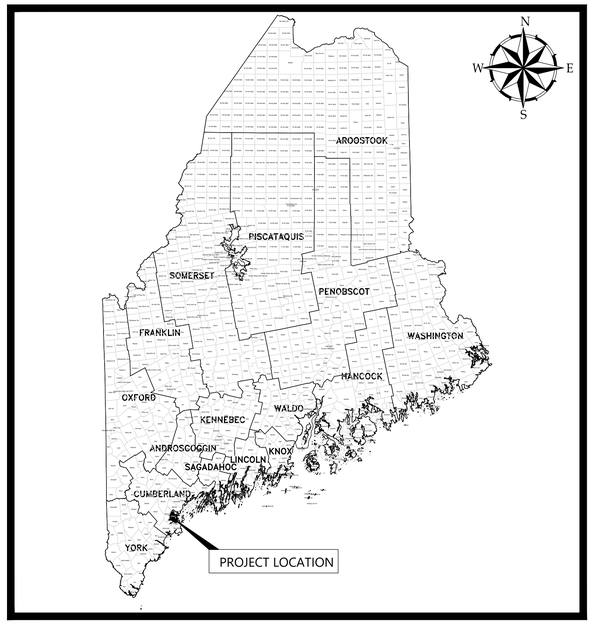
10/2/2025 9:21:29 AM

45 UNION STREET

PORTLAND, MAINE

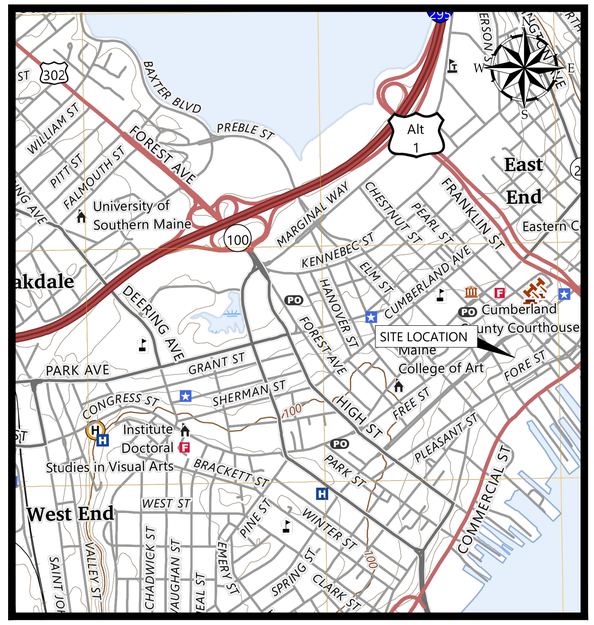
NOT FOR CONSTRUCTION

AUGUST 2025



PROJECT LOCATION MAP

DRAWING INDEX	
Sheet Description	**Sheet Title**
GENERAL	
COVER	**G-000**
LEGEND & ABBREVIATIONS	**G-001**
CIVIL	
EXISTING CONDITIONS	**C-001**
EROSION & SEDIMENTATION CONTROL PLAN	**C-002**
SITE LAYOUT PLAN	**C-100**
SITE UTILITY PLAN	**C-200**
SITE GRADING & DRAINAGE PLAN	**C-300**
CIVIL DETAILS - 1	**C-400**
CIVIL DETAILS - 2	**C-401**
CIVIL DETAILS - 3	**C-402**
CIVIL DETAILS - 4	**C-403**
CIVIL DETAILS -5	**C-404**
CIVIL DETAILS - 6	**C-405**
CIVIL DETAILS - 7	**C-406**



SITE LOCATION MAP

SOURCE: USGS TOPO QUADRANGLE

3/19/2025 9:54:17 AM

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED PROFESSIONAL ENGINEER

KEY PLAN

NOTES

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PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	**CHECKED BY**
AUGUST 2025	CGS

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

AS NOTED

DRAWING TITLE

COVER

SHEET NUMBER

G-000

GENERAL NOTES

1. EXISTING CONDITIONS SHOWN HEREON HAVE BEEN PROVIDED FROM A FIELD SURVEY PREPARED BY SEBAGO TECHNICS, DATED APRIL 22, 2025.
2. ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND VERTICAL DATUM, BASED UPON A LEVEL RUN FROM CITY OF PORTLAND BENCHMARK AT CITY HALL BUILDING, CARD REFERENCE L.B. 786/188.
3. 3.BASIS OF BEARING IS REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, GEOID18, IN U.S. SURVEY FEET.
4. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ANY ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS, AND LOCATION AND SIZE OF BUILDINGS.
5. EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS. THESE PLANS DO NOT NECESSARILY DEPICT THE EXACT LOCATIONS OF ALL UTILITIES, WHICH MAY EXIST AT THIS TIME WITHIN THE SURVEY LIMITS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY UTILITY CONNECTIONS OR CROSSINGS OF PROPOSED OR EXISTING UTILITIES. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IN WRITING. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THESE LINES. NO SEPARATE OR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND ACTUAL FIELD CONDITIONS ENCOUNTERED. THE CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE EXISTING UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE AND TO FACILITATE THE PROPOSED CONNECTION(S).
6. THE CONTRACTOR SHALL CALL "DIG SAFE. MAINE" AT 888-344-7233 AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
7. RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH (GRAVEL, PAVEMENT, GRASS, ETC.). RESTORATION OF PAVED SURFACES, GRAVEL SURFACES, DRIVEWAYS, AND LAWNS DAMAGED BY CONSTRUCTION ACTIVITIES OUTSIDE OF LIMITS OF WORK INDICATED ON THE PLANS SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER. ANY CURB DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND SPECIFICATIONS AT NO ADDITIONAL COST TO OWNER.
8. PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE BY A LICENSED LAND SURVEYOR ACCEPTABLE TO THE CITY.
9. EXISTING FACILITIES (I.E. TREES, POLES, LIGHT POSTS, CATCH BASINS, ETC.) SHALL BE REMOVED AND PROTECTED DURING CONSTRUCTION. OWNER AND/OR CITY RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES FOR WORK WITHIN RIGHT-OF-WAY. CONTRACTOR TO DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF OWNER AT CONTRACTOR'S EXPENSE.
10. ALL WORK WITHIN THE RIGHT OF WAY OF CITY STREETS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSED TRAFFIC CONTROL PLAN TO THE TRAFFIC ENGINEER AT LEAST 7 DAYS BEFORE BEGINNING CONSTRUCTION IN ANY STREET. THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER, WHO MAY ATTACH SPECIAL CONDITIONS TO, OR REQUIRE MODIFICATIONS OF, THE TRAFFIC CONTROL PLAN. WORK SHALL NOT BEGIN UNTIL THE PLAN IS APPROVED BY THE TRAFFIC ENGINEER.
11. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN WRITING BY CITY AND/OR LAND OWNER.
12. RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, BARRIERS, FENCES, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. NO TRENCH SHALL BE LEFT OPEN DURING NON-WORKING HOURS. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR, DURING BOTH WORKING AND NON-WORKING HOURS.
13. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
14. ALL WORK ASSOCIATED WITH THE PROJECT SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLES VI, VII, AND IX OF CHAPTER 25-STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES OF THE CITY OF PORTLAND CODE OF ORDINANCES.
15. THE CITY OF PORTLAND ENGINEERING DIVISION REQUIRES THAT UPON COMPLETION OF CONSTRUCTION, A COMPLETE SET OF "RECORD" DRAWINGS THAT REFLECT ANY AND ALL MODIFICATIONS TO THE SANITARY SEWER SYSTEM, STORM SEWER SYSTEM AND ANY OTHER UTILITY INSTALLATIONS OR ALTERATIONS WITHIN THE PROJECT LIMITS BE SUBMITTED TO THE DIVISION.
16. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, DEVELOPMENT REVIEW COORDINATOR, PUBLIC SERVICES REPRESENTATIVE, AND OWNER TO REVIEW THE CONSTRUCTION SCHEDULE AND CRITICAL ASPECTS OF THE SITE WORK. AT THAT TIME, THE SITE/BUILDING CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF A DETAILED CONSTRUCTION SCHEDULE TO THE ATTENDING CITY REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A MUTUALLY AGREEABLE TIME FOR THE PRECONSTRUCTION MEETING.
17. EXISTING PAVEMENT SHALL BE SAWCUT AND BUTTED TO THE NEW PAVEMENT. NO FEATHERING OF PAVEMENT WILL BE PERMITTED.

DEMOLITION NOTES

1. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE CITY OF PORTLAND, AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
2. CONSTRUCTION/DEMOLITION DEBRIS NOT APPROVED FOR REUSE ON-SITE, SHALL BE REMOVED AND DISPOSED OFF SITE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION. WASTE MANIFEST FORMS DOCUMENTING PROPER OFF-SITE DISPOSAL SHALL BE PROVIDED TO THE SITE/CIVIL ENGINEER AND THE CITY OF PORTLAND. CONTRACTOR SHALL CONTROL DUST AND DEBRIS DURING DEMOLITION OPERATIONS. MATERIALS SHALL NOT BE STOCKPILED OR STORED OUTSIDE THE DESIGNATED CONSTRUCTION LIMITS.
3. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES TO REMAIN. ANY TEMPORARY SHUT DOWNS REQUIRED TO FACILITATE THE PROPOSED CONSTRUCTION, WHICH MAY AFFECT USES ON ADJACENT PROPERTIES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY PROVIDER, CITY OF PORTLAND, AND AFFECTED LAND OWNERS.
4. CONTRACTOR SHALL REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES DAMAGED DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL PROCEED WITH CAUTION WITHIN THE PROPOSED WORK AREA TO PREVENT ANY INTERRUPTION TO EXISTING UTILITY SERVICE.
6. CONTRACTOR SHALL COVER CONSTRUCTION DUMPSTERS AND ROLL-OFF CONTAINERS, AND STORE ALL CONSTRUCTION CHEMICALS INSIDE THE CONSTRUCTION TRAILER OR UNDER A COVERED AREA DURING PERIODS WHEN CONSTRUCTION CEASES.

ABBREVIATIONS*

&	AND
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ADA	AMERICANS WITH DISABILITIES ACT
APPROX; ±	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
B-#	BORING NUMBER
BOC	BOTTOM OF CURB
BCC	BITUMINOUS CONCRETE CURB
BIT	BITUMINOUS
BLDG	BUILDING
B.M.	BENCH MARK
B.O.A.	BOTTOM OF FOOTING
B.O.S.	BOTTOM OF SILL
BOT	BOTTOM
B.S.	BOTTOM OF STEPS
B.W.	BOTTOM OF WALL
B/W	BETWEEN
℄	CENTERLINE
CB	CATCH BASIN
CC	CONCRETE CURB
C.D.F.	CONTROL DENSITY FILL
C.I.	CAST IRON
C.L.	CLEARING LIMITS
C.L.D.I.	CEMENTED LINED DUCTILE IRON
C.L.F.	CHAIN LINK FENCE
C.M.P.	CORRUGATED METAL PIPE
C.M.U.	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC	CONCRETE
CONT	CONTINUOUS
DEMO	DEMOLISH
D.I.	DUCTILE IRON
DIA, Ø	DIAMETER
DMH	DRAINAGE MANHOLE
DWL	DOUBLE WHITE LINE
DYL	DOUBLE YELLOW LINE
EA	EACH
ECC	ECCENTRIC
EL. ELEV	ELEVATION
ELEC	ELECTRICAL
E.O.P.	EDGE OF PAVEMENT/EDGE OF PIPE
EXIST, EX, EXG	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F.D.	FLOOR DRAIN
FDN	FOUNDATION
F.F., FIN. FLR.	FINISH FLOOR
FL. FLR	FLOOR
FT	FOOT/ FEET
GAL	GALLON
G.G.	GAS GATE VALVE
GRAN	GRANITE
GRND	GROUND
H.A.T.	HIGHEST ANNUAL TIDE
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HMA	HOT MIX ASPHALT
HT	HEIGHT
HWY	HIGHWAY
H:V	HORIZONTAL TO VERTICAL
HYD	HYDRANT
I.A.	INSIDE DIAMETER
IN	INCHES
INF	INFLUENT
INT	INTERIOR
INV	INVERT
I.P.	IRON PIPE
L	LENGTH
LB	POUND
L.D.	LINEAR FEET
LW, L.O.W.	LIMIT OF WORK
MAX	MAXIMUM
MECH	MECHANICAL
MFG	MANUFACTURER
MH	MANHOLE
M.H.W.	MEAN HIGH WATER
MIL	MILLIMETER
MIN	MINIMUM
M.J.	MECHANICAL JOINT
MLW	MEAN LOW WATER
MON	MONUMENT
M.P.H.	MILES PER HOUR
M.S.L.	MEAN SEA LEVEL
N/A	NOT APPLICABLE
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
N/F	NOW OR FORMERLY
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.R.	ON CENTER
O.S.	OUTSIDE DIAMETER
O.T.	OVERHEAD ELECTRIC
OH	OVERHEAD
PCC	PRECAST CONCRETE CURB
PE	POLYETHYLENE
P.L.S.	PROFESSIONAL LAND SURVEYOR
PROP	PROPOSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED/POINT
PVC	POLYVINYL CHLORIDE
R=/RIM	RIM ELEVATION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R.D.	ROOF DRAIN
RED	REDUCER
RET	RETAINING WALL
REQ'D	REQUIRED
R.O.W., R/W	RIGHT-OF-WAY
RT, RTE	ROUTE
S	SLOPE (FT./FT.)
SCH	SCHEDULE
SD	STORM DRAIN
S.D.R.	STANDARD DIMENSION RATIO
SECT	SECTION
SGC	SLOPED GRANITE CURB
S.H.G.W.T.	SEASONAL HIGH GROUND WATER TABLE
SHT	SHEET
SMH	SEWER MANHOLE
SS	SANITARY SEWER
S.S./SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
SQ. FT.	SQUARE FEET
SWL	SINGLE WHITE LINE
SYL	SINGLE YELLOW LINE
TOC	TOP OF CURB
T.O.F.	TOP OF FOOTING
T.O.W., T.W.	TOP OF WALL
TP-#	TEST PIT
T.S.	TOP OF STEPS
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
U.P.	UTILITY POLE
VGC	VERTICAL GRANITE CURB
VERT	VERTICAL
V.T.A.	VENT TO ATMOSPHERE
W/	WITH
W	WEST/WATER/WATERMAIN
W.G.	WATER GATE VALVE
W.S.	WATER SERVICE/WATER STOP/WATER SURFACE
W.V.	WATER VALVE

LINETYPE LEGEND

EXISTING		PROPOSED
122	CONTOUR (1' OR 2' INTERVAL)	122
120	CONTOUR (10' INTERVAL)	120
S	SANITARY SEWER	S
FM	FORCE MAIN	FM
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
FD	FOUNDATION DRAIN	FD
RD	ROOF DRAIN	RD
W	WATER MAIN	W
E	UNDERGROUND ELECTRIC	E
T	UNDERGROUND TELEPHONE	T
COMM	UNDERGROUND COMMUNICATIONS	COMM
G	GAS LINE	G
OE	OVERHEAD ELECTRIC	OE
	PROPERTY LINE	
	PROJECT SITE PROPERTY LINE	
	RIGHT OF WAY LINE	
	TEMPORARY EASEMENT	
	PERMANENT EASEMENT	
	CENTERLINE	
	EDGE OF VEGETATION	
	CHAIN LINK FENCE	
	WOOD FENCE	
	GRANITE CURB	
	EDGE OF PAVEMENT	
	GUARDRAIL	
	BUILDING OVERHANG	
	EROSION CONTROL SEDIMENT BARRIER	
	LIMIT OF WORK	LW
	ABANDON IN PLACE	
	UTILITY REMOVE AND DISPOSE	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
	HISTORIC PRESERVATION BOUNDARY	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
	REMOVE AND DISPOSE PAVEMENT	
	REMOVE AND DISPOSE SIDEWALK	
	BITUMINOUS PAVEMENT	
	BRICK SIDEWALK	
	CONCRETE	
	RIPRAP	
	GRAVEL	
	CRUSHED STONE	
	LAWN	
	BUILDING	

MATCHLINE STA. X+XX _ _ _ SEE SHEET ####

SYMBOLS LEGEND

EXISTING		PROPOSED
XXX.XX	SPOT ELEVATION	XXX.XX
SCD	STONE CHECK DAM	SCD
S / CO	SANITARY SEWER MANHOLE / CLEANOUT	S / CO
	GREASE INTERCEPTOR	
D	DRAINAGE MANHOLE	D
	CATCH BASIN	
	INLET PROTECTION	
RD	ROOF DRAIN	RD
	ACCESS COVER HATCH	
T	TELEPHONE MANHOLE	T
T	TELEPHONE STAND BOX	T
	TRANSFORMER	
E	ELECTRICAL MANHOLE	
	ELECTRICAL VAULT	
EM	ELECTRICAL METER BOX	
	UTILITY POLE	
	UTILITY POLE WITH GUY	
	LIGHT POST/LIGHT POLE	
GM	GAS METER	G
	GAS GATE VALVE	
	CURB STOP	
	HYDRANT	
W	WATER WELL	W
WM	WATER METER BOX	WM
	WATER GATE VALVE	
	PROPERTY MONUMENT	MS
	IRON PIN	IPS
	SURVEY STATION / CONTROL POINT	
	TEMPORARY BENCH MARK	
	MAILBOX	
	BOLLARD	
	STREET AND MISCELLANEOUS SIGNS	
	ACCESSIBLE PARKING	
FP	BIKE LANE	FP
	FLAGPOLE	
PM	PARKING METER	
	DECIDUOUS TREE/SHRUB	
	CONIFEROUS TREE/SHRUB	
	TREE PROTECTION	
	TREE REMOVAL	
	TREE PLANTERS	

NOTE: THIS IS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DOCUMENT

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED PROFESSIONAL ENGINEER

KEY PLAN



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1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

PHASE
ISSUED FOR SITE PLAN APPROVAL

SCALE
AS NOTED

DRAWING TITLE
LEGEND & ABBREVIATIONS

SHEET NUMBER
G-001

3/19/2025 9:54:17 AM

SHEET INDEX:

SH. 1	COVER SHEET & NOTES
SH. 2	BOUNDARY SURVEY - 1
SH. 3	BOUNDARY SURVEY - 2
SH. 4	BOUNDARY SURVEY - 3
SH. 5	BOUNDARY SURVEY - 4
SH. 6	TOPOGRAPHY PLAN - 1
SH. 7	TOPOGRAPHY PLAN - 2
SH. 8	TOPOGRAPHY PLAN - 3
SH. 9	TOPOGRAPHY PLAN - 4
SH. 10	UTILITY PLAN - 1
SH. 11	UTILITY PLAN - 2
SH. 12	UTILITY PLAN - 3
SH. 13	UTILITY PLAN - 4
SH. 14	STRUCTURE TABLE

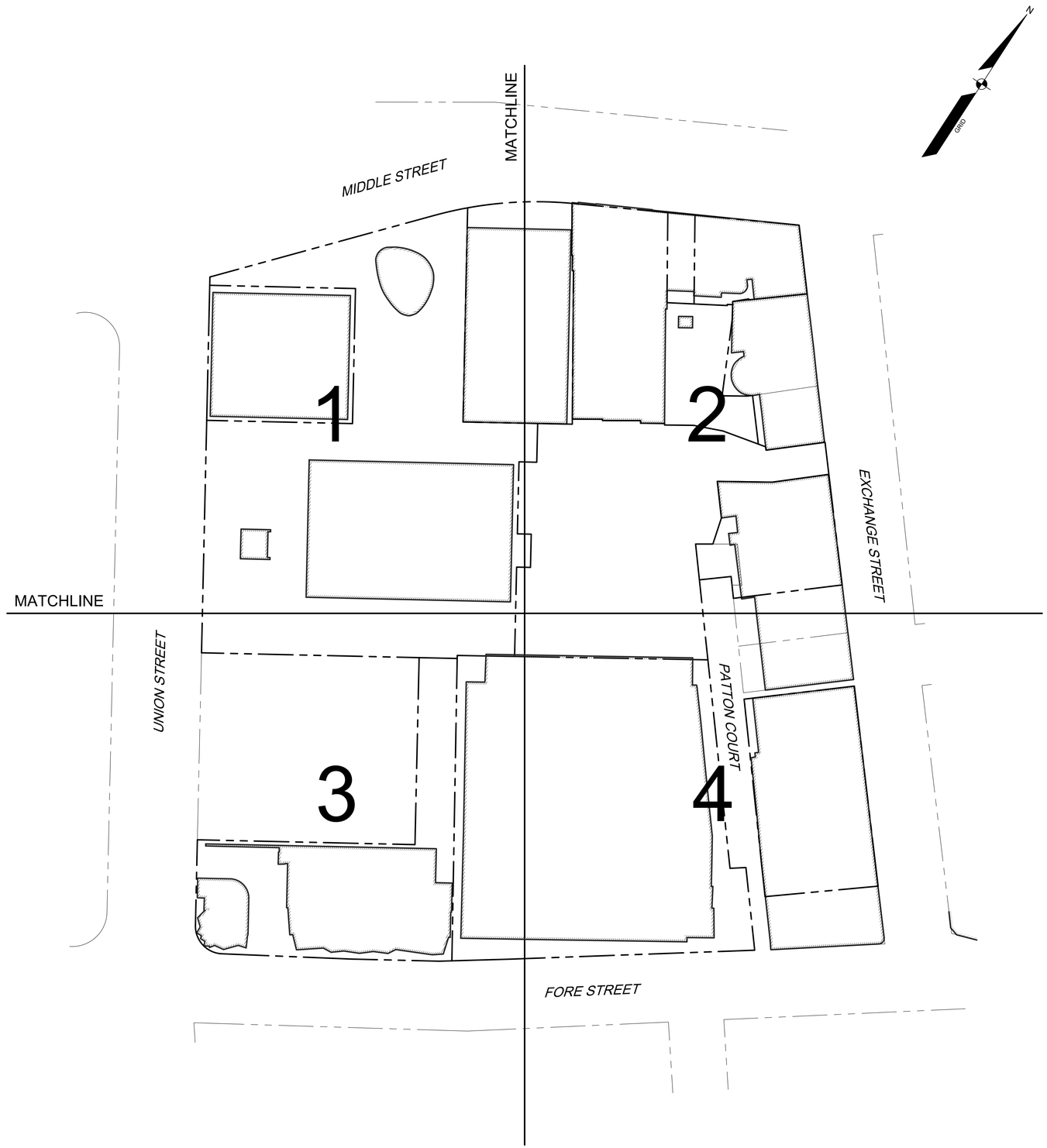
LEGEND

EXISTING	DESCRIPTION
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	EASEMENT
	MONUMENT (FOUND)
	IRON MARKER (FOUND)
N / F	NOW OR FORMERLY
32(I)-33	TAX MAP (BLOCK), LOT NUMBER
	BUILDING
	DECK/STEPS
	OVERHANG
	LEDGE
	EDGE OF PAVEMENT
	EDGE OF CONCRETE
	EDGE OF BRICK
	PAVEMENT PAINT
	EDGE GRAVEL
	CURB LINE
120 118	CONTOURS
	CHAIN LINK FENCE
	STOCKADE FENCE
	RETAINING WALL
	DECIDUOUS TREE
	SHRUB
	STUMP
	MULCH LINE
	BOLLARD
	SIGN
G	GAS
	GAS GATE VALVE
GM	GAS METER
G	GAS MANHOLE
W	WATER
	WATER GATE VALVE
	WATER SHUT OFF
	HYDRANT
W	WATER MANHOLE
	IRRIGATION BOX
	IRRIGATION VALVE
	YARD DRAIN (YD)
	FIRE SPIGGOT
MW	MONITORING WELL
MH	MANHOLE
S	SANITARY SEWER
S	SANITARY MANHOLE
	SANITARY CLEAN OUT
SD	STORM DRAIN
D	DRAINAGE MANHOLE
	CATCH BASIN
	DRAINAGE CLEAN OUT
OHU	OVERHEAD UTILITY
UGT	UNDERGROUND COMMUNICATIONS
UGE	UNDERGROUND ELECTRIC
UGU	UNKNOWN UNDERGROUND UTILITY
T	TRANSFORMER PAD
C	COMMUNICATIONS BOX
E	ELECTRICAL MANHOLE
EM	ELECTRIC METER
H	HVAC UNIT
C	COMMUNICATIONS MANHOLE
	HANDHOLE
	LIGHT POLE
	MAILBOX
	PARKING METER

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 INCH = 40 FT.



GENERAL NOTES:

1. BOOK AND PAGE NUMBERS ARE REFERENCED TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS UNLESS NOTED OTHERWISE. VAULT AND VOLUME NUMBERS ARE REFERENCED TO THE CITY OF PORTLAND ENGINEERING DIVISION ARCHIVES.
2. BASIS OF BEARING IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, GEOID18, IN U.S. SURVEY FEET, BASED ON DUAL FREQUENCY GNSS OBSERVATIONS. ELEVATIONS DEPICTED HEREON ARE CITY OF PORTLAND VERTICAL DATUM, BASED UPON A LEVEL RUN FROM THE CITY OF PORTLAND BENCHMARK AT CITY HALL BUILDING, CARD REFERENCE L.B. 786/188.
3. AREA AS NOTED WITHIN EACH PROPERTY (SHOWN ON THE BOUNDARY SHEETS).
4. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD WORK PERFORMED BY SEBAGO TECHNICS, INC. IN MARCH AND APRIL OF 2025.
5. PLAN REFERENCES:
   A. ALTA/ASCM LAND TITLE SURVEY MADE FOR COW PLAZA 1, LLC BY NORTHEAST CIVIL SOLUTIONS, DATED NOVEMBER 30, 2009, VAULT #1018-011.
   B. PLAN OF PROPERTY IN PORTLAND, MAINE MADE FOR CITY OF PORTLAND, MAINE "SITE PLAN" BY H.I. & E.C. JORDAN, DATED MAY 22, 1979, VAULT #738-003.
   C. STREET LINE RETRACEMENT PLAN "SPRING / MIDDLE ARTERIAL" MADE BY THE CITY OF PORTLAND, DATED FEBRUARY 10, 2014, VAULT #882-037A.
   D. PLAN OF PATTON COURT MADE BY THE CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, DATED THROUGH JANUARY 9, 1939, VAULT #598-009.
   E. PLAN OF PROPOSED FORE STREET PARKING GARAGE SITE MADE FOR THE CITY OF PORTLAND BY OWEN HASKELL, INC. DATED NOVEMBER 5, 1979, VAULT #500-006.
   F. STREET LINE DRAWING OF EXCHANGE STREET DATED NOVEMBER 1925, VOLUME 2, PAGE 117.
   G. STREET LINE DRAWING OF FORE STREET DATED JULY 1925, VOLUME 1, PAGE 27.
   H. STREET LINE DRAWING OF UNION STREET DATED NOVEMBER 1925, VOLUME 2, PAGE 121.
   I. PLAN OF EXCHANGE STREET DATED NOVEMBER 1855, VAULT #363-003.
   J. RIGHT OF WAY PLAN OF SPRING-MIDDLE ARTERIAL MADE FOR THE CITY OF PORTLAND BY OWEN HASKELL, INC. DATED OCTOBER 18, 1977, VAULT #595-010.
   K. EXISTING CONDITIONS PLAN ON UNION STREET MADE FOR CENTRAL MAINE POWER COMPANY BY TRC, DATED THROUGH JUNE 10, 2013, VAULT #1018-011A.
   L. PLAN OF CANAL PLAZA MADE FOR CANAL NATIONAL BANK-PLAZA REALTY TRUST BY H.I. & E.C. JORDAN, DATED AUGUST 1972, RECORDED IN PLAN BOOK 109, PAGE 108.
   M. ALTA/NSPS LAND TITLE SURVEY MADE FOR COW PLAZA HOTEL LLC BY NORTHEAST CIVIL SOLUTIONS DATED DECEMBER 9, 2016.
   N. DESIGN PLANS AND DRAWINGS OF CANAL PLAZA SHOWING PROPOSED UTILITIES PROVIDED BY WOODARD AND CURRAN.
6. EASEMENT/ENCUMBRANCES:
   A. SUBJECT TO A RECIPROCAL EASEMENT AGREEMENT BETWEEN COW PLAZA 1 LLC, COW PLAZA 2 LLC, COW PLAZA 3 LLC, COW PLAZA GARAGE LLC, COW PLAZA HOTEL LLC, AND KOWTOWER LLC RECORDED IN BOOK 27481, PAGE 1 AND AMENDED IN BOOK 35559, PAGE 70.
   B. SUBJECT TO A DRAINAGE AND STORMWATER RUNOFF EASEMENT RECORDED IN BOOK 30060, PAGE 87.
   C. SUBJECT TO A DECLARATION OF RESTRICTIONS RECORDED IN BOOK 30361, PAGE 242.
   D. SUBJECT TO A PARKING AGREEMENT RECORDED IN BOOK 37636, PAGE 111.
   E. SUBJECT TO AN ELECTRICAL EASEMENT RECORDED IN BOOK 30282, PAGE 57.
   F. SUBJECT TO AN EASEMENT FOR SEWER PURPOSES OVER THE DISCONTINUED PORTION OF PLUM STREET RESERVED BY THE CITY OF PORTLAND RECORDED IN BOOK 3231, PAGE 337.
   G. SUBJECT TO ACCESS AND MAINTENANCE RIGHTS RECORDED IN BOOK 3495, PAGE 183.
   H. SUBJECT TO AND BENEFITING FROM RIGHTS AND RESERVATIONS RECORDED IN BOOK 3519, PAGE 165.
   I. SUBJECT TO AND BENEFITING FROM RIGHTS AND RESERVATIONS RECORDED IN BOOK 3344, PAGE 45.
   J. SUBJECT TO A RIGHT OF WAY TO ACCESS THE PARKING GARAGE RECORDED IN BOOK 30060. PAGE 82.
   K. SUBJECT TO AN EASEMENT AGREEMENT AND BUILDING RESTRICTIONS RECORDED IN BOOK 30438, PAGE 253.
   L. BENEFITS FROM A LICENSE AGREEMENT WITH THE CITY OF PORTLAND OVER PORTIONS OF UNION STREET AND FORE STREET RECORDED IN BOOK 30393, PAGE 133.
   M. SUBJECT TO BUILDING RESTRICTIONS RECORDED IN BOOK 2074, PAGE 269.
   N. SUBJECT TO A DECLARATION OF 10 EXCHANGE STREET CONDOMINIUM RECORDED IN BOOK 33536, PAGE 85 AS AMENDED IN BOOK 34266, PAGE 17; BOOK 34289, PAGE 325; BOOK 34493, PAGE 255; AND BOOK 37244, PAGE 295.
   O. SUBJECT TO A PARTY WALL AND RECIPROCAL EASEMENT AGREEMENT RECORDED IN BOOK 37715, PAGE 80.
7. BENCHMARKS:
   BM-1: PAINT BOX ON CONCRETE TRAFFIC SIGNAL BASE
   ELEVATION: 49.96 (CITY OF PORTLAND VERTICAL DATUM)
   BM-2: HYDRANT FLANGE BOLT FACING FORE & UNION INTERSECTION
   ELEVATION: 27.13 (CITY OF PORTLAND VERTICAL DATUM)
   BM-3: HYDRANT FLANGE BOLT FACING FACING FORE ST
   ELEVATION: 21.19 (CITY OF PORTLAND VERTICAL DATUM)
8. UTILITY NOTES:
   A. INFORMATION DEPICTED HEREON IS OF QUALITY LEVEL D PER AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARD CI/ASCE 38-02. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION. PROMARK UTILITY LOCATING, INC. MARKED THE UNDERGROUND UTILITIES SHOWN HEREON IN MARCH OF 2025, AND WERE FIELD-LOCATED BY SEBAGO TECHNICS, INC.
   B. UTILITIES SHOWN IN BROWN ON UTILITY PLANS 1-4 ARE BASED ON PLAN REFERENCE N AND HAVE NOT BEEN FIELD VERIFIED.
   C. SEWER STUBS SHOWN ON UTILITY PLANS 1-4 ARE BASED ON CCTV REPORTS PROVIDED BY THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT.
9. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR PORTLAND, MAINE, CUMBERLAND COUNTY, PANEL NUMBER 23005C0692F, HAVING AN EFFECTIVE DATE OF 06/20/2024 . THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE "X", AREAS OF MINIMAL FLOODING.
10. AREAS ADJACENT TO COW PLAZA 4 LLC AND KOWTOWER LLC (INDICATED AS SHADED AREAS WITHIN THIS PLAN SET) WERE UNDER CONSTRUCTION AT THE DATE OF THIS SURVEY. SOME FEATURES MAY HAVE BEEN OBSCURED AND NOT SHOWN ON THIS PLAN SET.

OWNERS OF RECORD:

COW PLAZA 1 LLC
TAX MAP 32(I), LOTS 7, 36 AND 43
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 310

COW PLAZA 2 LLC
TAX MAP 32(I), LOT 33
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 330

COW PLAZA 3 LLC
TAX MAP 32(I), LOT 23
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 335

COW PLAZA 4 LLC
TAX MAP 32(I), LOT 21
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 37832, PAGE 235

COW PLAZA HOTEL LLC
TAX MAP 32(I), LOT 42
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 29745, PAGE 82

COW PLAZA GARAGE LLC
TAX MAP 32(I), LOT 41
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 27480, PAGE 325

KOWTOWER LLC
TAX MAP 32(I), LOT 40
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 35559, PAGE 67

COW EXCHANGE LLC
TAX MAP 32(I), LOTS 8 AND 9
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 39725, PAGE 172

ABATSOBE LLC
TAX MAP 32(I), LOT 22
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 38454, PAGE 17

FRESNELL LLC
TAX MAP 32(I), LOT 1
100 COMMERCIAL STREET
PORTLAND, ME 04101
BOOK 37832, PAGE 239

10 EXCHANGE PROPERTIES, LLC
TAX MAP 32(I), LOTS 12, 13 AND 17
P.O. BOX 4894
PORTLAND, ME 04112
BOOK 18001, PAGE 336

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE:	STATUS
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AS INDICATED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

COVER SHEET & NOTES
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 40'
PROJECT	240988

SHEET 1 OF 14

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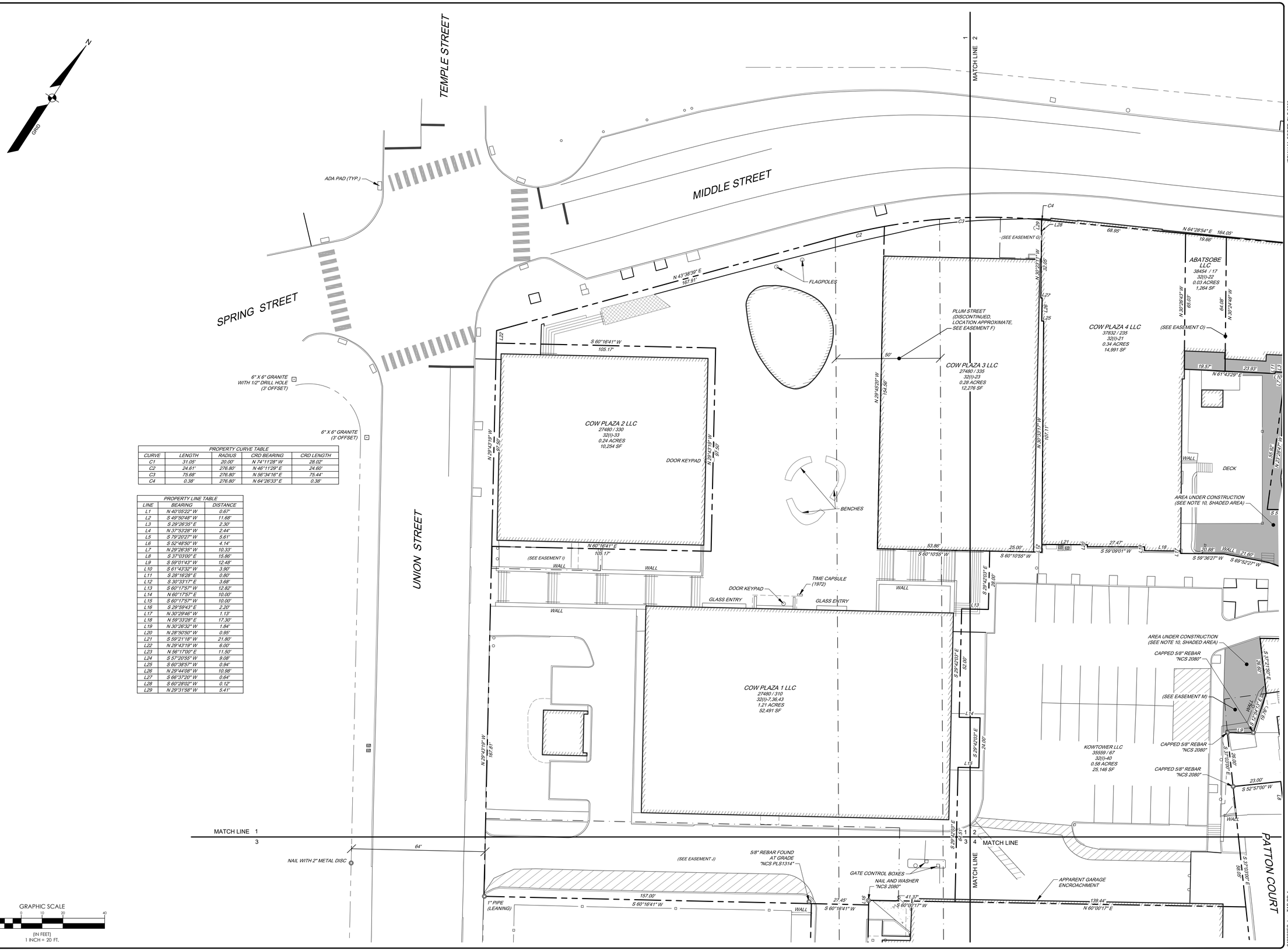
240988EC.dwg - TAB:Cover Sheet



PROPERTY CURVE TABLE				
CURVE	LENGTH	RADIUS	CRD BEARING	CRD LENGTH
C1	31.05'	20.00'	N 74°11'28" W	28.02'
C2	24.61'	276.80'	N 46°11'29" E	24.60'
C3	75.68'	276.80'	N 56°34'16" E	75.44'
C4	0.38'	276.80'	N 64°26'33" E	0.38'

PROPERTY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 40°05'22" W	0.67'
L2	S 49°50'48" W	11.68'
L3	S 29°26'35" E	2.30'
L4	N 37°53'29" W	2.44'
L5	S 79°20'27" W	5.61'
L6	S 52°48'50" W	4.14'
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L25	S 60°38'57" W	0.94'
L26	N 29°44'08" W	10.98'
L27	S 66°37'20" W	0.64'
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L29	N 29°31'58" W	5.41'

GRAPHIC SCALE
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(IN FEET)
1 INCH = 20 FT.

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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT #2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE:	STATUS
2.	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
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SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

BOUNDARY SURVEY - 1
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST., & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 2 OF 14

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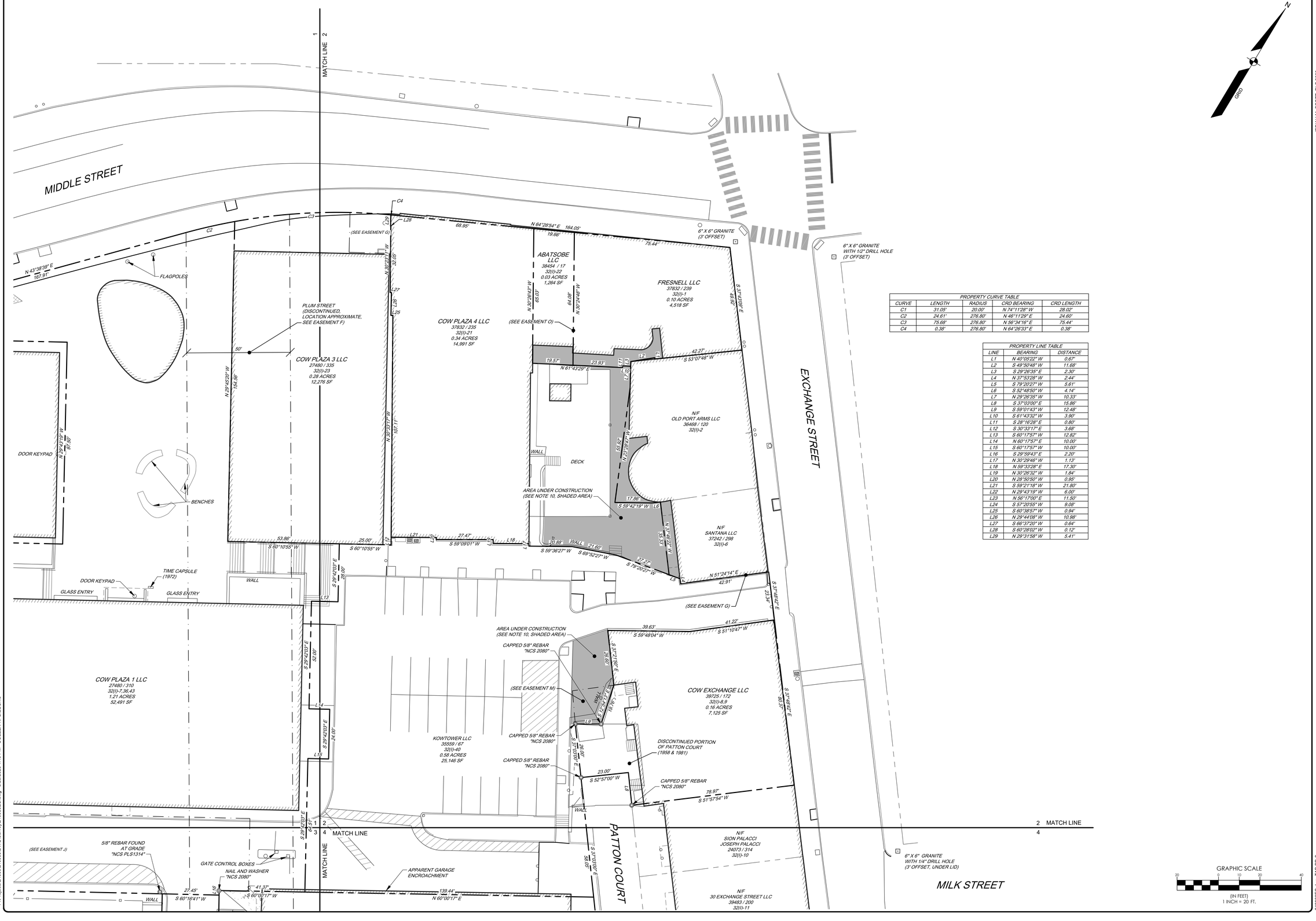

GRID

PROPERTY CURVE TABLE				
CURVE	LENGTH	RADIUS	CRD BEARING	CRD LENGTH
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C3	75.68'	276.80'	N 56°34'16" E	75.44'
C4	0.38'	276.80'	N 64°26'33" E	0.38'

PROPERTY LINE TABLE		
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JEDIAH M. SCOTT, PLS 2660

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JEDIAH M. SCOTT
#2660
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SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

BOUNDARY SURVEY - 2

OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST., & UNION ST.
PORTLAND, MAINE

FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 3 OF 14

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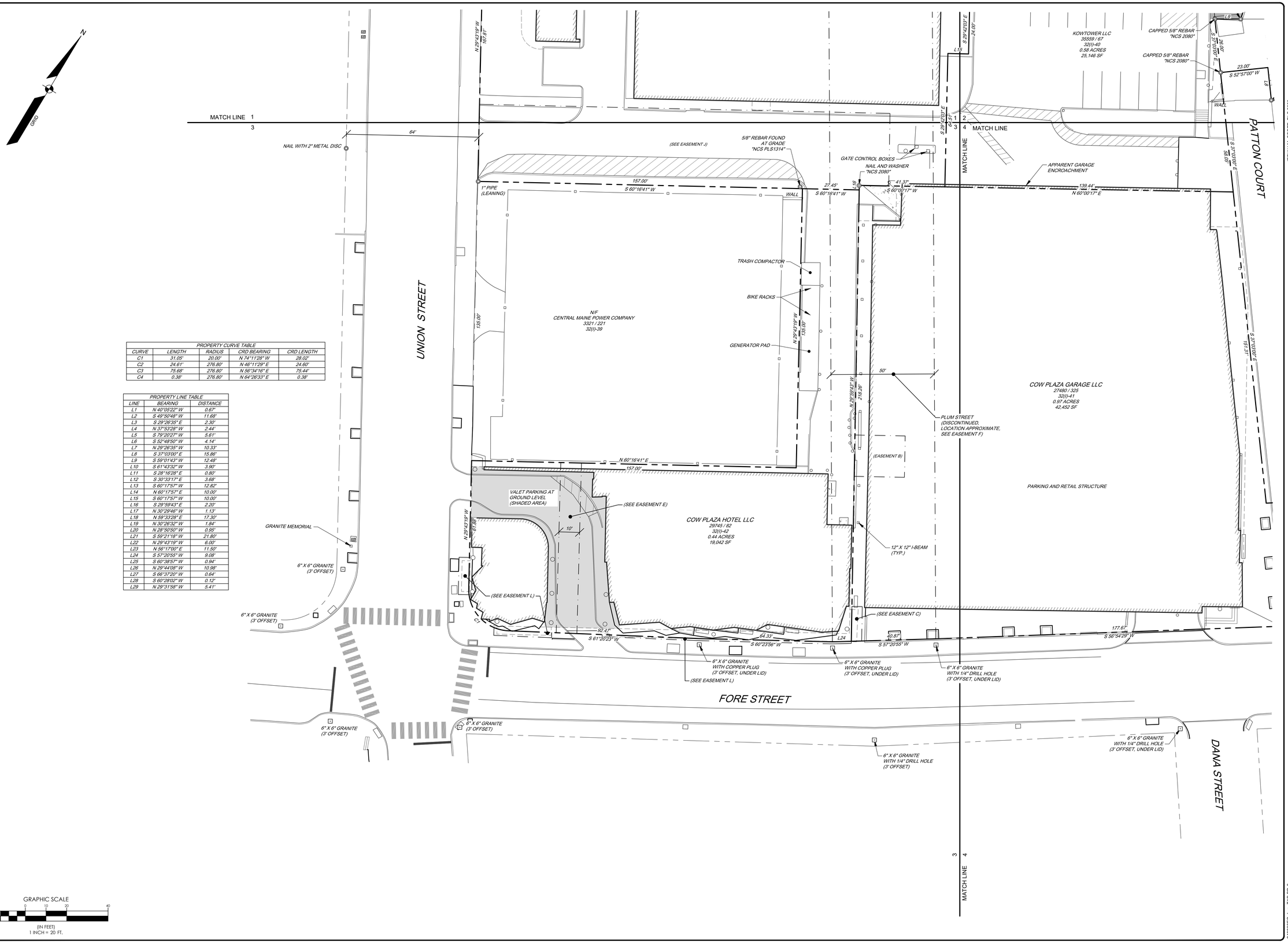

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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

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SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

BOUNDARY SURVEY - 3
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

240988EC.dwg, TAB:BD-3

SHEET 4 OF 14

KOWTOWER LLC
35559 / 67
32(I)-40
0.59 ACRES
25,146 SF

CAPPED 5/8" REBAR "NCS 2080"

DISCONTINUED PORTION OF PATTON COURT (1958 & 1981)

CAPPED 5/8" REBAR "NCS 2080"

CAPPED 5/8" REBAR "NCS 2080"

WALL

MATCH LINE

PATTON COURT

N/F
SION PALACCI
JOSEPH PALACCI
24073 / 314
32(I)-10

N/F
30 EXCHANGE STREET LLC
39483 / 200
32(I)-11

MILK STREET

6" X 6" GRANITE WITH 1/4" DRILL HOLE (3' OFFSET, UNDER LID)

6" X 6" GRANITE WITH 1/4" DRILL HOLE (3' OFFSET)

FOX ALLEY

5/8" REBAR FOUND AT GRADE "NCS PLS1314"

(SEE EASEMENT J)

GATE CONTROL BOXES

NAIL AND WASHER "NCS 2080"

APPARENT GARAGE ENCROACHMENT

WALL

TRASH COMPACTOR

BIKE RACKS

GENERATOR PAD

COW PLAZA GARAGE LLC
27480 / 325
32(I)-41
0.97 ACRES
42,452 SF

10 EXCHANGE PROPERTIES LLC
18001 / 336
32(I)-12,13,17
0.27 ACRES
11,677 SF

CONDOMINIUM DECLARATION (SEE EASEMENT N)

PLUM STREET (DISCONTINUED, LOCATION APPROXIMATE, SEE EASEMENT F)

(EASEMENT B)

PARKING AND RETAIL STRUCTURE

EXCHANGE STREET

COW PLAZA HOTEL LLC
29745 / 82
32(I)-42
0.44 ACRES
19,042 SF

12" X 12" I-BEAM (TYP.)

PATTON COURT

N/F
395 FORE STREET, LLC
21888 / 126
32(I)-18

(SEE EASEMENT C)

6" X 6" GRANITE (3' OFFSET)

6" X 6" GRANITE WITH COPPER PLUG (3' OFFSET, UNDER LID)

(SEE EASEMENT L)

6" X 6" GRANITE WITH 1/4" DRILL HOLE (3' OFFSET, UNDER LID)

FORE STREET

6" X 6" GRANITE WITH 1/4" DRILL HOLE (3' OFFSET)

DANA STREET

6" X 6" GRANITE WITH 1/4" DRILL HOLE (3' OFFSET, UNDER LID)

GRAPHIC SCALE
20 0 10 20 40
[IN FEET]
1 INCH = 20 FT.

PROPERTY CURVE TABLE				
CURVE	LENGTH	RADIUS	CRD BEARING	CRD LENGTH
C1	31.05'	20.00'	N 74°11'28" W	28.03'
C2	24.61'	276.80'	N 46°11'29" E	24.60'
C3	75.68'	276.80'	N 56°34'16" E	75.44'
C4	0.38'	276.80'	N 64°26'33" E	0.38'

PROPERTY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 40°05'22" W	0.67'
L2	S 49°50'48" W	11.68'
L3	S 29°26'35" E	2.30'
L4	N 37°53'28" W	2.44'
L5	S 79°20'27" W	5.61'
L6	S 52°48'50" W	4.14'
L7	N 29°26'35" W	10.33'
L8	S 37°03'00" E	15.86'
L9	S 59°01'43" W	12.48'
L10	S 61°43'32" W	3.90'
L11	S 28°16'28" E	0.80'
L12	S 30°33'17" E	3.68'
L13	S 60°17'57" W	12.82'
L14	N 60°17'57" E	10.00'
L15	S 60°17'57" W	10.00'
L16	S 29°59'43" E	2.20'
L17	N 30°29'46" W	1.13'
L18	N 59°33'28" E	17.30'
L19	N 30°26'32" W	1.84'
L20	N 28°50'50" W	0.95'
L21	S 59°21'18" W	21.80'
L22	N 29°43'19" W	8.00'
L23	N 56°17'00" E	11.50'
L24	S 57°20'55" W	9.08'
L25	S 60°38'57" W	0.94'
L26	N 29°44'08" W	10.98'
L27	S 66°37'20" W	0.64'
L28	S 60°28'02" W	0.12'
L29	N 29°31'58" W	5.41'

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE:	STATUS:
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AS PROVED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

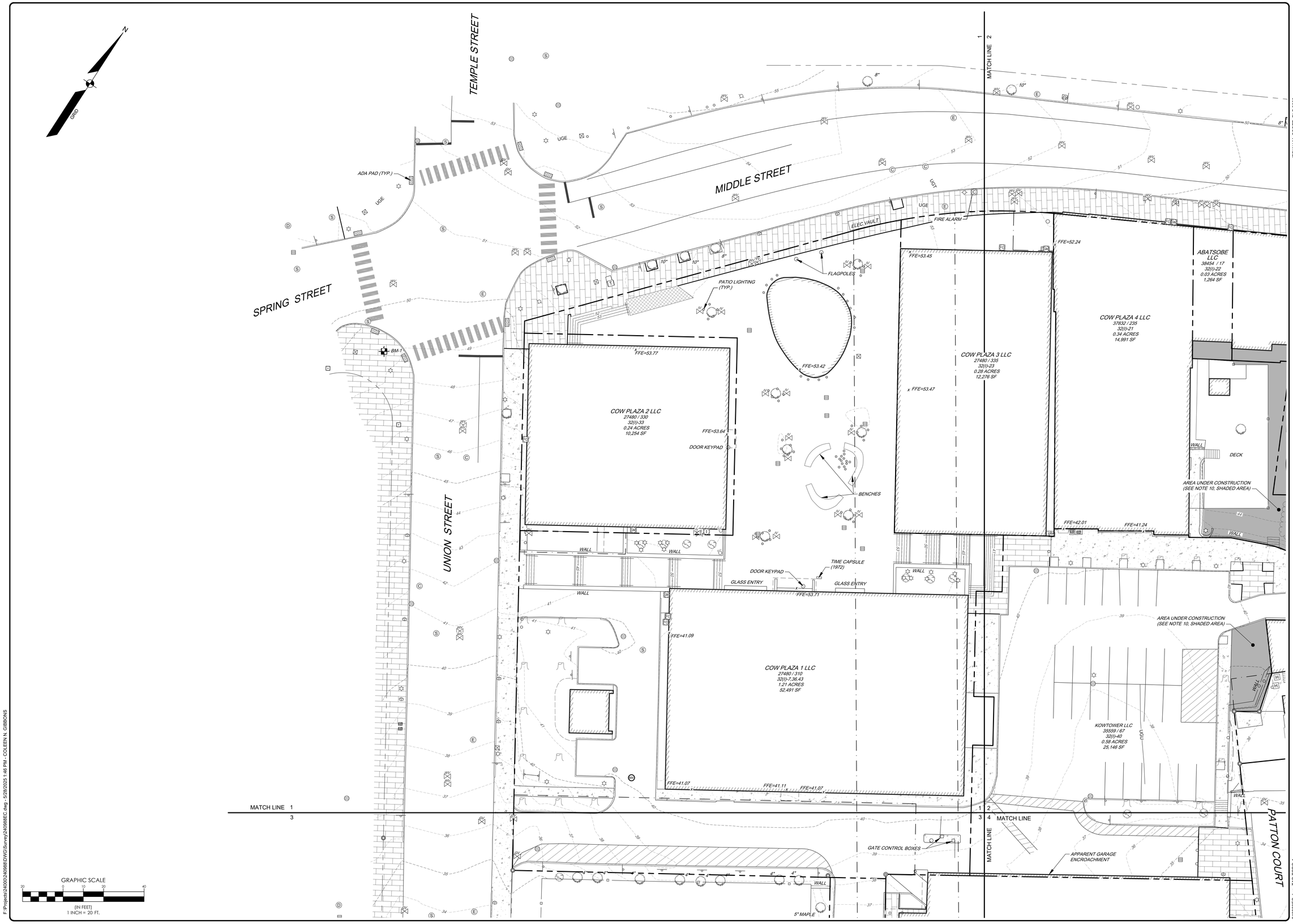
BOUNDARY SURVEY - 4
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 5 OF 14

F:\Projects\240000\240988\DWG\Survey\240988EC.dwg - 5/28/2025 1:46 PM - COLEEN N. GIBBONS

240988EC.dwg - TAB:BD-4



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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

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SEBAGOTECHNICS.COM
75 John Roberts Rd. Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

TOPOGRAPHY PLAN - 1
OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE
FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

240988EC.dwg, TAB:TOPO-1

SHEET 6 OF 14

MIDDLE STREET

EXCHANGE STREET

MILK STREET

PATTON COURT

MATCH LINE

MATCH LINE

MATCH LINE

MATCH LINE

COW PLAZA 1 LLC
27480 / 310
32(I)-7,36,43
1.21 ACRES
52,491 SF

COW PLAZA 3 LLC
27480 / 335
32(I)-23
0.28 ACRES
12,276 SF

COW PLAZA 4 LLC
37832 / 235
32(I)-21
0.34 ACRES
14,991 SF

ABATSOBE LLC
38454 / 17
32(I)-22
0.03 ACRES
1,264 SF

FRESNELL LLC
37832 / 239
32(I)-1
0.10 ACRES
4,518 SF

N/F
OLD PORT ARMS LLC
36468 / 120
32(I)-2

N/F
SANTANA LLC
37242 / 298
32(I)-6

COW EXCHANGE LLC
39725 / 172
32(I)-8,9
0.16 ACRES
7,125 SF

KOWTOWER LLC
35559 / 67
32(I)-40
0.59 ACRES
25,146 SF

N/F
SION PALACCI
JOSEPH PALACCI
24073 / 314
32(I)-10

N/F
30 EXCHANGE STREET LLC
39483 / 200
32(I)-11

FFE=53.64
DOOR KEYPAD
BENCHES
FFE=53.42
PATIO LIGHTING (TYP.)
FLAGPOLES
ELEC VAULT
FIRE ALARM
FFE=53.45
x FFE=53.47
FFE=52.24
FFE=48.50
FFE=44.88
WALL
DECK
AREA UNDER CONSTRUCTION (SEE NOTE 10, SHADED AREA)
FFE=42.01
FFE=41.24
DOOR KEYPAD
TIME CAPSULE (1972)
GLASS ENTRY
GLASS ENTRY
FFE=53.71
AREA UNDER CONSTRUCTION (SEE NOTE 10, SHADED AREA)
FFE=40.73
FFE=39.05
FFE=41.11
FFE=41.07
GATE CONTROL BOXES
APPARENT GARAGE ENCROACHMENT
FFE=36.38
FFE=34.48
FFE=34.50
FFE=34.41
UGE
OHE

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

GRID N

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE	STATUS
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
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SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

TOPOGRAPHY PLAN - 2

OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE

FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 7 OF 14

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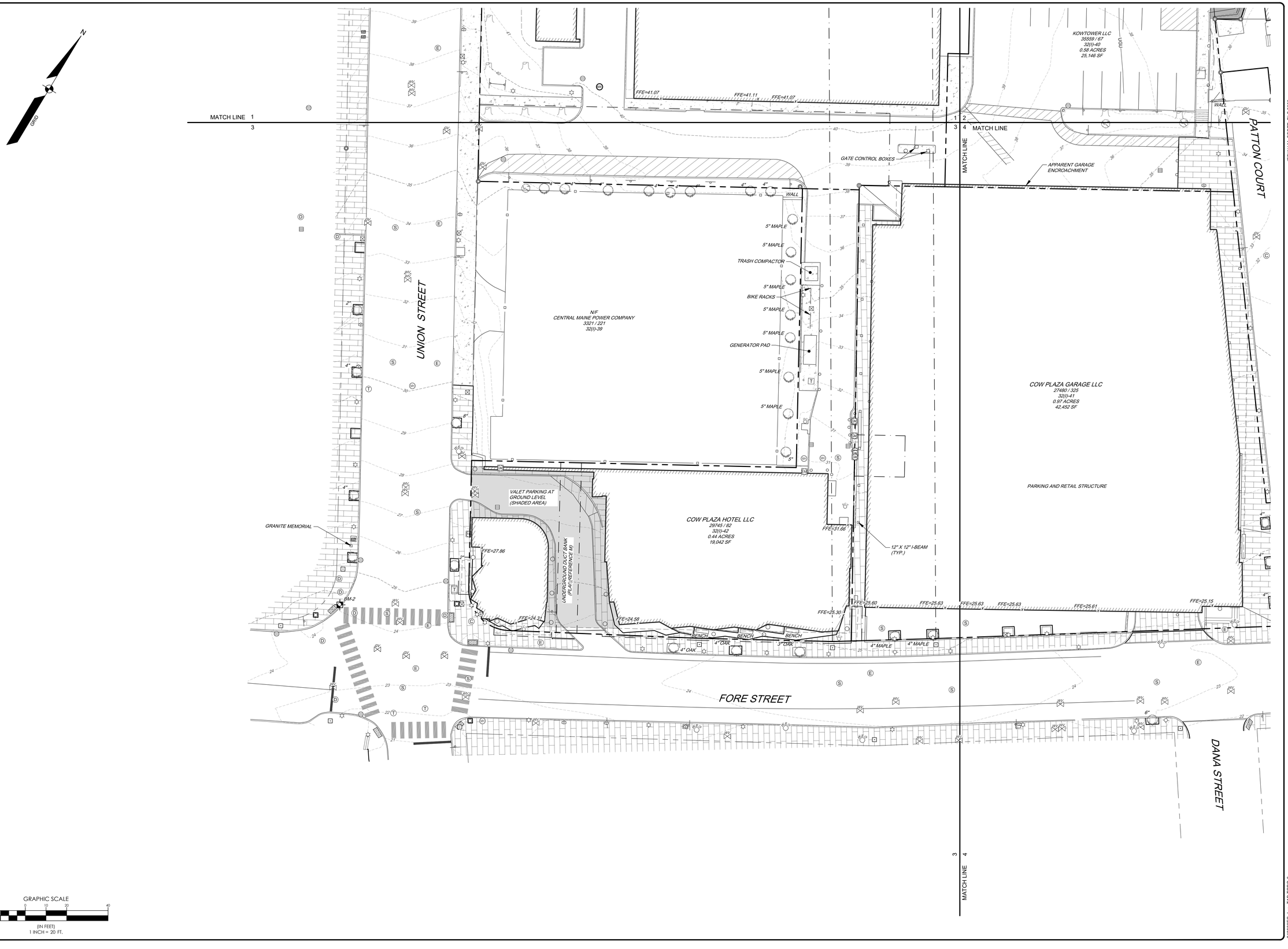

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS
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SEBAGOTECHNICS.COM
75 John Roberts Road, Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

TOPOGRAPHY PLAN - 3

OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE

FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 8 OF 14

F:\Projects\240000\240988\DWG\Survey\240988EC.dwg - 5/28/2025 1:46 PM - COLEEN N. GIBBONS

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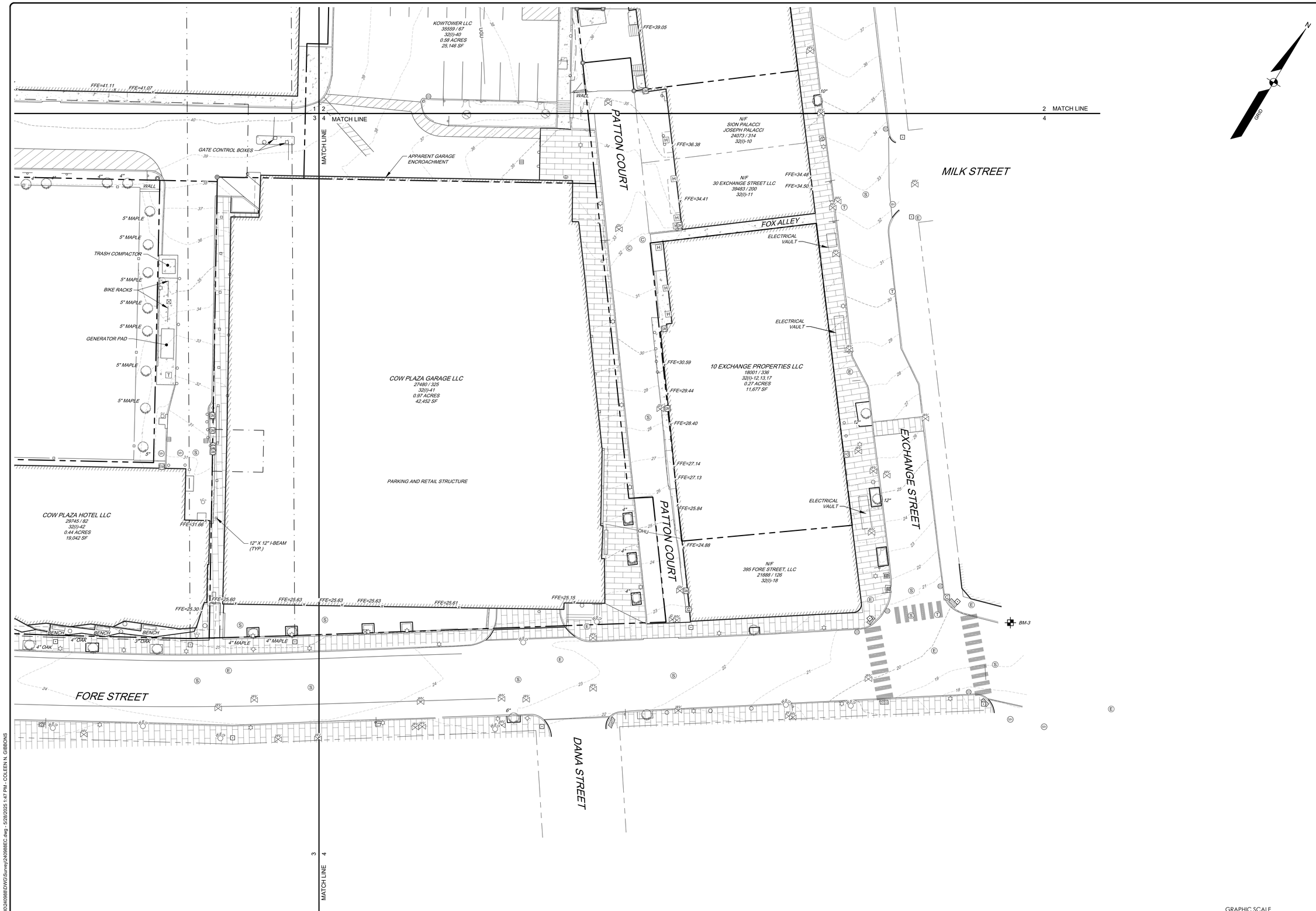

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE	STATUS
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207-200-2100
South Portland, Bridgton, and Sanford

TOPOGRAPHY PLAN - 4

OF:
COW PROPERTIES
MIDDLE ST, EXCHANGE ST, FORE ST, & UNION ST.
PORTLAND, MAINE

FOR:
EAST BROWN COW MANAGEMENT, INC.
100 COMMERCIAL STREET, SUITE 300
PORTLAND, MAINE 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 9 OF 14

F:\Projects\240000\240988\DWG\Survey\240988EC.dwg - 5/28/2025 1:47 PM - COLEEN N. GIBBONS

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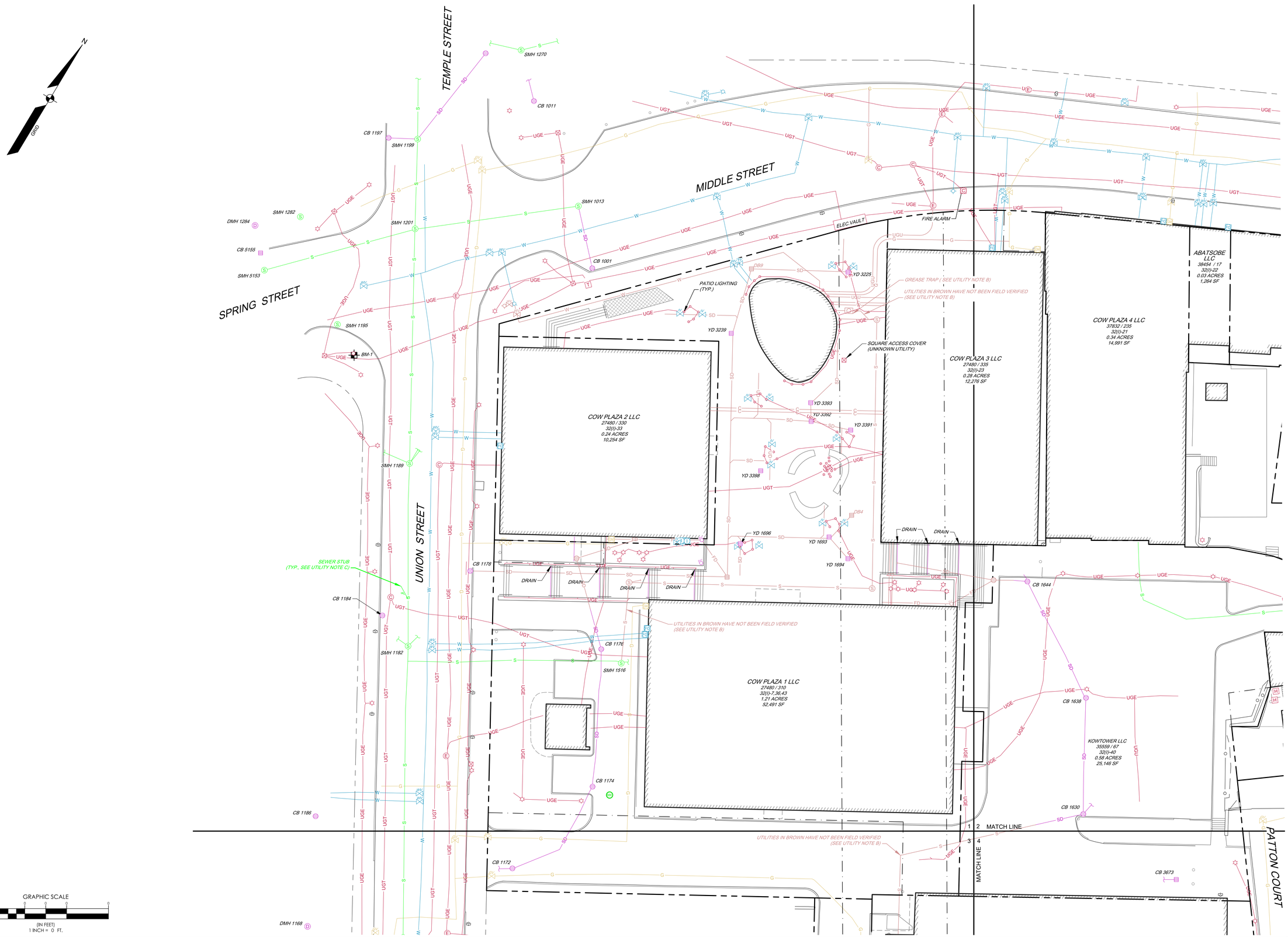

GRAPHIC SCALE
(IN FEET)
1 INCH = 0 FT.

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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

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SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 JOHN ROBERTS ROAD, SUITE 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

UTILITY PLAN - 1
OF:
CANAL PLAZA
UNION, FORE, MIDDLE, EXCHANGE STREETS
FOR:
EAST BROWN COW
100 COMMERCIAL ST, SUITE 300
PORTLAND, ME 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET10 OF 14

240988EC.dwg, TAB:UT-1

MIDDLE STREET

EXCHANGE STREET

PATTON COURT

MILK STREET

MATCH LINE

1 2 MATCH LINE
3 4

ELEC VAULT

FIRE ALARM

PATIO LIGHTING (TYP.)

SQUARE ACCESS COVER (UNKNOWN UTILITY)

GREASE TRAP (SEE UTILITY NOTE B)

UTILITIES IN BROWN HAVE NOT BEEN FIELD VERIFIED (SEE UTILITY NOTE B)

SEWER STUB (TYP., SEE UTILITY NOTE C)

DRAIN

COW PLAZA 1 LLC
27480 / 310
32(I)-7,36,43
1.21 ACRES
52,491 SF

COW PLAZA 3 LLC
27480 / 335
32(I)-23
0.28 ACRES
12,276 SF

COW PLAZA 4 LLC
37832 / 235
32(I)-21
0.34 ACRES
14,991 SF

ABATSOBE LLC
38454 / 17
32(I)-22
0.03 ACRES
1,264 SF

FRESNELL LLC
37832 / 239
32(I)-1
0.10 ACRES
4,518 SF

N/F
OLD PORT ARMS LLC
38468 / 120
32(I)-2

N/F
SANTANA LLC
37242 / 298
32(I)-6

KOWTOWER LLC
35559 / 87
32(I)-40
0.58 ACRES
25,146 SF

COW EXCHANGE LLC
39725 / 172
32(I)-8,9
0.16 ACRES
7,125 SF

N/F
SION PALACCI
JOSEPH PALACCI
24073 / 314
32(I)-10

N/F
30 EXCHANGE STREET LLC
39483 / 200
32(I)-11

CB 1025
CB 1017
CB 1019 (SEALED)
CB 1644
CB 1638
CB 1630
CB 3673
CB 1041
SMH 1027
SMH 1033
SMH 1049
MH 1051
YD 3225
YD 3239
YD 3393
YD 3392
YD 3391
YD 3398
YD 1696
YD 1693
YD 1694
DB9
DB4

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

N

GRID

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT #2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE	STATUS
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SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 JOHN ROBERTS ROAD, SUITE 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

UTILITY PLAN - 2
OF:
CANAL PLAZA
UNION, FORE, MIDDLE, EXCHANGE STREETS
FOR:
EAST BROWN COW
100 COMMERCIAL ST, SUITE 300
PORTLAND, ME 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 11 OF 14

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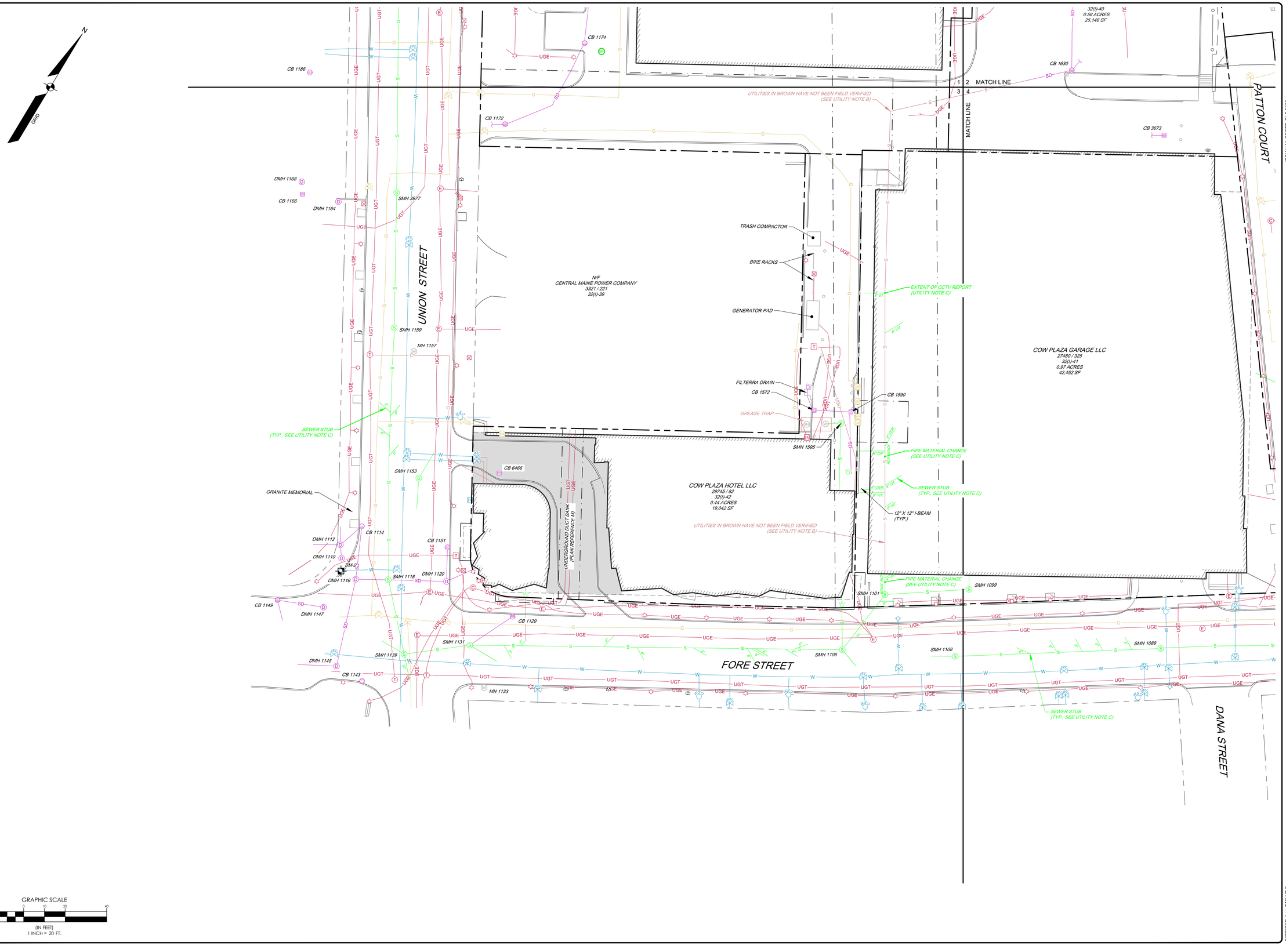

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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT #2660
PROFESSIONAL LAND SURVEYOR

SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Road, Suite A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

UTILITY PLAN - 3

OF:
CANAL PLAZA
UNION, FORE, MIDDLE, EXCHANGE STREETS

FOR:
EAST BROWN COW
100 COMMERCIAL ST, SUITE 300
PORTLAND, ME 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

SHEET 12 OF 14

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240988EC-.dwg, TAB:UT-3



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JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY:	DATE:	STATUS:
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1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

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SEBAGO TECHNICS

SEBAGOTECHNICS.COM
75 John Roberts Rd. Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

UTILITY PLAN - 4
OF:
CANAL PLAZA
UNION, FORE, MIDDLE, EXCHANGE STREETS

FOR:
EAST BROWN COW
100 COMMERCIAL ST, SUITE 300
PORTLAND, ME 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	1" = 20'
PROJECT	240988

240988EC.dwg, TAB:UT-4

SHEET 13 OF 14

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE	TYPE	LOCATION (N=12)	COMMENTS
1001	CBR	51.11	OUT	47.07	12"	UNKNOWN	11	
1011	CBR	54.16	IN	49.61	UNKNOWN	CACSO TRAP	11	TOP OF CASCO TRAP
			SUMP	48.16				
1013	SMH	52.70	IN	46.12	12"	UNKNOWN	4	
			OUT	46.91	UNKNOWN	CASCO TRAP	8	TOP OF CASCO TRAP
			SUMP	43.50				
1017	CBR	48.40	OUT	45.75	6"	PVC	1	TOP OF ELBOW
			SUMP	42.90				
1025	CBR	47.82	OUT	44.92	UNKNOWN	CASCO TRAP	6	TOP OF CASCO TRAP
			SUMP	41.42				
1027	SMH	48.30	IN	34.85	24"	VIT CLAY	10	UP EXCHANGE
			OUT	34.71	24"	VIT CLAY	4	
			SHELF	36.05				
1033	SMH	43.37	IN	29.82	24"	VIT CLAY	10	
			OUT	29.77	24"	VIT CLAY	4	
			SHELF	31.02				
1041	CBR	33.65	OUT	28.01	UNKNOWN	CASCO TRAP	6	TOP OF CASCO TRAP
			SUMP	25.80				
1049	SMH	32.92	IN	19.67	24"	VIT CLAY	10	
			OUT	19.64	24"	VIT CLAY	4	
			SHELF	20.67				
1061	CBR	20.59	OUT	18.81	UNKNOWN	CASCO TRAP	1	TOP CASCO TRAP
			SUMP	15.89				
1063	SMH	21.32	IN	14.07	24"	VIT CLAY	10	
			IN	17.73	12"	UNKNOWN	8	
			OUT	13.93	24"	VIT CLAY	4	
			SHELF	15.12				
1065	CBR	20.33	OUT	17.14	UNKNOWN	CASCO TRAP	7	TOP OF CASCO TRAP
			SUMP	12.63				
1071	CBR	17.35	OUT	14.73	UNKNOWN	CASCO TRAP	1	TOP OF CASCO TRAP
			SUMP	10.15				
1079	SMH	19.03	IN	11.00	24"	VIT CLAY	9	
			IN	11.01	8"	PVC	8	
			OUT	10.61	24"	VIT CLAY	3	
			SHELF	11.77				
1083	CBR	20.71	OUT	16.48	8"	UNKNOWN	3	
			SUMP	13.11				
1085	SMH	22.35	IN	12.23	10"	PVC	8	
			IN	13.07	8"	PVC	11	
			OUT	12.23	10"	PVC	2	
			SHELF	12.76				
1089	SMH	23.58	IN	12.94	10"	PVC	8	
			OUT	12.93	10"	PVC	2	
			SHELF	13.63				
1093	SMH	28.35	IN	21.23	8"	PVC	11	
			IN	22.95	6"	PVC	9	
			OUT	21.11	8"	PVC	5	
			SHELF	21.60				
1099	SMH	25.46	IN	18.48	12"	METAL	11	
			OUT	18.93	UNKNOWN	UNKNOWN	8	TOP OF PIPE, OBSTRUCTED
			SUMP	15.01				
1101	SMH	25.49	IN	15.28	15	BRICK	11	
			IN	18.36	12"	METAL	2	
			OUT	14.80	12"	VIT CLAY	5	
			SHELF	16.39				
1106	SMH	24.62	IN	14.34	12"	VIT CLAY	12	
			IN	14.70	12"	UNKNOWN	4	
			IN	18.07	8"	PVC	11	
			OUT	14.44	15"	VIT CLAY	8	
			SHELF	15.32				
1108	SMH	24.54	OUT	13.49	10"	PVC	8	
			IN	13.44	10"	PVC	2	
			SHELF	14.34				
1112	DMH	25.65	IN	20.35	10"	PVC	9	
			IN	20.45	15"	PVC	11	
			IN	20.95	12"	PVC	12	
			OUT	20.45	15"	PVC	4	
			SUMP	20.35				HEAVY SEDIMENT

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE	TYPE	LOCATION (N=12)	COMMENTS
1114	CBR	25.26	OUT	21.07	12"	PVC	7	
			IN	20.20	10"	PVC	5	CAPPED
			SUMP	21.16				HEAVY SEDIMENT
1116	DMH	24.09	IN	19.70	15"	PVC	10	
			IN	20.70	10"	PVC	12	
			IN	18.92	12	UNKNOWN	2	CAPPED
			OUT	18.89	15"	PVC	4	
			SUMP	18.44				
1118	SMH	24.29	IN	15.19	18"	ASBESTOS	10	
			IN	19.53	12"	UNKNOWN	2	
			IN	17.68	12"	UNKNOWN	8	
			OUT	15.07	18"	ASBESTOS	4	
			SHELF	16.39				
1120	DMH	24.22	IN	20.02	12"	CONCRETE	2	
			IN	20.72	10"	PVC	10	
			OUT	21.12	UNKNOWN	CASCO TRAP	9	TOP OF CASCO TRAP
			SUMP	17.22				HEAVY SEDIMENT
1129	CBR	23.19	OUT	19.91	UNKNOWN	CASCO TRAP	7	
			SUMP	17.14				HEAVY SEDIMENT
1131	SMH	23.20	IN	11.64	15"	VIT CLAY	2	
			IN	17.41	8"	PVC	12	
			OUT	11.63	15"	UNKNOWN	8	
			SHELF	12.76				
			IN	15.52	8"	PVC	4	
1139	SMH	22.83	IN	11.52	15"	VIT CLAY	2	
			IN	13.30	18"	VIT CLAY	8	STACKED ABOVE OTHER 8 OCLOCK
			IN	10.75	18"	VIT CLAY	8	
			IN	10.61	18"	VIT CLAY	10	
			IN	13.31	18"	UNKNOWN	10	STACKED
			OUT	10.57	24"	UNKNOWN	4	
			SHELF	12.27				
1143	CBR	21.79	IN	17.19	8"	UNKNOWN	10	
			OUT	17.09	12"	PVC	9	
			SUMP	13.19				HEAVY SEDIMENT
1145	DMH	22.65	IN	15.35	12"	PVC	3	
			IN	15.32	15"	PVC	11	
			OUT	15.21	15"	PVC	8	
			SHELF	16.05				
1147	MH	23.93	OUT	20.74	10"	PVC	8	CAPPED
			SUMP	---------				FULL OF SEDIMENT
1149	CBR	23.76	IN	20.36	10"	PVC	2	CAPPED
			OUT	20.02	12"	PVC	4	PERP. TO SEWER
			SUMP	19.36				HEAVY SED. APROX.
1151	CBR	24.79	OUT	21.50	10"	PVC	4	
			SUMP	21.49				HEAVY SEDIMENT
1153	SMH	27.06	IN	22.41	10"	PVC	2	
			OUT	21.30	10"	PVC	6	
			SHELF	21.86				
1159	SMH	30.54	IN	22.76	18"	ASBESTOS	10	STACKED
			IN	20.82	18"	UNKNOWN	10	
			OUT	20.44	18"	ASBESTOS	4	
			SHELF	21.34				
1164	DMH	34.39	IN	28.21	12"	PVC	8	
			OUT	27.63	15"	PVC	4	
			SHELF	28.69				
1166	CB	34.93	IN	29.91	6"	PVC	8	
			IN	28.60	12"	PVC	11	
			OUT	28.53	12"	PVC	2	
			SUMP	25.43				HEAVY SEDIMENT
1168	DMH	35.44	IN	29.09	12"	PVC	8	
			IN	29.04	12"	PVC	11	
			IN	27.17	12"	PVC	2	CAPPED
			OUT	28.85	12"	PVC	4	
			SUMP	24.94				HEAVY SEDIMENT
1172	CBR	35.57	IN	30.17	12"	PVC	2	
			OUT	29.78	12"	UNKNOWN	9	
			SUMP	28.97				HEAVY SEDIMENT
1174	CBR	40.10	IN	33.70	12"	UNK	11	
			OUT	33.60	12"	PVC	5	
			SUMP	32.10				

POINT #	STRUCTURE TYPE	RIM EL.	INV.	INV. EL.	SIZE	TYPE	LOCATION (N=12)	COMMENTS
1176	CBR	39.70	IN	34.82	8"	UNKNOWN	10	
			OUT	34.68	12"	UNKNOWN	5	
			SUMP	33.30				
1182	SMH	40.69	IN	28.83	18"	ASBESTOS	10	
			IN	34.67	12"	UNKNOWN	9	
			OUT	28.96	18"	ASBESTOS	4	
			SHELF	29.69				
1186	CBR	38.32	IN	31.03	6"	PVC	1	
			OUT	32.02	12"	PVC	5	
			SUMP	29.07				
1189	SMH	45.76	IN	32.17	18"	ASBESTOS	10	
			IN	32.51	6"	UNKNOWN	2	
			IN	32.22	8"	UNKNOWN	2	
			IN	40.06	8"	UNKNOWN	2	
			IN	40.69	6"	UNKNOWN	9	
			OUT	32.04	18"	ASBESTOS	4	
			SHELF	33.56				
1197	CBR	51.66	OUT	47.33	UNKNOWN	CASCO TRAP	2	TOP OF CASCO TRAP
			SUMP	45.96				HEAVY SEDIMENT
1199	SMH	52.05	IN	43.12	18"	ASBESTOS	10	
			IN	46.69	12"	UNKNOWN	12	
			IN	45.72	12"	UNKNOWN	8	
			OUT	42.95	18"	ASBESTOS	4	
			SHELF	44.22				
1201	SMH	50.90	IN	39.00	12"	UNKNOWN	2	
			IN	39.22	12"	UNKNOWN	8	
			OUT	38.33	18"	ASBESTOS	4	
			SHELF	39.71				
1270	SMH	54.94	IN	46.55	18"	UNKNOWN	8	
			OUT	46.33	18"	UNKNOWN	2	
			SHELF	47.34				
1272	CBR	54.03	OUT	50.12	UNKNOWN	CASCO TRAP	6	TOP OF CASCO TRAP
			SUMP	46.53				HEAVY SEDIMENT
1516	SMH	40.46	IN	31.05	10"	UNKNOWN	11	
			IN	31.10	10"	UNKNOWN	2	
			OUT	31.00	12"	UNKNOWN	8	
			SHELF	32.16				
1572	CB	30.94	IN	27.76	4"	PVC	10	
			OUT	26.94	8"	PVC	3	
			SUMP	23.94				
1595	SMH - GREASE TRAP	30.98	IN	20.45	4"	PVC	9	
			OUT	20.46	4"	PVC	5	
			SHELF	21.23				
1630	CBR	36.99	IN	31.98	12"	PVC	11	
			IN	31.72	10"	HDPE	12	
			OUT	31.55	12"	PVC	8	
			SUMP	29.99				
1638	CBR	38.06	IN	32.75	12"	PVC	10	
			OUT	32.69	12"	PVC	5	
			SUMP	31.91				HEAVY SEDIMENT
1644	CBR	39.92	IN	34.22	8"	PVC	10	
			IN	35.62	12"	PVC	8	
			IN	35.73	3"	PVC	9	
			OUT	34.16	12"	PVC	4	
			SUMP	34.42				HEAVY SEDIMENT
3673	CB	34.26	OUT	32.21	10"	HDPE	7	
			SUMP	31.26				HEAVY SEDIMENT
3977	SMH	33.84	IN	24.46	18"	ASBESTOS	10	
			IN	25.05	12"	PVC	8	
			OUT	24.53	18"	ASBESTOS	4	
			SHELF	25.34				
6466	CB	27.43	IN	22.78	8	PVC	6	
			OUT	23.67	UNKNOWN	CASCO TRAP	9	TOP OF CASCO TAP
			SUMP	19.83				

JEDIAH M. SCOTT, PLS 2660

STATE OF MAINE
JEDIAH M. SCOTT
#2660
PROFESSIONAL LAND SURVEYOR

REV.	BY	DATE	STATUS
2	JMS	05/28/2025	ADDITIONAL UTILITY AND BOUNDARY INFORMATION
1	JMS	05/02/2025	RELEASED FOR CLIENT COMMENTS

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SEBAGO TECHNICS
SEBAGOTECHNICS.COM
75 John Roberts Rd., Suite 4A
South Portland, ME 04106
207-200-2100
South Portland, Bridgton, and Sanford

STRUCTURE TABLE

OF:
CANAL PLAZA
UNION, FORE, MIDDLE, EXCHANGE STREETS

FOR:
EAST BROWN COW
100 COMMERCIAL ST, SUITE 300
PORTLAND, ME 04101

-	-
DRAWN	CNV
CHECKED	JMS
DATE	04/22/2025
SCALE	-
PROJECT	240988

SHEET 14 OF 14

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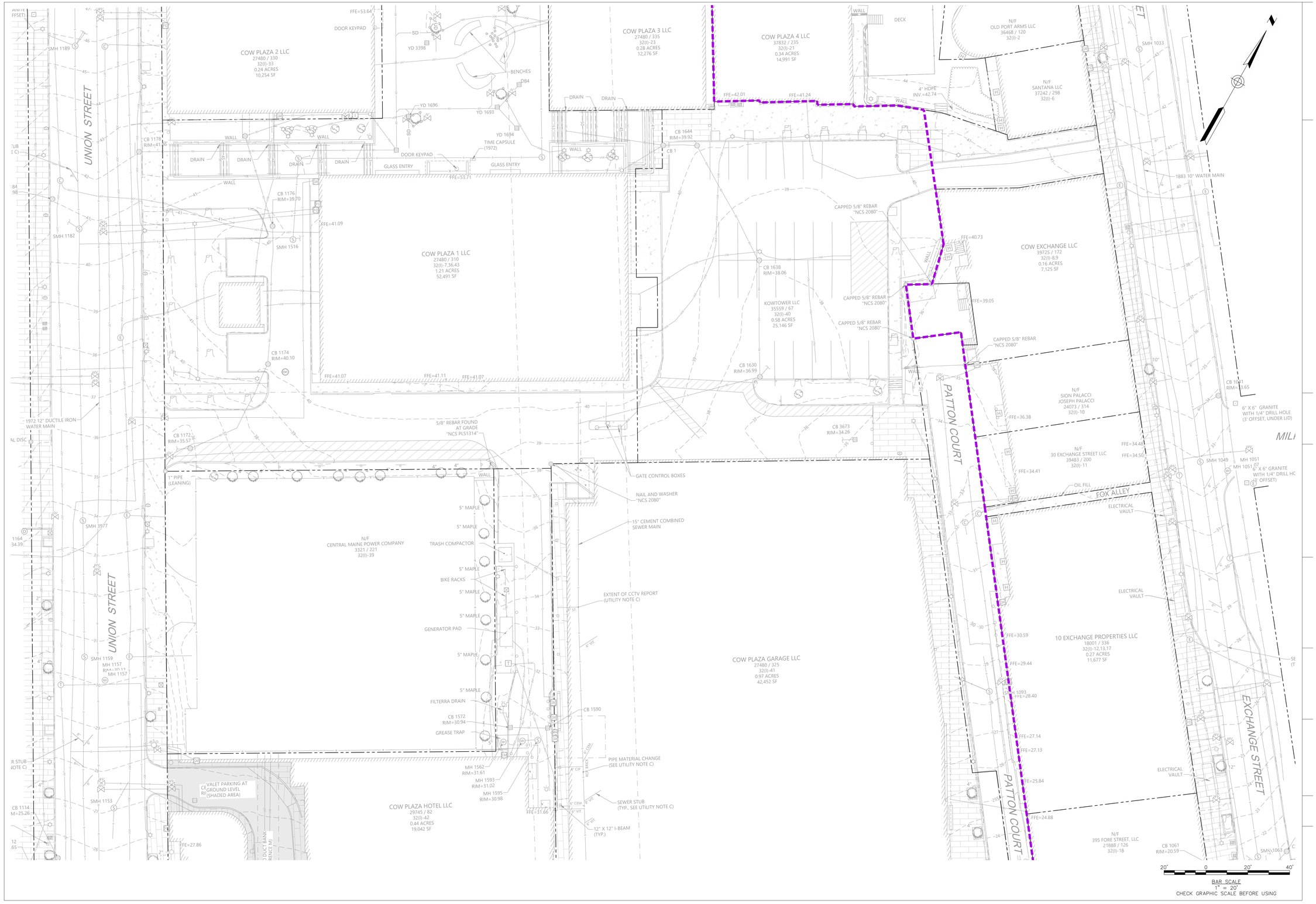
240988EC-dwg_TAB STRUCTURE TABLE



45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
100 Properzi Way
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Boston, MA 02110 USA
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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED PROFESSIONAL ENGINEER

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

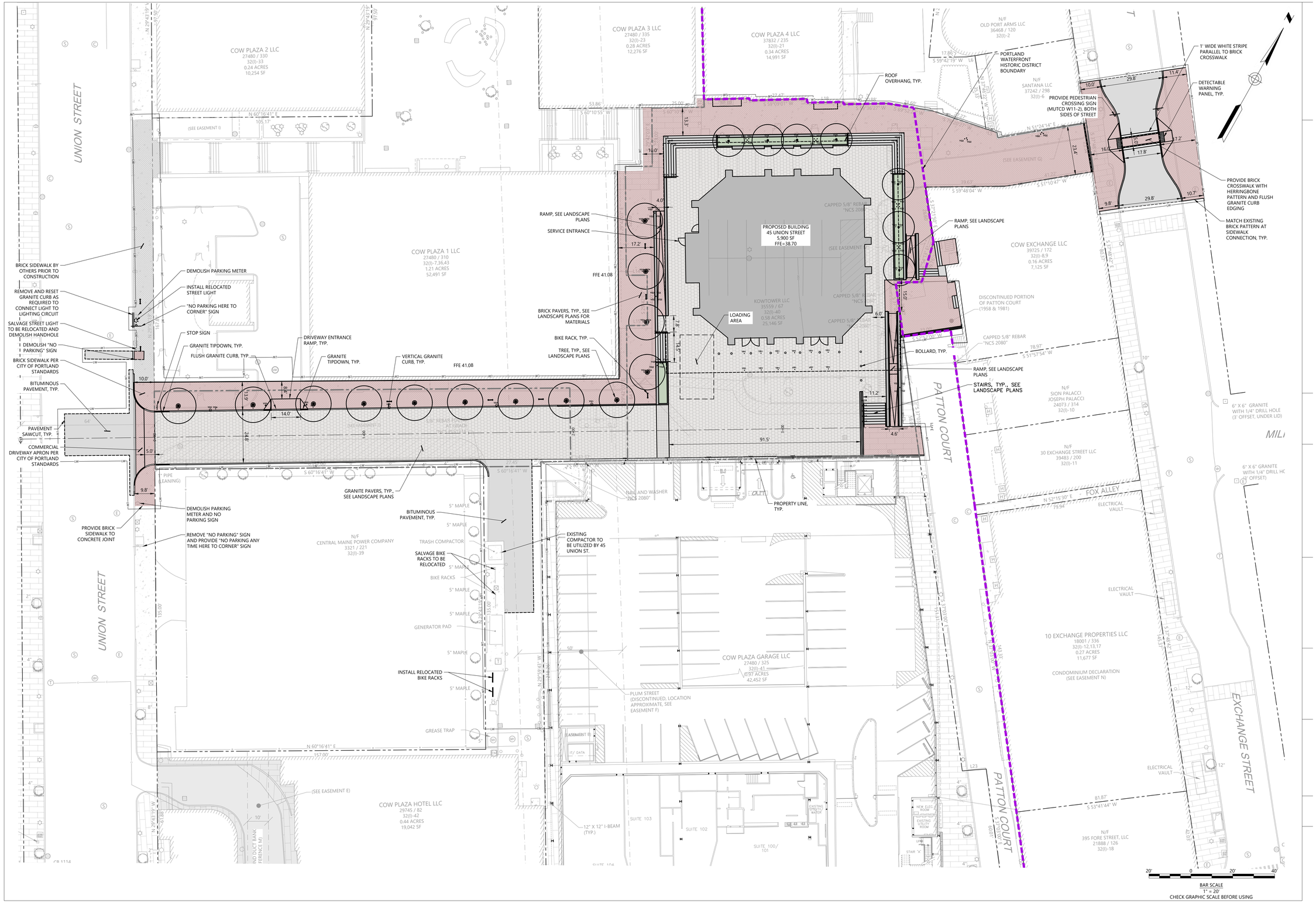
PHASE
ISSUED FOR SITE PLAN APPROVAL

SCALE
1"=20'

DRAWING TITLE
EXISTING CONDITIONS

SHEET NUMBER
C-001

3/19/2025 9:54:17 AM



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45 Union Street, Portland, Maine

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED
PROFESSIONAL ENGINEER

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

PHASE
ISSUED FOR SITE PLAN APPROVAL

SCALE
1" = 20'

DRAWING TITLE
SITE LAYOUT PLAN

SHEET NUMBER
C-100

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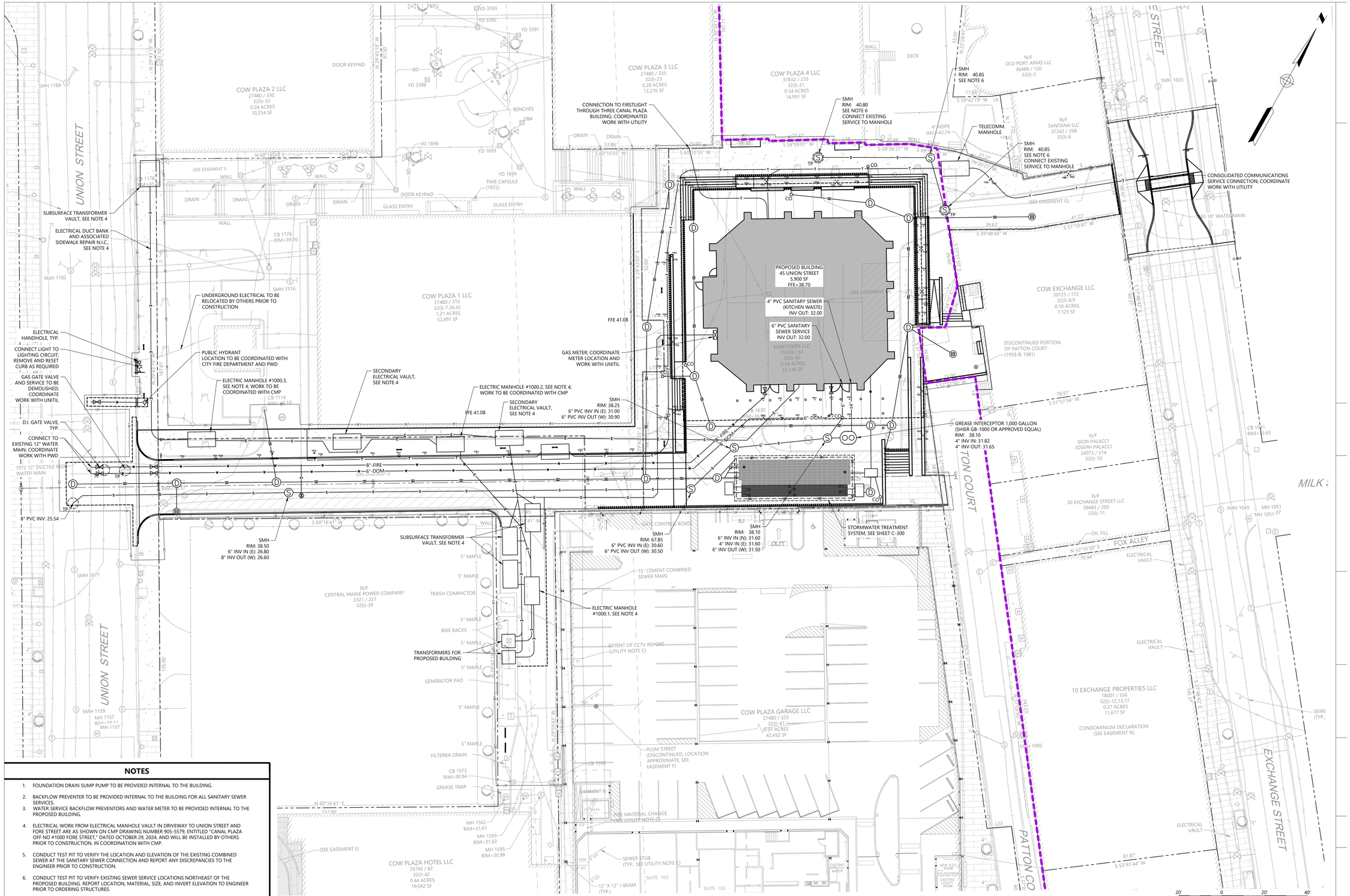
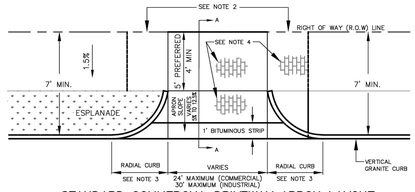
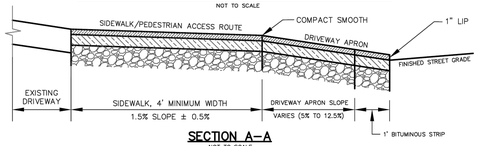

UNION STREET
FORE STREET
EXCHANGE STREET
PATTON COURT
FOX ALLEY
COW PLAZA 1 LLC
27480 / 310
32(I)-7,36,43
1.21 ACRES
52,491 SF
COW PLAZA 2 LLC
27480 / 330
32(I)-33
0.24 ACRES
10,254 SF
COW PLAZA 3 LLC
27480 / 335
32(I)-23
0.28 ACRES
12,276 SF
COW PLAZA 4 LLC
37832 / 235
32(I)-21
0.34 ACRES
14,991 SF
COW PLAZA GARAGE LLC
27480 / 325
32(I)-41
0.57 ACRES
42,452 SF
COW PLAZA HOTEL LLC
29745 / 82
32(I)-42
0.44 ACRES
19,042 SF
KOWTOWER LLC
35559 / 67
32(I)-40
0.58 ACRES
25,146 SF
COW EXCHANGE LLC
39725 / 172
32(I)-8,9
0.16 ACRES
7,125 SF
10 EXCHANGE PROPERTIES LLC
18001 / 336
32(I)-12,13,17
0.27 ACRES
11,677 SF
N/F CENTRAL MAINE POWER COMPANY
3321 / 221
32(I)-39
N/F OLD PORT ARMS LLC
36468 / 120
32(I)-2
N/F SANTANA LLC
37242 / 298
32(I)-6
N/F SION PALACCI JOSEPH PALACCI
24073 / 314
32(I)-10
N/F 30 EXCHANGE STREET LLC
39483 / 200
32(I)-11
PROPOSED BUILDING
45 UNION STREET
5,900 SF
FFE=38.70
FFE 41.08
4" PVC SANITARY SEWER (KITCHEN WASTE) INV OUT: 32.00
6" PVC SANITARY SEWER SERVICE INV OUT: 32.00
CONNECTION TO FIRSTLIGHT THROUGH THREE CANAL PLAZA BUILDING; COORDINATED WORK WITH UTILITY
SMH RIM: 40.80 SEE NOTE 6 CONNECT EXISTING SERVICE TO MANHOLE
SMH RIM: 40.85 SEE NOTE 6
SMH RIM: 40.85 SEE NOTE 6 CONNECT EXISTING SERVICE TO MANHOLE
TELECOMM. MANHOLE
CONSOLIDATED COMMUNICATIONS SERVICE CONNECTION; COORDINATE WORK WITH UTILITY
SUBSURFACE TRANSFORMER VAULT, SEE NOTE 4
ELECTRICAL DUCT BANK AND ASSOCIATED SIDEWALK REPAIR N.I.C., SEE NOTE 4
UNDERGROUND ELECTRICAL TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION
ELECTRICAL HANDHOLE, TYP.
CONNECT LIGHT TO LIGHTING CIRCUIT; REMOVE AND RESET CURB AS REQUIRED
GAS GATE VALVE AND SERVICE TO BE DEMOLISHED; COORDINATE WORK WITH UNITIL
D.I. GATE VALVE, TYP.
CONNECT TO EXISTING 12" WATER MAIN; COORDINATE WORK WITH PWD
1972 12" DUCTILE IRON WATER MAIN
8" PVC INV: 25.54
PUBLIC HYDRANT LOCATION TO BE COORDINATED WITH CITY FIRE DEPARTMENT AND PWD
SECONDARY ELECTRICAL VAULT, SEE NOTE 4
ELECTRIC MANHOLE #1000.3, SEE NOTE 4; WORK TO BE COORDINATED WITH CMP
ELECTRIC MANHOLE #1000.2, SEE NOTE 4; WORK TO BE COORDINATED WITH CMP
SECONDARY ELECTRICAL VAULT, SEE NOTE 4
GAS METER; COORDINATE METER LOCATION AND WORK WITH UNITIL
SMH RIM: 38.25 6" PVC INV IN (E): 31.00 6" PVC INV OUT (W): 30.90
GREASE INTERCEPTOR 1,000 GALLON (SHIER GB-1000 OR APPROVED EQUAL) RIM: 38.10 4" INV IN: 31.82 4" INV OUT: 31.65
SMH RIM: 38.50 6" INV IN (E): 26.80 8" INV OUT (W): 26.60
SUBSURFACE TRANSFORMER VAULT, SEE NOTE 4
SMH RIM: 67.85 6" PVC INV IN (E): 30.60 6" PVC INV OUT (W): 30.50
SMH RIM: 38.10 6" INV IN (N): 31.60 4" INV IN (E): 31.60 6" INV OUT (W): 31.50
STORMWATER TREATMENT SYSTEM, SEE SHEET C-300
GATE CONTROL BOXES
ELECTRIC MANHOLE #1000.1, SEE NOTE 4
15" CEMENT COMBINED SEWER MAIN
EXTENT OF CCTV REPORT (UTILITY NOTE C)
PLUM STREET (DISCONTINUED, LOCATION APPROXIMATE, SEE EASEMENT F)
PIPE MATERIAL CHANGE (SEE UTILITY NOTE C)
SEWER STUB (TYP., SEE UTILITY NOTE C)
12" X 12" I-BEAM (TYP.)
TRANSFORMERS FOR PROPOSED BUILDING
GENERATOR PAD
FILTERRA DRAIN
GREASE TRAP
TRASH COMPACTOR
BIKE RACKS
5" MAPLE
DISCONTINUED PORTION OF PATTON COURT (1958 & 1981)
CONDOMINIUM DECLARATION (SEE EASEMENT N)
OIL FILL
ELECTRICAL VAULT
SUITE 102
SUITE 103
EXISTING ENTRANCE / WATER
NEW ELEC ROOM
EXISTING UTILITY ROOM
SMH 1189
SMH 1182
SMH 1516
SMH 1159
MH 1157
SMH 3977
SMH 1033
SMH 1049
MH 1051
SMH 1093
CB 1178
CB 1176 RIM=39.70
CB 1174 RIM=41.10
CB 1590
CB 1572 RIM=30.94
CB 1061 RIM=35.65
MH 1562 RIM=31.61
MH 1593 RIM=31.02
MH 1595 RIM=30.98
MH 1630
YD 3393
YD 3392
YD 3391
YD 3398
YD 1696
YD 1693
YD 1694
TIME CAPSULE (1972)
BENCHES
DB4
DOOR KEYPAD
GLASS ENTRY
WALL
DRAIN
DECK
(SEE EASEMENT I)
(SEE EASEMENT G)
(SEE EASEMENT E)
(SEE EASEMENT N)
EASEMENT B
8"-FIRE
6"-DOM
SD
S
W
G
T
E
N 60°16'41" E 157.00
S 60°16'41" W
N 29°45'43" W 135.00
S 29°45'43" E 135.00
S 60°10'55" W 53.86'
N 29°49'17" W 91.50'
S 59°09'01" W 20.88'
S 59°36'27" W 41.22'
S 59°42'19" W 17.86'
S 59°48'04" W 39.63'
S 51°10'47" W 41.22'
S 51°57'54" W 78.97'
S 53°41'44" W 81.87'
N 52°15'30" E 79.94'
S 37°00'00" E 149.33'
S 29°45'43" E 208.00'
N 29°45'43" W 32.00'
N 60°16'41" E 157.00'
S 60°16'41" W 157.00'
N 29°49'17" W 55.92'
N 29°45'43" W 208.00'
N 60°16'41" E 157.00'
N 29°45'43" W 32.00'
S 29°45'43" E 32.00'
S 60°16'41" W 157.00'
S 29°45'43" E 135.00'
N 29°45'43" W 135.00'
N 60°16'41" E 157



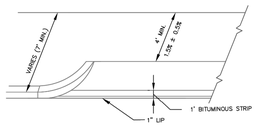
STANDARD COMMERCIAL DRIVEWAY APRON LAYOUT

NOT TO SCALE



SECTION A–A

NOT TO SCALE

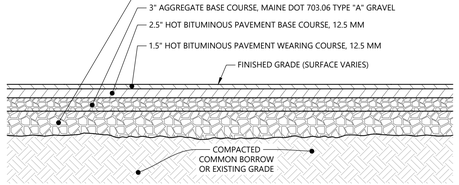


NOTES:

1. MATCH EXISTING GRADE AT R.O.W LINE. WHERE REQUIRED TO MEET A.D.A. AND DRIVEWAY APRON SLOPE REQUIREMENTS, A CONSTRUCTION EASEMENT MAY BE REQUIRED.
2. IF MATCHING THE EXISTING GRADE AT ROW CAUSES APRON SLOPE TO EXCEED RECOMMENDED %, SIDEWALK TRANSITION AREAS MAY BE ADDED, BUT SHALL NOT EXCEED 8.33%.
3. DRIVEWAY CURB RADIUS SHALL NOT BE LARGER THAN REQUIRED BY THE SITE'S DESIGN VEHICLE.
4. ALL MATERIALS IN ROW TO COMPLY WITH CITY'S SIDEWALK & DRIVEWAY MATERIAL POLICY. BRICK IN DRIVEWAY APRONS, WHERE APPLICABLE, SHALL BE ORIENTED IN THE SAME WAY AS THE ADJACENT BRICK SIDEWALK..

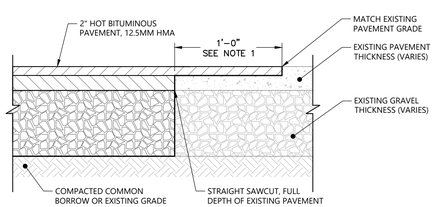
1 COMMERCIAL/ INDUSTRIAL DRIVEWAY APRON

SCALE: NTS



4 BITUMINOUS PAVEMENT REPAIR

SCALE: NTS



NOTES:

1. GRIND EXISTING PAVEMENT, 2" DEPTH.
2. PROVIDE BITUMINOUS TACK COAT ON VERTICAL AND HORIZONTAL SURFACES PRIOR TO PAVING.
3. DETAIL APPLICABLE TO PAVEMENT BUTT JOINTS AT ROADWAY WORK LIMITS. REFER TO PIPE INSTALLATION DTL. OR PAVED ROAD SECTION DTLS. FOR TRENCH REPAIR REQUIREMENTS.

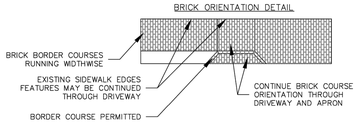
7 PAVEMENT BUTT JOINT

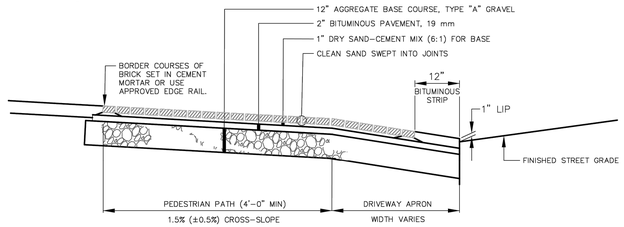
SCALE: NTS

BRICKS TO BE USED:

NEW CONSTRUCTION:
4"x8" PINE HALL PATHWAY PAVER BRICK, MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM # 193623, PINE HALL PATHWAY PAVER BRICK.

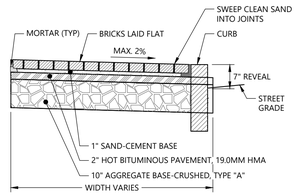
REPAIR /MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER; SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK", ITEM NUMBER # VBBB





2 BRICK DRIVEWAY APRON WITH BITUMINOUS BASE

SCALE: NTS



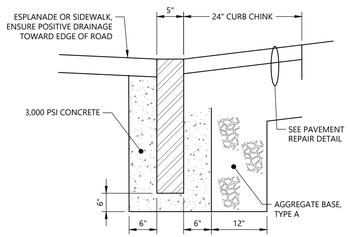
SECTION VIEW

NOTES:

1. BRICKS SHALL BE VERMONT BACKER BRICK PAVER SUPPLIED BY GAGNE AND SONS OR APPROVED EQUAL.
2. PROVIDE MIN. 48" OF STRUCTURAL FILL BENEATH ANY BRICK SIDEWALK SECTION WITHIN 6 FEET OF AN EXTERIOR DOOR, ALL DIRECTIONS.
3. PROVIDE MIN. 48" OF STRUCTURAL FILL BENEATH ANY BRICK SIDEWALK SECTION WITHIN 6 FEET OF AN EXTERIOR DOOR, ALL DIRECTIONS.

5 BRICK SIDEWALK IN CITY RIGHT-OF-WAY

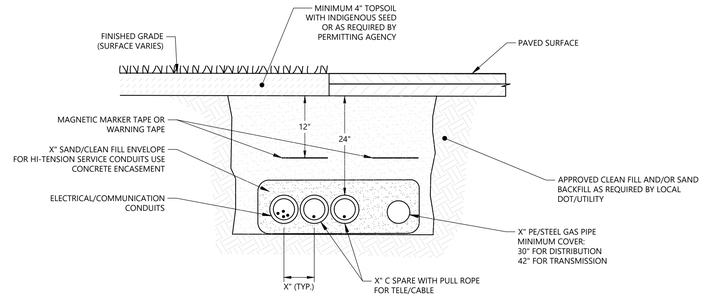
SCALE: NTS



SECTION VIEW

8 FLUSH GRANITE CURB IN CITY RIGHT-OF-WAY

SCALE: NTS

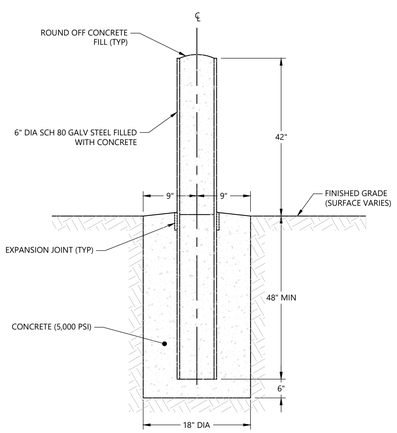


NOTES:

1. MAINTAIN 18" CLEAR BETWEEN ELECTRICAL/COMMUNICATION CONDUITS AND GAS PIPING.
2. EXCAVATE, REMOVE ROCK, BACKFILL, SEED AND RESTORE GRASS OR PAVEMENT TO ORIGINAL CONDITIONS.

6 ELECTRICAL, GAS, AND COMMUNICATIONS TRENCH

SCALE: NTS

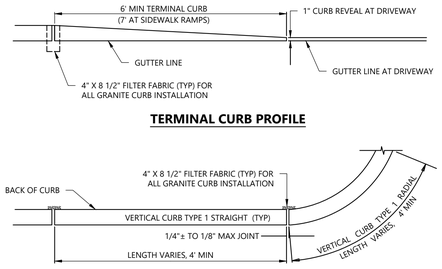


NOTE:

1. ALL BOLLARDS SHALL BE PAINTED. COLOR SELECTED BY OWNER.

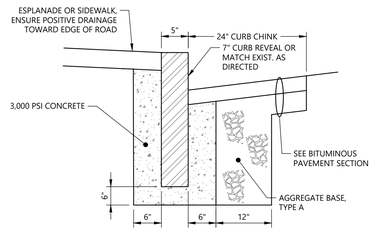
9 6" DIA. BOLLARD (IN PAVEMENT)

SCALE: NTS



TERMINAL CURB PROFILE

VERTICAL GRANITE CURB PLAN VIEW



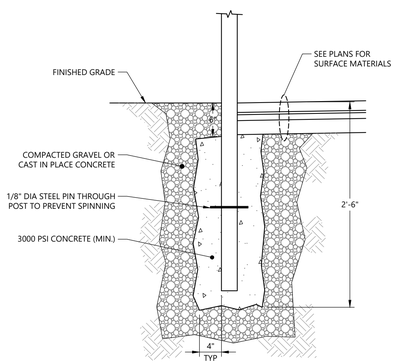
VERTICAL GRANITE CURB CROSS SECTION

NOTES:

1. PROVIDE 6" TYP CURB REVEAL UNLESS OTHERWISE INDICATED. IF NECESSARY TO MAKE SIDEWALK GRADES ACCESSIBLE, CURB REVEAL BETWEEN 4 AND 7 INCHES IS ACCEPTABLE. CURB REVEALS LARGER THAN 6" ARE ACCEPTABLE WHERE INDICATED ON THE DRAWINGS OR WITH WRITTEN APPROVAL FROM ENGINEER.
2. GRANITE BLOCKS SHALL BE SUFFICIENT SIZE AND DEPTH TO PREVENT OVERTURNING.
3. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
4. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
5. CURBING SHALL BE SET IN 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
6. WOODEN SHIMS MAY BE USED TO SET CURB.
7. SUBGRADE TO BE 95% COMPACTED.

3 VERTICAL GRANITE CURB IN CITY RIGHT-OF-WAY

SCALE: NTS



POST SPECIFICATION			
TYPE	HEIGHT ABOVE FINISHED GRADE	POST DIAMETER	POST MATERIAL
STREET SIGNAGE	0' TO 60' INCL.	4" MIN.	GALV. STEEL

10 TYPICAL SIGN POST

SCALE: NTS

45 Union Street

45 Union Street, Portland, Maine

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED PROFESSIONAL ENGINEER

KEY PLAN



NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

AS NOTED

DRAWING TITLE

CIVIL DETAILS - 2

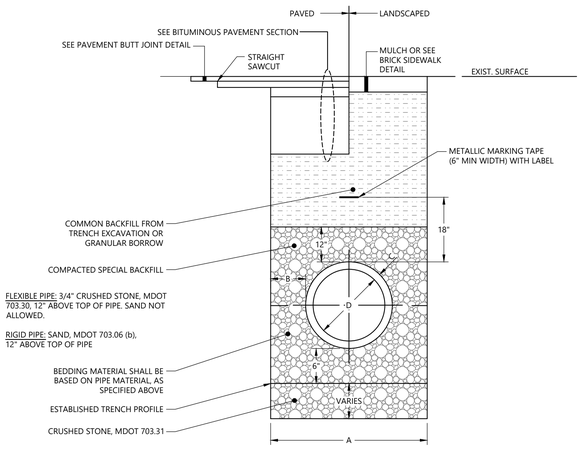
SHEET NUMBER

C-401

3/19/2025 9:54:17 AM

NOTES:

ANY ALTERNATE TRENCHING SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES.



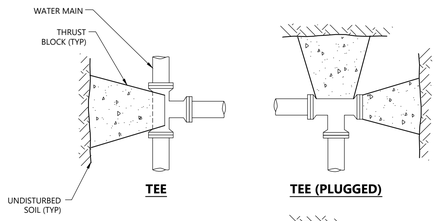
NOTES:

1. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
2. DIMENSION "B" SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES "B" SHALL BE AT LEAST 9".
3. DIMENSION "A" SHALL BE BASED ON PIPE DIAMETER, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, "D" (INCHES)	MAX. TRENCH WIDTH, "A" (FEET)
6	4.0
8	4.0
10	4.0
12	4.0
15	4.0
18	5.0
21	5.0
24	5.5
27	6.0
30	6.0
36	7.0
42	8.0
48	8.0

1 PIPE INSTALLATION

SCALE: NTS



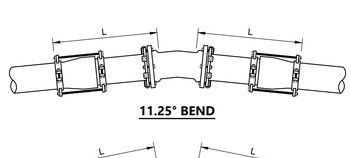
NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	REQUIRED BEARING AREA (SQ FT)					
		90 DEG	60 DEG	45 DEG	30 DEG	22.30 DEG	11.25 DEG
3	3.96	2.0	1.4	1.1	0.7	0.5	0.3
4	4.80	2.9	2.0	1.6	1.1	0.8	0.4
6	6.90	6	4	3	2.2	1.6	0.8
8	9.05	10	7	6	4	3	1.4
10	11.10	15	11	8	6	4	2.1
12	13.20	22	15	12	8	6	3
14	15.30	29	21	16	11	8	4
16	17.40	38	27	20	14	10	5
18	19.50	48	34	26	17	13	7
20	21.60	58	41	32	21	16	8
24	25.80	83	59	45	30	23	12
30	32.00	128	90	69	47	35	18
36	38.30	183	130	99	67	51	25

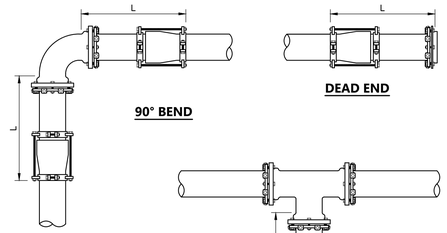
NOTES:

1. MAXIMUM TEST PRESSURE = 1.5x150 PSI.
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF.
3. BEARING AREA = AxB.
4. C SHALL BE GREATER THAN A/2 AND B/2.
5. WRAP FITTINGS WITH POLYETHYLENE PRIOR TO CONSTRUCTING THRUST BLOCKS. NO JOINTS SHALL BE COVERED WITH CONCRETE.

2 THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS

SCALE: NTS





DIAMETER	REQUIRED LENGTH OF RESTRAINED JOINT PIPE ON BOTH SIDES OF FITTING				REQUIRED LENGTH OF RESTRAINED JOINT PIPE
	HORIZONTAL BEND				
	11.25°	22.5°	45°	TEE/90°	DEAD END
6"	2'	4'	9'	21'	51'
8"	3'	6'	11'	27'	67'
10"	4'	7'	14'	32'	81'
12"	4'	8'	16'	38'	96'
16"	5'	10'	20'	48'	123'

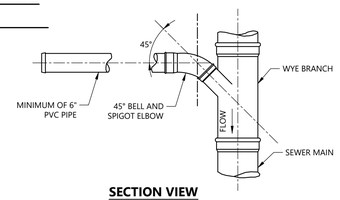
ASSUMED PARAMETERS:	
LAYING CONDITION	TYPE 5
SOIL DESIGNATION	SILT 1
DEPTH COVER	5 FT
DESIGN PRESSURE	200 PSI
SAFETY FACTOR	1.5

NOTES:

1. RESTRAINED JOINTS SHALL BE MECHANICAL JOINT OR PUSH-ON RESTRAINED JOINT AS SPECIFIED IN SECTION 33 14 11.01.

3 THRUST RESTRAINT

SCALE: NTS

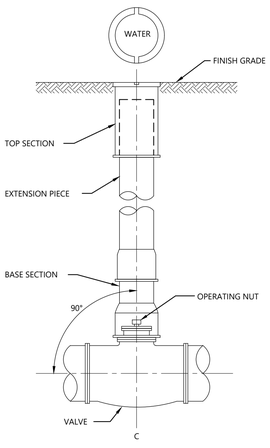


NOTES:

1. A 2" RIGID INSULATION WILL BE REQUIRED IN AREAS WHERE LESS THAN 4'-0" OF COVER OVER TOP OF PIPE OR WHERE REQUIRED BY ENGINEER.
2. MINIMUM SLOPE 1/4" PER FOOT UNLESS OTHERWISE DIRECTED.

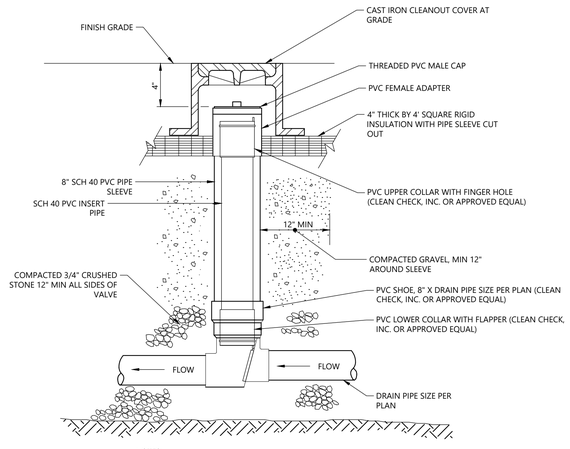
6 SANITARY SEWER SERVICE CONNECTION

SCALE: NTS



4 VALVE WITH VALVE BOX

SCALE: NTS

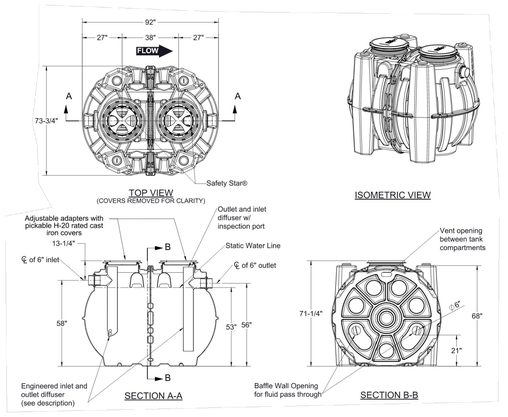


NOTES:

1. MATERIALS AND INSTALLATION PER MANUFACTURER'S INSTRUCTIONS.

5 BACKFLOW PREVENTER

SCALE: NTS



NOTES:

1. GREASE TRAP SHALL BE GB-1000 MODEL BY SCHIER, OR APPROVED EQUAL.
2. GREASE TRAP SHALL BE PROVIDED WITH RISERS AS NECESSARY TO ACCOMMODATE DEFINED INVERTS.
3. GREASE TRAP AND ASSOCIATED COVERS AND RISERS SHALL BE PROVIDED FOR H-20 LOADING.

7 GREASE INTERCEPTOR

SCALE: NTS

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45 Union Street, Portland, Maine

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KEY PLAN

NOTES

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PROJECT NUMBER	DRAWN BY
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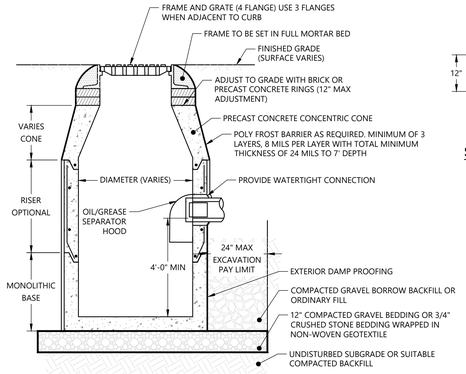
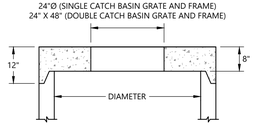


NOTES:

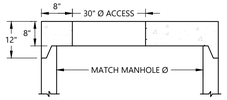
1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS-20 LOADINGS.
2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
3. ALTERNATE TOP SLAB MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
5. DOUBLE CATCH BASIN FRAME AND GRATE SHALL BE INSTALLED ON A MINIMUM 5'-0" DIAMETER TOP SLAB.
6. PROVIDE MINIMUM 24" DIAMETER OPENING.
7. PROVIDE ANTIFLOATATION SLAB EXTENSION AS REQUIRED TO SATISFY ANTIFLOATATION REQUIREMENTS.

1 4' DIA. PRECAST CONCRETE CATCH BASIN

SCALE: NTS



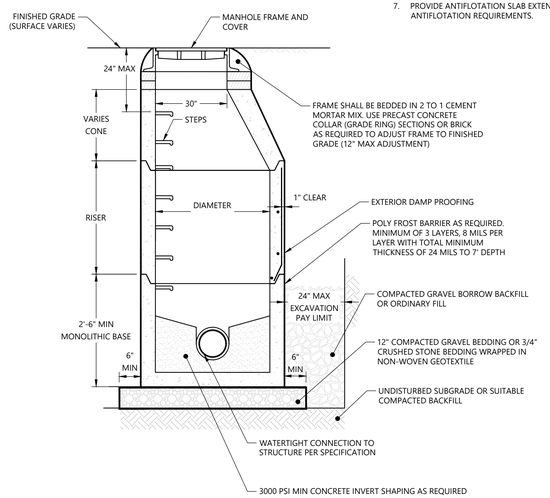
SHALLOW ALTERNATIVE TOP SLAB



SHALLOW ALTERNATE TOP SLAB

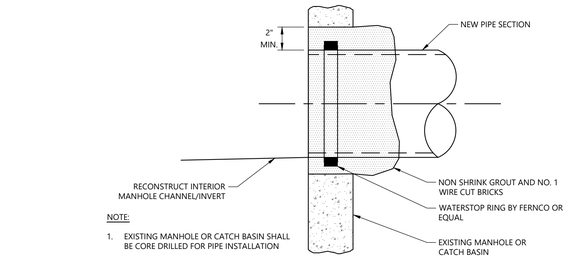
NOTES:

1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS-20 LOADINGS.
2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
3. ALTERNATE TOP SLAB MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
4. MANHOLE FRAME AND GRATE(S) SHALL MEET MUNICIPAL AND STATE SPECIFICATIONS WHEN APPLICABLE.
5. REFER TO PROJECT SPECIFICATIONS FOR MORE DRAINAGE MANHOLE INFORMATION.
6. JOINT SEALANT BETWEEN SECTIONS SHALL BE BUTYL RUBBER.
7. PROVIDE ANTIFLOTATION SLAB EXTENSION AS REQUIRED TO SATISFY ANTIFLOTATION REQUIREMENTS.



5 4' DIA. PRECAST CONCRETE DRAINAGE MANHOLE

SCALE: NTS

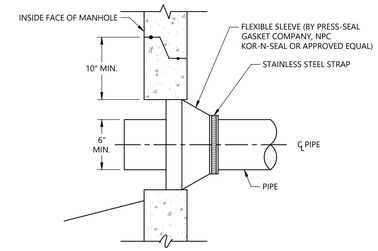


NOTE:

1. EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION

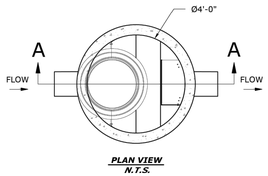
2 NEW PIPE TO EXISTING STRUCTURE

SCALE: NTS

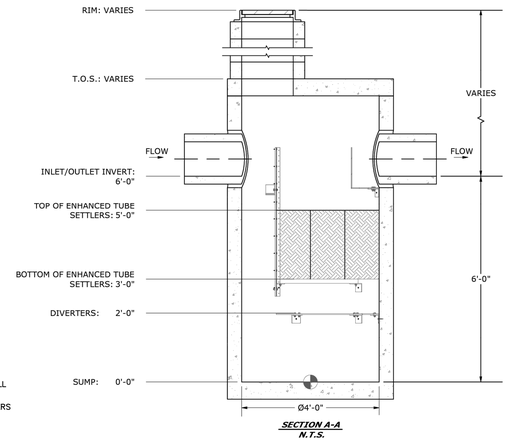


3 NEW PIPE TO NEW STRUCTURE CONNECTION

SCALE: NTS



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.

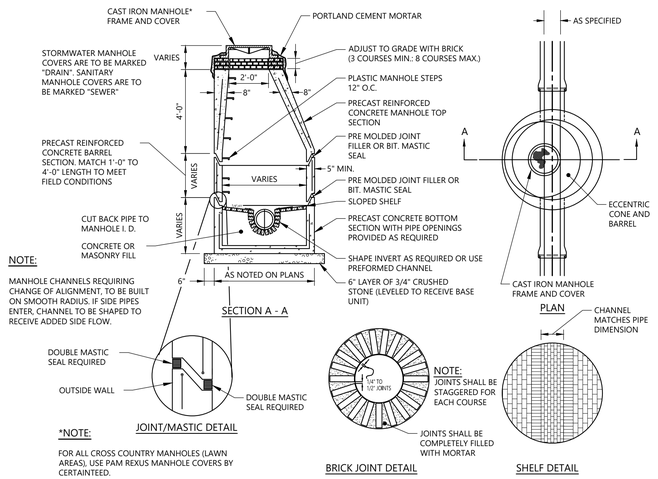
NOTE: PROVIDE STORMSETTLER BY STORMTRAP OR APPROVED EQUAL.

4 HYDRODYNAMIC SEPARATOR

SCALE: NTS

GENERAL NOTES:

1. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C478.
2. CONTRACTOR TO INSTALL THE STRUCTURE IN ACCORDANCE WITH ASTM C1821.
3. CONTRACTOR TO PROVIDE ALL LABOR AND EQUIPMENT REQUIRED TO OFFLOAD AND INSTALL UNIT.
4. CONTRACTOR TO PROVIDE AND INSTALL ALL PIPES, FRAMES, COVERS, HATCHES, AND RISERS UNLESS SPECIFIED OTHERWISE.
5. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS.



NOTE:

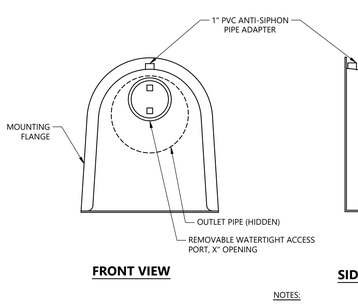
MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.

*NOTE:

FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

6 4' DIA. PRECAST CONCRETE MANHOLE

SCALE: NTS



FRONT VIEW

SIDE VIEW

CONFIGURATION DETAIL	
PIPE SIZE (I.D.)	**SNOUT MODEL REQUIRED**
12"	18R
15"	18R
18"	24R
24"	30R
30"	54R
36"	54R
42"	72F
48"	72F
54"	96F
60"	96F
66"	96F

F = SQUARE STRUCTURE
R = CIRCULAR STRUCTURE

NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY COMPANY OR PRE-APPROVED EQUAL.
2. SEE MANUFACTURER SPECIFICATIONS FOR MATERIAL, DIMENSIONS AND OTHER REQUIREMENTS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW.
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
6. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WIN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT. INSTALLATION KIT SHALL INCLUDE: INSTALLATION INSTRUCTIONS, PVC ANTI-SIPHON VENT PIPE AND ADAPTER, OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING, 3/8" STAINLESS STEEL BOLTS, AND ANCHOR SHIELDS.

7 SNOUT OIL-WATER-DEBRIS SEPARATOR

SCALE: NTS

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED
PROFESSIONAL ENGINEER

KEY PLAN

NOTES

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PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

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ISSUED FOR SITE PLAN APPROVAL

SCALE

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CIVIL DETAILS - 4

SHEET NUMBER

C-403

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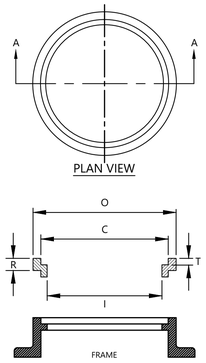
GENERAL NOTES FOR MANHOLES AND CATCH BASINS

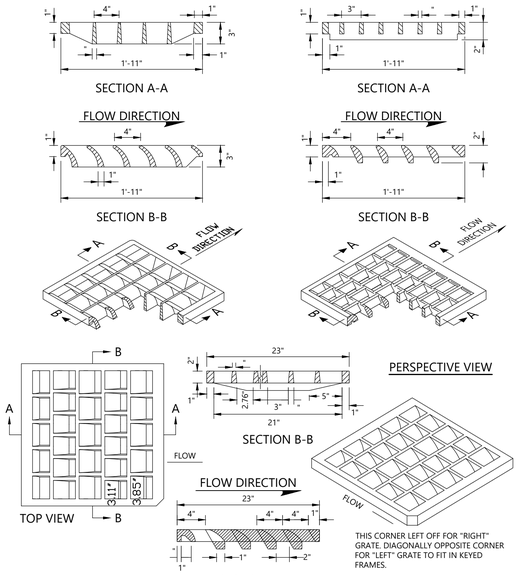
1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
3. ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR SURFACE. IF CONSTRUCTED OF BRICK MASONRY, SURFACE SHALL BE PLASTERED WITH A SMOOTH MORTAR FINISH 3/8" THICK. AFTER THE MORTAR HAS SET, THE SURFACE SHALL BE WATERPROOFED AS REQUIRED BY SUPPLEMENTAL SPECIFICATIONS SECTION 604.
4. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35. ALL PARTS OF CASTINGS, EXCEPT FINISHED SURFACE, SHALL RECEIVE A COAT OF COAL TAR PITCH VARNISH OR ASPHALTUM PAINT WHICH SHALL BE SMOOTH AND TOUGH BUT NOT BRITTLE.
5. MANHOLES MAY BE CONSTRUCTED OF MASONRY, PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
6. CONTRACTOR SHALL SUBMIT ANTIFLOATATION CALCULATIONS FOR ALL MANHOLE AND CATCH BASIN STRUCTURES.
7. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION, OFFSET, AND STRUCTURE ID PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
8. STORM AND SEWER MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED PICK HOLE.
9. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS WITHIN CITY RIGHT-OF-WAY SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
10. WHEN THE FLOW CHANGES DIRECTION IN A MANHOLE, THE CHANNEL ALIGNMENT SHALL FOLLOW A SMOOTH RADIUS. CHANNELS SHALL BE FORMED TO ACCEPT ALL INLET PIPES.
11. ON STORM AND SEWER MANHOLES, THE SHELF AND CHANNEL SHALL BE FORMED BY BRICK SET IN CEMENT MORTAR OR BY FACTORY PRE-CAST CONCRETE. SUCH PRE-CAST CONCRETE SHALL BE EPOXY COATED AND THE SHELF SHALL HAVE A PERMANENT NON-SKID SURFACE.



SIZE	C	R	T	O	I	Wt.
R241 1/2	24	1 1/2	1 1/8	26 1/4	22 1/2	60
R242	24	2	1 1/8	26 1/4	22 1/2	80
R242 1/2	24	2 1/2	1 1/8	26 1/4	22	100
R243	24	3	1 1/8	26 1/4	22	120

1 MANHOLE RISER RING

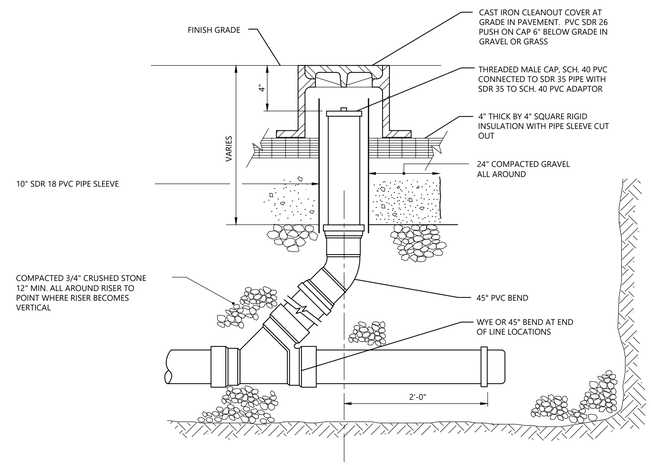
SCALE: NTS



NOTES:
TO BE USED WHERE PARALLEL BAR GRATES WOULD PRESENT A HAZARD TO BICYCLE TRAFFIC. FOR USE ON CATCH BASIN TYPES: A1-C, A2-C, A5-C, B1-C, B2-C, B5-C, F3-C, F4-C, F5-C, F6-C.

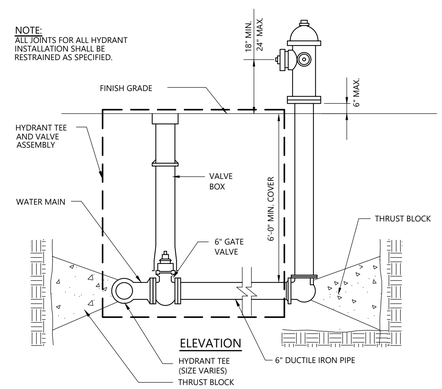
2 "CASCADE"-TYPE GRATES

SCALE: NTS



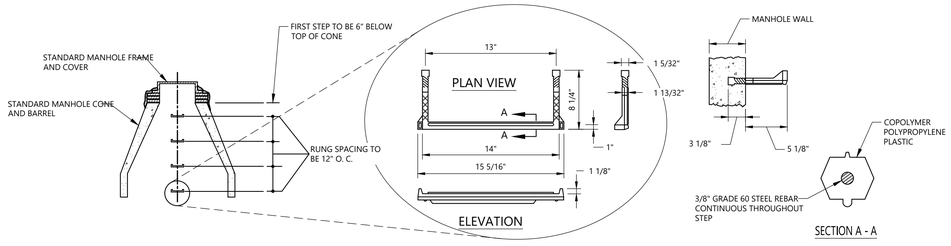
5 CLEANOUT

SCALE: NTS



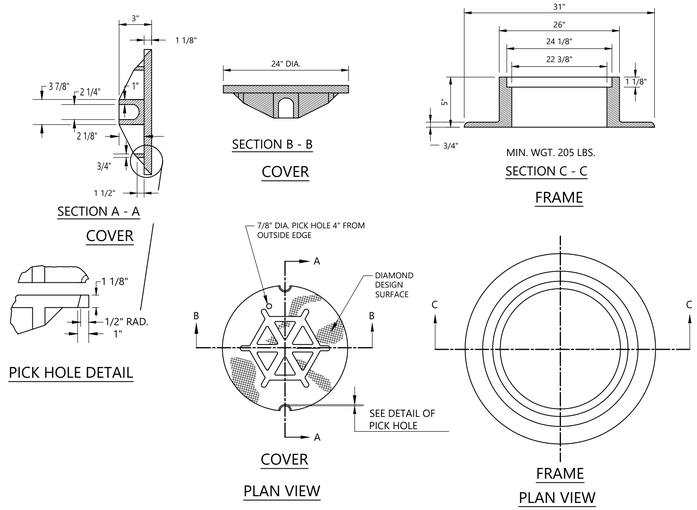
6 HYDRANT ASSEMBLY

SCALE: NTS



3 PLASTIC MANHOLE STEPS

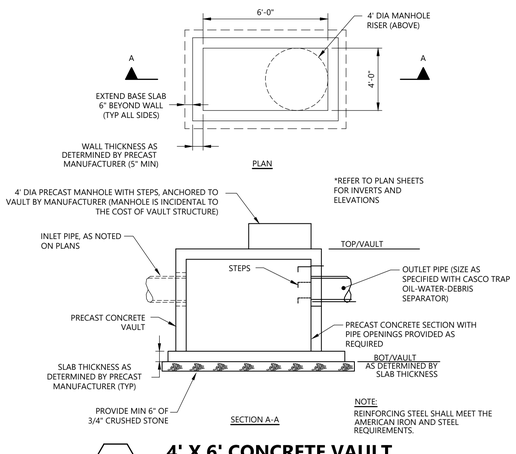
SCALE: NTS



NOTE:
FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

4 TYPE "A" CAST IRON MANHOLE COVER AND FRAME

SCALE: NTS



NOTE:
REINFORCING STEEL SHALL MEET THE AMERICAN IRON AND STEEL REQUIREMENTS.

7 4' X 6' CONCRETE VAULT

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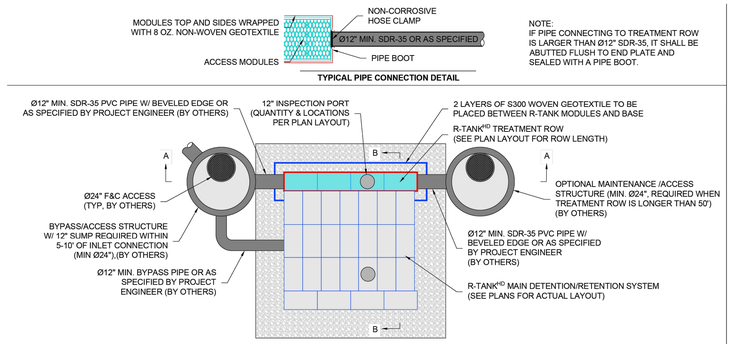
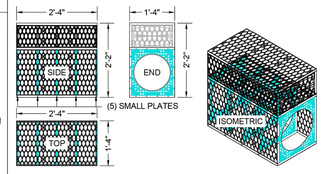
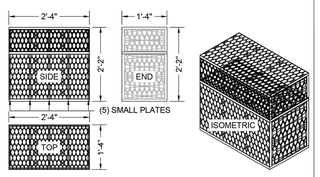


NOTE:
IF PIPE CONNECTING TO TREATMENT ROW IS LARGER THAN Ø12" SDR-35, IT SHALL BE ABUTTED FLUSH TO END PLATE AND SEALED WITH A PIPE BOOT.

TYPICAL PIPE CONNECTION DETAIL

R-TANKHD TREATMENT ROW WITH PRECAST INLET/ACCESS STRUCTURE

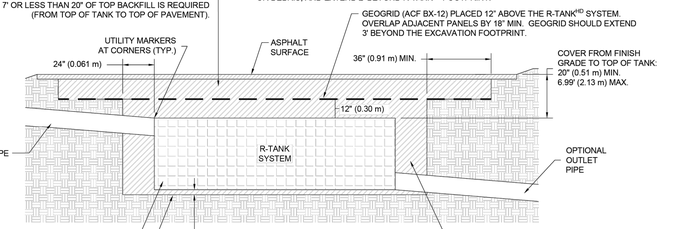




MODULE DATA

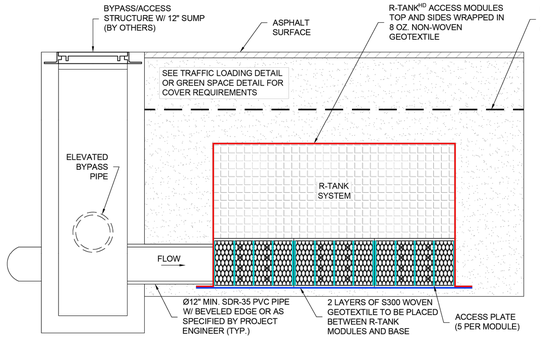
GEOMETRY:	**LOAD RATING:**
LENGTH = 28.15 IN. (715 MM)	33.4 PSI. (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS20/HS25 - SEE SPEC FOR
HEIGHT = 25.98 IN. (660 MM)	COVER REQUIREMENTS
TANK VOLUME = 6.67 CF	**MATERIAL:**
STORAGE VOLUME = 6.33 CF	100% RECYCLED POLYPROPYLENE
VOID INTERNAL VOLUME: 95%	**SMALL PLATES REQUIRED:**
VOID SURFACE AREA: 90%	5/SEGMENT, 10/MODULE

TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

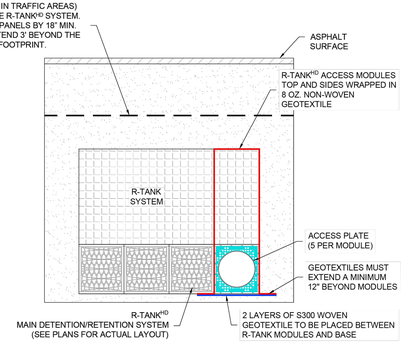


NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANKHD MODULE SHEET .
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANKHD FOOTPRINT.

R-TANKHD & HS-20 LOADS - SECTION VIEW



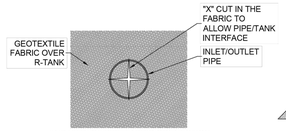
R-TANKHD TREATMENT ROW SECTION A-A



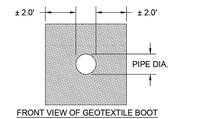
R-TANKHD TREATMENT ROW SECTION B-B

NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24".
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

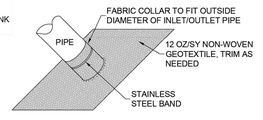
CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.



END VIEW OF PIPE/FABRIC CONNECTION

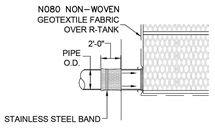


FRONT VIEW OF GEOTEXTILE BOOT

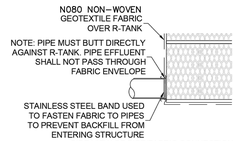


GEOTEXTILE BOOT

AFTER TANK WRAP IS SECURED TO PIPE, SLIDE BOOT AGAINST R-TANK AND SECURE WITH SECOND STAINLESS STEEL BAND, THEN ATTACH BOOT FLAP TO TANK ENVELOPE FABRIC WITH DUCT TAPE OR OTHER ADHESIVE.

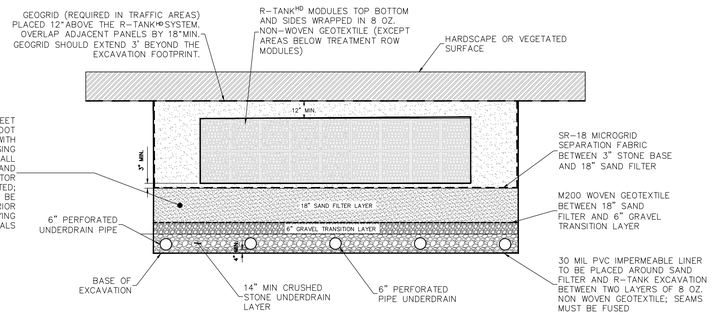


SIDE VIEW OF GEOTEXTILE BOOT



SIDE VIEW OF PIPE/FABRIC CONNECTION

R-TANK TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL

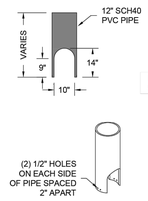


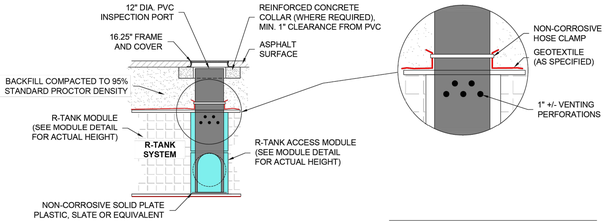
NOTE:

1. SAND FILTER MEDIA SHALL MEET SPECIFICATIONS FOR MEDOT AGGREGATE #703.01, WITH BETWEEN 8-10% FINES PASSING THE #200 SIEVE; MATERIAL SHALL BE INSTALLED IN TWO LIFTS AND COMPACTED TO 92% PROCTOR AND INFILTRATION TESTED; INFILTRATION RATES SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION OF OVERLYING MATERIALS

1 SUBSURFACE SAND FILTER SECTION
SCALE: NTS

NOTES
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANKHD, R-TANKXD, R-TANKHD AND R-TANKXD MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.





R-TANK TYPICAL INSPECTION PORT

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED PROFESSIONAL ENGINEER

KEY PLAN



NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

PHASE
ISSUED FOR SITE PLAN APPROVAL

SCALE
AS NOTED

DRAWING TITLE
CIVIL DETAILS - 6

SHEET NUMBER
C-405

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK INCLUDED

A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.

B. Provide and install R-TankLID, R-TankHD, R-TankSD, or R-TankUD system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.

C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.

D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL

A. All materials shall be manufactured in ISO certified facilities.

B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.

C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.

D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS

A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.

B. Submit manufacturer's product data, including compressive strength and unit weight.

C. Submit manufacturer's installation instructions.

D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.

E. Submit material certificates for geotextile, geogrid, base course and backfill materials.

F. Submit required experience and personnel requirements as specified in Section 1.03.

G. Any proposed equal alternate product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.

B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.

C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE.

A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS

A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.

B. Protect adjacent work from damage during R-Tank system installation.

C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.

D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS

2.01 R-TANK UNITS

A. R-Tank - Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).

B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank[LD] VALUE	R-Tank[HD] VALUE	R-Tank[SD] VALUE	R-Tank[UD] VALUE
Void Area	Volume available for water storage	95%	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%	90%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	30.0 psi	33.4 psi	42.9 psi	134.2 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	22.4 psi	28.9 psi	N/A
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	20"	18"	12" (STONE BACKFILL)
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	24"	19"	15" (STONE BACKFILL)
Maximum Cover	Maximum allowable cover depth	3 feet	< 7 feet	< 10 feet	5 feet
Unit Weight	Weight of plastic per cubic foot of tank	3.29 lbs / cf	3.62 lbs/f	3.96 lbs / cf	4.33 lbs / cf
Rib Thickness	Thickness of load-bearing members	0.18 inches	0.18 inches	0.18 inches	N/A
Service Temperature	Safe temperature range for use	-14 – 167° F	-14 – 167° F	-14 – 167° F	-14 – 167° F

C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 GEOSYNTHETICS

A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.

B. Geogrid. For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is not always required for R-TankUD installations, and is often not required for non-traffic load applications.

2.03 BACKFILL & COVER MATERIALS

A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.

B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications - Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
a. For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14" or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.

C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS

A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION

3.01 ASSEMBLY OF R-TANK UNITS

A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION

A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.

B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.

C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.

D. Base: Of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.

E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 PREPARATION OF BASE

A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within ½" (+/- ¼") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.

B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 2' perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 INSTALLATION OF THE R-TANKS

A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer. Use tape, special adhesives, sandbags or other ballast to secure overlaps. As geotextiles can be damaged by extreme heat, smoking is not permissible on/near the geotextile, and tools such as a flame to tack the overlaps, such as propane torches, are prohibited.

B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A.

C. Install R-Tank modules by placing side by side, in accordance with the design drawings. No lateral connections are required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank system. The modules are to be oriented as per the design drawing with required depth as shown on plans.
1. For LD, HD, and SD installations, the large side plate of the tank should be placed on the perimeter of the system. This will typically require that the two ends of the tank area will have a row of tanks placed perpendicular to all other tanks. If this is not shown in the construction drawings, it is a simple field adjustment that will have minimal effect on the overall system footprint. Refer to R-Tank Installation Guide for more details
2. For UD installations, there is no perpendicular and row required.

D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.

E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against R-Tank system.

F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.

G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with "U" bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

3.05 BACKFILLING OF THE R-TANK UNITS

A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used.
3. Take care to ensure that the compaction process does not allow the machinery to come into contact with the modules due to the potential for damage to the geotextile and R-Tank units.
4. No compaction equipment is permissible to operate directly on the R-Tank modules.
5. Top Backfill: Only low pressure track vehicles shall be operated over the R-Tank system during construction. Dump Trucks and Pans shall not be operated within the R-Tank system footprint at any time. Heavy equipment should unload in an area adjacent to the R-Tank system and the material should be moved over the system using tracked equipment with an operating weight of less than 10 tons.
a. Typical Applications: Install a 12" (or as shown on plans) lift of freely draining material (Section 2.03 B) over the R-Tank Units, maintaining 12" between equipment tracks and R-Tank System. Lightly compacted using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used. Roller must remain in static mode until a minimum of 24" of cover has been placed over the modules. Sheep foot rollers should not be used.
b. Shallow Applications (< 18" total cover): Install top backfill in accordance with plans.
6. If required, install a geogrid as shown on plans. Geogrid shall extend a minimum of 3 feet beyond the limits of the excavation wall.
7. Following placement and compaction of the initial cover, subsequent lifts of structural fill (Section 2.03 C) shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the R-Tank system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill shall be maintained to within 12" across the footprint of the R-Tank system. Do not exceed maximum cover depths listed in Table 2.01 B.
8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the R-Tank system shall extend a minimum of 3 feet beyond the limits of the excavation wall.

B. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No non-installation related loading should be allowed over the R-Tank system until the final design section has been constructed (including pavement).

C. Place surfacing materials, such as groundcovers (no large trees), or paving materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.

D. Backfill depth over R-Tank system must be within the limitations shown in the table in Section 2.01 B. If the total backfill depth does not comply with this table, contact engineer or manufacturer's representative for assistance.

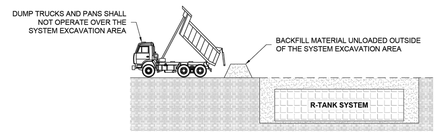
3.06 MAINTENANCE REQUIREMENTS

A. A routine maintenance effort is required to ensure proper performance of the R-Tank system. The Maintenance program should be focused on pretreatment systems. Ensuring these structures are clean and functioning properly will reduce the risk of contamination of the R-Tank system and stormwater released from the site. Pre-treatment systems shall be inspected yearly, or as directed by the regulatory agency and by the manufacturer (for proprietary systems). Maintain as needed using acceptable practices or following manufacturer's guidelines (for proprietary systems).

B. All inlet pipes and Inspection and/or Maintenance Ports in the R-Tank system will need to be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter.

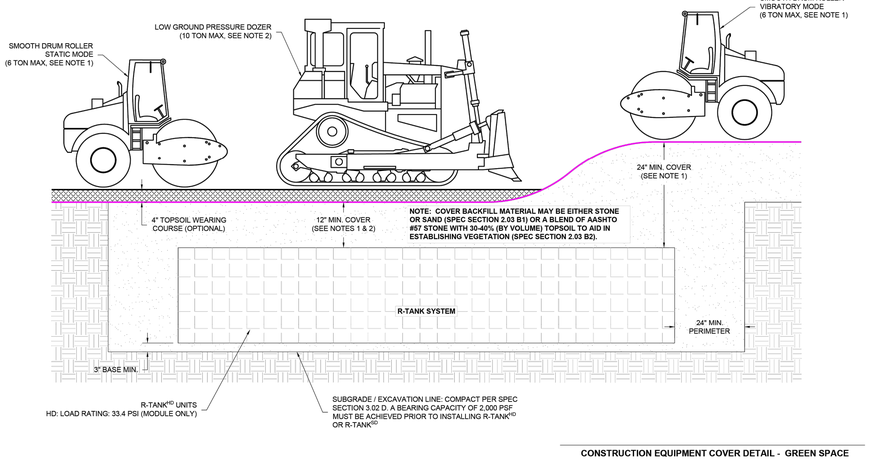
C. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed.

D. All inspection and maintenance activities should be performed in accordance with the R-Tank Operation, Inspection & Maintenance Manual.



DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
2. ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
4. ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT). **SPEC SECTION 3.05 B**
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.

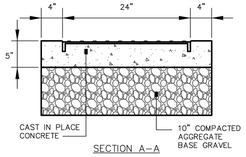


CONSTRUCTION EQUIPMENT COVER DETAIL - GREEN SPACE

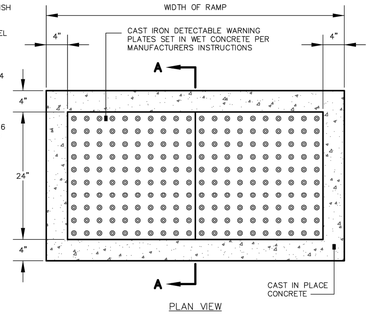
R-TANK SPECIFICATION

NOTES:

1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



SECTION A—A

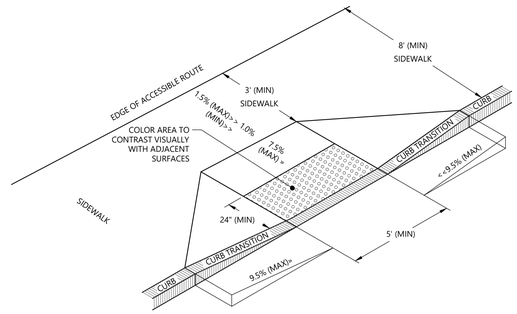


PLAN VIEW

SIDEWALK RAMP DETECTABLE WARNING PANEL

1

SCALE: NTS



TYPE A

NOTES:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN)
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
6. ADJACENT SURFACES AT TRANSITIONS SHALL BE FLUSH WITH CURB RAMPS.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY OR OTHERWISE INDICATED.
10. DETECTABLE WARNING SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. TRUNCATED DOMES AND ALL RELATED INSTALLED SURFACES TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ALL DETECTABLE WARNING SURFACE INSTALLATIONS SHALL BE AT A MINIMUM AT LEAST AS NON SKID AS THE SURROUNDING PEDESTRIAN SURFACES.
12. FOR ALLOWABLE SLOPE OF ACCESSIBLE ROUTE ON EXISTING SITE, SEE SECTION 405 OF THE ADA STANDARD FOR ACCESSIBLE DESIGN.

ACCESSIBLE CURB RAMP

2

SCALE: NTS

45 Union Street

45 Union Street, Portland, Maine

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LICENSED PROFESSIONAL ENGINEER

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ISSUED FOR SITE PLAN APPROVAL

SCALE

AS NOTED

DRAWING TITLE

CIVIL DETAILS - 7

SHEET NUMBER

C-406

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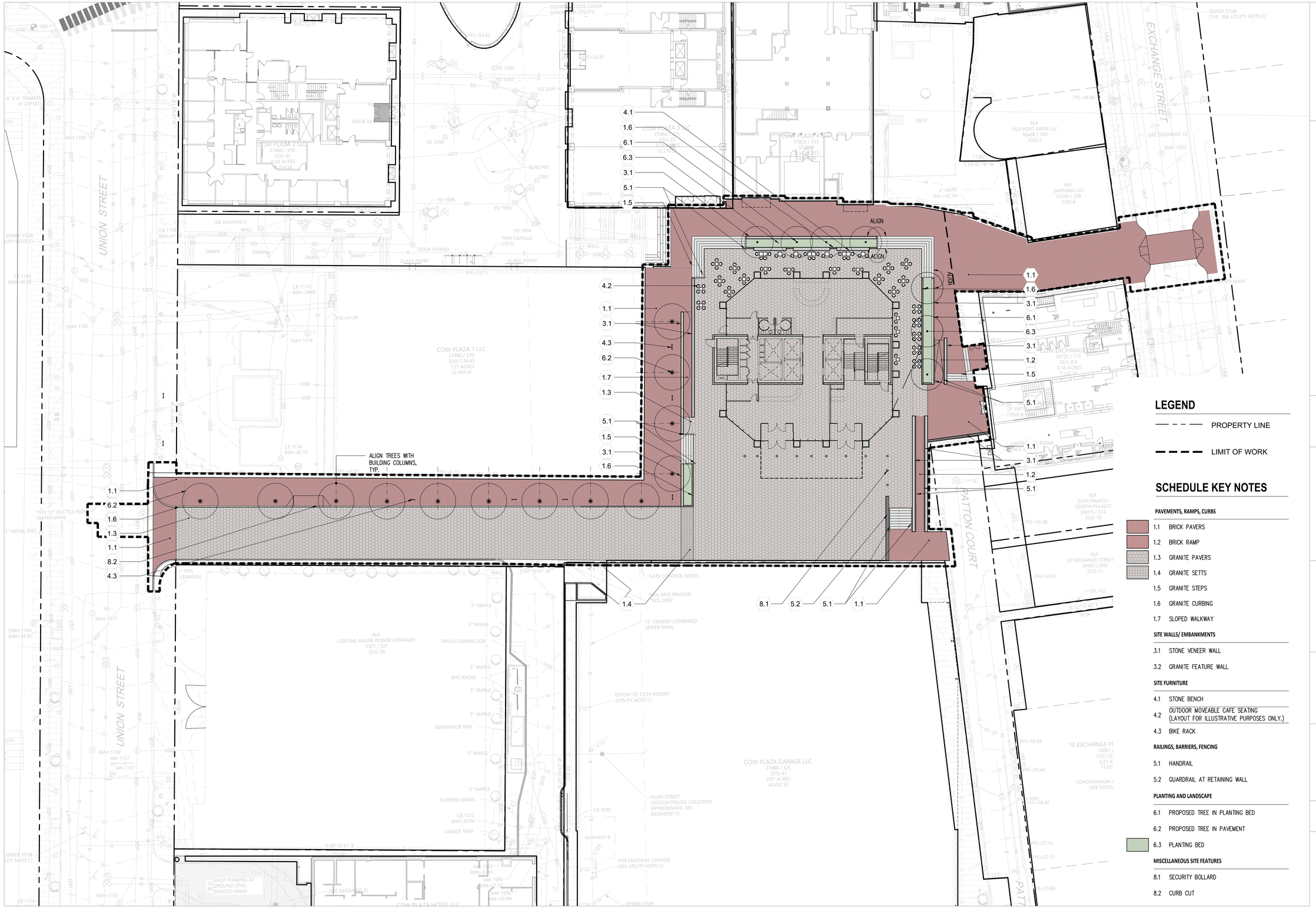

LEGEND

- PROPERTY LINE
- LIMIT OF WORK

SCHEDULE KEY NOTES

PAVEMENTS, RAMPS, CURBS

- 1.1 BRICK PAVERS
- 1.2 BRICK RAMP
- 1.3 GRANITE PAVERS
- 1.4 GRANITE SETTS
- 1.5 GRANITE STEPS
- 1.6 GRANITE CURBING
- 1.7 SLOPED WALKWAY

SITE WALLS/ EMBANKMENTS

- 3.1 STONE VENEER WALL
- 3.2 GRANITE FEATURE WALL

SITE FURNITURE

- 4.1 STONE BENCH
- 4.2 OUTDOOR MOVEABLE CAFE SEATING (LAYOUT FOR ILLUSTRATIVE PURPOSES ONLY.)
- 4.3 BIKE RACK

RAILINGS, BARRIERS, FENCING

- 5.1 HANDRAIL
- 5.2 GUARDRAIL AT RETAINING WALL

PLANTING AND LANDSCAPE

- 6.1 PROPOSED TREE IN PLANTING BED
- 6.2 PROPOSED TREE IN PAVEMENT
- 6.3 PLANTING BED

MISCELLANEOUS SITE FEATURES

- 8.1 SECURITY BOLLARD
- 8.2 CURB CUT

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
100 Properzi Way
Somerville, MA 02143-3740 USA
T 617.629.2100 F 617.629.2406

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Woodard & Curran
12 Mountfort Street
Portland, ME 04101 USA
T 800.426.4262

LANDSCAPE ARCHITECT
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Brunswick, ME 04011 USA
T 207.865.1080 x7044

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Boston, MA 02109 USA
T 617.864.2987

STRUCTURAL ENGINEERING
ARUP
77 Water Street
New York, NY 10005 USA
T 212.896.3000

MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION
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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN



NOTES

NOT FOR CONSTRUCTION

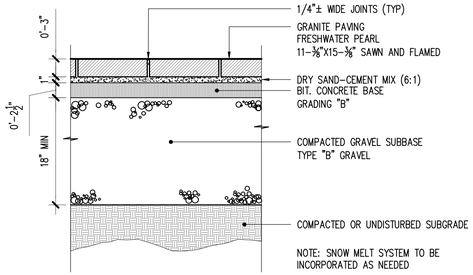
PROJECT NUMBER	DRAWN BY
1083.00	LW
DATE	CHECKED BY
OCTOBER 8, 2025	JP

PHASE
ISSUED FOR SITE PLAN APPROVAL

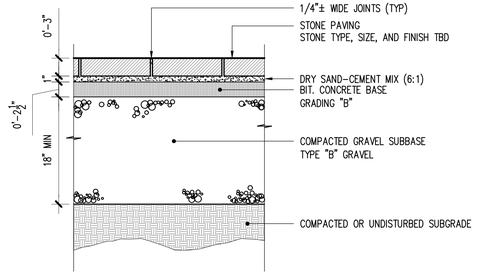
SCALE
1" = 20'

DRAWING TITLE
SITE PLAN

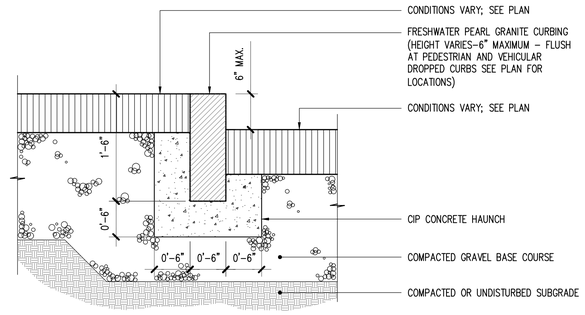
SHEET NUMBER
L 1.0



1 GRANITE PAVING
1"=1'



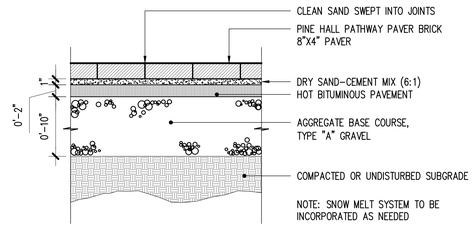
2 STONE PAVING (A AND B)
1"=1'



3 STONE CURB
1"=1'

MATERIAL SPECIFICATIONS

	MATERIAL	PRODUCT	FINISH / PATTERN	
	BRICK	PER CITY OF PORTLAND STANDARDS, 4"X8" PINE HALL PATHWAY PAVER BRICK	COLOR: FULL RANGE	
	GRANITE CURB	PER CITY OF PORTLAND STANDARDS	PER CITY OF PORTLAND STANDARDS	
	GRANITE PAVING, STEPS & WALL VENEER	FRESHWATER PEARL, FRESHWATER STONE	SAWN AND FLAMED	SOLAR REFLECTANCE: 0.45 WHILE THE FABRICATOR DOES NOT HAVE TEST RESULTS FOR THE SPECIFIED GRANITE'S THERMAL EMITTANCE, GRANITE OF A SIMILAR COLOR AND COMPOSITION HAS A THERMAL EMITTANCE OF .90 RESULTING IN SRI OF 49.6



4 BRICK PAVING
1"=1'

45 Union Street

45 Union Street, Portland, Maine

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NOTES

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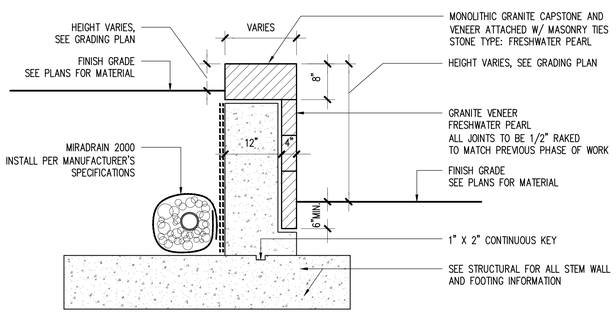
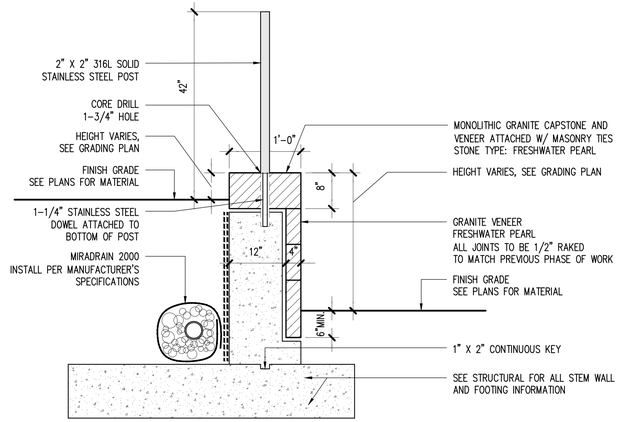
PROJECT NUMBER 1083.00
DRAWN BY LW
DATE OCTOBER 8, 2025
CHECKED BY JP
PHASE ISSUED FOR SITE PLAN APPROVAL
SCALE SEE DETAIL
DRAWING TITLE PAVING DETAILS
SHEET NUMBER L 5.0



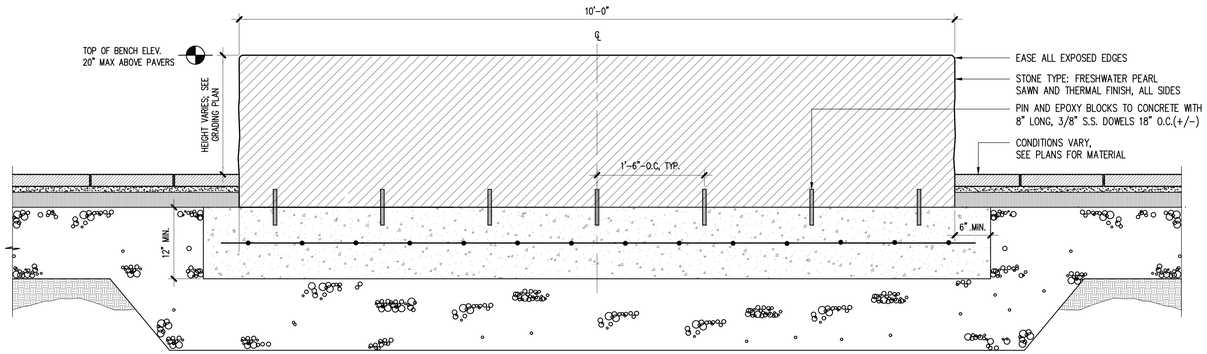
1 STONE VENEER RETAINING WALL

3/4" = 1'

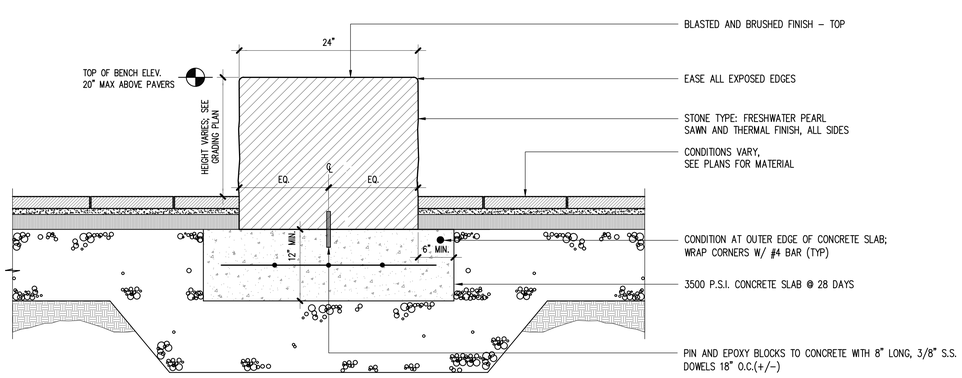


2 STONE VENEER RETAINING WALL WITH HAND RAIL

3/4" = 1'

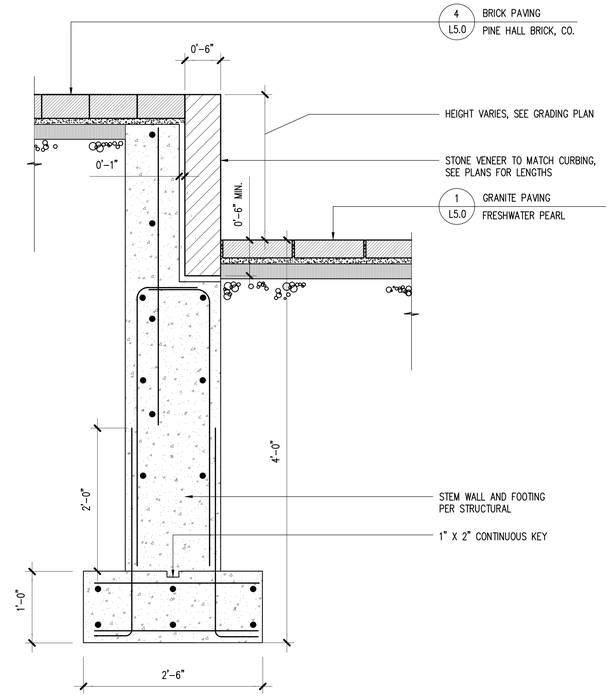


NOTES:
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.



3 STONE BENCH

1"=1'



4 STONE CURB WALL

1"=1'

45 Union Street

45 Union Street, Portland, Maine

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PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

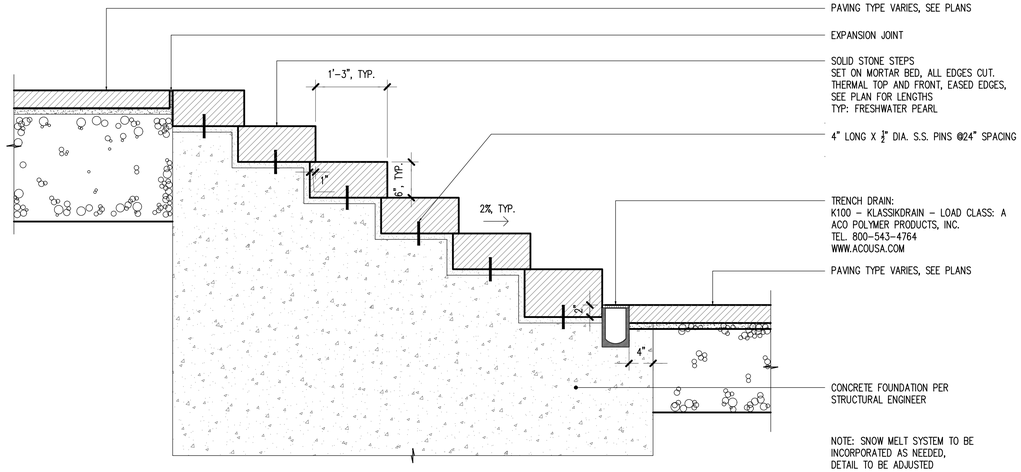
SEE DETAIL

DRAWING TITLE

SITE DETAILS

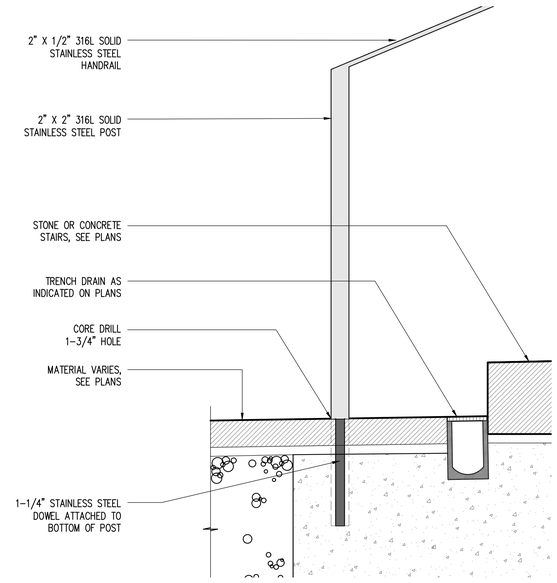
SHEET NUMBER

L 5.1



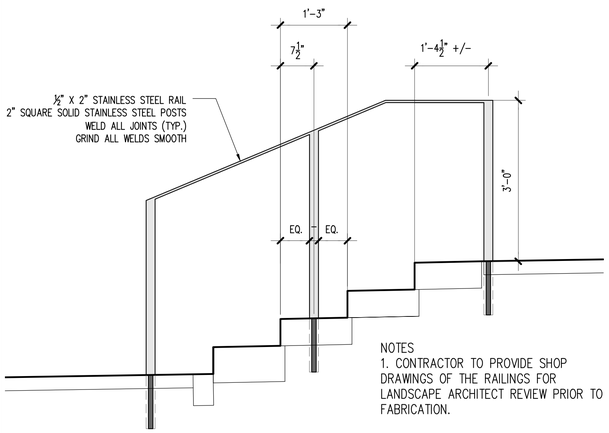
1 STONE STEPS

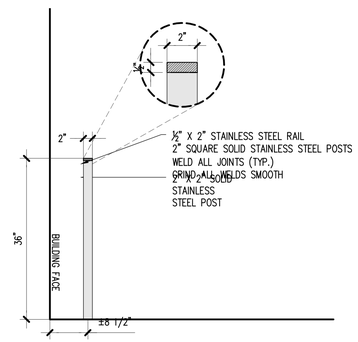
1" = 1'



2 STEEL HANDRAIL ATTACHMENT

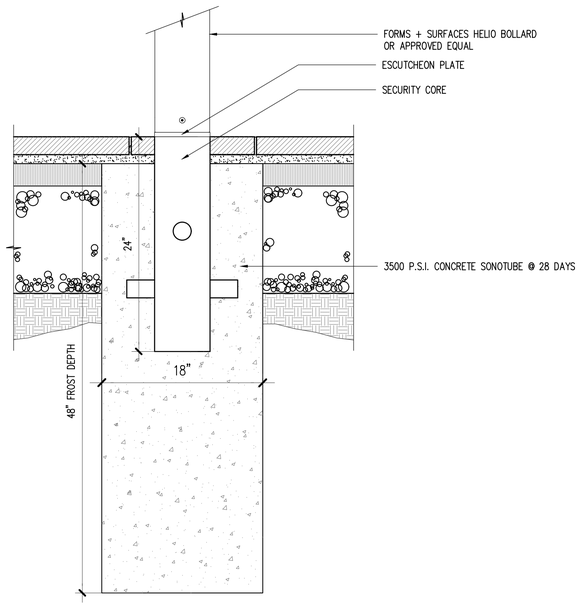
1 1/2" = 1'





3 STEEL HANDRAILS

3/4" = 1'



4 VEHICULAR SECURITY BOLLARD

1-1/2" = 1'-0"

45 Union Street

45 Union Street, Portland, Maine

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OCTOBER 8, 2025	JP

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

SEE DETAIL

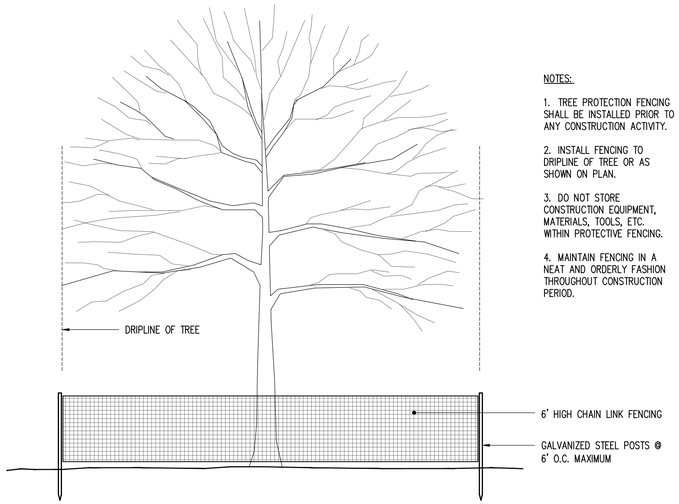
DRAWING TITLE

SITE DETAILS

SHEET NUMBER

L 5.2

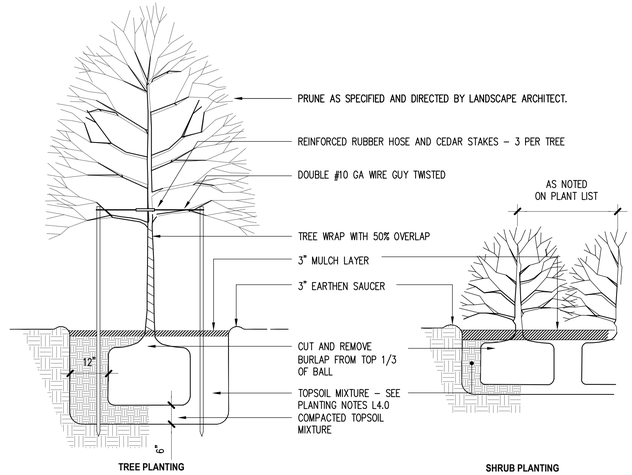
NOT FOR CONSTRUCTION



NOTES:

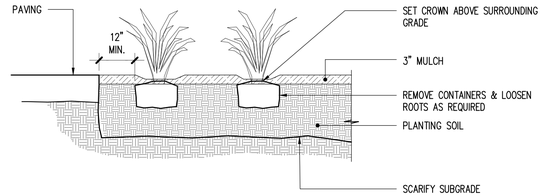
1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL FENCING TO DRIPLINE OF TREE OR AS SHOWN ON PLAN.
3. DO NOT STORE CONSTRUCTION EQUIPMENT, MATERIALS, TOOLS, ETC. WITHIN PROTECTIVE FENCING.
4. MAINTAIN FENCING IN A NEAT AND ORDERLY FASHION THROUGHOUT CONSTRUCTION PERIOD.

1 TREE PROTECTION
3/4"=1'



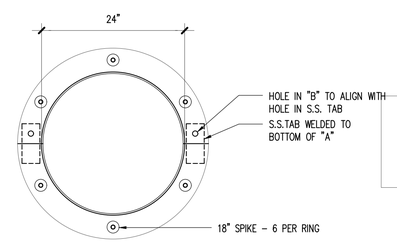
TREE PLANTING

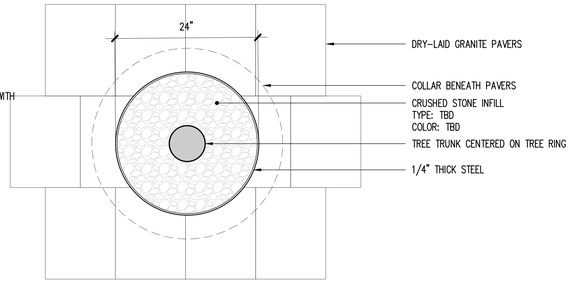
SHRUB PLANTING



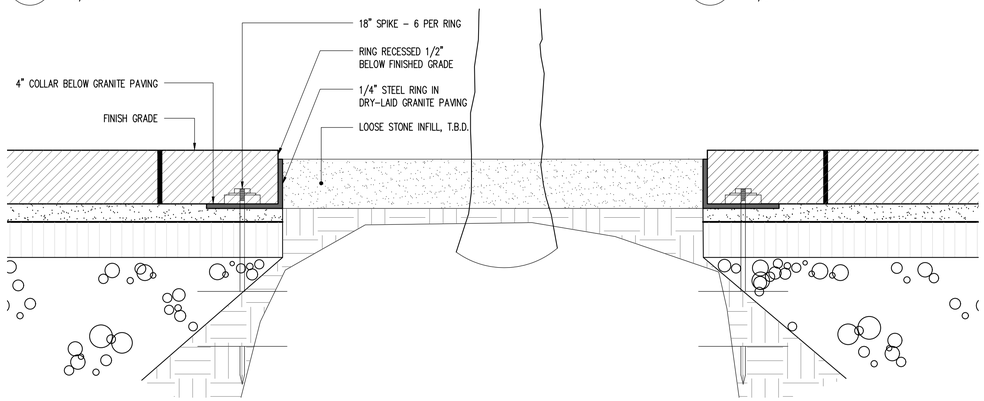
2 TREE AND SHRUB PLANTING IN PLANTER
3/4"=1'

3 GROUNDCOVER PLANTING
1/2" = 1'

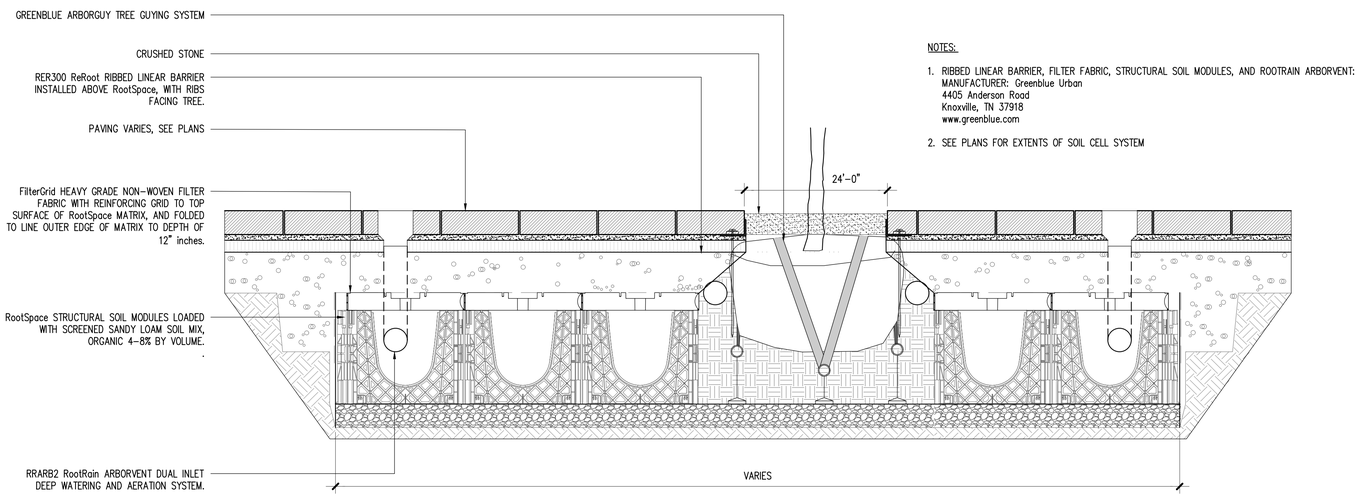




4 TREE RING ALIGNMENT
3" = 1'



5 TREE RING INSTALLATION
3" = 1'



NOTES:

1. RIBBED LINEAR BARRIER, FILTER FABRIC, STRUCTURAL SOIL MODULES, AND ROOTRAIN ARBORVENT:
   MANUFACTURER: Greenblue Urban
   4405 Anderson Road
   Knoxville, TN 37918
   www.greenblue.com
2. SEE PLANS FOR EXTENTS OF SOIL CELL SYSTEM

6 SOIL CELL SYSTEM
1"=1'

mbla
michael boucher landscape architecture
457 US Route 1 Suite 2
Freeport, ME 04032
t 207.865.1080
www.boucherlandscape.com

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Client
East Brown Cow - Kowtower LLC
100 Commercial St
Suite 300
Portland ME 04101

45 Union St
PORTLAND, ME

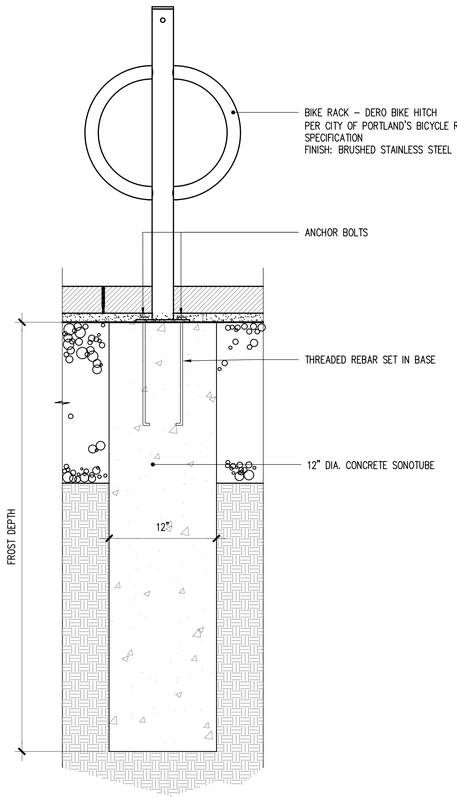
LICENSED LANDSCAPE ARCHITECT
JEFFREY PELLETIER
No. 3192
STATE OF MAINE

REVISION:

1	DATE
2	DATE
3	DATE
4	DATE
5	DATE
6	DATE

DATE OF ISSUE: 08.11.2025
STATUS: ISSUED FOR SITE PLAN APPROVAL
SCALE: SEE DETAIL

L5.3
PLANTING DETAILS



2 BIKE RACK

1–1/2" = 1'–0"

45 Union Street

45 Union Street, Portland, Maine

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ISSUE

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KEY PLAN



NOTES

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PROJECT NUMBER 1083.00

DRAWN BY LW

DATE OCTOBER 8, 2025

CHECKED BY JP

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

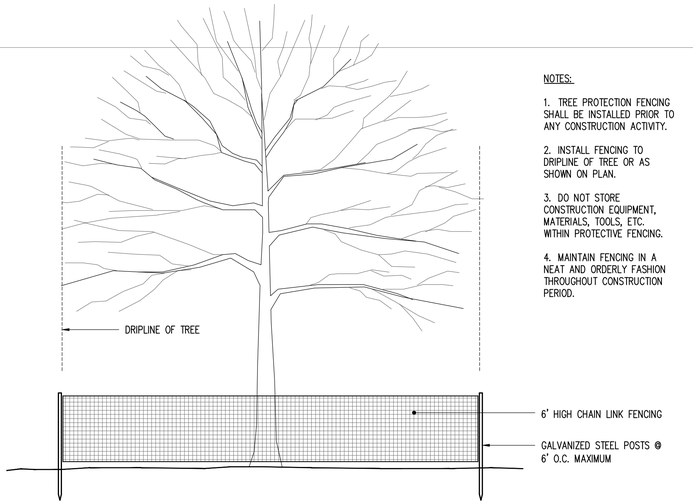
SEE DETAIL

DRAWING TITLE

SITE FURNISHING

SHEET NUMBER

L 5.3



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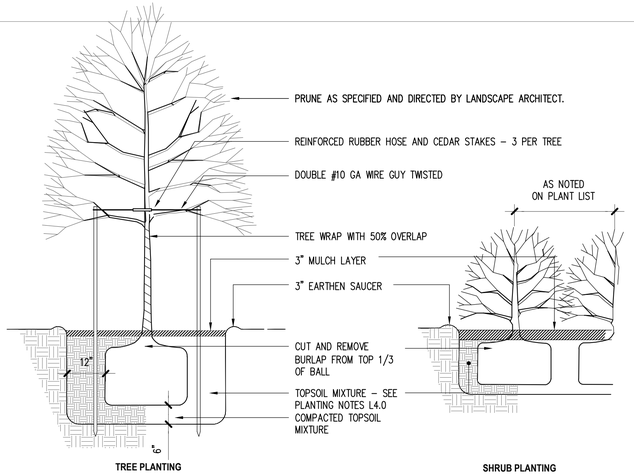
2. INSTALL FENCING TO DRIPLINE OF TREE OR AS SHOWN ON PLAN.

3. DO NOT STORE CONSTRUCTION EQUIPMENT, MATERIALS, TOOLS, ETC. WITHIN PROTECTIVE FENCING.

4. MAINTAIN FENCING IN A NEAT AND ORDERLY FASHION THROUGHOUT CONSTRUCTION PERIOD.

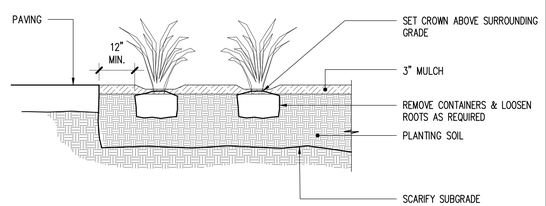
1 TREE PROTECTION

3/4"=1'



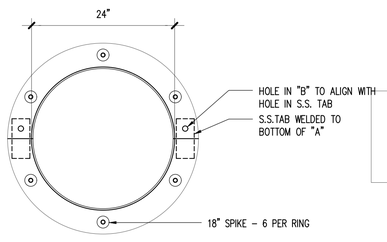
2 TREE AND SHRUB PLANTING IN PLANTER

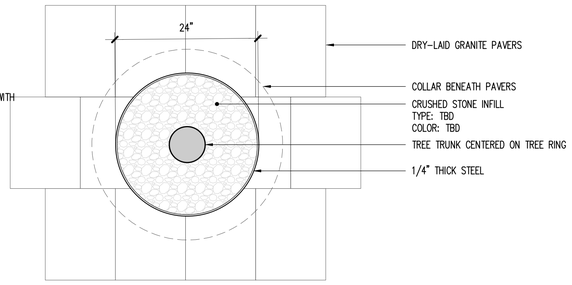
3/4"=1'



3 GROUNDCOVER PLANTING

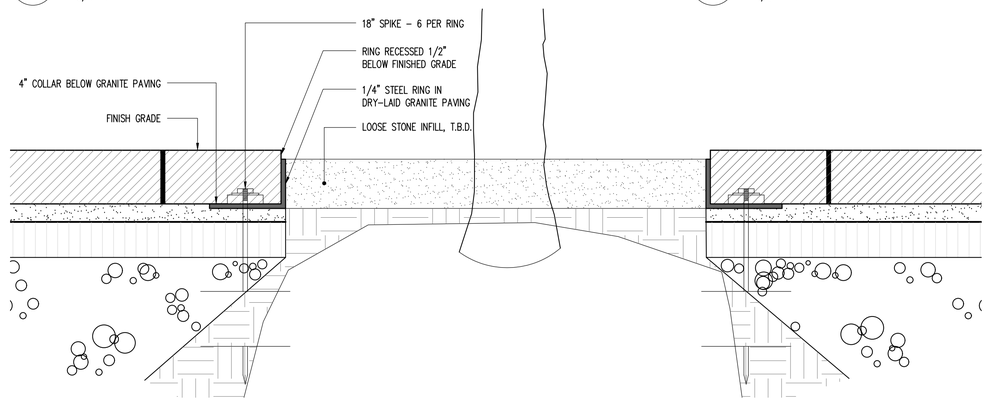
1/2" = 1'





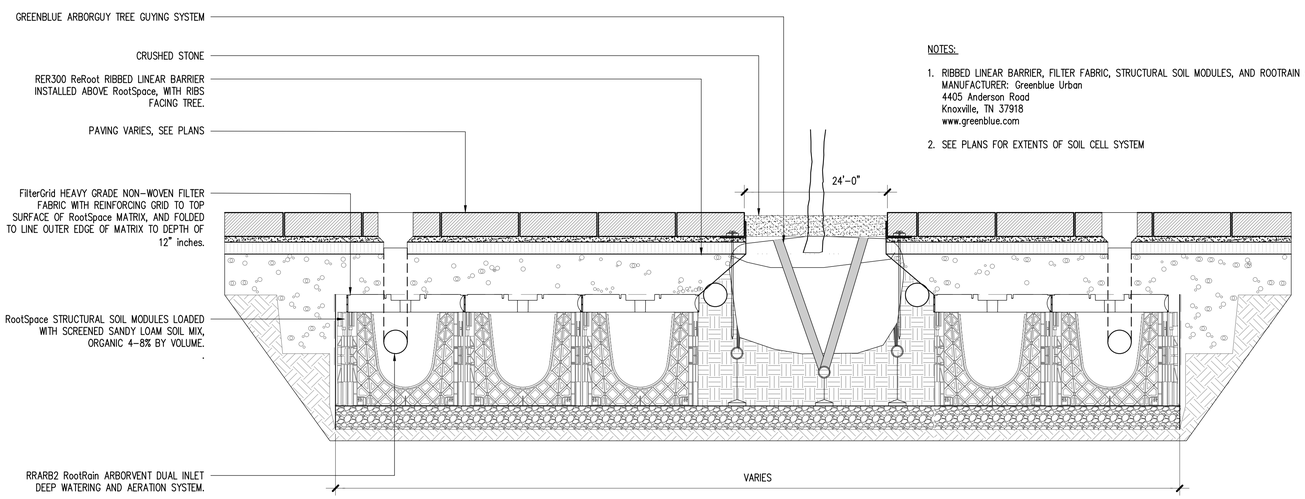
4 TREE RING ALIGNMENT

3" = 1'



5 TREE RING INSTALLATION

3" = 1'



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   www.greenblue.com

2. SEE PLANS FOR EXTENTS OF SOIL CELL SYSTEM

6 SOIL CELL SYSTEM

1"=1'

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45 Union Street, Portland, Maine

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Somerville, MA 02143-3740 USA
T 617.629.2100 F 617.629.2406

CIVIL ENGINEERING
Woodard & Curran
12 Mountfort Street
Portland, ME 04101 USA
T 800.426.4262

LANDSCAPE ARCHITECT
M B L A
98 Maine St, Suite 7
Brunswick, ME 04011 USA
T 207.865.1080 x7044

CODE CONSULTANT
ARUP
60 State Street
Boston, MA 02109 USA
T 617.864.2987

STRUCTURAL ENGINEERING
ARUP
77 Water Street
New York, NY 10005 USA
T 212.896.3000

MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION
Cosentini
101 Federal Street, 6th Floor
Boston, MA 02110 USA
T 617.748.7800

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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN



NOTES

NOT FOR CONSTRUCTION

PROJECT NUMBER 1083.00

DRAWN BY LW

DATE OCTOBER 8, 2025

CHECKED BY JP

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

SEE DETAIL

DRAWING TITLE

PLANTING DETAILS

SHEET NUMBER

L 5.4



45 Union Street site plan within larger Old Port Square area.
Information outside of site plan boundary included for reference purposes only.

LEGEND

LIMIT OF WORK

BIKE RACKS

EXISTING

43 BIKE RACK CAPACITY

TOTAL

43 EXISTING BIKE PARKING SPOTS

PROPOSED

NOTE: REQUIREMENT OF MINIMUM OF 10% OF TOTAL NUMBER OF BIKE PARKING SPACES BEING NO MORE THAN 50 FEET FROM BUILDING ENTRANCE BEFORE COUNTS

6 BIKE RACK CAPACITY – LESS THAN 50' FROM BUILDING ENTRANCE

20 BIKE RACK CAPACITY – INDOOR GARAGE

30 BIKE RACK CAPACITY – PUBLIC SIDEWALK/RIGHT OF WAY

TOTAL

56 PROPOSED BIKE PARKING SPOTS

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
100 Properzi Way
Somerville, MA 02143-3740 USA
T 617.629.2100 F 617.629.2406

CIVIL ENGINEERING
Woodard & Curran
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Portland, ME 04101 USA
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LANDSCAPE ARCHITECT
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98 Maine St, Suite 7
Brunswick, ME 04011 USA
T 207.865.1080 x7044

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Boston, MA 02109 USA
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ISSUE

NO.	DESCRIPTION	DATE

KEY PLAN

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NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWN BY
1083.00	LW
DATE	CHECKED BY
NOVEMBER 13, 2025	JP

PHASE

ISSUED FOR SITE PLAN APPROVAL

SCALE

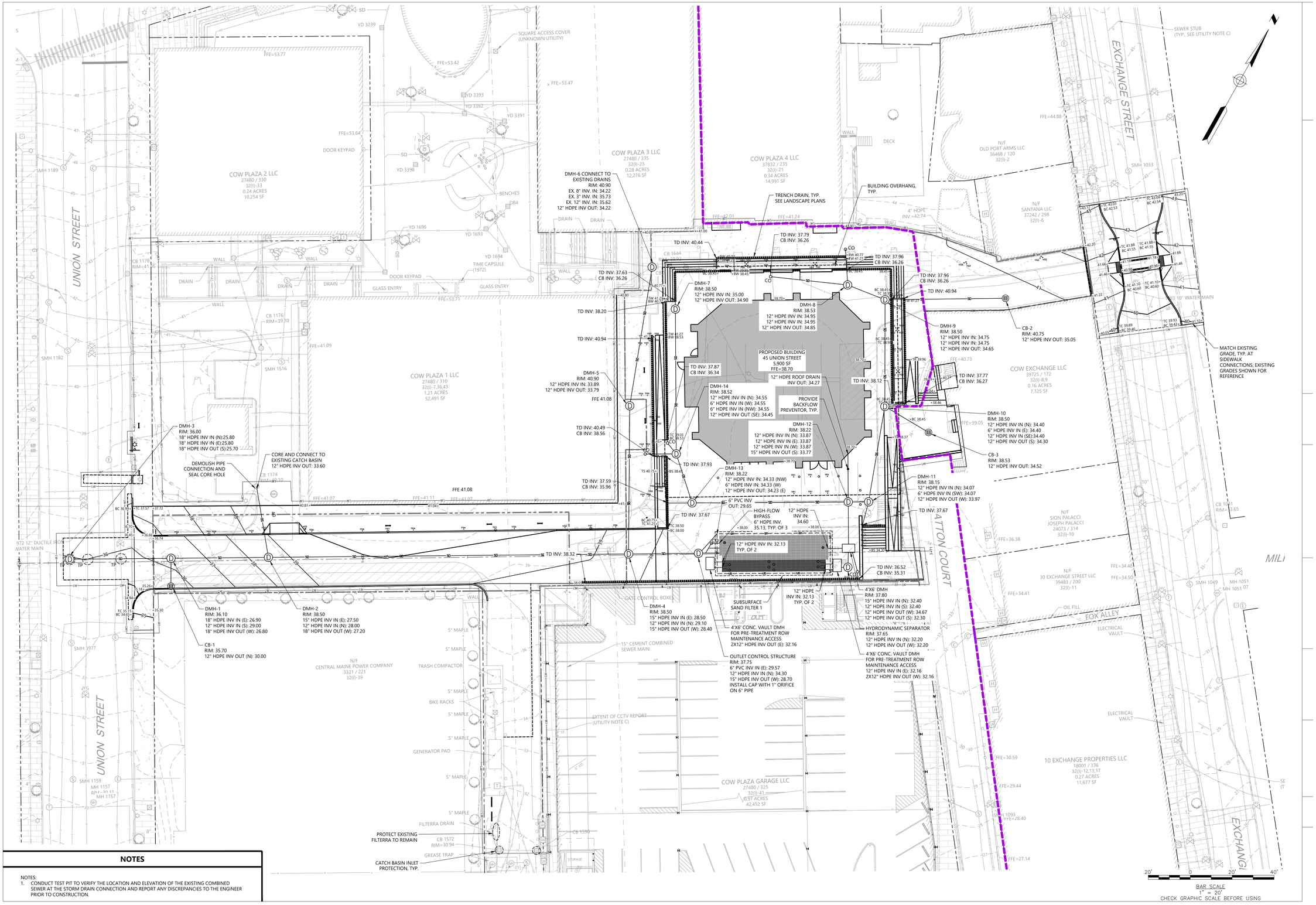
NTS

DRAWING TITLE

BIKE RACK LOCATIONS

SHEET NUMBER

L 2.0



NOTES

NOTES:
1. CONDUCT TEST PIT TO VERIFY THE LOCATION AND ELEVATION OF THE EXISTING COMBINED SEWER AT THE STORM DRAIN CONNECTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

3/13/2025 9:54:17 AM

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
100 Properzi Way
Somerville, MA 02143-3740 USA
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CIVIL ENGINEERING
Woodard & Curran
12 Mountfort Street
Portland, ME 04101 USA
T 800.426.4262

LANDSCAPE ARCHITECT
Michael Boucher Landscape Architecture
98 Maine Street, Suite 7
Brunswick, ME 04011 USA
T 207.865.1080 x7044

CODE CONSULTANT
ARUP
60 State Street
Boston, MA 02109 USA
T 617.864.2987

STRUCTURAL ENGINEERING
ARUP
77 Water Street
New York, NY 10005 USA
T 212.896.3000

MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION
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Boston, MA 02110 USA
T 617.748.7800

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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED
PROFESSIONAL ENGINEER

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

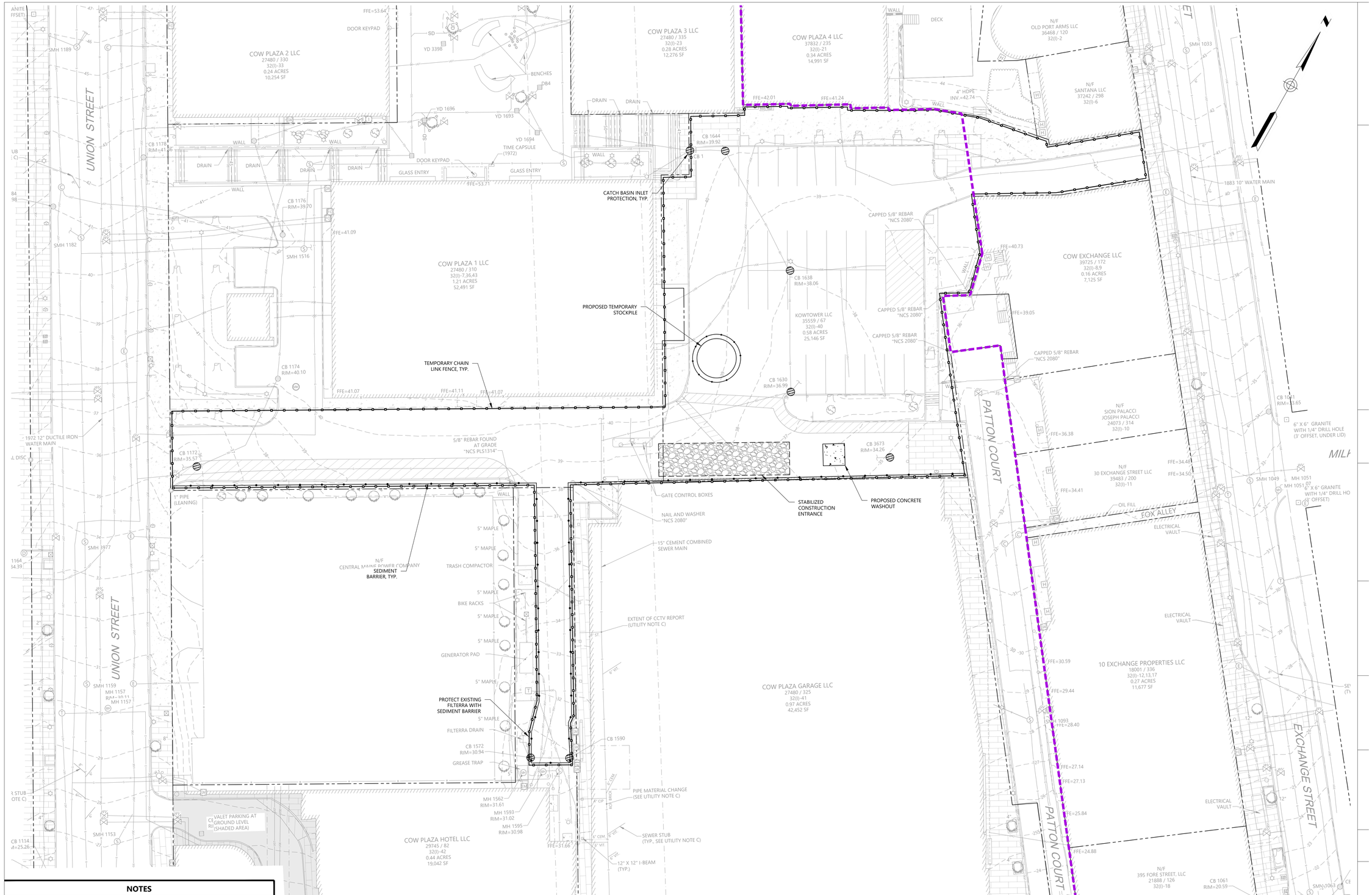
PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

PHASE
ISSUED FOR SITE PLAN APPROVAL

SCALE
1" = 20'

DRAWING TITLE
SITE GRADING & DRAINAGE PLAN

SHEET NUMBER
C-300



NOTES

1. REFER TO SHEET C-400 FOR EROSION CONTROL NOTES AND DETAILS.

3/19/2025 9:54:17 AM

45 Union Street

45 Union Street, Portland, Maine

EAST BROWN COW®

CLIENT
East Brown Cow - Kowtower LLC
100 Commercial Street, Suite 300, Portland, Maine, 04101

DESIGN ARCHITECT
Safdie Architects, LLC
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STATE OF MAINE
CAITLIN G. SUHR
No. 17568
LICENSED PROFESSIONAL ENGINEER

KEY PLAN

NOTES

NOT FOR CONSTRUCTION

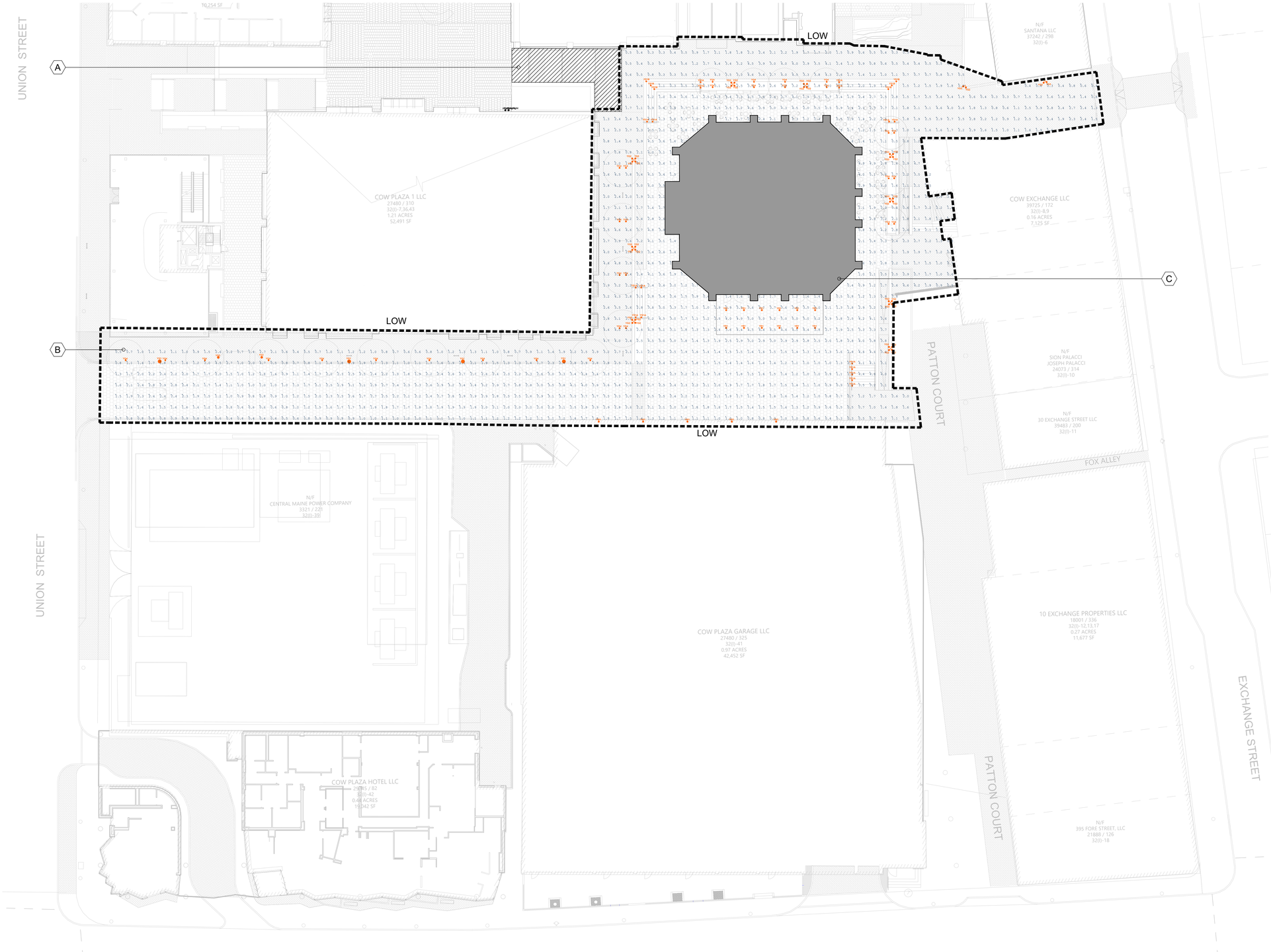
PROJECT NUMBER	DRAWN BY
1083.00	BCM
DATE	CHECKED BY
AUGUST 2025	CGS

PHASE
ISSUED FOR SITE PLAN APPROVAL

SCALE
1"=20'

DRAWING TITLE
EROSION & SEDIMENTATION CONTROL PLAN

SHEET NUMBER
C-002



1 SITE LIGHTING PHOTOMETRIC PLAN
1/16" = 1"

Applicable City Lighting Standards and References:
City of Portland Technical Manual - Section 8 - Lighting Standards
City of Portland Land Use Code - Section 13.6.4 - Site Plan Review Standards

Photometric Lighting Plan Notes:

A. Existing Outdoor Staircase Between 190 & 200 Middle Street
Identified area is not included as part of the project site or Major Site Plan application and therefore no photometrics or new lighting is proposed. Existing building-mounted rooftop moonlighting and wall sconces as well as steplights to remain.

B. Site Sidewalk to Union Street
All proposed tree uplights will be designed to be in compliance with the landscape feature exception in (§13.6.4.F.2.b) Land Use Code language: "Up-lighting by any method is prohibited except for public buildings and parklands; clock towers and steeples; landscape features; designated historic landmarks; flags of state, federal, or national jurisdictions; and public art. Such light fixtures, brackets, conduits, and all other components shall be designed by a lighting professional and shall be scaled and placed to minimize their visibility and installed in accordance with the lighting standards of the Technical Manual."

C. 45 Union Street Vertical Open Space
All architectural building lighting, including illumination of the walls and ceiling area of the vertical open space between level 1 and level 2, (an open-air void that occurs between approximately 16'0" and 33'10" above grade), will be further outlined during forthcoming design phases. The design will be insured to prevent light trespass beyond the property and/or into the night sky.

In order to further highlight the openness at the base of the building and provide a safe and visually attractive open volume at night, the lighting design will be focused so that the peak candle power from the fixtures will be fully limited to building surfaces.

The fixtures will be well located and oriented in strategic ways so as to create a soft wash of light on this portion of the building form in order to visually separate the body of the tower from the ground level/base, without spilling any direct light up into the night sky.

The architectural lighting will be designed with complete sensitivity to the surrounding context and the night time environment, and also be fully consistent with the guidelines found within the City of Portland Technical Manual and associated Lighting Standards.

Calculation Summary							
Project: 45 Union St - Major Site Plan Application							
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
Inside Project Boundary	Illuminance	Fc	2.05	5.2	0.3	6.83	17.33

Luminaire Schedule

Tag	Symbol	Qty	Label	Description	LLD	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height (Feet Above FFE)	BUG Rating
YG1		4	Luminis Clermont - Post Mount	CT152-L1L80-LD2-40K	0.850	7092	60	240	20	B1-U0-G1
YG2		40	Luminis Scopo - Pole Mounted	SC655-L1L15-FLD-40K	0.850	1600	15.4	616	20	B2-U0-G0
YG3		2	Bega System Bollard Head - 360deg Distribution	84704K3	0.850	2005	20	40	2.5	B2-U3-G1
YG4		32	B-K Lighting Nite Star	NS-LED-e65-MFL	0.850	409	6.8	217.6	0.75	N.A.
YR1		12	Erco Iku Downlight	B0000057_V01	0.850	653	7.4	88.8	16	B1-U0-G0
YS1A		17	Wagner Lumepod 28 - Asymmetric Distribution	LULRxx30KA3	0.850	100	2.89	49.13	3	B0-U1-G0
YS1B		6	Wagner Lumepod 28 - Symmetric Distribution	LULRxx30KS5	0.850	158	3.52	21.12	3	B0-U0-G0
YW1		5	Luminis Scopo - Wall Mounted	SC655-L1L15-VWD-40K	0.850	1704	15.4	77	35	B2-U0-G0

Not for bidding or construction unless fully incorporated into contract documents by Architect and/or Engineer.

Lam Partners

Lam Partners Project # 25063
Lam Partners PIC: JRP
Lam Partners PM: PW
Lam Partners Designer: JK

This information is provided for the use of the Architect and their consultants in the production of their detailed drawings and specifications. Assurances of code compliance, conformity with environmental conditions and other building systems, voltage selection, design of wiring, supports, switching, emergency and exit lighting, engineering calculations or details, and preparation of cost and power consumption estimates are the responsibility of others. Information provided by Lam Partners Inc may require coordination and development by others to a level of detail suitable for incorporation into contract documents. Lam Partners Inc's documents are not intended or represented to be suitable for reuse on extensions of the Project or on any other project, nor are they to be relied upon by anyone other than the Architect and the Architect's consultants for the Project. Lam Partners Inc is not responsible for construction means, methods, sequences, techniques, safety programs, or procedures, or the failure of any contractor to comply with the requirements of the contract documents. There are no warranties of merchantability or fitness for a particular purpose or any other warranties or guarantees whatsoever, express or implied, with respect to any materials, documents, or designs provided by Lam Partners Inc.

45 Union St

Project Location:
Portland, ME

Owner:
East Brown Cow - Kowtower LLC

Architect:
Safdie Architects

Landscape Architect:
MBLA

Revision Schedule

#	Description	Date

Project Phase
Major Site Plan

Submission
MSP Submission

Architect's Issuance Date
14 November 2025

Date
13 November 2025

ARCHITECTURAL LIGHTING

SITE LIGHTING PHOTOMETRICS

LL-100

Scale
As Indicated

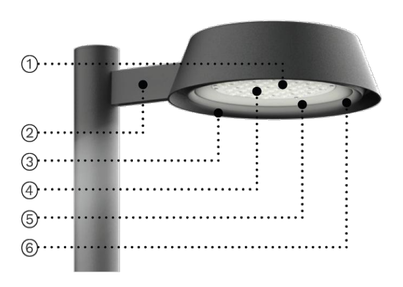
YG1 Lam

LUMINIS

POST TOP/POLE MOUNT

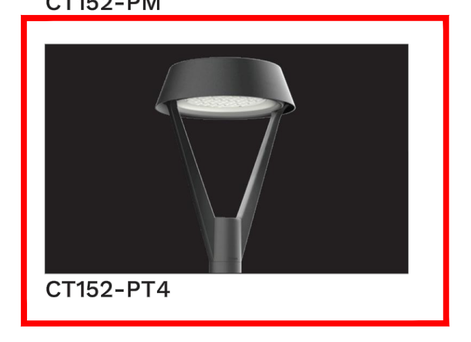
PROJECT NAME: QUANTITY: TYPE:

ORDERING CODE:



① Performance optic series.
② Side mount or post-top attachment.
③ Corrosion resistant diecast aluminum housing.
④ High efficency LED light engine with acrylics optics.
⑤ Clear tempered glass.
⑥ All stainless steel hardware.


CT152-PM


CT152-PT4

MATERIALS

Clermont is made of aluminum diecast offering exceptional precision and durability. The main housing is sealed with durable gasket. Features a high efficiency LED light engine, mounted on a recessed heatsink whose pattern is optimized for heat dissipation. The driver is preinstalled inside the main housing, sealed with gasket, and secured with four captive screws which makes it easy for maintenance.

ELECTRICAL DRIVER

Standard driver is 0-10V dimming-ready (dims to 10%) with: 120-277 multi-volt compatibility (50-60Hz), operating temperature range of -40°C to +55°C -40°F to +131°F, output over voltage protection, output over current protection and output short circuit protection with auto-recovery. Optional 347/480V available.

LED LIGHT ENGINE

Offered in 2700K, 3000K, 3500K & 4000K / 80CRI. 70% LED lumen maintenance at 60,000 hours (L70/B50) based on IESNA LM-80-08 LED extrapolated life, calculated per IESNA TM-21-21.

FINISH

Five-stage preparation process includes preheating of cast aluminum parts for air extraction. Polyester powder coating is applied through an electrostatic process, and oven cured for long term finish.

CERTIFICATION

UL Certified to Canadian and U.S. safety standards. Certified for use in wet locations. Rated IP66/IK10. Photometric testing performed by an independent laboratory in accordance with IES LM-79-08 standards at 25°C. Actual performance may differ as a result of end-user environment and application.

WARRANTY

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

MOUNTING

For PM mounting: designed to fit on 4" or 5" OD pole.
For PT4 mounting: designed to fit on 4" OD pole with 1/4", 3/16" or 1/8" wall thickness.

MEASUREMENTS

Maximum weight: 40 lbs (18 kg)



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YG2 Lam

LUMINIS

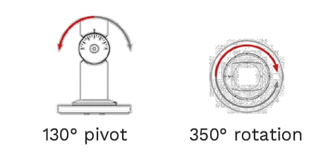
PROJECTOR

PROJECT NAME: QUANTITY: TYPE:

ORDERING CODE:



① Extruded aluminum cylindrical housing.
② Sealed cast aluminum light assembly.
③ Sealed cast aluminum lens frame.
④ Clear tempered glass lens.
⑤ Faceted specular aluminum reflector.
⑥ Pivoting arm allows forward/back adjustability. The 130º adjustment allows the light beam to be aimed in a desired direction. Scopo also rotates 350º without disturbing the luminaire mounting.
⑦ Base cover.
All stainless steel hardware.




SC655

MATERIALS

Scopo is made of corrosion resistant 356 aluminum alloy with a copper (CU) content of less than 0.1%. The main housing is made of seamless extruded aluminum, with an integrally sealed LED light module designed for optimal heat dissipation, and lighting performance. The back cast aluminum cover includes ventilation slots allowing air circulation and cooling of assembly.

ELECTRICAL DRIVER

120V/277V driver is 0-10V dimming-ready (min. dim to 10%) with 120-277 multi-volt compatibility (50-60Hz), operating temperature range of -40°C/-40°F to 55°C/131°F, output over voltage protection, output over current protection and output short circuit protection with auto-recovery. 347V/480V driver is 0-10V dimming ready (min. dim to 10%) with operating temperature range of -40°C/-40°F to 55°C/131°F, over current and output short circuit protection.

LED LIGHT ENGINE

Offered in 2700K, 3000K, 3500K & 4000K / 80CRI. 70% LED lumen maintenance at 60,000 hours (L70/B50) based on IESNA LM-80-08 LED extrapolated life, calculated per IESNA TM-21-21.
Optional true amber LED for turtle sensitive areas.
Wavelengths: 585nm to 597nm.

FINISH

Five-stage preparation process including preheating of cast aluminum parts for air extraction, and an environmentally friendly alloy sealant. Polyester powder coating is applied through an electrostatic process and oven cured for long term finish.

CERTIFICATION

UL Certified to Canadian and U.S. safety standards. Certified for use in wet locations. Rated IP65. Photometric testing performed by an independent laboratory in accordance with IES LM-79-08 standards at 25°C. Actual performance may differ as a result of end-user environment and application.

WARRANTY

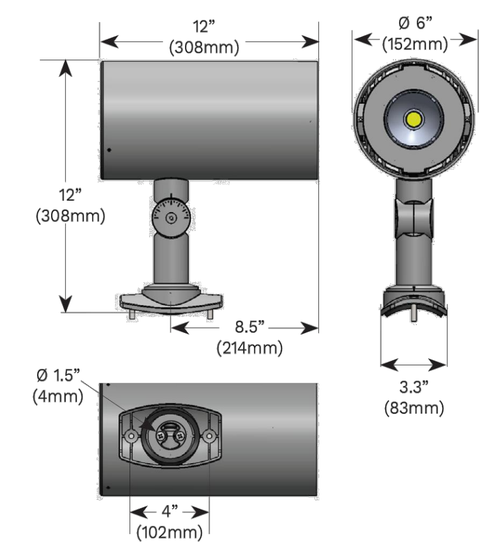
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: https://www.acuitybrands.com/support/warranty/terms-and-conditions

MOUNTING

Mounting hardware: The mounting plate is designed to fit on a ø4" (102mm) and ø5" (127mm) pole using 2 x 1/4-20 UNC, 4" (102mm) spaced holes. Optional mounting to ø6" (152mm) or ø8" (203mm) pole.

MEASUREMENTS

Maximum weight: 10.1 lbs (4.6 kg)



EPA: 0.59 ft²
EPA: 0.81 ft² (with SNT option)

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YG3 Lam

System bollard head · 360° light output

Application
BEGA System Bollard head with shielded 360º light distribution. Simply order the bollard head and also the required bollard tube in various heights and options. Both modules can be joined together easily and quickly during the installation.

Materials
Borosilicate glass
Marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
Interlocking stainless steel mounting mechanism for attachment of head and tube
Pre-wired with 5-pole plug-in connectors for ease of installation
High temperature silicone gasket
Pure anodized aluminum reflector surface

NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65

Weight: 5.7 lbs.

Electrical

Operating voltage	120V or 277V AC
Minimum start temperature	-30°C
LED module wattage	16.6W
System wattage	20.0W
Controllability	0-10V, TRIAC, and ELV dimmable
Color rendering index	Ra > 80
Luminaire lumens	2132lm
LED service life (L70)	60000hrs

LED color temperature
☐ 4000K (K4)
☐ 3500K (K35)
☐ 3000K (K3)
☐ 2700K (K27)

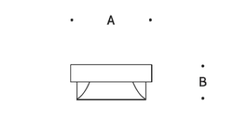
BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

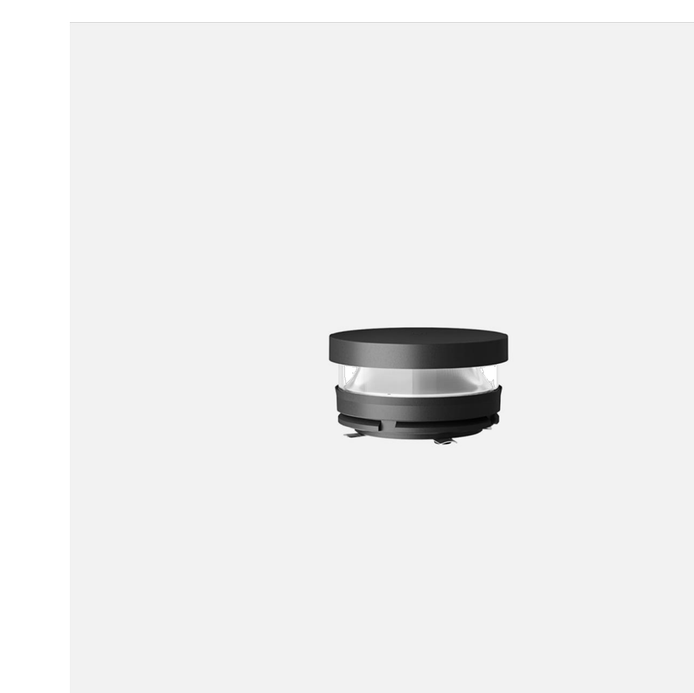
Finish
All BEGA standard finishes are matte, textured powder coat with minimum 3 mil thickness. BEGA Unidure® finish provides superior fade protection in Black, Bronze, and Silver. BEGA standard White is a super durable polyester powder. Optionally available RAL, custom, and premium colors provided in polyester powder and/or liquid paint.

Available colors
☐ Black (BLK) ☐ Bronze (BRZ)
☐ Silver (SLV) ☐ White (WHT)
☐ Natural Bronze (NTB) ☐ RAL:
☐ CUS:

Type:
BEGA Product:
Project:
Modified:

Available options
☐ CUS Custom finish
☐ FSC Fusing
☐ MGU Marine grade undercoat
☐ NTB Natural bronze (premium finish)
☐ RAL RAL finish





System bollard head · 360° light output

	LED	A	B
B84704	16.6W	7 1/2	2 1/4

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com
Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com
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Updated 04/28/25

YG4 Lam

Fixtures | Floodlight (formerly Delta Star / DS-LED)

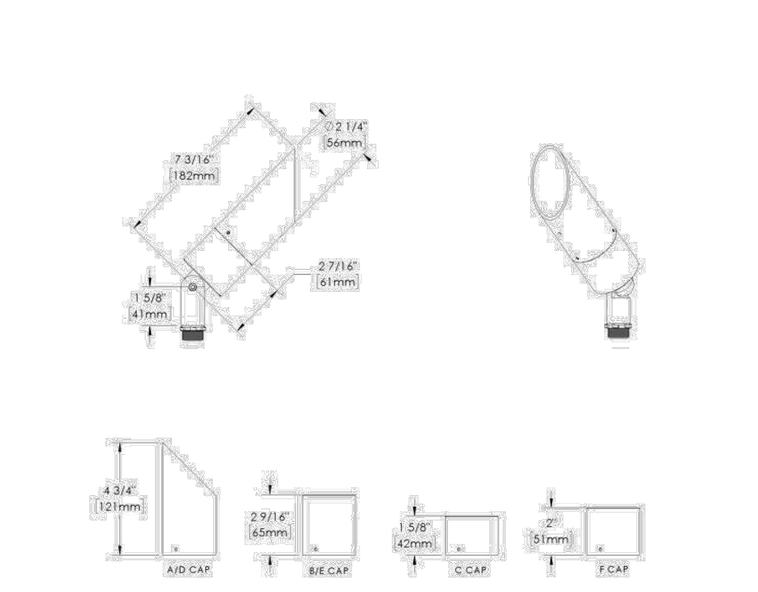
NITE STAR - Floodlight - Low Voltage - LED High-Power - Round

IP66

Downloads
Installation Instructions
2D (.dwg)
2D (.dxf)
BIM - Revit (.zip)
Photometry Files (.zip)

Product Variant Examples





AMERICAN MADE + EMPLOYEE OWNED | 40429 Brickyard Drive, Madera, CA 93636 | +1 (559) 438-5800 | info@bklighting.com | bklighting.com

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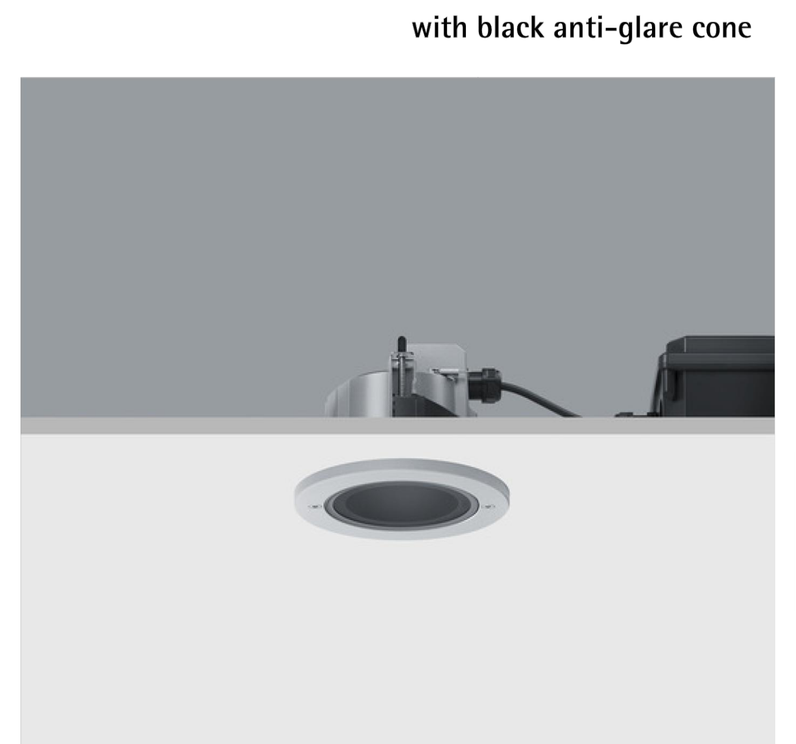
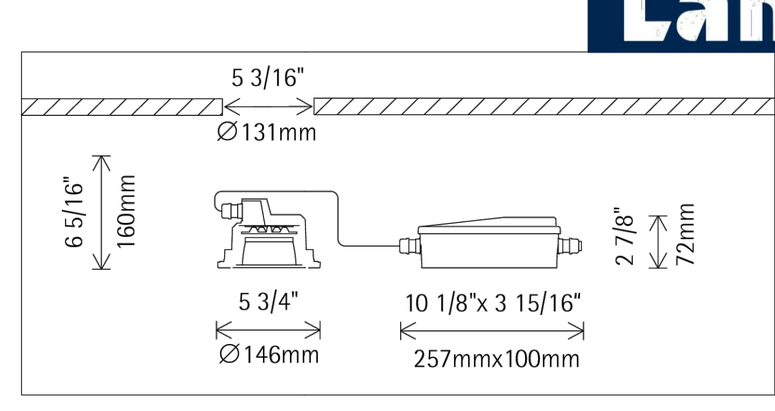
 Updated 10/05/2025

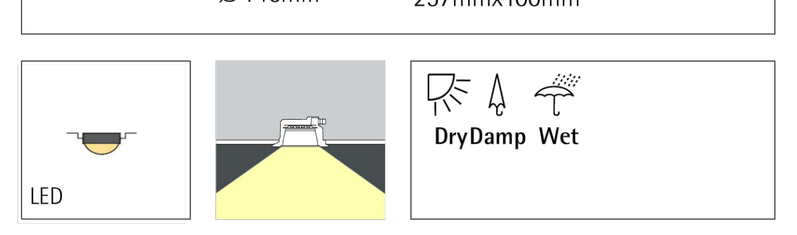
YR1 Lam

ERCO Iku Downlight

with black anti-glare cone

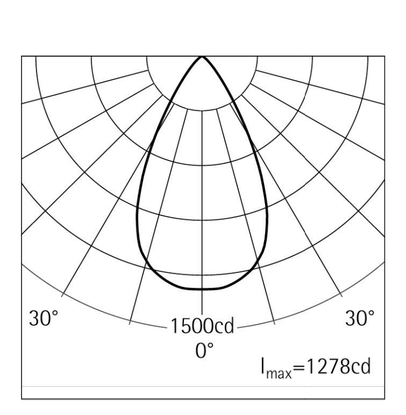






B0000015 Silver (RAL9006)
LED module: 8.7W 1487lm 3000K warm white
0-10V dimmable
Version 1
Size 3
Covered mounting detail
Fresnel lens wide flood

Product description
IC-rated.
Housing: corrosion-resistant cast aluminum, No-Rinse surface treatment. Silver, double powder-coated.
Mounting with 2-point support and screw fixing. Connection cable L 19 11/16" / 500mm.
2 cable entries. Through-wiring possible. 5-pole terminal block.
Control gear 120V/277V, 60Hz, dimmable.
LED module: mid-power LEDs.
Fresnel lens made of optical polymer.
Anti-glare cone: polymer, coated black (RAL9005), matt.
Cover ring with non-reflective safety glass: corrosion-resistant cast aluminum, No-Rinse surface treatment. Silver, double powder-coated.
Dimming with external dimmers possible (0-10V).
Suitable for wet location (IP65): dust-proof and water jet-proof.
Weight 3.31lbs / 1.50kg
Version with 2700K, 3000K, 3500K or 4000K CRI 92 available on request.



h(ft)	E(fc)	D 55°
3'0"	142	3'1"
6'0"	35	6'2"
9'0"	16	9'3"
12'0"	9	12'4"
15'0"	6	15'6"

Technical data

Luminous flux of the luminaire	1059lm
Connected load	12.1W
Luminaire efficacy	87lm/W
Color deviation	1.5 SDCM
Color rendition index	CRI 92
Lumen maintenance (LED manufacturer specifications)	L90/B10 >50000h L80/B50 >100000h
LED failure rate	0.1% >50000h
TLA (Temporal Light Artefacts)	SVM ≤ 0.4; PstLM ≤ 1
LMF	E

For your regional contact in the ERCO Sales network click here www.erco.com/contact

Technical region: 120V/60Hz, 277V/60Hz
We reserve the right to make technical and design changes.
Edition: 14.04.2025
Current version under www.erco.com/B0000015

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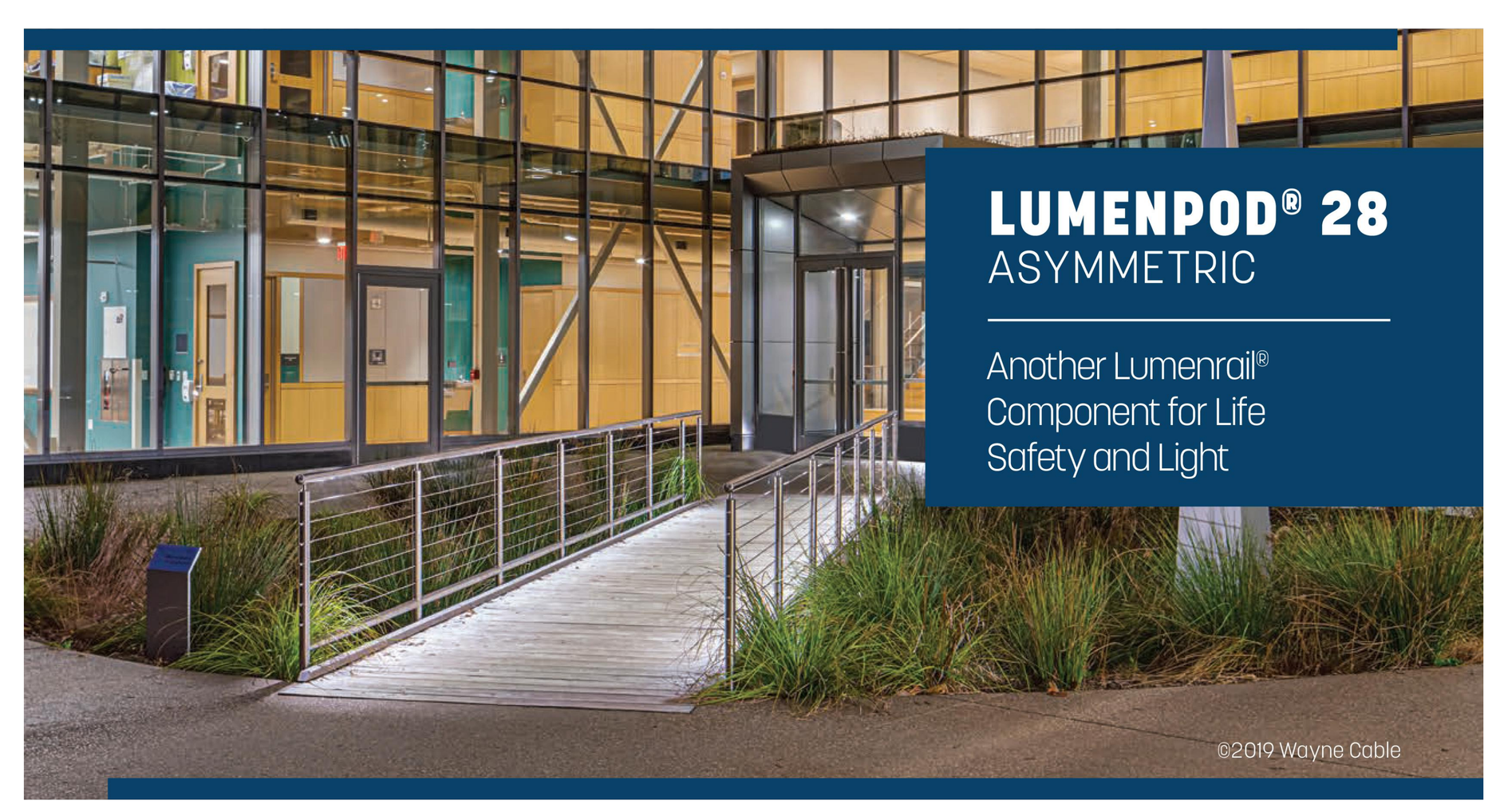
YS1A Lam

WAGNER Architectural Systems



FLUSH PROFILE LUMINAIRE

The evolution of the handrail point source from Wagner Architectural Systems has performance that leverages the latest LED technology and manufacturing techniques. This USA engineered and manufactured luminaire is designed for pathway, stair and ramp illumination. Both the asymmetric and symmetric versions have optical characteristics developed specifically for these applications. The Lumenpod 28 provides a flush-profile architectural solution for new or retrofit projects, including egress compliance opportunities. Superior harsh environment protection and vandal resistance are combined with a straight forward, push-in installation.



- Cast solid 316 stainless steel face
- Superior installation in a variety of rail diameters
- 122 lumens per watt LED
- Rectilinear distribution promotes uniformity
- Dramatic backlight cutoff from effective shielding
- IK9 impact rating and secure installation
- 24VDC operation
- ETL wet location listed
- L70 = 50,000 hours +
- IP68 ingress protection
- Standard in 4 CCT whites and solid colors
- US PAT. # 10,612,734 B2, USA Design, Manufacturing and Engineering

Specifications subject to change without notice. Verify data at time of order.

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WagnerCompanies.com
LULRA SUBM R3

YS1B Lam

WAGNER Architectural Systems



FLUSH PROFILE LUMINAIRE

The evolution of the handrail point source from Wagner Architectural Systems has performance that leverages the latest LED technology and manufacturing techniques. This USA engineered and manufactured luminaire is designed for pathway, stair and ramp illumination. Both the asymmetric and symmetric versions have optical characteristics developed specifically for these applications. The Lumenpod 28 provides a flush-profile architectural solution for new or retrofit projects, including egress compliance opportunities. Superior harsh environment protection and vandal resistance are combined with a straight forward, push-in installation.



- Cast solid 316 stainless steel face
- Superior installation in a variety of rail diameters
- 122 lumens per watt LED
- Standard in 4 CCT whites and solid colors
- 93° optical distribution
- Rectilinear distribution promotes uniformity
- IK9 impact rating and secure installation
- 24VDC operation
- ETL wet location listed
- IP68 ingress protection
- L70 = 50,000 hours +
- US PAT. # 10,612,734 B2, USA Design, Manufacturing and Engineering

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LULRS SUBM R3

YW1 Lam

LUMINIS

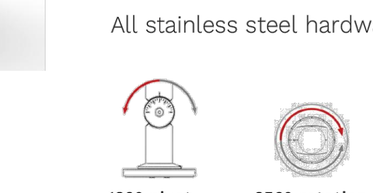
PROJECTOR

PROJECT NAME: QUANTITY: TYPE:

ORDERING CODE:



① Extruded aluminum cylindrical housing.
② Sealed cast aluminum light assembly.
③ Sealed cast aluminum lens frame.
④ Clear tempered glass lens.
⑤ Faceted specular aluminum reflector.
⑥ Pivoting arm allows forward/back adjustability. The 130º adjustment allows the light beam to be aimed in a desired direction. Scopo also rotates 350º without disturbing the luminaire mounting.
⑦ Base cover.
All stainless steel hardware.




SC650 - WALL


SC654 - GROUND

MATERIALS

Scopo is made of corrosion resistant 356 aluminum alloy with a copper (CU) content of less than 0.1%. The main housing is made of seamless extruded aluminum, with an integrally sealed LED light module designed for optimal heat dissipation, and lighting performance. The back cast aluminum cover includes ventilation slots allowing air circulation and cooling of assembly.

ELECTRICAL DRIVER

120V/277V driver is 0-10V dimming-ready (min. dim to 10%) with 120-277 multi-volt compatibility (50-60Hz), operating temperature range of -40°C/-40°F to 55°C/131°F, output over voltage protection, output over current protection and output short circuit protection with auto-recovery. 347V/480V driver is 0-10V dimming ready (min. dim to 10%) with operating temperature range of -40°C/-40°F to 55°C/131°F, over current and output short circuit protection.

LED LIGHT ENGINE

Offered in 2700K, 3000K, 3500K & 4000K / 80CRI. 70% LED lumen maintenance at 60,000 hours (L70/B50) based on IESNA LM-80-08 LED extrapolated life, calculated per IESNA TM-21-21.
Optional true amber LED for turtle sensitive areas.
Wavelengths: 585nm to 597nm.

FINISH

Five-stage preparation process including preheating of cast aluminum parts for air extraction, and an environmentally friendly alloy sealant. Polyester powder coating is applied through an electrostatic process and oven cured for long term finish.

CERTIFICATION

UL Certified to Canadian and U.S. safety standards. Certified for use in wet locations. Rated IP65. Photometric testing performed by an independent laboratory in accordance with IES LM-79-08 standards at 25°C. Actual performance may differ as a result of end-user environment and application.

WARRANTY

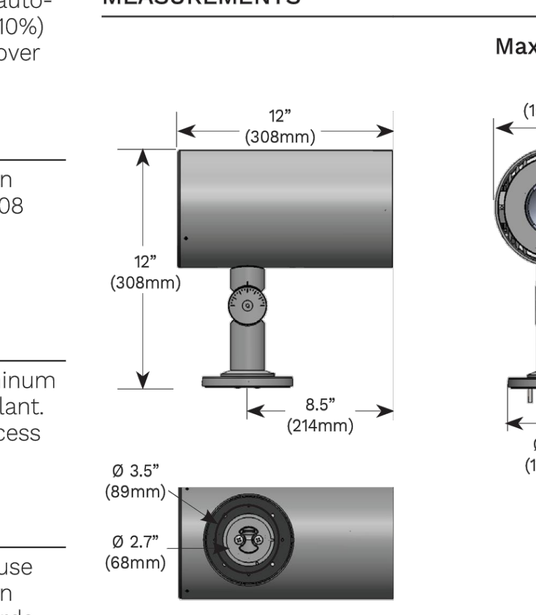
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: https://www.acuitybrands.com/support/warranty/terms-and-conditions

MOUNTING

The mounting plate is designed to fit on a 4" (102mm) round electrical box using 3.5" (89mm) C/C four mounting holes.

MEASUREMENTS

Maximum weight: 10.4 lbs (4.7 kg)



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Lam Partners

Lam Partners Project #	25063
Lam Partners PIC:	JRP
Lam Partners PM:	PW
Lam Partners Designer:	JK

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45 Union St

Project Location:
Portland, ME

Owner:
East Brown Cow - Kowtower LLC

Architect:
Safdie Architects

Landscape Architect:
MBLA

Revision Schedule

#	Description	Date

Project Phase
Major Site Plan

Submission
MSP Submission

Architect's Issuance Date
14 November 2025

Date
13 November 2025

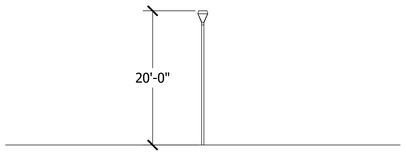
ARCHITECTURAL LIGHTING

SITE LIGHTING
CUT SHEETS

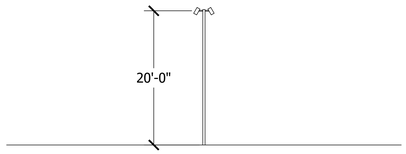
LL-101

Scale
As Indicated

Not for bidding or construction unless fully incorporated into contract documents by Architect and/or Engineer.



1 TYPE YG1
1/8" = 1"



2 TYPE YG2
1/8" = 1"



3 TYPE YG3
1/8" = 1"

Lam Partners

Lam Partners Project # 25063

Lam Partners PIC: JRP

Lam Partners PM: PW

Lam Partners Designer: JK

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45 Union St

Project Location:
Portland, ME

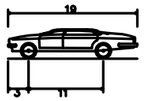
Owner:
East Brown Cow - Kowtower LLC

Architect:
Safdie Architects

Landscape Architect:
MBLA

Revision Schedule

#	Description	Date



P – Passenger Car

Overall Length	19.000ft
Overall Width	7.000ft
Overall Body Height	4.300ft
Min Body Ground Clearance	1.115ft
Track Width	6.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	31.60°

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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Portland, Maine 04101
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CLIENT INFO:

EAST BROWN COW
PORTLAND, MAINE

45 UNION STREET

JOB NO:	0232191.08
DATE:	AUGUST 2025
SCALE:	AS NOTED
DESIGNED BY:	ANG
DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

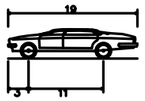
DRAWING TITLE:

VEHICLE MOVEMENTS
PASSENGER VEHICLE - 1

DRAWING NO:

C-1

\\woodardcurran.net\shared\Projects\0232191.08 Kowtower LLC Kowtower Hotel\wip\Drawings\Civil\0232191.08 Vehicle Figs.dwg, Aug 14, 2025 - 3:48pm HMEHL



P – Passenger Car

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Overall Width	7.000ft
Overall Body Height	4.300ft
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Track Width	6.000ft
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SCALE:	AS NOTED
DESIGNED BY:	ANG
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CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:

VEHICLE MOVEMENTS PASSENGER VEHICLE - 1A

DRAWING NO:

C-1A

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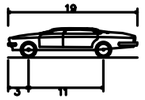

P – Passenger Car

Overall Length	19.000ft
Overall Width	7.000ft
Overall Body Height	4.300ft
Min Body Ground Clearance	1.115ft
Track Width	6.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	31.60°

BAR SCALE
1" = 40'
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PORTLAND, MAINE

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JOB NO:	0232191.08
DATE:	AUGUST 2025
SCALE:	AS NOTED
DESIGNED BY:	ANG
DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:
VEHICLE MOVEMENTS PASSENGER VEHICLE - 1C

DRAWING NO:
C-1C

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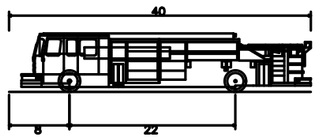

Pumper Fire Truck	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

BAR SCALE
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SCALE:	AS NOTED
DESIGNED BY:	ANG
DRAWN BY:	BCM
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FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:
VEHICLE MOVEMENTS FIRE TRUCK

DRAWING NO:
C-2

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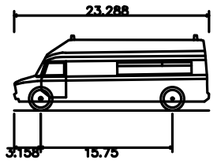

Horton 453 Type I Ford E-Series Ambulance	
Overall Length	23.288f
Overall Width	8.021ft
Overall Body Height	9.000ft
Min Body Ground Clearance	1.075ft
Track Width	8.021ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	27.400f

40' 0 40' 80'

BAR SCALE
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DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:
VEHICLE MOVEMENTS AMBULANCE

DRAWING NO:
C-3

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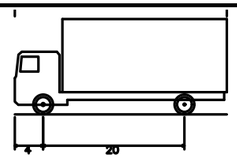
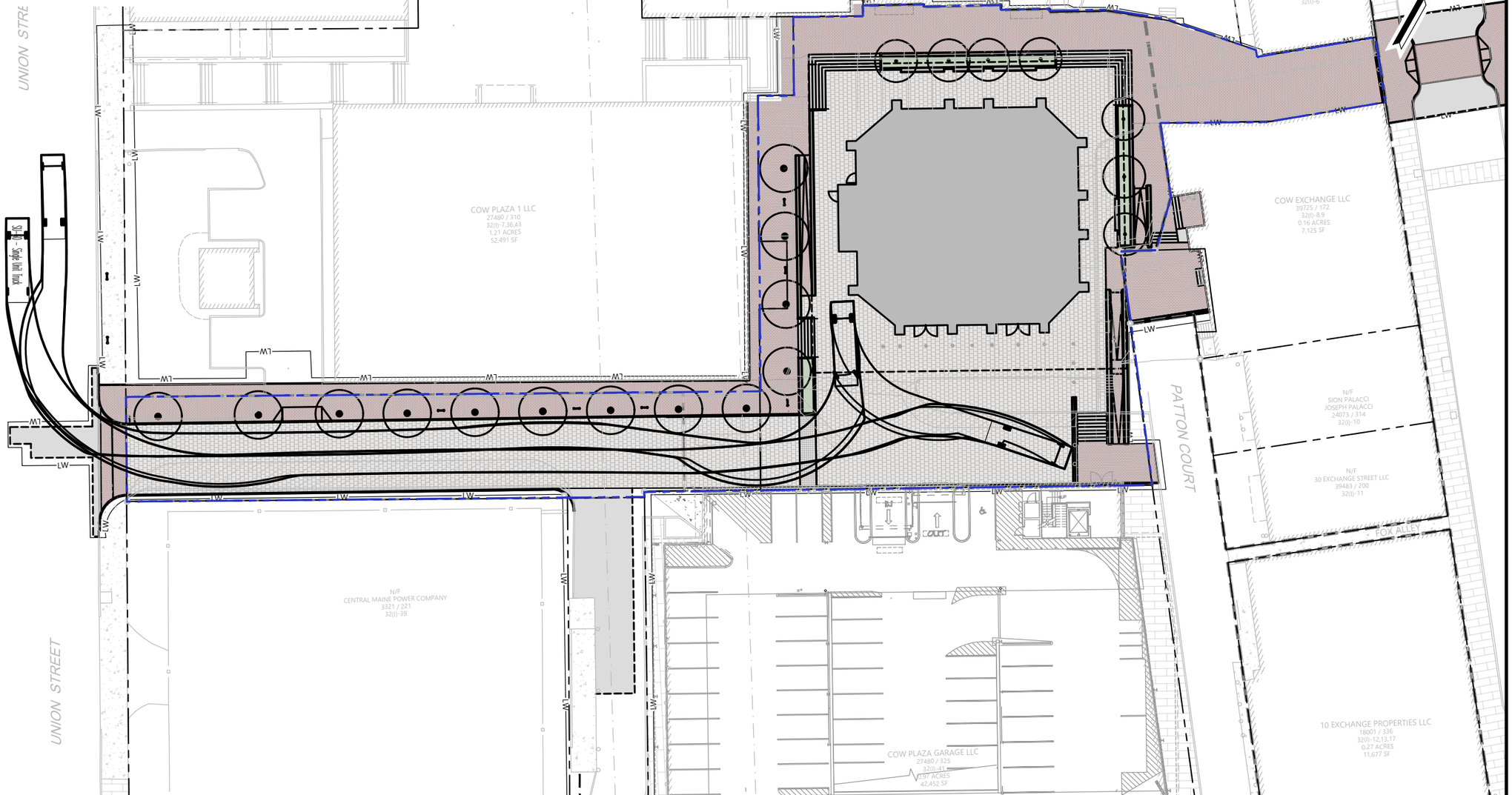


SU-30 – Single Unit Truck	
Overall Length	30.000f
Overall Width	8.000ft
Overall Body Height	13.500fl
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°



40' 0 40' 80'

BAR SCALE
1" = 40'
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45 UNION STREET

JOB NO:	0232191.08
DATE:	AUGUST 2025
SCALE:	AS NOTED
DESIGNED BY:	ANG
DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:

VEHICLE MOVEMENTS SU-30 TURNAROUND BY GARAGE

DRAWING NO:

C-4

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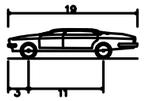

P – Passenger Car

Overall Length	19.000ft
Overall Width	7.000ft
Overall Body Height	4.300ft
Min Body Ground Clearance	1.115ft
Track Width	6.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	31.60°

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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PORTLAND, MAINE

45 UNION STREET

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SCALE:	AS NOTED
DESIGNED BY:	ANG
DRAWN BY:	BCM
CHECKED BY:	CS
FILENAME:	0232191.08 VEHICLE*.dwg

DRAWING TITLE:
VEHICLE MOVEMENTS
PASSENGER VEHICLE - 1B

DRAWING NO:
C-1B

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View from Lobsterman Park




OLD POR
OP
SQ.
URBAN OUTFITTE







View from Portland Harbor - Facing Northwest



View from Portland Harbor - Facing West



View towards Fore River - Facing South



View from Post Office Park

CITY OF PORTLAND, MAINE

PLANNING BOARD

Brandon Mazer, Chair
David Silk, Vice Chair
Austin Smith
Nicholas Messina
Joseph Zamboni
Kelsey Robertson
Michael Joseph Fox

December 9, 2025

Caitlin Suhr
Woodard & Curran
12 Mountfort Street
Portland, ME 04101

Project Name:	45 Union Street Tower	**Project ID:**	PL-003157-2024
Address:	45 Union Street	**CBL:**	032 I040
Applicant:	East Brown Cow LLC		
Planner:	Eric Freeman		

Dear Caitlin Suhr,

On December 9, 2025, the Planning Board approved a Major Site Plan and Traffic Movement Permit application to facilitate the construction of a 30-story mixed-use tower with 88 hotel units, 73 residential units, restaurant, café and amenity space with associated site improvements at 45 Union Street within the B-3 Downtown Business Zone. The decision is based upon the application, documents and plans as submitted. The Planning Board reviewed the proposal for conformance with the standards of the Site Plan Ordinance, Chapter 13, Section 13.6

Based on the information provided to the Board in the application, plans, and reports, through testimony and other information submitted by the applicant, as well as the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing held on December 9, 2025 which is attached hereto and incorporated herein by reference, the Planning Board found the application met all relevant standards and voted (X-X) to approve the application with the following conditions as presented below

A. SITE PLAN

Based on the information in the application, plans, reports, through testimony at the Planning Board hearing, and other information submitted by the applicant the Planning Board adopts the findings and recommendations contained in the Planning Board Report for the public hearing on December 9, 2025 for application# PL-003157-2024 at 45 Union Street, relevant to the site plan regulations and **[finds/does not find]** that the plan is in conformance with the site plan standards of the land use cod, subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall address outstanding stormwater review comments provided on November 21, 2025 by Wright-Pierce and submit a finalized stormwater management plan for review and approval by the Planning Authority.
2. The applicant shall provide ability to serve letters from Unitil and the Portland Water District

PRIOR TO ISSUANCE OF A BUILDING PERMIT

3. The applicant shall establish a public access easement encompassing all publicly accessible areas of the site within the property boundary, including sidewalks and open spaces. This easement shall be reviewed and accepted by the Planning Authority and Corporation Counsel prior to recording in the Cumberland County Registry of Deeds.
4. The applicant shall coordinate with the Department of Public Works to finalize the design of utility connections between the project site and Union Street.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

5. The applicant shall enter into an agreed upon Affordable Housing Agreement for the off-site inclusionary zoning units (AHA with the City of Portland, for (NUMBER OF UNITS) to satisfy the City's Hotel Inclusionary Zoning requirements. At the time of completion of the project at 45 Union Street the off-site units are not yet complete but staff determines that construction is actively underway and being pursued, a Certificate of Occupancy for 45 Union Street may be issued, provided all other conditions have been met. If the applicant elects to satisfy the inclusionary zoning requirement through payment instead, a fee-in-lieu of $4,831 per hotel room shall be paid into the Jill C. Duson Housing Trust Fund.
6. The applicant shall pay a fee-in-lieu of $182,830 per unit into the Jill C. Duson Housing Trust Fund for all 18 required affordable housing units as set forth in the City's Inclusionary Zoning Ordinance. In the event the applicant elects to provide the units on-site, the applicant shall enter into an agreed upon Affordable Housing Agreement (AHA) in compliance with the City's Inclusionary Zoning Ordinance.
7. The applicant shall coordinate with the Planning Authority to finalize the locations and installation of bicycle racks within the public right-of-way on Middle, Exchange and Union Streets.

B. TRAFFIC MOVEMENT PERMIT

Based on the information in the application, plans, report, through testimony at the Planning Board hearing, and other information submitted by the applicant, the Planning Board adopts the findings and recommendations contained in the Planning Board Report for the public hearing on December 9, 2025 for application PL-003157-2024 at 45 Union Street relevant to the traffic movement permit regulations and **[finds/does not find]** that that the plan is in conformance with 23 M.R.S. §704-A and Chapter 305 Rules and Regulations pertaining to Traffic Movement Permits, Subject to the following conditions of approval

ON-SITE MITIGATION

1. The project is responsible for the implementation of details noted on the Site Plan, C-100.
2. The applicant has proposed a Valet Operations Plan and the applicant is responsible for implementation of the plan as detailed.
3. Regular Tractor Trailers deliveries will not be permitted into the site.
4. The parking garage gate system shall be upgraded to offer greater efficiency in the gate openings for daily parkers.

OFF-SITE MITIGATION

5. Intersection of Union Street/Temple Street/Middle Street/Spring Street
   The applicant shall change the lane assignment on the Spring Street and Middle Street approaches to consist of dedicated left-turn lanes and shared through/right lanes. The traffic signal equipment shall be upgraded to reflect this change and include replacement of existing signal heads with signal heads that have yellow retroreflective borders. The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.
6. Intersection of Union Street and Fore Street
   The applicant shall change the lane assignment on the southbound Union Street approach to eliminate the dedicated right-turn lane and implement changes to on-street parking regulations, as directed by the city. The Applicant shall conduct an evaluation of converting all approaches to single-lane configuration and if analysis completed by the Applicant demonstrates adequate level of service for the intersection, the changes shall be fully implemented. These changes shall include replacement of existing signal heads with heads that have yellow retroreflective borders. The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.
7. Intersection of Fore Street and Exchange Street
   The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for review and approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.
8. Intersection of Fore Street and Exchange Street
   The applicant shall conduct an evaluation of illumination conditions and compliance with MaineDOT standards and shall implement lighting improvements if substandard conditions are identified. Design plans shall be provided for review and approval by the city. The intersection improvements shall be completed prior to the Certificate of Occupancy.

OVERALL REQUIREMENTS

9. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to City, MaineDOT and/or National standards.
10. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall

meet MRSA Title 23, Chapter 21, Section 1914: “On-Premise Signs”.

11. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from the City of Portland a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.
12. The applicant must obtain approval of the design plans and coordinate work through the City of Portland Department of Public Works.

Standard Procedures

Note: The following standard procedures and requirements apply to all approved site plans:

1. Site Plan Expiration
   The site plan approval shall expire three (3) years from the date of approval unless development has been undertaken in accordance with the approved site plan and site work or building construction is ongoing. Any lapse in construction for a period in excess of 12 months shall result in an expiration of the site plan.

2. Separate Building Permits Are Required
   This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

3. Performance Guarantee and Inspection Fees
   A performance guarantee covering the site improvements and an inspection fee payment of 2.0% of the guarantee amount and three (3) final sets of plans must be submitted to and approved by the Planning and Urban Development Department prior to the release of a building permit, street opening permit or certificate of occupancy for site plan.

4. Construction Management Plans
   The applicant, contractor and subcontractors are required to conform to the approved Construction Management Plan, and all conditions contained within the project's approval, for the entire duration of the project. Any amendments to the approved Construction Management Plan shall be reviewed and approved by the Department of Public Works prior to the execution. The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan. The applicant shall coordinate the project's construction schedule with the timing of nearby construction activities to avoid cumulative impacts on a neighborhood and prevent unsafe vehicle and pedestrian movements. Accordingly, nearby construction activities could involve a delay in the commencement of construction.

5. Preconstruction Meeting
   Prior to the release of a building permit and scheduling of a preconstruction meeting, a hard copy set of approved plans shall be submitted to the Development Review Coordinator. A pre-construction meeting shall be held at the project site with the contractor, Development Review Coordinator, Public Works representative, and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan and the approved Construction Management Plan. The site/building contractor shall provide one (1) copy of a detailed construction schedule to the attending City representative. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre- construction meeting.

6. Department of Public Works Permits

If work or obstructions will occur within the public right- of-way, such as utilities, curb, sidewalk, driveway construction, site deliveries and equipment siting, a Street Opening and/or Occupancy Permits are required for your site. Please contact the Department of Public Works Permit Clerk at (207) 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

7. Develop Site According to Plan

The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Any modifications of an approved site plan or alteration of a parcel, or of any approved exterior elevations, which were the subject of site plan approval after May 20, 1974, shall require the prior approval of an amended site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

8. Stormwater Management

The owner/operator of an approved stormwater management system, and all assigns shall comply with the conditions of Chapter 32, Stormwater including Article Ill, Post Construction Stormwater Management, which specifies the annual inspections and reporting requirements. A maintenance agreement for the stormwater drainage system, as attached, or in substantially the same form, shall be submitted for review by Corporation Counsel. Once approved, the document shall be signed and recorded at the Cumberland County Registry of Deeds. The following stormwater management documentation shall be submitted to the Water Resources Division of Public Works and the Planning and Urban Development Department prior to the issuance of a Certificate of Occupancy:

1. Final executed and recorded stormwater maintenance agreement including the site's inspection and maintenance plan.
2. Certification, based on initial comprehensive inspection from the project Engineer of Record, certifying that the approved stormwater systems were installed properly, are fully operational, and are functioning as intended.
3. As-built drawings including grading and drainage and updated details for any stormwater systems on site.
4. Department of Public Works Impervious Area Adjustment Form 5A
5. Department of Public Works Stormwater Credit Application Form 3

Department of Public Works stormwater program forms can be found at the following link: https://www.portlandmaine.gov/1102/Credit-Manual-and-Applications

9. Third Party Inspections

For all sites with one acre or greater of disturbance, the applicant shall retain the services of a third-party inspector for the duration of construction until final site stabilization is in place. The inspection is required in order to ensure that all construction and stabilization activities comply with the approved drawings and specifications; that field decisions regarding erosion control implementation, stormwater system installation, and natural resource protection are based on sound engineering and environmental considerations; and that any changes to the development's erosion control plan, stormwater management plan, or final stabilization plan is communicated to the City of Portland for additional review and approval.

The inspector will submit weekly written reports to the Stormwater Coordinator(s) in the Water Resources Division of Public Works. Reports must include: project ID, project address, the date(s) and time(s) of inspection(s), site photographs of areas under construction, and the date(s) and approximate duration(s) of any rainfall events. The report will identify and describe any erosion problems or discharge of pollutants and what actions will be taken to address these issues and repair

any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.

10. Defect Guarantee
A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

11. As-Built Final Plans
Final sets of as-built plans shall be submitted digitally to the Planning and Urban Development Department as a PDF. Once the PDF version has been reviewed and accepted, a mylar and a AutoCAD format will need to be submitted to the Department of Public Works Engineering Archive, located at 212 Canco Road, Portland, Maine 04102.

12. Mylar Copies
Mylar copies of the as-built drawings for public streets and other public infrastructure in the subdivision must be submitted to Public Works prior to the issuance of a certificate of occupancy.

13. Impact Fees
New development or changes of use that result in net new residential dwelling units, non- residential building square footage, or water meters, are subject to the City of Portland's impact fee ordinance (Chapter 14, Article XVII). Impact fees are calculated at the time of building permit and must be paid prior to the certificate of occupancy. For more information, visit https://www.portlandmaine.gov/2409/Impact-Fees

The Development Review Coordinator must be notified five (s) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning and Urban Development Department at drc@portlandmaine.gov or (207)874-8901. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Eric Freeman by phone at 207-874-8724 or email at efreeman@portlandmaine.gov

Sincerely,
Brandon Mazer, Planning Board Chair

Attachments:
1. Planning Board Report
2. Portland City Code: Chapter 32
3. Sample Stormwater Maintenance Agreement
4. Performance Guarantee Packet