

CITY OF PORTLAND, MAINE

PLANNING BOARD



Maggie Stanley, Chair
Brandon Mazer, Vice Chair
Justin Barker
Marpheen Chann
Sean Murphy
David Silk
Austin Smith

AGENDA PORTLAND PLANNING BOARD MEETING

The Planning Board will hold a remote meeting on **Tuesday, September 13, 2022, 4:30 p.m.** This meeting will take place remotely using Zoom pursuant to the Remote Meeting Policy adopted by the Planning Board and as authorized under 1 M.R.S. 403-B because of the existence of an emergency or urgent issue that requires the committee to meet by remote methods. Allow your computer to install the free Zoom app to get the best meeting experience.

If you are not able to attend live, a recording will be available following the meeting. For public comment, you will need to use the "raise your hand" feature. To raise your hand via the telephone, please hit *9. You will be unmuted by the host when it is time for public comment.

For more information on submitting written public comments and participating in the remote meeting, please refer to the document, A Guide to Public Comment, Remote Mtg. and Public Participation, which can be found at <https://www.portlandmaine.gov/485/Development-Review>. Public comments will be taken for each item on the agenda during the estimated allotted time.

Written Public Comment

Written comments received by email by 12:00 p.m. **the day before** the scheduled meeting date will be included in the agenda backup materials ("agenda packet").

Written comments received **by the aforementioned deadline** will be published in the agenda packet no later than 12:00 p.m. the day of the meeting. Written comments must be submitted to planningboard@portlandmaine.gov. If you have any questions or feedback regarding this process, please email citymanager@portlandmaine.gov

Please note that the placement of each item on the agenda is subject to change. Please check the Agenda & Minutes Center prior to the meeting for the item start time here: <https://www.portlandmaine.gov/602/Agendas-Mintues>.

ZOOM MEETING INFORMATION

You are invited to a Zoom webinar.

When: Sep 13, 2022 04:30 PM Eastern Time (US and Canada)

Topic: Planning Board Workshop and Public Hearing 9/13/2022

Please click the link below to join the webinar:

<https://portlandmaine-gov.zoom.us/j/82496874058>

Or One tap mobile : US: +13126266799,,82496874058# or +16469313860,,82496874058#

Or Telephone: Dial(for higher quality, dial a number based on your current location):

US: +1 312 626 6799 or +1 646 931 3860 or +1 929 205 6099 or +1 301 715 8592 or +1 309 205 3325 or +1 564 217 2000 or +1 669 444 9171 or +1 669 900 6833 or +1 719 359 4580 or +1 253 215 8782 or +1 346 248 7799 or +1 386 347 5053

Webinar ID: 824 9687 4058

International numbers available: <https://portlandmaine-gov.zoom.us/j/kd5Dgj79uw>

WORKSHOP - 4:30 PM

- i. Technical Manual Updates (estimated time 4:30 – 5:30 p.m.) The Planning Board will hold a remote workshop to consider amendments to Sections 1, 2, 4 and 10 of the City of Portland Technical Manual, focusing on technical standards related to transportation systems and street design, sewer and storm drain design, site landscaping, and street lighting.
- ii. Conditional Use; 343 Cumberland Avenue; Preble Street, Applicant. (estimated time 5:30 – 6:30 p.m.) The Planning Board will hold a remote workshop to consider a Conditional Use application for the siting of a 24-bed, 7,981 square foot emergency teen shelter in the existing building at 343 Cumberland Avenue. The subject property is 11,136 square feet in size and is zoned B-3 Downtown Business. A project and plan summary are available for viewing on the city's CSS Portal (<https://css.portlandmaine.gov/>) by referencing Plan Number CU-002134-2022.

PUBLIC HEARING - 7:00 PM

- 1. ROLL CALL AND DECLARATION OF QUORUM**
- 2. COMMUNICATION AND REPORTS**
- 3. REPORT OF ATTENDANCE AT THE MEETING HELD ON AUGUST 9, 2022**

Afternoon Workshop

1 Bean Pot Circle: All Present.

165 Lambert Street: Barker, Chann, Mazer, Murphy, Silk present; Smith and Stanley absent.

Evening Hearing

385 Congress Street: Barker, Chann, Mazer, Murphy, Silk present; Smith and Stanley absent.

- 4. REPORTS OF DECISIONS AT THE MEETING HELD ON AUGUST 9, 2022**

- i. Master Development Plan and Traffic Movement Permit; 385 Congress Street; 385 Congress Street LLC., Applicant. Chann moved and Murphy seconded a motion to waive Land Use Code Section 7.3, Table 7-E, to allow a maximum front setback of 22 feet on Congress Street, 16 feet on Cumberland Avenue, and 6 feet on Pearl Street. Vote 5-0, Smith and Stanley absent. Chann moved and Murphy seconded a motion to waive Technical Manual Section 1.14.2 to allow all of the proposed parking spaces for the portion of the site labeled 'Lot 1' to be compact spaces and 96 (35%) of the 267 parking spaces proposed for the portion of the site labeled as 'Lot 2' and 'Lot 3' to be compact spaces. Vote 5-0, Smith and Stanley absent. Chann moved and Silk seconded a motion to waive Technical Manual Section 1.14.3 to allow a parking layout for the portion of the site labeled as 'Lot 1' to have a design that does not conform to Figures I-28 thru I-32. Vote 5-0, Smith and Stanley absent. Chann moved and Silk seconded a motion to waive Technical Manual Section 1.14.3 to allow a reduced drive aisle width of 15 feet. Vote 5-0, Smith and Stanley absent.

- 5. NEW BUSINESS**

- i. Map Amendment; 50 County Way; Cumberland County, Applicant. The Planning Board will hold a public hearing to consider a zoning map amendment to rezone the I-L Low-Impact Industrial Zone bounded by Congress Street to the north, Fore River Parkway to the west, and the Amtrak Downeaster Corridor to the south and east to B-2 Community Business to allow Governmental Use as a permitted use. A project and plan summary are available for viewing on the city's CSS Portal (<https://css.portlandmaine.gov/>), by referencing Plan Number ZN-001944-2022.

To: Chair Stanley & Members of the Planning Board
From: Nell Donaldson, Director of Special Projects
Date: September 9, 2022
Re: Technical Manual Updates: Sections 1, 2, 4, 10, & 17
Meeting Date: September 13, 2022

I. INTRODUCTION

On May 6, the Department of Planning & Urban Development, with assistance from the Departments of Public Works and Parks & Recreation, appeared before the Planning Board to review a slate of draft amendments to the *City of Portland Technical Manual*. These amendments affect Section 1 (Transportation Systems and Street Design Standards), 2 (Sanitary Sewer and Storm Drain Design Standards), 4 (Landscaping and Landscape Preservation Standards), and 10 (Municipal Street Lighting Standards), and include the reorganization of material into a new Section 17 (Transportation Plans and Studies). In large part, the proposed edits represent an effort to bring standards into alignment with current and best practice, and to reorganize material for legibility.

This memo does not revisit the first draft edits presented at the May 6 workshop, but instead focuses on 2nd draft revisions, with an emphasis on edits made in response to Planning Board input, public feedback, and the recommendations of several third-party reviews. For a complete summary of the 1st draft edits, see the May 6 staff memo (*Attachment 1*).

II. THIRD PARTY REVIEWS

At the May meeting, Planning Board members suggested that staff obtain third party reviews of proposed *Technical Manual* amendments. In response, staff distributed drafts to several consultants who regularly engage in development review, and thus are familiar with the application of *Technical Manual* standards. Section 1 was reviewed by Tom Errico of TY Lin International, the City's consulting traffic engineer (*Attachment 2*), as well as by Will Savage of Acorn Engineering (*Attachment 3*). Lauren Swett of Woodard & Curran, who conducts civil engineering reviews for the City, reviewed the proposed amendments to Section 2 (*Attachment 4*). Staff also met with Sarah Cushman, of Cushman Transportation Consulting, regarding proposed edits to the Transportation Demand Management provisions of Section 17 of the *Technical Manual* (*Attachment 5*).

It is important to note that, in addition to continued coordination with the Department of Public Works and the Department of Parks and Recreation, staff consulted with other departments as necessary on 2nd draft edits as well, including the Departments of Permitting & Inspections and Sustainability.

III. 2nd DRAFT EDITS

Below is a summary of 2nd draft edits to the *Technical Manual*, suggested both on the basis of the feedback received at the May 6 workshop and the recommendations of the third-party reviewers.

A. Section 1: Transportation Systems and Street Design Standards (*Attachment 6*, with new text edits indicated in purple.)

- 1.5: Revised driveway location and design standards to allow DPW discretion around larger driveway openings and driveway separation standards.

- 1.6: Revised language around detectable warning panels to allow for their installation at driveways where warranted, and modified conditions where curb extensions are merited to allow for instances of mid-block crossings and areas of safety concern which may not qualify as high crash locations.
- 1.8: Revised roadway construction, surface, and aggregate standards to align with MaineDOT standards.
- 1.10: Added language to clarify that parking areas must be built to allow for delineation of parking spaces and aisles.
- 1.13: Revised bicycle lane design standards to provide additional detail on standard bike lane paint and striping requirements, address the placement of bike lane buffers, address the potential for obstructions within bike lanes, address conditions in which sufficient width is not immediately available, and speak to general design standards for bike lanes, including parking-separated bike lanes, with a reference to best practice design guides. Note that staff pursued this approach, rather than a more prescriptive one, in acknowledgement of the wide variation in street design contexts within the city.
- 1.14: Refined EV charging requirements to clarify EV-ready standards, acknowledge the potential for Level 3 charging stations in certain land use contexts, address projects with significant supplies of proposed parking, and revise the required number of EV-ready spaces to better align with projected demand. In the case of this last edit, the refined requirement for 50% EV-ready spaces (rather than the current 80%) is based on a calculator developed by the U.S. Department of Energy, which estimates the number of Level 2 workplace charging stations necessary to meet demand at various levels of adoption within a given region. These projections were applied against the total number of existing parking spaces within the area of the 2017 *Parking Study for Downtown, Old Port, and the Eastern Waterfront*, to arrive at a rough target for EV-ready parking spaces.
- Details: Made minor revisions to correct typos or clarify.

For a complete overview of 1st and 2nd draft edits proposed to Section 1, including a list of edits to details, please see the accompanying memo from the Department of Public Works (*Attachment 11*).

B. Section 2: Sanitary Sewer and Storm Drain Design Standards (*Attachment 7*, with new edits indicated in [purple](#).)

- 2.2: Revised language to clarify that spaces surrounding enclosed parking areas should direct stormwater away from the sewer system.
- 2.5: Revised language regarding force main connections into existing manholes.
- 2.6: Revised backflow prevention language to clarify when backflow prevention is necessary.
- 2.8: Added underdrain specifications.
- 2.12: Revised aggregate specifications to eliminate redundancy with Section 1.
- Details: Made minor revisions to correct typos or clarify.

For an overview of the 1st and 2nd draft edits to Section 2, including edits to details, please see the accompanying memo from the Department of Public Works (*Attachment 12*).

C. Section 4: Landscaping and Landscape Preservation Standards (*Attachment 8*, with new edits indicated in purple.)

- 4.6: Revised street tree language to allow for the application of one of three new tree well details, based on the location and suitability of the site for tree survival.
- Details: Updated Detail IV-4a and added new details for tree wells. Revised recommended tree list (to be incorporated into Figures IV-1A and IV-1B) to reflect lessons learned regarding survivability.

D. Section 10: Municipal Street Lighting Standards (*Attachment 9*)

- No additional changes proposed.

E. Section 17: Transportation Studies and Plans (*Attachment 10*, with new edits indicated in purple.)

- 17.1: Revised transportation study scope elements to reflect a more multi-modal approach to traffic analysis.
- 17.3: Revised Transportation Demand Management requirements to promote consistency around metrics across sites, ensure that targets are derived from transportation analysis and designed relative to the local context, and require strategies in each of several Transportation Demand Management categories – infrastructure/operations, incentives, and education.

IV. STAFF ANALYSIS

Section 2.1.10 of the City's land use code grants the Planning Board the authority to review and approve technical standards through the *Technical Manual*. In order to do so, the Planning Board must find that such standards are additional to and consistent with the provisions of the land use code, necessary and reasonable, and "in accordance with sound engineering...practice." As discussed previously, in addition to clerical edits for the sake of clarity or consistency and reorganization to assist with document legibility and administration, the proposed edits to the *Technical Manual* also include substantive edits. These edits are generally designed to reflect lessons learned through practice, and to bring standards into alignment with state and national guidance in engineering and other relevant fields.

V. NEXT STEPS

Following the Planning Board workshop, staff will consider and incorporate feedback from the Board and members of the public as necessary, and will prepare revised drafts for public hearing.

VI. ATTACHMENTS

1. May 6 Memo to the Planning Board
2. Section 1 Review by Tom Errico, TY Lin International
3. Section 1 Detail Review by Will Savage, Acorn Engineering
4. Section 2 Review by Lauren Swett, Woodard & Curran
5. Section 17 Review by Sarah Cushman, Cushman Transportation Consulting
6. 2nd Draft Revisions to Section 1 – Transportation Systems and Street Design Standards
7. 2nd Draft Revisions to Section 2 – Sewer and Storm Drain Design Standards
8. 2nd Draft Revisions to Section 4 – Landscaping and Landscape Standards
9. 1st Draft Revisions to Section 10 – Municipal Street Lighting Standards
10. 2nd Draft Revisions to Section 17 – Transportation Studies and Plans
11. Summary of Updates to Chapter 1 of the *Technical Manual*, DPW

12. Summary of Updates to Chapter 2 of the *Technical Manual*, DPW
13. Public comment

To: Chair Stanley & Members of the Planning Board
From: Matthew Grooms, AICP
Date: May 6, 2022
Re: Technical Manual Updates: Sections 1, 2, 4, and 10
Meeting Date: May 10, 2022

I. INTRODUCTION

The Department of Planning & Urban Development, in collaboration with the Department of Public Works and the Department of Parks and Recreation, has prepared a package of amendments to the City of Portland Technical Manual, Sections 1, 2, 4 and 10, pertaining to transportation systems and street design, sanitary sewer and storm drain design, landscaping and landscape preservation, and municipal street lighting. These edits include both substantive amendments, such as new or revised review standards and technical details, along with less substantive edits, such as updates to terminology and code references. Per Section 2.1.10 of the Land Use Code, revisions to the *Technical Manual* fall under the jurisdiction of the Planning Board.

II. GENERAL EDITS TO TECHNICAL MANUAL

Below is a summary of proposed changes. For the changes shown in redline format, please refer to Attachments 1-8.

A. Section 1 and Section 17 - Transportation Systems and Street Design Standards and Transportation Studies and Plans. (Attachments 1-3)

- Removed traffic study, parking study, transportation demand management plan, and construction management plan requirements from Section 1 and created new Section 17 of the Technical Manual for transportation studies and plans.
- Renumbered sections based upon these edits.
- ‘Department of Public Services’ has been replaced by ‘Department of Public Works’.
- Where applicable, exact requirements written verbatim (i.e. DOT, AASHTO, local code) have been removed and replaced with references to the current local, state or federal requirements.

B. Section 2 – Sanitary Sewer and Storm Drain Design Standards (Attachments 4-5)

- Separated out standards for sewer systems and storm systems across the section.
- ‘Department of Public Services’ has been replaced by ‘Department of Public Works’.
- Revised approval authority in certain instances from ‘City Engineer’ to ‘Public Works Director’.

C. Section 4 - Landscaping and Landscape Preservation Standards (Attachments 6-7)

- References to appendix figures were revised to be consistent in terminology, (i.e. ‘Figure-XX’).
- In certain instances, existing content was assigned new sub-headings or relocated

within the section to help with navigation, legibility, and administration.

- Instances where the term, 'Department of Public Services' remain have been replaced with 'Department of Public Works'.

D. Section 10 – Municipal Street Lighting Standards (Attachment 8)

- City has selected a comparable replacement for the X-3 lighting bollard, for use in public rights of way, due to the existing model no longer being manufactured.

Note that in addition to the above list, changes to code references have been incorporated into nearly every section of the *Technical Manual*.

III. PROPOSED ADDITIONS TO SECTION 1 AND SECTION 17 (NEW) – TRANSPORTATION SYSTEMS AND STREET DESIGN STANDARDS, AND TRANSPORTATION STUDIES & PLANS (ATTACHMENTS 1-3)

Existing Section 1 of the Technical Manual has been comprehensively reformatted and reorganized, which gives the edited document the appearance of being almost entirely rewritten. As such, content shifts and reformatting are being presented within the redlined version of this document as existing material to aid with legibility. Only substantive edits are shown in redline. These include updated ADA requirements, standards for concrete sidewalks, driveway aprons, curbing, bike lanes, bus stops, curb extensions, traffic islands and pedestrian crossings. Further, several elements that currently exist within Section 1, such as requirements around traffic studies, parking studies, and transportation demand management (TDM) plans, have been relocated to a new Section 17.

For a complete overview of the substantive changes being proposed within this section, please see the accompanying memo from the Department of Public Works (Attachment 8).

IV. PROPOSED ADDITIONS TO SECTION 2 – SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS (ATTACHMENTS 4-5)

Section 2 of the Technical Manual has been comprehensively reformatted and reorganized, which gives the edited document the appearance of being almost entirely rewritten. As such, content shifts and reformatting are being presented within the redlined version of this document as existing material to aid with legibility. Only substantive edits are shown in redline. The majority of this update is a reorganization of the standards to make it more clear which standards are intended for sewer systems and which are for storm drain systems. Previously, these were mixed together and described individually throughout the section. Other substantive edits include provisions to allow accessory dwelling units (ADUs) to tie into the principal unit's sewer lateral, as opposed to a new connection within the City right-of-way. Similarly, standards were introduced for grease interceptors, force mains, and the use of catch basins for on-site field inlets. These standards generally represent a matter of codifying existing practice.

For a complete overview of the substantive changes being proposed within this section, please see the accompanying memo from the Department of Public Works, Water Resources Division

(Attachment 9).

V. PROPOSED ADDITIONS TO SECTION 4 – LANDSCAPING AND LANDSCAPE PRESERVATION STANDARDS (ATTACHMENTS 6-7)

A. Definitions (Section 4.1)

- Feature Mature Tree – A new definition was drafted for feature mature tree, based upon the current definition of a ‘heritage tree’. The heritage tree ordinance, as currently in effect, provides additional protections and enhanced tree replacement/fee requirements for certain trees located within established historic districts. These trees include trees on the ‘Register of Big Trees’ list promulgated by the Maine Department of Agriculture, Conservation & Forestry, certain trees 24” inches in diameter or greater, and rare tree specimens. The ‘feature mature tree’ term is currently in use within Section 4, clearly referring to what would be a heritage tree located outside of established historic districts. Given this, and that no definition currently exists, staff have drafted a new definition based upon the heritage tree definition that is more general and broadly applicable in nature. Staff also removed the term ‘heritage tree’ from the section, as heritage trees are governed under a separate ordinance.

B. Preservation of Existing Vegetation (Section 4.3)

- Section 4.3.1 - Staff recommend introducing a tree survey requirement to identify trees 10” DBH (Diameter at Breast Height) not only on the development site, as is currently required, but also within the right of way (ROW) adjacent to the site.
- Section 4.3.4 - Staff recommend requiring that all tree preservation signage required to be erected and maintained throughout construction be placed outside of the drip line of individual, groupings, or perimeter trees to be preserved. This is consistent with other preservation elements, such as fencing or other protective barriers, and is intended to maintain the health of the tree(s).

C. Site Landscaping (Section 4.5)

- All Landscape Design (Section 4.5.1) - Staff have introduced new introductory language pertaining to all landscape design, which expands the stated purpose of site vegetation and landscaping. The current version encourages low-maintenance landscaping that provides site definition and screening, while supporting biodiversity. The statement has been expanded to encourage landscaping which achieves one or more additional functions, such as furthering climate resiliency and mitigation, creating or enhancing areas of native habitat, improving stormwater management and treatment, and increasing local food production. These edits are supported by policies adopted in Portland’s Plan, One Climate Future, and the currently drafted Community Agriculture Plan.
- Screening and Buffers (Section 4.5.2) - Currently, opaque fencing may be utilized as a site element to screen or buffer contrasting land uses. Staff have introduced additional clarifying language requiring that such fencing be of high architectural quality.
- Parking Areas (Section 4.5.5) - The language requiring some form of separation between

vehicular parking areas and landscaped areas has been modified to allow for either physical or visual forms of separation, with bollards being introduced as an example of such separation.

- Snow Storage (Section 4.5.6) - Staff propose striking a requirement that snow storage be sited so as not to encroach upon required off-street parking. The rationale for this is that off-street parking requirements do not explicitly permit the temporary occupation of required off-street parking spaces, and as such, per Article 19 of the City's Land Use Code, an applicant would not be permitted to routinely store snow atop required off-street parking.
- Slope Stabilization (Section 4.5.8) – Within this subsection, staff have modified the requirement for a retaining wall. Currently, any wall measuring four (4) feet in height from the bottom of the footing to the top of the wall is required to be designed by a licensed engineer. This differs from the City's building permit requirement, which only requires a building permit and engineered design if the wall measures four (4) feet from the proposed finished grade to the top of the wall. Staff recommend modifying this requirement to reflect this, and to also specify that the wall must be designed by a licensed structural engineer.
- Climate Positive Planting (Section 4.5.10) – A new sub-section was introduced titled 'Climate Positive Planting', which encourages new development to prioritize landscaping that furthers the City's climate goals; specifically by requiring that the viability of planted vegetation in a warming climate be considered, by prioritizing expansion of the City's tree canopy in an equitable manner to address the urban heat island effect, and encouraging the use of landscaping elements to reduce energy consumption.

D. Street Trees (Section 4.6)

- Street Trees/Residential Development (Sections 4.6 and 4.6.1) - Staff recommend expanding the street tree requirements to include not only public right-of-way (ROW) but also along private roadways, for example as part of a PRUD.
- Street Trees (Section 4.6) – Edits are suggested to revise planting area requirements for street trees from 10 feet to 20 feet. This aligns with the requirement in Section 4.6.4., which allows for existing trees located within 20 feet of the right-of-way to be counted towards a project's street tree requirement.
- Street Tree Alternatives (Section 4.6.4) – Where an applicant can demonstrate that it is infeasible to plant street trees in the prescribed amount within the right-of-way, that applicant may fulfill the requirement by providing one of six street tree alternatives.
 - The City's preferred alternative is to have the required street trees planted elsewhere within the neighborhood in which the development is occurring on public land, within esplanades or within parks, playgrounds or other locations with tangible public benefit. Staff have introduced two additional alternative locations, those being in areas of the city identified as having minimal tree coverage, or within existing empty street tree wells or planting strips. The first additional alternative is recommended as a means to prioritize and further tree equity across the city. The second alternative is being proposed to reinforce the primary purpose of street

trees, to create comfortable streetscapes and expand the City's tree canopy.

- Staff propose striking one of the alternatives, which was already struck from the Land Use Code as part of ReCode, which states that the incorporation of measures to enhance tree survival, such as raised planters, irrigation and structural soils, may count towards street tree requirements. Staff's rationale for this edit is that a developer should take necessary measures to ensure a tree's survival, and in the event that such measures are cost prohibitive, a developer should pursue one of the other alternatives.
- Staff propose striking a second alternative, which states that other planted features may count towards a development's street tree requirement. Staff's rationale for this edit is that other planted features, such as green screens, green roofs, new trees well away from public spaces, and shrubbery, do not provide an in-kind public benefit when compared with street trees, particularly shading of public right-of-way.
- A new alternative has been introduced which would allow for existing, healthy trees located within the right-of-way to be counted towards a development's street tree requirement. Currently, we explicitly permit existing trees to be maintained on an applicant's property as an alternative, and in practice, permit existing trees within the right of way to count. This amendment simplify codifies existing practice and encourages preservation of existing mature trees.
- Similar to the above recommendation where a developer would be encouraged to plant new street trees in neighborhoods or locations with minimal tree coverage, staff recommend that street tree contribution funds be similarly directed to increase tree equity city-wide. Staff also recommend eliminating an existing requirement which states that 85% of the Tree Fund be allocated towards new trees, and 15% be allocated towards maintenance. In discussions with Parks and Forestry staff, it was determined that this prescriptive requirement did not adequately account for the constantly evolving needs of our street tree network, and that for example, this requirement might artificially limit the City's ability to respond when additional on-going maintenance is required.

E. Installation and Maintenance of Plantings (Section 4.8)

- Planting Selection (Existing Section 4.7) – This section has been split into two separate sections, with standards related to the installation and on-going maintenance requirements of site vegetation now housed within a standalone section for improved legibility and navigation.
- Section 4.8.2 - A statement requiring that landscaping not installed prior to an issuance of a certificate of occupancy be subject to a performance guarantee has been struck, as performance guarantee requirements already require this, and are listed in the City's Land Use Code.
- Section 4.8.5 - An existing requirement, currently located within Section 4.3, which requires that new vegetation planted as part of site development which shows signs of construction damage within a one-year period following construction be rejected and replaced in kind

prior to the release of the defect guarantee. As Section 4.3 specifically pertains to landscape preservation, this language has been introduced within this proposed new section to apply directly to new vegetation.

VI. STAFF ANALYSIS

Section 2.1.10 of the City's Land Use Code requires that in order for the Planning Board to approve technical standards, such standards should be additional to and consistent with the provisions of the Land Use Code, necessary and reasonable, and "in accordance with sound engineering...practice." As discussed above, the proposed updates to the *Technical Manual* represent clerical edits, reorganization to assist with document legibility and administration, or new policy directly informed either by engineering best practice, or in the case of landscape standards, recommendations from One Climate Future and Portland's Plan, which are in line with best practices observed elsewhere. For example, a major theme expressed in these edits is the notion of tree equity, and ensuring that we not only expand our city's tree canopy, but target expansion in areas with limited tree canopy. In looking at the city's tree coverage, these areas often coincide with neighborhoods exhibiting lower median household incomes, and higher percentages of households of color as well as neighborhoods that have transitioned from predominantly manufacturing to commercial or residential uses. The emphasis on tree equity in our street tree alternatives, and the direction of tree funds towards areas of low tree coverage as opposed to other locations within the neighborhood of development, is an important step towards achieving this goal. Similar changes include the introduction of a climate positive planting standard, and revision to the landscaping purpose statement.

VII. NEXT STEPS

Following the Planning Board workshop on May 10th, staff will consider and incorporate feedback from the Board and members of the public as necessary, and will prepare revised drafts for further Board consideration or action.

VIII. ATTACHMENTS

1. Section 1 – Transportation Systems and Street Design Standards - Suggested Edits
2. Section 1 –Detail Revisions
3. Section 17 – Transportation Studies and Plans – Suggested Edits
4. Section 2 – Sewer and Storm Drain Design Standards – Suggested Edits
5. Section 2 – Detail Revisions
6. Section 4 – Landscaping and Landscape Standards – Suggested Edits
7. Section 10 – Municipal Street Lighting Detail Revision
8. Department of Public Works – Transportation Division Memo
9. Department of Public Works – Water Resources Division Memo

1. TRANSPORTATION SYSTEMS AND STREET DESIGN STANDARDS

1.1. TRAFFIC STUDIES

For the purposes of this section, **passenger car equivalents (PCE)** shall be defined as the number of passenger cars or, in the case of non-passenger vehicles, the number of passenger cars that would be displaced by non-passenger vehicles. One tractor trailer combination is the equivalent of two passenger cars.

Developments that generate 100 PCE or more, thus requiring a Traffic Movement Permit (TMP), shall meet the requirements of TMP regulations of State Law, in addition to all applicable transportation site plan standards of the City Code. For more information concerning state TMP requirements, please refer to <http://www.maine.gov/mdot/traffic-counts/traffic-mvmnt-app.php> or contact the Maine Department of Transportation (MDOT). The City of Portland is the delegated reviewing authority for TMP applications.

Developments that generate less than 100 passenger car equivalents (PCE) but require a scoping meeting because they generate 25 PCE or more and are located

(1) on an arterial; and/or

(2) within ½ mile of a high crash location; and/or

(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D,

shall meet the following standards, if a traffic study is required:

1.1.1. Traffic studies shall be prepared, stamped and signed by a Professional Engineer licensed in the State of Maine.

1.1.2. Scope of Study: The City Transportation Engineer, in consultation with the applicant's engineer, shall determine the need for and scope of the traffic study. The requirements for the study shall be based on standard transportation engineering practice

Commented [TE1]: Link did not work
www.maine.gov/mdot/traffic/index.shtml#permits

but the new regulations are not posted yet

Commented [TE2]: This seem low. I would suggest we increase it to 50.

A typical traffic study includes the following major sections:

- A description of the development proposal
- A description of existing conditions.
- Estimated trip generation by the development and design hour volume for affected driveway(s) and study intersections.
- Trip generation will be based upon the latest edition of the ITE *Trip Generation* publication unless suitable documented local data that meets ITE methodology is available.
- Trip distribution
- Capacity analysis for adjacent roadways and for any existing or proposed driveways.
- Traffic crash analysis for adjacent roadways.
- Key findings concerning traffic impacts, problems, and deficiencies.
- Proposed traffic improvements.
- Summary of findings and recommendations for transportation improvements and other impact mitigation measures.

Commented [ND3]: Move to Section 17.

~~1.2. Reserved~~**1.31. HORIZONTAL ALIGNMENT OF STREETS**

The horizontal alignment of all proposed streets shall conform to the following standards:

- Horizontal curves shall have centerline radii of not less than 110 feet.
- The alignment centerline shall be straight for at least 100 feet between reverse curves whenever either curve has a centerline radius of less than 200 feet.
- When two streets intersect and one street is an arterial or collector street, or both streets are arterial or collector streets, the angle of intersection shall be 90 degrees. When two streets intersect and neither street is an arterial or collector street, the angle of intersection shall be at least 75 degrees and no greater than 105 degrees.
- When two streets intersect, adjoining right-of-way lines shall be connected by a circular arc with radius of at least ten (10) feet. The connecting arc shall be tangent to the right-of-way lines on both streets. When the angle of intersection is other than 90 degrees, a radius greater than ten (10) feet may be required.
- All dead-end streets shall provide for a turnaround at the end of the street, subject to approval by the reviewing authority. Turnarounds shall be designed to facilitate future street connectivity and shall always be

designed to the right (refer to Figure I-5).

- Street intersections with more than four (4) legs shall be prohibited.
- The minimum distance between intersections on any street shall be as follows unless the City Engineer determines that unique conditions of the site necessitate a lesser length. The distance between intersections shall be measured from the intersection of street centerlines at one intersection to the intersection of street centerlines at the other intersection. Streets shall be classified in accordance with the Federal Highway Administration Functional Classification Guidelines.

Commented [TE4]: I would change this to MaineDOT as they classify roads in Portland

Local Street and Local Street Intersection	<u>2</u> 300 feet
Local Street and Collector Street Intersection	<u>25</u> 30 0 feet
Local Street and Arterial Street Intersection	<u>3</u> 500 feet
Collector Street and Collector Street Intersection	<u>4</u> 500 feet
Collector Street and Arterial Street Intersection	500 feet
Arterial Street and Arterial Street Intersection	500 feet

1.24. STREET GRADES

1.24.1. Street grades shall conform to the following standards, as shown in Figures I-1, I-2, and I-3:

- The maximum grade for the centerline of all streets shall not exceed eight (8) percent.
- The minimum grade for the centerline of all streets shall not be less than one-half (0.5) percent.
- The cross slope for local streets shall be three (3) percent~~0.03~~. The cross slope for other street classifications shall be two (2) percent~~0.02~~.
- Cross slopes for sidewalks shall be one (1) percent minimum and two (2) percent maximum~~0.02~~, sloping down and away from the street line to the top of the curb at the gutter line, including pedestrian access routes

across driveways, as shown in Figure I-10C13.

- Street grades at intersections shall not be more than three (3) percent for a distance of one hundred (100) feet from the center of the intersection.

1.2.2 Curbless "shared streets" shall be considered on a case-by-case basis after consideration of context, design, and maintenance. Approval of any curbless "shared street" shall be subject to review by the Department of Public Works.

1.35. VERTICAL ALIGNMENT

Where two adjacent street segments are proposed to have different straight line centerline finish grades, vertical curves shall be used to connect the adjacent street segments. Vertical curves shall be parabolic and tangent to each of the adjacent grades. The minimum vertical curve length, "L", shall be calculated based on the following formula

$$L = K \times A$$

where "A" is the absolute value of the algebraic difference between the beginning grade and the ending grade of the vertical curve, with both grades expressed in percent, and "K" is a factor whose value depends on street design speed, ~~which is related to street classification. The design speeds, in miles per hour, for this section's street classifications are as follows:~~

Local Street	25 mph
Collector Street	30 mph
Arterial Street	35 mph

The K values corresponding to the minimum vertical curve lengths for the above street classifications and vertical curve types (sag curve or crest curve) are as follows:

Local Streets

Crest Vertical Curves: K = 20

Sag Vertical Curves: K = 30

Collector Streets

Crest Vertical Curves: K = 30

Sag Vertical Curves: K = 40

Arterial Streets

Crest Vertical Curves: K = 50

Sag Vertical Curves: K = 50

1.46. SIGHT DISTANCE

Where driveways or new streets enter an existing street, vehicular sight-distance shall conform to standards established by the Maine DOT as contained in their publication, Chapter 299, Highway Driveway and Entrances Rules ~~and noted below for entrances with standard vehicles~~. For driveways frequently accessed by large vehicles, greater sight distance will be required according to Maine DOT guidelines. Along sloped roadways, or where the design vehicle is larger than a standard passenger vehicle, additional sight distance may be required.

Commented [TE5]: What does this mean.

Commented [TE6]: This is defined and required in the MaineDOT standards.

<u>Speed Limit (mph)</u>	<u>Measured Distance (feet)</u>
25	200
30	250
35	305
40	360
45	425
50	495
55	570
60	645

1.57. DRIVEWAY DESIGN

1.75.1. All driveways shall be designed according to the following table, unless otherwise approved by the Department of Public Works.

<u>Requirement</u>	<u>Minor Driveway (serving < 10 residential spaces)</u>	<u>All other driveways</u>
<u>A) Number of Driveways</u>	<u>No more than one (1) driveway shall be permitted.</u>	<u>No more than two (2) driveways shall be permitted. Adjacent sites under common ownership shall have no more than two (2) driveways combined.</u>
<u>B) Minimum/ maximum driveway width</u>	<u>10 feet minimum, 20 feet maximum, measured at the property line</u>	<u>For two-way driveways (preferred): 20 feet minimum; 24 feet maximum for residential/commercial uses; 30 foot maximum for industrial uses.</u>
<u>C) Driveway spacing</u>	<u>Spacing of new or reconfigured driveways shall take the existing pattern of driveways in the</u>	<u>50 feet along local streets; 100 feet along arterial and collector streets with posted speeds of 35mph or</u>

Commented [TE7]: There are rare cases where a commercial driveway may need two approach lanes. Those would not be covered here

	<u>surrounding context into account, and shall limit the impact to on-street parking and existing street trees. Shared driveways are encouraged.</u>	<u>less; 150 feet for roadways posted at 35mph or greater. Driveway locations may be rejected based on documented or anticipated safety or operational issues.</u>
<u>D) Driveway separation from Intersections</u>	<u>At least 35 feet along local roads and 50 feet along collectors/arterials, measured from the projection of the right-of-way line at the roadway to the centerline of the driveway.</u>	<u>At least 35 feet along local roads, 100 feet along collectors/arterials, measured from the projection of the right-of-way line at the driveway to the centerline of the driveway.</u>
<u>E) Curbing</u>	<u>2-foot granite corner radius “bugs” (also known as a “bullnose”) shall be used where possible. Tipdowns may be used if the driveway crosses a narrow sidewalk</u>	<u>Granite radii (where sufficient esplanade is available) or tipdowns shall be used. Granite radii shall not cross the pedestrian access route.</u>
<u>F) Driveway intersection angle</u>	<u>Perpendicular to the street, where possible. Where necessary, the driveway shall intersect the street between 75 and 105 degrees unless otherwise approved by the Department of Public Works.</u>	
<u>G) Design vehicle</u>	<u>Driveways shall be designed to accommodate site-specific design vehicles, and shall not be designed larger than necessary, as determined by turning movement diagrams and engineering judgment.</u>	
<u>H) Loading</u>	<u>All necessary functions for loading, circulation, and parking maneuvers shall occur within the site and outside of the right-of-way to the extent practicable, given the site context.</u>	
<u>I) Circulation</u>	<u>Vehicle circulation shall be completely contained within the site to the extent practicable, given the site context.</u>	
<u>J) Backing maneuvers</u>	<u>Backing maneuvers may be permitted to enter the site. Backing maneuvers from a site may be permitted based on upon site context including functional class of the adjacent street, traffic volumes, and speeds.</u>	<u>Backing maneuvers into and out of the site are prohibited. All vehicles must enter and exit the site facing forward.</u>
<u>L) Parking area size</u>	<u>All driveways shall serve a parking area of at least 8’x16’, clear of any encroachment, plus any setbacks required by zoning. Parking areas and parked cars shall not encroach upon the public right-of-way.</u>	

Commented [TE9]: This should be edited to say above 35 MPH, since the prior one is 35 MPH or less

Commented [TE8]: I do worry that this doesn’t prevent two driveways directly next to each other. It just seems that some minimum separation should be noted.

Commented [TE10]: I would suggest you add the same as above. “Driveway locations may be rejected based on documented or anticipated safety or operational issues.

~~Residential development with nine (9) parking spaces or less:~~

~~Minimum/maximum driveway width: Any site shall have a minimum driveway width of ten (10) feet and a maximum width of twenty (20) feet measured at the property line.~~

~~Location of driveway: A driveway shall be located on the lot in a manner to provide a minimum distance of twenty (20) ft spacing between it and adjacent driveways. This spacing shall be measured between edge of driveways at the property line. If the development is a major site plan with frontage on an arterial roadway, the standards listed in the table under section 1.6.1.7 shall apply.~~

~~No more than one (1) driveway shall be permitted.~~

~~1.7.2. Multi-Family Residential with 10 (ten) parking spaces or more, Commercial and Industrial shall meet the following standards:~~

~~1.7.2.1. All driveways shall be designed to connect perpendicular to the street, where feasible. In no case shall the angle of intersection be less than 75 degrees or greater than 105 degrees.~~

~~1.7.2.2. Minimum driveway width (one-way): Any site with driveway access to a street shall have a minimum 12-foot wide driveway (at the property line) for one-way ingress or egress. Driveways shall permit traffic to enter and leave the site simultaneously without conflict in aisles, parking or maneuvering areas. If parking is adjacent to the property line, then the appropriate aisle width shall apply. Both the entrance and exit drives shall be identified with appropriate signage.~~

~~1.7.2.3. Minimum driveway width (two-way): Any site with driveway access to a street shall have a minimum width of 20 feet for two-way ingress and egress, with a preferred width of 24 feet.~~

~~1.7.2.4. Maximum driveway width (two-way): The maximum width of a driveway will be based upon site conditions or vehicle characteristics that warrant a wider access (e.g., dedicated turn lanes at exits) and will require approval of the reviewing authority. Maximum widths shall not exceed the following, although confirmation of exact capacity requirements will be necessary:~~

- ~~Commercial – 24 feet~~
- ~~Industrial – 30 feet~~

~~1.7.2.5. Curbing of driveways: Where driveways enter on an existing street, the full radius of the driveway shall be designed and constructed of granite curb. The radius size shall be based upon information in the following tables. The radii listed below are recommended standards. A vehicle template analysis may be~~

submitted for review as an alternative to the use of the following table:

	Passenger-Car	Departure Lane			
		12 foot or less	12 to 14 feet	14 to 16 feet	16 to 18 feet
Receiving Lane	12 foot or less	15 ft.	15 ft.	15 ft.	15 ft.
	12 to 14 foot	15 ft.	15 ft.	15 ft.	15 ft.
	14 to 16 foot	15 ft.	15 ft.	15 ft.	15 ft.
	SU-30 Truck				
	12 foot or less	35 ft.	30 ft.	30 ft.	30 ft.
	12 to 14 foot	30 ft.	30 ft.	30 ft.	30 ft.
	14 to 16 foot	30 ft.	30 ft.	30 ft.	30 ft.
	WB-50 Truck				
	12 foot or less	45 ft.	45 ft.	45 ft.	45 ft.
	12 to 14 foot	35 ft.	35 ft.	35 ft.	35 ft.
	14 to 16 foot	25 ft.	25 ft.	25 ft.	25 ft.
	WB-62 Truck				
	12 foot or less	85 ft.	85 ft.	85 ft.	85 ft.
	12 to 14 foot	85 ft.	85 ft.	85 ft.	85 ft.
	14 to 16 foot	65 ft.	65 ft.	65 ft.	65 ft.

~~1.7.2.6. Maneuvering: The area within the site to which a driveway provides access shall be of sufficient size to allow all necessary functions for loading, unloading and parking maneuvers to be carried out on the site and completely off the street right-of-way. Backing out of vehicles from the driveway is prohibited. The design vehicle used in the analysis shall be the predominant vehicle type and shall be approved by the reviewing authority.~~

~~1.7.2.7. Location and spacing of driveways: The location and spacing of driveways shall be determined as follows:~~

- ~~• The angle of intersection between an access driveway and the right-of-way shall be 90 degrees where feasible and shall in no case be less than 75 degrees or greater than 105 degrees.~~
- ~~• Along local streets, access driveways to corner lots shall be located a minimum of thirty-five (35) feet from the intersection of the projection of right-of-way lines to the center line of the driveway, except as provided hereinafter.~~

- ~~Along arterial and collector streets, access driveways to corner lots shall be located a minimum of one hundred fifty (150) feet from the intersection of the projection of right of way lines to the center line of the driveway except as provided for hereinafter.~~
- ~~Along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria below:~~

Speed Limit (mph)	Minimum Separation* (feet)
25 or less	100
30	125
35	150
40	185
45	230

~~*Spacing of driveways shall be measured from center of driveway to center of driveway and shall include driveways on both sides of the street.~~

- ~~1.7.2.8. Number of driveways: No more than two (2) driveways shall be permitted for ingress and egress purposes to any commercial, industrial or residential (with 10 or more parking spaces) site. A joint access driveway shall be considered as adequate access for any adjacent sites and shall be encouraged. An easement for joint access shall be required.~~

- ~~1.7.2.9. Off-street vehicular circulation: An off-street facility shall have full internal vehicular circulation and storage. Vehicle circulation shall be completely contained within the facility, and vehicles located within one portion of the facility shall have access to all other portions without using the adjacent street system.~~

- ~~1.5.27.3. Auxiliary Lanes Serving Driveways: A left-turn lane and/or right-turn lane with appropriate storage and transition may be considered where engineering analysis indicates a need. The need for auxiliary lanes shall be considered within the context of the impacts to sidewalks, bikeways, transit stops, on-street parking, and traffic safety. All new auxiliary lanes are subject to the approval of the Department of Public Works.~~

~~Ingress left-turn lanes requirements: A left-turn lane with appropriate storage and transition shall be provided where a submitted engineering analysis indicates a need.~~

~~Ingress right-turn lanes: For any site, a right-turn lane with appropriate storage and transition shall be provided where a submitted engineering analysis indicates a need.~~

1.68. SIDEWALKS AND ~~DRIVEWAY APRONS~~ CURB RAMPS

1.8.1. Driveway Aprons: Any driveway, or section thereof, located within any public street right-of-way shall be designed and built with a permanent, erosion resistant, surface, such as hot mix asphalt pavement, concrete, or brick, as illustrated in Figures I-10 through I-12. At a minimum, all driveway aprons shall be constructed of the designated sidewalk material within the pedestrian access route.

Commented [ND11]: MOVED TO 1.7

1.6.18-2. Sidewalk Construction and Materials: Sidewalks shall be brick, concrete or hot mix asphalt. The City Sidewalk Materials Policy (Appendix ~~-1 of this manual~~) shall be consulted to determine the appropriate type of sidewalk and driveway construction to use on various streets and in different areas of the City. Within the city's historic districts, only brick shall be used. Sidewalk and driveway construction details are illustrated in Figures I-10 and I-11 through I-15. All new concrete sidewalks ~~and driveway aprons~~ which abut existing concrete sidewalks must be doweled in prior to pouring. All new brick sidewalks shall be constructed with bricks running perpendicular to the path of pedestrian travel, including through driveway crossings.

1.68.32. Sidewalk ~~Design for Accessibility~~: All sidewalks shall meet any minimum standards set forth by current Americans for Disabilities Act (ADA) and Public Right-of-Way Accessibility Guidelines (PROWAG) guidance. There are no exceptions unless technical infeasibilities are identified, documented, and approved by the Department of Public Works. In case of conflict, these standards shall supersede this manual.

Commented [TE12]: Americans with Disabilities

1.6.2.1 Sidewalk width: The minimum sidewalk clear width shall be five (5) feet, ~~including the pedestrian access route through driveway aprons.~~ Where obstructions, such as utility poles, are located in sidewalks, a minimum clear and direct pedestrian access route path width of five (5) feet shall be provided between the obstruction and one edge of the sidewalk. Wider sidewalks may be required in locations where heavy pedestrian traffic is expected, based on the site context. New sidewalks shall be at least as wide within the right-of-way as the sidewalk(s) along the adjacent properties, required between the obstruction and one edge of the sidewalk.

1.6.2.2 Level changes: The maximum allowable vertical level change at any point is ¼-inch. A level change of ¼-inch to ½-inch shall be formed with a beveled slope no steeper than 26.6 degrees (2:1). Level changes greater than ½-inch shall be designed as ramps.

1.6.2.3 Running slope: Sidewalks shall be designed with a running slope no greater than the adjacent street slope.

1.6.3.4 Cross-slope: Sidewalks, including pedestrian access routes across driveways, shall be constructed ~~designed~~ with a minimum cross slope of 1% and a maximum cross-slope of 2% post-construction, ~~including the pedestrian access route through driveway aprons.~~ Finished cross-slopes of greater than 2% shall not be acceptable. Designed cross-slopes of 1.5% are encouraged. Cross-slopes shall be consistent across the width of the sidewalk.

~~Accessible sidewalk ramps shall be required on all projects involving construction of new streets or new sidewalks and all projects involving major alteration, including repaving, of existing streets and sidewalks.~~

- 1.6.38-4. Sidewalk Ramp Design Curb ramps: ADA-compliant curb ramps are required on all projects involving construction of new streets or new sidewalks, and on all projects involving alterations to the abutting street, including repaving of existing streets and sidewalks.

Curb ramps shall be designed to prevent ponding of water at the base of the ramp. Ramp designs and details will indicate how positive drainage away from the landing in the vicinity of curb ramps will be achieved.

1.6.3.1. Applicability: ADA-compliant curb ramps are required at all marked and unmarked crossing locations. ~~Ramps shall not be provided only where there is no crossing present due to safety concerns or a lack of pedestrian facilities on the opposite corner.~~

1.6.3.2 Orientation: Curb ramps shall be designed with the direction of travel on the ramp perpendicular to the curb line and parallel to the crosswalk, where feasible. Where existing conditions, such as narrow right-of-way width or utility constraints, preclude such layouts, parallel ramps, where the entire sidewalk ramps down, are acceptable. Diagonal ramps are not desirable, but may be approved by DPW on a case-by-case basis. Ramp design standards are provided in Figure I-6 and the subsequent set of details.

1.6.3.3. ~~Detectable w~~Detectable warning panels: All pedestrian crosswalks shall include truncated dome warning panels as shown in Figure I-7. Any curb ramp that is not intended to be used by pedestrians (e.g. ramps serving bikeways) shall not include warning panels. Warning panels shall also be provided where a crossing is present without a curb ramp (for example, where pedestrian facilities are at the same grade as the street, within a median refuge, etc.). All warning panels shall be uncoated cast iron, as detailed in Figure I-7.

Commented [TE13]: Do we want to include something about panels at driveways? Panels are not required at private driveways unless....

1.6.4 Shared use paths: Shared use paths and other pedestrian access routes in the right-of-way shall conform to the same ADA requirements as sidewalks discussed herein. The appropriate material for shared use paths may differ from the material prescribed in the Sidewalk Material Policy. The appropriate material shall be determined by the review authority if not already documented in a transportation plan or master plan. Shared use paths shall be 10 feet in width or greater to allow for two-way traffic and passing.

1.6.5 Curb extensions: Curb extensions (also known as bump-outs, bulb-outs, or neckdowns) describe any localized narrowing of the roadway, typically at pedestrian crosswalk locations. The installation of any curb extension is subject to the approval of the Department of Public Works.

1.6.5.1. Applicability: Curb extensions may be considered where one or more of the following conditions are met:

- There is a documented speeding issue confirmed by a speed study;
- Curb extensions are necessary to construct one or more ADA-compliant curb ramps at an existing or proposed crosswalk;
- At signalized intersections, where reducing the pedestrian crossing time improves signal timing;
- At High Crash Locations, particularly where there is a history of crashes involving pedestrians and/or crashes involving right-turning vehicles; or
- Where they are prescribed in a master plan or transportation plan.

1.6.5.2. Curb extension design: Curb extensions, where permitted, shall be constructed to achieve the applicable goal(s) without disrupting the functionality of the roadway or intersection. Curb extensions:

- Shall not impede necessary turning movements for trucks or emergency vehicles;
- Shall not negatively impact drainage without adequate mitigation;
- Shall not impede upon, or narrow to an unacceptable degree, the adjacent travel or bicycle lanes; and
- Shall be constructed with radial curb (typically 10-foot radius or greater)

Commented [TE14]: I know curb extensions have been a sensitive topic. But it seems like we are missing an important criteria, at a uncontrolled location where you want to shorten the crossing distance, improve visibility.

Commented [TE15]: This will be met at every signal. It will always short ped times and improve conditions.

Commented [TE16]: I don't think this should be HCL driven. Many ped crash locations are not HCL's

at transition points to assist with drainage and maintenance.

Curb extensions that encompass on-street parallel parking lanes should generally not exceed six (6) feet in width.

- 1.6.6. Non-compliance: ADA-compliance is required both within and outside of the public right-of-way. Any construction within the public right-of-way that is not built to ADA-compliance shall be reconstructed at the Applicant's expense.

Where strict compliance with ADA is technically infeasible in an alteration of an existing condition, the alteration must be made to the maximum extent technically feasible. The extent to which compliance is technically infeasible shall be documented, and an acceptable design shall be approved by DPW. This process should occur during the design phase.

Ramps, flares, landings and approaches shall be designed as follows:

1. Maximum ramp running slope shall be 8.33% for new construction. In retrofit situations, ramp slope may be between 8.33% to 10% for a rise of up to six (6) inches and 10% to 12.5% for a rise of up to three (3) inches. Ramp cross slope shall be 2% or less.
2. Minimum ramp width shall be four (4) feet in new construction and three (3) feet for retrofits.
3. Sidewalk ramps adjacent to all public streets shall be constructed with truncated dome detectable warning surface panels. The detectable warning panel shall be located so that the edge nearest the curb line is 6 inches minimum or 8 inches maximum from the curb line. The panel shall be oriented to the direction of travel as identified by the point of egress. The panel shall extend 24 inches minimum up the ramp in the direction of travel. The panel shall extend the full width of the ramp.
4. Detectable warning panels shall be uncoated cast iron, following manufacturer's instruction for installation and meeting Portland's specifications for Sidewalk Ramp Detectable Warning Panel, Figure 1-7.
5. Reserved
6. Flares shall be designed with a maximum slope of 10% provided that a landing area at least 48 inches x 48 inches is provided at the top of the ramp. If the landing area is less than 48 inches x 48 inches, the maximum slope of the flares shall be 8.33%.
7. Landings shall be at least 48 inches by 48 inches for new construction and

~~at least 36 inches x 36 inches for retrofits. Landings shall be designed with slopes in both directions that are no greater than 2%.~~

- ~~8. Approaches shall be designed with a cross slope no greater than 2% and a running slope that does not exceed the slope requirements for sidewalk ramps.~~

~~1.8.5. Sidewalk Ramp Location and Orientation:~~

~~Sidewalk ramps shall be designed as perpendicular ramps with the direction of travel on the ramp perpendicular to the curb line and parallel to the crosswalk. Where existing conditions (such as narrow right of way width) preclude such layouts, parallel ramps or diagonal ramps may be approved.~~

~~Diagonal ramps are located in the middle of a section of circular curb at a corner, where the ramp is at an angle of about 45 degrees to one or two marked crosswalks. In such cases, the crosswalks shall be laid out to encompass a 48 inch by 48 inch landing and wheelchair maneuvering area at the base of the ramp in the street.~~

1.7 DRIVEWAY APRONS

Any driveway, or section thereof, located within any public street right-of-way shall be designed and built according to the following specifications, ~~with a permanent, erosion-resistant, surface, such as hot mix asphalt pavement, concrete, or brick, as illustrated in Figures I-10 through I-12. At a minimum, all driveway aprons shall be constructed of the designated sidewalk material within the pedestrian access route.~~

1.7.1. Construction and materials: The portion of the driveway within the public right-of-way within the pedestrian access route shall be comprised of the same material as the abutting sidewalk as identified in the Sidewalk Material Policy (Appendix 1) and constructed according to Figures I-10 through I-12.

1.7.2. Pedestrian access route: Where a driveway crosses a sidewalk, shared use path, or other pedestrian access route, a pedestrian access route shall be constructed across the driveway apron with a maximum cross-slope of 2% (1.5% preferred). The pedestrian access route shall be designed and constructed to meet the elevation of the adjacent sidewalk or shared use pathway to the extent feasible.

The pedestrian access route shall be constructed at the same width as the adjacent sidewalk or shared use path to the extent feasible. For pedestrian access routes connecting to adjacent sidewalks, the minimum width is 5'.

1.7.3. Driveway apron slope: The driveway apron shall ramp up to the grade of the sidewalk, where feasible. The portion of the driveway between the roadway and the pedestrian access route shall be designed to a maximum slope of 15%, unless otherwise approved by the Department of Public Works. This slope should be minimized to the extent possible while maintaining ADA-compliance and continuity of travel along the pedestrian access route.

1.7.4 Driveway design: Where feasible, driveways shall be designed to keep the pedestrian access route at a consistent elevation for continuity of travel. The portion of the driveway between the roadway and pedestrian access route shall be sloped to provide the full transition between the roadway and sidewalk elevations where feasible. Along roadways where the sidewalk width plus esplanade width is less than seven (7) feet, the sidewalk may be transitioned using ADA-compliant ramps in order to create a suitable driveway crossing.

1.9. Reserved

1.810. ROADWAY CONSTRUCTION, SURFACE, AND AGGREGATES

1.810.1. All roadways shall be constructed in accordance with Chapter 25 of the City of Portland Code of Ordinances and the MaineDOT Standard Specifications unless otherwise indicated herein or otherwise directed in writing by the Department of Public Works.

1.8.2 Aggregates used in concrete mixes and in the construction of streets, sidewalks and aprons shall meet the requirements in SECTION 703 - AGGREGATES of the *State of Maine Department of Transportation Standard Specifications* ~~Revision of December 2002~~ with the following additions and modifications:

703.02 Coarse Aggregate for Concrete: Designated Aggregate Size

Sieve Size	Percent Passing Sieve				
	2 in.	1½ in.	1 in.	¾ in.	½ in.
2 in.	95-100	100	-	-	-
1-1/2 in.	-	95-100	100	-	-
1 in.	50-70	-	90-100	100	-
3/4 in.	-	50-70	-	90-100	100
1/2 in.	15-30	-	25-60	-	90-100
3/8 in.	-	10-30	-	20-55	-

No. 4	0-5	0-5	0-10	0-10	0-15
F.M. (+0.20)	7.45	7.20	6.95	6.70	6.10

1. ~~8.310-2~~. Aggregate used in concrete shall not exceed the following maximum designated sizes:

- 2 inches for mass concrete
- 1-1/2 inch for piles, pile caps, footings, foundation mats, and walls 8 inches or more thick
- 3/4 inch for slabs, beams, and girders.
- 1/2 inch for fireproofing on steel columns and beams
- 1 inch for all other concrete

1. ~~8.410-3~~. 703.06 (a) Aggregate Base:

Aggregate base - crushed, type "B" shall not contain particles of rock which will not pass a two inch (2") square mesh sieve, and shall conform to the type "B" aggregate, as listed in the subsection of the Standard Specifications.

"Crushed" shall be defined as consisting of rock particles with at least 50 per cent of the portion retained on a 1/4 inch square mesh sieve, having a minimum of 2 fracture faces.

1. ~~8.510-4~~. 703.06 (b) Aggregate Subbase:

Sand subbase shall not contain particles of rock which will not pass a one inch (1") square mesh sieve, and shall conform to the type "F" Aggregate, as listed in this subsection of the Standard Specifications.

Gravel subbase shall not contain particles of rock which will not pass a three inch (3") square mesh sieve, and shall conform to type "D" Aggregate, as listed in this subsection of the Standard Specifications.

1. ~~8.610-5~~. 703.18 Common Borrow:

Common borrow shall not contain any particle of bituminous material.

1. ~~8.710-6~~. 703.19 Granular Borrow:

Granular borrow shall contain no particles which will not pass a three inch (3") square mesh sieve.

1. ~~8.910-7~~. 703.20 Gravel Borrow:

Gravel borrow shall not contain particles of rock which will not pass a three inch ("3") square mesh sieve.

1. ~~8.1010-8~~. 703.31 Crushed Stone for Pipe Bedding and Underdrain:

"Crushed Stone" shall be defined as rock of uniform quality and shall consist of clean, angular fragments of quarried rock, free from soft disintegrated pieces, vegetable matter, lumps or balls of clay, and other unsuitable substances.

Crushed stone used as a bedding material for pipe and underdrain shall be uniformly graded and shall meet the gradations listed in the tables below. The stone shall be free from vegetable matter, lumps or balls of clay, and other unsuitable substances.

Sieve Designation	Percentage by Weight Passing
3/4 – inch	100
3/8 – inch	20 - 55
No. 4	0 - 10

For pipe sizes 42 inches and larger

Sieve Designation (square mesh sieve)	Percentage by Weight Passing
1-1/4 – inch	100
3/8 – inch	20-55
No. 4	0-10

Minimum thicknesses for pavement structure materials

Street Classification	Minimum Materials Thicknesses (Inches)			
	Wearing Course Pavement	Base Course Pavement	Agg. Base Course	Agg. Subbase Course
Minor Residential	1 ½	2	3	15
Residential	1 ½	2	3	15
Collector	1 ½	2 ½	3	18
Commercial/Industrial	2	3	3	18

Minimum placement temperatures for hot mix asphalt pavement

Base Temp. ° f	Mat Thickness, Inches					
	½	¾	1	1 ½	2	3+
40 - 50*	--	--	--	--	285	275
50 - 60	--	310	300	295	280	270
60 - 70	310	300	290	285	275	265
70 - 80	300	290	285	280	270	265
80 - 90	290	280	275	270	265	260
90+	280	275	270	265	260	255

* Surface course pavement shall not be placed when the air or road base temperature is less than 50 degrees F.

1.911. STREETS ON ISLANDS IN CASCO BAY

Reserved.

1.12. PARKING STUDY

Parking studies shall be produced by a licensed transportation professional engineer.

Where a parking study is required, data shall be determined by values contained in the most up to date version of the Institute of Transportation Engineers (ITE) publication titled Parking Generation, or through local, regional or other pertinent national data. If local or regional data is to be used, the scope and methodology of the parking study shall be coordinated with the City Transportation Engineer.

Where a parking study is required, the applicant's engineer shall have a scoping meeting with the City Transportation Engineer or their designee to determine the need for and required scope of the study. The requirements for the study shall be based on standard transportation engineering practices.

Commented [ND17]: Moved to Section 17.

1.13. TRANSPORTATION DEMAND MANAGEMENT (TDM)

All TDM Plans shall include specific provisions for the following:

1.13.1. Transportation Narrative:

Every TDM plan shall describe how the project fits within the multimodal transportation system serving the district in which the development is located. The narrative should address the specifics of the use, occupants,

visitors, and location of the development and how it is anticipated to relate to its transportation context.

1.13.2. Identify a TDM Coordinator to administer the TDM plan:

Every TDM Plan needs to identify the plan administrator and establish the roles and responsibilities of the administrator.

1.13.3. Employee and Customer Survey:

The TDM plan shall develop and use an employee and/or customer survey format that:

- Is specifically designed to reflect the use mix within the development.
- Is electronically tabulated.
- Produces comparable data from year to year
- Allows for compilation of data from multiple employers by third party.
- Allows for data use by employees to foster car pooling and ride sharing.
- Identifies barriers to or best practices in public transit, bicycle, and pedestrian transportation.
- Can be conducted periodically (typically annually) and can be used to monitor program effectiveness and provide the basis for periodic plan adjustment (see monitoring section below).

1.13.4. Set Parking and Trip Reduction Target:

The TDM plan shall use ITE trip generation and parking demand projections as the basis to establish a projected transportation demand and/or impact of the development. Alternatively, project-specific parking and trip generation projections may be used in place of ITE standards, if estimated by a licensed professional engineer and approved by the City. A project specific demand analysis may be advantageous to projects that can demonstrate reduced parking demand and trip generation based on approved assumptions in their TDM and Site Plan.

The TDM plan must use the specific use, location, local alternative transportation opportunities, and initial survey results to establish an achievable percentage reduction in transportation demand for the project. The TDM plan will utilize the

stated parking and trip reduction targets as the basis for reduced infrastructure and contribution requirements for the Planning Board's evaluation.

1.13.5. Customize Parking and Trip Reduction Strategies:

Every TDM plan must be customized to reflect the specific mix of use proposed for the development. For example, A residential development will utilize a very different approach to reducing project generated parking and trips than an office building. Likewise, the administration of the TDM plan and the role of the TDM Coordinator must adequately respond to the scale of the development, the uses in the development, as well as the ownership framework and management of the facility.

1.13.6. Education:

The TDM plan shall, at a minimum include provisions for the following. All educational information and programs shall be readily accessible to all project occupants.

- Transit maps and schedules. These shall be posted and updated by the TDM Coordinator, as necessary.
- Access to Information concerning transportation providers and guaranteed ride home services such as: carpooling list serves and/or van pool providers.
- Internal information sharing such as posting a "Ride Board" or employee email list-serve to facilitate carpooling and to share the results of employee and customer surveys.
- Educational and promotional materials that describe and identify the advantages and cost saving opportunities of using alternative transportation, including specific incentives offered by the employer.
- Recognition of employees who reduce the traffic impact of the development through newsletter, email, bulletin board, or other announcements.
- Information on bicycling routes, parking infrastructure and locations and other amenities or incentives that may be available.

1.13.7. Monitoring:

All TDM plans must include provisions for monitoring program effectiveness over time to establish whether trip reduction targets are being met.

Responsibility: TDM Coordinators and/or plan administrators are responsible for

monitoring the efficacy of the TDM plan periodically over time and making adjustments to the plan needed to achieve trip reduction targets.

Methods: The methods and scheduling of monitoring shall be outlined in the TDM plan and shall follow accepted transportation engineering. Monitoring methods will typically involve use of the periodic survey combined with direct observation.

Reporting: TDM plan monitoring shall be compiled into a report that compares the results to trip reduction targets and parking demand projections. The monitoring results shall be provided to the Reviewing Authority according to the monitoring schedule established in the TDM plan.

1.13.8. Project Specific Standards:

Individual TDM Plans shall assess the following topics on a site-specific basis tailored to the transportation needs of the development.

1. Infrastructure:

On-site and off-site infrastructure improvements may be incorporated to achieve trip reduction targets and may include the following:

- **Public Transit Access:** The TDM plan shall identify how occupants and/or visitors will access public transit. Pedestrian links to bus routes and other transit links shall be identified and their usability assessed for sidewalk condition, ADA accessibility, street lighting, cross walk facilities, wayfinding, and general safety and attractiveness. The nearest sheltered public transit facility shall be identified. Deficiencies in the links to public transit that constitute barriers to its use shall be addressed in the TDM plan and in the site plan.
- **Bicycle Parking:** Minimum bicycle parking is a site plan requirement according to Article 14 of the Land Use Code. The TDM plan may incorporate additional bicycle parking, bicycle wayfinding, and/or covered parking to further encourage bicycle use.
- **On-site Shower and Locker Facilities:** Access to showers and locker facilities may be incorporated into the TDM Plan in order to encourage human powered transportation alternatives.
- **TDM Bulletin Board or Kiosk:** TDM plans shall identify to occupants where information and educational material will be provided within the development a visible and convenient facility such as a transportation bulletin board and/or kiosk. In multi-tenanted facilities, transportation

information shall be provided in the lobby of the structure or other such location that is accessible and frequented by a significant majority of occupants and visitors to the facility. The TDM coordinator shall be responsible for keeping all material current and available, as needed.

2. Incentives: Incentives available to users and/or occupants of the development may be incorporated to achieve trip reduction targets and may include the following:

- Parking “Cash Out”: TDM plans may include “parking cash out” incentives where employees have the choice of receiving monetary payments in lieu of provided parking. The efficacy of these programs will need to be carefully assessed and the method of monitoring must be described in the TDM plan.
- Public Transit Passes/Van Pool vouchers: Free or reduced price bus passes or van pool vouchers may be used as an incentive in the TDM plan. The use of transit options should be incorporated into the employee/customer survey and incorporated into the plan monitoring program. Transit payment options may be combined with parking cash out incentives, where appropriate.
- Preferred parking for car pool: Car pooling employees may be provided with more convenient and attractive parking, if available. If this option is incorporated into the TDM plan, the location of preferred parking shall be identified on the site plan and signed accordingly.
- Car sharing: Residential developments may incorporate shared car services or jointly owned vehicles into the TDM plan. Commercial development TDM plans may identify use of a shared vehicle for use by employees for either commercial or personal trips through the work day as a means to encourage alternative commuting to work.
- Telecommuting, flex time, and other flexible work scheduling mechanisms that promote fewer employee trips to work or promote alternative transportation travel.

*Other incentives infrastructure improvements and/or methods as may also be appropriate to the development.

Commented [ND18]: Moved to Section 17

1.1014. PARKING LOT AND PARKING SPACE DESIGN

~~Refer to Article 19 of the City Land Use Code for zoning ordinance requirements concerning the number of parking spaces required for off-street parking.~~

1.104.1. Parking lots, except for temporary lots to be used for less than one year, shall be constructed of a permanent and durable hard surface that is not subject to ponding or erosion.

1.104.2. Parking spaces shall meet the following dimensional requirements:

- Standard parking space: 9 feet wide by 18 feet long, except that low turnover parking spaces, such as those used by residents or employees, may be designed with a width of 8'-6" and considered a standard parking space.
- Compact parking space: 8 feet wide by 15 feet long.
- Motorcycle/motorized scooter parking space: 4 feet wide by 8 feet long.

Obstructions within parking areas, including columns and other permanent fixtures, shall not be located within the dimensions of a parking space. Where these obstructions are present, parking shall be striped and dimensioned to omit these obstructions. Such obstructions should not significantly impact vehicle maneuverability, visibility, ability to open doors, etc.

All spaces provided shall be safely accessible. Substandard and specialty spaces that are open to the general public shall be labeled as such using signage or pavement markings to inform users.

1.10.2.1. Compact spaces: Any parking lot with 10 or fewer spaces shall contain standard sized parking spaces. Five or more spaces may contain a mix of standard and compact spaces. Up to 20% of parking spaces in a parking area may be compact. Compact parking spaces should be limited in high-turnover parking areas or locations where the typical vehicle is likely to be larger than a typical passenger vehicle. Vehicle turning analysis may be required for review by the Department of Public Works to ensure that spaces function as designed.

1.10.2.2. Accessible Parking: All parking areas shall provide accessible parking per ADA and the Maine Fair Housing Act. ADA standards for number of spaces, dimensions, buffers, cross-slopes, materials, pedestrian accessibility, and other requirements shall apply with no exceptions. Accessible spaces shall be considered "standard" parking spaces for the purposes of calculating the allowable number of compact spaces.

1.14.3. Parking lot layout shall conform to Figures I-28 thru I-32.

1.14.4. Where off-street parking for more than six vehicles is required or provided, the

Commented [TE19]: I know we don't say paved to allow for options. But wondering if this can be modified to say parking lot shall be paved so parking spaces and circulation aisles can be delineated. Alternatives.....

Commented [TE20]: Low turnover?

~~following construction requirements shall apply:~~

- ~~• Appropriate driveways from streets or alleys, as well as maneuvering areas, shall be provided. Location and width of approaches over public sidewalks shall be approved by the traffic engineer.~~
- ~~• The surface of driveways, maneuvering areas and parking areas shall be uniformly graded with a subgrade consisting of gravel or equivalent materials at least six inches in depth, well compacted, and with a wearing surface equivalent in quantities of compaction and durability to fine gravel.~~
- ~~• A system of surface drainage shall be provided in such a way that the waste run-off shall not run over or across any public sidewalk or street.~~
- ~~• Where artificial lighting is provided, it shall be shaded or screened so that no light source shall be visible from outside the area and its access driveways.~~

1.104.35. Vehicular access shall be provided by one or more aisles. The minimum two-way drive aisle width is 24 feet for standard, right-angle parking, and is otherwise dependent on parking space orientation, as illustrated in Figures I-16A. Minimum widths of aisles are illustrated in Figures I-28 thru I-31. Accessible parking spaces shall be served by at least one aisle of standard width or greater.

1.118. **MOTORCYCLE/-MOTORIZED SCOOTER/-MOPED PARKING (ON-STREET):**

To distinguish motorcycle/motorized scooter/moped parking spaces from standard parking spaces the spaces shall be painted and delineated with signage. These painted spaces shall be angled and shall be four (4) feet wide by eight (8) feet long. The dimensions for on-street motorcycle/motorized scooter/moped parking are outlined in Figure I-31. On-street motorcycle/motorized scooter/~~and~~ moped parking may also be located where standard vehicle parking would be prohibited because of sight restrictions, such as, adjacent to a crosswalk or an approach to a traffic control device. Motorcycles/motorized scooter/mopeds do not ~~have~~ create the same sight impediment as a standard vehicle.

1.152. **BICYCLE PARKING**

~~Refer to Article 19 of the City Land Use Code for zoning ordinance requirements concerning the number of bicycle parking spaces required.~~

1.12.1 Bicycle parking shall:

- Provide secure, durable racks that maintain bicycles in an upright position and to which bicycles can be affixed with customary lock and cable mechanisms. Fence-type ("wheel bender") racks designed to secure the front wheel only and wave racks are prohibited from counting

toward bicycle parking requirements.

- Be installed on a hard surface that is suitably sized and provides sufficient clearance from obstacles.
- Be separated from car parking by a physical barrier such as curbing, wheel stops, parking bollards or similar features.
- Be adequately illuminated where nighttime use is anticipated.
- Be provided under covered areas and/or in secure storage lockers or rooms, if intended for long-term use.
- Be provided within the public right-of-way or publicly accessible for uses that expect visitation, customers or short-term usage.

~~1.15.1. Bicycle parking intended for long-term use (residential or full-time employee parking) shall be provided under covered areas and/or in secure storage lockers.~~

1.125.2. Placement of off-street bicycle parking racks shall conform to the Bicycle Parking Rack Placement Criteria (drawn from the *Bicycle Facility Design Guide of the District Department of Transportation, 2006*) as illustrated in Figure I-33.

1.125.3. ~~For c~~Commercial ~~or i~~-Industrial uses ~~that~~ (requiring more than ten (10) bicycle parking spaces):

- A minimum of ten percent (10%) of required bicycle parking shall be provided within fifty (50) feet of the main egress-entry point of the structure, or shall be no further from such entry than the nearest five (5) non-handicapped parking spaces.
- Where there is more than one structure on a site, or where a structure has more than one main entrance, the parking shall be distributed to adequately serve all structures or main entrances.

1.125.4. Directional Signage: If bicycle parking is not directly visible from the public right-of-way, directional signage shall be provided indicating the availability and location of bicycle parking facilities.

1.125.5. Approved Bicycle Racks:

1.12.5.1. Design: Bicycle racks that are required to meet site plan requirements shall:

- Provide multiple points of contact between the rack and the bicycle;
- Allow bicycles to be locked without the need to lift the bicycle into the rack; and
- Be placed in such a way as to allow the intended number of bikes to be securely locked.

1.12.5.2 Approved Racks by Location:

- Private property: A variety of commercially available racks are acceptable for installation on private property, including but not limited to those catalogue listings identified herein (Figures I-34 and I-35).
- In the Public Right-of-Way: Where site conditions cannot reasonably accommodate bicycle parking on private property, it may be located within a public sidewalk area either adjacent to or within reasonable walking distance of the site, if such areas are available that meet the Bicycle Parking Rack Placement Criteria of this chapter (*drawn from the Bicycle Facility Design Guide of the District Department of Transportation, 2006*) as illustrated in—see Figure I-33. Bicycle racks within the public right-of-way shall be placed to allow for the safe storage of bicycles while limiting encroachment onto adjacent sidewalks. If no ~~such~~ location within the right-of-way is available, a financial contribution commensurate with the cost for purchase and installation of the required number of bicycle racks shall be made to a City infrastructure account.

The following approved brands, installed according to company specifications, shall be permitted in the public right-of-way. Equivalent bicycle racks by other manufacturers are acceptable upon prior approval by the reviewing authority.

- DERO 'Downtown Rack' Inverted U-Rack (Figure I-35)
- DERO 'Bike Hitch' (Figure I-34)
- Old Port District, including Commercial Street: DERO Bike Hitch only (Figure I-34)

Bicycle racks in the public right-of-way shall become the property of the City of Portland.

Bicycle racks in the public right-of-way shall match the designated street furniture color for that location as described in the Municipal Street Lighting Standards in this manual. Where there is no designated street furniture color, bicycle racks in the public right-of-way shall be black (manufacturer's specification).

1.163. BICYCLE ROUTES AND LANES

The City has developed a Bike Route Network Map (~~Figure I-35~~) to show present and proposed bike routes on City streets. These routes are typically accomplished by providing ~~either~~ dedicated bicycle lanes, shared use paths, or shared lanes—~~“Share the Road” methodology~~. Positive identification of the lanes shall be provided by pavement markings, bike lane symbols, and or signage. The following standards shall be applied to the installation of bike lanes on City streets:

1.13.1. Design: The design of any new or modified bicycle facility shall be reviewed and approved by the Department of Public Works prior to application and shall be consistent with the following design standards:

- Vehicular travel lanes and bicycle lanes shall be separated by a minimum six (6) inch solid white painted edge line adjacent to the travel lane. At intersections the white edge line shall be a dotted-dashed line (two (2) foot painted length by four (4) foot opening) across the intersection and for 50' to 100' in advance of the intersection, as appropriate. Where there are the potential for right turning vehicle conflicts with through bicycle movements at intersections, green paint within the bike lane is recommended and may be required.
- Bike lanes shall have a minimum width of five (5) feet. Six (6) feet is preferred for bicycle lanes adjacent to curbed street sections. Where sufficient ~~shoulder-street width is provided~~ exists, a second edge line shall be painted off the face of the curb at a painted buffer of one (1) foot or more ~~may be provided between the bicycle lane and vehicle travel lanes or two (2) feet. This edge line shall not extend across intersections~~. Where a bicycle lane is adjacent to on-street parking with moderate to high utilization and/or turnover rates of parking, this buffer may be should be considered to be placed between the bicycle lane and parking lane. The location of the buffer will be determined in consultation with the Department of Public Works. Where a buffer of one foot or greater is provided, the width of the bicycle lane may be reduced to four (4) feet, if necessary, with approval from the Department of Public Works. Design shall take into account the location of potential obstructions, such as catch basins. See Figure I-36
- Where the minimum or recommended width for bicycle lanes is not immediately available, reallocation of general travel lane widths or the number and configuration of lanes should be considered, as appropriate, in consultation with the Department of Public Works
- On-street bicycle lanes and associated buffers shall not exceed eight (8) feet in total width unless vertical delineation is provided in the buffer area.

Commented [ND21]: Edited by BH

Commented [ND22]: Edited by BH

Commented [ND23]: Added to address Maggie Stanley's comments.

Commented [ND24]: Edited by BH.

Applicability and materials of vertical delineation shall be determined by the Department of Public Works.

- Standard bike lanes and all other on-street bicycle facilities such as separated bike lanes shall be designed in accordance with the most recent versions of nationally recognized design guides such as the NACTO Urban Bikeway Design Guide, the NACTO Urban Street Design Guide and the FHWA Separated Bike Lane Planning and Design Guide.
- Shared use paths shall be designed to facilitate two-way traffic by users of multiple, nonmotorized modes. In general, shared use paths shall be ten (10) feet or greater in width, and free of any obstructions including a 2' clear zone on each side of the pathway. Refer to the AASHTO Guide for the Development of Bicycle Facilities for shared use path design considerations.
- When bike lanes are provided on streets with on-street parking, the bike lane shall be a minimum of six (6) feet wide delineated by edge lines on either side of the bike lane. See Figure I-37.

Commented [ND25]: New to address comments re parking-separated bike lanes.

Commented [ND26]: New from BH.

1.13.2. Bike Network Considerations: Bicycle facilities shall be designed within the context of the city-wide bicycle network.

- Bicycle lanes shall be marked with appropriate pavement markings such as longitudinal lines and stenciled symbols, as illustrated in; see Figure I-2138 for two examples.
- On bicycle routes, or other roads with considerable bicycle traffic and insufficient roadway width to provide a bicycle lane, shared lane markings ("sharrows") may be used. Where used, sharrows shall be placed in the center of the travel lane(s) serving the bike route(s) or where bicyclists are expected.
- On two-way roadways with excess roadway width for one bicycle lane, but not two, installation of a single bicycle lane should be considered. The single bicycle lane should be placed in the uphill direction, if located on a hill. Otherwise, if parking is provided on only one side of the roadway, bicycle lane placement should be prioritized on the side of the street with no parking. Where possible, streets with bicycle lanes in only one direction should be paired with another lane on an adjacent parallel street to achieve bicycle mobility in both directions, if possible.
- Bike routes shall be identified by appropriate signage as found in the FHWA 'Manual of Uniform Traffic Control Devices,' as illustrated in. See Figure I-2138 for examples.

Commented [ND27]: New from BH.

1.174. ELECTRIC VEHICLE INFRASTRUCTURE

New structured and surface parking lots of five or more spaces shall include energized electrical outlets or installed chargers capable of providing Level 2 EV charging or higher to 20% of parking spaces (rounded down to the nearest whole number). Remaining spaces must be served by sufficient conduit, wiring, and electrical service to allow for future installation of electric vehicle supply equipment.

1.18. MOTORCYCLE / MOPED PARKING (ON-STREET):

To distinguish motorcycle/moped parking spaces from standard parking spaces the spaces shall be painted and delineated with signage. These painted spaces shall be angled and shall be four (4) feet wide by eight (8) feet long. The dimensions for on-street motorcycle/moped parking are outlined in Figure I-31. On-street motorcycle and moped parking may also be located where standard vehicle parking would be prohibited because of sight restrictions, such as, adjacent to a crosswalk or an approach to a traffic control device. Motorcycles/mopeds do not have the same sight impediment as a standard vehicle.

Commented [ND28]: Moved to 1.11

1.195. TRAFFIC CONTROL DEVICES SIGNALS

All intersections of two or more roadways shall be controlled by one of the traffic control methods listed herein. All traffic control shall be selected and installed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

1.15.1. Traffic signals. All new traffic signals are subject to the approval of the Department of Public Works. Proposed traffic signals are required to meet at least one traffic signal warrant set by the MUTCD. Signals justified using Warrant 3 (Peak Hour Volume), Warrant 7 (Crash Experience), or Warrant 8 (Roadway Network) without meeting at least one other warrant may require additional study. Development projects that trigger, or further exceed, one or more signal warrants at one or more existing or proposed intersections or driveways may be required to install a traffic signal at those locations.

New or modified traffic signals also require the submission of a traffic signal plan, including locations of all equipment, underground utilities, a phasing and timing plans, and a specific list of all traffic signal hardware. ~~For new or modified traffic signal installations, a new plan~~ shall be submitted to the Department of Public Works for review and approval prior to installation. ~~reviewing authority for review and approval before installation can proceed.~~

New traffic signal proposals are subject to review by MaineDOT, as appropriate. All city, state, and federal guidelines with regard to installation,

activation, and monitoring shall apply.

Existing traffic signals that do not meet MUTCD signal warrants may be removed if they present operational or safety issues. All removals of existing traffic signals are subject to the approval of the Department of Public Works.

Commented [TE29]: There is a formal process for signal removal. Should that be noted?

The City of Portland's traffic signal specifications can be found in the City of Portland Traffic Signal Policy and Guidance Manual.

1.15.2 Stop Control. Stop signs shall be installed in accordance with MUTCD. Stop signs shall be accompanied by a stop line 12" in width.

Stop control shall not be used for speed control. Stop control should generally not be used on intersection approaches with multiple travel lanes. Stop control shall not be used for intersections with five (5) or more approaches. Such intersections shall be signalized (if warranted), equipped with a roundabout, or otherwise realigned or regulated so that the number of approaches is reduced to four (4) or fewer.

1.15.3. Roundabouts: Where sufficient right-of-way is available, circular intersections (i.e. roundabouts or traffic circles) should be considered. Such intersections may provide operational and safety benefits compared to signalized or stop-controlled intersections. Where selected as the appropriate traffic control measure, roundabouts shall be designed in accordance with the MUTCD Chapter 3C, with signage according to MUTCD Section 2B.07. Neighborhood traffic circles may be considered at stop-controlled intersections as a traffic calming measure. All such treatments are subject to the approval of the Department of Public Works.

1.15.4. Yield Control: Yield control should generally only be implemented in the following scenarios:

- At certain channelized turning lanes separated from adjacent travel lanes by an island (even if the adjacent lanes are controlled by a stop sign or signal);
- At the entering roadway for a merging movement, including at a roundabout;
- or
- Where engineering judgment determines that yield control is appropriate, subject to the approval of the Department of Public Works.

~~Listed below are the traffic signal items required for traffic signal installations. These items or an approved equivalent shall be provided.~~

~~1.19.1. Controller Equipment:~~

- ~~• Controllers shall be compatible with existing Naztec Street Wise ATMS~~

Software

- ▲ ~~Traffic control cabinets shall be Naztec Model M34 or P44 TS2 Type 1 Series only~~
- ▲ ~~Secondary traffic controllers shall be Naztec Model 980 TS2 Type 1 Series only~~
- ▲ ~~Master controllers shall be Naztec Model 981 Series only~~
- ▲ ~~Malfunction management units shall be Naztec Model MMU-516E only~~

1.19.2. Video Detection Equipment:

- ▲ ~~Video detection units shall be Traficon Model VIP3.1 & VIP3.2 Series only~~
- ▲ ~~Video detection cameras shall be Traficon approved models only~~

1.19.3. Signal Equipment:

- ▲ ~~Signal housings shall be McCain Model MTSTA or MTSTP Series only~~
- ▲ ~~LED modules for vehicle indications shall be GELcore Model DR6 Series only~~
- ▲ ~~LED modules for pedestrian indications shall be GELcore Model PS7 Series only~~
- ▲ ~~Accessible Pedestrian Signals shall be Campbell Advisor Series only~~

1.19.4. Traffic Structures:

- ▲ ~~Mast arms shall be Valmont SM16 or CB16 Series only~~
- ▲ ~~Strain poles shall be Valmont SW56 Series only.~~

1.1620. PUBLIC CROSSWALKS

1.16.1. Public crosswalks shall meet the requirements of The Manual on Uniform Traffic Control Devices (MUTCD), unless City standards specify a stricter measure. Public improvements may include but shall not be limited to any one or combination of the following:

- Crosswalks;
- Curb Bump Outs or Curb Extensions, where warranted;
- Pedestrian Crossing Signs (curbside, overhead or in the street);
- Rectangular Rapid Flashing Beacons (RRFBs)~~Pedestrian Activated Yellow Flashing Warning Lights~~;
- Pedestrian Hybrid Beacons;
- Pedestrian Activated Traffic Control Signal (Red, yellow, green); and
- Medians or raised islands

1.1620.42. Crossing locations shall be designed to the following standards unless otherwise directed by the Department of Public Works:

- Street markings: Crosswalks on public streets shall consist of 24-inch block style white lines, placed 48 inches apart on center, for an overall width of 8 feet (or wider; at least as wide as the sidewalks served by the crosswalk).
- Street lighting: Crosswalk locations shall be adequately illuminated for visibility at nighttime.
- Signage: Select crosswalk locations may need to be accentuated through the use of signage mounted curbside, overhead, or on the roadway centerline, as described hereinafter. Crosswalk signs shall be placed directly adjacent to crosswalks, and advance warning signs shall be placed in accordance with MUTCD. Standard signs shall be black legend on a fluorescent background.

Critical Physical Factors:

Walking Speed:

- ~~This factor is applicable at signalized intersections and affects the length of the pedestrian clearance (flashing “don’t walk”) interval.~~
- ~~Average walking speed is generally measured as three and a half (3.5) feet per second. In areas with elderly or young children pedestrians, a rate of three (3) feet per second is appropriate.~~

Vehicular Sight Distance:

- ~~Sight distance shall be based on the posted speed plus 5 miles per hour or the 85th percentile travel speed as tabulated below.~~

Stopping Sight Distances (1)

Speed (mph)	Stopping Sight Distance (feet) *
25	155
30	200
35	250
40	305
45	360
50	425

~~*Assumes level grade~~

~~Source: AASHTO Policy reference 1, Exhibit 3-1 of that publication.~~

- ~~Sight distance shall be based on a driver eye height of 3.5 feet and a pedestrian height of 2.0 feet.~~
- ~~Parking shall be prohibited within twenty (20) feet from the centerline of a crosswalk and within thirty (30) feet at signalized and STOP sign.~~

~~locations.~~

~~1.20.2. General Standards for Crosswalk Installation:~~

- ~~1. The Manual on Uniform Traffic Control Devices (MUTCD) provides guidance for placement of crosswalks. In addition, crosswalks should:~~
 - ~~• Occur where substantial pedestrian/vehicle conflicts exist. (See the Federal Highway Administration notebook titled "Traffic Conflict Techniques for Safety and Operations" which provides methods for conflict evaluation.)~~
 - ~~• Occur at points of pedestrian concentration that can meet applicable standards or where pedestrians may not recognize the appropriate place to cross (e.g., loading islands, mid-block pedestrian crossings).~~
 - ~~• Maintain suitable separation (approximately 300 feet) between non-intersection or mid-block crosswalks.~~
 - ~~• Be installed based on an engineering study if located other than at a STOP sign or traffic signal. For mid-block locations, a study shall evaluate factors of need including but not limited to school crossings, age of pedestrians, and nearest alternative crosswalk location as well as safety issues such as traffic speed, volume, and sight lines.~~
 - ~~• Consider advance warning signage if installed at uncontrolled locations and allow for restriction of parking for adequate visibility of the advance signage.~~
 - ~~• No crosswalk spacing requirements are to be imposed at intersection locations. Other engineering factors are to be reviewed in the determination of suitability of the location.~~
- ~~2. The Crosswalk Installation Guidelines (Figure I-24) provide criteria for guiding evaluations of when crosswalks may be desirable at uncontrolled locations based on pedestrian and vehicular volumes. Crosswalks at uncontrolled locations shall be placed where these criteria are met; or where special requirements and/or plans exist that support the installation of a crosswalk.~~
- ~~3. Crosswalks proposed at signalized intersections shall include pedestrian signal indications for substantial pedestrian crossings.¹ Each proposed location shall be evaluated based on through traffic volumes, turning vehicle volumes and signal phasing to determine which legs of the intersection are most appropriate for pedestrian crossings.~~

~~The default assumption is that crosswalks shall be provided on all~~

~~intersection approaches and supplemental analysis must be provided that identifies specific engineering conclusions on why this cannot be accomplished.~~

[†]~~Design and Safety of Pedestrian Facilities, 1998, ITE Technical Committee 5A-5~~

~~4. Marked crosswalks across stop-controlled intersection approaches shall be considered where vehicular traffic may block pedestrian traffic². This will be assessed based on a visual observation of vehicular and pedestrian traffic flow at the intersection to determine if there is sufficient vehicular traffic to block the pedestrian crossing path for a significant period of time.~~

~~1.20.3. Design Criteria:~~

~~Street Markings: Crosswalks on public streets shall use a minimum of eight (8)-inch wide solid white lines, which should be spaced to provide a minimum overall width of eight (8) feet. Wider line width is required for locations with higher posted speeds as shown below. Paint, wherever used, shall meet Maine Department of Transportation (Maine DOT) specifications. Additional designs may consist of longitudinal lines. Figure I-21 illustrates these typical crosswalk markings and the table below provides dimensions utilized in the City of Portland for various applications.~~

Crosswalk Dimensions

Type	Overall Width	Line Width	Spacing
Standard Crosswalk Marking (two lines)			
Posted Speed ≤ 35 mph	8'	8"	N.A.
Posted Speed > 35 mph	8'	12"	
Crosswalk with Longitudinal Lines (block style) (See Pedestrian Crossing Distances table)	8'	24"	Spacing 4' o.c.

~~The longitudinal or block style striping of crosswalks should be reserved for use at the following locations (see Pedestrian Crossing Distances table):~~

- ~~• Uncontrolled locations of special significance, such as school walking routes, trail/shared-use paths and mid-block crossings;~~
- ~~• High volume pedestrian locations with at least 25 pedestrian crossings for each 4 hours or 40 crossings during the peak hour; and~~
- ~~• High vehicle speed (> 35 mph posted speed) crossings.~~

- ~~1.—Street Lighting: Crosswalk locations shall be adequately illuminated for night time use.~~

^{*}~~Pedestrian Facilities Users Guide, March 2002, USDOT – FHWA~~

- ~~2.—Signage: Select crosswalk locations may need to be accentuated through the use of signage mounted curbside, overhead, or on the road centerline, as described below:~~
- ~~3.—Curbside Signs: There are three standard curbside signs consisting of a crosswalk warning sign, a school crossing warning sign, and an advance warning pedestrian crossing sign. The City of Portland also installs “yield for pedestrians” signs at crosswalks, as shown in Figures I-22 and I-23. Crosswalk signs shall be placed directly adjacent to crosswalks and advance warning signs shall be placed in accordance with the MUTCD guidelines as shown below.~~

Advance Warning Sign Placement (2)

85th Percentile Speed* (mph)	Advance Placement (feet)
25	125**
30	125**
35	125**
40	125
45	175

^{*}~~or the posted speed when a speed study is not available.~~

^{**}~~recommended minimum for the City of Portland~~

~~Source: Table 2C-4 of the MUTCD.~~

- ~~1.20.4. Standard signs shall be black legend on a yellow background. The MUTCD also allows the use of a yellow-green fluorescent high grade reflective background for increased visibility. These higher grade signs shall be used where locations meet at least one of the following criteria:~~

- ~~— Vehicle 85th percentile speeds or the posted speed is greater than or equal to 35 mph;~~
- ~~— Pedestrian crossing volume of at least 25 per hour for four hours or~~
- ~~— 40 during the peak hour; or~~
- ~~— School crossing.~~

- ~~1.—Overhead Signs and Flashing Warning Lights: Overhead signs supplemented with pedestrian activated flashers may be placed at high volume pedestrian crossing locations or where specific pedestrian safety issues have been identified.~~

~~2. Centerline Signs: Centerline signs shall be able to withstand vehicle impact without damage to the vehicle and with minimal damage to the device and shall be anchored in place. Note that these devices must be removed without damaging the pavement prior to the start of winter season. The City recommends a device with a base anchored to the pavement with epoxy and a flexible upright paddle that is replaceable. The following criteria should be considered for these devices to be utilized:~~

- ~~• Presence of a high crash location (HCL) as defined by Maine DOT:
 Both of the following criteria must be met in order to be classified as an HCL:

 - ~~○ A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State; and~~
 - ~~○ A minimum of eight (8) accidents over a three (3) year period.~~~~
- ~~• Principal or minor arterial, as identified in Figure 24.~~
- ~~• At least 25 pedestrian crossings per hour for four (4) hours or 40 pedestrian crossings for the peak hour.~~

~~1.20.5. Traffic Control Signals: The following provides general guidance concerning installation of a pedestrian activated red-yellow-green traffic control signal. The MUTCD should be consulted for specific details:~~

- ~~• The location is a school crossing and a traffic engineering study reveals that there are not adequate gaps in the traffic stream; or~~
- ~~• There are 107 pedestrian crossings for each of four (4) hours or 133 crossings during any one hour and under both conditions for high-volume roadways. Higher rates of pedestrian crossings are necessary for lower volume streets. The number of pedestrians may be reduced by 50% where they are predominantly elderly or young children to include crossing locations along school walking routes for elementary and middle school students.~~

~~1.20.6. Specific Guidelines for Crosswalk Use: The City of Portland has established the following guidelines for pedestrian street crossing devices:~~

Pedestrian Crossing Devices

Device	Use*
Crosswalk	
8" lines, 8' total width	Where volume criteria of Figure I-25 are met and speeds are less than 35 mph and at signalized intersections.

12" lines, 8' total width	At all unsignalized locations where volume criteria of Figure 1-25 are met and speeds are between 35 and 45 mph.
24" block style lines, 8' width	At mid-block locations where volume criteria of Figure 1-25 are met and speeds are between 35 and 45 mph, at all school and trail/shared-use path crossings and as noted in 1.20.3 (Design Criteria) above or at uncontrolled locations as determined by the Traffic Engineer.
Curbside signs-	
Advance Crossing Signs	For all mid-block crosswalks and other uncontrolled locations as determined by Traffic Engineer.
Standard Grade Crossing Sign	At all locations where crosswalk lines alone are not sufficient to define the crossing location to motorists at the discretion of the Crosswalk Committee.
High Grade Crossing Sign	Speed greater than or equal to 35 mph; or 25 pedestrians crossing per hour for four hours or 40 pedestrians crossing for the peak hour
School Crossing Sign	In accordance with MUTCD
Other	
Overhead Signs/Flashers	On arterial roadways or roadways with at least two lanes of traffic in at
Centerline Signs	As noted in 1.20.4 above.
Traffic Control Signal	Consider at locations meeting MUTCD warrants for school crossings or

**All speeds are 85th percentile speeds for off-peak daytime periods or the posted speed.*

1.1721. PUBLIC TRANSIT FACILITIES

Where required, public transit facilities shall meet the following standards:

1.1721.1. Transit Pullout Bays:

- Transit pullout bays shall be located in the City right-of-way along the property frontage; or
- Where space constraints prevent locating a transit pullout bay along the property frontage, transit pullout bays may be located within reasonable walking distance of the site.
- Where possible, transit pullout bays shall be located at intersections. At signalized intersections, far-side bus stops are preferred. Mid-block bays are not preferred due to impacts to parking and traffic.
- The design of the pullout bay shall provide adequate space for vehicles to maneuver through facilities without causing damage to either the vehicles or facilities, as detailed ~~in Section 1 of the Technical Manual~~ herein.

1.1721.2. Transit Shelters:

1. Transit shelters shall be located within the site, directly adjacent to the right-of-way on which the public transportation route is established; or
2. Where site constraints prevent locating a transit shelter on the site, it shall be located within a public sidewalk area along the property frontage. If a transit shelter is to be located within a public sidewalk area, City sidewalk clearance requirements shall apply.
3. Where space constraints prevent locating a transit shelter within a public sidewalk area along the property frontage, it may be located within reasonable walking distance of the site.
4. Installation and ongoing maintenance of transit shelters on private property shall be the responsibility of the property owner. Ongoing maintenance of transit shelters located within the City right-of-way or within an easement held by the City shall be the responsibility of the City or of the local or regional transit authority serving the facility.

- 1.1721.3. Where necessary, developments shall provide easements to the City, sufficient in size to accommodate public transit infrastructure and access to the transit stop.

1.22. CONSTRUCTION PERMITTING AND TRAFFIC CONTROL PLANS

- 1.22.1. Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & charges are all outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Services.
- 1.22.2. Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Services. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Services. See also Section II of the Technical Manual for lateral abandonment requirements associated with demolition permits.
- 1.22.3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along arterial and/or collector streets are required to submit a satisfactory 'maintenance of traffic'

Commented [TE30]: We also need them for local streets

(MOT) plan prior to any site plan, subdivision, or street opening permit approval.

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

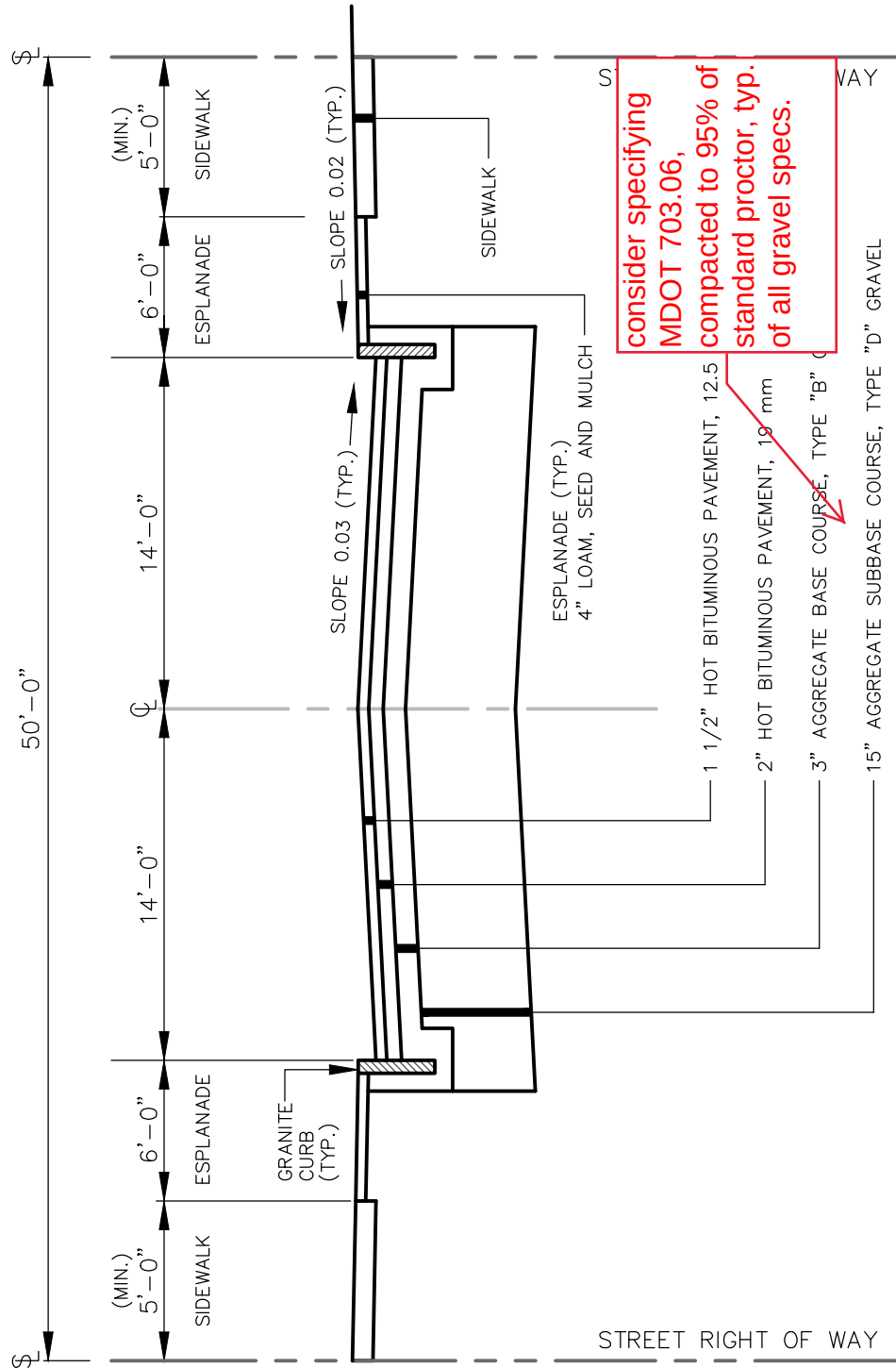
- Construction speed signing may be used as needed to slow traffic
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
- In extreme situations, flaggers may be required to allow for safe pedestrian and bicycle movement

1.22.4. All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Services.

- Traffic control for bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycles and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and/or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.

1.22.5. Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Services.

Commented [ND31]: Moved to Section 17.



LOCAL STREET CROSS SECTION

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

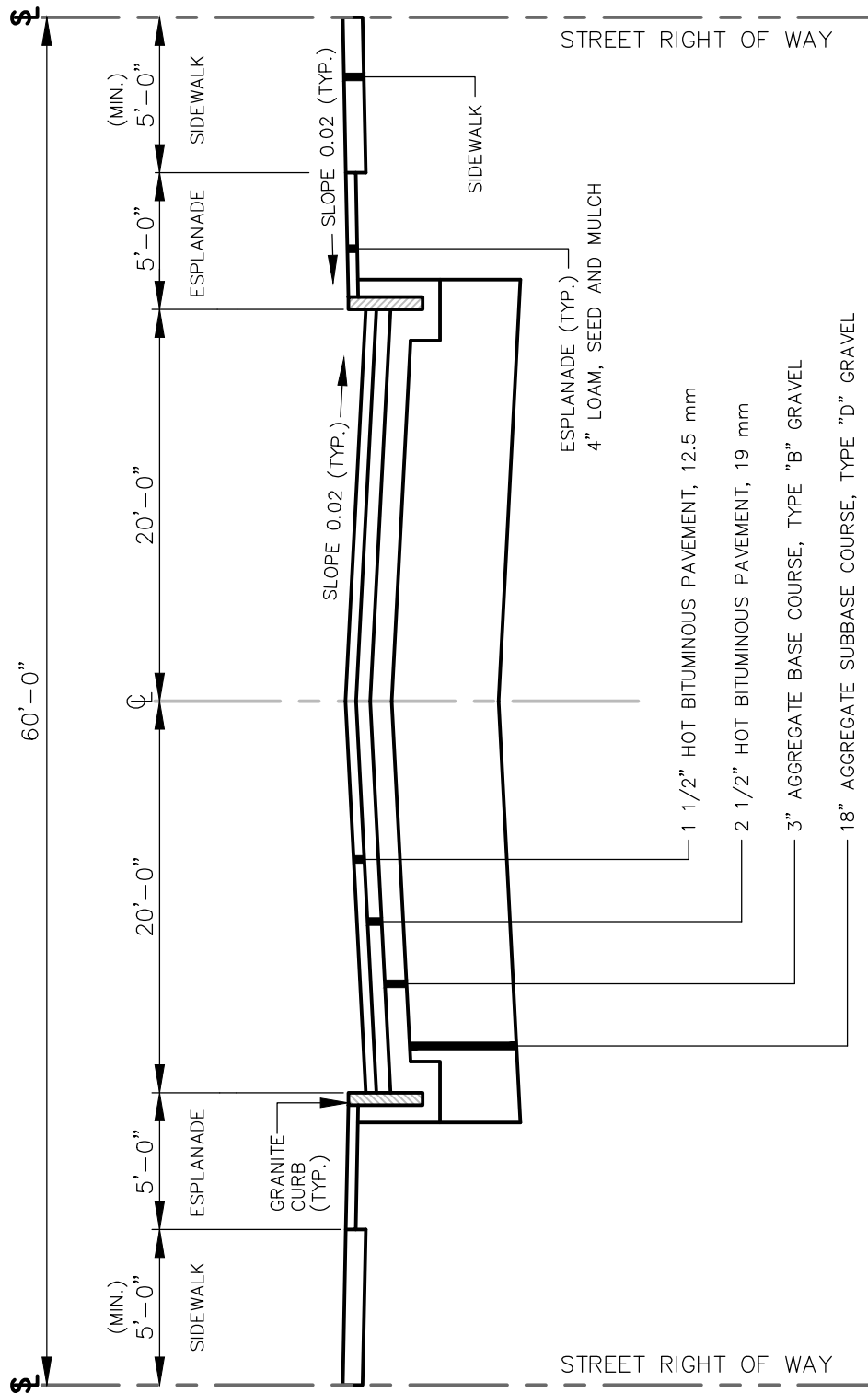
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

LOCAL STREET CROSS SECTION

I-1



COLLECTOR STREET CROSS SECTION

NOT TO SCALE

DATE:
JUNE 2022
REVISED:

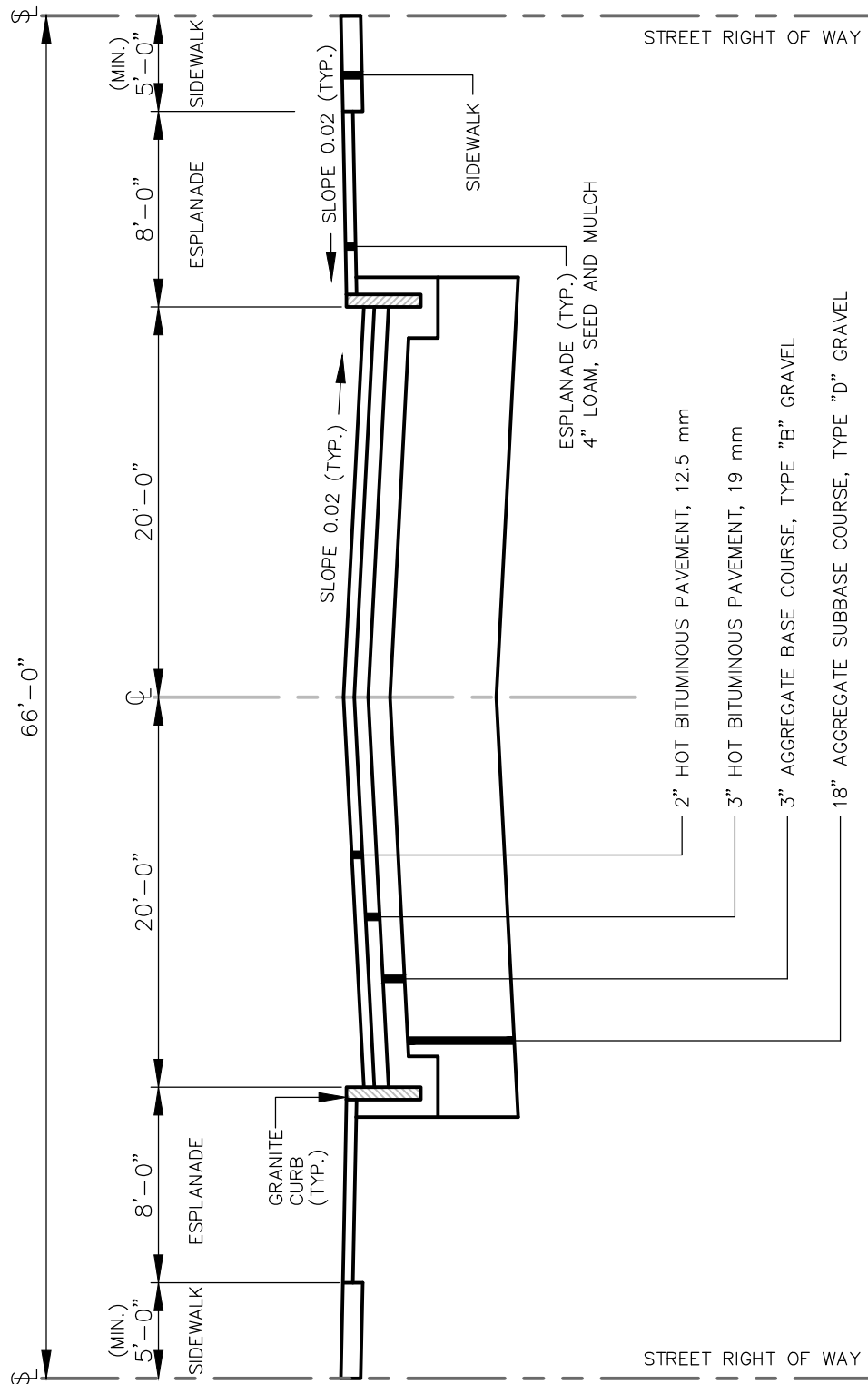
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

FIGURE:

COLLECTOR STREET CROSS SECTION

I-2



ARTERIAL STREET CROSS SECTION

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

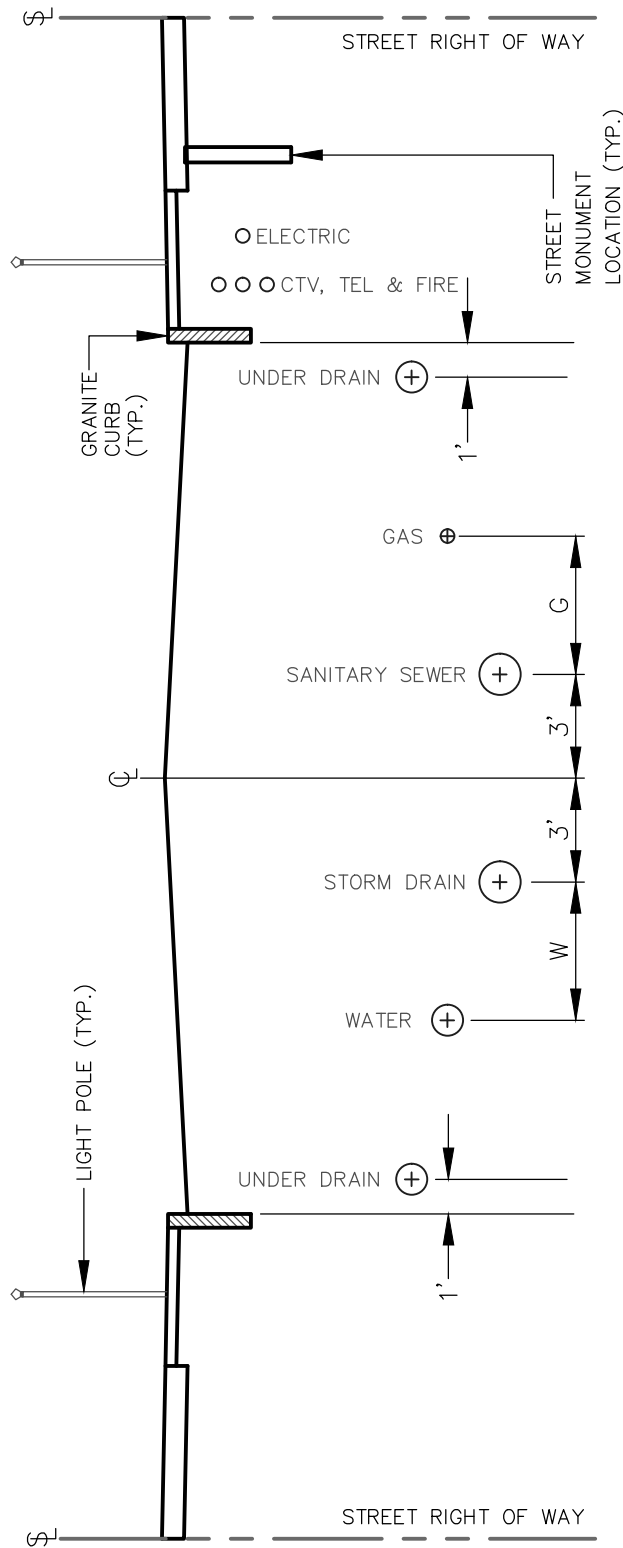
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

FIGURE:

ARTERIAL STREET CROSS SECTION

I-3



NOTES:

1. DEPTH OF SANITARY SEWER AND STORM DRAIN PER CITY ENGINEER.
2. DEPTH OF UNDER DRAIN SHALL BE 3'-6" FROM GUTTER LINE TO PIPE INVERT.
3. DEPTHS OF ELECTRIC, TELEPHONE, CABLE TELEVISION AND FIRE TO BE AT LEAST 36 INCHES BELOW FINISH GRADE. DEPTHS OF OTHER UTILITIES PER REQUIREMENTS OF APPLICABLE UTILITY COMPANY. WHEN TREES ARE PROPOSED FOR THE ESPLANADE, THE UTILITIES DESIGNATED FOR THAT LOCATION SHALL MAKE NECESSARY PROVISIONS.
4. APPLICABLE WARNING TAPE SHALL BE PLACED OVER EACH UTILITY.
5. RIGID PVC CONDUIT IS REQUIRED FOR STREET AND DRIVEWAY CROSSINGS AND OTHER PAVEMENT CROSSINGS MORE THAN 12 FEET IN LENGTH. CONDUITS CROSSING STREETS SHALL BE ENCASED IN CONCRETE.
6. UTILITY MANHOLES SHALL NOT BE LOCATED WITHIN TRAVEL LANE VEHICLE TRACKING TO THE EXTENT POSSIBLE.

consider basic spec for 3,000 psi comp strength and min. 4" thick encasement on chairs

STREET CLASSIFICATION	R.O.W. WIDTH (ft.)	UTILITY LOCATION DIMENSIONS	
		W (ft.)	G (ft.)
LOCAL	50	5	5
COLLECTOR	60	7	7
ARTERIAL	66	8	8

UTILITY LOCATIONS IN STREETS

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

FIGURE:

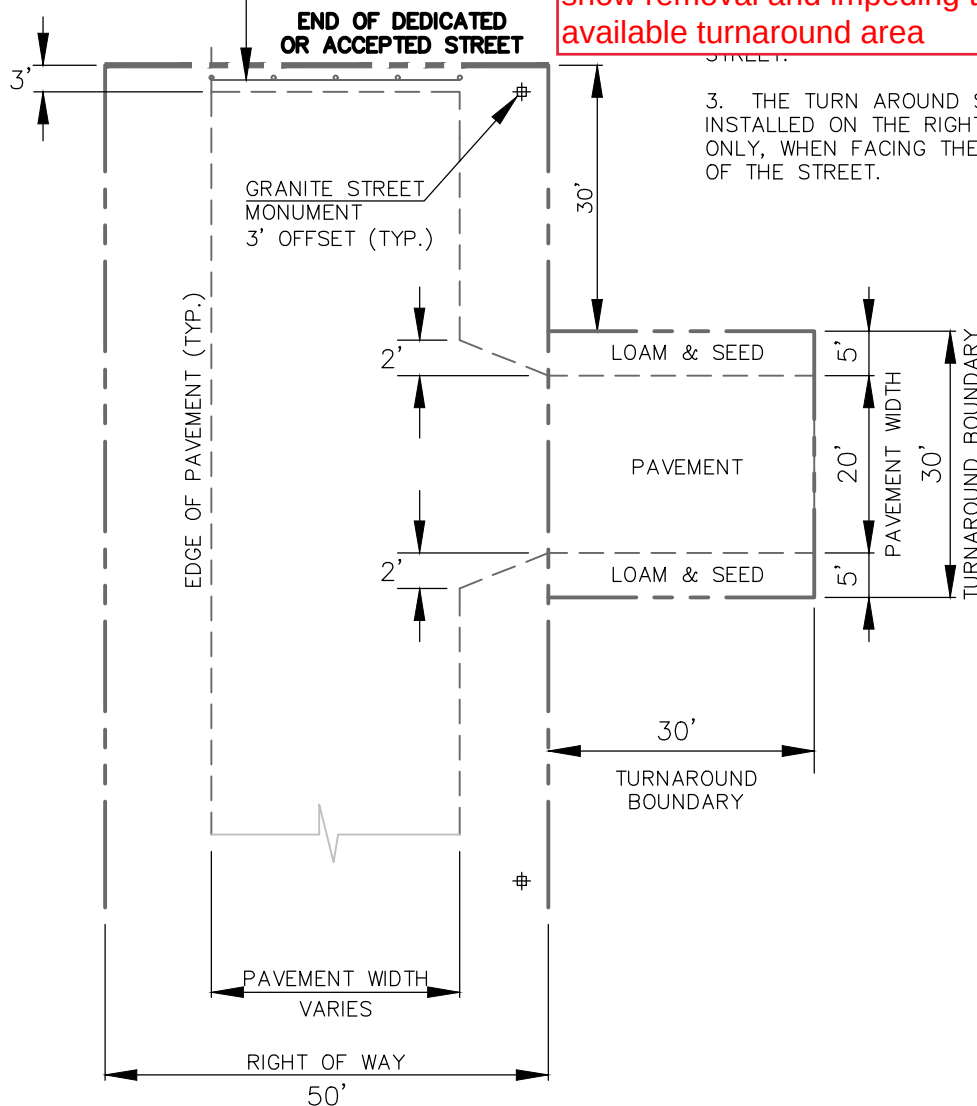
I-4

UTILITY LOCATIONS IN STREETS

~~GALVANIZED STEEL OR PRESSURE
TREATED WOOD GUARDRAIL
WITH OM4-2 END OF ROADWAY
MARKER SIGN OR APPROVED
EQUAL~~

~~STREET.~~

3. THE TURN AROUND SHALL BE
INSTALLED ON THE RIGHT SIDE
ONLY, WHEN FACING THE DEAD END
OF THE STREET.



NOT TO SCALE

Page 56

GENERAL NOTES

1. DESIGN OF ACCESSIBLE RAMPS AND ASSOCIATED FACILITIES ARE GOVERNED BY THE 2010 AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN, WHICH IS DETAILED IN DOJ SECTION 28 CFR 35.151. ADDITIONAL GUIDANCE AND INFORMATION CAN BE FOUND IN THE PROPOSED PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES PUBLISHED BY THE U.S. ACCESS BOARD. IN ANY CASE WHERE THE DESIGN REQUIREMENTS ARE MORE STRINGENT BETWEEN ADA STANDARDS AND CITY REQUIREMENTS, THE ADA STANDARDS SHALL GOVERN.
2. SIDEWALKS SHALL BE CONSTRUCTED IN BRICK, CONCRETE, OR BITUMINOUS, ACCORDING TO THE SIDEWALK & DRIVEWAY APRON MATERIALS POLICY, UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER.
3. SIDEWALKS AND RAMPS SHALL BE BUILT ACCORDING TO THE FOLLOWING DIMENSIONS AND GRADES:
SIDEWALK RUNNING SLOPE: MATCH ADJACENT STREET GRADE
SIDEWALK CROSS SLOPE: 1.0% MINIMUM, 2.0% MAXIMUM
SIDEWALK WIDTH: 5'-0" MINIMUM, WIDER PREFERRED
ESPLANADE (WHERE PROVIDED) 2'-0" MINIMUM, 4'-0" OR GREATER PREFERRED IF LANDSCAPED.
4. TWO CURB RAMPS ARE REQUIRED AT EACH SIDEWALK CORNER. EACH CURB RAMP SHALL CONNECT THE PEDESTRIAN ACCESS ROUTE AT EACH PEDESTRIAN STREET CROSSING. IN ALTERATIONS WHERE PHYSICAL CONSTRAINTS PREVENT TWO CURB RAMPS FROM BEING INSTALLED AT A STREET CORNER, A SINGLE PEDESTRIAN CURB RAMP MAY BE PERMITTED.
5. OPPOSING CURB RAMPS AT A SINGLE CROSSING SHALL ALIGN TO PROVIDE A STRAIGHT PATH OF TRAVEL FROM THE TOP OF THE RAMP TO THE CURB RAMP ON THE OPPOSITE SIDE OF THE ROADWAY TO THE MAXIMUM EXTENT FEASIBLE.
6. ALL SIDEWALKS AND RAMPS SHALL DRAIN TOWARD THE STREET, DRIVEWAY, OR PARKING AREA, WITH A MAXIMUM CROSS SLOPE OF 2.0%.
7. LEVEL LANDINGS (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION AT THE BOTTOM OF) PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS.
8. PONDING SHALL NOT BE PERMITTED WITHIN THE CURB RAMP LIMITS. RAMPS SHALL NOT ALTER ROADWAY DRAINAGE PATTERNS.
9. TRANSITION FROM RAMPS TO WALKS OR STREET SURFACE SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. PAVEMENT AT THE STREET SURFACE SHALL BE MILLED TO ACHIEVE FLUSH CONDITION.
10. CURB RAMP AND FORM WORK SLOPES SHALL BE CHECKED WITH A DIGITAL LEVEL OF AN APPROPRIATE LENGTH. NO PORTION OF A RAMP RUN SHALL EXCEED THE MAXIMUM SLOPE REQUIREMENT.
11. THE COUNTER SLOPE WITHIN 2' OF THE CURB RAMP SHALL BE 5% MAXIMUM. IN ALTERATIONS, IF THE COUNTER SLOPE OF 5% MAXIMUM CANNOT BE ACHIEVED, THE SLOPE ELEVATION MAY BE ADJUSTED SO THAT THE COMBINED COUNTER SLOPE AND RAMP SLOPE DO NOT EXCEED 13.3%.
12. VERTICAL DROP-OFF EDGES TO RAMPS SHALL NOT BE BUILT UNLESS THE RAMP ABUTS AN ESPLANADE OR OTHER AREA NOT TO BE USED BY PEDESTRIANS.
13. AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS.
14. TACTILE WARNING PANELS SHALL BE PROVIDED ON ALL RAMPS AS PER FIGURE I-7 (OR I-7A) OF THESE STANDARD DETAILS.
15. RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED.
16. SIGNS, POLES, PLANTERS, MAILBOXES, ETC. SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS. UTILITY POLES MAY BE INCORPORATED INTO THE FLARES OF THE CURB RAMP.
17. SIDEWALK RAMPS SHALL NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS, OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED, THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS.
18. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCAL CONDITIONS. LOCAL ENGINEERS SHALL VERIFY THAT THE STANDARDS ARE APPROPRIATE FOR ALL LOCAL CONDITIONS. INDIVIDUAL LOCAL ENGINEERS SHALL BE RESPONSIBLE FOR VERIFYING THAT THE STANDARDS ARE APPROPRIATE FOR ALL LOCAL CONDITIONS. INDIVIDUAL ENGINEERS SHALL BE RESPONSIBLE FOR VERIFYING THAT THE STANDARDS ARE APPROPRIATE FOR ALL LOCAL CONDITIONS.
19. THE PROVISIONS OF THESE DETAILS AND TO ADA GUIDELINES TO THE MAXIMUM EXTENT PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE CITY ENGINEER.
20. MATERIALS AND CONSTRUCTION TOLERANCES AND ARE NOT TO BE EXCEEDED OR UNMET.
21. THE MINIMUM TURNING SPACE (LEVEL LANDING) IS 4'-0" X 4'-0" SLOPING NO MORE THAN 2.0%. WHERE THE TURNING SPACE SHALL BE 4'-0" MINIMUM BY 5'-0" MINIMUM. THE 5'-0" DIMENSION SHALL BE PROVIDED IN THE DIRECTION OF THE RAMP RUN.
22. DETECTABLE WARNINGS SHALL BE INSTALLED AT ALL SIGNED OR SIGNALIZED INTERSECTIONS. THEY SHALL HAVE A TRUNCATED DOME SURFACE. THE DOMES SHALL BE IN A SQUARE PATTERN AND ALIGNED WITH PEDESTRIAN TRAFFIC WHERE POSSIBLE.
23. DETECTABLE WARNINGS SHALL SPAN THE WIDTH OF THE PEDESTRIAN RAMP. SEE STANDARD DETAIL FIGURE I-7 (I-7A).
24. ALL DETECTABLE WARNING FIELDS PLACED AT THE SAME INTERSECTION SHALL BE MADE UP OF THE SAME UNIFORM MATERIAL TYPE. DETECTABLE WARNINGS SHALL BE CONTRASTING IN COLOR TO THE ADJACENT WALKWAY.
25. A RAMP WITH A RUNNING SLOPE LESS THAN 5.0% IS DEFINED AS A "BLENDED TRANSITION". BLENDED TRANSITIONS DO NOT REQUIRE A LEVEL LANDING AT THE TOP OF THE RAMP.
26. THE RAMP LENGTH SHALL NOT EXCEED 15 FEET. ADJUST RAMP LENGTH OR SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
27. ALL CURB RAMP JOINTS AND GRADE BREAKS SHALL BE FLUSH.
28. RAMP GRADE BREAKS SHALL BE PERPENDICULAR TO THE RUNNING SLOPE.
29. THERE SHALL BE A MINIMUM OF 12" AGGREGATE SUBBASE COURSE - GRAVEL UNDER THE SIDEWALK SURFACE ON PEDESTRIAN RAMPS.
30. DRAINAGE STRUCTURES, UTILITY POLES, TRAFFIC SIGNAL EQUIPMENT OR OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED IN THE CURB RAMP OR TURNING SPACE AREAS.
31. BEFORE RETROFITTING RAMPS, THE CONTRACTOR SHALL VERIFY REMOVAL LIMITS ARE SUFFICIENT TO PROVIDE POSITIVE DRAINAGE, MAINTAIN EXISTING DRAINAGE PATTERNS AND AVOID PONDING IN THE FINAL CONFIGURATION.
32. A TEMPORARY PEDESTRIAN ACCESS ROUTE SHALL BE PROVIDED WHENEVER THE EXISTING PEDESTRIAN ACCESS ROUTE IN THE PUBLIC RIGHT OF WAY IS BLOCKED BY CONSTRUCTION, ALTERATION, MAINTENANCE OR OTHER TEMPORARY CONDITIONS. REFER TO MUTCD FOR GUIDANCE.

and repaved

what about guy wires?

"detectable" to be consistent with below wording and shown in I-7

I-7A no longer applicable/was removed?

DATE:
JUNE 2022

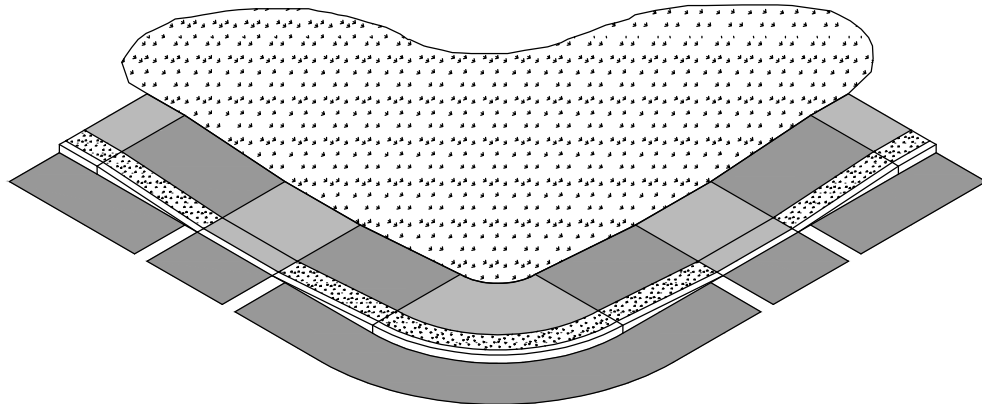
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

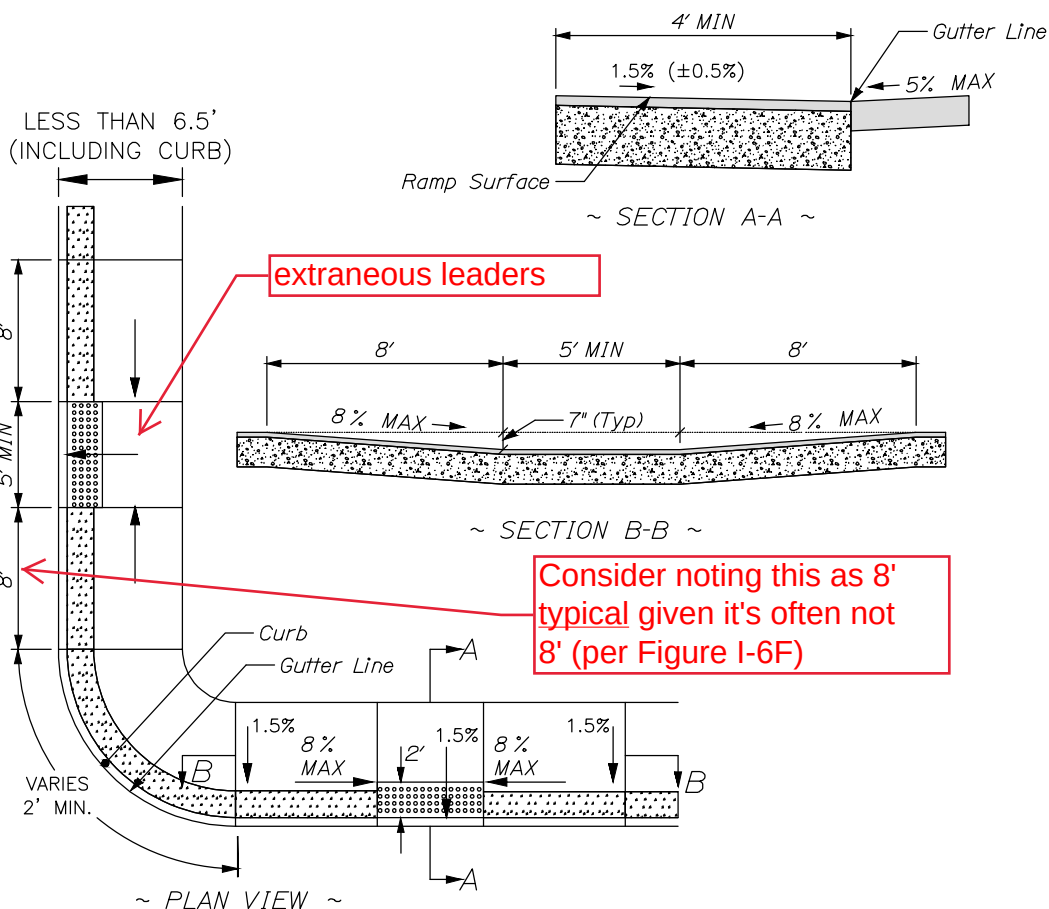
FIGURE:

ACCESSIBLE RAMP
GENERAL NOTES

I-6



~ ISOMETRIC VIEW ~
(NOT TO SCALE)



NOTES:

1. THIS DESIGN IS THE PREFERRED OPTION WHEN THE SIDEWALK & ESPLANADE WIDTH IS LESS THAN 6.5'. USE OTHER OPTIONS ONLY WHEN REQUIRED BY DESIGN CONSTRAINTS.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

**PARALLEL ADA RAMP – SIDEWALK LESS THAN 6.5' WIDE
WITH OR WITHOUT ESPLANADE**

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

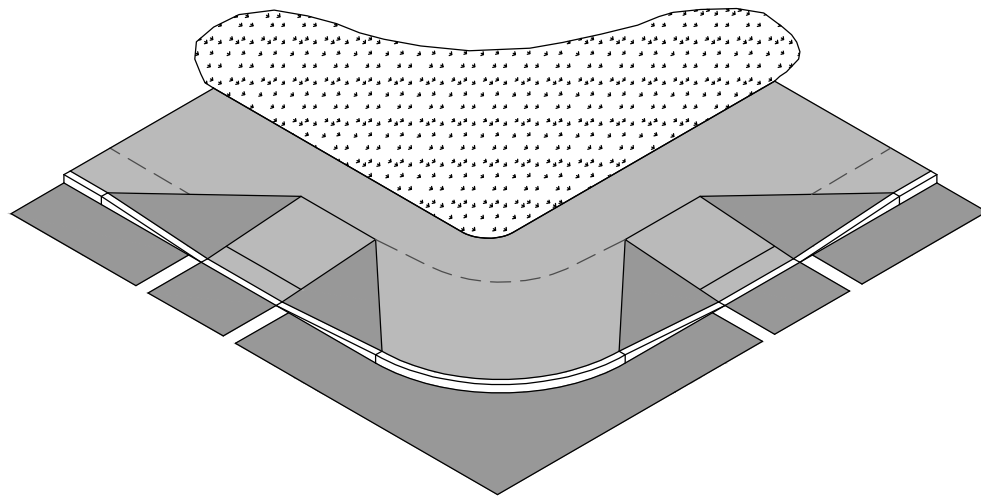
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

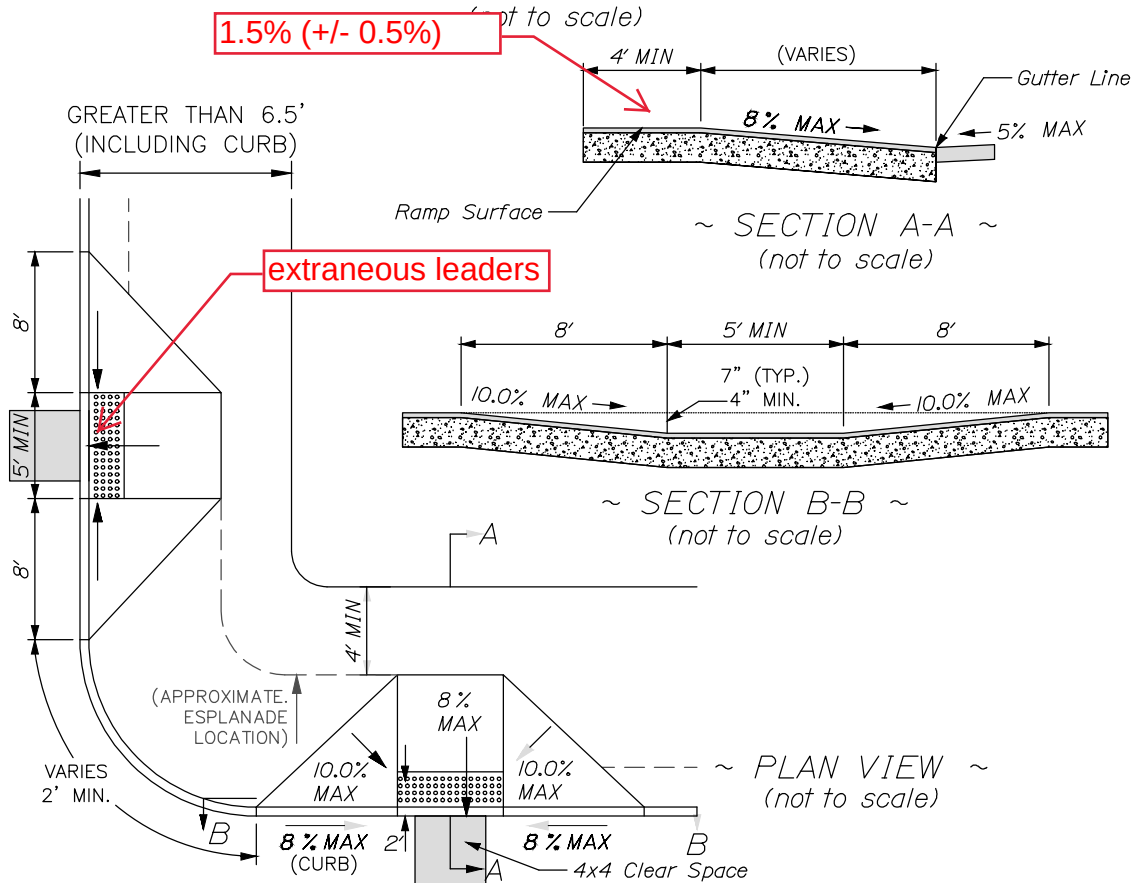
**PARALLEL ADA RAMP FOR SIDEWALK
LESS THAN 6.5' WIDE**

FIGURE:

I-6A



~ ISOMETRIC VIEW ~
(not to scale)



NOTES:

1. THIS DESIGN IS THE PREFERRED OPTION WHEN THE SIDEWALK WIDTH IS GREATER THAN 6.5'. USE OTHER OPTIONS ONLY WHEN REQUIRED BY DESIGN CONSTRAINTS.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

PERPENDICULAR ADA RAMP – SIDEWALK WIDTH GREATER THAN 6.5' WIDE
WITH OR WITHOUT ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

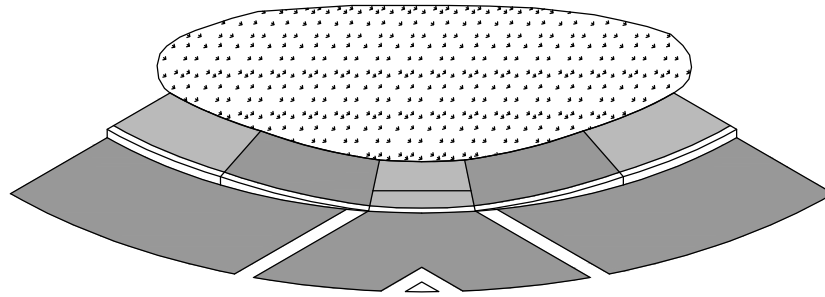
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

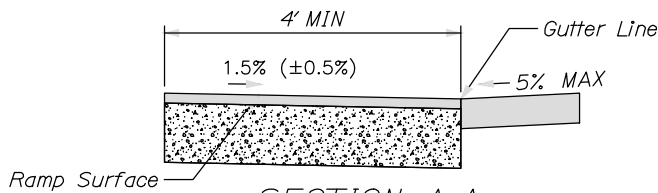
FIGURE:

PERPENDICULAR ADA RAMP FOR SIDEWALK
GREATER THAN 6.5'

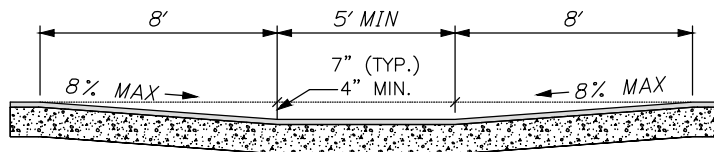
I-6B



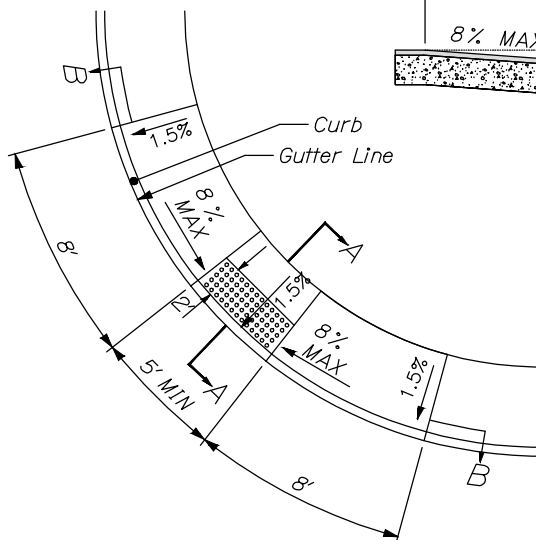
~ ISOMETRIC VIEW ~
(NOT TO SCALE)



~ SECTION A-A ~



~ SECTION B-B ~



~ PLAN VIEW ~

NOTES:

1. THIS LESS DESIRABLE DESIGN SHOULD NOT BE USED UNLESS REQUIRED BY DESIGN CONSTRAINTS. IT DOES NOT PROVIDE DIRECTIONAL CUES.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

APEX RAMP – SIDEWALKS **LESS THAN 6.5'** WIDE
WITH NO ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

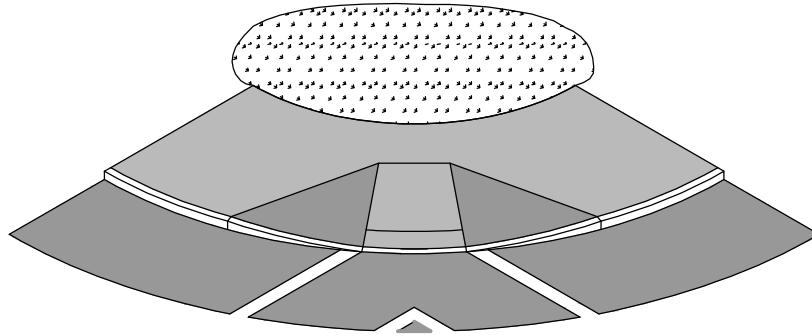
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

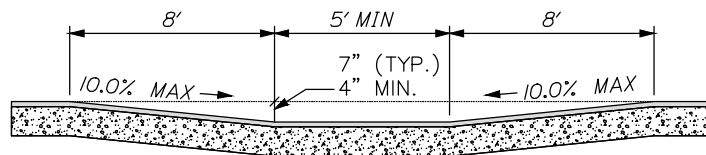
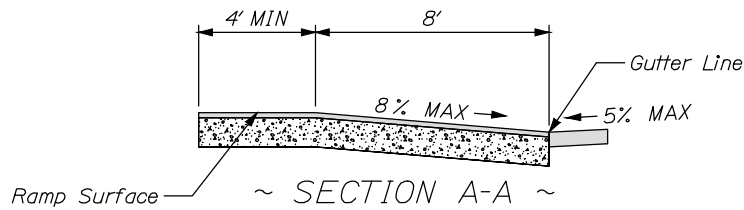
FIGURE:

**APEX RAMP FOR SIDEWALK
LESS THAN 6.5' WIDE**

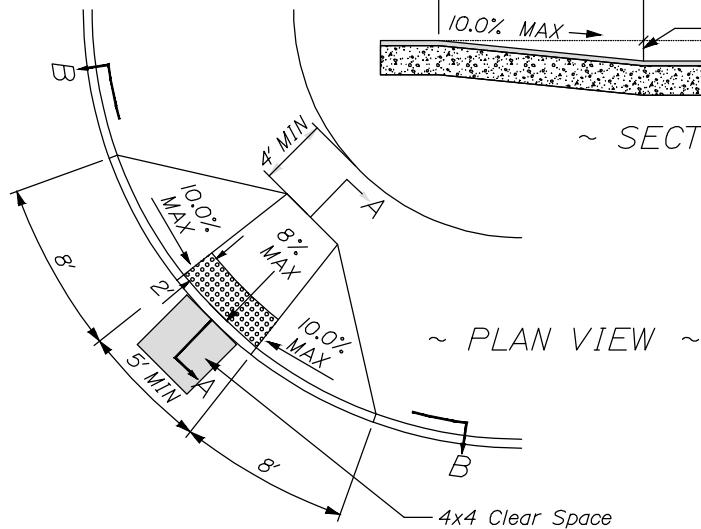
I-6C



~ ISOMETRIC VIEW ~
(NOT TO SCALE)



~ SECTION B-B ~



~ PLAN VIEW ~

NOTES:

1. THIS LESS DESIRABLE DESIGN SHOULD NOT BE USED UNLESS REQUIRED BY DESIGN CONSTRAINTS. IT DOES NOT PROVIDE DIRECTIONAL CUES.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

APEX RAMP – SIDEWALK GREATER THAN 6.5' WIDE
WITH OR WITHOUT ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

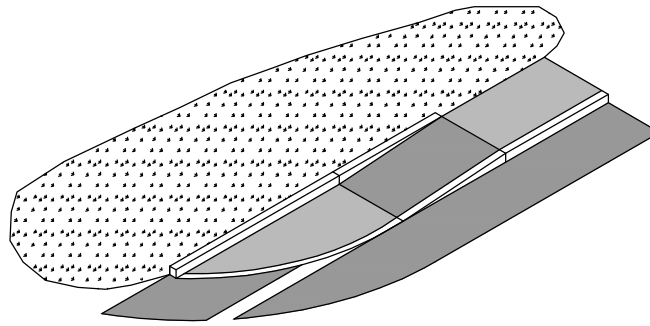
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

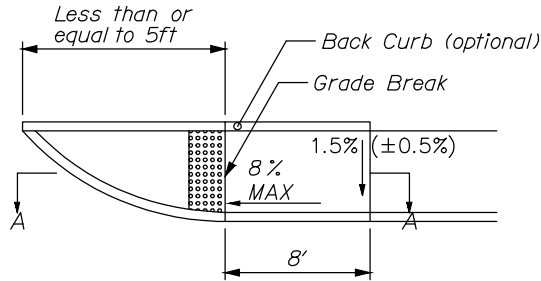
FIGURE:

**APEX RAMP FOR SIDEWALK
6.5' WIDE AND GREATER**

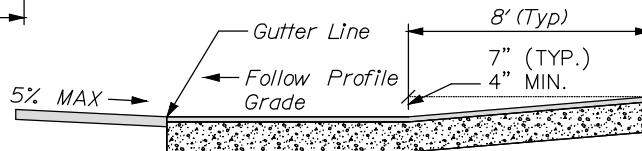
I-6D



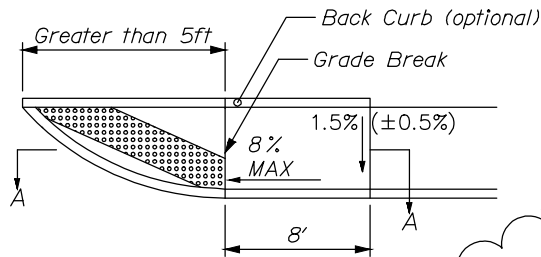
~ PERSPECTIVE VIEW ~
(NOT TO SCALE)



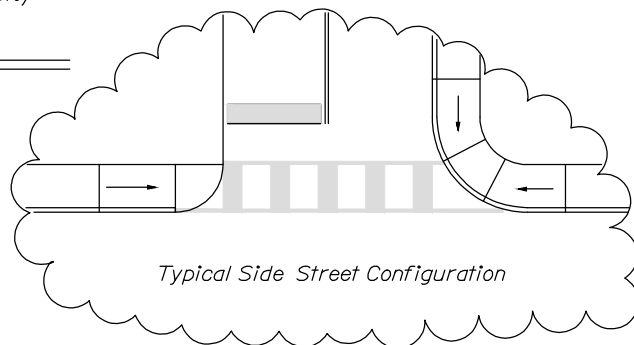
~ *PLAN VIEW* ~



~ SECTION A-A ~



~ **PLAN VIEW** ~



Typical Side Street Configuration

NOTES:

1. FOR USE ONLY WHEN NO SIDEWALK IS PRESENT ON THE SIDE ROAD.
2. USE *THIS* DETECTABLE WARNING PLACEMENT IF THE DISTANCE FROM THE GRADE BREAK TO THE GUTTERLINE IS LESS THAN OR EQUAL TO 5 FEET.
2. USE **THIS** DETECTABLE WARNING PLACEMENT IF THE DISTANCE FROM THE GRADE BREAK TO THE GUTTERLINE IS GREATER THAN 5 FEET.
3. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

SIDE STREET RAMP
WITH OR WITHOUT ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

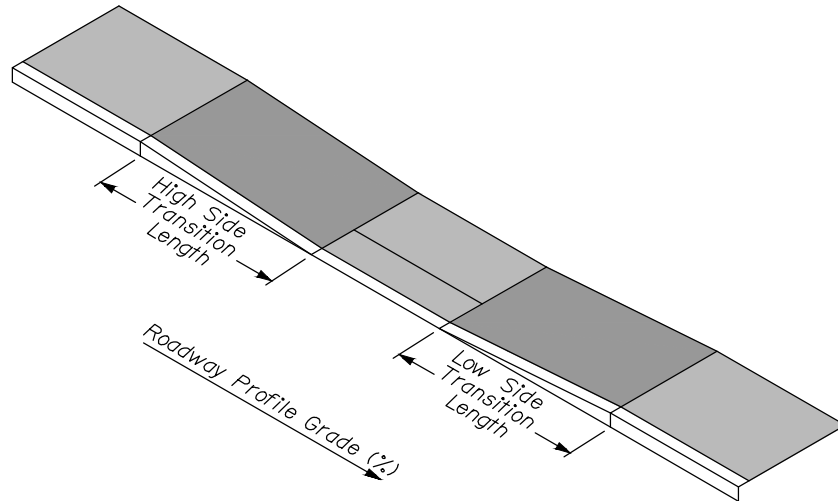
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

**SIDE STREET RAMP
WHEN NO INTERSECTING SIDEWALK IS PRESENT**

I-6E



Pedestrian Ramp Length Table						
Curb Reveal (Inches)		7	6	5	4	3
	Roadway Profile Grade	Minimum Transition Length Required (Feet)				
Low Side Transition Length	-7% and Lower	4.0	4.0	4.0	4.0	4.0
	-6%	8.0	4.0	4.0	4.0	4.0
	-5%	8.0	4.0	4.0	4.0	4.0
	-4%	8.0	8.0	4.0	4.0	4.0
	-3%	8.0	8.0	4.0	4.0	4.0
	-2%	8.0	8.0	8.0	4.0	4.0
	-1%	8.0	8.0	8.0	4.0	4.0
	0%	8.0	8.0	8.0	8.0	4.0
High Side Transition Length	1%	8.0	8.0	8.0	8.0	4.0
	2%	10.0	8.0	8.0	8.0	4.0
	3%	12.0	10.0	8.0	8.0	8.0
	4%	14.0	12.0	10.0	8.0	8.0
	5%	15.0	15.0	14.0	10.0	8.0
	6%	15.0	15.0	15.0	15.0	12.0
	7% and Higher	15.0	15.0	15.0	15.0	15.0

Choose roadway profile grade by rounding up for positive grades and down for negative grades. Round to the nearest whole integer. If constraints prevent placement of the ramp length required by the table, place the maximum length possible and check the slope. If above the maximum allowable slope, consider design modifications before considering technical infeasibility.

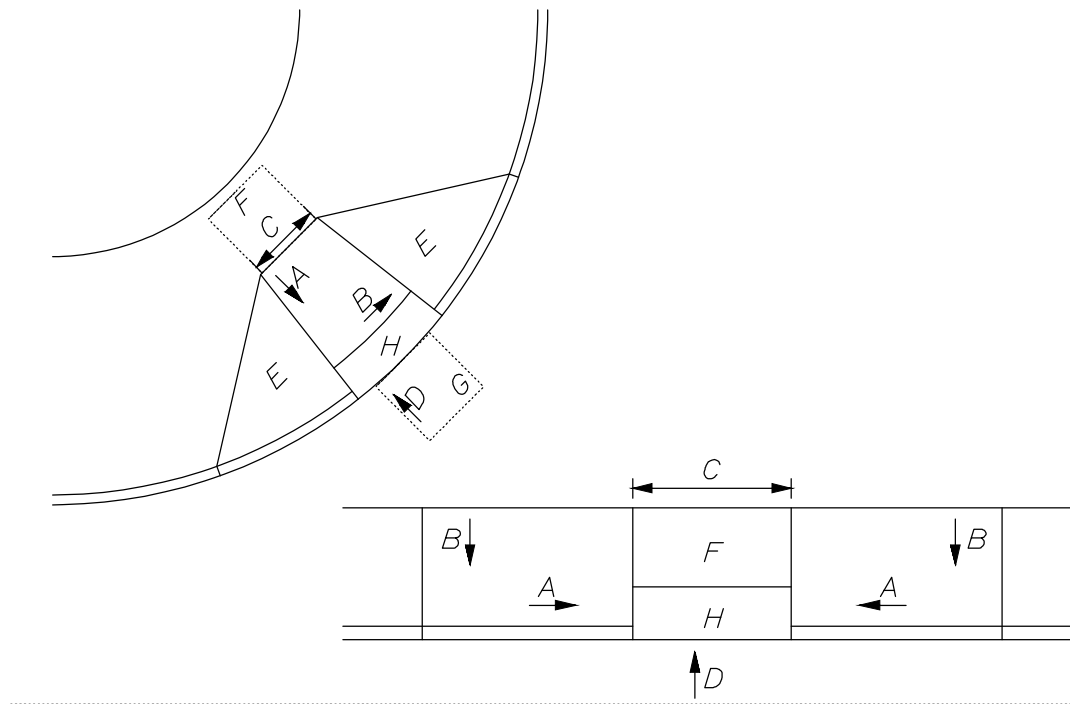
RAMP LENGTH TABLE FOR SIDEWALK RAMPS

NOT TO SCALE

DATE: JUNE 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE: I-6F
REVISED:			
PEDESTRIAN RAMP LENGTH TABLE FOR SIDEWALK RAMPS			

CURB RAMP REQUIREMENTS		
Running Slope	A	Max. 8.33% (1:12)
Cross Slope	B	Max. 2% (1:50) <i>Ramp cross slope at street crossings without stop or signal control may match roadway profile.</i>
Clear Width	C	Min. 5 feet <i>For existing ramps only, ramp width may remain 4 feet.</i>
Counter Slope	D	Max. 5% (1:20) <i>Adjacent surface must be flush with the ramp.</i>
Flared Sides	E	Max. 10% (1:10)
Turning Space	F	4 feet by 4 feet <i>Maximum slope of 2% in any direction. May include Detectable Warnings</i>
Clear Space	G	4 feet by 4 feet <i>Located at the bottom of the ramp outside active travel lanes.</i>
Detectable Warnings	H	<i>Required at traffic controlled intersections and mid-block crossings, full ramp width.</i>

min 1%?



PEDESTRIAN RAMP REQUIREMENTS FOR SIDEWALK RAMPS

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

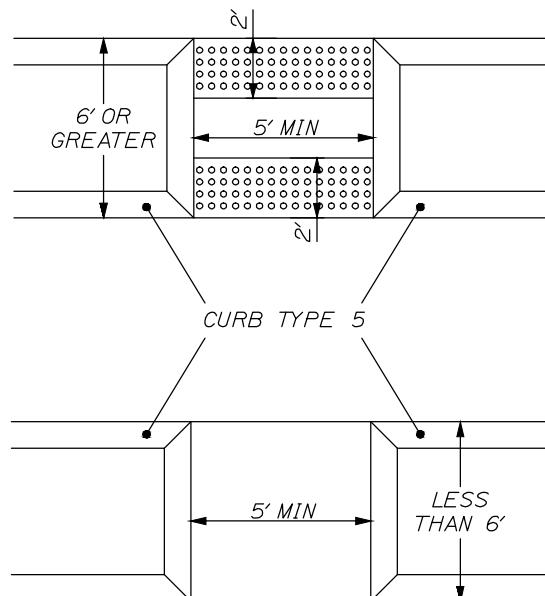
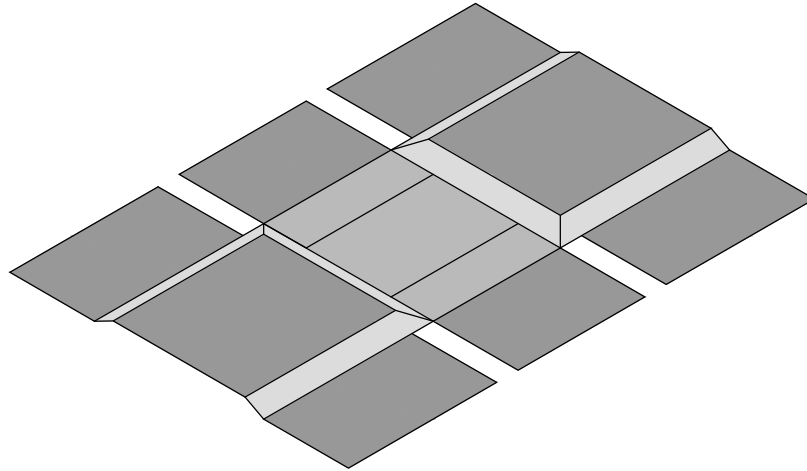
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

**PEDESTRIAN RAMP REQUIREMENTS
FOR SIDEWALK RAMPS**

I-6G



NOTES:

1. OMIT DETECTABLE WARNINGS IF THE ISLAND CROSSING IS LESS THAN 6'-0".
2. INSURE POSITIVE DRAINAGE (2% MAXIMUM CROSS SLOPE).

ISLAND PEDESTRIAN CROSSINGS
FOR ISLANDS 6' OR GREATER

NOT TO SCALE

shows both conditions, consider striking "6' Or Greater" from title

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

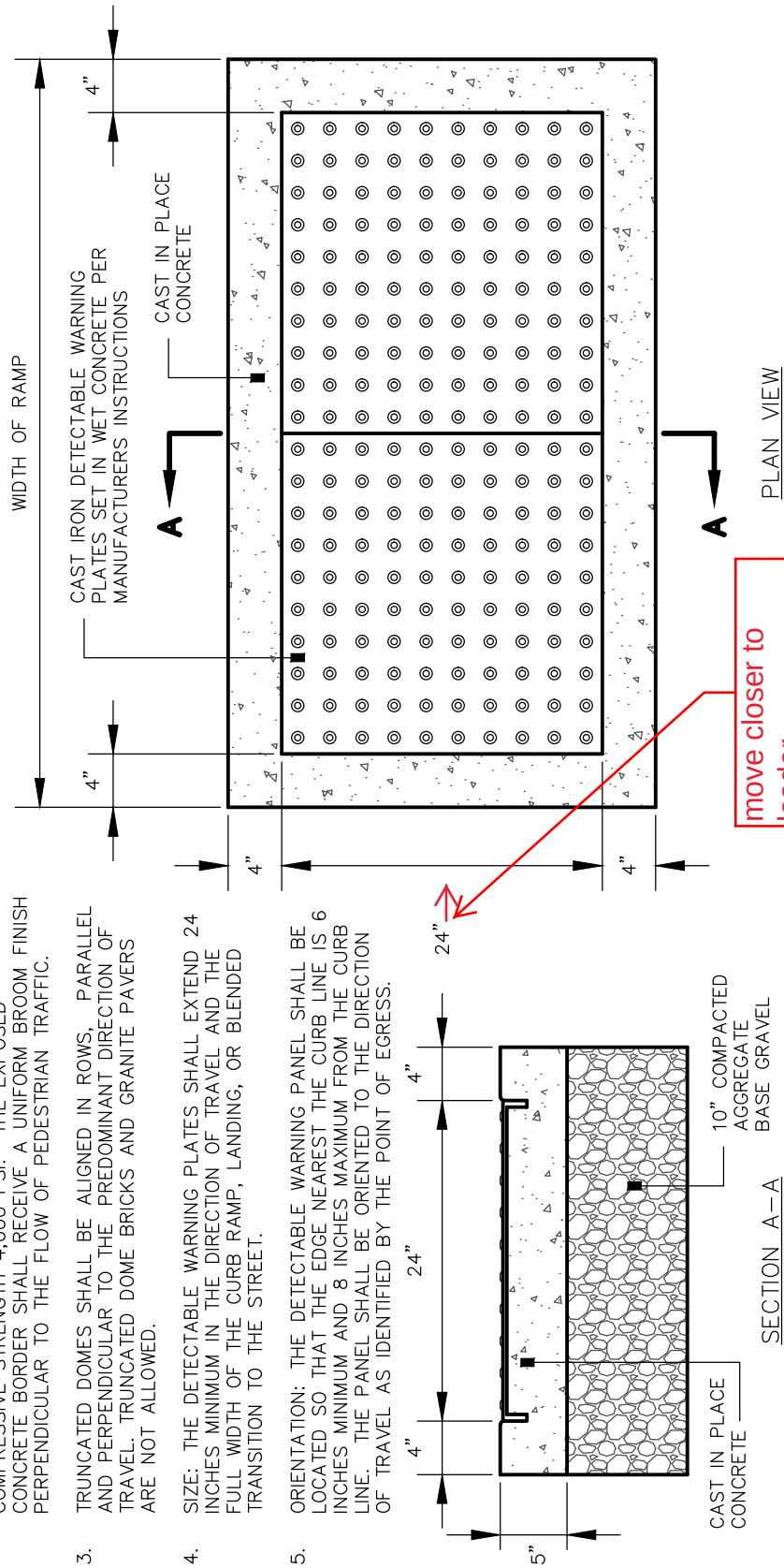
FIGURE:

**ISLAND PEDESTRIAN CROSSINGS
FOR ISLANDS 6' OF GREATER**

I-6H

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.



SIDEWALK RAMP DETECTABLE WARNING PANEL

NOT TO SCALE

DATE:
JUNE 2022
REVISED:

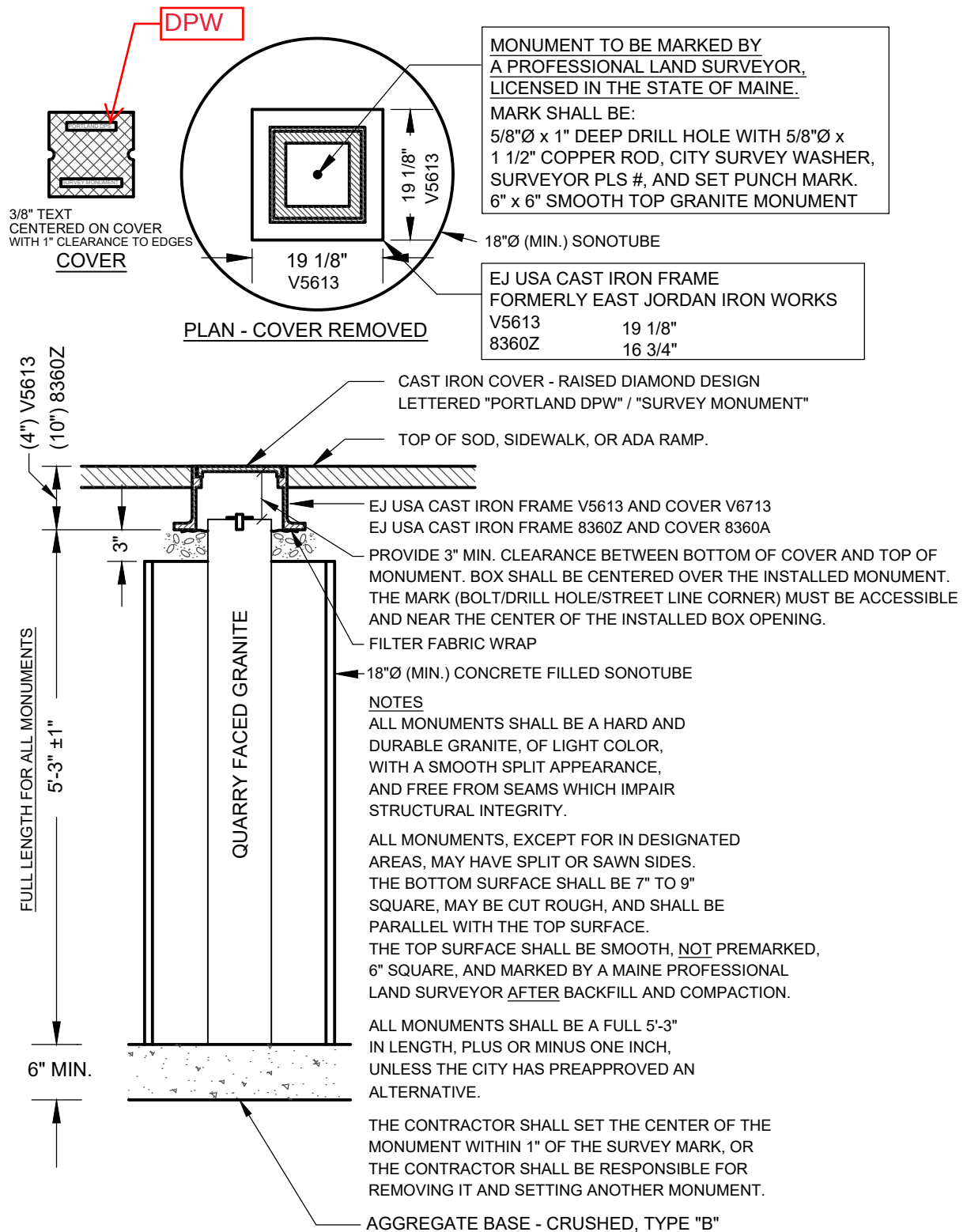
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

FIGURE:

SIDEWALK RAMP DETECTABLE WARNING PANEL

I-7



GRANITE STREET MONUMENTS - NEW OR REPLACEMENT

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

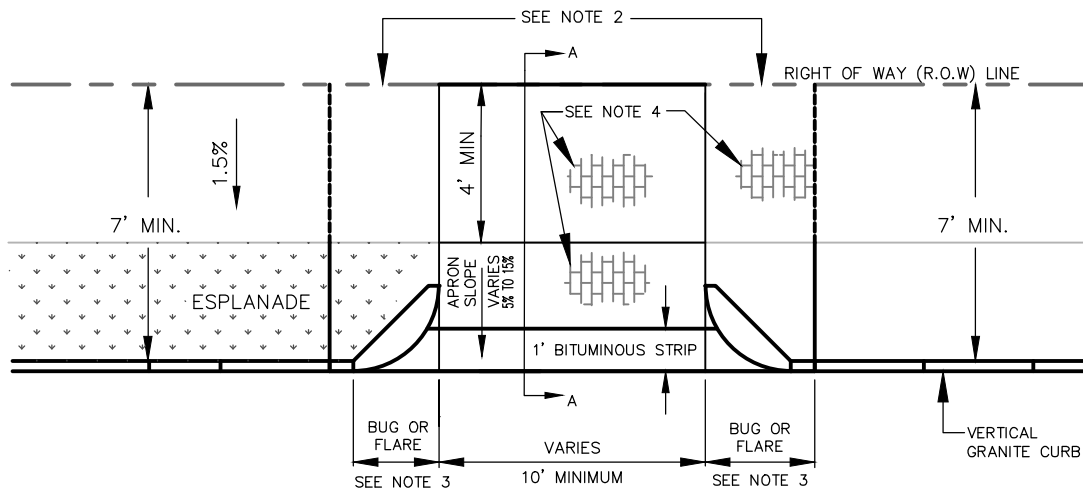
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

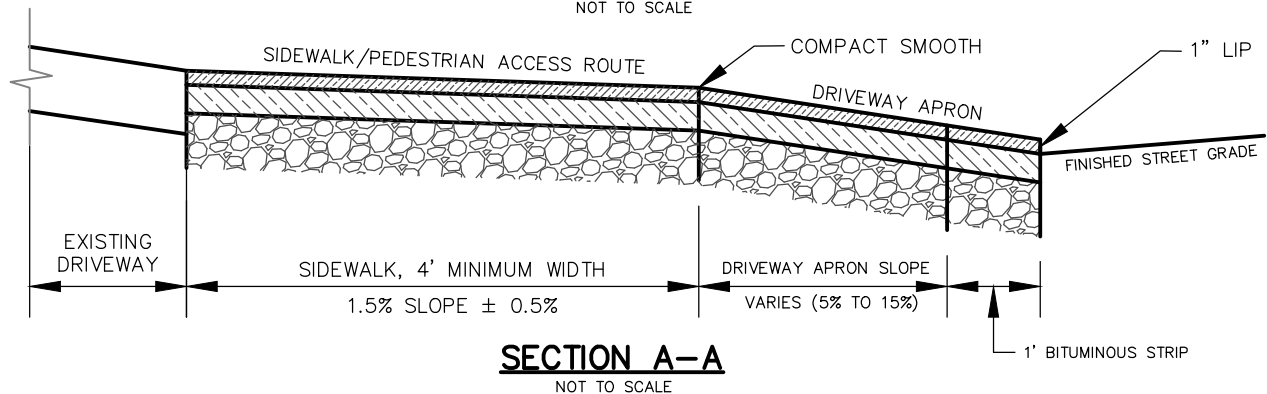
GRANITE STREET MONUMENT - NEW OR REPLACEMENT

I-8



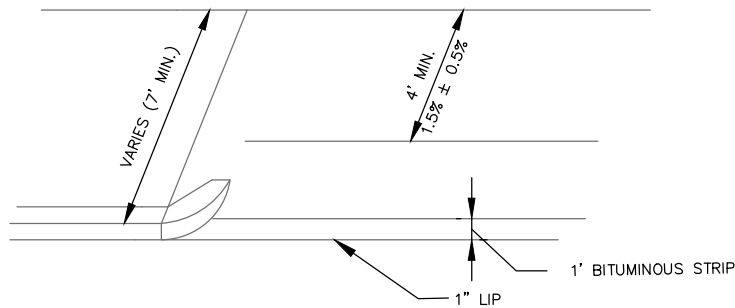
STANDARD RESIDENTIAL DRIVEWAY APRON LAYOUT

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. TWO-FOOT RADIUS CORNER GRANITE PIECES ("BUGS") ARE REQUIRED AT LOW-VOLUME DRIVEWAYS UNLESS OTHERWISE DIRECTED BY DPW. AT OTHER DRIVEWAYS, STANDARD FLARE/TIPDOWN TREATMENTS SHALL BE USED.
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.
5. THIS LAYOUT MAY BE REQUIRED AT MINOR DRIVEWAYS SERVING COMMERCIAL OR INDUSTRIAL USES.

DATE:
JUNE 2022

REVISED:

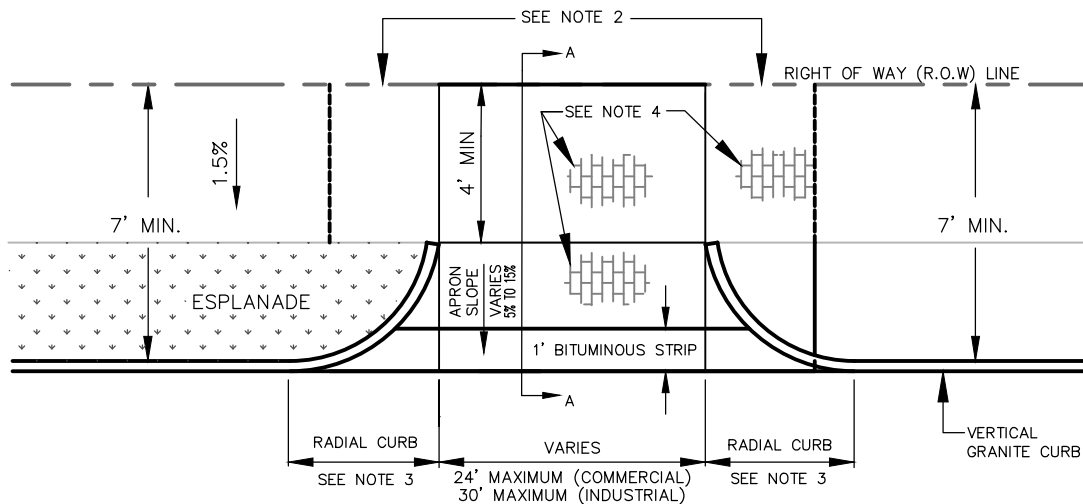
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

RESIDENTIAL DRIVEWAY APRON

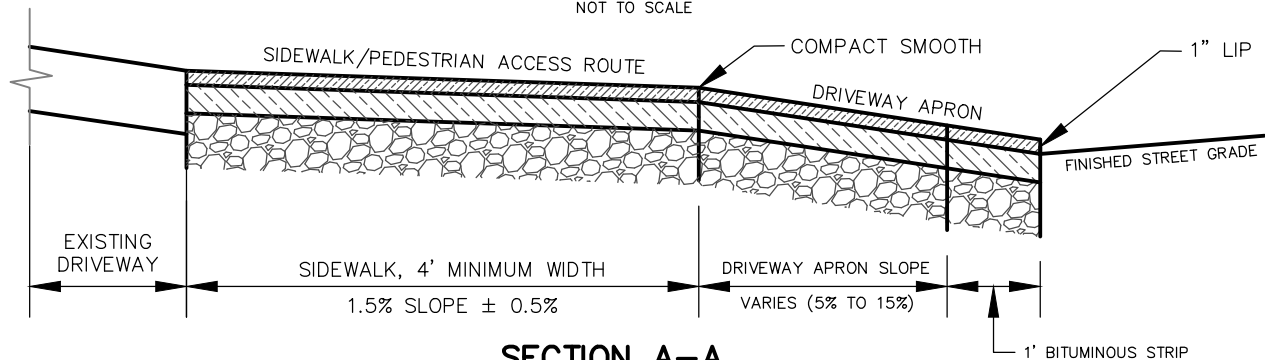
FIGURE:

I-9A



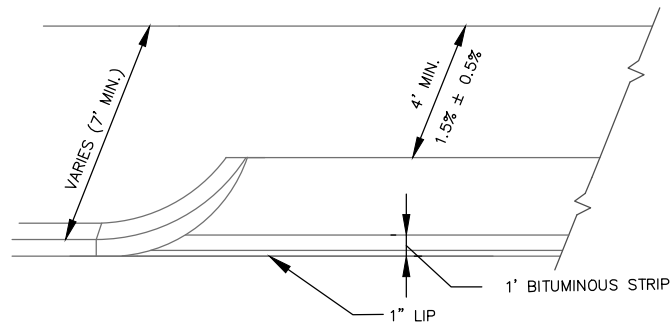
STANDARD COMMERCIAL DRIVEWAY APRON LAYOUT

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..

DATE:
JUNE 2022

REVISED:

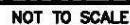
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

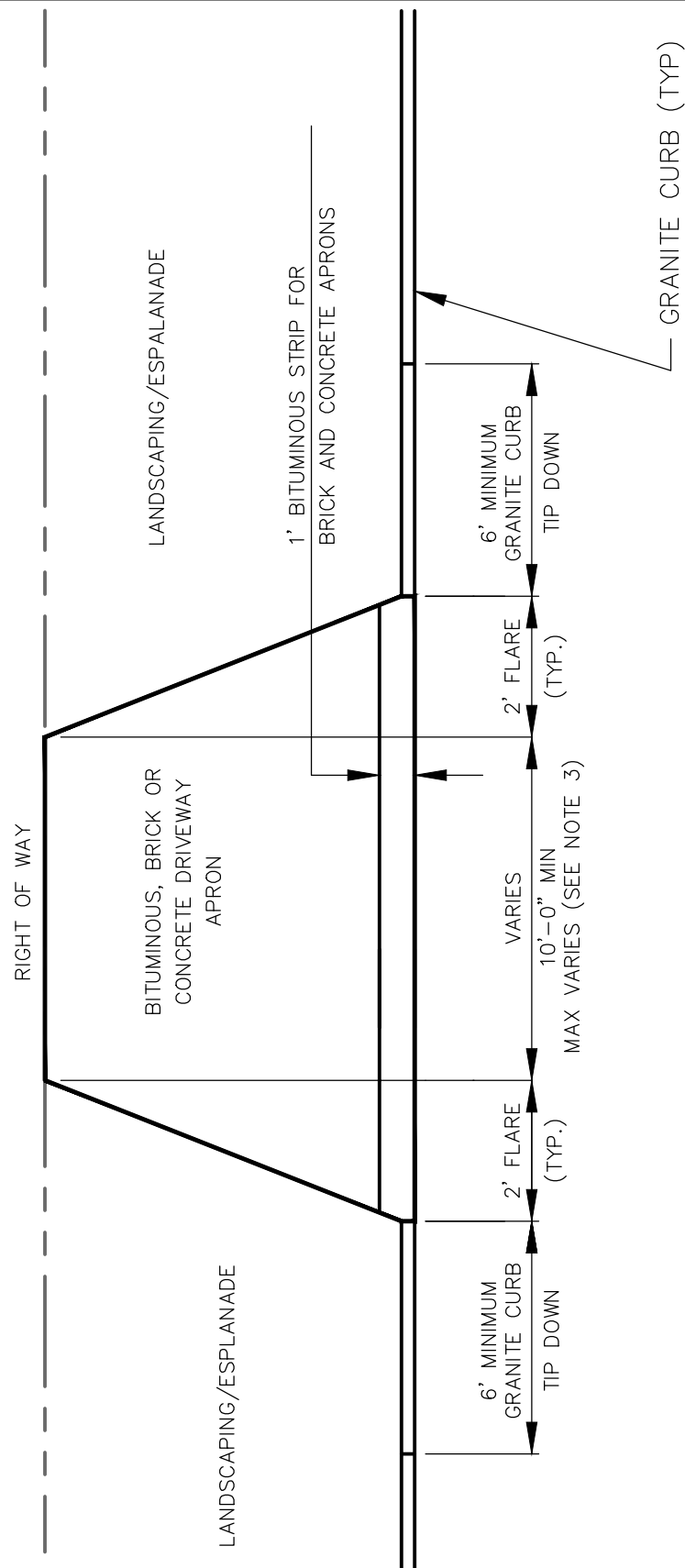
TRANSPORTATION
DESIGN STANDARDS
SECTION I

COMMERCIAL/INDUSTRIAL DRIVEWAY APRON

FIGURE:

I-9B





NOTES:

1. THIS DETAIL SHALL NOT BE USED UNLESS THERE ARE NO EXISTING OR PROPOSED SIDEWALKS ALONG THE FRONTAGE OF THE PROPERTY SERVED BY THE PROPOSED DRIVEWAY.
2. MATCH GRADE OF EXISTING DRIVEWAY AT R. O. W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.
3. MAXIMUM DRIVEWAY WIDTH IS 20 FEET FOR MINOR RESIDENTIAL DRIVEWAYS, 24 FEET FOR COMMERCIAL DRIVEWAYS, AND 30 FEET FOR INDUSTRIAL DRIVEWAYS.

DRIVEWAY APRON LAYOUT ALONG FRONTAGE WITHOUT PED ACCESS

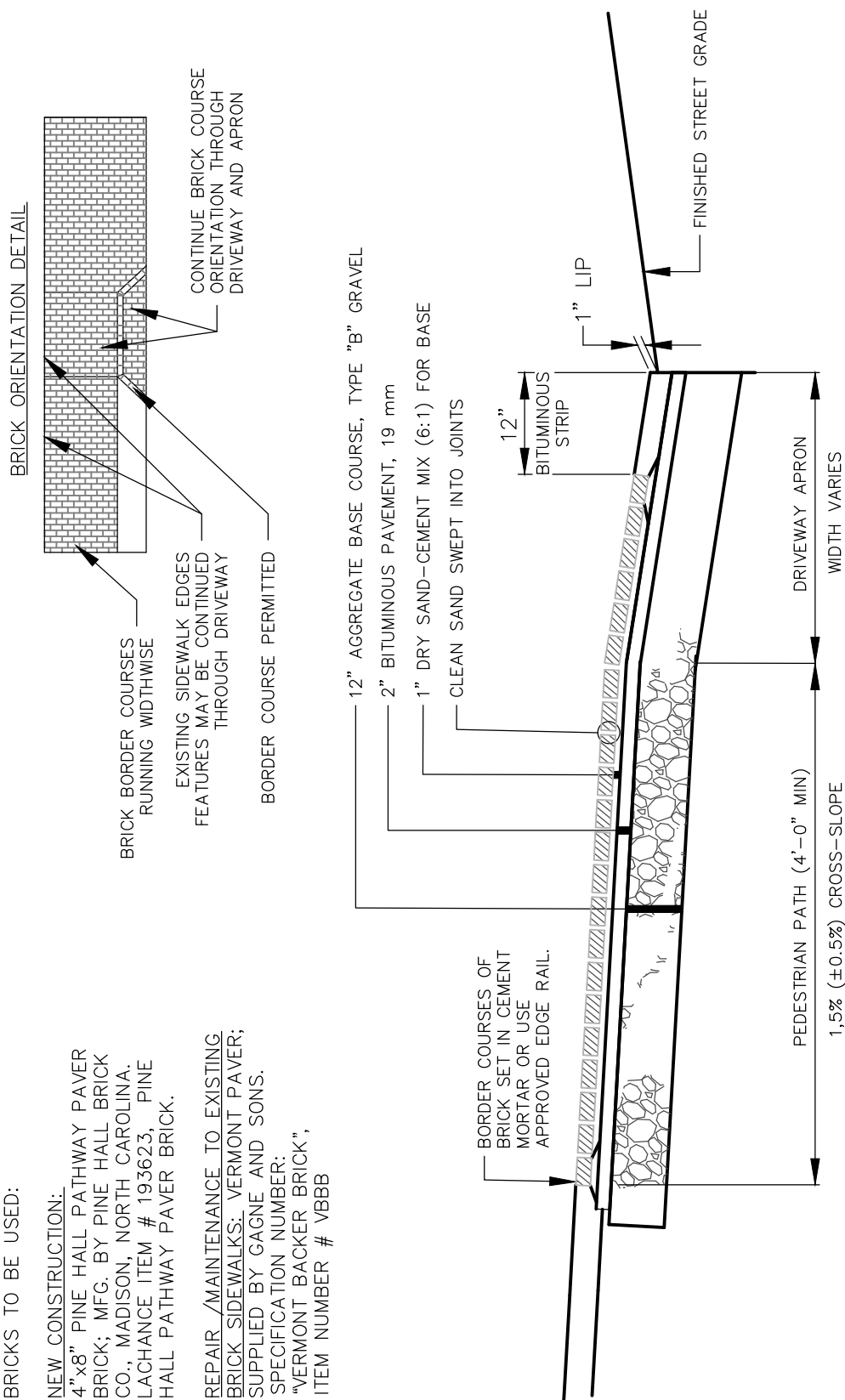
NOT TO SCALE

DATE: JUNE 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	DRIVEWAY APRON LAYOUT ALONG STREET FRONTAGE WITHOUT PED ACCESS		I-9D

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 PAVES;
SUPPLIED BY GAGNE AND SONS.
SPECIFICATION NUMBER:
"VERMONT BACKER BRICK",
ITEM NUMBER # VB88



typo

BRICK DRIVEWAY APRON WITH BITUMINOUS BASE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

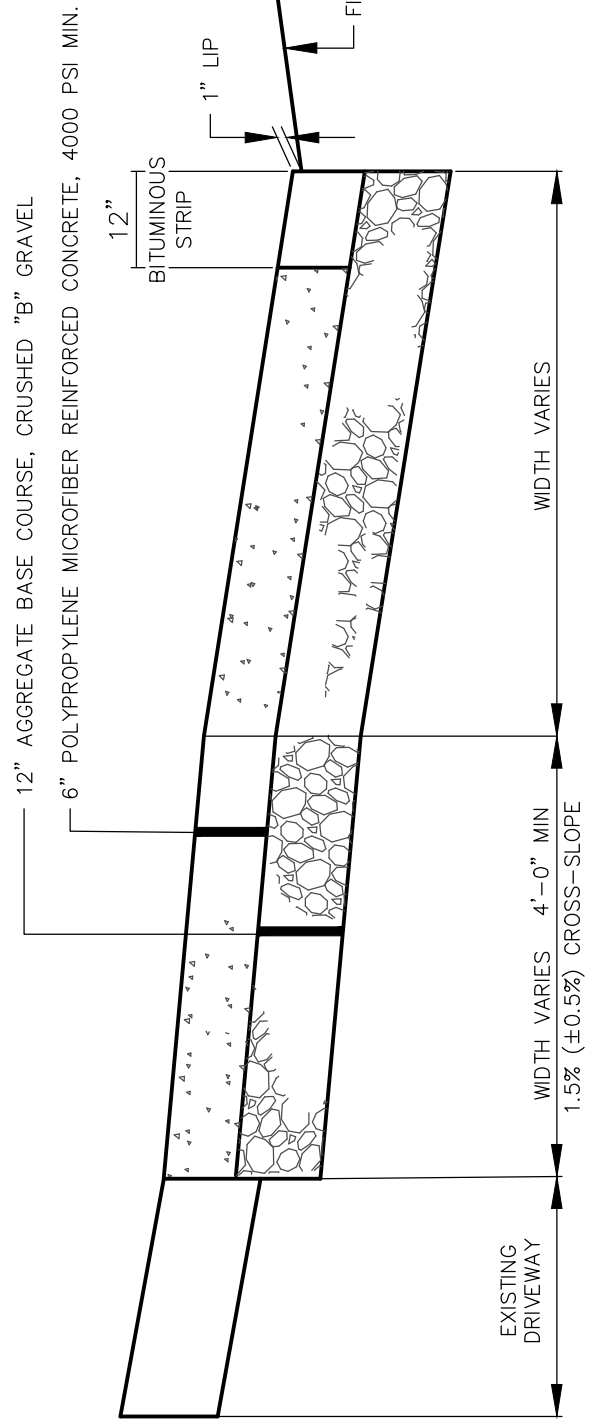
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

**BRICK DRIVEWAY APRON
WITH BITUMINOUS BASE**

I-10A

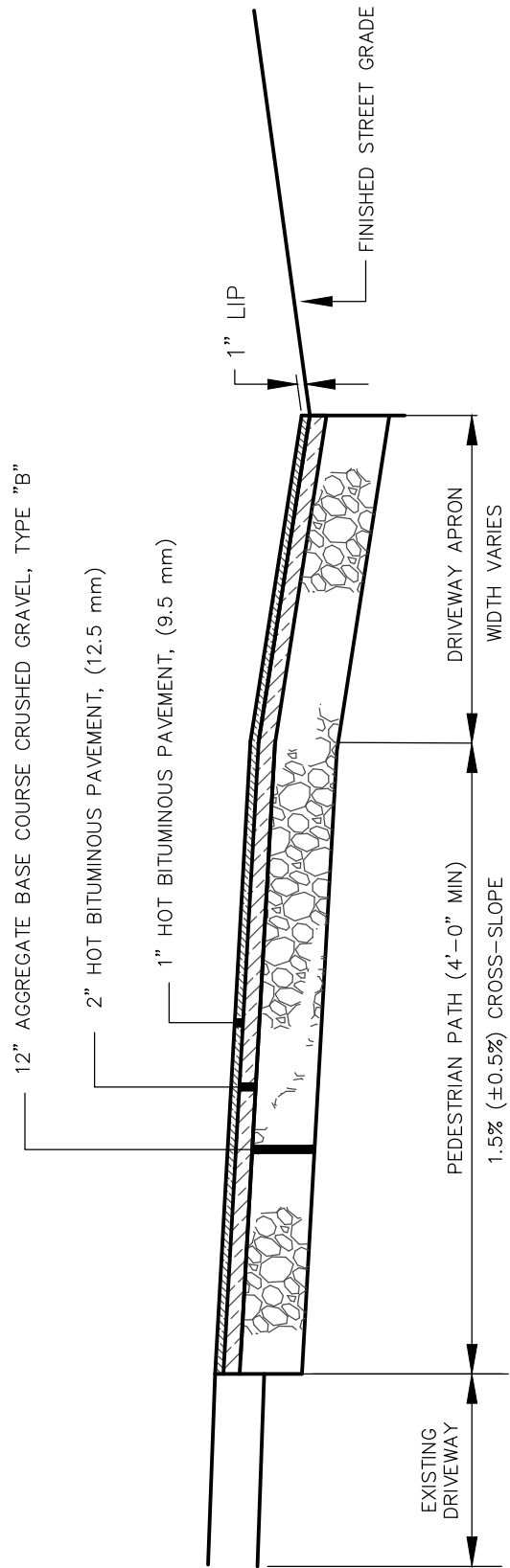


REINFORCED CONCRETE DRIVEWAY APRON

NOT TO SCALE

add salt guard note
shown on I-11B?

DATE: JUNE 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
	REINFORCED CONCRETE DRIVEWAY APRON		I-10B



BITUMINOUS DRIVEWAY APRON

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

BITUMINOUS DRIVEWAY APRON

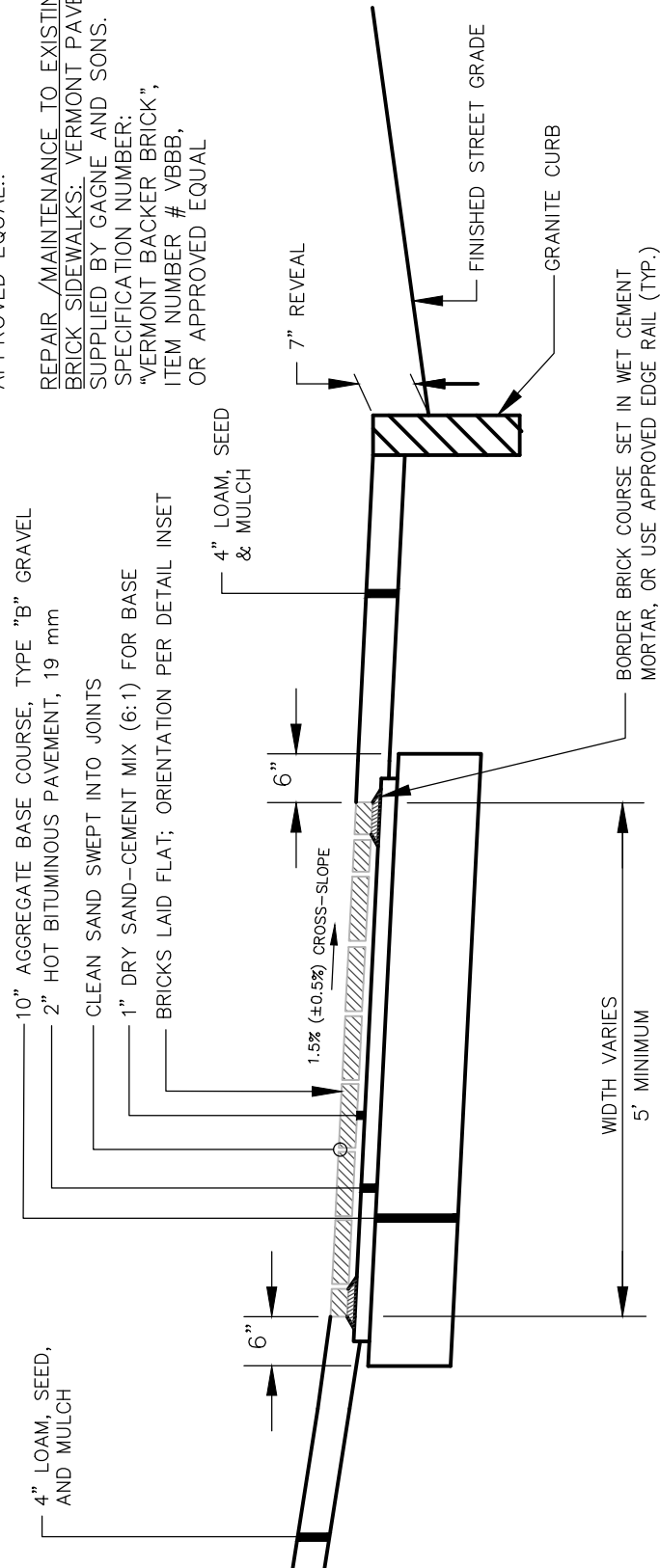
I-10C

BRICKS TO BE USED:

NEW CONSTRUCTION:

4"x8" PINE HALL PATHWAY PAVER
BRICK; MFG. BY PINE HALL BRICK
CO., MADISON, NORTH CAROLINA, OR
APPROVED EQUAL..
LACHANCE ITEM # 193623, PINE
HALL PATHWAY PAVER BRICK, OR
APPROVED EQUAL..

REPAIR /MAINTENANCE TO EXISTING
BRICK SIDEWALKS: VERMONT PAVER;
SUPPLIED BY GAGNE AND SONS.
SPECIFICATION NUMBER:
"VERMONT BACKER BRICK",
ITEM NUMBER # VBBB,
OR APPROVED EQUAL



BRICK SIDEWALK WITH BITUMINOUS BASE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

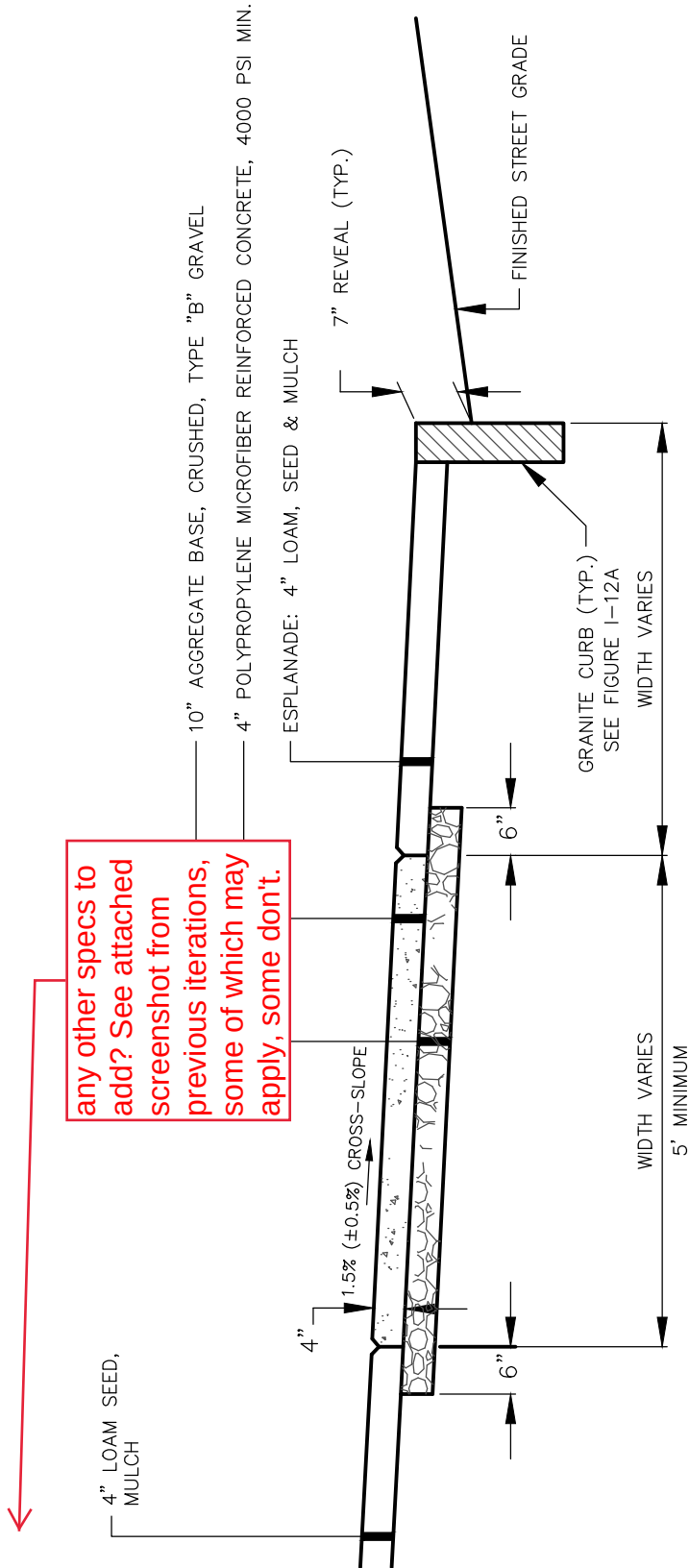
FIGURE:

BRICK SIDEWALK WITH BITUMINOUS BASE

I-11A

NOTE

CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDECK SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.



any other specs to add? See attached screenshot from previous iterations, some of which may apply, some don't.

REINFORCED CONCRETE SIDEWALK

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

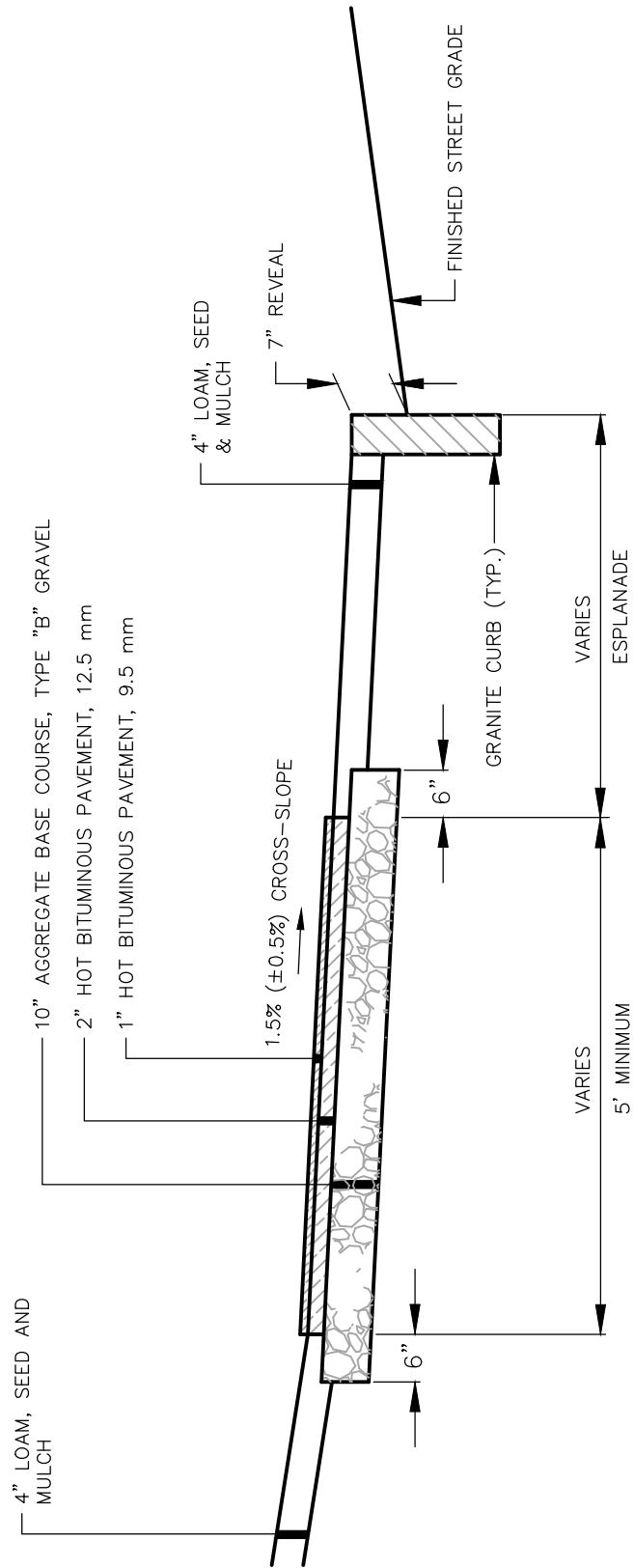
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

REINFORCED CONCRETE SIDEWALK

I-11B



BITUMINOUS SIDEWALK

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

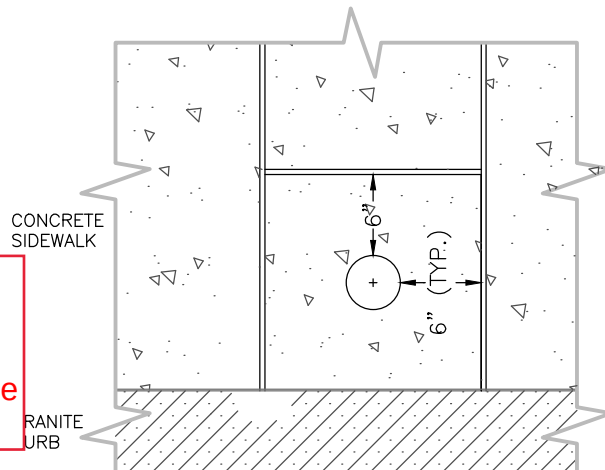
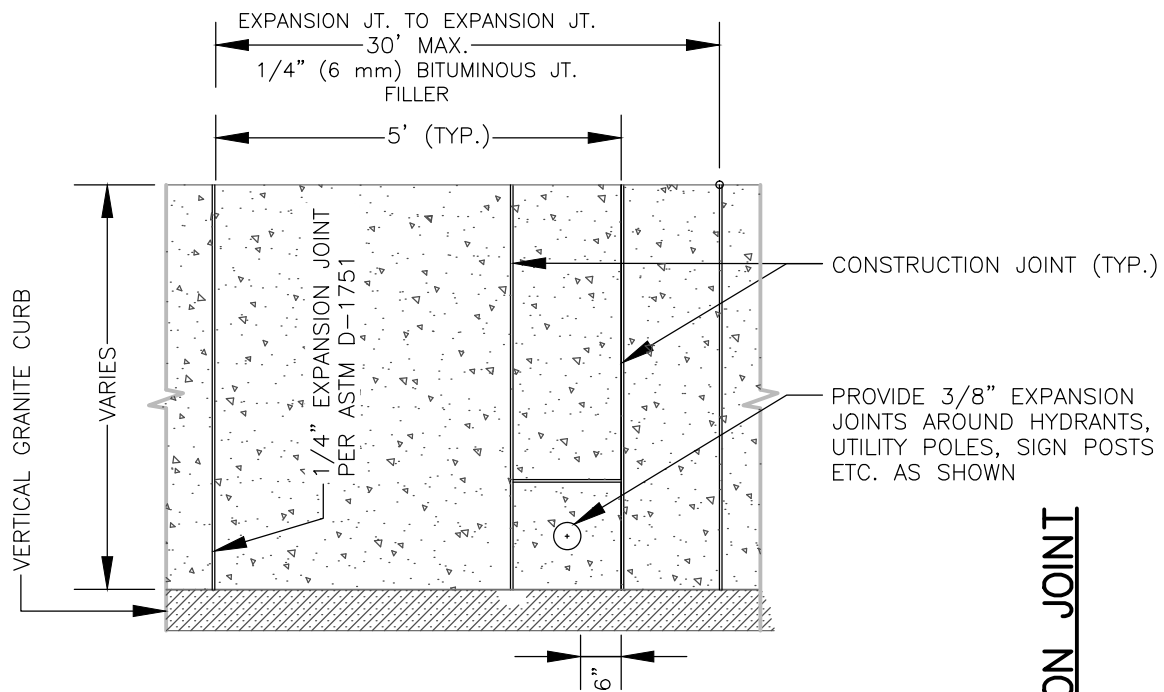
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

BITUMINOUS SIDEWALK

I-11C



is "construction" synonymous with "expansion"? Consider using one term consistently

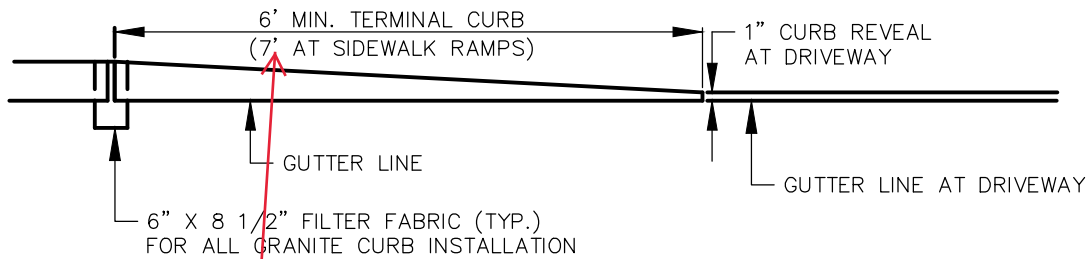
SIDEWALK EXPANSION JOINT
NOT TO SCALE

1/4" wide preformed filler?

CONCRETE SIDEWALK ~~EXPANSION~~ JOINT NOTES:

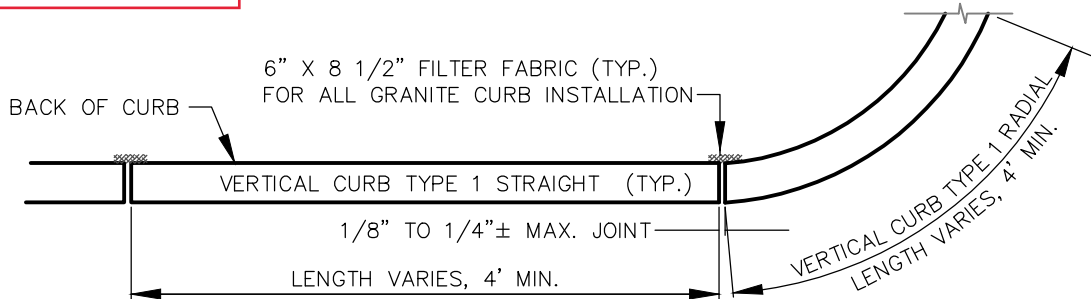
- EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
- 1/4" (6mm) BITUMINOUS JOINT FILLER SHALL BE INSTALLED AT THE EXPANSION JOINT LOCATIONS AND SHALL EXTEND THE FULL LENGTH/DEPTH OF THE CONCRETE.
- 1" DEEP CONSTRUCTION JOINTS SHALL BE PLACED:
 - AT INTERVALS OF APPROXIMATELY 15 FEET
 - AT THE SPACING THAT MATCHES ADJACENT TIP DOWN CURB
 - EXTENSION OF EXPANSION JOINTS LOCATED AT HYDRANTS & UTILITY POLES.
- FORMED CONSTRUCTION JOINTS SHALL BE FINISHED WITH A TOOL HAVING A 1/4" (6 mm) RADIUS. **control**
- SCORED JOINTS SHALL BE 1/4" (6 mm) DEEP AND PLACED AT THE SPACING INDICATED FOR THE WIDTH OF THE SIDEWALK.
- CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWEL AND BROOM A FINE BRUSH IN A TRANSVERSE DIRECTION.
- 1/4" (6 mm) DEEP SCORED JOINTS (TYP.) SPACES AT 5 FOOT OR EQUAL TO SIDEWALK WIDTH AS GOVERNED BY PLAN AND/OR DPW ENGINEER. **note 7 is redundant**

DATE: JUNE 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	SIDEWALK EXPANSION JOINT		I-11D

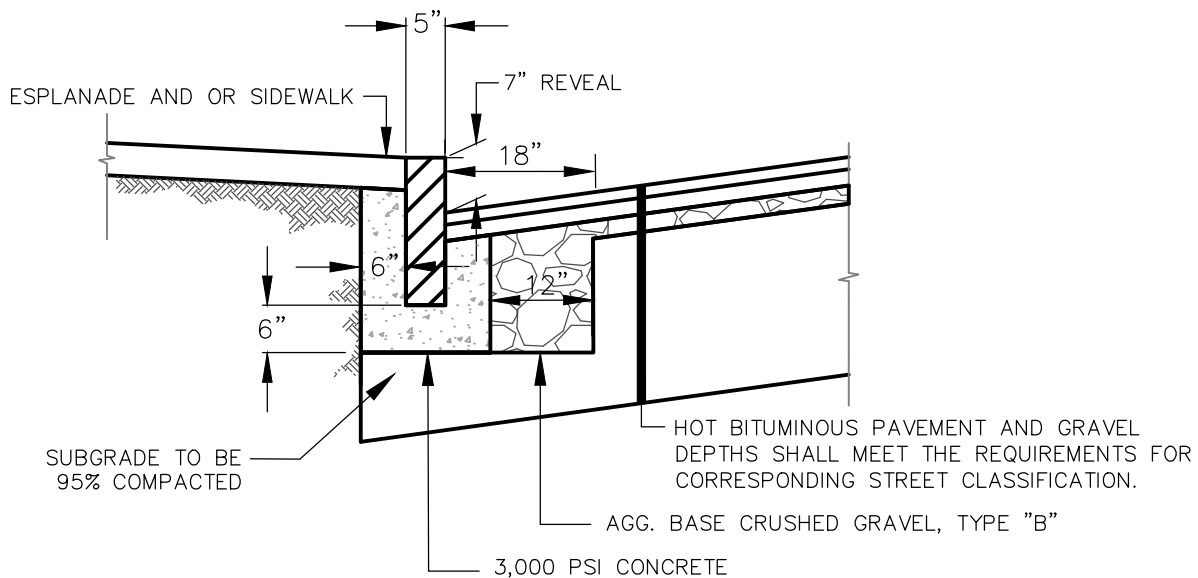


is this now 8'?

TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

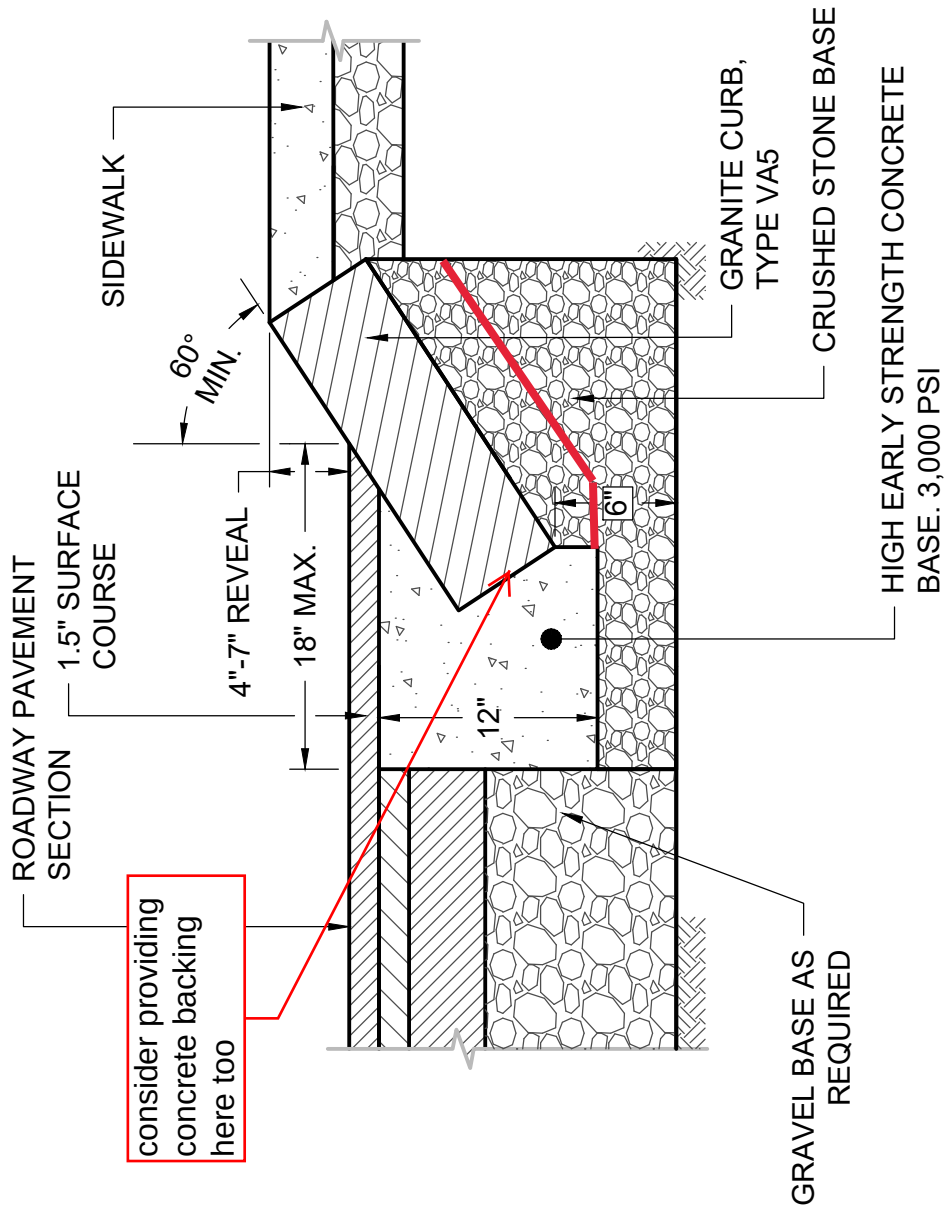
NOTES:

1. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
2. 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.
3. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
4. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB

NOT TO SCALE

DATE: JUNE 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	VERTICAL GRANITE CURB		I-12



SLOPED GRANITE CURB

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

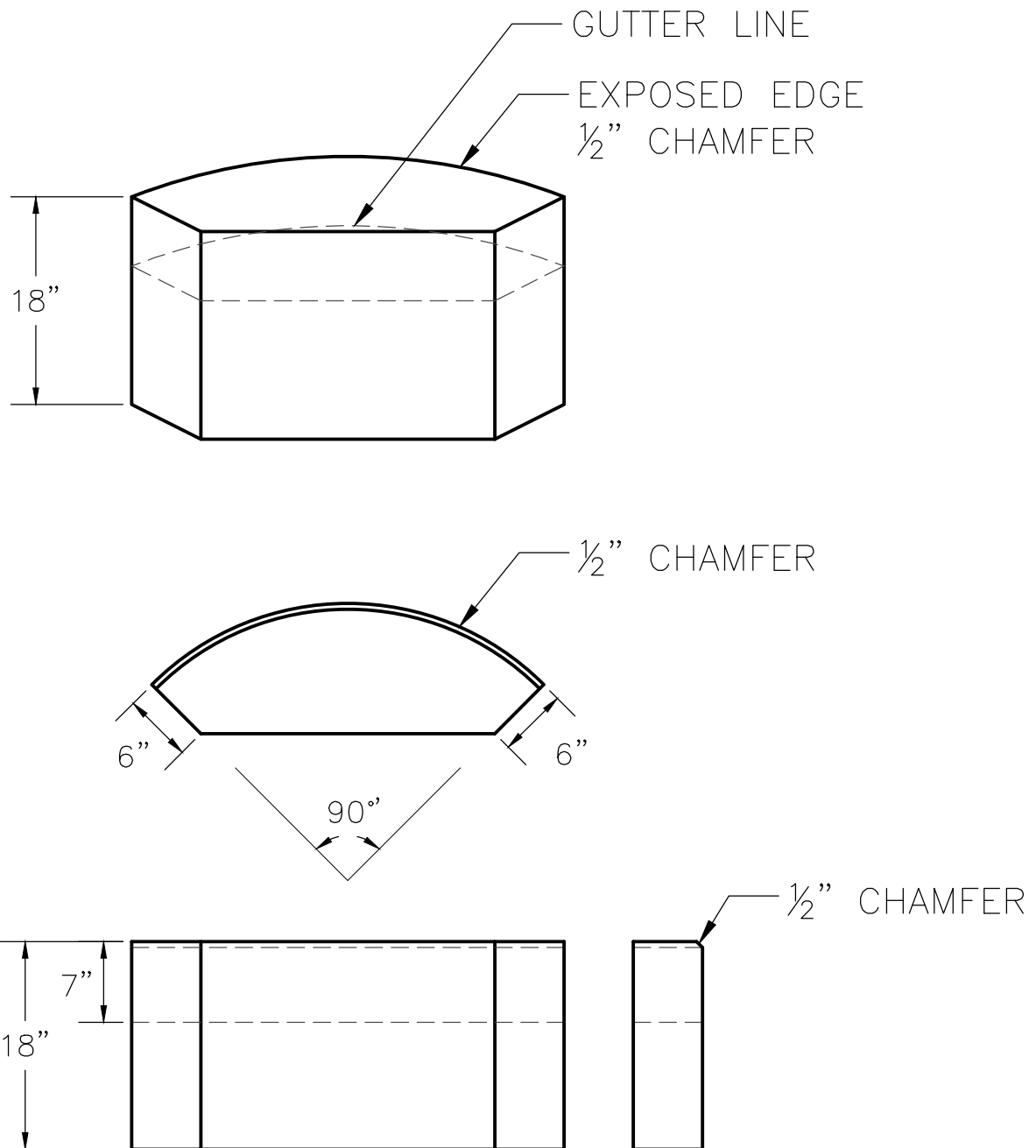
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

SLOPED GRANITE CURB

FIGURE:

I-13



GRANITE RADIUS CORNER "BUG"

NOT TO SCALE

DATE:
JUNE 2022

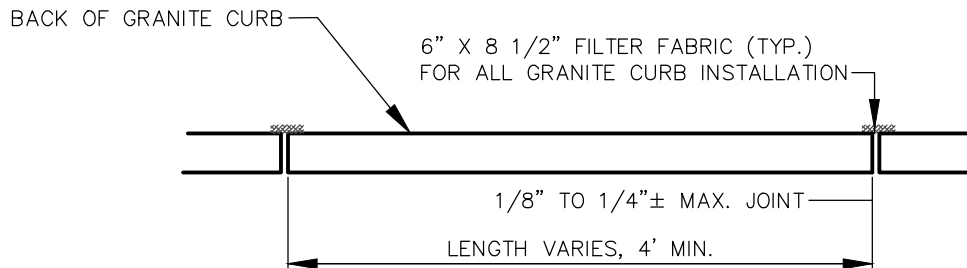
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

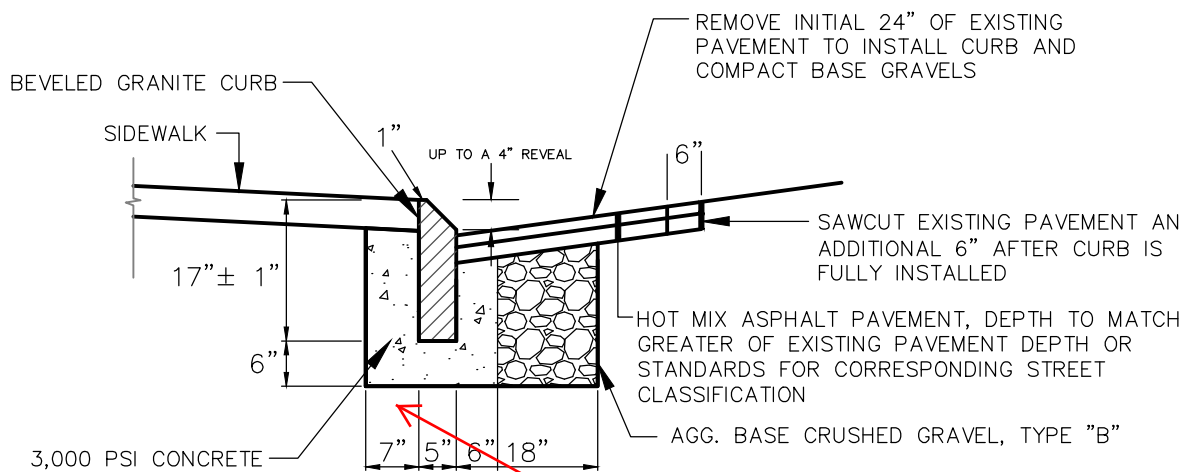
**GRANITE RADIUS CORNER
"BUG"**

I-14



VERTICAL GRANITE CURB PLAN VIEW

NOT TO SCALE



NOTES:

1. INSTALL PER MANUFACTURER'S SPEC'S
2. PROVIDE CUSTOM TRANSITION CURB THAT TIPS DOWN 3" IN BETWEEN MOUNTABLE AND VERTICAL CURBS. SAWCUT TRANSITION STONE IN THE FIELD FOR FLUSH JOINT WITH ADJACENT VERTICAL CURB
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 A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
6. WOODEN SHIMS MAY BE USED TO SET CURB.

MOUNTABLE BEVELED GRANITE CURB CROSS SECTION

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

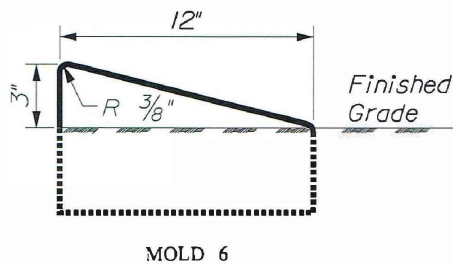
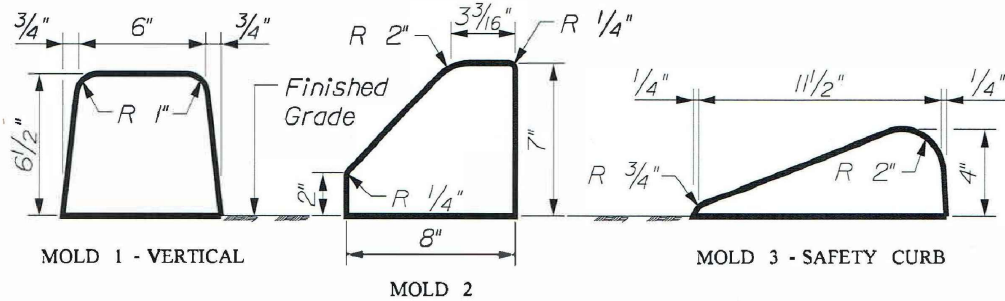
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

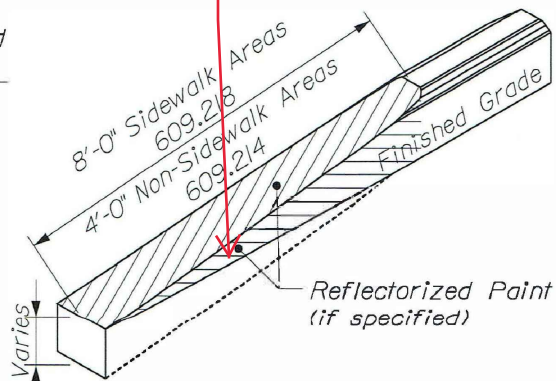
MOUNTABLE BEVELED GRANITE CURB

FIGURE:

I-15



consider improving
this detail - see
email



SLIPFORM CONCRETE CURB

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

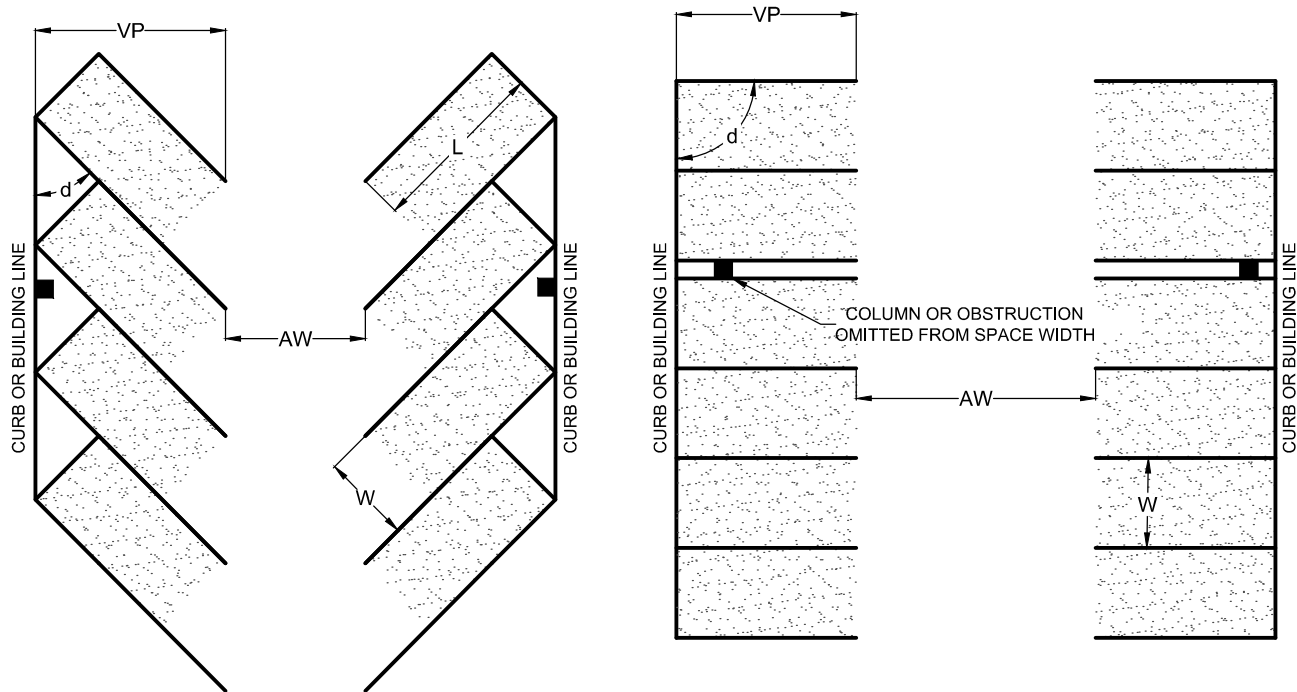
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

SLIPFORM CONCRETE CURB

I-16



Standard Parking Dimensions

Parking Angle (d)	Space Length (L)	Space Width (W)	Aisle Width (AW)	Vehicle Projection (VP)
90°	18	9	24	18.0
75°	18	9	22	19.7
60°	18	9	19	20.1
45°	18	9	14	19.0
30°	18	9	12	16.7
0° (parallel)	20	8	12	8.0

82 Hanover
19' wide a
on row of
and one r
compact.

Compact Parking Dimensions

Parking Angle (d)	Space Length (L)	Space Width (W)	Aisle Width (AW)	Vehicle Projection (VP)
90°	15	8	24	15.0
75°	15	8	22	16.8
60°	15	8	19	17.5
45°	15	8	14	16.9
30°	15	8	12	15.2
0° (parallel)	15	7	10	7.0

667 Congre
a aisle width
17.83 for co
spaces. - W

NOTES:

- STANDARD SPACE WIDTH MAY BE REDUCED TO 8.5 FEET IN LOW-TURNOVER LOTS.
- COMPACT SPACES SHOULD BE DESIGNED AS CLOSE TO STANDARD AS POSSIBLE WITHIN SITE CONSTRAINTS.
- ACCESSIBLE PARKING SPACES SHALL BE PROVIDED IN ACCORDANCE WITH ADA, AND SHALL BE CONSIDERED A STANDARD PARKING SPACE WHEN CALCULATING THE PERMISSIBLE NUMBER OF COMPACT SPACES.

All dimensions in feet

17'

Dimensions represent clear width and do not include obstruction such as structural columns.

Depending
use and tu
generally
recommen
width less

DATE:

JUNE 2022

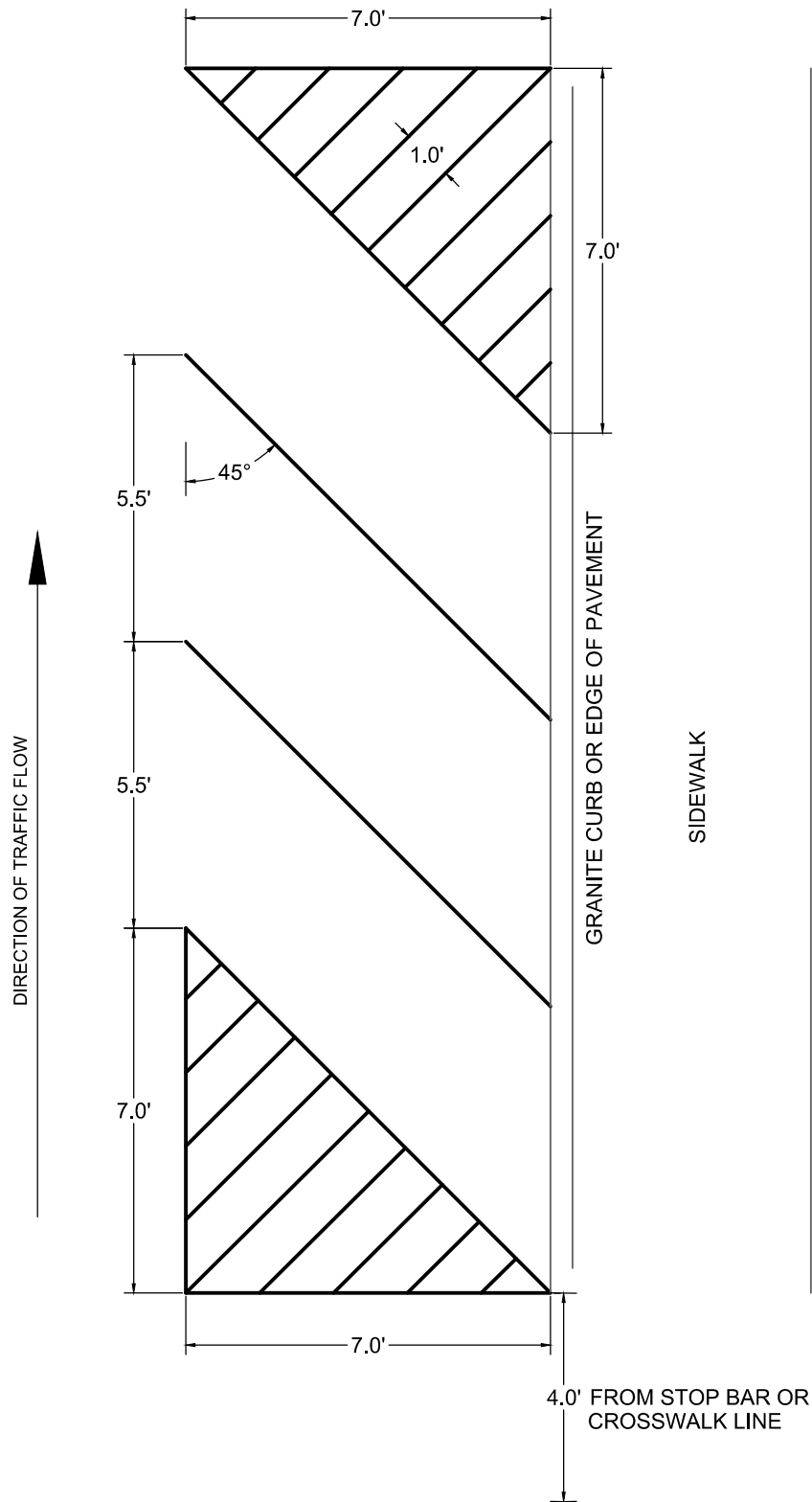
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

DESIGN STANDARDS
SECTION I

VEHICLE PARKING DIMENSIONS

I-16A



MOTORCYCLE PARKING

*ALL PAVEMENT MARKINGS SHALL BE 4 INCH WIDE WHITE LINES.

DATE:
JUNE 2022

REVISED:

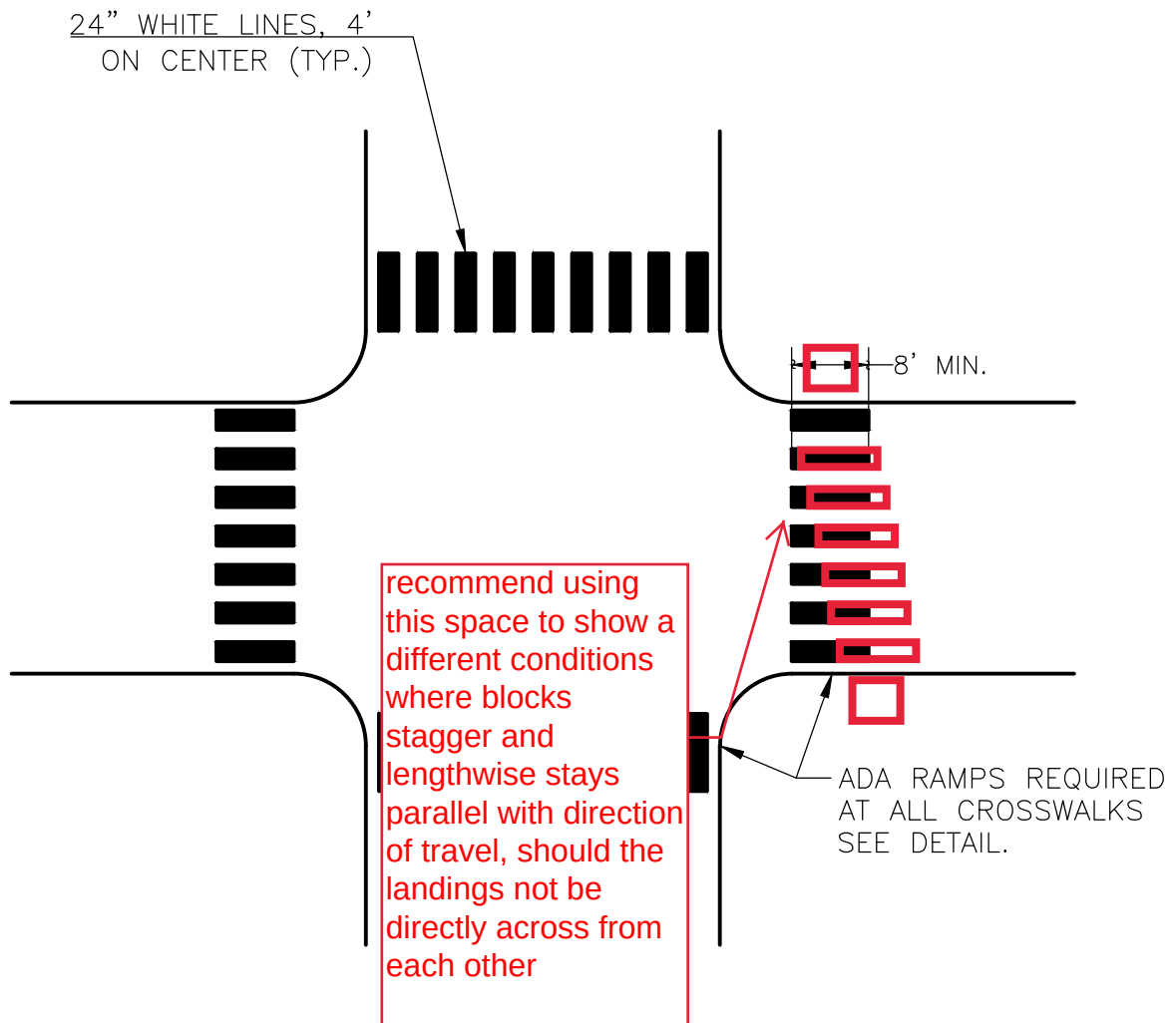
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

MOTORCYCLE PARKING DIMENSIONS

I-16B



CROSSWALK MARKINGS

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

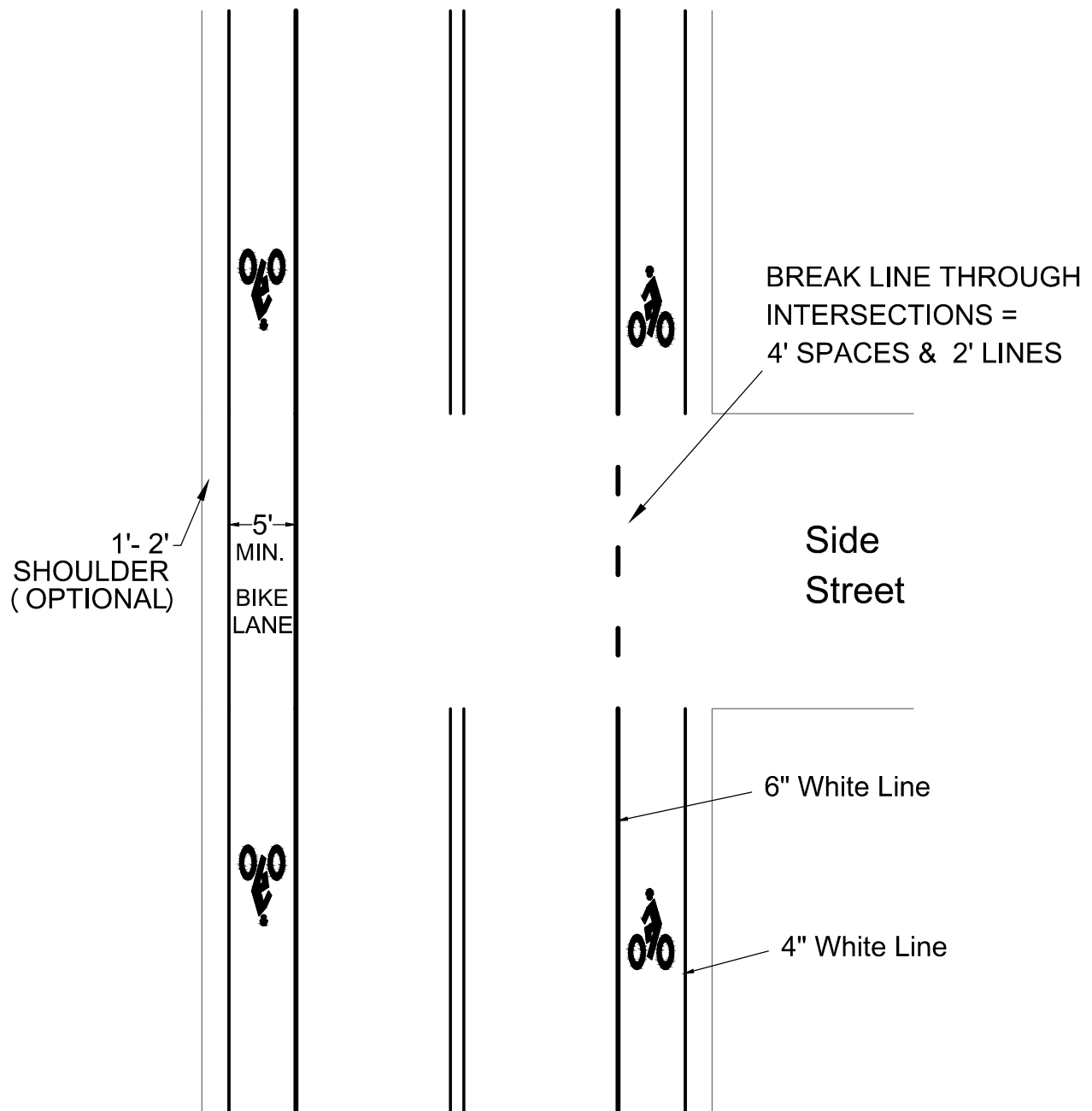
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

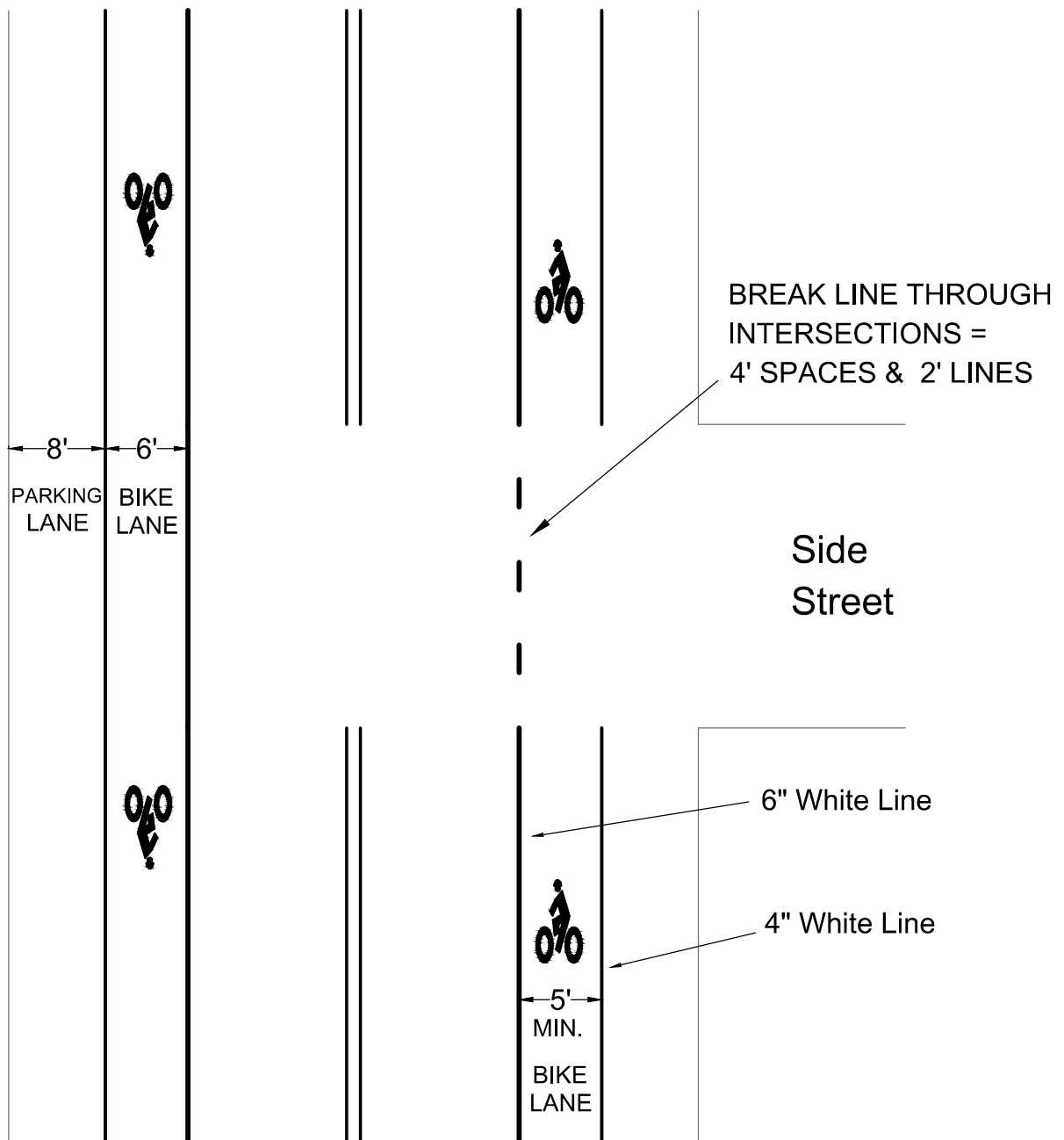
TYPICAL CROSSWALK MARKINGS

I-17



CITY STREET W/ BIKE LANES

DATE: JUNE 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:			I-20A
CITY STREET W/BIKE LANES & NO PARKING			



CITY STREET W/ PARKING & BIKE LANES

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

CITY STREET W/BIKE LANES & PARKING

I-20B

TYPICAL BICYCLE LANE PAVEMENT MARKINGS



SHARED USE LANE
SYMBOL



BICYCLE LANE
SYMBOL

TYPICAL BICYCLE ROUTE SIGNAGE



R3-17
30"x24"



R3-17
30"x24"



R3-17B
30"x12"



DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

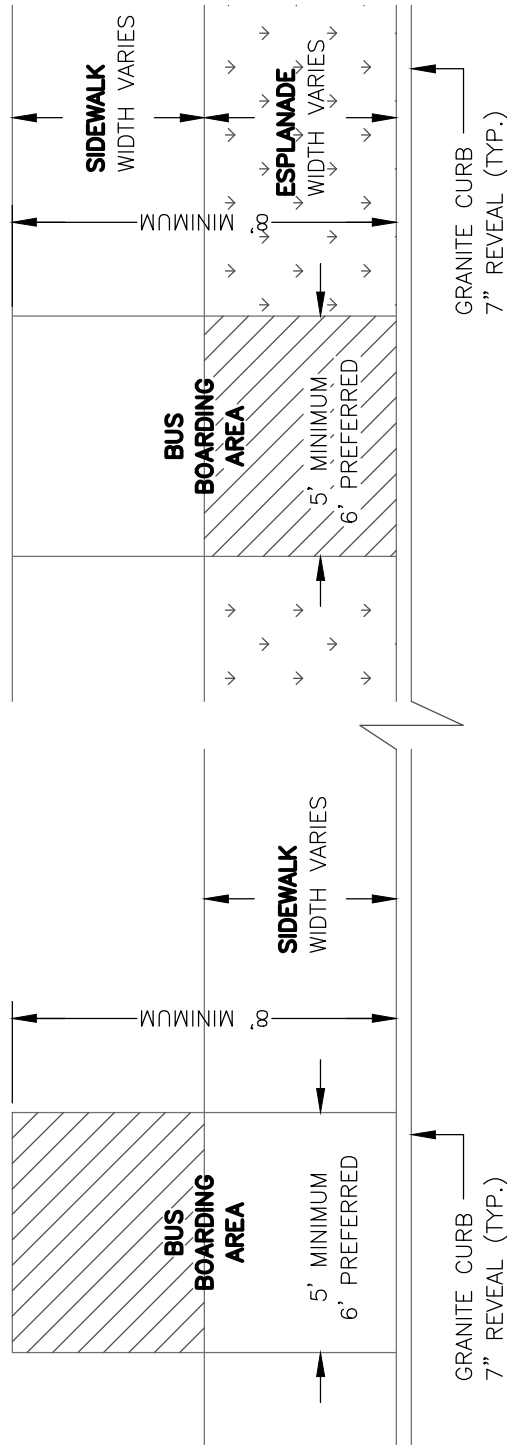
FIGURE:

**TYPICAL BIKEWAY PAVEMENT MARKINGS
AND BICYCLE ROUTE SIGNAGE**

I-21

NOTES:

1. **SURFACE.** BUS STOP BOARDING AREAS SHALL HAVE A FIRM, STABLE SURFACE.
2. **DIMENSIONS.** BUS STOP BOARDING AREAS SHALL PROVIDE A CLEAR LENGTH OF 8' MINIMUM, MEASURED PERPENDICULAR TO THE CURB OR VEHICLE ROADWAY EDGE, AND A CLEAR WIDTH OF 5' MINIMUM, MEASURED PARALLEL TO THE VEHICLE ROADWAY. THIS AREA SHALL BE CLEAR OF ANY OBSTRUCTIONS, INCLUDING BUT NOT LIMITED TO: BICYCLE RACKS, LIGHT POLES, UTILITY POLES, FIRE HYDRANTS, STREET SIGNS, STREET FURNITURE, NEWSPAPER BOXES OR SIMILAR OBSTACLES.
3. **CONNECTION.** BUS STOP BOARDING AREAS SHALL BE CONNECTED TO STREETS, SIDEWALKS OR PEDESTRIAN PATHS BY AN ADA ACCESSIBLE ROUTE.
4. **SLOPE.** PARALLEL TO THE ROADWAY, THE SLOPE OF THE BUS STOP BOARDING AREA SHALL BE THE SAME AS THE ROADWAY, TO THE MAXIMUM EXTENT PRACTICABLE. PERPENDICULAR TO THE ROADWAY, THE SLOPE OF THE BUS STOP BOARDING AREA SHALL NOT EXCEED 2%.



**BUS BOARDING AREA
WITHOUT ESPLANADE**
NOT TO SCALE

**BUS BOARDING AREA
WITH ESPLANADE**
NOT TO SCALE

DATE:
JUNE 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

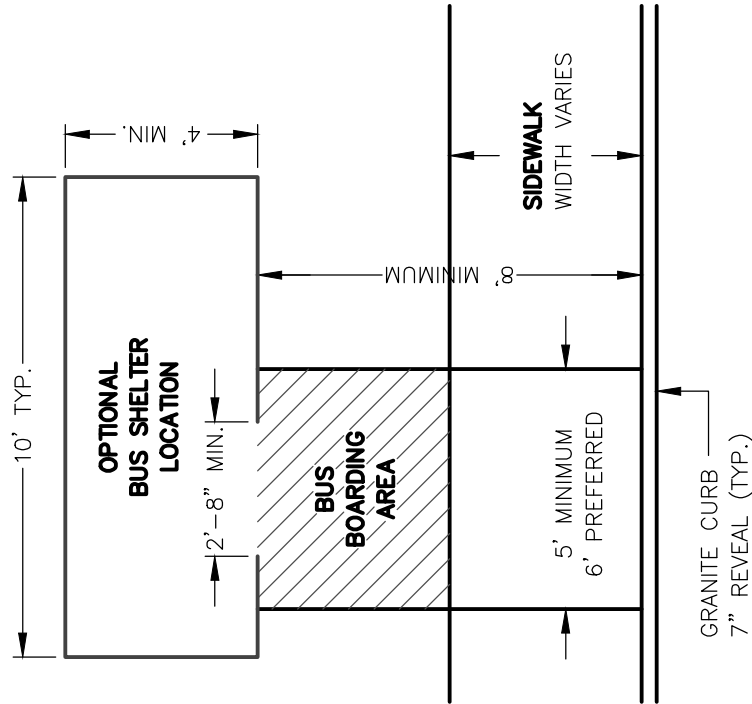
FIGURE:

**BUS STOP BOARDING AREA LAYOUT FOR
SIDEWALK WITH OR WITHOUT ESPLANADE**

I-39

NOTES:

1. **DIMENSIONS.** MINIMUM CLEAR FLOOR INTERIOR AREA ENTIRELY WITHIN THE PERIMETER OF THE SHELTER IS 2'-6" WIDE BY 4' DEEP TO PERMIT WHEELCHAIR OR MOBILITY AID USER ACCESS. THE MINIMUM SHELTER OPENING FOR WHEELCHAIR ACCESS IS 2'-8".
2. **CONNECTION.** BUS SHELTER OPENINGS WILL BE CONNECTED TO THE BUS BOARDING AREA BY AN ADA ACCESSIBLE ROUTE.
3. **SLOPE.** PARALLEL TO THE ROADWAY, THE SLOPE OF THE BUS BOARDING AREA SHALL BE THE SAME AS THE ROADWAY, TO THE MAXIMUM EXTENT PRACTICABLE. PERPENDICULAR TO THE ROADWAY, THE SLOPE OF THE BUS BOARDING AREA SHALL NOT EXCEED 2%.



**BUS SHELTER AND SHELTER SITING
WITHOUT ESPLANADE**

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

**BUS SHELTER AND SHELTER SITING LAYOUT
FOR SIDEWALK WITHOUT ESPLANADE**

FIGURE:

I-40



MEMORANDUM

TO: Nell Donaldson, Director of Special Projects, City of Portland
CC: Nathaniel Smith, Project Engineer, Water Resources, City of Portland
FROM: Lauren Swett, PE
DATE: June 23, 2022
RE: Review of Revisions to Section 2 of the Technical Manual

Woodard & Curran has performed a technical review of Section 2 Sanitary Sewer and Storm Drain Design Standards from the City of Portland's Technical Manual. We have reviewed the red-lined version of the Section 2 text as well as the Section 2 Details. We have the following comments and suggestions for consideration as the City finalizes these documents.

Section 2 Sanitary Sewer and Storm Drain Design Standards

- 2.2.8 I would suggest adding additional clarification to the enclosed parking/garage requirements for drainage being directed to the sanitary sewer. There have been project questions in the past when there is a covered parking area that is open on the sides. I would suggest maybe adding the word covered (i.e. "covered or enclosed parking"). I also like how the oil separator detail refers to the spaces as "partially or totally enclosed parking garages". I would also suggest adding a statement that stormwater from outside of these areas shall be directed away from these areas so that additional stormwater is not directed to the sewer.
- 2.5.4 I do not understand this statement – it starts with an implication that existing brick manholes are allowed, but then says that replacement is performed. I think there may just be extra wording here.
- 2.9.7 Should this restriction clarify that on-street catch basins could connect into other catch basins? In some cases drainage may run catch basin to catch basin in the street before connecting to a manhole.
- 2.11.8 For the option with a grease trap to install a manhole at the connection to the sanitary sewer, can this be done even for pipes smaller than 8" that wouldn't need a manhole at the main?

Sewer and Storm Drain Details

- Figure II-4 I would suggest adding a note here that all manholes and catch basins require buoyancy calculations, and structures shall be modified as necessary based on those calculations.
- Figure II-7 The detail notes that an outlet hood is required but does not show it or give the reference to the detail.
- Figure II-9 The detail does not include any specific acceptable manufacturers.



- Figure II-20 One piece of the oil water separator that is often forgotten is that they typically need to have a vent pipe that has a vertical outlet off to the side of the structure. I would suggest adding a note that a vent pipe may be required.
- Figure II-22 I believe that the granite curb detail has been updated to require concrete embedment of the curb. I'm not sure if it's worth updating this detail to match?
- Figures II-22 & II-23 This detail gives specific allowable pipe requirements for underdrain. Should this information be added to the text of the standard with the information on stormdrain pipe materials?

1. TRANSPORTATION SYSTEMS AND STREET DESIGN STANDARDS**1.1. TRAFFIC STUDIES**

For the purposes of this section, **passenger car equivalents (PCE)** shall be defined as the number of passenger cars or, in the case of non-passenger vehicles, the number of passenger cars that would be displaced by non-passenger vehicles. One tractor trailer combination is the equivalent of two passenger cars.

Developments that generate 100 PCE or more, thus requiring a Traffic Movement Permit (TMP), shall meet the requirements of TMP regulations of State Law, in addition to all applicable transportation site plan standards of the City Code. For more information concerning state TMP requirements, please refer to <http://www.maine.gov/mdot/traffic-counts/traffic-mvmnt-app.php> –or contact the Maine Department of Transportation (MDOT). The City of Portland is the delegated reviewing authority for TMP applications.

Developments that generate less than 100 passenger car equivalents (PCE) but require a scoping meeting because they generate 25 PCE or more and are located

(1) on an arterial; and/or

(2) within ½ mile of a high crash location; and/or

(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D,

shall meet the following standards, if a traffic study is required:

1.1.1.1. Traffic studies shall be prepared, stamped and signed by a Professional Engineer licensed in the State of Maine.

1.1.1.2. Scope of Study:

The City Transportation Engineer, in consultation with the applicant's engineer, shall determine the need for and scope of the traffic study. The requirements for the study shall be based on standard transportation engineering practices.

Commented [SC1]: TDM ties to TMP process: Because of the volume of trips and also the latest TDM language in the state TMP regulations, it seems appropriate and desirable to also require a TDM Plan whenever a TMP is required. Because TDM has most beneficial impact on passenger car and light-duty truck trips, a recommended exception would be for freight or other industrial contexts where it's determined the bulk of the trips are SOV medium/heavy-duty trucks or other equipment.

A typical traffic study includes the following major sections:

- A description of the development proposal
- A description of existing conditions.
- Estimated trip generation by the development and design hour volume for affected driveway(s) and study intersections.
- Trip generation will be based upon the latest edition of the ITE *Trip Generation* publication unless suitable documented local data that meets ITE methodology is available.
- Trip distribution
- Capacity analysis for adjacent roadways and for any existing or proposed driveways.
- Traffic crash analysis for adjacent roadways.
- Key findings concerning traffic impacts, problems, and deficiencies.
- Proposed traffic improvements.
- Summary of findings and recommendations for transportation improvements and other impact mitigation measures.

Commented [SC2]: Also recommend language encouraging concurrent process/engagement/integration of traffic study work with a site's TDM plan (if required).

1.2. Reserved**1.3. HORIZONTAL ALIGNMENT OF STREETS**

The horizontal alignment of all proposed streets shall conform to the following standards:

- Horizontal curves shall have centerline radii of not less than 110 feet.
- The alignment centerline shall be straight for at least 100 feet between reverse curves whenever either curve has a centerline radius of less than 200 feet.
- When two streets intersect and one street is an arterial or collector street, or both streets are arterial or collector streets, the angle of intersection shall be 90 degrees. When two streets intersect and neither street is an arterial or collector street, the angle of intersection shall be at least 75 degrees and no greater than 105 degrees.
- When two streets intersect, adjoining right-of-way lines shall be connected by a circular arc with radius of at least ten (10) feet. The connecting arc shall be tangent to the right-of-way lines on both streets. When the angle of intersection is other than 90 degrees, a radius greater than ten (10) feet may be required.
- All dead-end streets shall provide for a turnaround at the end of the street, subject to approval by the reviewing authority. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).
- Street intersections with more than four (4) legs shall be prohibited.

- The minimum distance between intersections on any street shall be as follows unless the City Engineer determines that unique conditions of the site necessitate a lesser length. The distance between intersections shall be measured from the intersection of street centerlines at one intersection to the intersection of street centerlines at the other intersection. Streets shall be classified in accordance with the Federal Highway Administration Functional Classification Guidelines.

Local Street and Local Street Intersection	300 feet
Local Street and Collector Street Intersection	300 feet
Local Street and Arterial Street Intersection	500 feet
Collector Street and Collector Street Intersection	500 feet
Collector Street and Arterial Street Intersection	500 feet
Arterial Street and Arterial Street Intersection	500 feet

1.4. STREET GRADES

1.4.1. Street grades shall conform to the following standards:

- The maximum grade for the centerline of all streets shall not exceed eight (8) percent.
- The minimum grade for the centerline of all streets shall not be less than one-half (0.5) percent.
- The cross slope for local streets shall be 0.03. The cross slope for other street classifications shall be 0.02.
- Cross slopes for sidewalks shall be 0.02, sloping down and away from the street line to the top of the curb at the gutter line.
- Street grades at intersections shall not be more than three (3) percent for a distance of one hundred (100) feet from the center of the intersection.

1.5. VERTICAL ALIGNMENT

Where two adjacent street segments are proposed to have different straight line centerline finish grades, vertical curves shall be used to connect the adjacent street segments. Vertical curves shall be parabolic and tangent to each of the adjacent

grades. The minimum vertical curve length, “L”, shall be calculated based on the following formula

$$L = K \times A$$

where “A” is the absolute value of the algebraic difference between the beginning grade and the ending grade of the vertical curve, with both grades expressed in percent, and “K” is a factor whose value depends on street design speed, which is related to street classification. The design speeds, in miles per hour, for this section’s street classifications are as follows:

Local Street	25 mph
Collector Street	30 mph
Arterial Street	35 mph

The K values corresponding to the minimum vertical curve lengths for the above street classifications and vertical curve types (sag curve or crest curve) are as follows:

Local Streets

Crest Vertical Curves: K = 20

Sag Vertical Curves: K = 30

Collector Streets

Crest Vertical Curves: K = 30

Sag Vertical Curves: K = 40

Arterial Streets

Crest Vertical Curves: K = 50

Sag Vertical Curves: K = 50

1.6. SIGHT DISTANCE

Where driveways or new streets enter an existing street, vehicular sight-distance shall conform to standards established by the Maine DOT as contained in their publication, Chapter 299, Highway Driveway and Entrances Rules and noted below for entrances with standard vehicles. For driveways frequently accessed by large vehicles, greater sight distance will be required according to Maine DOT guidelines.

Speed Limit (mph)	Measured Distance (feet)
25	200
30	250
35	305
40	360
45	425
50	495
55	570
60	645

1.7. DRIVEWAY DESIGN

1.7.1. Residential development with nine (9) parking spaces or less:

Minimum/maximum driveway width: Any site shall have a minimum driveway width of ten (10) feet and a maximum width of twenty (20) feet measured at the property line.

Location of driveway: A driveway shall be located on the lot in a manner to provide a minimum distance of twenty (20) ft spacing between it and adjacent driveways. This spacing shall be measured between edge of driveways at the property line. If the development is a Level III site plan with frontage on an arterial roadway, the standards listed in the table under section 1.6.1.7 shall apply.

No more than one (1) driveway shall be permitted.

1.7.2. Multi-Family Residential with 10 (ten) parking spaces or more, Commercial and Industrial shall meet the following standards:

1.7.2.1. All driveways shall be designed to connect perpendicular to the street, where feasible. In no case shall the angle of intersection be less than 75 degrees or greater than 105 degrees.

1.7.2.2. Minimum driveway width (one-way): Any site with driveway access to a street shall have a minimum 12 foot wide driveway (at the property line) for one-way ingress or egress. Driveways shall permit traffic to enter and leave the site simultaneously without conflict in aisles, parking or maneuvering areas. If parking is adjacent to the property line, then the appropriate aisle width shall apply. Both the entrance and exit drives shall be identified with appropriate signage.

1.7.2.3. Minimum driveway width (two-way): Any site with driveway access to a street shall have a minimum width of 20 feet for two-way ingress and egress, with a preferred width of 24 feet.

1.7.2.4. **Maximum driveway width (two-way):** The maximum width of a driveway will be based upon site conditions or vehicle characteristics that warrant a wider access (e.g., dedicated turn lanes at exits) and will require approval of the reviewing authority. Maximum widths shall not exceed the following, although confirmation of exact capacity requirements will be necessary:

- Commercial -24 feet
- Industrial – 30 feet

1.7.2.5. **Curbing of driveways:** Where driveways enter on an existing street, the full radius of the driveway shall be designed and constructed of granite curb. The radius size shall be based upon information in the following tables. The radii listed below are recommended standards. A vehicle template analysis may be submitted for review as an alternative to the use of the following table:

Passenger Car	12 foot or less departure lane	12 to 14 foot departure lane	14 to 16 foot departure lane	16 to 18 foot departure lane
12 foot or less receiving lane	15ft	15ft	15ft	15ft
12 to 14 foot receiving lane	15ft	15ft	15ft	15ft
14 to 16 foot receiving lane	15ft	15ft	15ft	15ft
SU-30 Truck	12 foot or less departure lane	12 to 14 foot departure lane	14 to 16 foot departure lane	16 to 18 foot departure lane
12 foot or less receiving lane	35ft	30ft	30ft	30ft
12 to 14 foot receiving lane	30ft	30ft	30ft	30ft
14 to 16 foot receiving lane	30ft	30ft	30ft	30ft
WB-50 Truck	12 foot or less departure lane	12 to 14 foot departure lane	14 to 16 foot departure lane	16 to 18 foot departure lane
12 foot or less receiving lane	45ft	45ft	45ft	45ft
12 to 14 foot receiving lane	35ft	35ft	35ft	35ft
14 to 16 foot receiving lane	25ft	25ft	25ft	25ft
WB-62 Truck	12 foot or less departure lane	12 to 14 foot departure lane	14 to 16 foot departure lane	16 to 18 foot departure lane
12 foot or less receiving lane	85ft	85ft	85ft	85ft
12 to 14 foot receiving lane	85ft	85ft	85ft	85ft
14 to 16 foot receiving lane	65ft	65ft	65ft	65ft

1.7.2.6. **Maneuvering:** The area within the site to which a driveway provides access shall be of sufficient size to allow all necessary functions for loading, unloading and parking maneuvers to be carried out on the site and completely off the street right-of-way. Backing out of vehicles from the driveway is prohibited. The design vehicle used in the analysis shall be the predominant vehicle type and shall be approved by the reviewing authority.

1.7.2.7. **Location and spacing of driveways:** The location and spacing of driveways shall be determined as follows:

- The angle of intersection between an access driveway and the right of way shall be 90 degrees where feasible and shall in no case be less than 75 degrees or greater than 105 degrees.
- Along local streets, access driveways to corner lots shall be located a minimum of thirty-five (35) feet from the intersection of the projection of right-of-way lines to the center line of the driveway, except as provided hereinafter.
- Along arterial and collector streets, access driveways to corner lots shall be located a minimum of one hundred fifty (150) feet from the intersection of the projection of right-of-way lines to the center line of the driveway except as provided for hereinafter.
- Along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria below:

Speed Limit (mph)	Minimum Separation* (feet)
25 or less	100
30	125
35	150
40	185
45	230

Spacing of driveways shall be measured from center of driveway to center of driveway **and shall include driveways on both sides of the street.*

1.7.2.8. **Number of driveways:**

No more than two (2) driveways shall be permitted for ingress and egress purposes to any commercial, industrial or residential (with 10 or more parking spaces) site.

A joint access driveway shall be considered as adequate access for any adjacent sites and shall be encouraged. An easement for joint access shall be required.

1.7.2.9. Off-street vehicular circulation:

An off-street facility shall have full internal vehicular circulation and storage.

Vehicle circulation shall be completely contained within the facility, and vehicles located within one portion of the facility shall have access to all other portions without using the adjacent street system.

1.7.3. Auxiliary Lanes:

Ingress left-turn lanes requirements: A left-turn lane with appropriate storage and transition shall be provided where a submitted engineering analysis indicates a need.

Ingress right-turn lanes: For any site, a right-turn lane with appropriate storage and transition shall be provided where a submitted engineering analysis indicates a need.

1.8. SIDEWALKS AND DRIVEWAY APRONS

1.8.1. Driveway Aprons

Any driveway, or section thereof, located within any public street right-of-way shall be designed and built with a permanent, erosion resistant, surface, such as hot mix asphalt pavement, concrete, or brick, as illustrated in Figures I-10 through I-12. At a minimum, all driveway aprons shall be constructed of the designated sidewalk material within the pedestrian access route.

1.8.2. Sidewalk Construction and Materials.

Sidewalks shall be brick, concrete or hot mix asphalt. The City Sidewalk Materials Policy (Appendix-1 of this manual) shall be consulted to determine the appropriate type of sidewalk and driveway construction to use on various streets and in different areas of the City. Within the city's historic districts, only brick shall be used. Sidewalk and driveway construction details are illustrated in Figures I-10 through I-15.

All new concrete sidewalks and driveway aprons which abut existing concrete sidewalks must be doveled in prior to pouring.

1.8.3. Sidewalk Design for Accessibility.

The minimum sidewalk width shall be five (5) feet, including the pedestrian access route through driveway aprons. Where obstructions, such as utility poles, are located in sidewalks, a minimum clear path width of five (5) feet shall be required between the obstruction and one edge of the sidewalk.

The maximum allowed vertical level change at any point is ¼-inch. A level change of ¼-inch to ½-inch shall be formed with a beveled slope no steeper than 26.6 degrees (2:1). Level changes greater than ½-inch shall be designed as ramps.

Sidewalks shall be designed with a running slope no greater than the adjacent street slope.

Sidewalks shall be designed with a cross slope of 2%, including the pedestrian access route through driveway aprons.

Accessible sidewalk ramps shall be required on all projects involving construction of new streets or new sidewalks and all projects involving major alteration, including repaving, of existing streets and sidewalks.

1.8.4. Sidewalk Ramp Design:

Ramps, flares, landings and approaches shall be designed as follows:

- (1) Maximum ramp running slope shall be 8.33% for new construction. In retrofit situations, ramp slope may be between 8.33% to 10% for a rise of up to six (6) inches and 10% to 12.5% for a rise of up to three (3) inches. Ramp cross slope shall be 2% or less.
- (2) Minimum ramp width shall be four (4) feet in new construction and three (3) feet for retrofits.
- (3) Sidewalk ramps adjacent to all public streets shall be constructed with truncated dome detectable warning surface panels. The detectable warning panel shall be located so that the edge nearest the curb line is 6 inches minimum or 8 inches maximum from the curb line. The panel shall be oriented to the direction of travel as identified by the point of egress. The panel shall extend 24 inches minimum up the ramp in the direction of travel. The panel shall extend the full width of the ramp.
- (4) Detectible warning panels shall be composite wet set (replaceable) as manufactured by ADA Solutions, Inc (www.Adatile.com), or equivalent.
- (5) Distinct standards for curb ramp construction apply for locations (1) within and immediately adjacent to Historic Districts and/or Historic Landscapes (Figure I-7A) and (2) all other locations within the City (Figure I-7).
 - For locations within Historic Districts and Historic Landscapes and the areas immediately adjacent where detectible warning panels are required, "Dark Gray" (#36118) panels shall be used (Figure I-7A).
 - For all other areas, "Federal Yellow" (#33538) panels shall be used (Figure I-7).
- (6) Flares shall be designed with a maximum slope of 10% provided that a landing area at least 48 inches x 48 inches is provided at the top of the ramp. If the landing area is less than 48 inches x 48 inches, the maximum slope of the flares shall be 8.33%.

- (7) Landings shall be at least 48 inches by 48 inches for new construction and at least 36 inches x 36 inches for retrofits. Landings shall be designed with slopes in both directions that are no greater than 2%.
- (8) Approaches shall be designed with a cross slope no greater than 2% and a running slope that does not exceed the slope requirements for sidewalk ramps.

1.8.5. Sidewalk Ramp Location and Orientation:

Sidewalk ramps shall be designed as perpendicular ramps with the direction of travel on the ramp perpendicular to the curb line and parallel to the crosswalk. Where existing conditions (such as narrow right of way width) preclude such layouts, parallel ramps or diagonal ramps may be approved.

Diagonal ramps are located in the middle of a section of circular curb at a corner, where the ramp is at an angle of about 45 degrees to one or two marked crosswalks. In such cases, the crosswalks shall be laid out to encompass a 48 inch by 48 inch landing and wheelchair maneuvering area at the base of the ramp in the street.

1.9. Reserved

1.10. SURFACE AND AGGREGATES

- 1.10.1. Aggregates used in concrete mixes and in the construction of streets, sidewalks and aprons shall meet the requirements in SECTION 703 - AGGREGATES of the *State of Maine Department of Transportation Standard Specifications Revision of December 2002* with the following additions and modifications:

703.02 Coarse Aggregate for Concrete:

Designated Aggregate Size

Sieve Size	Percent Passing Sieve				
	2 in.	1½ in.	1 in.	¾ in.	½ in.
2 in.	95-100	100	-	-	-
1-1/2 in.	-	95-100	100	-	-
1 in.	50-70	-	90-100	100	-
3/4 in.	-	50-70	-	90-100	100
1/2 in.	15-30	-	25-60	-	90-100
3/8 in.	-	10-30	-	20-55	-
No. 4	0-5	0-5	0-10	0-10	0-15
F.M. (+0.20)	7.45	7.20	6.95	6.70	6.10

1.10.2. Aggregate used in concrete shall not exceed the following maximum designated sizes:

- 2 inches for mass concrete
- 1-1/2 inch for piles, pile caps, footings, foundation mats, and walls 8 inches or more thick
- 3/4 inch for slabs, beams, and girders.
- 1/2 inch for fireproofing on steel columns and beams
- 1 inch for all other concrete

1.10.3. 703.06 (a) Aggregate Base:

Aggregate base - crushed, type "B" shall not contain particles of rock which will not pass a two inch (2") square mesh sieve, and shall conform to the type "B" aggregate, as listed in the subsection of the Standard Specifications.

"Crushed" shall be defined as consisting of rock particles with at least 50 per cent of the portion retained on a 1/4 inch square mesh sieve, having a minimum of 2 fracture faces.

1.10.4. 703.06 (b) Aggregate Subbase:

Sand subbase shall not contain particles of rock which will not pass a one inch (1") square mesh sieve, and shall conform to the type "F" Aggregate, as listed in this subsection of the Standard Specifications.

Gravel subbase shall not contain particles of rock which will not pass a three inch (3") square mesh sieve, and shall conform to type "D" Aggregate, as listed in this subsection of the Standard Specifications.

1.10.5. 703.18 Common Borrow:

Common borrow shall not contain any particle of bituminous material.

1.10.6. 703.19 Granular Borrow:

Granular borrow shall contain no particles which will not pass a three inch (3") square mesh sieve.

1.10.7. 703.20 Gravel Borrow:

Gravel borrow shall not contain particles of rock which will not pass a three inch (3") square mesh sieve.

1.10.8. 703.31 Crushed Stone for Pipe Bedding and Underdrain:

"Crushed Stone" shall be defined as rock of uniform quality and shall consist of clean, angular fragments of quarried rock, free from soft disintegrated pieces, vegetable matter, lumps or balls of clay, and other unsuitable substances.

Crushed stone used as a bedding material for pipe and underdrain shall be uniformly graded and shall meet the gradations listed in the tables below. The stone shall be free from vegetable matter, lumps or balls of clay, and other unsuitable substances.

Sieve Designation	Percentage by Weight Passing
3/4 – inch	100
3/8 – inch	20 - 55
No. 4	0 - 10

For pipe sizes 42 inches and larger	
Sieve Designation (square mesh sieve)	Percentage by Weight Passing
1-1/4 – inch	100
3/8 – inch	20-55
No. 4	0-10

Minimum thicknesses for pavement structure materials:

Street Classification	Minimum Materials Thicknesses (Inches)			
	Wearing Course Pavement	Base Course Pavement	Agg. Base Course	Agg. Subbase Course
Minor Residential	1 ½	2	3	15
Residential	1 ½	2	3	15
Collector	1 ½	2 ½	3	18
Commercial/Industrial	2	3	3	18

Minimum placement temperatures for hot mix asphalt pavement:

Base Temp. °f	Mat Thickness, Inches					
	½	¾	1	1 ½	2	3+
40 - 50*	--	--	--	--	285	275
50 - 60	--	310	300	295	280	270
60 - 70	310	300	290	285	275	265
70 - 80	300	290	285	280	270	265
80 - 90	290	280	275	270	265	260
90+	280	275	270	265	260	255

* Surface course pavement shall not be placed when the air or road base temperature is less than 50 degrees F.

1.11. STREETS ON ISLANDS IN CASCO BAY

Reserved.

1.12. PARKING STUDY

Parking studies shall be produced by a licensed transportation professional engineer.

Where a parking study is required, data shall be determined by values contained in the most up to date version of the Institute of Transportation Engineers (ITE) publication titled Parking Generation, or through local, regional or other pertinent national data. If local or regional data is to be used, the scope and methodology of the parking study shall be coordinated with the City Transportation Engineer.

Where a parking study is required, the applicant's engineer shall have a scoping meeting with the City Transportation Engineer or their designee to determine the need for and required scope of the study. The requirements for the study shall be based on standard transportation engineering practices.

1.13. TRANSPORTATION DEMAND MANAGEMENT (TDM)

All TDM Plans shall include specific provisions for the following:

1.13.1. Transportation Narrative:

Every TDM plan shall describe how the project fits within the multimodal transportation system serving the district in which the development is located. The narrative should address the specifics of the use, occupants, visitors, and location of the development and how it is anticipated to relate to its transportation context.

1.13.2. Identify a TDM Coordinator to administer the TDM plan:

Every TDM Plan needs to identify the plan administrator and establish the roles and responsibilities of the administrator. Likewise, the administration of the TDM plan and the role of the TDM Coordinator must adequately respond to the scale of the development, the uses in the development, as well as the ownership framework and management of the facility.

1.13.3. Employee, Resident and Customer/Visitor Survey:

The TDM plan shall develop and use an employee, resident and/or customer/visitor survey format that:

Commented [SC3]: Another place where it would be helpful to include language **encouraging concurrent process/engagement/integration of Parking Study work with a site's TDM plan** (if required).

Commented [SC4]: Thanks for Past Work! - Before I dig in here I just want to acknowledge HOW AWESOME our small city is to have started requiring TDM plans for certain developments well over a decade ago – and to have established the TDM ordinance and put together these standards 10 years ago now. As much as we all hope for and work for continuous improvement on behalf of the city and region – and that's reflected in my suggestions :) – it's really important to recognize the vision Portland had to acknowledge the growth and traffic and parking implications that long ago, and even during a recession. And to seek and find and implement potential pieces of the solution (like TDM).

So, many thanks to everyone has come before and worked on this!

I appreciate the opportunity to review the standards and offer feedback at this point in time. (And god love you for ...)

Commented [SC5]: Including Residential TDM: Per my public comment on the TDM section of the ReCode draft, it's important to include, explicitly, residential uses as part of the City's TDM efforts. The Technical Standards already intermittently reference residential settings. And whether ...

Commented [SC6]: Tying TDM to City Goals: Could there be language added to tie the TDM standards in with the City's goals – like something from the Comp Plan's Appendix, referencing the 1993 Transp Plan goal of "reducing the share of single occupancy vehicle trips city- ...

Commented [SC7]: Two-Part TDM – at Site Approval & CoFO:
If possible, *highly recommend* the TDM Plan be prepared as it already is, as part of initial site plan review – with TDM program and strategies outlined. ...

Commented [SC8]: Alternate Title for Coordinator:
Because TDM as a term is so nebulous for folks, Portland might want to use a different term for this position, like "Property Transportation Coordinator".

Commented [SC9]: Detail Coordinator's Responsibilities:
Recommend the City further outline this responsibility for the developer/tenant group in the Tech Standards, to help them understand and also to provide consistency across sites. Can borrow language from other jurisdictions' TDM ...

Commented [SC10]: I moved this up from below.

Formatted: Right: 0.04"

Commented [SC11]: Timing of 1st Survey/Alternate Data Sources: With new developments, the use of an employee, resident or visitor survey is generally not possible to do as part of the initial TDM planning process. It would be good if the City could ask for the use of Census or other local data ...

Commented [SC12]: Recommend move to above: I would also fold that initial survey and/or census requirement into the Transportation Narrative above – instead of being this separate pull-out section. ...

- Is specifically designed to reflect the use mix within the development.
- Is electronically tabulated.

- Produces comparable data from year to year
- Allows for compilation of data from multiple employers by third party.
- Allows for data use by the TDM/Property Transportation Coordinator and employees or residents to foster car-pooling and ride sharing.
- Identifies barriers to or best practices in public transit, bicycle, and pedestrian transportation.
- Can be conducted periodically (typically annually) and can be used to monitor program effectiveness and provide the basis for periodic plan adjustment. (see monitoring section below).

1.13.4. Set Parking and Trip Reduction Target:

The TDM plan shall use ITE trip generation and parking demand projections as the basis to establish a projected transportation demand and/or impact of the development. Alternatively, project-specific parking and trip generation projections may be used in place of ITE standards, if estimated by a licensed professional engineer and approved by the City. A project specific demand analysis may be advantageous to projects that can demonstrate reduced parking demand and trip generation based on approved assumptions in their TDM and Site Plan.

The TDM plan must use the specific use, location, local alternative transportation opportunities, and initial survey or other data gathering results to establish an achievable percentage reduction in transportation demand for the project. The TDM plan will utilize the stated parking and trip reduction targets as the basis for reduced infrastructure and contribution requirements for the Planning Board's evaluation.

1.13.5. Customize Parking and Trip Reduction Strategies:

Every TDM plan must be customized to reflect the specific mix of use proposed for the development. For example, A-a residential development will utilize a very different approach to reducing project generated parking and trips than an office building. Likewise, the administration of the TDM plan and the role of the TDM Coordinator must adequately respond to the scale of the development, the uses in the development, as well as the ownership framework and management of the facility.

1.13.6. Education:

The TDM plan shall, at a minimum, include provisions for the following. All educational information and programs shall be readily accessible to all project occupants.

- Information regarding available site bicycle parking and any other commute gear storage and TDM amenities on-site.

Commented [SC13]: Alternate Data: Thinking Census or other data here, when a survey isn't possible.

Commented [SC14]: Clarifying Potential Reductions (also possible Bike Parking Fund): Hoping this language might be clarified more in this update of the Tech Standards. That is, maybe that it overtly states something like: "The TDM plan's stated transportation context, strategies, and parking and trip reduction targets will form the basis for the Planning Board's evaluation of a potential reduction in parking requirements."

I think specifically calling out the possibility of a reduction in the parking requirement would be most consistent with what actually happens now in front of the PB. Instead of using the broader terms of "reduced infrastructure and contribution requirements". I'm thinking it's not for the greater good of the City to want the TDM to justify reducing "infrastructure requirements" (unless maybe that's bloated road infrastructure?) – thinking it would more likely end up applying to multi-modal infrastructure improvements like bike parking or a bus shelter if they're located at a bus stop. Nor to justify a reduction in "contribution" – thinking: a reduction of a project's transportation impact fees (or maybe the City is open to that?)

In my discussion with Bruce we also talked about how specific reductions or proposed reductions aren't necessarily written within the TDM itself. But that the TDM becomes an important part of the project narrative and rationale for the Planning Board to consider approving reductions in required parking.

Oh! We also talked about the need for a Bike Parking Fund, similar to the Tree Fund. That is, when the PB permits a reduction in bike parking, a developer would pay for the balance of spaces that are not created, into the Bike Parking Fund.

Commented [SC15]: Recommend SF Point System: Is there any chance we could adopt the San Francisco point system? It's super-efficient and also makes things much more transparent for developers. I know it's a big ask to take a look at it and imagine adapting it for Portland – but I don't think it would be that hard to do. And could really simplify both the planning and reporting. Here's their TDM Standards doc (point system and parking space allocation info on pages 10-14): https://default.sfplanning.org/transportation/tdm/TDM_Program_Standards.pdf And for more detailed descriptions of the particular menu strategies, see their Appendix A: https://default.sfplanning.org/transportation/tdm/TDM_Measures.pdf

Commented [SC16]: Combine with below: This seems like it should be combined with 1.13.8. Project Specific Standards (below). Specifically, that section 1.13.8 should be moved up here. Then the Education & Monitoring sections can follow it.

Formatted: Right: 0.04"

- [illegible]

- TDM orientation and benefits packets and/or individualized commute coaching for new residents, relocating employees and new hires. This is a key intervention point for transportation behavior change.
- General access to information concerning local transportation providers, carpooling, vanpooling and guaranteed ride home services such as: online car-pool matching, vanpool providers, the Emergency Ride Home benefit and ongoing rewards for walking, bicycling, telecommuting, riding transit and carpooling/vanpooling through GO MAINE - the state's commuter assistance program. Or similar services provided through any future Transportation Management Association(s). ing list serves and/or van pool providers.
- Internal information sharing such as posting an employee or tenant "Ride Board" or employee email list-serve to facilitate car-pooling and to share the results of employee, resident and customer-visitor surveys.
- Educational and promotional materials that describe and identify the advantages and cost-saving opportunities of using alternative transportation, including specific incentives offered by the employer/developer and/or site tenants.
- Recognition of employees and residents who reduce the traffic impact of the development through newsletter, email, bulletin board, or other announcements.
- Information on walk and bicycling routes, any bicycle safety education opportunities, any nearby carshare or bikeshare opportunities, parking-infrastructure and locations and pricing, and other amenities or incentives that may be available.

Other education may include:

- On-site transportation fairs and/or hands-on experiential education such as bicycle safety courses or walking tours to see local multi-modal options.
- Site participation in regional and national events/campaigns such as Way 2 GO MAINE and National Bike Month.
- For commercial uses, do internal zip code analysis of employees (possibly also with other nearby large employers) to assess vanpool opportunities via Commute with Enterprise or other vanpool provider.

1.13.7. Monitoring:

All TDM plans must include provisions for monitoring program effectiveness over time to establish whether trip and parking reduction targets are being met.

Formatted: List Paragraph, Bulleted + Level: 1 + Aligned at: 1.32" + Indent at: 1.57"

Commented [SC17]: Comp Plan Goal Tie-In: Thinking to tie this back to the Comp Plan goal "Explore the technical and financial feasibility of a TMA..."

Formatted: Font: (Default) Calibri, 12 pt

Formatted: Indent: Left: 1.06", First line: 0"

Formatted: Font: (Default) Calibri, 12 pt

Formatted: Indent: Left: 0.5", Right: 0", Space After: 10 pt, Line spacing: Multiple 1.15 li, No bullets or numbering, Tab stops: Not at 1.32"

Formatted: List Paragraph, Indent: Left: 1.06", Bulleted + Level: 1 + Aligned at: 1.32" + Indent at: 1.57"

Formatted: Font: (Default) Calibri, 12 pt

Responsibility: TDM Coordinators and/or plan administrators are responsible for monitoring the efficacy of the TDM plan periodically over time and making adjustments to the plan needed to achieve trip reduction targets. This will be further monitored by City staff.

Methods: The methods and scheduling of monitoring shall be outlined in the TDM plan and shall follow accepted transportation engineering and TDM practices. Monitoring methods will typically involve use of the periodic survey combined with direct observation.

Reporting: TDM plan monitoring shall be compiled into a report that compares the results to trip and parking reduction targets and parking demand initial projections and assesses the efficacy of the site's TDM infrastructure, incentives and education. The monitoring results shall be provided to the Reviewing Authority-City according to the monitoring schedule established in the TDM plan.

1.13.8. Project Specific Standards:

Individual TDM Plans shall assess-address the following topics on a site-specific basis, tailored to the transportation needs of the development.

1.13.8.1. Infrastructure:

On-site and off-site infrastructure improvements may be incorporated are important to achieve trip and parking reduction targets and may (or shall – as indicated) include the following:

- Remote Parking/Reduced Parking/Shared-Use Parking/Actively-Managed Parking/Fee in Lieu of Parking: The TDM plan may include: reducing on-site parking availability and parking off-site to discourage drive alone trips and unnecessary vehicle ownership; parking that is shared-use – for example between daytime and nighttime uses – and/or actively managed by a 3rd party parking management organization to expand its efficiency; parking that is reduced through payment of Fee in Lieu of Parking, with the funds going to the Sustainable Transportation Fund for nearby multimodal transportation improvements.
- Affordable Housing: – The site and TDM Plan may include affordable housing. Affordable housing units at a lower rate of AMI generate fewer vehicle trips and less parking demand than higher AMI or market-rate housing units.
- Public Transit, -Walking Network & ADA Access: The TDM plan shall identify how occupants and/or visitors will access public transit and the pedestrian network. Pedestrian and ADA conditions on-site and connecting links to bus routes and/or other transit links shall be identified and their usability assessed for

Commented [SC18]: Monitoring & Reporting Interval: Recommend the City spell out a standard monitoring & reporting interval that will be in all plans, such as: "TDM plan surveying and reporting will begin after the first year of site occupancy and occur annually for the following 5 years. After five years of implementation, and based on the program's good faith effort and success, TDM program monitoring and reporting may be done every two years." Could also include language like: "The site applicant or City may suggest an alternate monitoring and reporting interval, based on the specific site context."

Commented [SC19]: Recommend Move Up: Per comment above, this section seems like it belongs between 1.13.5. Customize Parking and Trip Reduction Strategies and 1.13.6. Education – or really as a subsection of 1.13.5

Formatted: Font: (Default) +Body (Calibri), 11 pt, Not Expanded by / Condensed by

Formatted: Font: (Default) +Body (Calibri), 11 pt, Not Expanded by / Condensed by

Formatted: Pattern: Clear

Formatted: Right: 0", Space After: 10 pt, Line spacing: Multiple 1.15 li, Tab stops: Not at 1.5"

Formatted: Font: (Default) +Body (Calibri), 11 pt, Not Expanded by / Condensed by

Formatted: Not Expanded by / Condensed by

Formatted: Indent: Left: 1.57", No bullets or numbering

Formatted: Font: (Default) Calibri, 12 pt

Formatted: Font: (Default) Calibri, 12 pt

Formatted: List Paragraph, Bulleted + Level: 1 + Aligned at: 1.32" + Indent at: 1.57"

Formatted: Font: (Default) Calibri, 12 pt

Formatted: Font: (Default) Calibri, 12 pt

Formatted: List Paragraph

sidewalk condition, ADA accessibility, street lighting, benches or other street furniture, weather awning protection, cross-walk facilities, wayfinding, and general safety and attractiveness. The nearest transit stops and sheltered public transit facility(ies) shall be identified. Deficiencies in the pedestrian network and links to public transit that constitute barriers to its use shall be addressed in the TDM plan and in the site plan. Any passenger loading curb space for resident, employee and visitor pick-up, drop-off and carpooling should be identified in the TDM plan. Any live-time transit information made available on-site should also be included in the plan.

- Bicycle Parking and Commute Gear Storage: Minimum bicycle parking is a site plan requirement according to Section 14-526 of the Land Use Code. The TDM plan may incorporate additional bicycle parking, bicycle wayfinding, electric bicycle charging, bicycle repair stations, and/or covered secure and weatherproof bicycle parking and easily accessible storage for other commute gear such as strollers, handcarts and carseats to further encourage and support walking, bicycling and carpooling.
- Car sharing and/or bicycle sharing: Residential and commercial developments may incorporate jointly owned vehicles and/or bicycles into the TDM plan.

Formatted

Commented [SC20]: Wanting this Infrastructure section to more fully address pedestrian as well as transit pieces.

Formatted: Font: Not Italic

- On-site Shower and Locker Facilities: Access to showers and locker facilities may be incorporated into ~~the commercial~~ TDM Plans in order to encourage human-powered transportation alternatives.

- Electric Vehicle Charging: Electric vehicles do not reduce traffic congestion or parking demand but do improve air quality and reduce greenhouse gas emissions.

Formatted: List Paragraph, Bulleted + Level: 1 +
Aligned at: 1.51" + Indent at: 1.76"

Formatted: Font: (Default) Calibri, 12 pt

- TDM Bulletin Board or Kiosk: TDM plans shall identify to occupants where information and educational material will be provided within the development a visible and convenient facility such as a transportation bulletin board and/or kiosk. In multi-tenanted facilities, transportation information shall be provided in the lobby of the structure or other such location that is accessible and frequented by a significant majority of occupants and visitors to the facility. The TDM coordinator shall be responsible for keeping all material current and available, as needed.

- On-site Amenities: TDM plans may include amenities to decrease the need for travel, such as: café or convenience store, business center or co-working space, ATM, childcare facilities, broadband or wifi access for telework, health clinics or other public services, fitness centers, etc.

Formatted: Indent: Left: 1.76", No bullets or numbering

Formatted: Highlight

- Delivery Supportive Services: TDM and site plans may provide an area for receipt of deliveries with one or more of the following: (1) clothes lockers for delivery services, (2) temporary storage for package deliveries, laundry deliveries, and other deliveries, or (3) providing temporary refrigeration for grocery deliveries, and/or including other delivery supportive measures as proposed by the site applicant.

Formatted: List Paragraph, Bulleted + Level: 1 +
Aligned at: 1.51" + Indent at: 1.76"

Formatted: Font: (Default) Calibri, 12 pt

Commented [SC21]: Revised Kiosk Language:
Recommend broadening this category to reflect what has been in TDM plans more recently, E.g., "...a visible and convenient facility such as a transportation bulletin board, kiosk, webpage or lobby monitor with rotating slides."

1.13.8.2. Incentives & Disincentives: Incentives and disincentives available to users and/or occupants of the development ~~may be an important incorporated~~ to achieve trip and parking reduction targets. ~~These and~~ may include the following:

- Parking Unbundled from Leases/Unsubsidized Parking/Parking "Cash Out"/Providing Occasional Parking for Multimodal Commuters/Preferential Parking for Carpoolers: TDM plans may include: parking that is unsubsidized, rented at competitive market rates, and unbundled from tenant leases; ~~may include~~ "parking cash out" incentives where employees have the choice of receiving monetary payments and/or transit and vanpool benefits in lieu of provided and subsidized parking; ~~a limited number of daily parking passes for occasional use by employees who are primarily multi-modal commuters; Carpooling employees may be provided with more convenient and attractive parking for carpoolers, if available. If this option is incorporated into the TDM plan, the location of preferred parking shall be identified on the site plan and signed accordingly. The efficacy of these programs will need to be carefully assessed and the method of monitoring must be described in the~~

This important TDM feature has been harder and harder for developers or existing sites to imagine how to implement. E.g., "Our corporate hotel management views paper postings as unsightly and a fire hazard – and they want us to get rid of lobby screens." They're most amenable to posting something simple in employee breakrooms, that already have required employment posters, or residential mailrooms.

For some of them, a monitor in the lobby with slides seems doable. For others a monitor seems complicated or a barrier and they prefer a paper posting in the breakroom or mailroom that references a webpage for more info.

Because they're often open to something they can pay for and that's hands-off, I wonder if you'd consider recommending a vendor like Transit Screen directly as an example in the Tech Standards.

Formatted: Font: (Default) Calibri, 12 pt

Formatted: Highlight

Formatted: Highlight

TDM plan.**Commented [SC22]:** Incorporated below.

- Public Transit Passes & Carpool/Van-Pool Vouchers: Free or reduced-price bus or train passes or monthly van-pool vouchers may be used as an incentive in the TDM plan. The use of transit options should be incorporated into the employee/customer survey and incorporated into the plan monitoring program. Transit, vanpool and other transportation fringe benefit payment options may be combined with parking cash out incentives, where appropriate.

Commented [SC23]: Moved below.**Commented [SC24]:** E.g., in case the federal bicycle benefit ever comes back or there are other benefits eventually offered.

- Preferred parking for car pool: Car pooling employees may be provided with more convenient and attractive parking, if available. If this option is incorporated into the TDM plan, the location of preferred parking shall be identified on the site plan and signed accordingly.

Commented [SC25]: Moved above.

- Car-sharing, Bikshare, and Ridehailing Services: Residential and commercial developments may incorporate subsidies for resident or employee use of on-site or nearby shared car services or jointly owned vehicles, carshare vehicles, standard or electric bikeshare fleets, and/or ridehailing/taxi services into the TDM plan to reduce the need for drive alone trips and car ownership. Commercial development TDM plans may identify use of a shared vehicle for use by employees for either commercial or personal trips through the workday as a means to encourage

Commented [SC26]: About Electric Scooters... I know they're popular and I should probably include them. But because of some initial research showing they are diverting folks from other multimodal trips (like walk trips) more than replacing SOV trips, I just don't find them super compelling....My 2 cents 😊

- One-time Financial Incentives for Carpooling/Vanpooling & Reducing Parking: Residential and commercial developments may incorporate one-time financial incentives for employees or residents who organize a new carpool/vanpool and/or recruit new members – or one-time incentives for employees or residents who reduce one or more vehicles parked on-site or parked at off-site provided parking.

- Other Bicycle and Pedestrian Incentives: Residential and Commercial TDM plans may include other pedestrian and bicycling incentives such as: offering an annual bicycle maintenance and walk commuter shoe subsidy to provide some parity with the transit/vanpool subsidy; bicycle safety courses, offering Bicycle Benefits or other local rewards.

Formatted: List Paragraph, Right: 0.11", Bulleted + Level: 1 + Aligned at: 1.32" + Indent at: 1.57", Tab stops: 1.32", Left

alternative commuting to work.

- Alternate Work Arrangements & Written Policies: Commercial TDM plans may incorporate telecommuting, flex time, alternate work weeks (e.g., four ten-hour days) and other flexible work scheduling mechanisms and policies. These that promote fewer employee trips to work, staggering of drive alone trips over time, and/or promote alternative transportation travel.
- Early Access Rentals for Nearby Employees: Residential TDM plans may include a provision that nearby employers will be invited to share housing information with their employees and participate in an early tour and promotion of the facilities. Employees working at these nearby offices can also be allowed early rental options before the public.

Formatted: List Paragraph, Bulleted + Level: 1 +
Aligned at: 1.07" + Indent at: 1.32"

Formatted: Font: (Default) Calibri, 12 pt

*Other incentives infrastructure improvements and/or methods as may also be appropriate to the development.

The use of any site transportation incentives and policies should be included in the employee/resident/visitor survey and their efficacy should be assessed as part of the plan monitoring program.

1.14. PARKING LOT AND PARKING SPACE DESIGN

Refer to Division 20 of the City Land Use Code (Sections 14-331 to 14-350) for zoning ordinance requirements concerning the number of parking spaces required for off-street parking.

Parking spaces shall meet the following dimensional requirements:

- Standard parking space: 9 feet wide by 18 feet long.
- Compact parking space: 8 feet wide by 15 feet long.
- Motorcycle/motorized scooter parking space: 4 feet wide by 8 feet long.

Any parking lot with 10 or fewer spaces shall contain standard sized parking spaces. Parking lots with greater than 10 spaces may be comprised of up to 20% compact parking spaces.

Parking lot layout shall conform to Figures I-28 thru I-32.

Vehicular access shall be provided by one or more aisles. Minimum widths of aisles are illustrated in Figures I-28 thru I-31.

1.15. BICYCLE PARKING

Refer to Division 20 of the City Land Use Code (Sections 14-332.1) for zoning ordinance requirements concerning the number of bicycle parking spaces required.

Bicycle parking shall:

- Provide secure, durable racks that maintain bicycles in an upright position and to which bicycles can be affixed with customary lock and cable mechanisms. Fence-type (“wheel bender”) racks designed to secure the front wheel only are prohibited.
- Be installed on a hard surface.
- Be separated from car parking by a physical barrier such as curbing, wheel stops, parking bollards or similar features.

- Be adequately illuminated where nighttime use is anticipated.

1.15.1. Bicycle parking intended for long-term use (residential or full-time employee parking) shall be provided under covered areas and/or in secure storage lockers.

1.15.2. Placement of off-street bicycle parking racks shall conform to the Bicycle Parking Rack Placement Criteria (drawn from the *Bicycle Facility Design Guide of the District Department of Transportation, 2006*) as illustrated in Figure I-33.

1.15.3. Commercial, Industrial (requiring more than ten (10) bicycle parking spaces):

- A minimum of ten percent (10%) of required bicycle parking shall be provided within fifty (50) feet of the main egress point of the structure, or shall be no further from such entry than the nearest five (5) non-handicapped parking spaces.
- Where there is more than one structure on a site, or where a structure has more than one main entrance, the parking shall be distributed to adequately serve all structures or main entrances.

1.15.4. Directional Signage: If bicycle parking is not directly visible from the public right of way, directional signage shall be provided indicating the availability and location of bicycle parking facilities.

1.15.5. Approved Bicycle Racks:

Private property: A variety of commercially available racks are acceptable for installation on private property, including but not limited to those catalogue listings identified herein (Figures I-34 and I-35).

In the Public Right-of-Way: Where site conditions cannot reasonably accommodate bicycle parking on private property, it may be located within a public sidewalk area either adjacent to or within reasonable walking distance of the site, if such areas are available that meet the Bicycle Parking Rack Placement Criteria of this chapter (drawn from the *Bicycle Facility Design Guide of the District Department of Transportation, 2006*) – see Figure I-33. If no such location is available, a financial contribution commensurate with the cost for purchase and installation of the required number of bicycle racks shall be made to a City infrastructure account.

The following approved brands, installed according to company specifications, shall be permitted in the public right of way. Equivalent bicycle racks by other manufacturers are acceptable upon approval by the reviewing authority.

- DERO 'Downtown Rack' Inverted U-Rack (Figure I-35)
- DERO 'Bike Hitch' (Figure I-34)
- Old Port District, including Commercial Street: DERO Bike Hitch only (Figure I-34)

Bicycle racks in the public right of way shall become the property of the City of Portland.

Bicycle racks in the public right of way shall match the designated street furniture color for that location as described in the Municipal Street Lighting Standards in this manual. Where there is no designated street furniture color, bicycle racks in the public right of way shall be black (manufacturer's specification).

1.16. BICYCLE ROUTES AND LANES

The City has developed a Bike Route Network Map (Figure I-35) to show present and proposed bike routes on City streets. These routes are typically accomplished by providing either dedicated lanes or "Share the Road" methodology. Positive identification of the lanes shall be provided by pavement markings, bike lane symbols, and signage. The following standards shall be applied to the installation of bike lanes on City streets:

- Vehicular travel lanes and bicycle lanes shall be separated by a six (6) inch solid white painted edge line. At intersections the white edge line shall be a dotted line (two (2) foot painted length by four (4) foot opening) across the intersection.
- Bike lanes shall have a minimum width of five (5) feet. Where sufficient shoulder width is provided, a second edge line shall be painted off the face of the curb at one (1) or two (2) feet. This edge line shall not extend across intersections. See Figure I-36
- When bike lanes are provided on streets with on-street parking, the bike lane shall be a minimum of six (6) feet wide delineated by edge lines on either side of the bike lane. See Figure I-37
- Bicycle lanes shall be marked with appropriate stenciled symbols; see Figure I-38 for two examples.
- Bike routes shall be identified by appropriate signage as found in the FHWA 'Manual of Uniform Traffic Control Devices'. See Figure I-38 for examples.

1.17. Reserved.

1.18. MOTORCYCLE / MOPED PARKING (ON-STREET):

To distinguish motorcycle/moped parking spaces from standard parking spaces the spaces shall be painted and delineated with signage. These painted spaces shall be angled and shall be four (4) feet wide by eight (8) feet long. The dimensions for on-street motorcycle/moped parking are outlined in Figure I-31.

On-street motorcycle and moped parking may also be located where standard vehicle parking would be prohibited because of sight restrictions, such as, adjacent to a crosswalk or an approach to a traffic control device. Motorcycles/mopeds do not have the same sight impediment as a standard vehicle.

1.19. TRAFFIC SIGNALS

New or modified traffic signals require the submission of a traffic signal plan including location of all equipment, underground utilities, a phasing and timing plan and a specific list of all traffic signal hardware. For new or modified traffic signal installations, a new plan shall be submitted to the reviewing authority for review and approval before installation can proceed.

Listed below are the traffic signal items required for traffic signal installations. These items or an approved equivalent shall be provided.

1.19.1. Controller Equipment:

- Controllers shall be compatible with existing Naztec Street Wise ATMS Software
- Traffic control cabinets shall be Naztec Model M34 or P44 TS2 Type 1 Series only
- Secondary traffic controllers shall be Naztec Model 980 TS2 Type 1 Series only
- Master controllers shall be Naztec Model 981 Series only
- Malfunction management units shall be Naztec Model MMU-516E only

1.19.2. Video Detection Equipment:

- Video detection units shall be Traficon Model VIP3.1 & VIP3.2 Series only
- Video detection cameras shall be Traficon approved models only

1.19.3. Signal Equipment:

- Signal housings shall be McCain Model MTSTA or MTSTP Series only
- LED modules for vehicle indications shall be GELcore Model DR6 Series only
- LED modules for pedestrian indications shall be GELcore Model PS7 Series only
- Accessible Pedestrian Signals shall be Campbell Advisor Series only

1.19.4. Traffic Structures:

- Mast arms shall be Valmont SM16 or CB16 Series only
- Strain poles shall be Valmont SW56 Series only.

1.20. PUBLIC CROSSWALKS

Public crosswalks shall meet the requirements of The Manual on Uniform Traffic Control Devices (MUTCD), unless City standards specify a stricter measure. Public improvements may include but shall not be limited to any one or combination of the following:

- Crosswalks;
- Curb Bump Outs or Curb Extensions;
- Pedestrian Crossing Signs (curbside, overhead or in the street);
- Pedestrian Activated Yellow Flashing Warning Lights;
- Pedestrian Activated Traffic Control Signal (Red, yellow, green);
- Medians

1.20.1. Critical Physical Factors:**Walking Speed:**

- This factor is applicable at signalized intersections and affects the length of the pedestrian clearance (flashing “don’t walk”) interval.
- Average walking speed is generally measured as three and a half (3.5) feet per second. In areas with elderly or young children pedestrians, a rate of three (3) feet per second is appropriate.

Vehicular Sight Distance:

- Sight distance shall be based on the posted speed plus 5 miles per hour or the 85th percentile travel speed as tabulated below.

Table 1 Stopping Sight Distances (1)	
Speed (mph)	Stopping Sight Distance (feet) *
25	155
30	200
35	250
40	305
45	360
50	425

*Assumes level grade

Source: AASHTO Policy reference 1, Exhibit 3-1 of that publication.

- Sight distance shall be based on a driver eye height of 3.5 feet and a pedestrian height of 2.0 feet.
- Parking shall be prohibited within twenty (20) feet from the centerline of a crosswalk and within thirty (30) feet at signalized and STOP sign locations.

1.20.2. General Standards for Crosswalk Installation:

1.20.2.1. The Manual on Uniform Traffic Control Devices (MUTCD) provides guidance for placement of crosswalks. In addition, crosswalks should:

- Occur where substantial pedestrian/vehicle conflicts exist. (See The Federal Highway Administration notebook titled “Traffic Conflict Techniques for Safety and Operations” which provides methods for conflict evaluation.)
- Occur at points of pedestrian concentration that can meet applicable standards or where pedestrians may not recognize the appropriate place to cross (e.g., loading islands, mid-block pedestrian crossings).
- Maintain suitable separation (approximately 300 feet) between non-intersection or mid-block crosswalks.
- Be installed based on an engineering study if located other than at a STOP sign or traffic signal. For mid-block locations, a study shall evaluate factors of need including but not limited to school crossings, age of pedestrians, and nearest alternative crosswalk location as well as safety issues such as traffic speed, volume, and sight lines.
- Consider advance warning signage if installed at uncontrolled locations and allow for restriction of parking for adequate visibility of the advance signage.
- No crosswalk spacing requirements are to be imposed at intersection locations. Other engineering factors are to be reviewed in the determination of suitability of the location.

1.20.2.2. The Crosswalk Installation Guidelines (Figure I-24) provide criteria for guiding evaluations of when crosswalks may be desirable at uncontrolled locations based on pedestrian and vehicular volumes. Crosswalks at uncontrolled locations shall be placed where these criteria are met; or where special requirements and/or plans exist that support the installation of a crosswalk.

1.20.2.3. Crosswalks proposed at signalized intersections shall include pedestrian signal indications for substantial pedestrian crossings.¹ Each proposed location shall be evaluated based on through traffic volumes, turning vehicle volumes and signal phasing to determine which legs of the intersection are most appropriate for pedestrian crossings. The default assumption is that crosswalks shall be provided on all intersection approaches and supplemental analysis must be provided that identifies specific engineering conclusions on why this cannot be accomplished.

1.20.2.4. Marked crosswalks across stop controlled intersection approaches shall

¹ Design and Safety of Pedestrian Facilities, 1998, ITE Technical Committee 5A-5

be considered where vehicular traffic may block pedestrian traffic². This will be assessed based on a visual observation of vehicular and pedestrian traffic flow at the intersection to determine if there is sufficient vehicular traffic to block the pedestrian crossing path for a significant period of time.

1.20.3. Design Criteria:

Street Markings: Crosswalks on public streets shall use a minimum of eight (8) inch wide solid white lines, which should be spaced to provide a minimum overall width of eight (8) feet. Wider line width is required for locations with higher posted speeds as shown in Table 2. Paint, wherever used, shall meet Maine Department of Transportation (Maine DOT) specifications. Additional designs may consist of longitudinal lines. Figure I-21 illustrates these typical crosswalk markings and Table 2 provides dimensions utilized in the City of Portland for various applications.

Table 2 Crosswalk Dimensions			
Type	Overall Width	Line Width	Spacing
Standard Crosswalk Marking (two lines) Posted Speed ≤ 35 mph Posted Speed > 35 mph	8' 8'	8" 12"	N.A.
Crosswalk With Longitudinal Lines (block style) (See Table 4)	8'	24"	Spacing 4' o.c.

The longitudinal or block style striping of crosswalks should be reserved for use at the following locations (see Table 4):

- Uncontrolled locations of special significance, such as school walking routes, trail/shared-use paths and mid-block crossings;
- High volume pedestrian locations with at least 25 pedestrian crossings for each 4 hours or 40 crossings during the peak hour; and
- High vehicle speed (> 35 mph posted speed) crossings.

1.20.3.1. **Street Lighting:** Crosswalk locations shall be adequately illuminated for night-time use.

1.20.3.2. **Signage:** Select crosswalk locations may need to be accentuated through the use of signage mounted curbside, overhead, or on the road centerline, as described below:

² Pedestrian Facilities Users Guide, March 2002, USDOT - FHWA

- 1.20.3.3. **Curbside Signs:** There are three standard curbside signs consisting of a crosswalk warning sign, a school crossing warning sign, and an advance warning pedestrian crossing sign. The City of Portland also installs “yield for pedestrians” signs at crosswalks, as shown in Figures I-22 and I-23. Crosswalk signs shall be placed directly adjacent to crosswalks and advance warning signs shall be placed in accordance with the MUTCD guidelines as shown on Table 3.

Table 3	
Advance Warning Sign Placement (2)	
85th Percentile Speed* (mph)	Advance Placement (feet)
25	125**
30	125**
35	125**
40	125
45	175

*or the posted speed when a speed study is not available.

**recommended minimum for the City of Portland

Source: Table 2C-4 of the MUTCD.

- 1.20.4. Standard signs shall be black legend on a yellow background. The MUTCD also allows the use of a yellow-green fluorescent high grade reflective background for increased visibility. These higher grade signs shall be used where locations meet at least one of the following criteria:

- Vehicle 85th percentile speeds or the posted speed is greater than or equal to 35 mph;
- Pedestrian crossing volume of at least 25 per hour for four hours or 40 during the peak hour; or
- School crossing.

- 1.20.4.1. **Overhead Signs and Flashing Warning Lights:** Overhead signs supplemented with pedestrian activated flashers may be placed at high volume pedestrian crossing locations or where specific pedestrian safety issues have been identified.

- 1.20.4.2. **Centerline Signs:** Centerline signs shall be able to withstand vehicle impact without damage to the vehicle and with minimal damage to the device and shall be anchored in place. Note that these devices must be removed without damaging the pavement prior to the start of winter season. The City recommends a device with a base anchored to the pavement with epoxy and a flexible upright paddle that is replaceable. The following criteria should be considered for these devices to be utilized:

- Presence of a high crash location (HCL) as defined by Maine DOT:
Both of the following criteria must be met in order to be classified as an HCL:
 - o A critical rate factor of 1.00 or more for a three year period.
(A Critical Rate Factor (CRF) compares the actual accident

rate to the rate for similar intersections in the State; and

- o A minimum of eight (8) accidents over a three (3) year period.
- Principal or minor arterial, as identified in Figure -24.
- At least 25 pedestrian crossings per hour for four (4) hours or 40 pedestrian crossings for the peak hour.

1.20.5. Traffic Control Signals: The following provides general guidance concerning installation of a pedestrian activated red-yellow-green traffic control signal. The MUTCD should be consulted for specific details:

- The location is a school crossing and a traffic engineering study reveals that there are not adequate gaps in the traffic stream; or
- There are 107 pedestrian crossings for each of four (4) hours or 133 crossings during any one hour and under both conditions for high volume roadways. Higher rates of pedestrian crossings are necessary for lower volume streets. The number of pedestrians may be reduced by 50% where they are predominantly elderly or young children to include crossing locations along school walking routes for elementary and middle school students.

1.20.6. Specific Guidelines for Crosswalk Use: The City of Portland has established the following guidelines for pedestrian street crossing devices (Table 4):

Table 4: Pedestrian Crossing Devices	
Device	Use *
Crosswalk –	
a. 8" lines, 8' total width	Where volume criteria of Figure I-25 are met and speeds are less than 35 mph and at signalized intersections.
b. 12" lines, 8' total width	At all unsignalized locations where volume criteria of Figure I-25 are met and speeds are between 35 and 45 mph.
c. 24" block style lines, 8' width	At mid-block locations where volume criteria of Figure I-25 are met and speeds are between 35 and 45 mph, at all school and trail/shared-use path crossings and as noted in (Design Criteria) above, subsection 1.17 or at uncontrolled locations as determined by the Traffic Engineer.
Curbside signs –	
a. Advance Crossing Signs	For all mid-block crosswalks and other uncontrolled locations as determined by Traffic Engineer.
b. Crossing Signs	
1. Standard Grade	At all locations where crosswalk lines alone are not sufficient to define the crossing location to motorists at the discretion of the Crosswalk Committee.
2. High Grade	Speed greater than or equal to 35 mph; or 25 pedestrians crossing per hour for four hours or 40 pedestrians crossing for the peak hour
3. School	In accordance with MUTCD

Table 4: Pedestrian Crossing Devices (cont.)

Device	Use *
Overhead Signs/Flashers	On arterial roadways or roadways with at least two lanes of traffic in at least one direction
Centerline Signs	As noted in 1.17.4.2, above.
Traffic Control Signal	Consider at locations meeting MUTCD warrants for school crossings or pedestrian volume crossings.

*All speeds are 85th percentile speeds for off-peak daytime periods or the posted speed.

1.21. PUBLIC TRANSIT FACILITIES

Where required, public transit facilities shall meet the following standards:

1.21.1. Transit Pullout Bays:

- 1.21.1.1. Transit pullout bays shall be located in the City right of way along the property frontage; or
- 1.21.1.2. Where space constraints prevent locating a transit pullout bay along the property frontage, within reasonable walking distance of the site.
- 1.21.1.3. The design of the pullout bay shall provide adequate space for vehicles to maneuver through facilities without causing damage to either the vehicles or facilities, as detailed in Section I of the Technical Manual.

1.21.2. Transit Shelters:

- 1.21.2.1. Transit shelters shall be located within the site, directly adjacent to the right-of-way on which the public transportation route is established; or
 - 1.21.2.2. Where site constraints prevent locating a transit shelter on the site, it shall be located within a public sidewalk area along the property frontage. If a transit shelter is to be located within a public sidewalk area, City sidewalk clearance requirements.
 - 1.21.2.3. Where space constraints prevent locating a transit shelter within a public sidewalk area along the property frontage, it may be located within reasonable walking distance of the site.
 - 1.21.2.4. Installation and ongoing maintenance of transit shelters on private property shall be the responsibility of the property owner. Ongoing maintenance of transit shelters located in the City right of way shall be the responsibility of the City or of the local or regional transit authority serving the facility.
- 1.21.3. Where necessary, developments shall provide easements to the City, sufficient in size to accommodate public transit infrastructure.

1.22. CONSTRUCTION PERMITTING AND TRAFFIC CONTROL PLANS

- 1.22.1. Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & charges are all outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Services.
- 1.22.2. Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Services. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Services. See also Section II of the Technical Manual for lateral abandonment requirements associated with demolition permits.
- 1.22.3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along arterial and/or collector streets are required to submit a satisfactory 'maintenance of traffic' (MOT) plan prior to any site plan, subdivision, or street opening permit approval.

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic
 - Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
 - In extreme situations, flaggers may be required to allow for safe pedestrian and bicycle movement
- 1.22.4. All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Services.
- Traffic control for bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycles and pedestrians.
 - Barrier systems utilized to separate the construction activity from the public

street and/or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.

- 1.22.5. Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Services.

1.23. INFRASTRUCTURE CONTRIBUTIONS

Projects that generate traffic, which impacts roadways and intersections already operating at substandard levels of service E or F or adds traffic to improvement districts within the City (**as identified on the attached map - Figure I-39**) shall contribute towards future improvements. A contribution is not required when the applicant implements improvements to fully mitigate a project's impact.

The contribution amount shall be based upon the percentage impact of the project during the Weekday PM peak hour. Specifically, a percentage calculation of the trip generation increase as compared to No-Build traffic levels multiplied by the capital cost of implementing an improvement plan. If an improvement plan has not been identified for complex locations, the applicant shall fund a study that identifies required improvements.

1. TRANSPORTATION SYSTEMS AND STREET DESIGN STANDARDS

1.1. TRAFFIC STUDIES

For the purposes of this section, **passenger car equivalents (PCE)** shall be defined as the number of passenger cars or, in the case of non-passenger vehicles, the number of passenger cars that would be displaced by non-passenger vehicles. One tractor trailer combination is the equivalent of two passenger cars.

Developments that generate 100 PCE or more, thus requiring a Traffic Movement Permit (TMP), shall meet the requirements of TMP regulations of State Law, in addition to all applicable transportation site plan standards of the City Code. For more information concerning state TMP requirements, please refer to <http://www.maine.gov/mdot/traffic-counts/traffic-mvmnt-app.php> or contact the Maine Department of Transportation (MDOT). The City of Portland is the delegated reviewing authority for TMP applications.

Developments that generate less than 100 passenger car equivalents (PCE) but require a scoping meeting because they generate 25 PCE or more and are located

(1) on an arterial; and/or

(2) within ½ mile of a high crash location; and/or

(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D,

shall meet the following standards, if a traffic study is required:

1.1.1. Traffic studies shall be prepared, stamped and signed by a Professional Engineer licensed in the State of Maine.

1.1.2. Scope of Study: The City Transportation Engineer, in consultation with the applicant's engineer, shall determine the need for and scope of the traffic study. The requirements for the study shall be based on standard transportation engineering practice

Commented [TE1]: Link did not work
www.maine.gov/mdot/traffic/index.shtml#permits

but the new regulations are not posted yet

Commented [JP2R1]: Eliminated reference to pdf in Section 17.

Commented [TE3]: This seem low. I would suggest we increase it to 50.

Commented [ND4R3]: See new Section 17. Maintained 25 as the threshold as transportation studies for projects of this size are a matter of DPW discretion.

A typical traffic study includes the following major sections:

- A description of the development proposal
- A description of existing conditions.
- Estimated trip generation by the development and design hour volume for affected driveway(s) and study intersections.
- Trip generation will be based upon the latest edition of the ITE *Trip Generation* publication unless suitable documented local data that meets ITE methodology is available.
- Trip distribution
- Capacity analysis for adjacent roadways and for any existing or proposed driveways.
- Traffic crash analysis for adjacent roadways.
- Key findings concerning traffic impacts, problems, and deficiencies.
- Proposed traffic improvements.
- Summary of findings and recommendations for transportation improvements and other impact mitigation measures.

Commented [ND5]: Move to Section 17.

~~1.2. Reserved~~**1.31. HORIZONTAL ALIGNMENT OF STREETS**

The horizontal alignment of all proposed streets shall conform to the following standards:

- Horizontal curves shall have centerline radii of not less than 110 feet.
- The alignment centerline shall be straight for at least 100 feet between reverse curves whenever either curve has a centerline radius of less than 200 feet.
- When two streets intersect and one street is an arterial or collector street, or both streets are arterial or collector streets, the angle of intersection shall be 90 degrees. When two streets intersect and neither street is an arterial or collector street, the angle of intersection shall be at least 75 degrees and no greater than 105 degrees.
- When two streets intersect, adjoining right-of-way lines shall be connected by a circular arc with radius of at least ten (10) feet. The connecting arc shall be tangent to the right-of-way lines on both streets. When the angle of intersection is other than 90 degrees, a radius greater than ten (10) feet may be required.
- All dead-end streets shall provide for a turnaround at the end of the street, subject to approval by the reviewing authority. Turnarounds shall be designed to facilitate future street connectivity and shall always be

designed to the right (refer to Figure I-5).

- Street intersections with more than four (4) legs shall be prohibited.
- The minimum distance between intersections on any street shall be as follows unless the aDepartment of Public Works determines that unique conditions of the site necessitate a lesser length. The distance between intersections shall be measured from the intersection of street centerlines at one intersection to the intersection of street centerlines at the other intersection. Streets shall be classified in accordance with the Federal Highway Administration-Functional Classification Guidelines as set forth by MaineDOT.

Commented [TE6]: I would change this to MaineDOT as they classify roads in Portland

Commented [JP7R6]: Updated to address comment.

Local Street and Local Street Intersection	<u>2</u> 300 feet
Local Street and Collector Street Intersection	<u>25</u> 300 feet
Local Street and Arterial Street Intersection	<u>3</u> 500 feet
Collector Street and Collector Street Intersection	<u>4</u> 500 feet
Collector Street and Arterial Street Intersection	500 feet
Arterial Street and Arterial Street Intersection	500 feet

1.24. STREET GRADES

1.24.1. Street grades shall conform to the following standards, as shown in Figures I-1, I-2, and I-3:

- The maximum grade for the centerline of all streets shall not exceed eight (8) percent.
- The minimum grade for the centerline of all streets shall not be less than one-half (0.5) percent.
- The cross slope for local streets shall be three (3) percent~~0-03~~. The cross slope for other street classifications shall be two (2) percent~~0-02~~.
- Cross slopes for sidewalks shall be one (1) percent minimum and two (2) percent maximum~~0-02~~, sloping down and away from the street line to

the top of the curb at the gutter line, including pedestrian access routes across driveways, as shown in Figure I-10C13.

- Street grades at intersections shall not be more than three (3) percent for a distance of one hundred (100) feet from the center of the intersection.

1.2.2 Curbless "shared streets" shall be considered on a case-by-case basis after consideration of context, design, and maintenance. Approval of any curbless "shared street" shall be subject to review by the Department of Public Works.

1.35. VERTICAL ALIGNMENT

Where two adjacent street segments are proposed to have different straight line centerline finish grades, vertical curves shall be used to connect the adjacent street segments. Vertical curves shall be parabolic and tangent to each of the adjacent grades. The minimum vertical curve length, "L", shall be calculated based on the following formula

$$L = K \times A$$

where "A" is the absolute value of the algebraic difference between the beginning grade and the ending grade of the vertical curve, with both grades expressed in percent, and "K" is a factor whose value depends on street design speed, ~~which is related to street classification. The design speeds, in miles per hour, for this section's street classifications are as follows:~~

Local Street	25 mph
Collector Street	30 mph
Arterial Street	35 mph

The K values corresponding to the minimum vertical curve lengths for the above street classifications and vertical curve types (sag curve or crest curve) are as follows:

Local Streets

Crest Vertical Curves: K = 20

Sag Vertical Curves: K = 30

Collector Streets

Crest Vertical Curves: K = 30

Sag Vertical Curves: K = 40

Arterial Streets

Crest Vertical Curves: K = 50

Sag Vertical Curves: K = 50

1.46. SIGHT DISTANCE

Where driveways or new streets enter an existing street, vehicular sight-distance shall conform to standards established by the Maine DOT as contained in their publication, Chapter 299, Highway Driveway and Entrances Rules ~~and noted below for entrances with standard vehicles~~. For driveways frequently accessed by large vehicles, greater sight distance will be required according to Maine DOT guidelines. Along sloped roadways, or where the design vehicle is larger than a standard passenger vehicle, additional site distance may be required.

Speed Limit (mph)	Measured Distance (feet)
25	200
30	250
35	305
40	360
45	425
50	495
55	570
60	645

Commented [TE8]: What does this mean.

Commented [JP9R8]: Statement deleted.

Commented [TE10]: This is defined and required in the MaineDOT standards.

Commented [JP11R10]: See above.

1.57. DRIVEWAY DESIGN

1.75.1. All driveways shall be designed according to the following table, unless otherwise approved by the Department of Public Works.

Requirement	Minor Driveway (serving < 10 residential spaces)	All other driveways
<u>A) Number of Driveways</u>	<u>No more than one (1) driveway shall be permitted.</u>	<u>No more than two (2) driveways shall be permitted. Adjacent sites under common ownership shall have no more than two (2) driveways combined.</u>
<u>B) Minimum/ maximum driveway width</u>	<u>10 feet minimum, 20 feet maximum, measured at the property line</u>	<u>For two-way driveways (preferred): 20 feet minimum; 24 feet maximum for residential/commercial uses; 30 foot maximum for industrial uses. Larger driveway openings may be permitted by the Department of Public Works as determined on a</u>

Commented [TE12]: There are rare cases where a commercial driveway may need two approach lanes. Those would not be covered here

Commented [JP13R12]: Added language allowing DPW to approve larger driveway opening on a case by case basis.

		<u>case-by-case basis.</u>
<u>C) Driveway spacing</u>	<u>Spacing of new or reconfigured driveways shall take the existing pattern of driveways in the surrounding context into account, and shall limit the impact to on-street parking and existing street trees. Shared driveways are encouraged. Driveway locations may be rejected based on documented or anticipated safety or operational issues.</u>	<u>50 feet along local streets; 100 feet along arterial and collector streets with posted speeds of 35mph or less; 150 feet for roadways posted at speeds greater than 35mph or greater. Driveway locations may be rejected based on documented or anticipated safety or operational issues.</u>
<u>D) Driveway separation from Intersections</u>	<u>At least 35 feet along local roads and 50 feet along collectors/arterials, measured from the projection of the right-of-way line at the roadway to the centerline of the driveway. Driveway locations may be rejected based on documented or anticipated safety or operational issues.</u>	<u>At least 35 feet along local roads, 100 feet along collectors/arterials, measured from the projection of the right-of-way line at the driveway to the centerline of the driveway. Driveway locations may be rejected based on documented or anticipated safety or operational issues.</u>
<u>E) Curbing</u>	<u>2-foot granite corner radius “bugs” (also known as a “bullnose”) shall be used where possible. Tipdowns may be used if the driveway crosses a narrow sidewalk</u>	<u>Granite radii (where sufficient esplanade is available) or tipdowns shall be used. Granite radii shall not cross the pedestrian access route.</u>
<u>F) Driveway intersection angle</u>	<u>Perpendicular to the street, where possible. Where necessary, the driveway shall intersect the street between 75 and 105 degrees unless otherwise approved by the Department of Public Works.</u>	
<u>G) Design vehicle</u>	<u>Driveways shall be designed to accommodate site-specific design vehicles, and shall not be designed larger than necessary, as determined by turning movement diagrams and engineering judgment.</u>	
<u>H) Loading</u>	<u>All necessary functions for loading, circulation, and parking maneuvers shall occur within the site and outside of the right-of-way to the extent practicable, given the site context.</u>	
<u>I) Circulation</u>	<u>Vehicle circulation shall be completely contained within the site to the extent practicable, given the site context.</u>	
<u>J) Backing maneuvers</u>	<u>Backing maneuvers may be permitted to enter the site. Backing</u>	<u>Backing maneuvers into and out of the site are prohibited. All vehicles</u>

Commented [TE16]: This should be edited to say above 35 MPH, since the prior one is 35 MPH or less

Commented [JP17R16]: Updated per comment.

Commented [TE14]: I do worry that this doesn't prevent two driveways directly next to each other. It just seems that some minimum separation should be noted.

Commented [JP15R14]: This comment is noted but no changes are proposed at this time.

Commented [TE18]: I would suggest you add the same as above. “Driveway locations may be rejected based on documented or anticipated safety or operational issues.”

Commented [JP19R18]: Language added.

	<u>maneuvers from a site may be permitted based on upon site context including functional class of the adjacent street, traffic volumes, and speeds.</u>	<u>must enter and exit the site facing forward.</u>
<u>L) Parking area size</u>	<u>All driveways shall serve a parking area of at least 8'x16', clear of any encroachment, plus any setbacks required by zoning. Parking areas and parked cars shall not encroach upon the public right-of-way.</u>	

~~Residential development with nine (9) parking spaces or less:~~

~~Minimum/maximum driveway width: Any site shall have a minimum driveway width of ten (10) feet and a maximum width of twenty (20) feet measured at the property line.~~

~~Location of driveway: A driveway shall be located on the lot in a manner to provide a minimum distance of twenty (20) ft spacing between it and adjacent driveways. This spacing shall be measured between edge of driveways at the property line. If the development is a major site plan with frontage on an arterial roadway, the standards listed in the table under section 1.6.1.7 shall apply.~~

~~No more than one (1) driveway shall be permitted.~~

~~1.7.2. Multi-Family Residential with 10 (ten) parking spaces or more, Commercial and Industrial shall meet the following standards:~~

~~1.7.2.1. All driveways shall be designed to connect perpendicular to the street, where feasible. In no case shall the angle of intersection be less than 75 degrees or greater than 105 degrees.~~

~~1.7.2.2. Minimum driveway width (one way): Any site with driveway access to a street shall have a minimum 12-foot wide driveway (at the property line) for one-way ingress or egress. Driveways shall permit traffic to enter and leave the site simultaneously without conflict in aisles, parking or maneuvering areas. If parking is adjacent to the property line, then the appropriate aisle width shall apply. Both the entrance and exit drives shall be identified with appropriate signage.~~

~~1.7.2.3. Minimum driveway width (two-way): Any site with driveway access to a street shall have a minimum width of 20 feet for two-way ingress and egress, with a preferred width of 24 feet.~~

~~1.7.2.4. Maximum driveway width (two-way): The maximum width of a driveway~~

~~will be based upon site conditions or vehicle characteristics that warrant a wider access (e.g., dedicated turn lanes at exits) and will require approval of the reviewing authority. Maximum widths shall not exceed the following, although confirmation of exact capacity requirements will be necessary:~~

- ~~• Commercial – 24 feet~~
- ~~• Industrial – 30 feet~~

~~1.7.2.5. Curbing of driveways: Where driveways enter on an existing street, the full radius of the driveway shall be designed and constructed of granite curb. The radius size shall be based upon information in the following tables. The radii listed below are recommended standards. A vehicle template analysis may be submitted for review as an alternative to the use of the following table:~~

		Departure Lane			
	Passenger-Car	12 foot or less	12 to 14 feet	14 to 16 feet	16 to 18 feet
Receiving Lane	12 foot or less	15 ft.	15 ft.	15 ft.	15 ft.
	12 to 14 foot	15 ft.	15 ft.	15 ft.	15 ft.
	14 to 16 foot	15 ft.	15 ft.	15 ft.	15 ft.
	SU-30 Truck				
	12 foot or less	35 ft.	30 ft.	30 ft.	30 ft.
	12 to 14 foot	30 ft.	30 ft.	30 ft.	30 ft.
	14 to 16 foot	30 ft.	30 ft.	30 ft.	30 ft.
	WB-50 Truck				
	12 foot or less	45 ft.	45 ft.	45 ft.	45 ft.
	12 to 14 foot	35 ft.	35 ft.	35 ft.	35 ft.
	14 to 16 foot	25 ft.	25 ft.	25 ft.	25 ft.
	WB-62 Truck				
	12 foot or less	85 ft.	85 ft.	85 ft.	85 ft.
	12 to 14 foot	85 ft.	85 ft.	85 ft.	85 ft.
	14 to 16 foot	65 ft.	65 ft.	65 ft.	65 ft.

~~1.7.2.6. Maneuvering: The area within the site to which a driveway provides access shall be of sufficient size to allow all necessary functions for loading, unloading and parking maneuvers to be carried out on the site and completely off the street right of way. Backing out of vehicles from the driveway is prohibited. The design vehicle used in the analysis shall be the predominant vehicle type and shall be approved by the reviewing authority.~~

~~1.7.2.7. Location and spacing of driveways: The location and spacing of driveways shall be determined as follows:~~

- ~~• The angle of intersection between an access driveway and the right of way shall be 90 degrees where feasible and shall in no case be less than 75 degrees or greater than 105 degrees.~~
- ~~• Along local streets, access driveways to corner lots shall be located a minimum of thirty five (35) feet from the intersection of the projection of right of way lines to the center line of the driveway, except as provided hereinafter.~~
- ~~• Along arterial and collector streets, access driveways to corner lots shall be located a minimum of one hundred fifty (150) feet from the intersection of the projection of right of way lines to the center line of the driveway except as provided for hereinafter.~~
- ~~• Along arterial, collector and local streets, minimum acceptable spacing between double or multiple driveways for driveways on adjacent lots or on the same parcel shall meet the criteria below:~~

Speed Limit (mph)	Minimum Separation* (feet)
25 or less	100
30	125
35	150
40	185
45	230

~~*Spacing of driveways shall be measured from center of driveway to center of driveway and shall include driveways on both sides of the street.~~

~~1.7.2.8. Number of driveways: No more than two (2) driveways shall be permitted for ingress and egress purposes to any commercial, industrial or residential (with 10 or more parking spaces) site. A joint access driveway shall be considered as adequate access for any adjacent sites and shall be encouraged. An easement for joint access shall be required.~~

~~1.7.2.9. Off street vehicular circulation: An off street facility shall have full internal vehicular circulation and storage. Vehicle circulation shall be completely contained within the facility, and vehicles located within one portion of the facility shall have access to all other portions without using the adjacent street system.~~

1.5.2.7.3. Auxiliary Lanes Serving Driveways: A left-turn lane and/or right-turn lane with appropriate storage and transition may be considered where engineering analysis indicates a need. The need for auxiliary lanes shall be considered within

the context of the impacts to sidewalks, bikeways, transit stops, on-street parking, and traffic safety. All new auxiliary lanes are subject to the approval of the Department of Public Works.

Ingress left turn lanes requirements: A left turn lane with appropriate storage and transition shall be provided where a submitted engineering analysis indicates a need.

Ingress right turn lanes: For any site, a right turn lane with appropriate storage and transition shall be provided where a submitted engineering analysis indicates a need.

1.68. SIDEWALKS AND DRIVEWAY APRONS CURB RAMPS

1.8.1. Driveway Aprons: Any driveway, or section thereof, located within any public street right-of-way shall be designed and built with a permanent, erosion resistant, surface, such as hot mix asphalt pavement, concrete, or brick, as illustrated in Figures I-10 through I-12. At a minimum, all driveway aprons shall be constructed of the designated sidewalk material within the pedestrian access route.

Commented [ND20]: MOVED TO 1.7

1.6.18.2. Sidewalk Construction and Materials: Sidewalks shall be brick, concrete or hot mix asphalt. The City Sidewalk Materials Policy (Appendix -1 of this manual) shall be consulted to determine the appropriate type of sidewalk and driveway construction to use on various streets and in different areas of the City. Within the city's historic districts, only brick shall be used. Sidewalk and driveway construction details are illustrated in Figures I-10 and I-11 through I-15. All new concrete sidewalks and driveway aprons which abut existing concrete sidewalks must be doweled in prior to pouring. All new brick sidewalks shall be constructed with bricks running perpendicular to the path of pedestrian travel, including through driveway crossings.

1.68.32. Sidewalk Design for Accessibility: All sidewalks shall meet any minimum standards set forth by current Americans with Disabilities Act (ADA) and Public Right-of-Way Accessibility Guidelines (PROWAG) guidance. There are no exceptions unless technical infeasibilities are identified, documented, and approved by the Department of Public Works. In case of conflict, these standards shall supersede this manual.

Commented [TE21]: Americans with Disabilities

Commented [JP22R21]: Typo corrected.

1.6.2.1 Sidewalk width: The minimum sidewalk clear width shall be five (5) feet, including the pedestrian access route through driveway aprons. Where obstructions, such as utility poles, are located in sidewalks, a minimum clear and direct pedestrian access route path width of five (5) feet shall be provided

between the obstruction and one edge of the sidewalk. Wider sidewalks may be required in locations where heavy pedestrian traffic is expected, based on the site context. New sidewalks shall be at least as wide within the right-of-way as the sidewalk(s) along the adjacent properties.~~required between the obstruction and one edge of the sidewalk.~~

1.6.2.2 Level changes: The maximum allowable vertical level change at any point is ¼-inch. A level change of ¼-inch to ½-inch shall be formed with a beveled slope no steeper than 26.6 degrees (2:1). Level changes greater than ½-inch shall be designed as ramps.

1.6.2.3 Running slope: Sidewalks shall be designed with a running slope no greater than the adjacent street slope.

1.6.2.3.4 Cross-slope: Sidewalks, including pedestrian access routes across driveways, shall be ~~constructed~~ designed with a minimum cross slope of 1% and a maximum cross-slope of 2% post-construction,~~including the pedestrian access route through driveway aprons.~~ Finished cross-slopes of greater than 2% shall not be acceptable. Designed cross-slopes of 1.5% are encouraged. Cross-slopes shall be consistent across the width of the sidewalk.

~~Accessible sidewalk ramps shall be required on all projects involving construction of new streets or new sidewalks and all projects involving major alteration, including repaving, of existing streets and sidewalks.~~

- 1.6.38.4. Sidewalk Ramp DesignCurb ramps: ADA-compliant curb ramps are required on all projects involving construction of new streets or new sidewalks, and on all projects involving alterations to the abutting street, including repaving of existing streets and sidewalks.

Curb ramps shall be designed to prevent ponding of water at the base of the ramp. Ramp designs and details will indicate how positive drainage away from the landing in the vicinity of curb ramps will be achieved.

1.6.3.1. Applicability: ADA-compliant curb ramps are required at all marked and unmarked crossing locations. ~~Ramps shall not be provided only where there is no crossing present due to safety concerns or a lack of pedestrian facilities on the opposite corner.~~

1.6.3.2 Orientation: Curb ramps shall be designed with the direction of travel on the ramp perpendicular to the curb line and parallel to the crosswalk, where feasible. Where existing conditions, such as narrow right-of-way width or utility constraints, preclude such layouts, parallel ramps, where the entire sidewalk

ramps down, are acceptable. Diagonal ramps are not desirable, but may be approved by DPW on a case-by-case basis. Ramp design standards are provided in Figure I-6 and the subsequent set of details.

1.6.3.3. Detectable wDetectable warning panels: All pedestrian crosswalks shall include truncated dome warning panels as shown in Figure I-7. Any curb ramp that is not intended to be used by pedestrians (e.g. ramps serving bikeways) shall not include warning panels. Warning panels shall also be provided where a crossing is present without a curb ramp (for example, where pedestrian facilities are at the same grade as the street, within a median refuge, etc.). All warning panels shall be uncoated cast iron, as detailed in Figure I-7. DPW reserves the right to require the installation of warning panels at driveway locations in such situations where volume or configuration of traffic may necessitate their placement.

Commented [TE23]: Do we want to include something about panels at driveways? Panels are not required at private driveways unless....

Commented [JP24R23]: Language added to address this comment.

1.6.4 Shared use paths: Shared use paths and other pedestrian access routes in the right-of-way shall conform to the same ADA requirements as sidewalks discussed herein. The appropriate material for shared use paths may differ from the material prescribed in the Sidewalk Material Policy. The appropriate material shall be determined by the ~~review authority~~ Department of Public Works if not already documented in a transportation plan or master plan. Shared use paths shall be 10 feet in width or greater to allow for two-way traffic and passing.

1.6.5 Curb extensions: Curb extensions (also known as bump-outs, bulb-outs, or neckdowns) describe any localized narrowing of the roadway, typically at pedestrian crosswalk locations. The installation of any curb extension is subject to the approval of the Department of Public Works.

1.6.5.1. Applicability: Curb extensions may be considered where one or more of the following conditions are ~~met~~:

- There is a documented speeding issue confirmed by a speed study;
- Curb extensions are necessary to construct one or more ADA-compliant curb ramps at an existing or proposed crosswalk;
- As determined necessary at uncontrolled midblock crossings;
- At signalized intersections, where reducing the pedestrian crossing time improves signal timing;
- At High Crash Locations, At particularly where locations where there is a history of crashes involving pedestrians and/or crashes involving right-

Commented [TE25]: I know curb extensions have been a sensitive topic. But it seems like we are missing an important criteria, at a uncontrolled location where you want to shorten the crossing distance, improve visibility.

Commented [JP26R25]: Section 1.6.5.1 has been updated to address this comment.

Commented [TE27]: This will be met at every signal. It will always short ped times and improve conditions.

Commented [JP28R27]: Agreed.

turning vehicles; ~~or~~

- Where they are prescribed in a master plan or transportation plan.

1.6.5.2. Curb extension design: Curb extensions, where permitted, shall be constructed to achieve the applicable goal(s) without disrupting the functionality of the roadway or intersection. Curb extensions:

- Shall not impede necessary turning movements for trucks or emergency vehicles ~~or winter operations~~;
- Shall not negatively impact drainage without adequate mitigation;
- Shall not impede upon, or narrow to an unacceptable degree, the adjacent travel or bicycle lanes; and
- Shall be constructed with radial curb (typically 10-foot radius or greater) at transition points to assist with drainage and maintenance.
- Curb extensions that encompass on-street parallel parking lanes should generally not exceed six (6) feet in width.

1.6.6. Non-compliance: ADA-compliance is required both within and outside of the public right-of-way. Any construction within the public right-of-way that is not built to ADA-compliance shall be reconstructed at the Applicant's expense.

Where strict compliance with ADA is technically infeasible in an alteration of an existing condition, the alteration must be made to the maximum extent technically feasible. The extent to which compliance is technically infeasible shall be documented, and an acceptable design shall be approved by DPW. This process should occur during the design phase.

Ramps, flares, landings and approaches shall be designed as follows:

1. Maximum ramp running slope shall be 8.33% for new construction. In retrofit situations, ramp slope may be between 8.33% to 10% for a rise of up to six (6) inches and 10% to 12.5% for a rise of up to three (3) inches. Ramp cross slope shall be 2% or less.
2. Minimum ramp width shall be four (4) feet in new construction and three (3) feet for retrofits.
3. Sidewalk ramps adjacent to all public streets shall be constructed with truncated dome detectable warning surface panels. The detectable warning panel shall be located so that the edge nearest the curb line is 6

Commented [TE29]: I don't think this should be HCL driven. Many ped crash locations are not HCL's

Commented [JP30R29]: Language updated to address comment.

~~inches minimum or 8 inches maximum from the curb line. The panel shall be oriented to the direction of travel as identified by the point of egress. The panel shall extend 24 inches minimum up the ramp in the direction of travel. The panel shall extend the full width of the ramp.~~

- ~~4. Detectible warning panels shall be uncoated cast iron, following manufacturer's instruction for installation and meeting Portland's specifications for Sidewalk Ramp Detectable Warning Panel, Figure 1-7.~~

~~5. Reserved~~

- ~~6. Flares shall be designed with a maximum slope of 10% provided that a landing area at least 48 inches x 48 inches is provided at the top of the ramp. If the landing area is less than 48 inches x 48 inches, the maximum slope of the flares shall be 8.33%.~~

- ~~7. Landings shall be at least 48 inches by 48 inches for new construction and at least 36 inches x 36 inches for retrofits. Landings shall be designed with slopes in both directions that are no greater than 2%.~~

- ~~8. Approaches shall be designed with a cross slope no greater than 2% and a running slope that does not exceed the slope requirements for sidewalk ramps.~~

~~1.8.5. Sidewalk Ramp Location and Orientation:~~

~~Sidewalk ramps shall be designed as perpendicular ramps with the direction of travel on the ramp perpendicular to the curb line and parallel to the crosswalk. Where existing conditions (such as narrow right of way width) preclude such layouts, parallel ramps or diagonal ramps may be approved.~~

~~Diagonal ramps are located in the middle of a section of circular curb at a corner, where the ramp is at an angle of about 45 degrees to one or two marked crosswalks. In such cases, the crosswalks shall be laid out to encompass a 48 inch by 48 inch landing and wheelchair maneuvering area at the base of the ramp in the street.~~

1.7 DRIVEWAY APRONS

Any driveway, or section thereof, located within any public street right-of-way shall be designed and built according to the following specifications ~~with a permanent, erosion-resistant surface, such as hot mix asphalt pavement, concrete, or brick, as illustrated in Figures I-10 through I-12.~~ At a minimum, all driveway aprons shall be constructed of the designated sidewalk material within the pedestrian access route.

1.7.1. Construction and materials: The portion of the driveway within the public right-of-way within the pedestrian access route shall be comprised of the same material as the abutting sidewalk as identified in the Sidewalk Material Policy (Appendix 1) and constructed according to Figures I-10 through I-12.

1.7.2. Pedestrian access route: Where a driveway crosses a sidewalk, shared use path, or other pedestrian access route, a pedestrian access route shall be constructed across the driveway apron with a maximum cross-slope of 2% (1.5% preferred). The pedestrian access route shall be designed and constructed to meet the elevation of the adjacent sidewalk or shared use pathway to the extent feasible.

The pedestrian access route shall be constructed at the same width as the adjacent sidewalk or shared use path to the extent feasible. For pedestrian access routes connecting to adjacent sidewalks, the minimum width is 5'.

1.7.3. Driveway apron slope: The driveway apron shall ramp up to the grade of the sidewalk, where feasible. The portion of the driveway between the roadway and the pedestrian access route shall be designed to a maximum slope of 15%, unless otherwise approved by the Department of Public Works. This slope should be minimized to the extent possible while maintaining ADA-compliance and continuity of travel along the pedestrian access route.

1.7.4 Driveway design: Where feasible, driveways shall be designed to keep the pedestrian access route at a consistent elevation for continuity of travel. The portion of the driveway between the roadway and pedestrian access route shall be sloped to provide the full transition between the roadway and sidewalk elevations where feasible. Along roadways where the sidewalk width plus esplanade width is less than seven (7) feet, the sidewalk may be transitioned using ADA-compliant ramps in order to create a suitable driveway crossing.

~~1.9. Reserved~~

~~1.810. ROADWAY CONSTRUCTION, SURFACE, AND AGGREGATES~~

~~1.810.1. All roadways shall be constructed in accordance with Chapter 25 of the City of Portland Code of Ordinances and the most current edition of the MaineDOT Standard Specifications unless otherwise indicated herein or otherwise directed in writing by the Department of Public Works.~~

~~1.8.2 Aggregates used in concrete mixes and in the construction of streets, sidewalks and aprons shall meet the requirements in SECTION 703 - AGGREGATES of the most current edition of the State of Maine Department of Transportation Standard Specifications with the following clarifications.~~

additions and modifications: ~~Revision of December 2002 with the following additions and modifications:~~

Commented [JP31]: Change from old edition of the Maine DOT spec to most current edition to reflect current and future updates to the Maine DOT standard spec.

703.02 Coarse Aggregate for Concrete: Designated Aggregate Size

Sieve Size	Percent Passing Sieve				
	2 in.	1½ in.	1 in.	¾ in.	½ in.
2 in.	95-100	100	-	-	-
1-1/2 in.	-	95-100	100	-	-
1 in.	50-70	-	90-100	100	-
3/4 in.	-	50-70	-	90-100	100
1/2 in.	15-30	-	25-60	-	90-100
3/8 in.	-	10-30	-	20-55	-
No. 4	0-5	0-5	0-10	0-10	0-15
F.M. (+0.20)	7-45	7-20	6-95	6-70	6-10

Commented [JP32]: Deleted several modifications to Maine DOT standard spec to better align our technical standards to Maine DOT standard specifications.

~~1.8.310.2.~~ Aggregate used in concrete shall not exceed the following maximum designated sizes:

- 2 inches for mass concrete
- 1 1/2 inch for piles, pile caps, footings, foundation mats, and walls 8 inches or more thick
- 3/4 inch for slabs, beams, and girders.
- 1/2 inch for fireproofing on steel columns and beams
- 1 inch for all other concrete

~~1.8.3410.3.~~ 703.06 (a) 703.06 (a) Aggregate Base Gravels: shall adhere to Maine DOT standard specifications listed in sections 304 and 703 for type "A" material.

~~Aggregate base – crushed, type "B" shall not contain particles of rock which will not pass a two-inch (2") square mesh sieve, and shall conform to the type "B" aggregate, as listed in the subsection of the Standard Specifications.~~

~~"Crushed" shall be defined as consisting of rock particles with at least 50 percent of the portion retained on a 1/4 inch square mesh sieve, having a minimum of 2 fracture faces.~~

~~1.8.4510.4.~~ 703.06 (b) 703.06 (c) Aggregate Subbase Gravels: shall adhere to Maine DOT standard specifications listed in sections 304 and 703 for type "D" material.

~~Sand subbase shall not contain particles of rock which will not pass a one inch (1") square mesh sieve, and shall conform to the type "F" Aggregate, as listed in this subsection of the Standard Specifications.~~

~~Gravel subbase shall not contain particles of rock which will not pass a three inch (3") square mesh sieve, and shall conform to type "D" Aggregate, as listed in this subsection of the Standard Specifications.~~

~~1.8.56~~**10-5. 703.18 Common Borrow:**

Common borrow shall not contain any particle of bituminous material.

~~1.8.67~~**10-6. 703.19 Granular Borrow:** shall adhere to Maine DOT standard specification 703.19 for Granular Borrow material.

~~Granular borrow shall contain no particles which will not pass a three inch (3") square mesh sieve.~~

~~1.8.79~~**10-7. 703.20 Gravel Borrow:** shall adhere to Maine DOT standard specification 703.20 for Gravel Borrow material.

~~Gravel borrow shall not contain particles of rock which will not pass a three inch (3") square mesh sieve.~~

~~1.10.8. 703.31 Crushed Stone for Pipe Bedding and Underdrain:~~

~~"Crushed Stone" shall be defined as rock of uniform quality and shall consist of clean, angular fragments of quarried rock, free from soft disintegrated pieces, vegetable matter, lumps or balls of clay, and other unsuitable substances.~~

~~Crushed stone used as a bedding material for pipe and underdrain shall be uniformly graded and shall meet the gradations listed in the tables below. The stone shall be free from vegetable matter, lumps or balls of clay, and other unsuitable substances.~~

Sieve Designation	Percentage by Weight Passing
3/4 — inch	100
3/8 — inch	20 — 55
No. 4	0 — 10

Commented [JP33]: Pipe Bedding is covered in section 2.
Deleted from section 1

For pipe sizes 42 inches and larger

Sieve Designation (square mesh sieve)	Percentage by Weight Passing
1-1/4 — inch	100
3/8 — inch	20 — 55

~~No. 4~~~~0-10~~**Minimum thicknesses for pavement structure materials**

Street Classification	Minimum Materials Thicknesses (Inches)			
	Wearing Course Pavement	Base Course Pavement	Agg. Base Course	Agg. Subbase Course
Minor Residential	1 ½	2	3	15
Residential	1 ½	2	3	15
Collector	1 ½	2 ½	3	18
Commercial/Industrial	2	3	3	18

Minimum placement temperatures for hot mix asphalt pavement

Base Temp. ° f	Mat Thickness, Inches					
	½	¾	1	1 ½	2	3+
40 - 50*	--	--	--	--	285	275
50 - 60	--	310	300	295	280	270
60 - 70	310	300	290	285	275	265
70 - 80	300	290	285	280	270	265
80 - 90	290	280	275	270	265	260
90+	280	275	270	265	260	255

* Surface course pavement shall not be placed when the air or road base temperature is less than 50 degrees F.

1.911. STREETS ON ISLANDS IN CASCO BAY

Reserved.

1.12. PARKING STUDY

Parking studies shall be produced by a licensed transportation professional engineer.

Where a parking study is required, data shall be determined by values contained in the most up to date version of the Institute of Transportation Engineers (ITE) publication titled Parking Generation, or through local, regional or other pertinent

national data. If local or regional data is to be used, the scope and methodology of the parking study shall be coordinated with the City Transportation Engineer.

Where a parking study is required, the applicant's engineer shall have a scoping meeting with the City Transportation Engineer or their designee to determine the need for and required scope of the study. The requirements for the study shall be based on standard transportation engineering practices.

Commented [ND34]: Moved to Section 17.

1.13. TRANSPORTATION DEMAND MANAGEMENT (TDM)

All TDM Plans shall include specific provisions for the following:

1.13.1. Transportation Narrative:

Every TDM plan shall describe how the project fits within the multimodal transportation system serving the district in which the development is located. The narrative should address the specifics of the use, occupants, visitors, and location of the development and how it is anticipated to relate to its transportation context.

1.13.2. Identify a TDM Coordinator to administer the TDM plan:

Every TDM Plan needs to identify the plan administrator and establish the roles and responsibilities of the administrator.

1.13.3. Employee and Customer Survey:

The TDM plan shall develop and use an employee and/or customer survey format that:

- Is specifically designed to reflect the use mix within the development.
- Is electronically tabulated.
- Produces comparable data from year to year
- Allows for compilation of data from multiple employers by third party.
- Allows for data use by employees to foster car pooling and ride sharing.
- Identifies barriers to or best practices in public transit, bicycle, and pedestrian transportation.
- Can be conducted periodically (typically annually) and can be used

to monitor program effectiveness and provide the basis for periodic plan adjustment (see monitoring section below).

1.13.4. Set Parking and Trip Reduction Target:

The TDM plan shall use ITE trip generation and parking demand projections as the basis to establish a projected transportation demand and/or impact of the development. Alternatively, project-specific parking and trip generation projections may be used in place of ITE standards, if estimated by a licensed professional engineer and approved by the City. A project specific demand analysis may be advantageous to projects that can demonstrate reduced parking demand and trip generation based on approved assumptions in their TDM and Site Plan.

The TDM plan must use the specific use, location, local alternative transportation opportunities, and initial survey results to establish an achievable percentage reduction in transportation demand for the project. The TDM plan will utilize the stated parking and trip reduction targets as the basis for reduced infrastructure and contribution requirements for the Planning Board's evaluation.

1.13.5. Customize Parking and Trip Reduction Strategies:

Every TDM plan must be customized to reflect the specific mix of use proposed for the development. For example, A residential development will utilize a very different approach to reducing project generated parking and trips than an office building. Likewise, the administration of the TDM plan and the role of the TDM Coordinator must adequately respond to the scale of the development, the uses in the development, as well as the ownership framework and management of the facility.

1.13.6. Education:

The TDM plan shall, at a minimum include provisions for the following. All educational information and programs shall be readily accessible to all project occupants.

- Transit maps and schedules. These shall be posted and updated by the TDM Coordinator, as necessary.
- Access to Information concerning transportation providers and guaranteed ride home services such as: carpooling list serves and/or van pool providers.
- Internal information sharing such as posting a "Ride Board" or employee email list-serve to facilitate carpooling and to share the results of employee

and customer surveys.

- Educational and promotional materials that describe and identify the advantages and cost saving opportunities of using alternative transportation, including specific incentives offered by the employer.
- Recognition of employees who reduce the traffic impact of the development through newsletter, email, bulletin board, or other announcements.
- Information on bicycling routes, parking infrastructure and locations and other amenities or incentives that may be available.

1.13.7. Monitoring:

All TDM plans must include provisions for monitoring program effectiveness over time to establish whether trip reduction targets are being met.

Responsibility: TDM Coordinators and/or plan administrators are responsible for monitoring the efficacy of the TDM plan periodically over time and making adjustments to the plan needed to achieve trip reduction targets.

Methods: The methods and scheduling of monitoring shall be outlined in the TDM plan and shall follow accepted transportation engineering. Monitoring methods will typically involve use of the periodic survey combined with direct observation.

Reporting: TDM plan monitoring shall be compiled into a report that compares the results to trip reduction targets and parking demand projections. The monitoring results shall be provided to the Reviewing Authority according to the monitoring schedule established in the TDM plan.

1.13.8. Project Specific Standards:

Individual TDM Plans shall assess the following topics on a site-specific basis tailored to the transportation needs of the development.

1. Infrastructure:

On-site and off-site infrastructure improvements may be incorporated to achieve trip reduction targets and may include the following:

- Public Transit Access: The TDM plan shall identify how occupants and/or visitors will access public transit. Pedestrian links to bus routes and other transit links shall be identified and their usability assessed for sidewalk condition, ADA accessibility, street lighting, cross walk facilities,

wayfinding, and general safety and attractiveness. The nearest sheltered public transit facility shall be identified. Deficiencies in the links to public transit that constitute barriers to its use shall be addressed in the TDM plan and in the site plan.

- **Bicycle Parking:** Minimum bicycle parking is a site plan requirement according to Article 14 of the Land Use Code. The TDM plan may incorporate additional bicycle parking, bicycle wayfinding, and/or covered parking to further encourage bicycle use.
 - **On-site Shower and Locker Facilities:** Access to showers and locker facilities may be incorporated into the TDM Plan in order to encourage human powered transportation alternatives.
 - **TDM Bulletin Board or Kiosk:** TDM plans shall identify to occupants where information and educational material will be provided within the development a visible and convenient facility such as a transportation bulletin board and/or kiosk. In multi-tenanted facilities, transportation information shall be provided in the lobby of the structure or other such location that is accessible and frequented by a significant majority of occupants and visitors to the facility. The TDM coordinator shall be responsible for keeping all material current and available, as needed.
2. **Incentives:** Incentives available to users and/or occupants of the development may be incorporated to achieve trip reduction targets and may include the following:
- **Parking “Cash Out”:** TDM plans may include “parking cash out” incentives where employees have the choice of receiving monetary payments in lieu of provided parking. The efficacy of these programs will need to be carefully assessed and the method of monitoring must be described in the TDM plan.
 - **Public Transit Passes/Van Pool vouchers:** Free or reduced price bus passes or van pool vouchers may be used as an incentive in the TDM plan. The use of transit options should be incorporated into the employee/customer survey and incorporated into the plan monitoring program. Transit payment options may be combined with parking cash out incentives, where appropriate.
 - **Preferred parking for car pool:** Car pooling employees may be provided with more convenient and attractive parking, if available. If this option is incorporated into the TDM plan, the location of preferred parking shall be identified on the site plan and signed accordingly.

- Car sharing: Residential developments may incorporate shared car services or jointly owned vehicles into the TDM plan. Commercial development TDM plans may identify use of a shared vehicle for use by employees for either commercial or personal trips through the work day as a means to encourage alternative commuting to work.
- Telecommuting, flex time, and other flexible work scheduling mechanisms that promote fewer employee trips to work or promote alternative transportation travel.

*Other incentives infrastructure improvements and/or methods as may also be appropriate to the development.

Commented [ND35]: Moved to Section 17

1.1014. PARKING LOT AND PARKING SPACE DESIGN

~~Refer to Article 19 of the City Land Use Code for zoning ordinance requirements concerning the number of parking spaces required for off-street parking.~~

1.104.1. Parking lots, except for temporary lots to be used for less than one year, shall be constructed of a permanent and durable hard surface that is not subject to ponding or erosion, both onsite and within the right-of-way, and shall meet accessibility standards. Any proposed permanent parking lot surface must allow for delineation of parking spaces and circulation aisles.

Commented [TE36]: I know we don't say paved to allow for options. But wondering if this can be modified to say parking lot shall be paved so parking spaces and circulation aisles can be delineated. Alternatives.....

Commented [JP38R37]: Language updated to address comment.

Commented [JP37]: Added by KG

1.104.2. Parking spaces shall meet the following dimensional requirements:

- Standard parking space: 9 feet wide by 18 feet long, except that low turnover parking spaces, such as those used by residents or employees, may be designed with a width of 8'-6" and considered a standard parking space.
- Compact parking space: 8 feet wide by 15 feet long.
- Motorcycle/motorized scooter parking space: 4 feet wide by 8 feet long.

Obstructions within parking areas, including columns and other permanent fixtures, shall not be located within the dimensions of a parking space. Where these obstructions are present, parking shall be striped and dimensioned to omit these obstructions. Such obstructions should not significantly impact vehicle maneuverability, visibility, ability to open doors, etc.

All spaces provided shall be safely accessible. Substandard and specialty spaces that are open to the general public shall be labeled as such using signage or pavement markings to inform users.

1.10.2.1. Compact spaces: Any parking lot with ~~10 or fewer spaces~~ shall contain

~~standard sized parking spaces~~ five or more spaces may contain a mix of standard and compact spaces. ~~Up to. Parking lots with greater than 10 spaces may be comprised of up to 20% of parking spaces in a parking area may be compact. compact parking spaces.~~ Compact parking spaces should be limited in ~~high turnover~~ parking areas or locations where the typical vehicle is likely to be larger than a typical passenger vehicle. Vehicle turning analysis may be required for review by the Department of Public Works to ensure that spaces function as designed.

Commented [TE39]: Low turnover?

Commented [ND40R39]: We generally want to limit the use of compact spaces in high turnover situations

1.10.2.2. Accessible Parking: All parking areas shall provide accessible parking per ADA and the Maine Fair Housing Act. ADA standards for number of spaces, dimensions, buffers, cross-slopes, materials, pedestrian accessibility, and other requirements shall apply with no exceptions. Accessible spaces shall be considered "standard" parking spaces for the purposes of calculating the allowable number of compact spaces.

~~1.14.3. Parking lot layout shall conform to Figures I-28 thru I-32.~~

1.14.4. Where off-street parking for more than six vehicles is required or provided, the following construction requirements shall apply:

- ~~Appropriate driveways from streets or alleys, as well as maneuvering areas, shall be provided. Location and width of approaches over public sidewalks shall be approved by the traffic engineer.~~
- ~~The surface of driveways, maneuvering areas and parking areas shall be uniformly graded with a subgrade consisting of gravel or equivalent materials at least six inches in depth, well compacted, and with a wearing surface equivalent in quantities of compaction and durability to fine gravel.~~
- ~~A system of surface drainage shall be provided in such a way that the waste run-off shall not run over or across any public sidewalk or street.~~
- ~~Where artificial lighting is provided, it shall be shaded or screened so that no light source shall be visible from outside the area and its access driveways.~~

1.104.35. Vehicular access shall be provided by one or more aisles. The minimum two-way drive aisle width is 24 feet for standard, right-angle parking, and is otherwise dependent on parking space orientation, as illustrated in Figures I-16 A. Minimum widths of aisles are illustrated in Figures I-28 thru I-31. Accessible parking spaces shall be served by at least one aisle of standard width or greater.

1.1~~18~~. MOTORCYCLE-/MOTORIZED SCOOTER-/MOPED PARKING (ON-STREET):

To distinguish motorcycle/motorized scooter/moped parking spaces from standard parking spaces the spaces shall be painted and delineated with signage. These painted spaces shall be angled and shall be four (4) feet wide by eight (8) feet long. The dimensions for on-street motorcycle/motorized scooter/moped parking are outlined in Figure I-~~3416B~~. On-street motorcycle/motorized scooter-and-moped parking may also be located where standard vehicle parking would be prohibited because of sight restrictions, such as, adjacent to a crosswalk or an approach to a traffic control device. Motorcycles/ motorized scooter/mopeds do not ~~have create~~ the same sight impediment as a standard vehicle.

1.1~~52~~. BICYCLE PARKING

~~Refer to Article 19 of the City Land Use Code for zoning ordinance requirements concerning the number of bicycle parking spaces required.~~

1.12.1 Bicycle parking shall:

- Provide secure, durable racks that maintain bicycles in an upright position and to which bicycles can be affixed with customary lock and cable mechanisms. Fence-type (“wheel bender”) racks designed to secure the front wheel only and wave racks are prohibited from counting toward bicycle parking requirements.
- Be installed on a hard surface that is suitably sized and provides sufficient clearance from obstacles.
- Be separated from car parking by a physical barrier such as curbing, wheel stops, parking bollards or similar features.
- Be adequately illuminated where nighttime use is anticipated.
- Be provided under covered areas and/or in secure storage lockers or rooms, if intended for long-term use.
- Be provided within the public right-of-way or publicly accessible for uses that expect visitation, customers or short-term usage.

~~1.15.1. Bicycle parking intended for long-term use (residential or full-time employee parking) shall be provided under covered areas and/or in secure storage lockers.~~

1.~~125~~.2. Placement of off-street bicycle parking racks shall conform to the bicycle

parking rack placement criteria (*drawn from the Bicycle Facility Design Guide of the District Department of Transportation, 2006*) as illustrated in Figure I-33.

1.125.3. ~~For commercial or industrial~~ uses ~~requiring more than ten (10) bicycle parking spaces~~:

- A minimum of ten percent (10%) of required bicycle parking shall be provided within fifty (50) feet of the main ~~egress~~-entry point of the structure, or shall be no further from such entry than the nearest five (5) non- handicapped parking spaces.
- Where there is more than one structure on a site, or where a structure has more than one main entrance, the parking shall be distributed to adequately serve all structures or main entrances.

1.125.4. Directional Signage: If bicycle parking is not directly visible from the public right-~~of~~-way, directional signage shall be provided indicating the availability and location of bicycle parking facilities.

1.125.5. Approved Bicycle Racks:

1.12.5.1. Design: Bicycle racks that are required to meet site plan requirements shall:

- Provide multiple points of contact between the rack and the bicycle;
- Allow bicycles to be locked without the need to lift the bicycle into the rack; and
- Be placed in such a way as to allow the intended number of bikes to be securely locked.

1.12.5.2 Approved Racks by Location:

- Private property: A variety of commercially available racks are acceptable for installation on private property, including but not limited to those catalogue listings identified herein (Figures I-343 and I-354).
- In the Public Right-of-Way: ~~Where site conditions cannot reasonably accommodate bicycle parking on private property, it~~ Bicycle parking may be located within a public right-of-way/sidewalk area where site conditions cannot reasonably accommodate bicycle parking on private property or in the case of sites that expect high-turnover or short-term bike parking usage. Bike parking may be placed either adjacent to or within reasonable walking distance of the site, if such areas are available that meet the bicycle parking rack placement criteria ~~of this chapter~~ (*drawn from the Bicycle Facility Design Guide of the District Department of Transportation, 2006*) as

~~illustrated in—see~~ Figure I-33. Bicycle racks within the public right-of-way shall be placed to allow for the safe storage of bicycles while limiting encroachment onto adjacent sidewalks. If no ~~such~~ location within the right-of-way is available, a financial contribution commensurate with the cost for purchase and installation of the required number of bicycle racks shall be made to the Sustainable Transportation Fund—City infrastructure account.

The following approved brands, installed according to company specifications, shall be permitted in the public right-of-way. Equivalent bicycle racks by other manufacturers are acceptable upon prior approval by the reviewing authority.

- DERO 'Downtown Rack' Inverted U-Rack (Figure I-3~~54~~)
- DERO 'Bike Hitch' (Figure I-3~~43~~)
- Old Port District, including Commercial Street: DERO Bike Hitch only (Figure I-3~~43~~)

Bicycle racks in the public right-of-way shall become the property of the City of Portland.

Bicycle racks in the public right-of-way shall match the designated street furniture color for that location as described in the Municipal Street Lighting Standards in this manual. Where there is no designated street furniture color, bicycle racks in the public right-of-way shall be black (manufacturer's specification).

1.1~~63~~. BICYCLE ROUTES AND LANES

The City has developed a ~~Bike Route Network plansMap~~ (Figure I-~~35~~) to show present and proposed bikeways, including neighborhood byways, routes on City streets. ~~These routes are typically accomplished by providing either dedicated bicycle lanes, and shared use pathways—"Share the Road" methodology.~~ Positive identification of the lanes shall be provided by pavement markings, bike lane symbols, and or signage. The following standards shall be applied to the installation of bike lanes on City streets:

1.13.1. Design: The design of any new or modified bicycle facility shall be reviewed and approved by the Department of Public Works prior to application and shall be consistent with the following design standards:

- Vehicular travel lanes and bicycle lanes shall be separated by a minimum six (6) inch solid white painted edge line adjacent to the travel lane. At intersections the white edge line shall be a ~~dotted-dashed~~ line (two (2) foot painted length by four (4) foot opening) across the intersection and for 50 feet to 100 feet in advance of the intersection, as appropriate. Where there is the potential for right-turning vehicle conflicts with through bicycle

movements at intersections, green paint within the bicycle lane is recommended and may be required.

- Bike lanes shall have a minimum width of five (5) feet. ~~Six (6) feet is preferred for bicycle lanes adjacent to curbed street sections. Where sufficient shoulder street width is provided exists, a second edge line shall be painted off the face of the curb at painted buffer of one (1) foot or more may be provided between the bicycle lane and vehicle travel lanes. or two (2) feet. This edge line shall not extend across intersections. Where a bicycle lane is adjacent to on-street parking with moderate to high utilization and/or turnover rates, this buffer may be should be considered to be placed between the bicycle lane and parking lane. The location of the buffer shall be determined in consultation with the Department of Public Works. Where a buffer of one foot or greater is provided, the width of the bicycle lane may be reduced to four (4) feet, if necessary, with approval from the Department of Public Works. Design shall take into account the location of potential obstructions, such as catch basins. See Figure I-36~~
- Where the minimum or recommended width for bicycle lanes is not immediately available, reallocation of general travel lane widths or the number and configuration of general travel lanes should shall be considered, as appropriate, in consultation with the Department of Public Works.
- On-street bicycle lanes and associated buffers shall not exceed eight (8) feet in total width unless vertical delineation is provided in the buffer area. Applicability and materials of vertical delineation shall be determined by the Department of Public Works.
- Shared use paths shall be designed to facilitate two-way traffic by users of multiple, nonmotorized modes. In general, shared use paths shall be ten (10) feet or greater in width, and free of any obstructions, including a 2 foot clear zone on each side of the pathway. Refer to the AASHTO Guide for the Development of Bicycle Facilities for shared use path design considerations.
- When bike lanes are provided on streets with on-street parking, the bike lane shall be a minimum of six (6) feet wide delineated by edge lines on either side of the bike lane. See Figure I-37.
- On bicycle routes, or other roads with considerable bicycle traffic and insufficient roadway width to provide a bicycle lane, shared lane markings ("sharrows") may be used. Where used, sharrows shall be placed in the center of the travel lane(s) serving the bike route(s) or where bicyclists are expected.

- On two-way roadways with excess roadway width for one bicycle lane, but not two, installation of a single bicycle lane should be considered. The single bicycle lane should be placed in the uphill direction, if located on a hill. Otherwise, if parking is provided on only one side of the roadway, bicycle lane placement should be prioritized on the side of the street with no parking. Where possible, streets with bicycle lanes in only one direction should be paired with another lane on an adjacent parallel street to achieve bicycle mobility in both directions, if possible.
- Standard bike lanes and all other on-street bicycle facilities such as separated bike lanes shall be designed in accordance with the most recent version of nationally-recognized design guides, such as the NACTO Urban Bikeway Design Guide, the NACTO Urban Street Design Guide, the FHWA Separated Bike Lane Planning and Design Guide, or other best practice as it becomes available.

1.13.2. Bike Network Considerations: Bicycle facilities shall be designed within the context of the city-wide bicycle network.

1.13.3. Pavement Markings and Signage:

- Bicycle lanes shall be marked with appropriate pavement markings such as longitudinal lines and stenciled symbols, ~~as illustrated in;~~ see Figure I-182138 for two examples.
- Bike routes shall be identified by appropriate signage as found in the FHWA 'Manual of Uniform Traffic Control Devices,' ~~as illustrated in;~~ See Figure I-182138 for examples.

1.174. ELECTRIC VEHICLE INFRASTRUCTURE

New structured and surface parking lots of five or more spaces shall include energized electrical outlets or installed chargers capable of providing Level 2 EV charging or higher to 20% of parking spaces (rounded down to the nearest whole number). An additional 50% of Remaining spaces must be made EV-ready, meaning that they are served by sufficient conduit, ~~wiring,~~ and electrical service to allow for future installation of electric vehicle supply equipment at every space.

An applicant may request a reduction in the number of required EV-installed or EV-ready parking spaces if Level 3 EV charging is proposed. In this case, spaces served by Level 3 charging may be substituted for Level 2 at a ratio to be determined in consultation with the Department of Public Works.

In the case of new structured and surface parking of greater than 100 spaces, the review authority may establish the EV parking requirements on the basis of an EV parking demand study. Such study shall be prepared by a qualified professional using industry best practice, and account for future growth in EV demand.

1.18. MOTORCYCLE / MOPED PARKING (ON-STREET):

To distinguish motorcycle/moped parking spaces from standard parking spaces the spaces shall be painted and delineated with signage. These painted spaces shall be angled and shall be four (4) feet wide by eight (8) feet long. The dimensions for on-street motorcycle/moped parking are outlined in Figure I-31. On-street motorcycle and moped parking may also be located where standard vehicle parking would be prohibited because of sight restrictions, such as, adjacent to a crosswalk or an approach to a traffic control device. Motorcycles/mopeds do not have the same sight impediment as a standard vehicle.

Commented [ND41]: Moved to 1.11

1.19.5. TRAFFIC CONTROL DEVICES SIGNALS

All intersections of two or more roadways shall be controlled by one of the traffic control methods listed herein. All traffic control shall be selected and installed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

1.15.1. Traffic signals. All new traffic signals are subject to the approval of the Department of Public Works. Proposed traffic signals are required to meet at least one traffic signal warrant set by the MUTCD. Signals justified using Warrant 3 (Peak Hour Volume), Warrant 7 (Crash Experience), or Warrant 8 (Roadway Network) without meeting at least one other warrant may require additional study. Development projects that trigger, or further exceed, one or more signal warrants at one or more existing or proposed intersections or driveways may be required to install a traffic signal at those locations.

New or modified traffic signals also require the submission of a traffic signal plan, including locations of all equipment, underground utilities, a phasing and timing plans, and a specific list of all traffic signal hardware. ~~For new or modified traffic signal installations, a new plan shall be submitted to the Department of Public Works for review and approval prior to installation. reviewing authority for review and approval before installation can proceed.~~

New traffic signal proposals are subject to review by MaineDOT, as appropriate. All city, state, and federal guidelines with regard to installation, activation, and monitoring shall apply.

Existing traffic signals that do not meet MUTCD signal warrants may be removed if they present operational or safety issues. All removals of existing

Commented [TE42]: There is a formal process for signal removal. Should that be noted?

Commented [JP43R42]:

Commented [JP44R42]: Language updated to require coordination with DPW and Maine DOT.

traffic signals are subject to coordination with and the approval of the Department of Public Works and MaineDOT.

The City of Portland's traffic signal specifications can be found in the City of Portland Traffic Signal Policy and Guidance Manual.

1.15.2 Stop Control. Stop signs shall be installed in accordance with MUTCD. Stop signs shall be accompanied by a stop line 12" in width.

Stop control shall not be used for speed control. Stop control should generally not be used on intersection approaches with multiple travel lanes. Stop control shall not be used for intersections with five (5) or more approaches. Such intersections shall be signalized (if warranted), equipped with a roundabout, or otherwise realigned or regulated so that the number of approaches is reduced to four (4) or fewer.

1.15.3. Roundabouts: Where sufficient right-of-way is available, circular intersections (i.e. roundabouts or traffic circles) should be considered. Such intersections may provide operational and safety benefits compared to signalized or stop-controlled intersections. Where selected as the appropriate traffic control measure, roundabouts shall be designed in accordance with the MUTCD Chapter 3C, with signage according to MUTCD Section 2B.07. Neighborhood traffic circles may be considered at stop-controlled intersections as a traffic calming measure. All such treatments are subject to the approval of the Department of Public Works.

1.15.4. Yield Control: Yield control should generally only be implemented in the following scenarios:

- At certain channelized turning lanes separated from adjacent travel lanes by an island (even if the adjacent lanes are controlled by a stop sign or signal);
- At the entering roadway for a merging movement, including at a roundabout;
or
- Where engineering judgment determines that yield control is appropriate, subject to the approval of the Department of Public Works.

Listed below are the traffic signal items required for traffic signal installations. These items or an approved equivalent shall be provided.

1.19.1. Controller Equipment:

- Controllers shall be compatible with existing Naztec Street Wise ATMS-Software
- Traffic control cabinets shall be Naztec Model M34 or P44 TS2 Type 1 Series-only

- ~~Secondary traffic controllers shall be Naztec Model 980 TS2 Type 1 Series only~~
- ~~Master controllers shall be Naztec Model 981 Series only~~
- ~~Malfunction management units shall be Naztec Model MMU-516E only~~

~~1.19.2. Video Detection Equipment:~~

- ~~Video detection units shall be Traficon Model VIP3.1 & VIP3.2 Series only~~
- ~~Video detection cameras shall be Traficon approved models only~~

~~1.19.3. Signal Equipment:~~

- ~~Signal housings shall be McCain Model MTSTA or MTSTP Series only~~
- ~~LED modules for vehicle indications shall be GELcore Model DR6 Series only~~
- ~~LED modules for pedestrian indications shall be GELcore Model PS7 Series only~~
- ~~Accessible Pedestrian Signals shall be Campbell Advisor Series only~~

~~1.19.4. Traffic Structures:~~

- ~~Mast arms shall be Valmont SM16 or CB16 Series only~~
- ~~Strain poles shall be Valmont SW56 Series only.~~

1.1620. PUBLIC CROSSWALKS

1.16.1. Public crosswalks shall meet the requirements of The Manual on Uniform Traffic Control Devices (MUTCD), unless City standards specify a stricter measure. Public improvements may include but shall not be limited to any one or combination of the following:

- Crosswalks;
- Curb Bump Outs or Curb Extensions, where warranted;
- Pedestrian Crossing Signs (curbside, overhead or in the street);
- Rectangular Rapid Flashing Beacons (RRFBs) ~~Pedestrian Activated Yellow-Flashing Warning Lights~~;
- Pedestrian Hybrid Beacons;
- Pedestrian Activated Traffic Control Signal (Red, yellow, green); and
- Medians or raised islands

~~1.1620.12.~~ Crossing locations shall be designed to the following standards unless otherwise directed by the Department of Public Works:

- Street markings: Crosswalks on public streets shall consist of 24-inch block style white lines, placed 48 inches apart on center, for an overall width of 8

feet (or wider; at least as wide as the sidewalks served by the crosswalk).

- Street lighting: Crosswalk locations shall be adequately illuminated for visibility at nighttime.
- Signage: Select crosswalk locations may need to be accentuated through the use of signage mounted curbside, overhead, or on the roadway centerline, as described hereinafter. Crosswalk signs shall be placed directly adjacent to crosswalks, and advance warning signs shall be placed in accordance with MUTCD. Standard signs shall be black legend on a fluorescent background.

Critical Physical Factors:

Walking Speed:

- ~~This factor is applicable at signalized intersections and affects the length of the pedestrian clearance (flashing “don’t walk”) interval.~~
- ~~Average walking speed is generally measured as three and a half (3.5) feet per second. In areas with elderly or young children pedestrians, a rate of three (3) feet per second is appropriate.~~

Vehicular Sight Distance:

- ~~Sight distance shall be based on the posted speed plus 5 miles per hour or the 85th percentile travel speed as tabulated below.~~

Stopping Sight Distances (1)

Speed (mph)	Stopping Sight Distance (feet) *
25	155
30	200
35	250
40	305
45	360
50	425

**Assumes level grade*

Source: AASHTO Policy reference 1, Exhibit 3-1 of that publication.

- ~~Sight distance shall be based on a driver eye height of 3.5 feet and a pedestrian height of 2.0 feet.~~
- ~~Parking shall be prohibited within twenty (20) feet from the centerline of a crosswalk and within thirty (30) feet at signalized and STOP sign locations.~~

1.20.2. General Standards for Crosswalk Installation:

1. ~~The Manual on Uniform Traffic Control Devices (MUTCD) provides guidance for placement of crosswalks. In addition, crosswalks should:~~
 - ~~Occur where substantial pedestrian/vehicle conflicts exist. (See the Federal Highway Administration notebook titled "Traffic Conflict Techniques for Safety and Operations" which provides methods for conflict evaluation.)~~
 - ~~Occur at points of pedestrian concentration that can meet applicable standards or where pedestrians may not recognize the appropriate place to cross (e.g., loading islands, mid-block pedestrian crossings).~~
 - ~~Maintain suitable separation (approximately 300 feet) between non-intersection or mid-block crosswalks.~~
 - ~~Be installed based on an engineering study if located other than at a STOP sign or traffic signal. For mid-block locations, a study shall evaluate factors of need including but not limited to school crossings, age of pedestrians, and nearest alternative crosswalk location as well as safety issues such as traffic speed, volume, and sight lines.~~
 - ~~Consider advance warning signage if installed at uncontrolled locations and allow for restriction of parking for adequate visibility of the advance signage.~~
 - ~~No crosswalk spacing requirements are to be imposed at intersection locations. Other engineering factors are to be reviewed in the determination of suitability of the location.~~
2. ~~The Crosswalk Installation Guidelines (Figure I-24) provide criteria for guiding evaluations of when crosswalks may be desirable at uncontrolled locations based on pedestrian and vehicular volumes. Crosswalks at uncontrolled locations shall be placed where these criteria are met; or where special requirements and/or plans exist that support the installation of a crosswalk.~~
3. ~~Crosswalks proposed at signalized intersections shall include pedestrian signal indications for substantial pedestrian crossings.¹ Each proposed location shall be evaluated based on through traffic volumes, turning vehicle volumes and signal phasing to determine which legs of the intersection are most appropriate for pedestrian crossings.~~

~~The default assumption is that crosswalks shall be provided on all intersection approaches and supplemental analysis must be provided that identifies specific engineering conclusions on why this cannot be accomplished.~~

²Design and Safety of Pedestrian Facilities, 1998, ITE Technical Committee 5A-5

~~4. Marked crosswalks across stop controlled intersection approaches shall be considered where vehicular traffic may block pedestrian traffic². This will be assessed based on a visual observation of vehicular and pedestrian traffic flow at the intersection to determine if there is sufficient vehicular traffic to block the pedestrian crossing path for a significant period of time.~~

1.20.3. Design Criteria:

~~Street Markings: Crosswalks on public streets shall use a minimum of eight (8) inch wide solid white lines, which should be spaced to provide a minimum overall width of eight (8) feet. Wider line width is required for locations with higher posted speeds as shown below. Paint, wherever used, shall meet Maine Department of Transportation (Maine DOT) specifications. Additional designs may consist of longitudinal lines. Figure 1-21 illustrates these typical crosswalk markings and the table below provides dimensions utilized in the City of Portland for various applications.~~

Crosswalk Dimensions

Type	Overall Width	Line Width	Spacing
Standard Crosswalk Marking (two lines) Posted Speed ≤ 35 mph Posted Speed > 35 mph	8' 8'	8" 12"	N.A.
Crosswalk with Longitudinal Lines (block style) (See Pedestrian Crossing Distances table)	8'	24"	Spacing 4' o.c.

~~The longitudinal or block style striping of crosswalks should be reserved for use at the following locations (see Pedestrian Crossing Distances table):~~

- ~~• Uncontrolled locations of special significance, such as school walking routes, trail/shared use paths and mid-block crossings;~~
- ~~• High volume pedestrian locations with at least 25 pedestrian crossings for each 4 hours or 40 crossings during the peak hour; and~~
- ~~• High vehicle speed (> 35 mph posted speed) crossings.~~

~~1. Street Lighting: Crosswalk locations shall be adequately illuminated for night time use.~~

^{*}Pedestrian Facilities Users Guide, March 2002, USDOT – FHWA

~~2.—Signage: Select crosswalk locations may need to be accentuated through the use of signage mounted curbside, overhead, or on the road centerline, as described below:~~

~~3.—Curbside Signs: There are three standard curbside signs consisting of a crosswalk warning sign, a school crossing warning sign, and an advance warning pedestrian crossing sign. The City of Portland also installs “yield for pedestrians” signs at crosswalks, as shown in Figures I-22 and I-23. Crosswalk signs shall be placed directly adjacent to crosswalks and advance warning signs shall be placed in accordance with the MUTCD guidelines as shown below.~~

Advance Warning Sign Placement (2)

85th Percentile Speed* (mph)	Advance Placement (feet)
25	125**
30	125**
35	125**
40	125
45	175

^{*}or the posted speed when a speed study is not available.

^{**}recommended minimum for the City of Portland

Source: Table 2C-4 of the MUTCD.

~~1.20.4. Standard signs shall be black legend on a yellow background. The MUTCD also allows the use of a yellow-green fluorescent high grade reflective background for increased visibility. These higher grade signs shall be used where locations meet at least one of the following criteria:~~

- ~~▲ Vehicle 85th percentile speeds or the posted speed is greater than or equal to 35 mph;~~
- ~~▲ Pedestrian crossing volume of at least 25 per hour for four hours or~~
- ~~▲ 40 during the peak hour; or~~
- ~~▲ School crossing.~~

~~1.—Overhead Signs and Flashing Warning Lights: Overhead signs supplemented with pedestrian activated flashers may be placed at high volume pedestrian crossing locations or where specific pedestrian safety issues have been identified.~~

~~2.—Centerline Signs: Centerline signs shall be able to withstand vehicle impact without damage to the vehicle and with minimal damage to the device and shall be anchored in place. Note that these devices must be~~

~~removed without damaging the pavement prior to the start of winter season. The City recommends a device with a base anchored to the pavement with epoxy and a flexible upright paddle that is replaceable. The following criteria should be considered for these devices to be utilized:~~

- ~~• Presence of a high crash location (HCL) as defined by Maine DOT:
Both of the following criteria must be met in order to be classified as an HCL:

 - ~~○ A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor (CRF) compares the actual accident rate to the rate for similar intersections in the State; and~~
 - ~~○ A minimum of eight (8) accidents over a three (3) year period.~~~~
- ~~• Principal or minor arterial, as identified in Figure 24.~~
- ~~• At least 25 pedestrian crossings per hour for four (4) hours or 40 pedestrian crossings for the peak hour.~~

~~1.20.5. Traffic Control Signals: The following provides general guidance concerning installation of a pedestrian-activated red-yellow-green traffic control signal. The MUTCD should be consulted for specific details:~~

- ~~• The location is a school crossing and a traffic engineering study reveals that there are not adequate gaps in the traffic stream; or~~
- ~~• There are 107 pedestrian crossings for each of four (4) hours or 133 crossings during any one hour and under both conditions for high-volume roadways. Higher rates of pedestrian crossings are necessary for lower volume streets. The number of pedestrians may be reduced by 50% where they are predominantly elderly or young children to include crossing locations along school walking routes for elementary and middle school students.~~

~~1.20.6. Specific Guidelines for Crosswalk Use: The City of Portland has established the following guidelines for pedestrian street crossing devices:~~

Pedestrian Crossing Devices

Device	Use*
Crosswalk	
8" lines, 8' total width	Where volume criteria of Figure I-25 are met and speeds are less than 35 mph and at signalized intersections.
12" lines, 8' total width	At all unsignalized locations where volume criteria of Figure I-25 are met and speeds are between 35 and 45 mph.

24" block-style lines, 8' width	At mid-block locations where volume criteria of Figure 1-25 are met and speeds are between 35 and 45 mph, at all school and trail/shared-use-path crossings and as noted in 1.20.3 (Design Criteria) above or at uncontrolled locations as determined by the Traffic Engineer.
Curbside signs-	
Advance Crossing Signs	For all mid-block crosswalks and other uncontrolled locations as determined by Traffic Engineer.
Standard Grade Crossing Sign	At all locations where crosswalk lines alone are not sufficient to define the crossing location to motorists at the discretion of the Crosswalk Committee.
High Grade Crossing Sign	Speed greater than or equal to 35 mph; or 25 pedestrians crossing per hour for four hours or 40 pedestrians crossing for the peak hour
School Crossing Sign	In accordance with MUTCD
Other	
Overhead Signs/Flashers	On arterial roadways or roadways with at least two lanes of traffic in at
Centerline Signs	As noted in 1.20.4 above.
Traffic Control Signal	Consider at locations meeting MUTCD warrants for school crossings or

**All speeds are 85th percentile speeds for off-peak daytime periods or the posted speed.*

1.1721. PUBLIC TRANSIT FACILITIES

Where required, public transit facilities shall meet the following standards:

1.1721.1. Transit Pullout Bays:

- Transit pullout bays shall be located in the City right-of-way along the property frontage; or
- Where space constraints prevent locating a transit pullout bay along the property frontage, transit pullout bays may be located within reasonable walking distance of the site.
- Where possible, transit pullout bays shall be located at intersections. At signalized intersections, far-side bus stops are preferred. Mid-block bays are not preferred due to impacts to parking and traffic.
- The design of the pullout bay shall provide adequate space for vehicles to maneuver through facilities without causing damage to either the vehicles or facilities, as detailed in Section I of the Technical Manual herein.

1.1721.2. Transit Shelters:

1. Transit shelters shall be located within the site, directly adjacent to the right-of-way on which the public transportation route is established; or
 2. Where site constraints prevent locating a transit shelter on the site, it shall be located within a public sidewalk area along the property frontage. If a transit shelter is to be located within a public sidewalk area, City sidewalk clearance requirements shall apply.
 3. Where space constraints prevent locating a transit shelter within a public sidewalk area along the property frontage, it may be located within reasonable walking distance of the site.
 4. Installation and ongoing maintenance of transit shelters on private property shall be the responsibility of the property owner. Ongoing maintenance of transit shelters located within the City right-of-way or within an easement held by the City shall be the responsibility of the City or of the local or regional transit authority serving the facility.
1. ~~1724~~.3. Where necessary, developments shall provide easements to the City, sufficient in size to accommodate public transit infrastructure and access to the transit stop.

1.22. CONSTRUCTION PERMITTING AND TRAFFIC CONTROL PLANS

- 1.22.1. Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & charges are all outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Services.
- 1.22.2. Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Services. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Services. See also Section II of the Technical Manual for lateral abandonment requirements associated with demolition permits.
- 1.22.3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along arterial and/or collector streets are required to submit a satisfactory 'maintenance of traffic' (MOT) plan prior to any site plan, subdivision, or street opening permit approval.

Commented [TE45]: We also need them for local streets

Commented [JP46R45]: Changed this to cover ALL public streets.

Commented [JP47R45]: Nell- Make Sure to update this in it's new location

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

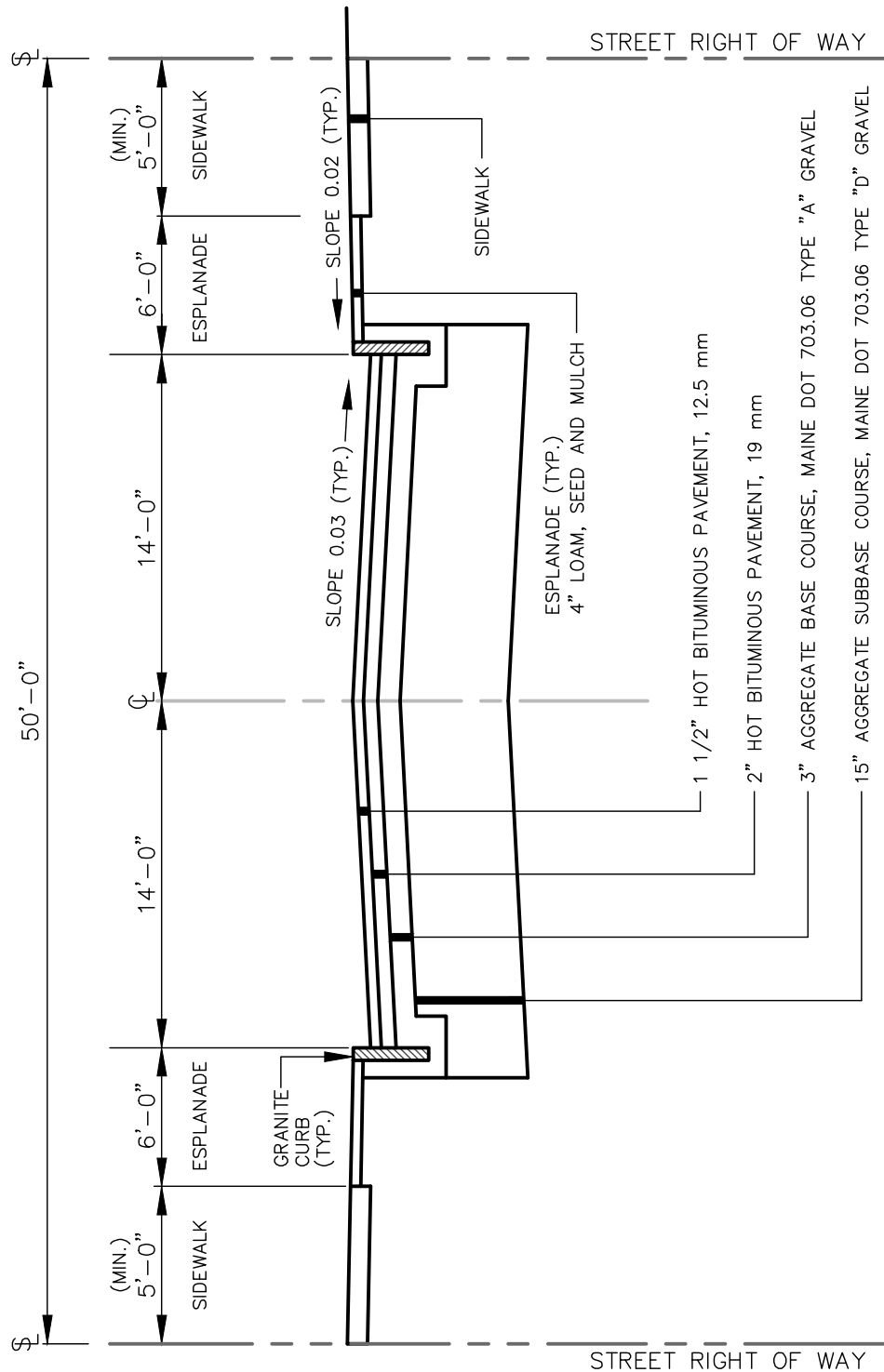
- Construction speed signing may be used as needed to slow traffic
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
- In extreme situations, flaggers may be required to allow for safe pedestrian and bicycle movement

1.22.4. All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Services.

- Traffic control for bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycles and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and/or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.

1.22.5. Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Services.

Commented [ND48]: Moved to Section 17.



LOCAL STREET CROSS SECTION

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

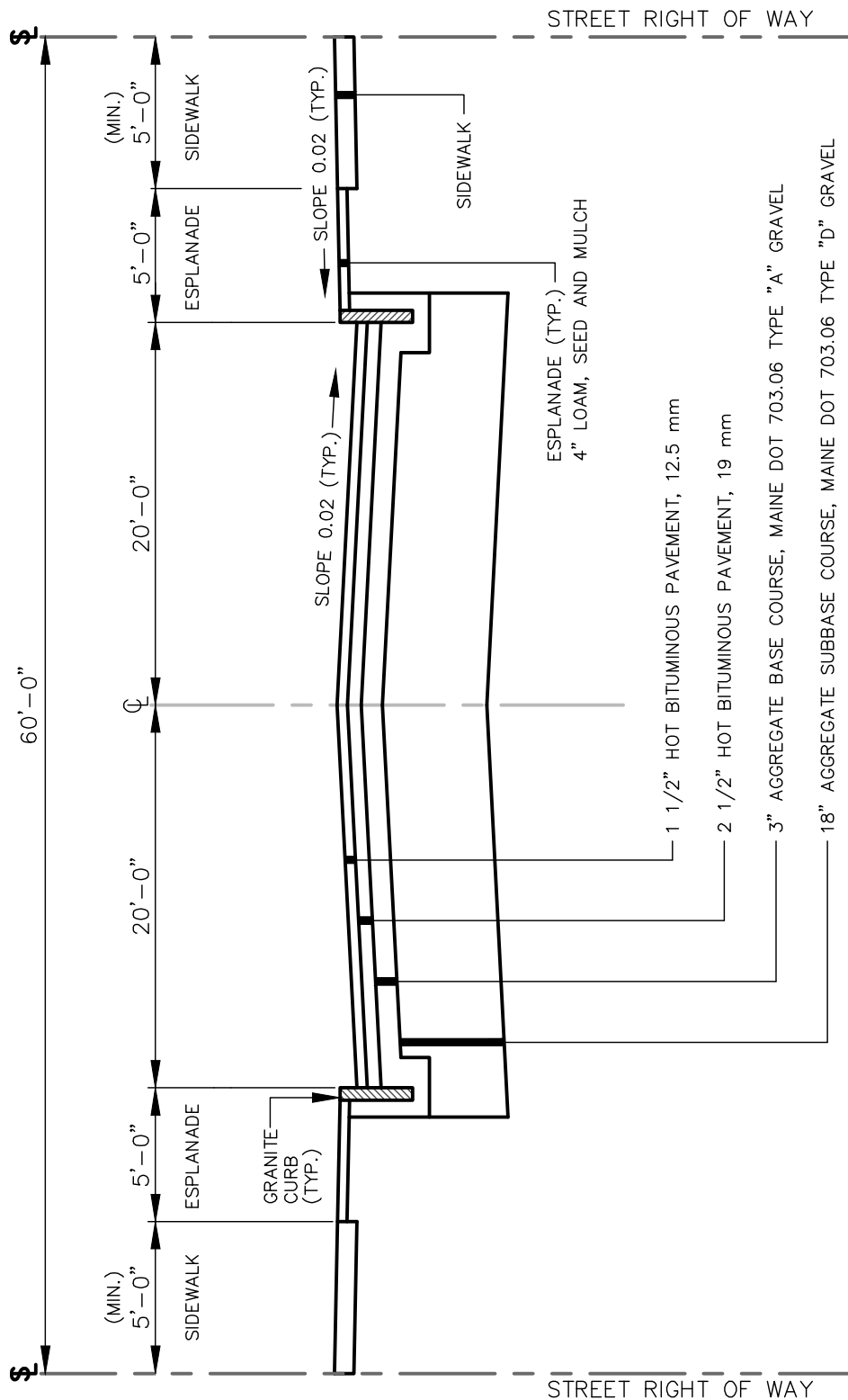
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

LOCAL STREET CROSS SECTION

I-1



COLLECTOR STREET CROSS SECTION

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

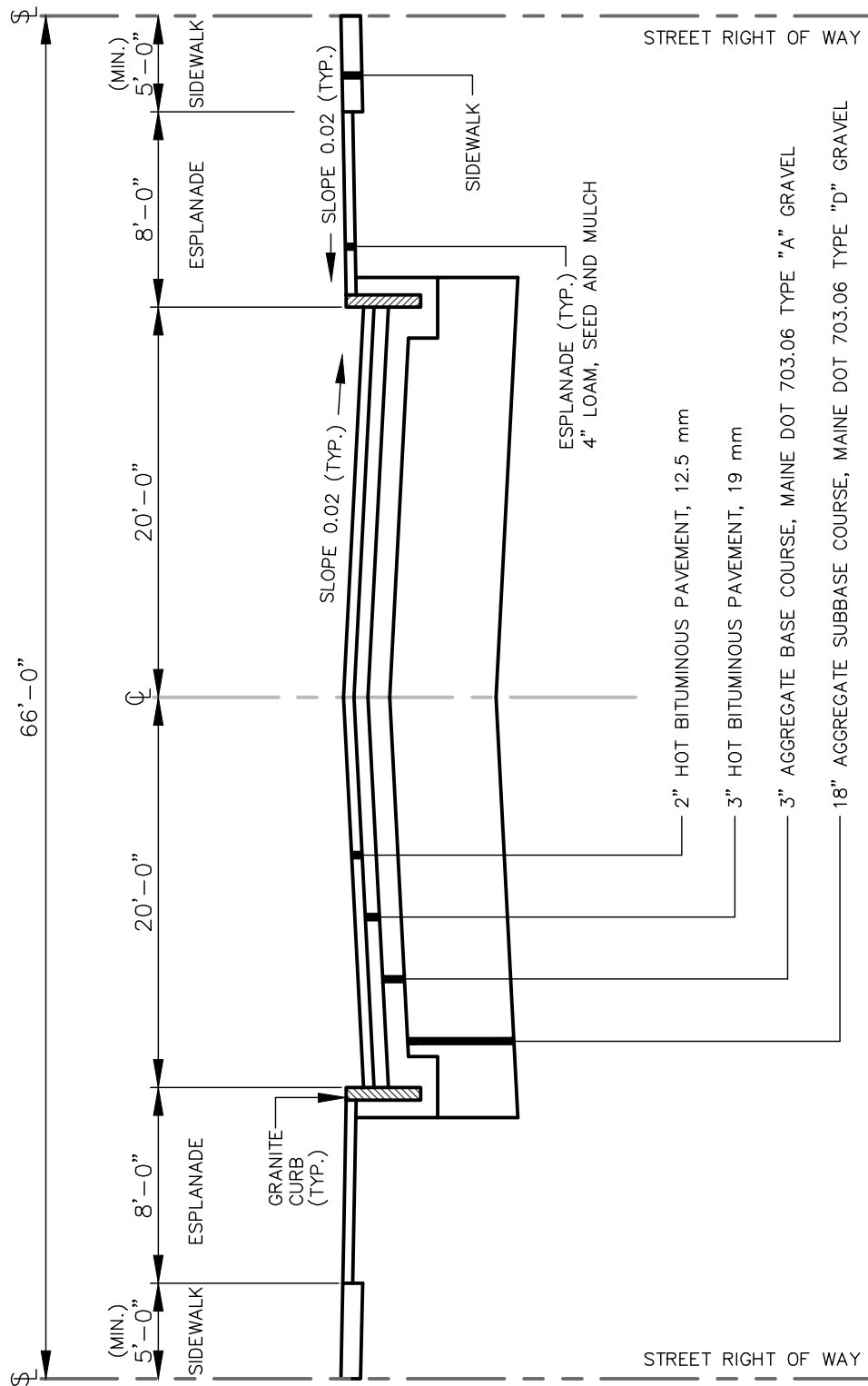
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

COLLECTOR STREET CROSS SECTION

I-2



ARTERIAL STREET CROSS SECTION

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

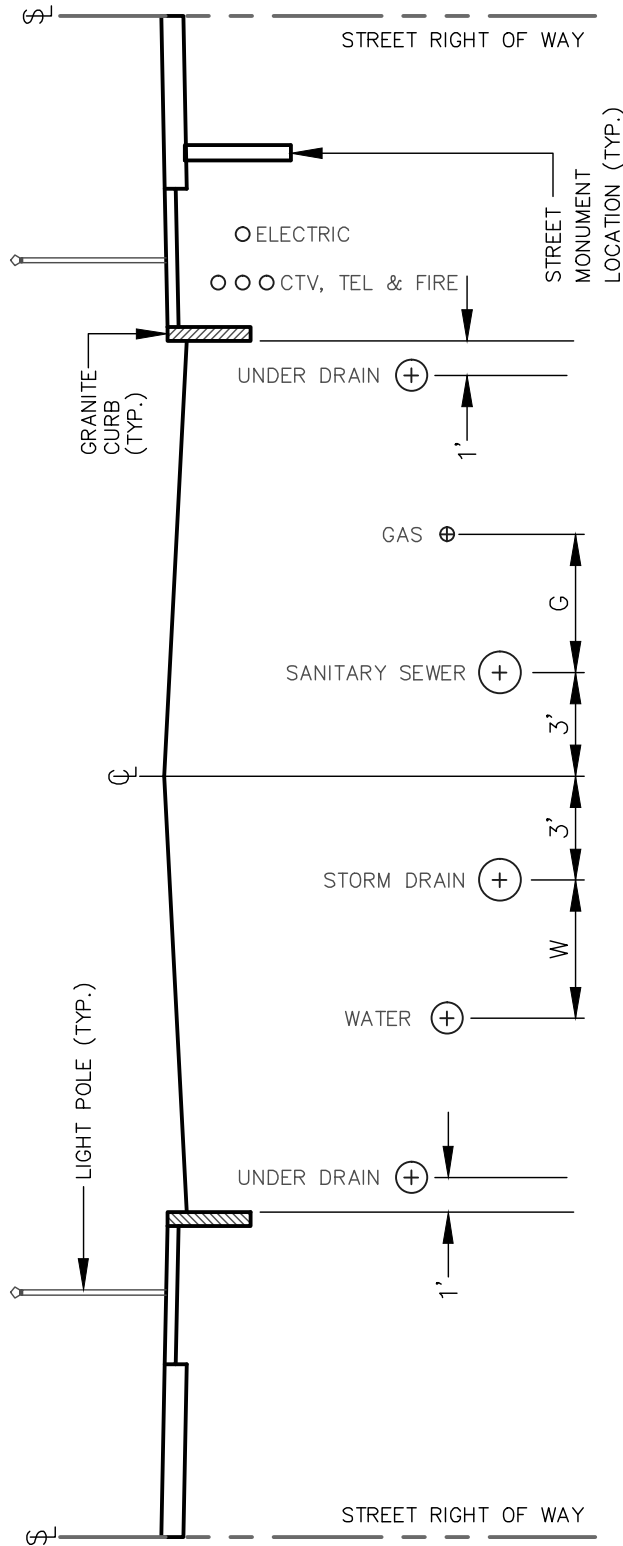
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

ARTERIAL STREET CROSS SECTION

I-3



NOTES:

1. DEPTH OF SANITARY SEWER AND STORM DRAIN PER CITY ENGINEER.
2. DEPTH OF UNDER DRAIN SHALL BE 3'-6" FROM GUTTER LINE TO PIPE INVERT.
3. DEPTHS OF ELECTRIC, TELEPHONE, CABLE TELEVISION AND FIRE TO BE AT LEAST 36 INCHES BELOW FINISH GRADE. DEPTHS OF OTHER UTILITIES PER REQUIREMENTS OF APPLICABLE UTILITY COMPANY. WHEN TREES ARE PROPOSED FOR THE ESPLANADE, THE UTILITIES DESIGNATED FOR THAT LOCATION SHALL MAKE NECESSARY PROVISIONS.
4. APPLICABLE WARNING TAPE SHALL BE PLACED OVER EACH UTILITY.
5. RIGID PVC CONDUIT IS REQUIRED FOR STREET AND DRIVEWAY CROSSINGS AND OTHER PAVEMENT CROSSINGS MORE THAN 12 FEET IN LENGTH. CONDUITS CROSSING STREETS SHALL BE ENCASED IN CONCRETE. CONCRETE SHALL BE DESIGNED TO HAVE MINIMUM 3,000 PSI COMP. STRENGTH AND SHALL HAVE A MINIMUM 4" THICK ENCASEMENT ON ALL SIDES OF CONDUIT.
6. UTILITY MANHOLES SHALL NOT BE LOCATED WITHIN TRAVEL LANE VEHICLE TRACKING TO THE EXTENT POSSIBLE.

STREET CLASSIFICATION	R.O.W. WIDTH (ft.)	UTILITY LOCATION DIMENSIONS	
		W (ft.)	G (ft.)
LOCAL	50	5	5
COLLECTOR	60	7	7
ARTERIAL	66	8	8

UTILITY LOCATIONS IN STREETS

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

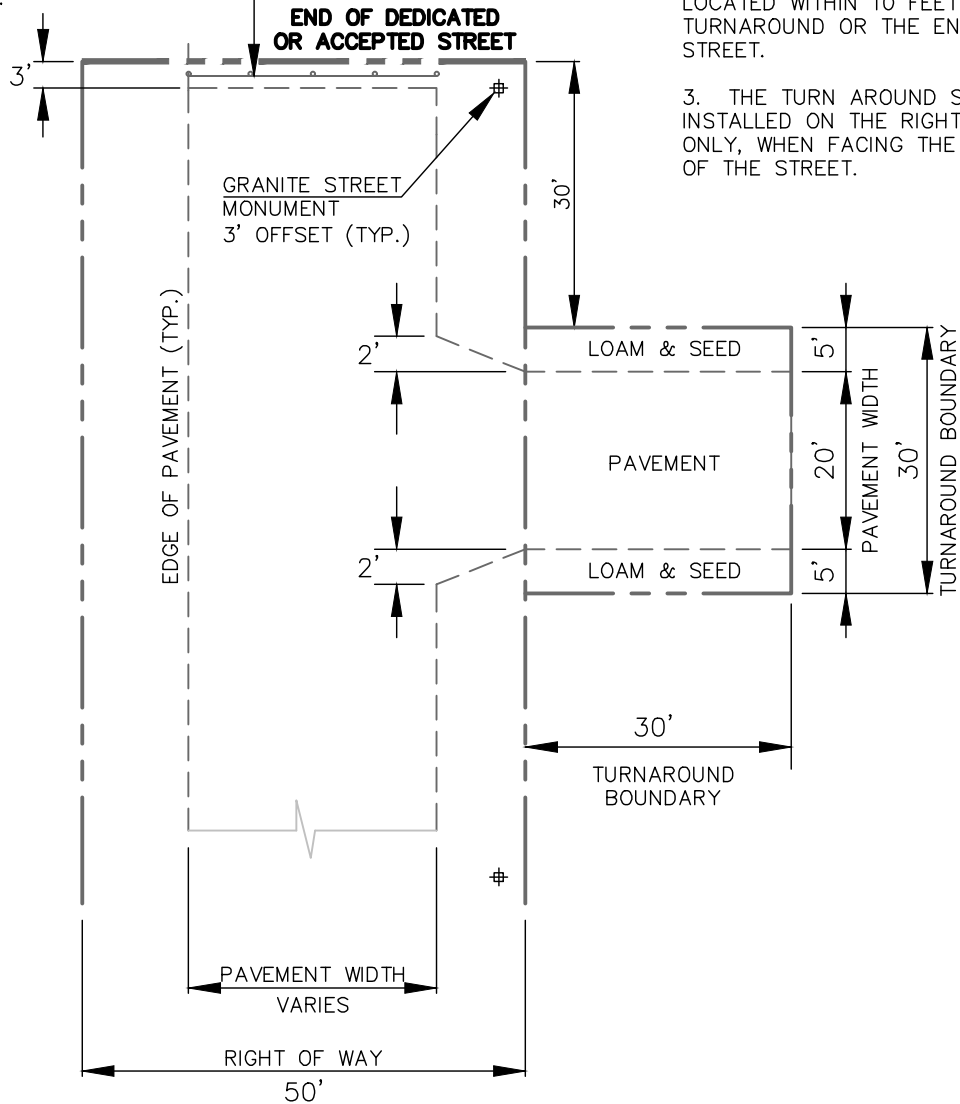
**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

FIGURE:

I-4

UTILITY LOCATIONS IN STREETS

GALVANIZED STEEL OR PRESSURE
TREATED WOOD GUARDRAIL WITH OM4-2
END OF ROADWAY MARKER SIGN OR
APPROVED EQUAL. DPW RESERVES THE
RIGHT TO WAIVE THE REQUIREMENT OF A
GUARD RAIL BASED ON SITE SPECIFIC
SNOW STORAGE AND TURNAROUND
CONSIDERATIONS.



NOTES

1. A TURNAROUND EASEMENT SHALL BE CONVEYED TO THE CITY.
2. NO DRIVEWAYS SHALL BE LOCATED WITHIN 10 FEET OF THE TURNAROUND OR THE END OF THE STREET.
3. THE TURN AROUND SHALL BE INSTALLED ON THE RIGHT SIDE ONLY, WHEN FACING THE DEAD END OF THE STREET.

TURNAROUND ON DEAD END STREET

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

TURNAROUND ON DEAD END STREET

I-5

GENERAL NOTES

1. DESIGN OF ACCESSIBLE RAMPS AND ASSOCIATED FACILITIES ARE GOVERNED BY THE 2010 AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN, WHICH IS DETAILED IN DOJ SECTION 28 CFR 35.151. ADDITIONAL GUIDANCE AND INFORMATION CAN BE FOUND IN THE PROPOSED PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES PUBLISHED BY THE U.S. ACCESS BOARD. IN ANY CASE WHERE THE DESIGN REQUIREMENTS ARE MORE STRINGENT BETWEEN ADA STANDARDS AND CITY REQUIREMENTS, THE ADA STANDARDS SHALL GOVERN.
2. SIDEWALKS SHALL BE CONSTRUCTED IN BRICK, CONCRETE, OR BITUMINOUS, ACCORDING TO THE SIDEWALK & DRIVEWAY APRON MATERIALS POLICY, UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER.
3. SIDEWALKS AND RAMPS SHALL BE BUILT ACCORDING TO THE FOLLOWING DIMENSIONS AND GRADES:
SIDEWALK RUNNING SLOPE: MATCH ADJACENT STREET GRADE
SIDEWALK CROSS SLOPE: 1.0% MINIMUM, 2.0% MAXIMUM
SIDEWALK WIDTH: 5'-0" MINIMUM, WIDER PREFERRED
ESPLANADE (WHERE PROVIDED) 2'-0" MINIMUM, 4'-0" OR GREATER PREFERRED IF LANDSCAPED.
4. TWO CURB RAMPS ARE REQUIRED AT EACH SIDEWALK CORNER. EACH CURB RAMP SHALL CONNECT THE PEDESTRIAN ACCESS ROUTE AT EACH PEDESTRIAN STREET CROSSING. IN ALTERATIONS WHERE PHYSICAL CONSTRAINTS PREVENT TWO CURB RAMPS FROM BEING INSTALLED AT A STREET CORNER, A SINGLE PEDESTRIAN CURB RAMP MAY BE PERMITTED.
5. OPPOSING CURB RAMPS AT A SINGLE CROSSING SHALL ALIGN TO PROVIDE A STRAIGHT PATH OF TRAVEL FROM THE TOP OF THE RAMP TO THE CURB RAMP ON THE OPPOSITE SIDE OF THE ROADWAY TO THE MAXIMUM EXTENT FEASIBLE.
6. ALL SIDEWALKS AND RAMPS SHALL DRAIN TOWARD THE STREET, DRIVEWAY, OR PARKING AREA, WITH A MAXIMUM CROSS SLOPE OF 2.0%.
7. LEVEL LANDINGS (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) AT THE BOTTOM OF PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS.
8. PONDING SHALL NOT BE PERMITTED WITHIN THE CURB RAMP LIMITS. RAMPS SHALL NOT ALTER ROADWAY DRAINAGE PATTERNS.
9. TRANSITION FROM RAMPS TO WALKS OR STREET SURFACE SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. PAVEMENT AT THE STREET SURFACE SHALL BE MILLED AND REPAVED TO ACHIEVE FLUSH CONDITION.
10. CURB RAMP AND FORM WORK SLOPES SHALL BE CHECKED WITH A DIGITAL LEVEL OF AN APPROPRIATE LENGTH. NO PORTION OF A RAMP RUN SHALL EXCEED THE MAXIMUM SLOPE REQUIREMENT.
11. THE COUNTER SLOPE WITHIN 2' OF THE CURB RAMP SHALL BE 5% MAXIMUM. IN ALTERATIONS, IF THE COUNTER SLOPE OF 5% MAXIMUM CANNOT BE ACHIEVED, THE SLOPE ELEVATION MAY BE ADJUSTED SO THAT THE COMBINED COUNTER SLOPE AND RAMP SLOPE DO NOT EXCEED 13.3%.
12. VERTICAL DROP-OFF EDGES TO RAMPS SHALL NOT BE BUILT UNLESS THE RAMP ABUTS AN ESPLANADE OR OTHER AREA NOT TO BE USED BY PEDESTRIANS.
13. AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS.
14. DETECTABLE WARNING PANELS SHALL BE PROVIDED ON ALL RAMPS AS PER FIGURE I-7 OF THESE STANDARD DETAILS.
15. RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED.
16. SIGNS, POLES, PLANTERS, MAILBOXES, ETC. SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS.
17. SIDEWALK RAMPS SHALL NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS, OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED, THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS.
18. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. RAMP DESIGNS THAT ARE COMPLIANT WITH ADA BUT NOT LISTED IN THESE DETAILS MAY BE APPROVED BY THE CITY ENGINEER.
19. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THESE DETAILS AND TO ADA GUIDELINES TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS, AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE ADA ACCESSIBILITY GUIDELINES.
20. MAXIMUMS AND MINIMUMS DO NOT HAVE TOLERANCES AND ARE NOT TO BE EXCEEDED OR UNMET.
21. THE STANDARD TURNING SPACE (LEVEL LANDING) IS 4'-0" X 4'-0" SLOPING NO MORE THAN 2.0%. WHERE THE TURNING SPACE SHALL BE 4'-0" MINIMUM BY 5'-0" MINIMUM. THE 5'-0" DIMENSION SHALL BE PROVIDED IN THE DIRECTION OF THE RAMP RUN.
22. DETECTABLE WARNINGS SHALL BE INSTALLED AT ALL SIGNED OR SIGNALIZED INTERSECTIONS. THEY SHALL HAVE A TRUNCATED DOME SURFACE. THE DOMES SHALL BE IN A SQUARE PATTERN AND ALIGNED WITH PEDESTRIAN TRAFFIC WHERE POSSIBLE.
23. DETECTABLE WARNINGS SHALL SPAN THE WIDTH OF THE PEDESTRIAN RAMP. SEE STANDARD DETAIL FIGURE I-7.
24. ALL DETECTABLE WARNING FIELDS PLACED AT THE SAME INTERSECTION SHALL BE MADE UP OF THE SAME UNIFORM MATERIAL TYPE. DETECTABLE WARNINGS SHALL BE CONTRASTING IN COLOR TO THE ADJACENT WALKWAY.
25. A RAMP WITH A RUNNING SLOPE LESS THAN 5.0% IS DEFINED AS A "BLENDED TRANSITION". BLENDED TRANSITIONS DO NOT REQUIRE A LEVEL LANDING AT THE TOP OF THE RAMP.
26. THE RAMP LENGTH SHALL NOT EXCEED 15 FEET. ADJUST RAMP LENGTH OR SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
27. ALL CURB RAMP JOINTS AND GRADE BREAKS SHALL BE FLUSH.
28. RAMP GRADE BREAKS SHALL BE PERPENDICULAR TO THE RUNNING SLOPE.
29. THERE SHALL BE A MINIMUM OF 12" AGGREGATE SUBBASE COURSE - GRAVEL UNDER THE SIDEWALK SURFACE ON PEDESTRIAN RAMPS.
30. DRAINAGE STRUCTURES, UTILITY POLES, TRAFFIC SIGNAL EQUIPMENT OR OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED IN THE CURB RAMP OR TURNING SPACE AREAS.
31. BEFORE RETROFITTING RAMPS, THE CONTRACTOR SHALL VERIFY REMOVAL LIMITS ARE SUFFICIENT TO PROVIDE POSITIVE DRAINAGE, MAINTAIN EXISTING DRAINAGE PATTERNS AND AVOID PONDING IN THE FINAL CONFIGURATION.
32. A TEMPORARY PEDESTRIAN ACCESS ROUTE SHALL BE PROVIDED WHENEVER THE EXISTING PEDESTRIAN ACCESS ROUTE IN THE PUBLIC RIGHT OF WAY IS BLOCKED BY CONSTRUCTION, ALTERATION, MAINTENANCE OR OTHER TEMPORARY CONDITIONS. REFER TO MUTCD FOR GUIDANCE.

DATE:
AUGUST 2022

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

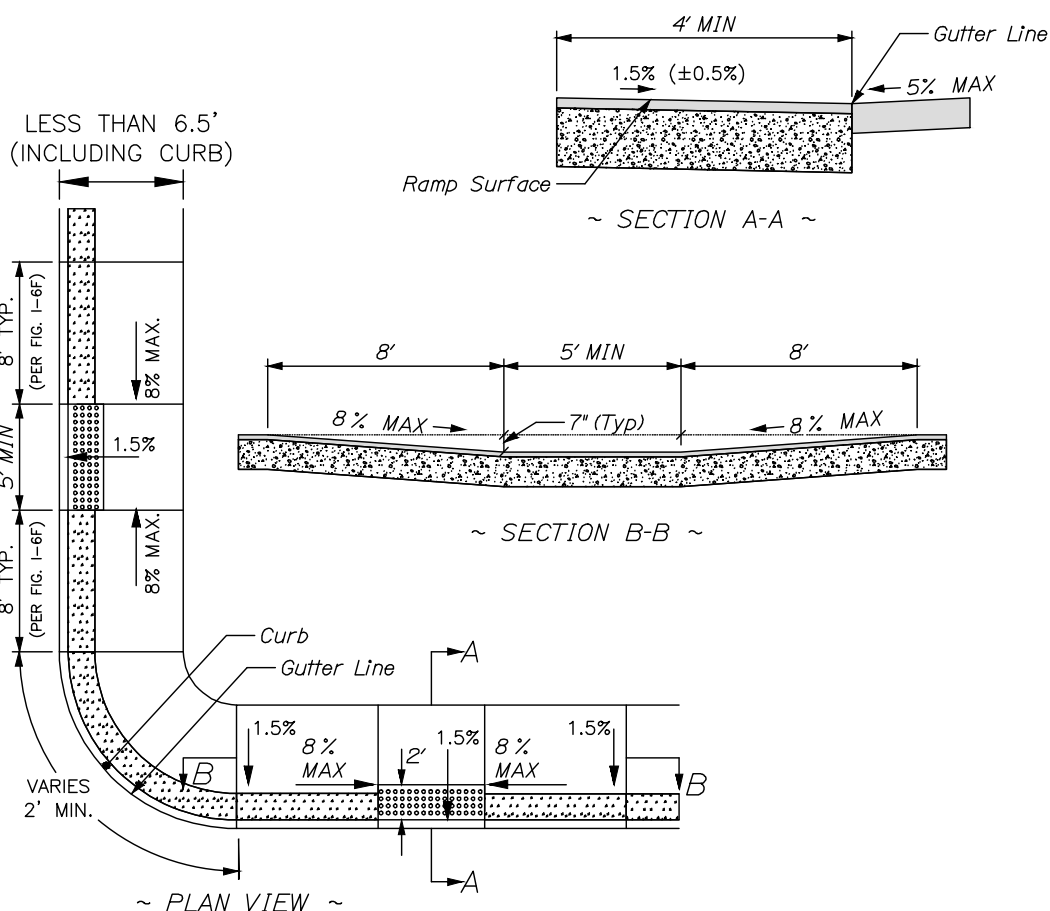
TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

**ACCESSIBLE RAMP
GENERAL NOTES**

I-6

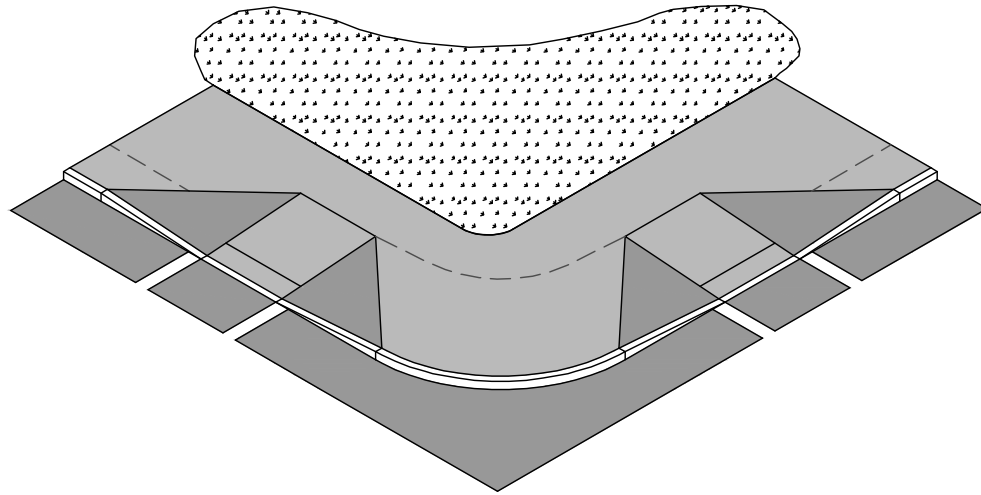
~ ISOMETRIC VIEW ~
(NOT TO SCALE)



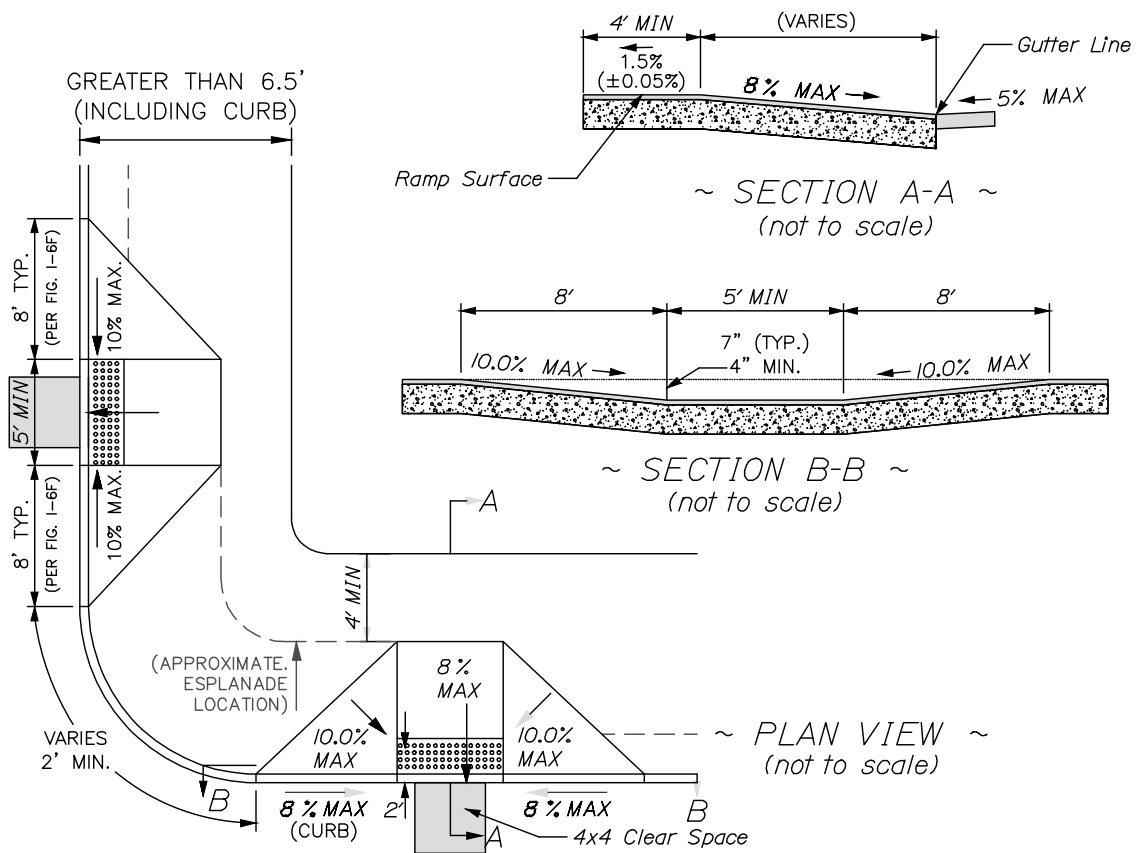
PARALLEL ADA RAMP – SIDEWALK LESS THAN 6.5' WIDE
WITH OR WITHOUT ESPLANADE

NOT TO SCALE

DATE: AUGUST 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	PARALLEL ADA RAMP FOR SIDEWALK LESS THAN 6.5' WIDE		I-6A



~ ISOMETRIC VIEW ~
(not to scale)



NOTES:

1. THIS DESIGN IS THE PREFERRED OPTION WHEN THE SIDEWALK WIDTH IS GREATER THAN 6.5'. USE OTHER OPTIONS ONLY WHEN REQUIRED BY DESIGN CONSTRAINTS.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

**PERPENDICULAR ADA RAMP – SIDEWALK WIDTH GREATER THAN 6.5' WIDE
WITH OR WITHOUT ESPLANADE**

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

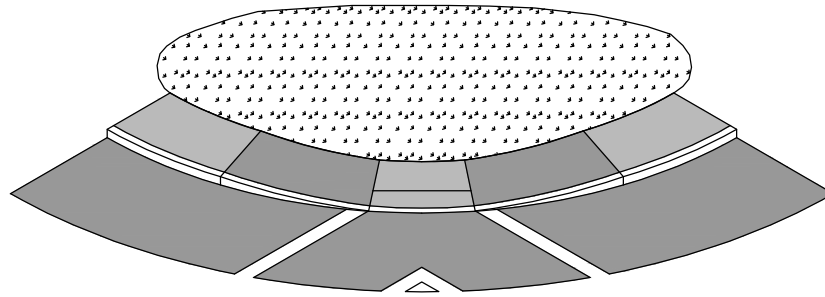
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

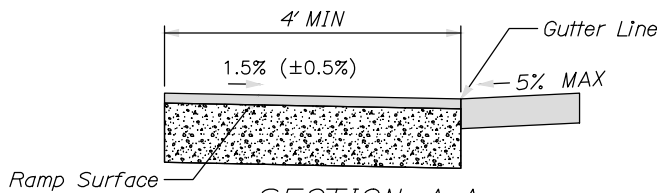
FIGURE:

**PERPENDICULAR ADA RAMP FOR SIDEWALK
GREATER THAN 6.5'**

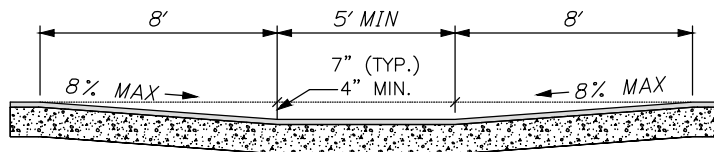
I-6B



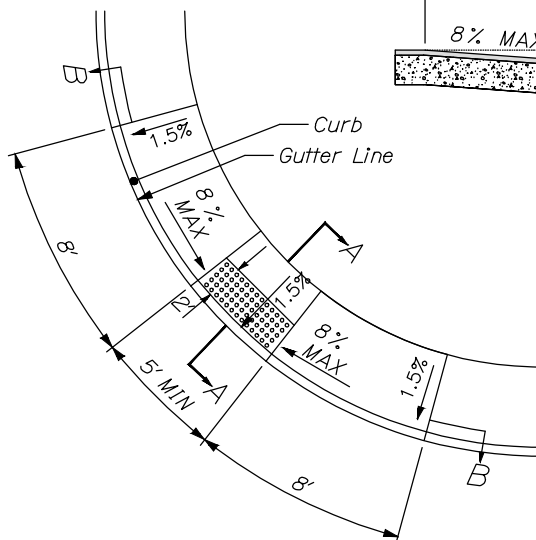
~ ISOMETRIC VIEW ~
(NOT TO SCALE)



~ SECTION A-A ~



~ SECTION B-B ~



~ PLAN VIEW ~

NOTES:

1. THIS LESS DESIRABLE DESIGN SHOULD NOT BE USED UNLESS REQUIRED BY DESIGN CONSTRAINTS. IT DOES NOT PROVIDE DIRECTIONAL CUES.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

APEX RAMP – SIDEWALKS **LESS THAN 6.5'** WIDE
WITH NO ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

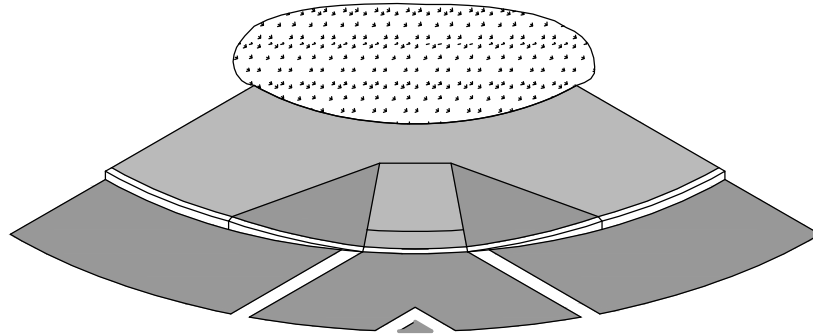
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

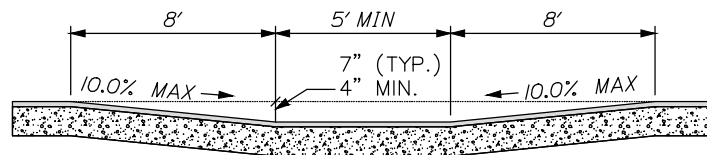
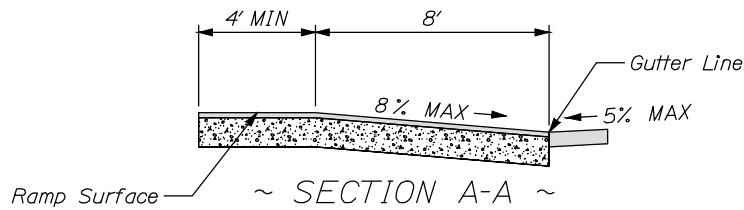
FIGURE:

**APEX RAMP FOR SIDEWALK
LESS THAN 6.5' WIDE**

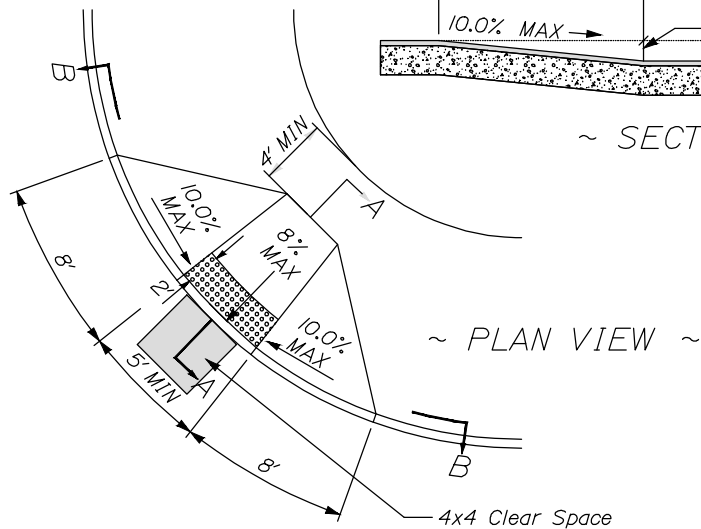
I-6C



~ ISOMETRIC VIEW ~
(NOT TO SCALE)



~ SECTION B-B ~



~ PLAN VIEW ~

NOTES:

1. THIS LESS DESIRABLE DESIGN SHOULD NOT BE USED UNLESS REQUIRED BY DESIGN CONSTRAINTS. IT DOES NOT PROVIDE DIRECTIONAL CUES.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

APEX RAMP – SIDEWALK GREATER THAN 6.5' WIDE
WITH OR WITHOUT ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

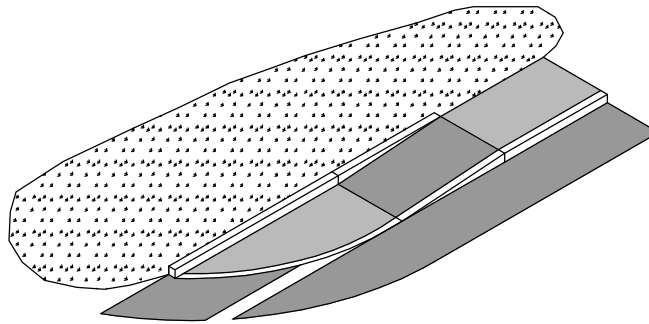
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

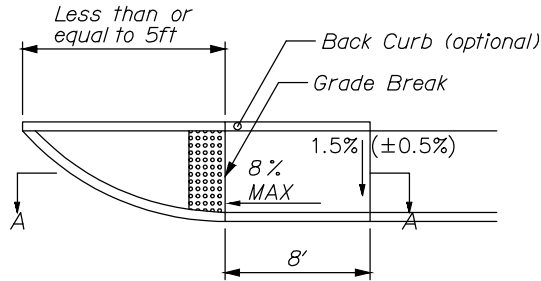
FIGURE:

**APEX RAMP FOR SIDEWALK
6.5' WIDE AND GREATER**

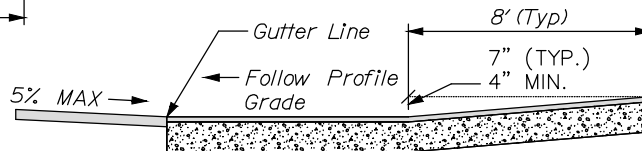
I-6D



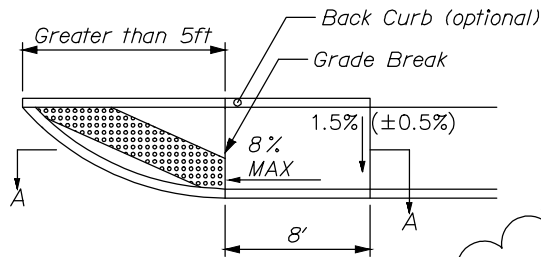
~ PERSPECTIVE VIEW ~
(NOT TO SCALE)



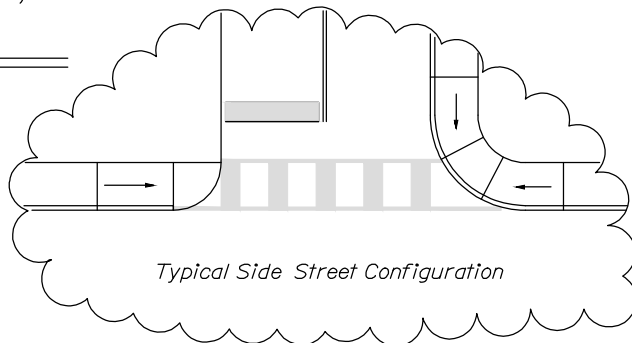
~ *PLAN VIEW* ~



~ SECTION A-A ~



~ **PLAN VIEW** ~



Typical Side Street Configuration

NOTES:

1. FOR USE ONLY WHEN NO SIDEWALK IS PRESENT ON THE SIDE ROAD.
2. USE *THIS* DETECTABLE WARNING PLACEMENT IF THE DISTANCE FROM THE GRADE BREAK TO THE GUTTERLINE IS LESS THAN OR EQUAL TO 5 FEET.
2. USE **THIS** DETECTABLE WARNING PLACEMENT IF THE DISTANCE FROM THE GRADE BREAK TO THE GUTTERLINE IS GREATER THAN 5 FEET.
3. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

SIDE STREET RAMP
WITH OR WITHOUT ESPLANADE

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

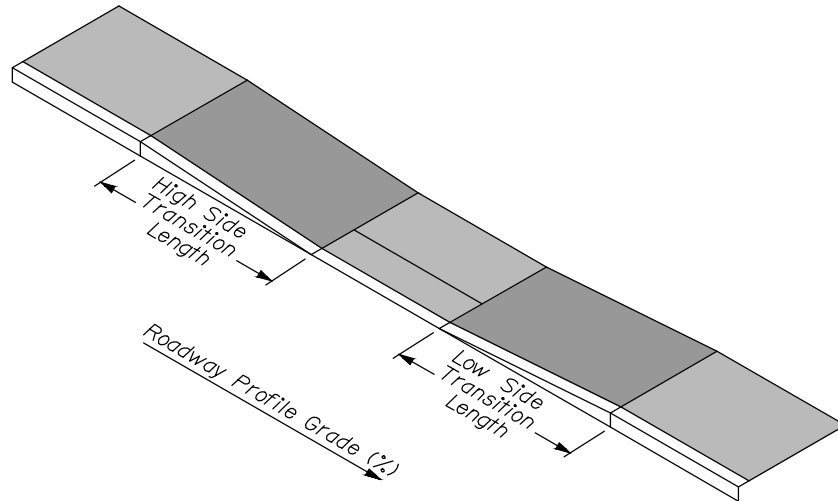
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

**SIDE STREET RAMP
WHEN NO INTERSECTING SIDEWALK IS PRESENT**

I-6E



Pedestrian Ramp Length Table						
Curb Reveal (Inches)		7	6	5	4	3
	Roadway Profile Grade	Minimum Transition Length Required (Feet)				
Low Side Transition Length	-7% and Lower	4.0	4.0	4.0	4.0	4.0
	-6%	8.0	4.0	4.0	4.0	4.0
	-5%	8.0	4.0	4.0	4.0	4.0
	-4%	8.0	8.0	4.0	4.0	4.0
	-3%	8.0	8.0	4.0	4.0	4.0
	-2%	8.0	8.0	8.0	4.0	4.0
	-1%	8.0	8.0	8.0	4.0	4.0
	0%	8.0	8.0	8.0	8.0	4.0
High Side Transition Length	1%	8.0	8.0	8.0	8.0	4.0
	2%	10.0	8.0	8.0	8.0	4.0
	3%	12.0	10.0	8.0	8.0	8.0
	4%	14.0	12.0	10.0	8.0	8.0
	5%	15.0	15.0	14.0	10.0	8.0
	6%	15.0	15.0	15.0	15.0	12.0
	7% and Higher	15.0	15.0	15.0	15.0	15.0

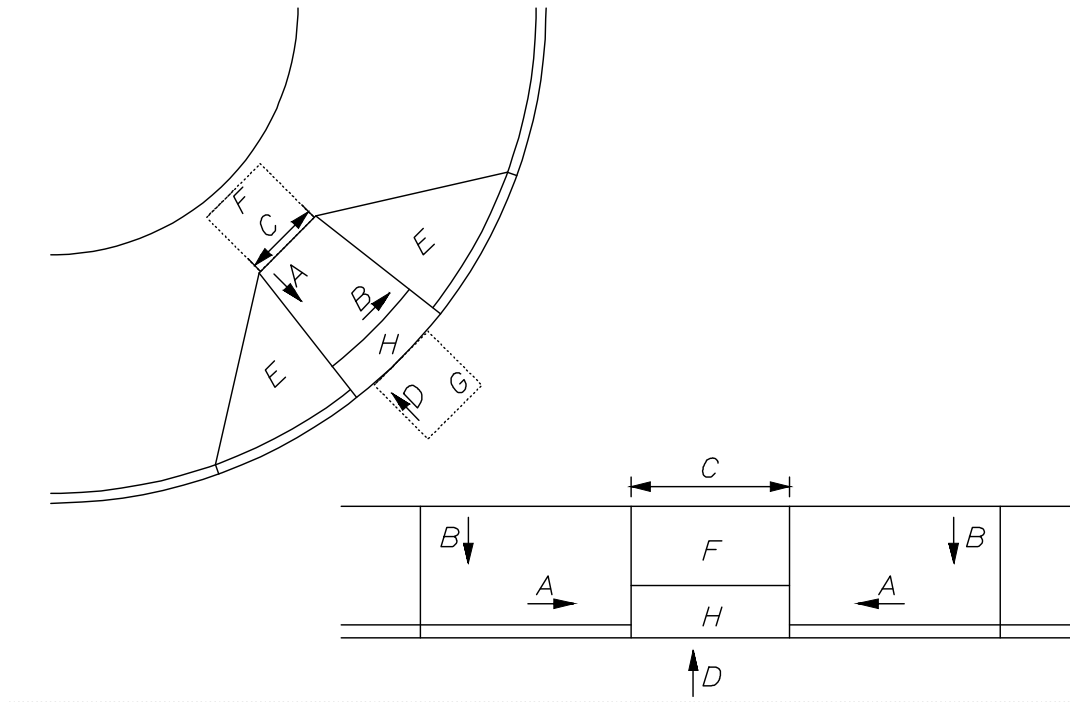
Choose roadway profile grade by rounding up for positive grades and down for negative grades. Round to the nearest whole integer. If constraints prevent placement of the ramp length required by the table, place the maximum length possible and check the slope. If above the maximum allowable slope, consider design modifications before considering technical infeasibility.

RAMP LENGTH TABLE FOR SIDEWALK RAMPS

NOT TO SCALE

DATE: JUNE 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE: I-6F
REVISED:			
PEDESTRIAN RAMP LENGTH TABLE FOR SIDEWALK RAMPS			

CURB RAMP REQUIREMENTS		
Running Slope	A	Max. 8.33% (1:12)
Cross Slope	B	Max. 2% (1:50) MIN. 1% <i>Ramp cross slope at street crossings without stop or signal control may match roadway profile.</i>
Clear Width	C	Min. 5 feet <i>For existing ramps only, ramp width may remain 4 feet.</i>
Counter Slope	D	Max. 5% (1:20) <i>Adjacent surface must be flush with the ramp.</i>
Flared Sides	E	Max. 10% (1:10)
Turning Space	F	4 feet by 4 feet <i>Maximum slope of 2% in any direction. May include Detectable Warnings</i>
Clear Space	G	4 feet by 4 feet <i>Located at the bottom of the ramp outside active travel lanes.</i>
Detectable Warnings	H	<i>Required at traffic controlled intersections and mid-block crossings, full ramp width.</i>



PEDESTRIAN RAMP REQUIREMENTS FOR SIDEWALK RAMPS

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

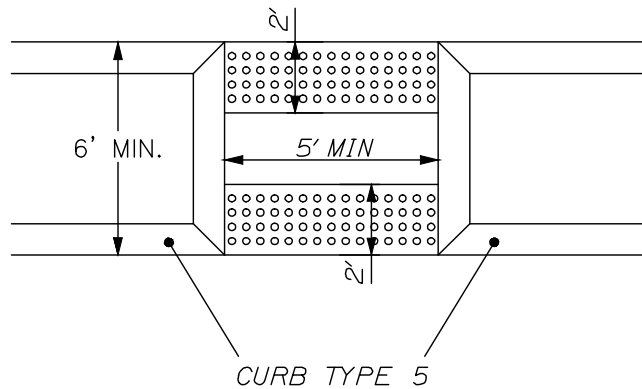
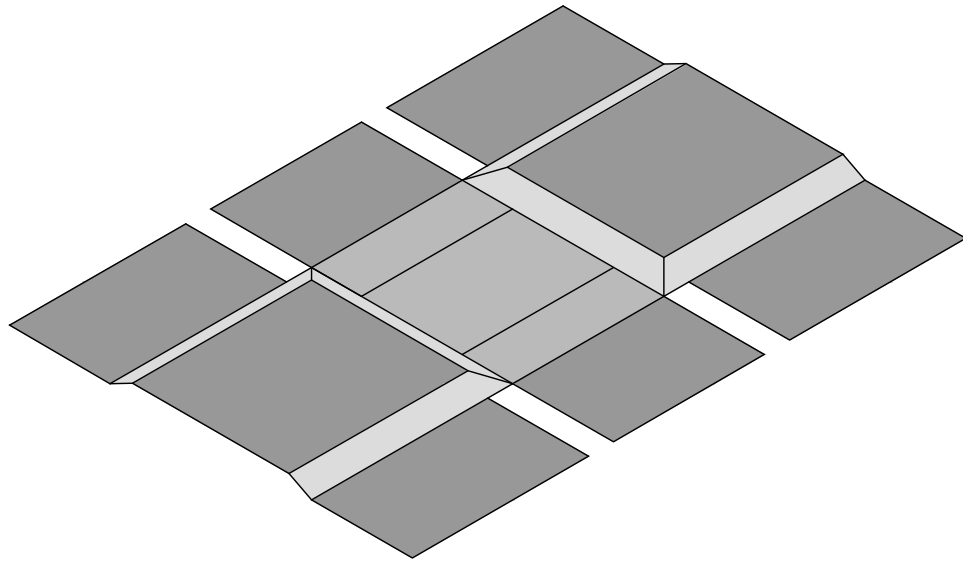
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

**PEDESTRIAN RAMP REQUIREMENTS
FOR SIDEWALK RAMPS**

I-6G



NOTES:

1. INSURE POSITIVE DRAINAGE (2% MAXIMUM CROSS SLOPE).

ISLAND PEDESTRIAN CROSSINGS

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

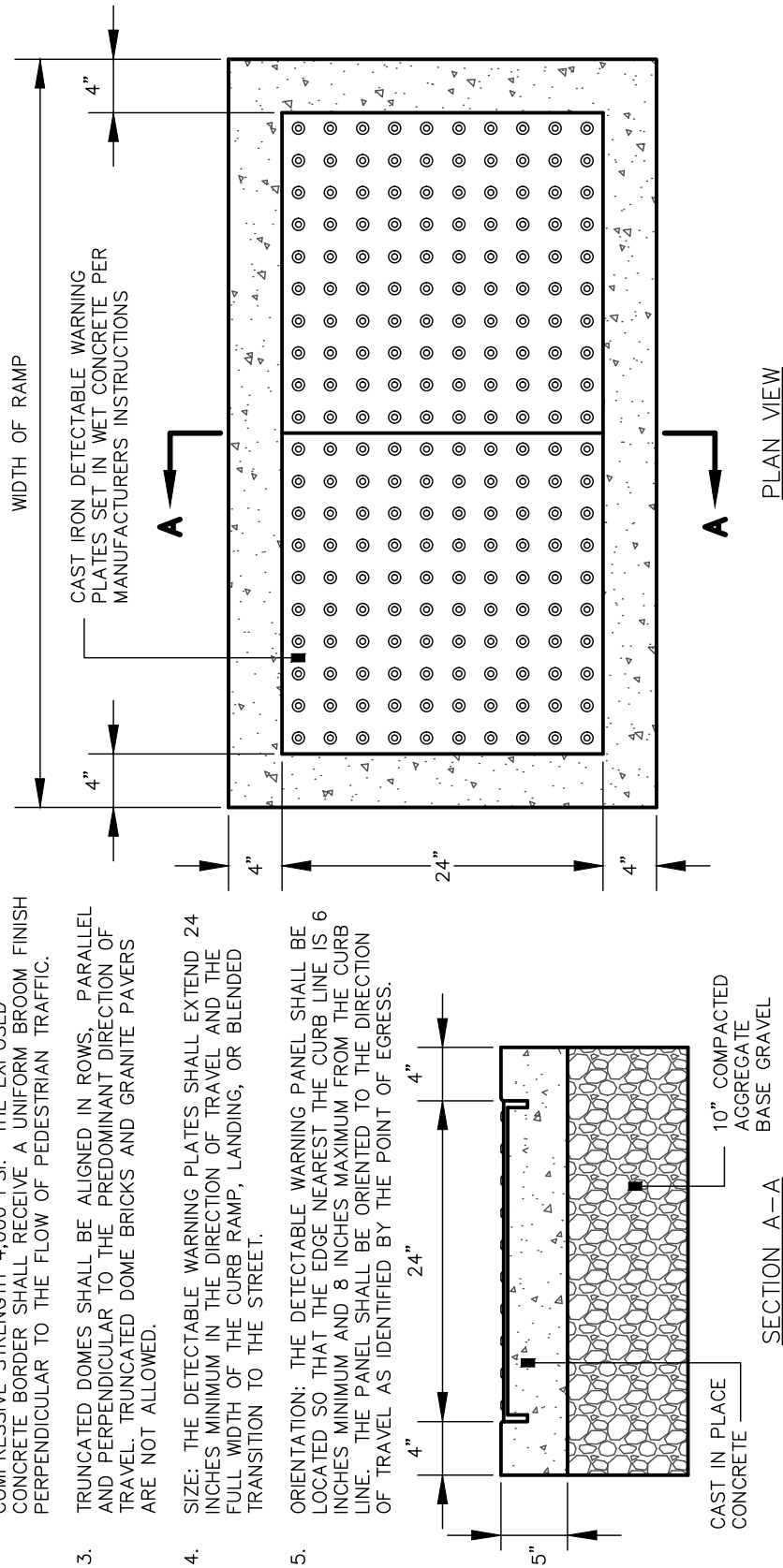
ISLAND PEDESTRIAN CROSSINGS

FIGURE:

I-6H

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.



NOT TO SCALE

SIDEWALK RAMP DETECTABLE WARNING PANEL

I-7

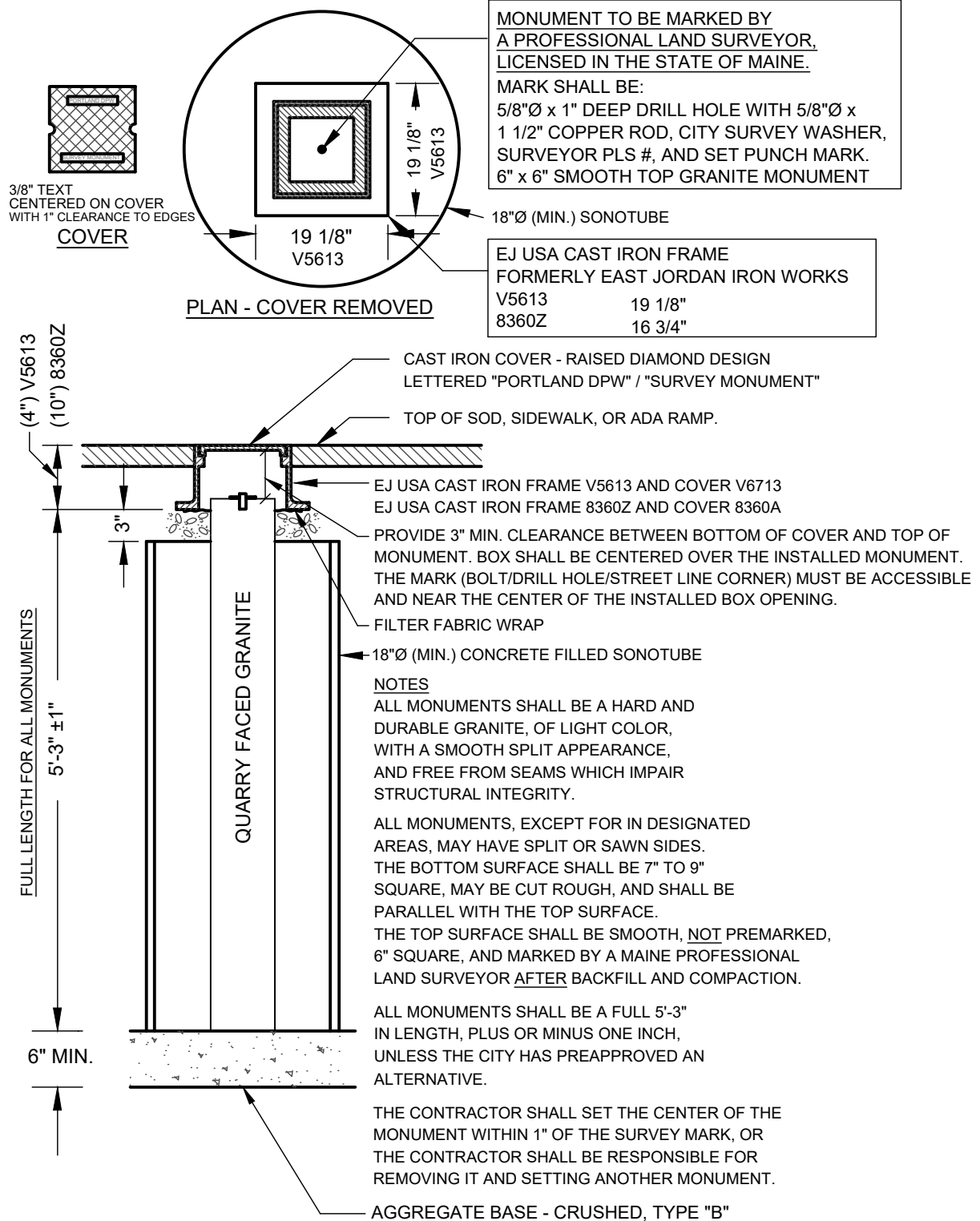
DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

SIDEWALK RAMP DETECTABLE WARNING PANEL



GRANITE STREET MONUMENTS - NEW OR REPLACEMENT

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

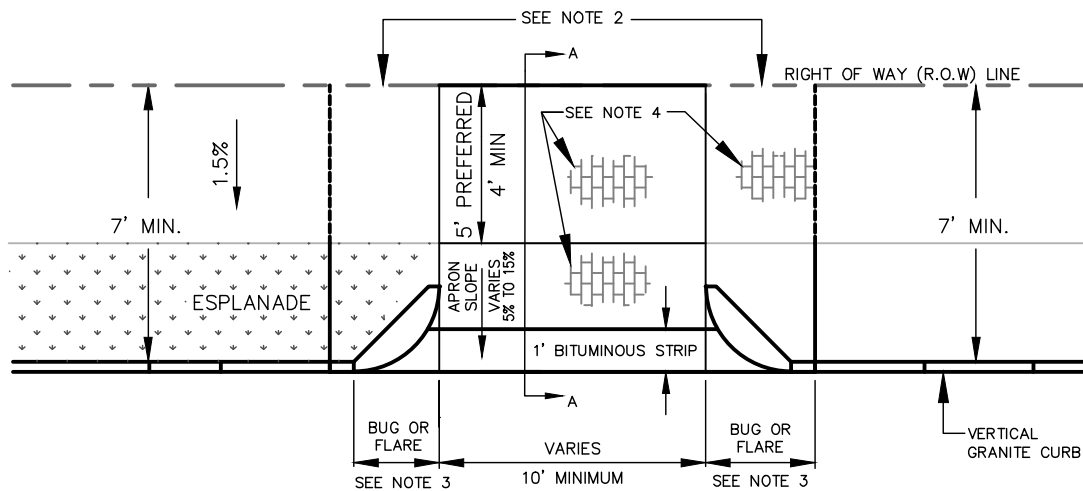
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

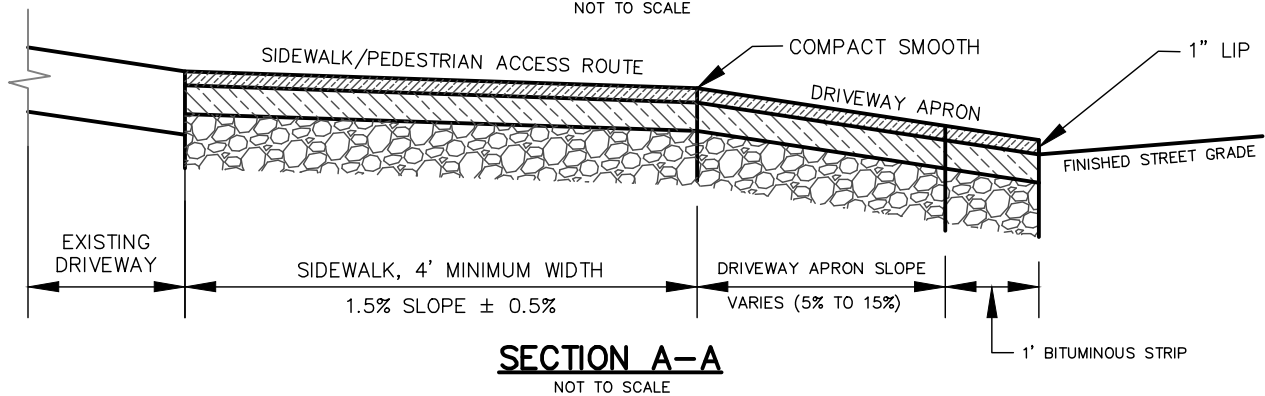
GRANITE STREET MONUMENT - NEW OR REPLACEMENT

I-8



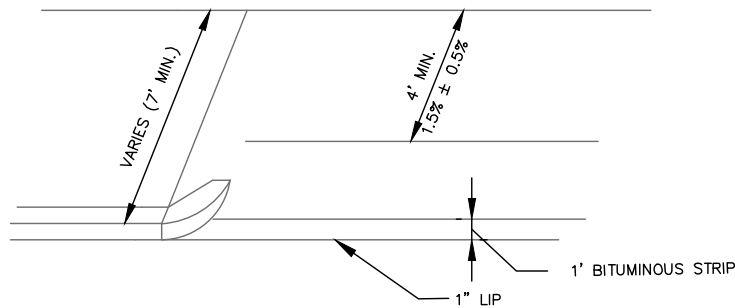
STANDARD RESIDENTIAL DRIVEWAY APRON LAYOUT

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. TWO-FOOT RADIUS CORNER GRANITE PIECES ("BUGS") ARE REQUIRED AT LOW-VOLUME DRIVEWAYS UNLESS OTHERWISE DIRECTED BY DPW. AT OTHER DRIVEWAYS, STANDARD FLARE/TIPDOWN TREATMENTS SHALL BE USED.
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.
5. THIS LAYOUT MAY BE REQUIRED AT MINOR DRIVEWAYS SERVING COMMERCIAL OR INDUSTRIAL USES.

DATE:
AUGUST 2022

REVISED:

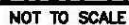
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

RESIDENTIAL DRIVEWAY APRON

I-9A



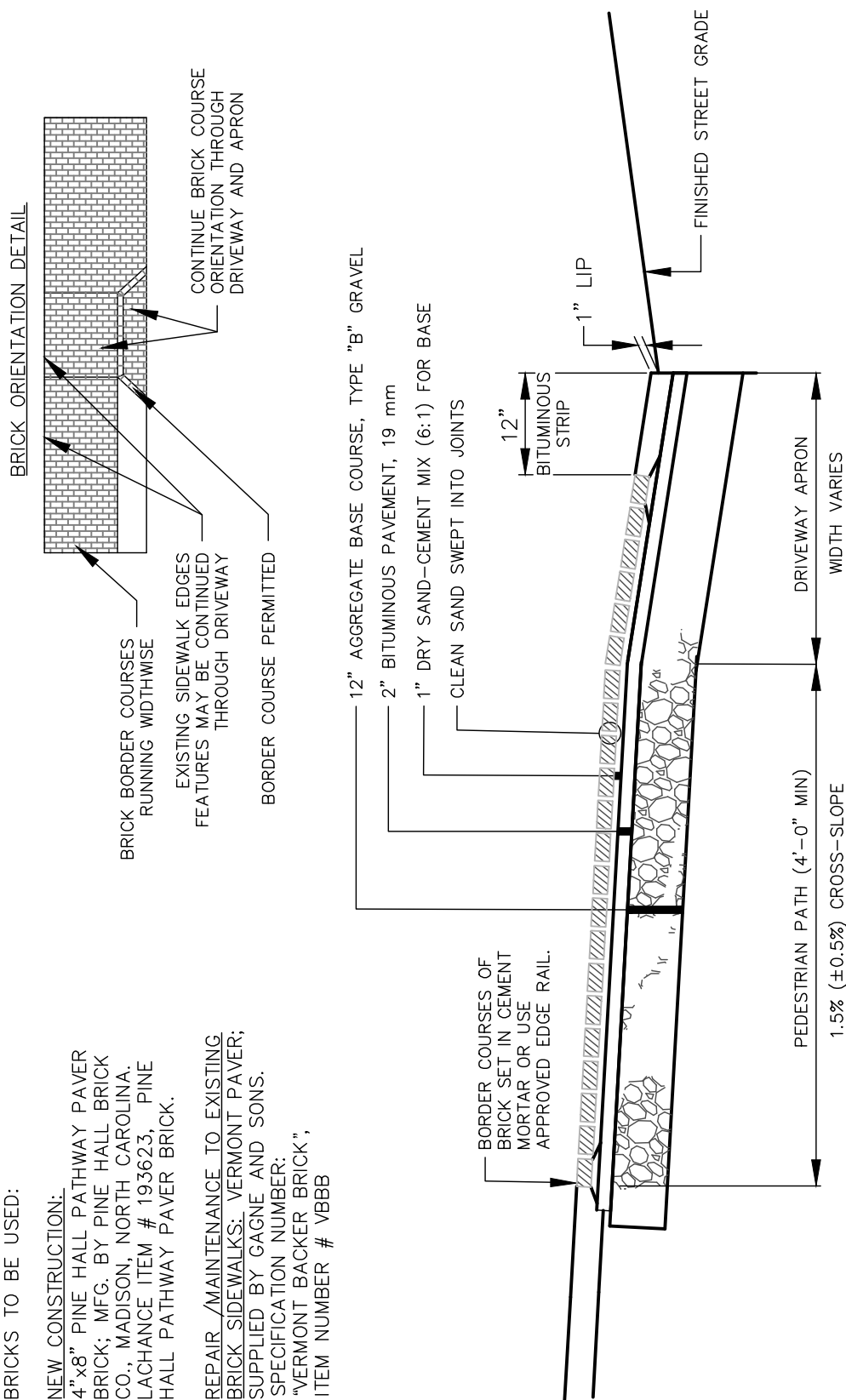
BRICKS TO BE USED:

NEW CONSTRUCTION:

4"x8" PINE HALL PATHWAY PAVEMENT
BRICK; MFG. BY PINE HALL BRICK
CO., MADISON, NORTH CAROLINA.
LACHANCE ITEM # 193623, PINE
HALL PATHWAY PAVEMENT BRICK.

REPAIR / MAINTENANCE TO EXISTING

BRICK SIDEWALKS: VERMONT PAVEMENT;
SUPPLIED BY GAGNE AND SONS.
SPECIFICATION NUMBER:
"VERMONT BACKER BRICK",
ITEM NUMBER # VB88



BRICK DRIVEWAY APRON WITH BITUMINOUS BASE

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

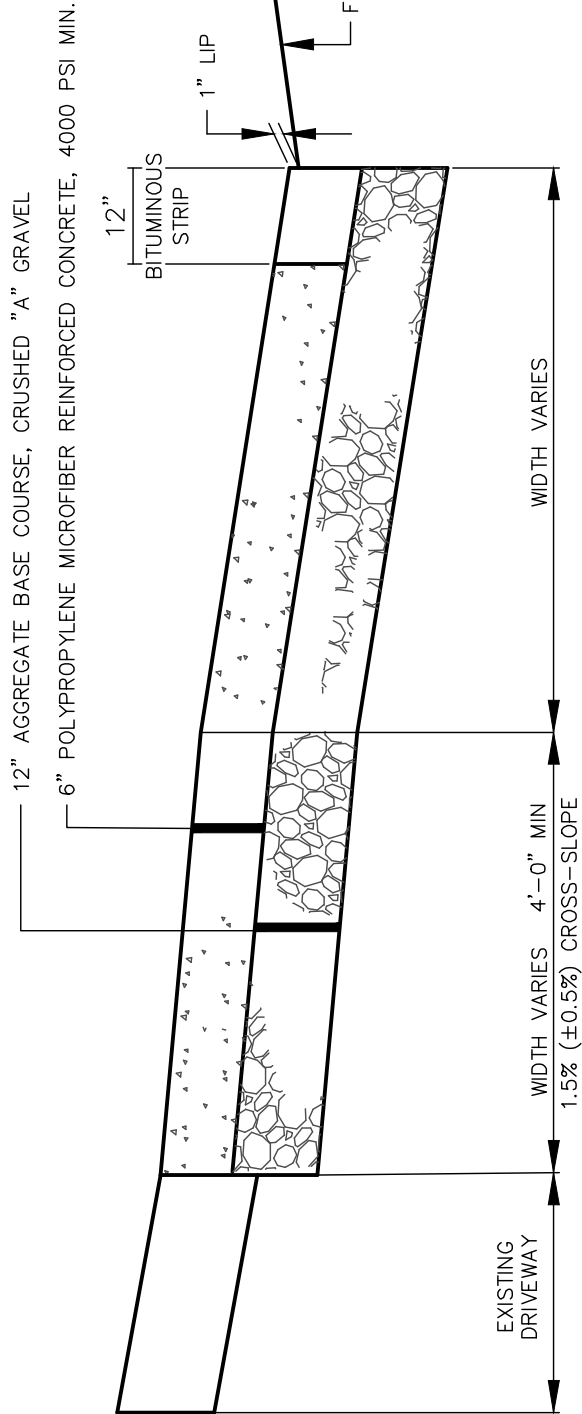
FIGURE:

**BRICK DRIVEWAY APRON
WITH BITUMINOUS BASE**

I-10A

NOTE

CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDECK
SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S
RECOMMENDATIONS FOR APPLICATION.



REINFORCED CONCRETE DRIVEWAY APRON

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

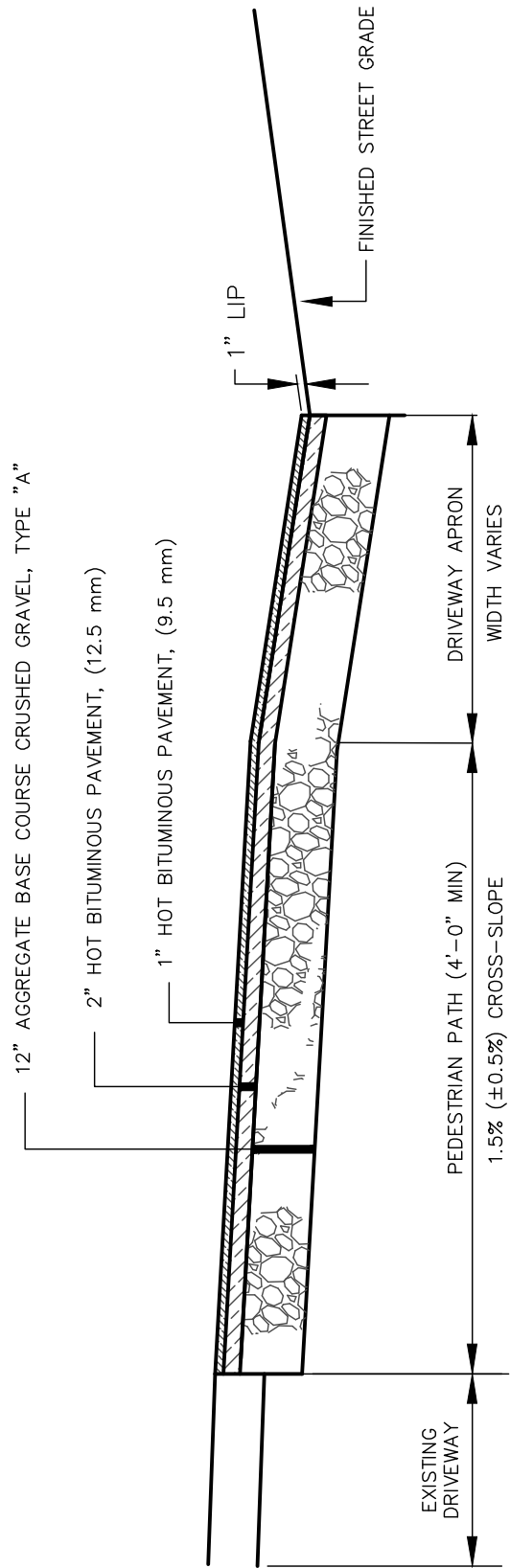
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

REINFORCED CONCRETE DRIVEWAY APRON

I-10B



BITUMINOUS DRIVEWAY APRON

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

BITUMINOUS DRIVEWAY APRON

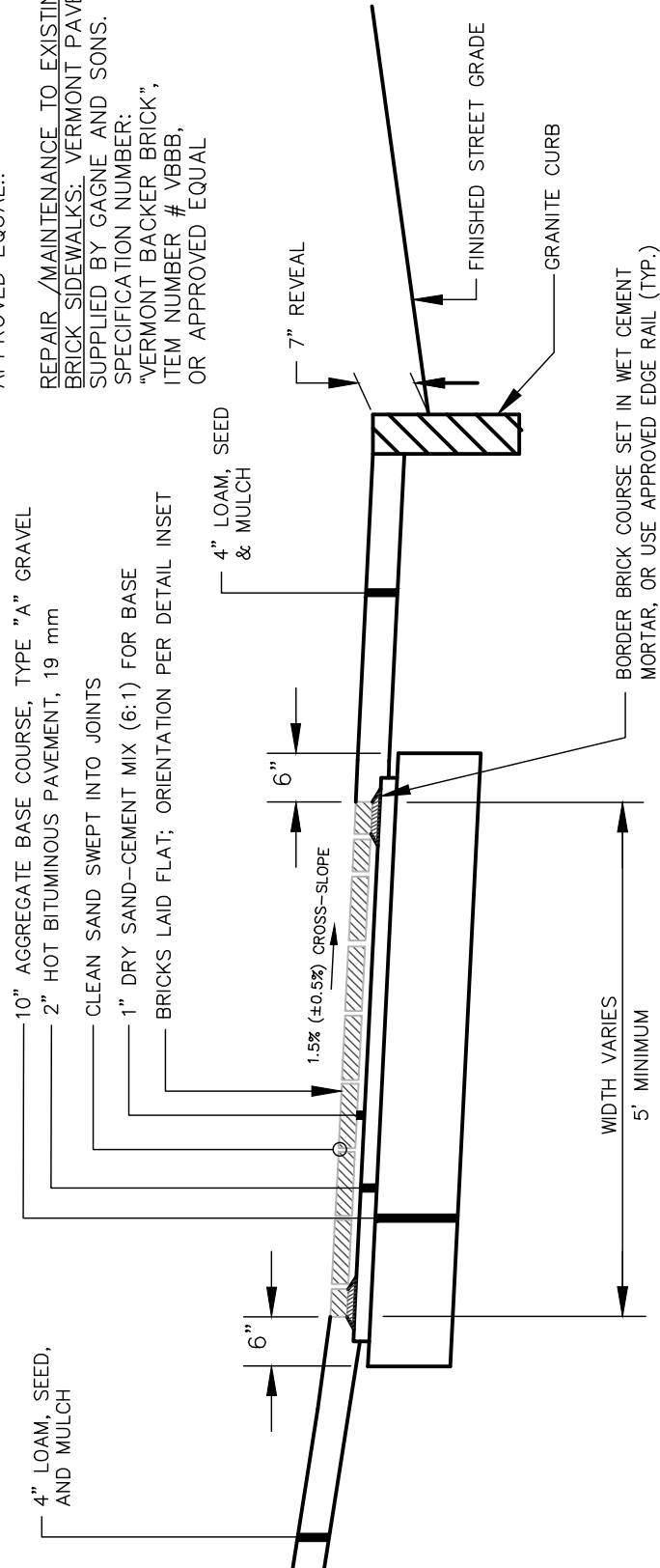
I-10C

BRICKS TO BE USED:

NEW CONSTRUCTION:

4"x8" PINE HALL PATHWAY PAVER
BRICK; MFG. BY PINE HALL BRICK
CO., MADISON, NORTH CAROLINA, OR
APPROVED EQUAL..
LACHANCE ITEM # 193623, PINE
HALL PATHWAY PAVER BRICK, OR
APPROVED EQUAL..

REPAIR /MAINTENANCE TO EXISTING
BRICK SIDEWALKS: VERMONT PAVER;
SUPPLIED BY GAGNE AND SONS.
SPECIFICATION NUMBER:
"VERMONT BACKER BRICK",
ITEM NUMBER # VBBB,
OR APPROVED EQUAL



BRICK SIDEWALK WITH BITUMINOUS BASE

NOT TO SCALE

DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

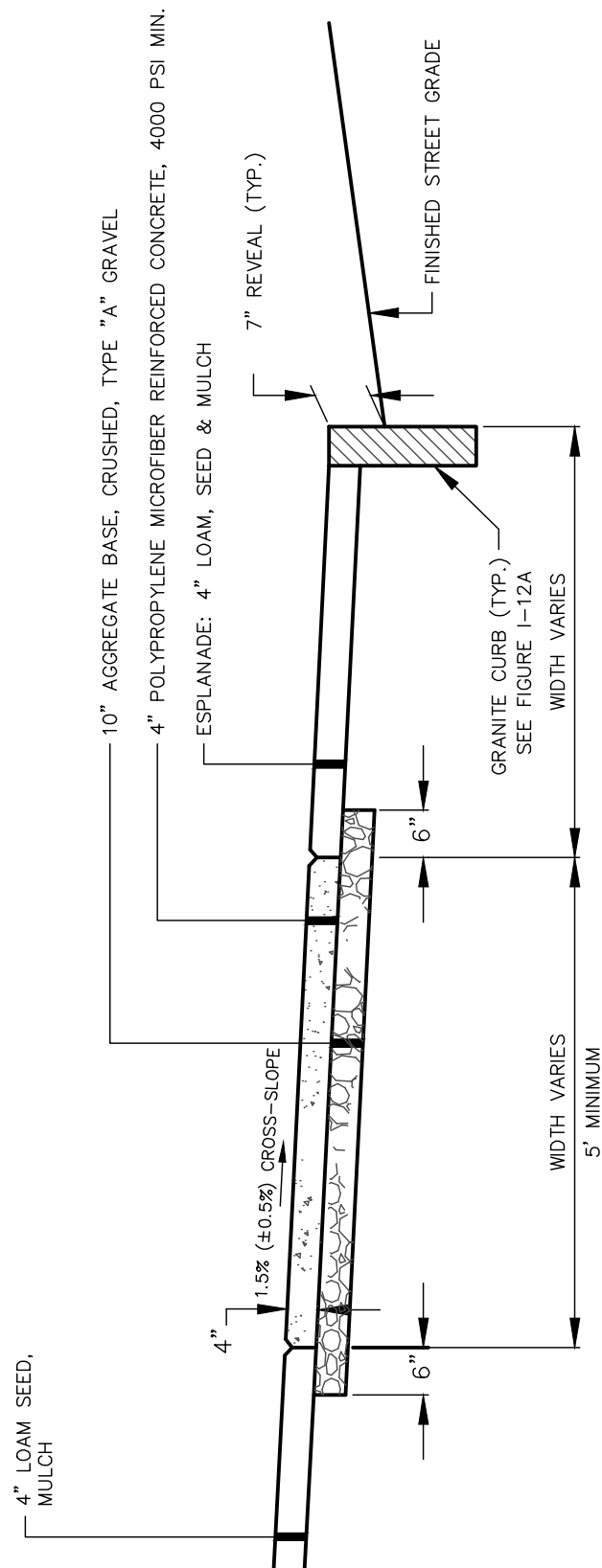
FIGURE:

BRICK SIDEWALK WITH BITUMINOUS BASE

I-11A

NOTE

CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDECK SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.



REINFORCED CONCRETE SIDEWALK

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

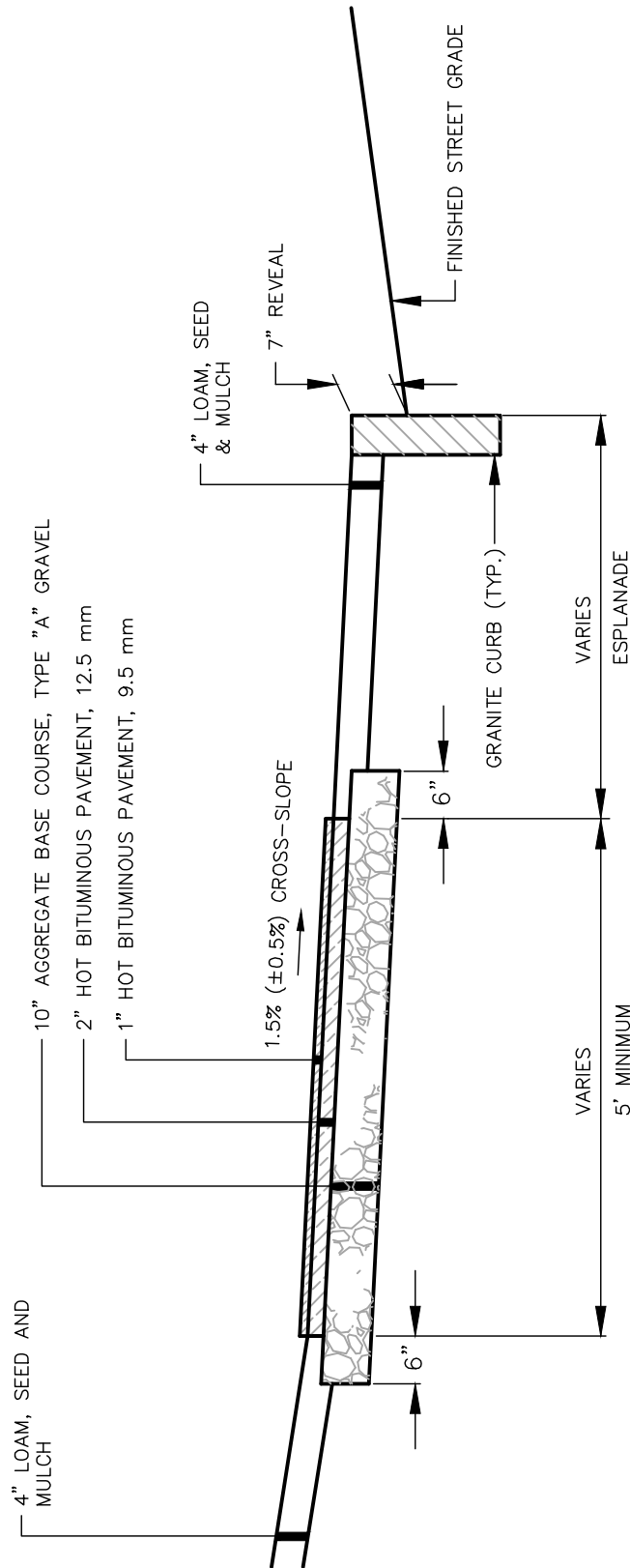
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

REINFORCED CONCRETE SIDEWALK

I-11B



BITUMINOUS SIDEWALK

NOT TO SCALE

DATE:
AUGUST 2022

REVISED:

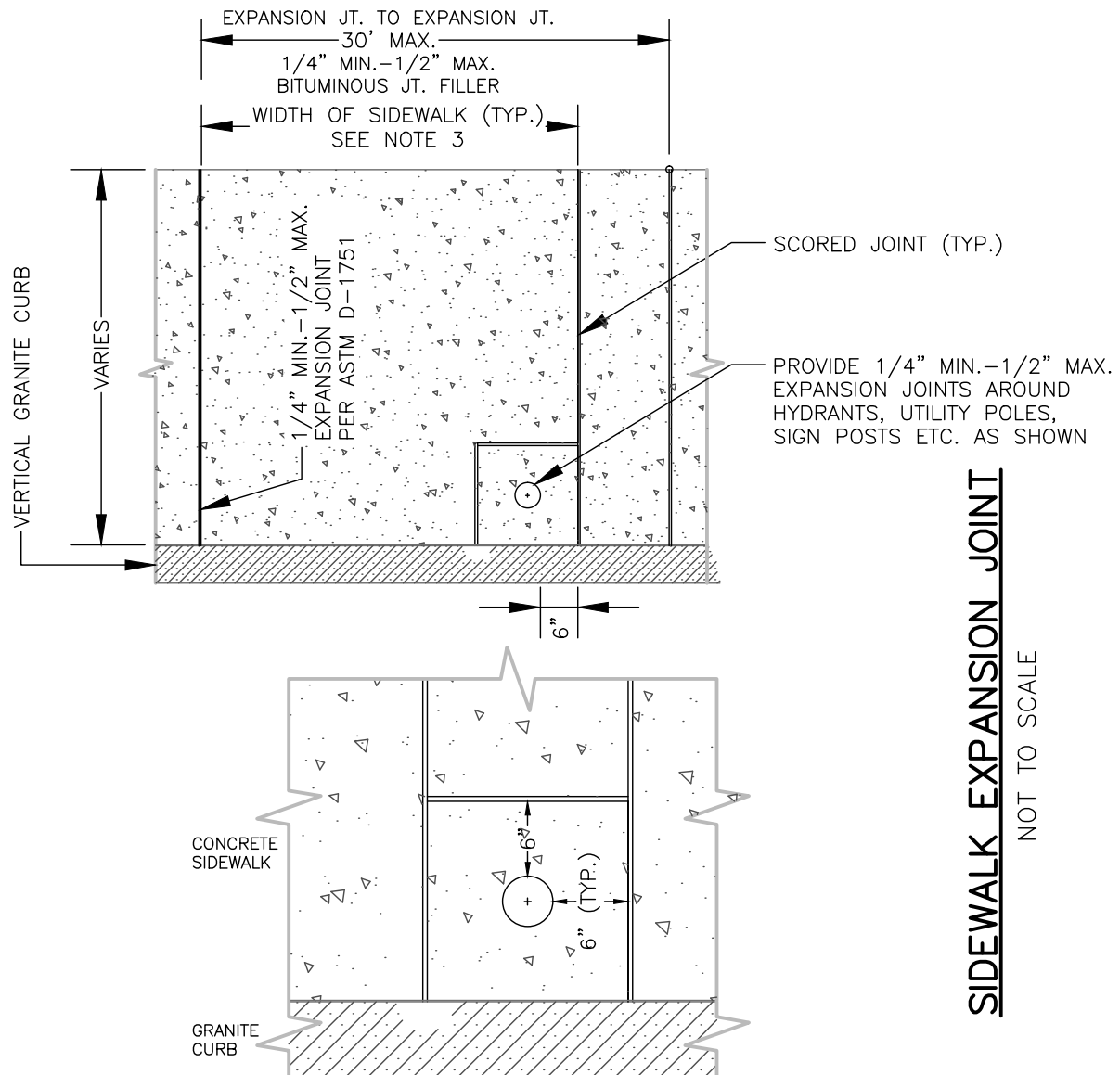
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

TRANSPORTATION
DESIGN STANDARDS
SECTION I

FIGURE:

BITUMINOUS SIDEWALK

I-11C

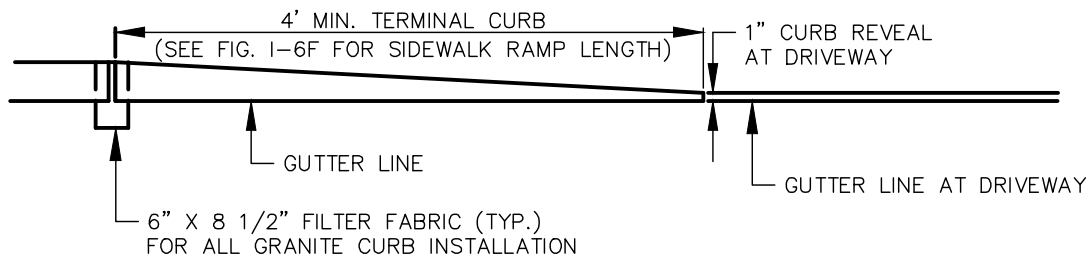


SIDEWALK EXPANSION JOINT
NOT TO SCALE

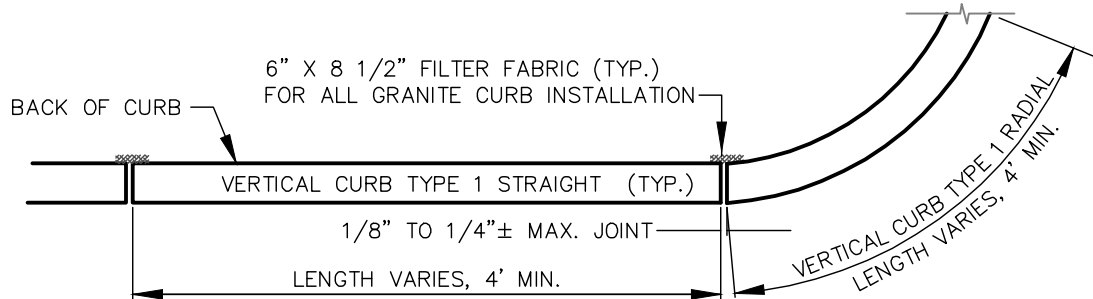
CONCRETE SIDEWALK JOINT NOTES:

- EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
- SLABS SHALL BE PLACED ALTERNATELY IN LENGTHS, NOT TO EXCEED 30 LINEAR FEET OR AS DIRECTED AND SHALL BE SEPARATED BY AN EXPANSION JOINT OF PREFORMED EXPANSION FILLER 1/4" MIN.-1/2" MAX. IN THICKNESS AND SHALL EXTEND THE FULL LENGTH/DEPTH OF THE CONCRETE.
- THE SIDEWALK SURFACE SHALL BE SCORED INTO BLOCK UNITS. THE DEPTH OF SCORING SHALL BE AT LEAST ONE QUARTER OF THICKNESS OF THE SLABS (1" TYP.). SCORED JOINTS MUST BE COMPLETED AS PART OF THE FINISHING PROCESS. SAW CUTTING OF JOINTS IS NOT ALLOWED. SCORED JOINTS SHALL BE PLACED AT THE FOLLOWING LOCATIONS:
 - IN LOCATIONS TO ENSURE BLOCK UNITS DO NOT EXCEED 36 SQUARE FEET.
 - AT THE SPACING THAT MATCHES ADJACENT TIP DOWN CURB
 - EXTENSION OF EXPANSION JOINTS LOCATED AT HYDRANTS & UTILITY POLES.
- ALL OUTSIDE EDGES OF THE SLAB AND ALL JOINTS SHALL BE ROUNDED WITH A 1/4" RADIUS EDGING TOOL.
- CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.

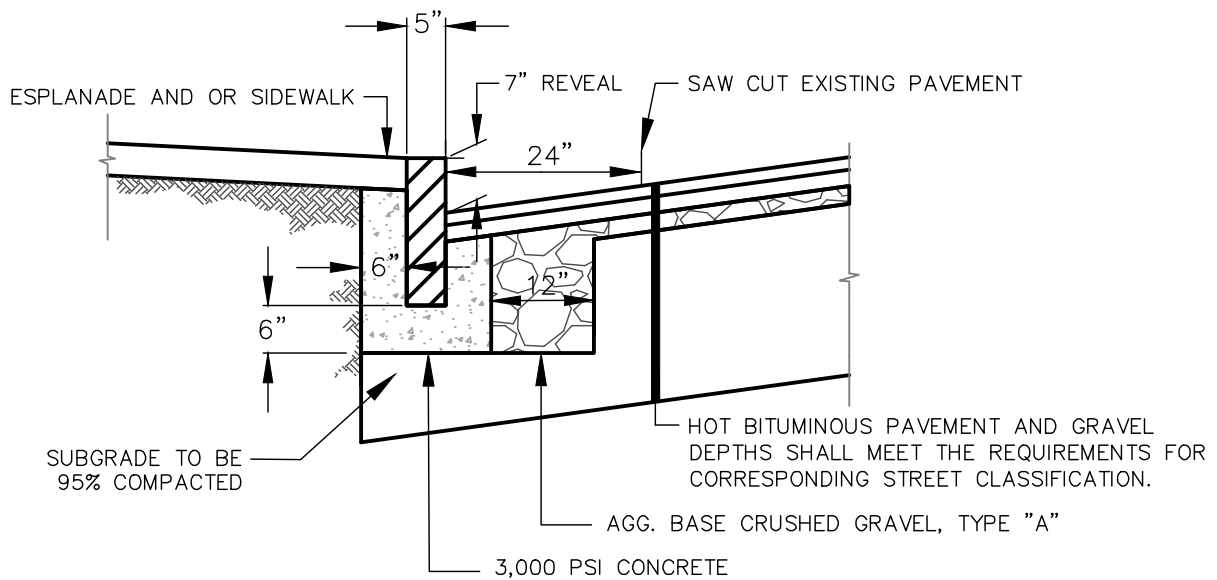
DATE: AUGUST 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	SIDEWALK EXPANSION JOINT		I-11D



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

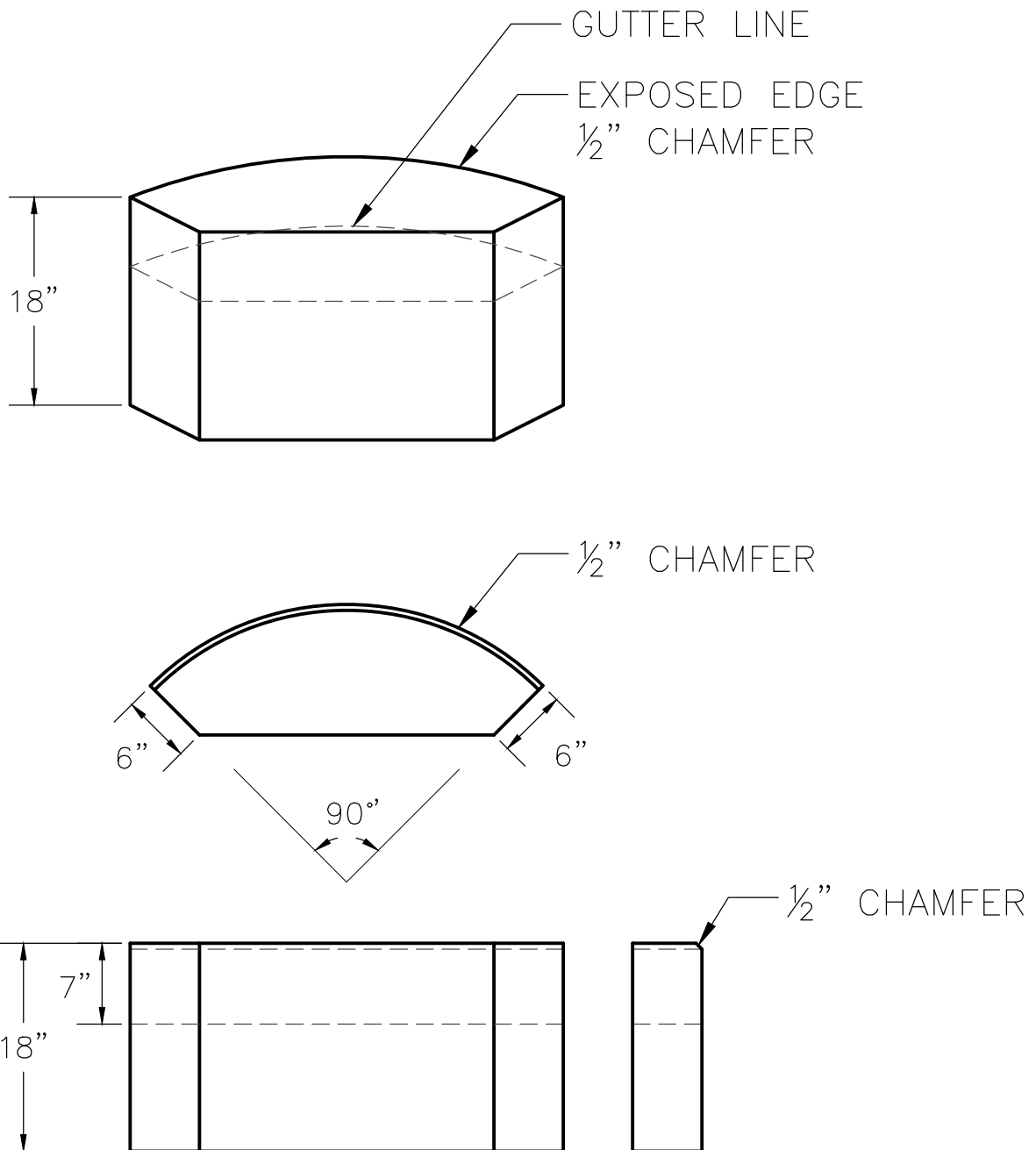
NOTES:

1. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
2. 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.
3. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
4. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB

NOT TO SCALE

DATE: AUGUST 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	VERTICAL GRANITE CURB		I-12



GRANITE RADIUS CORNER "BUG"

NOT TO SCALE

DATE:
JUNE 2022

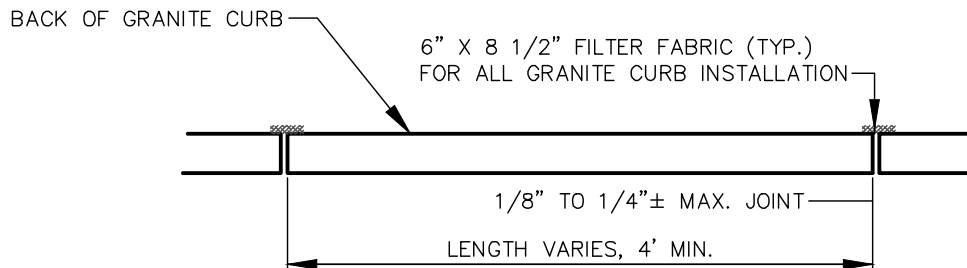
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

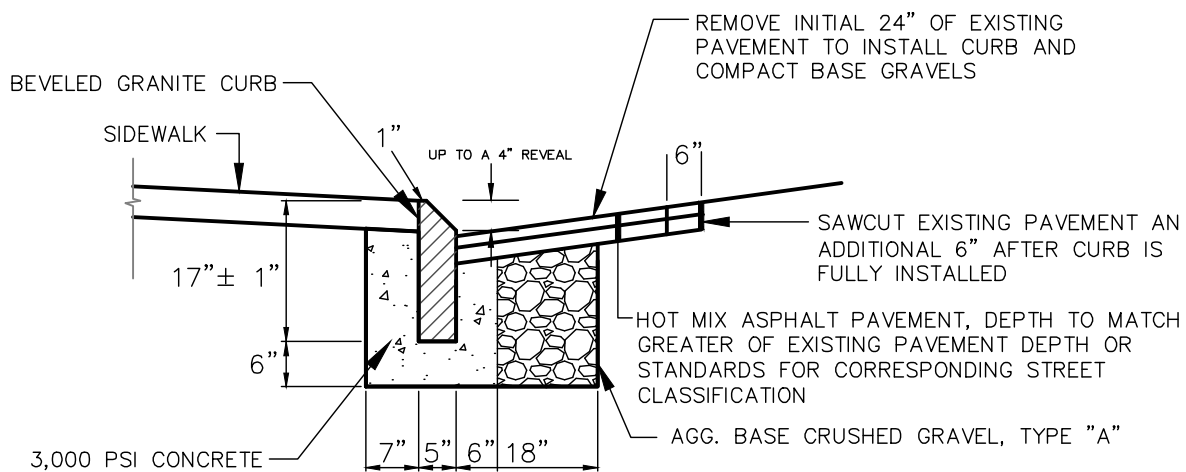
**GRANITE RADIUS CORNER
"BUG"**

I-14



VERTICAL GRANITE CURB PLAN VIEW

NOT TO SCALE



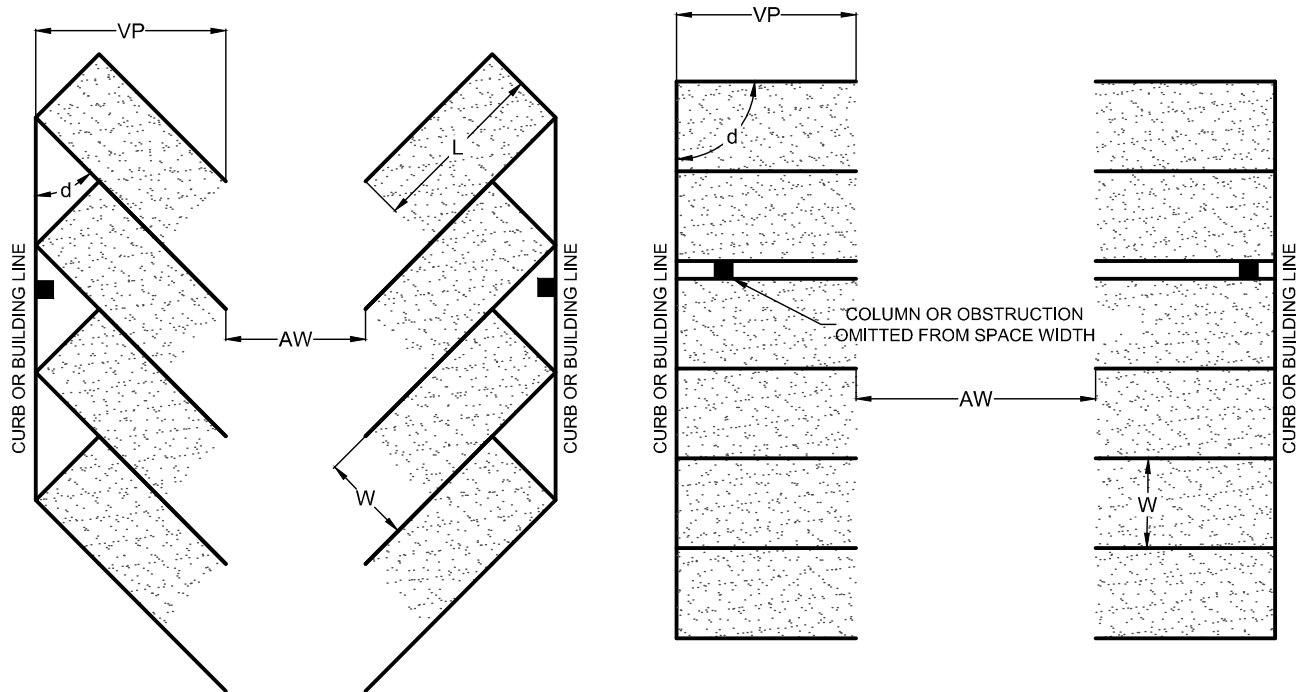
NOTES:

1. INSTALL PER MANUFACTURER'S SPEC'S
2. PROVIDE CUSTOM TRANSITION CURB THAT TIPS DOWN 3" IN BETWEEN MOUNTABLE AND VERTICAL CURBS. SAWCUT TRANSITION STONE IN THE FIELD FOR FLUSH JOINT WITH ADJACENT VERTICAL CURB
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 A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
6. WOODEN SHIMS MAY BE USED TO SET CURB.

MOUNTABLE BEVELED GRANITE CURB CROSS SECTION

NOT TO SCALE

DATE: AUGUST 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
	MOUNTABLE BEVELED GRANITE CURB		I-15



Standard Parking Dimensions

Parking Angle (d)	Space Length (L)	Space Width (W)	Aisle Width (AW)	Vehicle Projection (VP)
90°	18	9	24	18.0
75°	18	9	22	19.7
60°	18	9	19	20.1
45°	18	9	14	19.0
30°	18	9	12	16.7
0° (parallel)	20	8	12	8.0

Compact Parking Dimensions

Parking Angle (d)	Space Length (L)	Space Width (W)	Aisle Width (AW)	Vehicle Projection (VP)
90°	15	8	24	15.0
75°	15	8	22	16.8
60°	15	8	19	17.5
45°	15	8	14	16.9
30°	15	8	12	15.2
0° (parallel)	15	7	10	7.0

NOTES:

All dimensions in feet

1. STANDARD SPACE WIDTH MAY BE REDUCED TO 8.5 FEET IN LOW-TURNOVER LOTS.
2. COMPACT SPACES SHOULD BE DESIGNED AS CLOSE TO STANDARD AS POSSIBLE WITHIN SITE CONSTRAINTS.
3. ACCESSIBLE PARKING SPACES SHALL BE PROVIDED IN ACCORDANCE WITH ADA, AND SHALL BE CONSIDERED A STANDARD PARKING SPACE WHEN CALCULATING THE PERMISSIBLE NUMBER OF COMPACT SPACES.
4. DIMENSIONS REPRESENT CLEAR WIDTH AND DO NOT INCLUDE OBSTRUCTIONS SUCH AS STRUCTURAL COLUMNS.

DATE:
AUGUST 2022

REVISED:

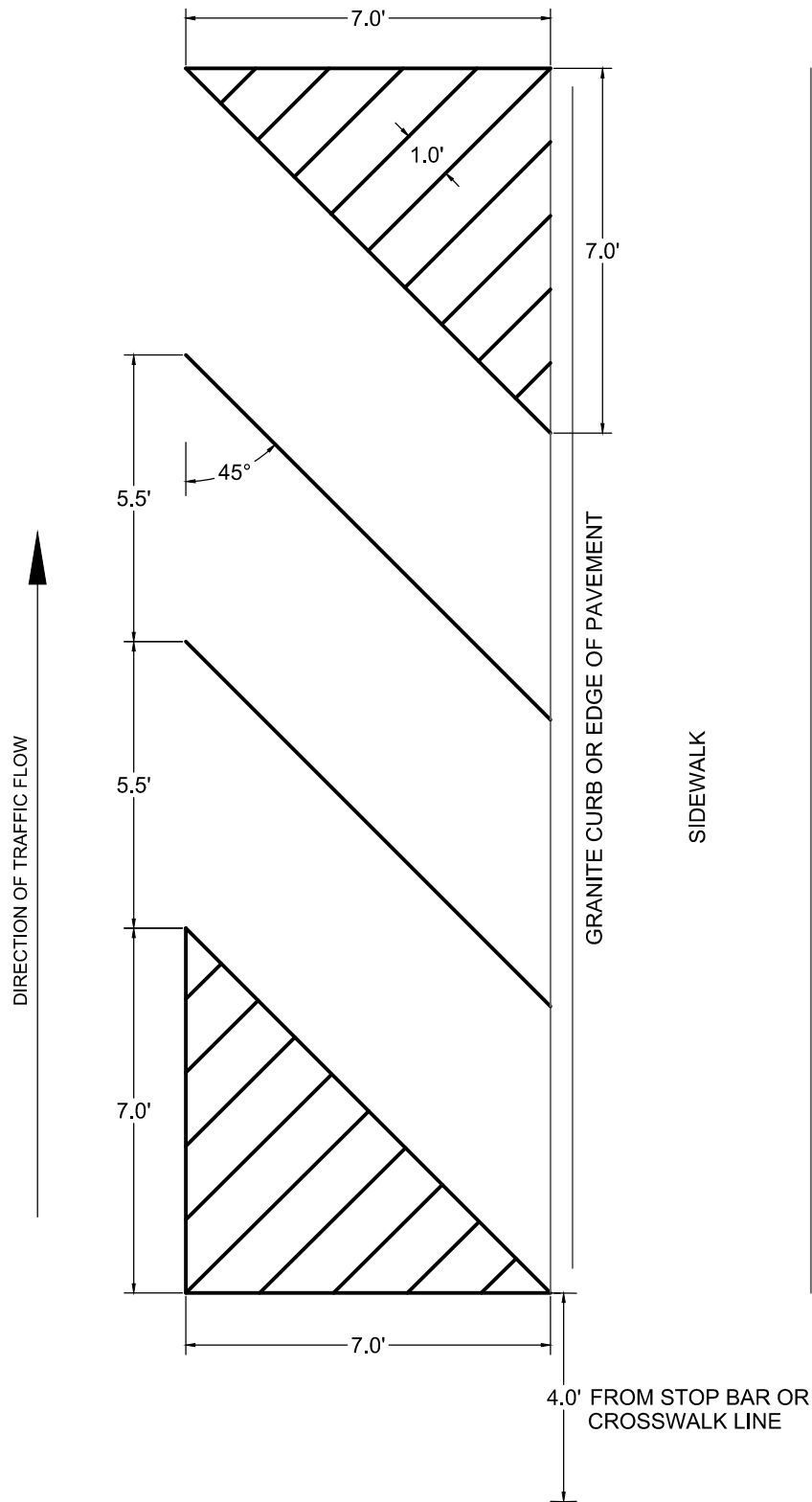
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

VEHICLE PARKING DIMENSIONS

I-16A



MOTORCYCLE PARKING

*ALL PAVEMENT MARKINGS SHALL BE 4 INCH WIDE WHITE LINES.

DATE:
JUNE 2022

REVISED:

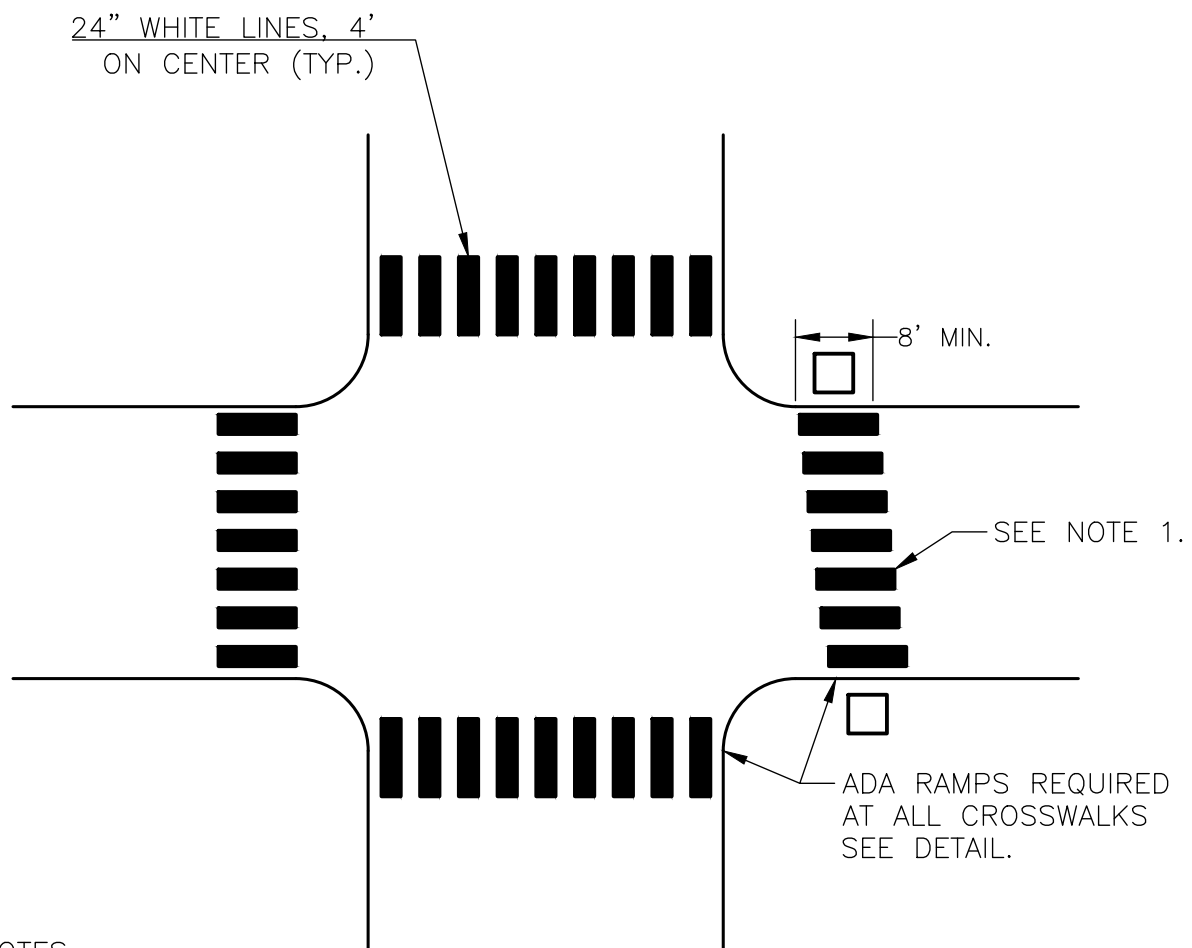
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

FIGURE:

MOTORCYCLE PARKING DIMENSIONS

I-16B



NOTES:

- 1.) CROSSWALK BLOCKS SHALL BE STAGGERED AND REMAIN PARALLEL TO THE ROADWAY CENTERLINE AT SKEWED CROSSING LOCATIONS.
- 2.) CROSSWALK MARKINGS LOCATED ON ARTERIAL STREETS SHALL BE APPLIED WITH A THERMOPLASTIC MATERIAL (OR APPROVED EQUAL) MEETING ALL MANUFACTURER AND MUTCD REQUIREMENTS.
- 3.) THE ESTABLISHMENT PERIOD FOR CROSSWALK MARKINGS SHALL BE BASED ON MANUFACTURER'S SPECIFICATIONS AND SHALL AT A MINIMUM MEET MAINE DOT STANDARD SPECIFICATION 627.07 ESTABLISHMENT PERIOD REQUIREMENTS.

CROSSWALK MARKINGS

NOT TO SCALE

DATE: SEPT 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE: I-17
	TYPICAL CROSSWALK MARKINGS		

TYPICAL BIKEWAY PAVEMENT MARKINGS



SHARED USE LANE
SYMBOL



BICYCLE LANE
SYMBOL

TYPICAL BIKEWAY ROUTE SIGNAGE



R3-17
30"x24"



R3-17
30"x24"



R3-17B
30"x12"



DATE:
AUGUST 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS**
SECTION I

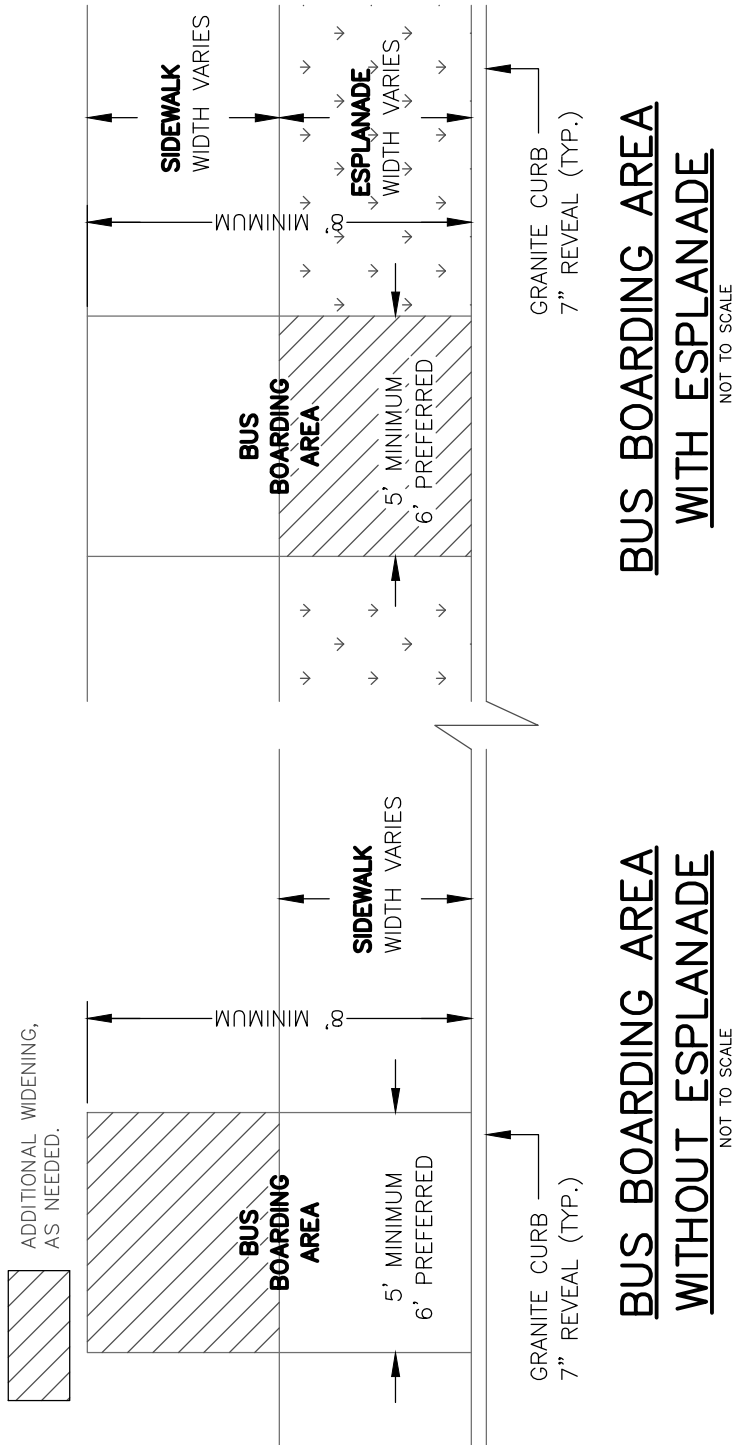
FIGURE:

**TYPICAL BIKEWAY PAVEMENT MARKINGS
AND BICYCLE ROUTE SIGNAGE**

I-18

NOTES:

1. **SURFACE.** BUS STOP BOARDING AREAS SHALL HAVE A FIRM, STABLE SURFACE.
2. **DIMENSIONS.** BUS STOP BOARDING AREAS SHALL PROVIDE A CLEAR LENGTH OF 8' MINIMUM, MEASURED PERPENDICULAR TO THE CURB OR VEHICLE ROADWAY EDGE, AND A CLEAR WIDTH OF 5' MINIMUM, MEASURED PARALLEL TO THE VEHICLE ROADWAY. THIS AREA SHALL BE CLEAR OF ANY OBSTRUCTIONS, INCLUDING BUT NOT LIMITED TO: BICYCLE RACKS, LIGHT POLES, UTILITY POLES, FIRE HYDRANTS, STREET SIGNS, STREET FURNITURE, NEWSPAPER BOXES OR SIMILAR OBSTACLES.
3. **CONNECTION.** BUS STOP BOARDING AREAS SHALL BE CONNECTED TO STREETS, SIDEWALKS OR PEDESTRIAN PATHS BY AN ADA ACCESSIBLE ROUTE.
4. **SLOPE.** PARALLEL TO THE ROADWAY, THE SLOPE OF THE BUS STOP BOARDING AREA SHALL BE THE SAME AS THE ROADWAY, TO THE MAXIMUM EXTENT PRACTICABLE. PERPENDICULAR TO THE ROADWAY, THE SLOPE OF THE BUS STOP BOARDING AREA SHALL NOT EXCEED 2%.



**BUS BOARDING AREA
WITHOUT ESPLANADE**
NOT TO SCALE

**BUS BOARDING AREA
WITH ESPLANADE**
NOT TO SCALE

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

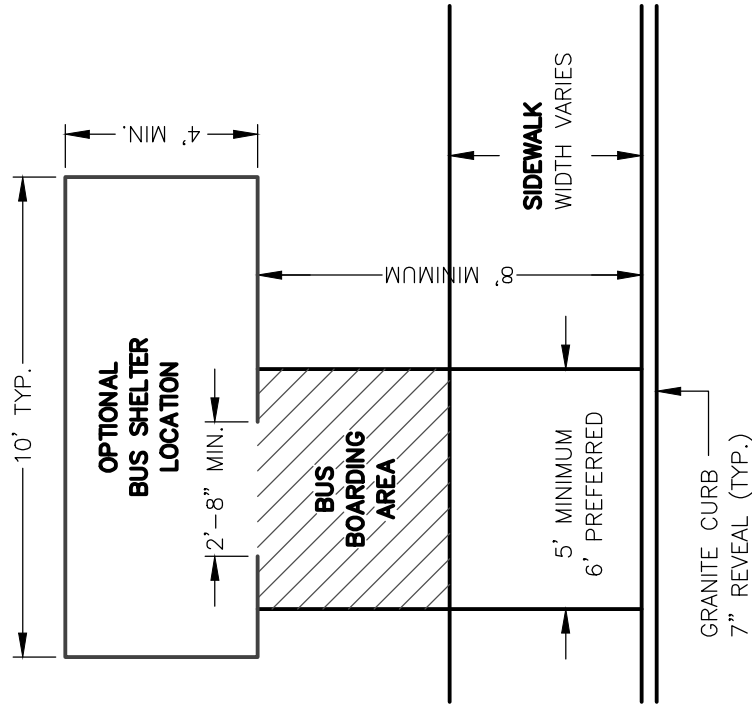
FIGURE:

I-39

**BUS STOP BOARDING AREA LAYOUT FOR
SIDEWALK WITH OR WITHOUT ESPLANADE**

NOTES:

1. **DIMENSIONS.** MINIMUM CLEAR FLOOR INTERIOR AREA ENTIRELY WITHIN THE PERIMETER OF THE SHELTER IS 2'-6" WIDE BY 4' DEEP TO PERMIT WHEELCHAIR OR MOBILITY AID USER ACCESS. THE MINIMUM SHELTER OPENING FOR WHEELCHAIR ACCESS IS 2'-8".
2. **CONNECTION.** BUS SHELTER OPENINGS WILL BE CONNECTED TO THE BUS BOARDING AREA BY AN ADA ACCESSIBLE ROUTE.
3. **SLOPE.** PARALLEL TO THE ROADWAY, THE SLOPE OF THE BUS BOARDING AREA SHALL BE THE SAME AS THE ROADWAY, TO THE MAXIMUM EXTENT PRACTICABLE. PERPENDICULAR TO THE ROADWAY, THE SLOPE OF THE BUS BOARDING AREA SHALL NOT EXCEED 2%.



**BUS SHELTER AND SHELTER SITING
WITHOUT ESPLANADE**

NOT TO SCALE

DATE:
JUNE 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**TRANSPORTATION
DESIGN STANDARDS
SECTION I**

**BUS SHELTER AND SHELTER SITING LAYOUT
FOR SIDEWALK WITHOUT ESPLANADE**

FIGURE:

I-40

2. SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS

2.1. TECHNICAL REFERENCE

- 2.1.1. The following technical publications are recognized by the City of Portland for use in the design, construction and testing of sanitary and storm water systems:
- 2.1.2. Technical Report #16 (TR-16): Guides for the Design of Wastewater Treatment Works, Prepared by the New England Interstate Water Pollution Control Commission available for review at the Department of Public Works or online at www.neiwpcc.org/tr16guides.asp
- 2.1.3. Maine Department of Transportation (MDOT) Standard Specifications for Highways and Bridges, Current Edition.

2.2. SANITARY STANDARDS AND SPECIFICATIONS

- 2.2.1. Sewer and Storm drain systems shall be planned and constructed in accordance with the regulations contained in Chapter 24 of the City Code of Ordinances.
- 2.2.2. The information presented below are City of Portland exceptions to the TR-16 or additional required standards.
- 2.2.3. The introduction of non-contaminated water such as rain water, non-contact cooling water, groundwater from foundation drains, sump pumps, surface drains or any other sources of inflow shall not be ~~allowed~~ to discharge into ~~a~~ sewer which conveys sanitary waste unless approved by the Public Works Director~~City Engineer. When no other practical alternatives exist, this condition may be waived by the City Engineer. All~~
- 2.2.4. Appeals will be considered by the Director of Public Works~~Services~~. (Refer to: Sec. 24-44 of the City Code - Public sewer connection limitations).
- 2.2.5. It is not permissible to backfill any excavation with frozen materials, organic materials, clay or blasted ledge. The maximum size of backfill material shall not exceed six inch (6"). (Please refer to Division 2, Street Opening Permits in the City Code).
- 2.2.6. The Department of Public Works~~Services~~ shall be responsible for televising all new sewer construction for acceptability as soon as backfilling has been completed and access is available. The permittee will be invoiced for these services. Information on current rates is available in Chapter 24 Sewer Ordinance~~through the City of Portland Wastewater Maintenance Division.~~
- 2.2.7. Permits to connect to the municipal stormwater and sanitary sewer system are required and may be obtained from the Department of Public Works~~Services~~.
- 2.2.8. Covered or Enclosed parking areas, mechanical rooms, garages (parking areas

not exposed to rain and snow) shall direct surface drainage to a sanitary sewer.
Storm water from outside of these areas shall be directed away from this covered area so that additional storm water is not directed to the sewer.
Drainage from these areas shall be collected by an Oil/ Grit Separator as shown in Figure II-20 or an approved equal.

2.3. **SANITARY MANHOLES**

- 2.3.1. All manholes shall be designed in conformance with City of Portland standards as illustrated in Figure II-~~01~~02.
- 2.3.2. When constructing sanitary manhole channels, if the ~~mathematical~~Vertical difference between the invert elevation of the manhole channel and the invert elevation of the sewer pipe connecting to such manhole is two vertical feet (2') or greater, a standard City of Portland internal drop manhole shall be provided. Such drop manholes shall conform to the engineering specifications illustrated in Figure II-03. A minimum of two stainless steel pipe anchors shall be used and the manhole diameter shall be five feet (5') minimum. ~~Drop manholes on stormwater collection systems are permitted.~~
- ~~2.3.3. Internal drop connections are prohibited unless site specific constraints warrant an exception. Where exceptional circumstances necessitate a waiver to allow for construction of an internal drop connection, a minimum of two stainless steel pipe anchors shall be use and the manhole diameter shall be five (5) feet minimum. Waiver requests will be evaluated on a case by case basis.~~
- 2.3.3. Sanitary Service service laterals that are four inch (4") or six inch (6") shall not be connected to either stormwater or sanitary manhole into a sanitary manhole and only into a sanitary sewer main.
- 2.3.4. ~~Stormwater and~~ Sanitary manholes shall include frames and covers as shown in Figure II-05 or an approved equivalent. Both the frame and riser shall be machined to assure a proper fit.
- 2.3.5. Manhole covers shall be marked "SEWER" ~~or "Drain" accordingly.~~
- 2.3.6. Manhole frames shall be raised to grade using only brick and mortar as shown in Figure II-02 or approved equal.
- 2.3.7. Riser Rings without tabs as shown in Figure II-06 may ~~shall~~ be used to adjust manholes to grade with approval of the Department of Public Works.
~~Wastewater Maintenance Division.~~
- ~~2.3.6.~~2.3.8. All new sanitary manholes shall be vacuum tested before backfilling. Refer to TR-16 for testing standards.
- 2.3.9. All manholes shall have copolymer polypropylene plastic steps with 3/8" grade 60 rebar continuous throughout, spaced at one foot (1') intervals. ~~Steps are not required in sewer manholes.~~ Any structures delivered to the site with step

“holes” shall be filled with mortar.

2.4. SANITARY GRAVITY PIPES

2.4.1. The types of allowable pipe shall be used for purposes of sanitary sewers, ~~storm sewers, catch basin drains, or underdrains shall be:~~

- ~~• Reinforced Concrete Pipe (RCP) with a minimum strength of Class III;~~
- PVC Ring Type Sewer Pipe (SDR 35 or equivalent, minimum PS-46 rating)
- PVC Ring Type Sewer Pipe meeting ASTM F 789 or equal to SDR
- Ductile iron Pipe (DIP)
- ~~• ADS N 12 HP triple wall pipe meeting a minimum PS 46~~
- ~~• ADS SaniTite HP meeting a minimum PS 46~~
- High Performance Polypropylene Dual Wall Sewer Pipe (ADS SaniTite HP or equal) meeting ASTM F2736 and have a minimum pipe stiffness of 46 psi with pipe sizes twelve inch (12”) through thirty inch (30”).
- High Performance Polypropylene Triple Wall Sewer Pipe (ADS SaniTite HP or equal) meeting ASTM F2764 and have a minimum pipe stiffness of 46 psi with pipe sizes thirty inch (30”) through sixty inch (60”).

2.4.2. Minimum velocities ~~of surface water drains~~ for sanitary pipes shall not be less than ~~three (3.0) feet per second~~ two feet per second (2 ft/s).

2.4.3. All PVC connections shall be made with Solid PVC Couplings.

2.4.4. The classes of pipe indicated shall be minimums, however the actual class of pipe used shall be determined by soil weight and compaction loads applied to such pipe in accordance with standard engineering design criteria and subject to the approval of the ~~City Engineer~~ Department of Public Works.

2.5. FORCE MAINS

2.5.1. Force mains four inches (4”) or greater shall terminate at a transition manhole and flow by gravity within a minimum sized eight inch (8”) pipe to a City manhole.

2.5.2. Force mains less than four inches (4”) may terminate to the nearest precast concrete manhole as directed by the City.

2.5.3. Cores into existing manholes shall be made with coring machines and have link seal or equivalent wall penetration seals.

2.5.4. Termination of force mains three inches (3”) or less may be permitted into existing City-owned manholes if reconstruction or replacement is performed.

depending on the material and condition of the existing manhole as determined by the Department of Public Works. Existing brick manholes shall be allowed for less than four inch (4") termination of force mains if full manhole reconstruction or replacement is performed as determined by the Department of Public Works.

2.5.5. All force mains shall be at a minimum HDPE SDR-21 made with fully restrained connections or equal. Piping pressure ratings shall be at least two (2) times the operating pressure of the system.

2.5.6. Force main discharge shall be directed into the channel in the direction of gravity flow.

2.5.2.6. BUILDING SEWER LATERALS

2.5.1.2.6.1. Construction of building sewers and drains shall conform to Chapter 24 (Sewers) of the City Code of Ordinance.

2.5.2.2.6.2. All building sewer laterals shall have a minimum diameter of four inch (4") and a minimum slope of one eighth inch per foot (1/8 in/ft) installed, as shown in Figure II-12.

2.5.3.2.6.3. Typical Pipe Installation: Where a building sewer lateral is to be installed from the sewer main in the street to a property or building to be served, the lateral shall either extend to the building or to the street line of each lot to be served and the pipe shall be capped air-tight.

2.5.4.2.6.4. An accurate record of each building sewer, its location and its depth at the street line shall be kept by the developer's engineer and a copy of the same shall be provided to the ~~City Engineer~~ Department of Public Works.

2.5.5.2.6.5. ~~For new construction, t~~The location of the building sewer at the street line shall be physically marked by the placement of a two inch by four inch (2" x 4") wooden stake placed at the end of the lateral end-cap and extending one foot above finished grade.

2.5.6.2.6.6. Each stake shall be painted with a fluorescent paint and marked as storm or sanitary sewer with the depth indicated from grade to end-cap. A one quarter inch (1/4") thick by six inch (6") square ferrous metal plate or equivalent shall be placed horizontally one foot below grade over the end of the storm drain.

2.5.7.2.6.7. Building sewers and drains shall be connected to the main sanitary sewer line by the use of wyes, tee/gyes, Inserta-Tees or similar approved methods as determined by the Department of Public ~~Services~~ Works. A manhole shall be installed at the sewer main to connect building laterals when the building lateral is eight inches (8") or larger in diameter. The lateral connections shall be installed from the main toward the lot where possible. Inserta-Tees can be

installed on pipes when the main receiving pipe is at least twelve inches (12") in size and the lateral is not more than half the size of the main receiving pipe in order to use a coring tee-type connection.

2.6.8. Before connecting new pipes into an existing sewer line, the contractor shall obtain a sewer connection permit from the Department of Public ~~Services~~Works.

2.6.9. Accessory Dwelling Units (ADU) -sewer laterals

2.6.9.1. Per Chapter 24 of the City Code of Ordinance "A separate and independent building sewer shall be provided for every new building, and a separate connection shall be made for each building sewer." The Department of Public Works recognizes the following scenarios for the successful connection of the proposed ADU to the public sewer system. See Figure II-21 for additional information.

- The proposed ADU is connected to the primary residence. In this scenario, the ADU may be connected to the primary residence sewer lateral internal to the primary residence.
- The proposed ADU is a separate standalone building: In this scenario, a separate and independent sewer lateral will be provided from both buildings with independent connections to the sewer.
- The proposed ADU is a separate standalone building: In this scenario, a separate and independent sewer lateral will be provided from both buildings with a connection of the two laterals into a sewer manhole at the property line. The sewer manhole will be a minimum two-foot (2') size providing access to each sewer lateral. The sewer manhole may be placed on the existing sewer lateral from the primary residence with the ADU sewer lateral being fed into it.

~~2.5.8.2.6.10.~~ Backflow Protection: Fixtures installed on a floor level that is lower than the next upstream manhole cover of the public, or private sewer shall be protected from backflow of sewage by installing an approved type of backwater valve. Fixtures on such floor level that are not below the next upstream manhole cover shall not be required to be protected by a backwater valve. Fixtures on floor levels above such elevation shall not discharge through the backwater valve. Cleanouts for drains that pass through a backwater valve shall be clearly identified with a permanent label stating "backwater valve downstream." All new laterals connecting to a combined sewer system shall have a Backflow Prevention Valve. The valve shall be installed to assure easy access and maintenance. When a Backflow Valve is installed, it is imperative that introduction of rain water, non-contact cooling water, groundwater from foundation drains, sump pumps, surface drains or any other sources of inflow

~~not be allowed on the building side of the valve.~~

~~2.5.9.2.6.11.~~ All building floor drains shall discharge to the sanitary sewer system.

~~2.5.10.2.6.12.~~ Plugging of Abandoned Sewer Laterals: Prior to abandoning any storm water or sanitary sewer lateral, the applicant shall acquire a permit from the Department of Public Works. The applicant shall provide a 48 hour notice to the Public Works Dispatch stating the date and time the applicant wished to complete the work. The ~~Water Resources Sewer Maintenance Division will mobilize to the site and allow one hour to assist the applicant to plug the lateral in the following manner. The location of the lateral to be plugged shall be televised by the applicant and witnessed by Water Resources staff~~ City staff will televise the sewer main in the street on site to determine the location of the lateral to be plugged. The applicant shall excavate or other means plug the lateral at the main where the lateral connects to the street sewer, as determined by City staff. The lateral must be filled with pumped grout starting at the plug and filling out to the points of excavation.

2.7. STORM WATER MANHOLES

~~2.5.11.2.7.1.~~ Storm water manholes shall include frames and covers as shown in Figure II-05 or an approved equivalent. Both the frame and riser shall be machined to assure a proper fit.

~~2.7.2.~~ Manhole frames shall be raised to grade using only brick and mortar as shown in Figure II-042.

~~2.5.12.2.7.3.~~ Riser Rings without tabs as shown in Figure II-06 may ~~shall~~ be used to adjust manholes to grade with approval of the Department of Public Works. ~~Wastewater Maintenance Division.~~

~~2.5.13.2.7.4.~~ Manhole covers shall be marked "DRAIN".

~~2.5.14.2.7.5.~~ Steps are not required in storm manholes. Any structures delivered to the site with step "holes" shall be filled with mortar.

2.8. STORM DRAINS

2.8.1. The types of allowable pipe and fittings shall be used for purposes of storm drains:

- All pipes listed for sanitary sewers
- Reinforced Concrete Pipe (RCP) with a minimum strength of Class III;
- Smooth Bore High Performance Polypropylene Dual Wall Storm Drain Pipe. (ADS HP Storm or equal) meeting a minimum PS- 46.

2.8.2. Storm drain lateral may be connected into storm drain mains without the use

of a manhole when the lateral is less than half the diameter of the receiving pipe.

~~2.5.15.~~2.8.3. Minimum velocities of surface water drains shall not be less than three feet per second (3 ft/s).

~~2.5.16.~~2.8.4. Ribbed corrugated polyethylene pipe material, smooth wall interior, is not permitted except for underdrain installation. Underdrain diameter shall be no larger than six inches (6").

~~2.5.17.~~2.8.5. The classes of pipe indicated shall be minimums, however the actual class of pipe used shall be determined by soil weight and compaction loads applied to such pipe in accordance with standard engineering design criteria and subject to the approval of the Department of Public Works~~City Engineer~~.

2.8.6. Pre-fabricated tees are allowable on storm drains. A pre-fabricated tee connection shall be used and installed in accordance with manufacturer specifications.

2.8.7. Connection of catch basin/storm drain lateral leads to storm drain larger than eighteen inch (18") diameter may be performed with the use of a coring machine and suitable connection device. The connecting pipe shall not be more than half the size of the main receiving pipe in order to use a coring tee-type connection.

~~2.5.18.~~2.8.8. Underdrains shall be six inch (6") diameter perforated pipe SDR 35 PVC or corrugated ADPE with smooth interior wall (AASHTO M252 Type S). They shall have a minimum of two rows of perforations.

~~2.5.19. eighteen (18") not more than half the size of the main~~

2.6.2.9. CATCH BASINS

~~2.6.1.~~2.9.1. All catch basins and catch basin inlets shall be designed and constructed in accordance with Figures II-~~072~~ and THROUGH II-811.

~~2.6.2.~~2.9.2. Catch basin drain pipes of less than ten inches (10") in diameter are not permitted.

~~2.6.3. All catch basin drains shall be supplied, laid and bedded in a minimum of six inches (6") of crushed stone.~~

~~2.6.4.~~2.9.3. All catch basins shall have a four-foot (4') granite headstone of catch basin inlets conforming to City standards as shown in Figure II-11.

~~2.6.5.~~2.9.4. No radius catch basin stones shall be permitted.

~~2.6.6.~~2.9.5. All catch basins shall be constructed with a minimum sump of three feet (3').

~~2.6.7.~~2.9.6. Catch basins shall not be located in driveway openings.

~~2.6.8.2.9.7.~~ No storm drains or storm drain laterals ~~lines~~, with the exception of street field inlets and underdrains, shall be connected into a catch basin structure.

~~2.6.9.2.9.8.~~ Catch basin drains and catch basin inlet drain pipe slopes shall be such that minimum flow velocities shall not be less than three feet per second (3 ft/s).

2.9.9. Bee hive casting shall be used on drainage structures located at low points in grassed off road locations.

2.9.10. Field inlets or Type-F catch basins may be used when- outside of city street right of ways within lawn areas, with Department of Public Works approval. They must have a minimum of a twelve-inch (12") sump and can be plastic or concrete.

2.9.11. All catch basins are required to have a hood on the outlet pipe as shown in Figure II-09.

2.10. SUBSURFACE WASTEWATER DISPOSAL

~~2.6.10.2.10.1.~~ To ensure that adequate provisions have been made for subsurface wastewater disposal, developers are required to locate, design, and install all septic systems in accordance with the latest version of the Maine Subsurface Wastewater Disposal Rules, 144 CMR minimum 241, as described in Chapter 6, Section 6-18(A) of the City Code.

~~2.6.11.2.10.2.~~ Developers are required to obtain a permit through the City of Portland Inspections Division prior to the installation of any subsurface wastewater disposal system identified on an approved site plan.

2.11. GREASE INTERCEPTORS

2.11.1. Grease Control Equipment is required for all food establishments based on the City of Portland's Fats, Oils, and Grease Program found in the Rules and Regulations for Use of the Sewer System.

2.11.2. Concrete grease interceptors must have two chambers. Chamber A, where influent enters, must be two thirds (2/3)s of the tank volume.

2.11.3. Concrete grease interceptors must have three twenty-four-inch (24") access points.

2.11.4. Tank must be designed for H-20 traffic wheel load and a concrete strength of 5000 PSI at 28 days.

2.11.5. Joints must be sealed with butyl rubber joint sealant such as CS-102 Butyl Rubber Sealant.

2.11.6. Tees inside grease interceptors must be supported. Galvanized riser clamps on drops must be rodded to tank wall with galvanized fasteners six inch (6") below

service weight tee. Tees must be accessible via an unobstructed view for cleaning through top of grease interceptor.

2.6.12.2.11.7. High density polyethylene grease interceptors are accepted as an equivalent to concrete grease interceptors. Polyethylene units shall be properly anchored to prevent floatation.

2.6.13.2.11.8. A control manhole must be installed downstream of the interceptor before it enters the city sewer system. ~~Alternatively, a manhole must be installed at the connection to the sanitary sewer.~~

2.7.2.12. AGGREGATE SPECIFICATIONS

2.7.1.2.12.1. The provisions of Section 703 of the State of Maine Department of Transportation (MDOT) *Standard Specifications for Highways and Bridges* shall apply with the following additions and modifications:

2.7.2.2.12.2. 703.02 Coarse Aggregate for Concrete: Aggregates associated with roads and streets are specified in Section 1.8.

Designated Aggregate Size

	Percent Passing Sieve				
Sieve Size	2 in.	1½ in.	1 in.	¾ in.	½ in.
2 in.	95-100	100	-	-	-
1-1/2 in.	-	95-100	100	-	-
1 in.	50-70	-	90-100	100	-
3/4 in.	-	50-70	-	90-100	100
1/2 in.	15-30	-	25-60	-	90-100
3/8 in.	-	10-30	-	20-55	-
No. 4	0-5	0-5	0-10	0-10	0-15
F.M. (+0.20)	7.45	7.20	6.95	6.70	6.10

2.7.3.2.12.3. Aggregate used in concrete shall not exceed the following maximum designated sizes:

- Two inches (2") for mass concrete.
- One and half inch (1 ½") for piles, pile caps, footings, foundation mats, and walls eight inches (8") or more thick.
- Three quarters of an inch (¾") for slabs, beams, and girders.
- Half inch (1/2") for fireproofing on steel columns and beams.
- One inch (1") for all other concrete.

2.7.4.2.12.4. 703.06 (a) Aggregate Base: Aggregate base – crushed, type "B" shall not

~~contain particles of rock which will not pass the two inch (2") square mesh sieve, and shall conform to the type "B" aggregate, as listed in the subsection of the Standard Specifications. "Crushed" shall be defined as consisting of rock particles with at least fifty per cent (50%) of the portion retained on the one-quarter inch (1/4") square mesh sieve, having a minimum of two (2) fracture faces.~~

~~2.7.5.2.12.5. 703.06 (b) Aggregate Subbase: Gravel subbase shall not contain particles of rock which will not pass the three inch (3") square mesh sieve, and shall conform to type "D" Aggregate, as listed in this subsection of the Standard Specifications.~~

<u>Gravel Aggregate Table</u>			
<u>Sieve Size</u>	<u>Type B</u>	<u>Type D</u>	<u>Type F</u>
<u>3 in.</u>	=	<u>100</u>	=
<u>2 in.</u>	<u>100</u>	=	=
<u>1 in.</u>	=	=	<u>100</u>
<u>1/2 in.</u>	<u>35-75</u>	=	=
<u>1/4 in.</u>	<u>25-60</u>	<u>25-70</u>	<u>60-100</u>
<u>No. 40</u>	<u>0-25</u>	<u>0-30</u>	<u>0-50</u>
<u>No. 200</u>	<u>0-5</u>	<u>0-7</u>	<u>0-7</u>

~~2.7.6.2.12.6. 703.18 Common Borrow:~~ Common borrow shall not contain any particle of bituminous material.

~~2.7.7.2.12.7. 703.19 Granular Borrow:~~ Granular borrow shall contain no particles which will not pass a three inch (3") square mesh sieve.

~~2.7.8.2.12.8. 703.20 Gravel Borrow:~~ Gravel borrow shall not contain particles of rock which will not pass three inch (3") square mesh sieve.

~~2.7.9.2.12.9. 703.313~~ Crushed Stone $\frac{3}{4}$ " for Pipe Bedding and Underdrain: "Crushed Stone" shall be defined as rock of uniform quality and shall consist of clean, angular fragments of quarried rock, free from soft disintegrated pieces or other objectionable matter. Crushed stone used as a bedding material for pipe and underdrain shall be uniformly graded and shall meet the follow gradations. The stone shall be free from vegetable matter, lumps or balls of clay, and other inappropriate substances.

Sieve Designation	<u>City of Portland</u> Percentage by Weight Passing Square Mesh Sieve
<u>1 inch</u>	<u>100</u>
$\frac{3}{4}$ inch	<u>90-100</u> 100
$\frac{3}{8}$ $\frac{1}{2}$ inch	<u>20-55</u>
$\frac{3}{8}$ inch	<u>0-15</u>
No. 4	<u>0-50</u> 10

For pipe sizes ~~42 inches and larger:~~

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1 $\frac{1}{4}$ inch	100
$\frac{3}{8}$ inch	20-55
No. 4	0-10

FIGURE II-01 = LIST OF DETAILS

FIGURE II-02 = PRECAST CONCRETE MANHOLE

FIGURE II-03 = TYPICAL INSIDE DROP MANHOLE

FIGURE II-04 = GENERAL NOTES FOR MANHOLES AND CATCH BASINS

FIGURE II-05 = CAST IRON MANHOLE COVER AND FRAME

FIGURE II-06 = MANHOLE RISER RING

FIGURE II-07 = PRECAST CONCRETE CATCH BASIN

FIGURE II-08 = CATCH BASIN FRAME AND GRATE

FIGURE II-09 = CATCH BASIN HOOD

FIGURE II-10 = TYPICAL PAVEMENT GRADING FOR CATCH BASIN INLETS

FIGURE II-11 = 4' GRANITE HEADSTONE FOR CATCH BASIN INLET

FIGURE II-12 = TYPICAL PIPE TRENCH INSTALLATION AND NOTES

FIGURE II-13 = PLASTIC PIPE CONNECTION METHODS 1 & 2

FIGURE II-14 = PLASTIC PIPE CONNECTION METHODS 3 & 4

FIGURE II-15 = MASONRY PLUG

FIGURE II-16 = TYPICAL EXISTING LATERAL CONNECTION

FIGURE II-17 = TYPICAL HOUSE LATERAL TEE/WYE CONNECTION

FIGURE II-18 = FORCE MAIN CONCRETE THRUST BLOCK PLACEMENT

FIGURE II-19 = EXTERNAL GREASE TRAP DESIGN

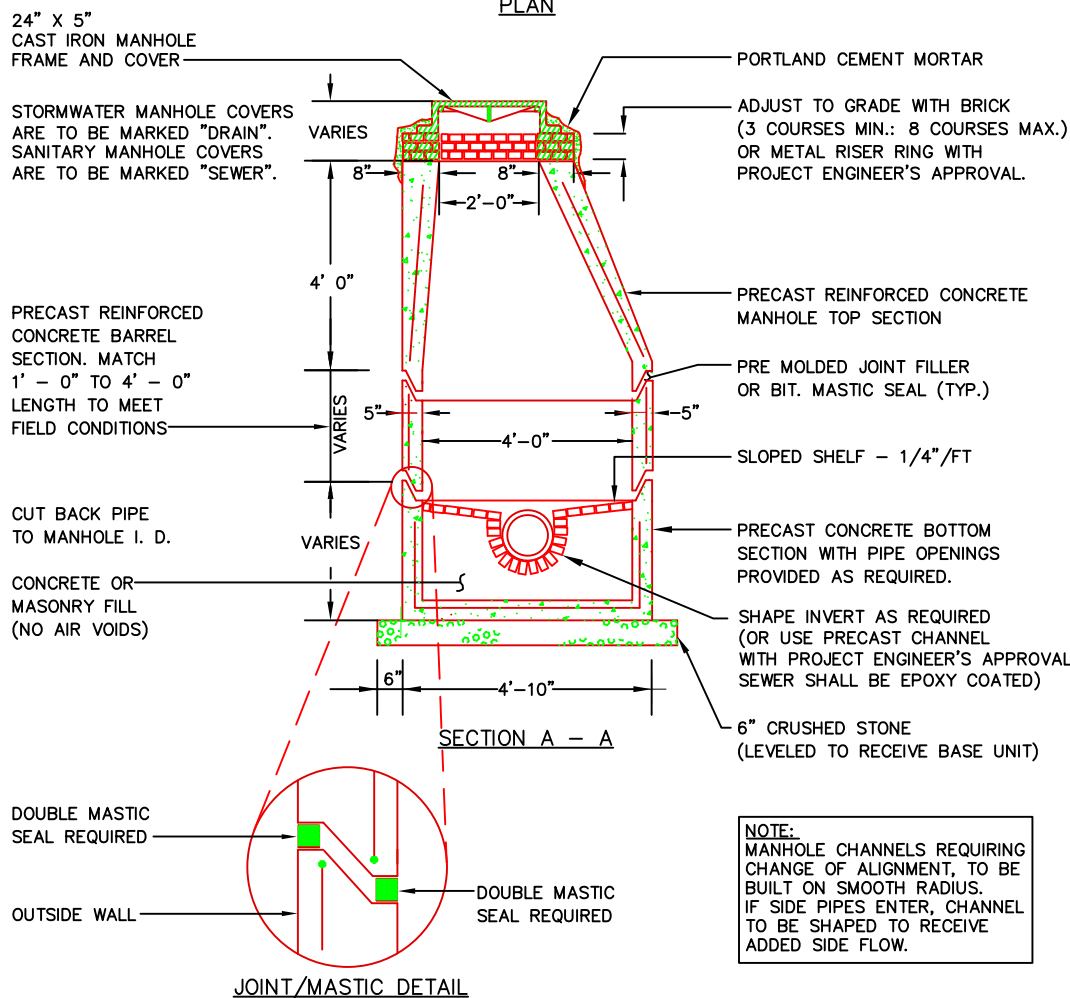
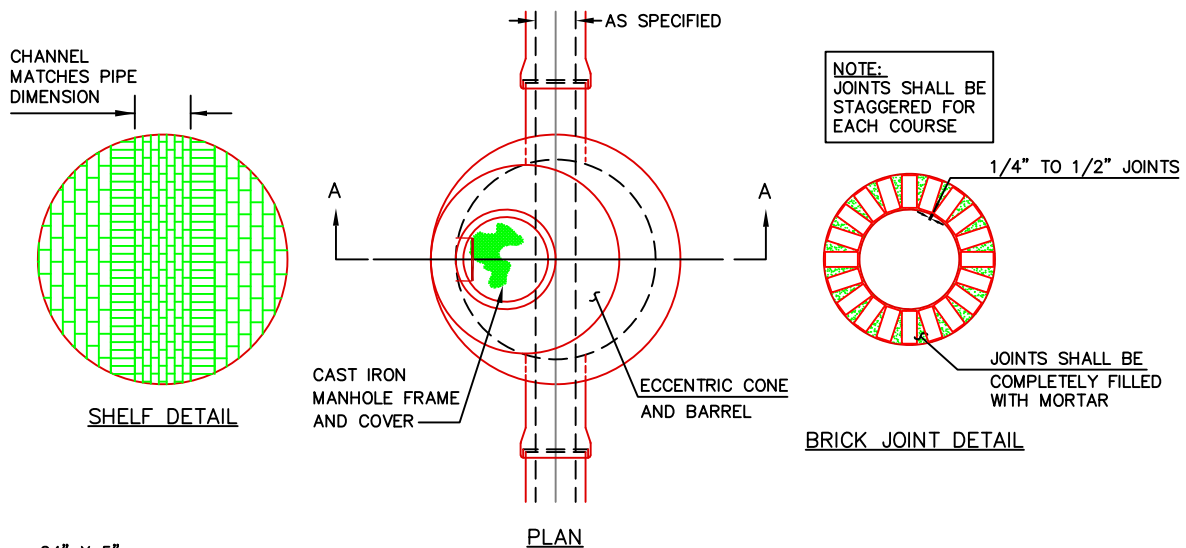
FIGURE II-20 = OIL / GRIT SEPARATOR

FIGURE II-21 = SEWER LINE CONFIGURATIONS FOR PRIMARY RESIDENCES
WITH AN ACCESSORY DWELLING UNIT

FIGURE II-22 = TYPE "B" UNDERDRAIN INSTALLATION ALTERNATIVE A

FIGURE II-23 = TYPE "B" UNDERDRAIN INSTALLATION ALTERNATIVE B

DATE: APRIL 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED:			II-1
LIST OF DETAILS			



PRECAST CONCRETE MANHOLE

NOT TO SCALE

DATE:
DEC. 2009

REVISED:
DEC. 2021

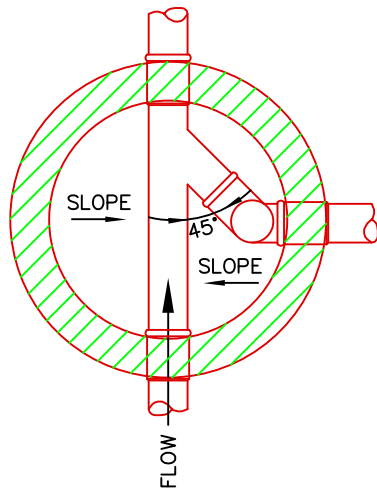
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

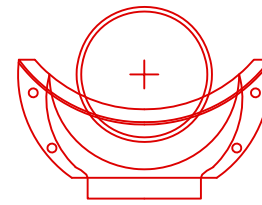
FIGURE:

II-2

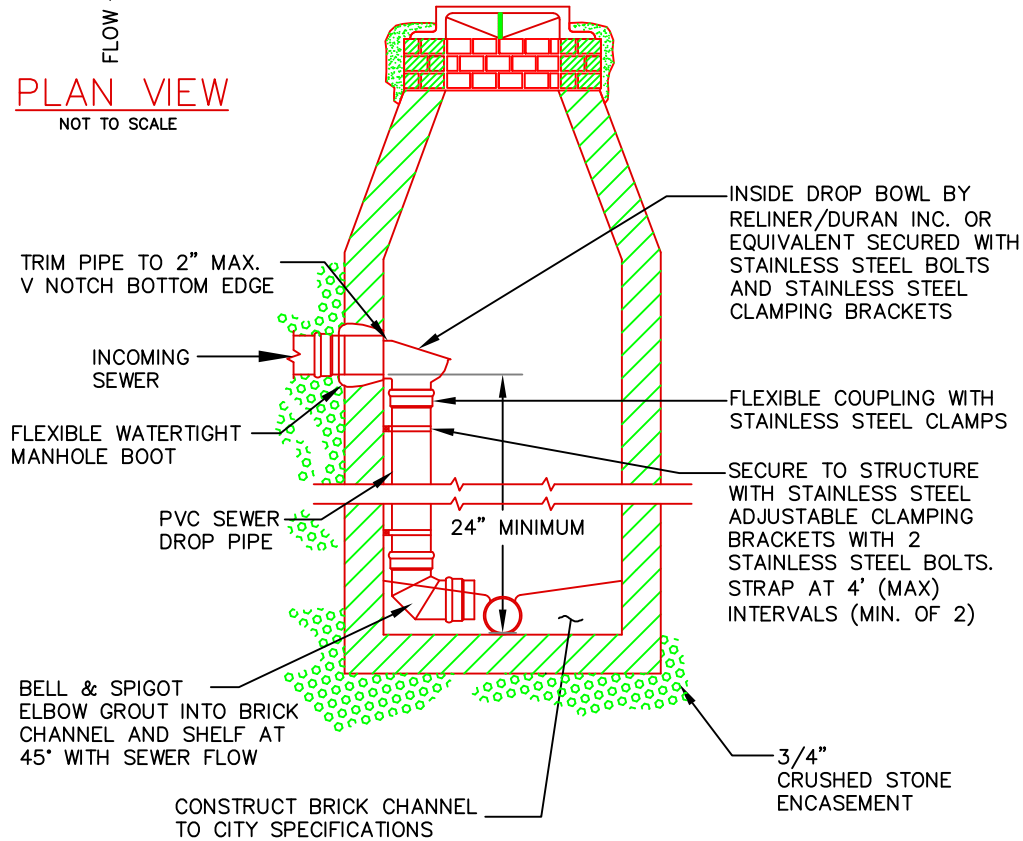
PRECAST CONCRETE MANHOLE



PLAN VIEW
NOT TO SCALE



**DROP BOWL
MOUNTING POSITION**
NOT TO SCALE



NOTES:

- 1) DROP MANHOLES ARE NOT REQUIRED FOR STORMWATER SYSTEMS.
- 2) MANHOLE MUST HAVE A MINIMUM DIAMETER OF 5' TO USE AN INSIDE DROP
- 3) ALL INSIDE DROP CONNECTIONS FOR SERVICES AND COLLECTOR SEWERS SHALL USE THE DROP BOWL AS SHOWN.

NOT TO SCALE

DATE:
APRIL 2022

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-3

TYPICAL INSIDE DROP MANHOLE

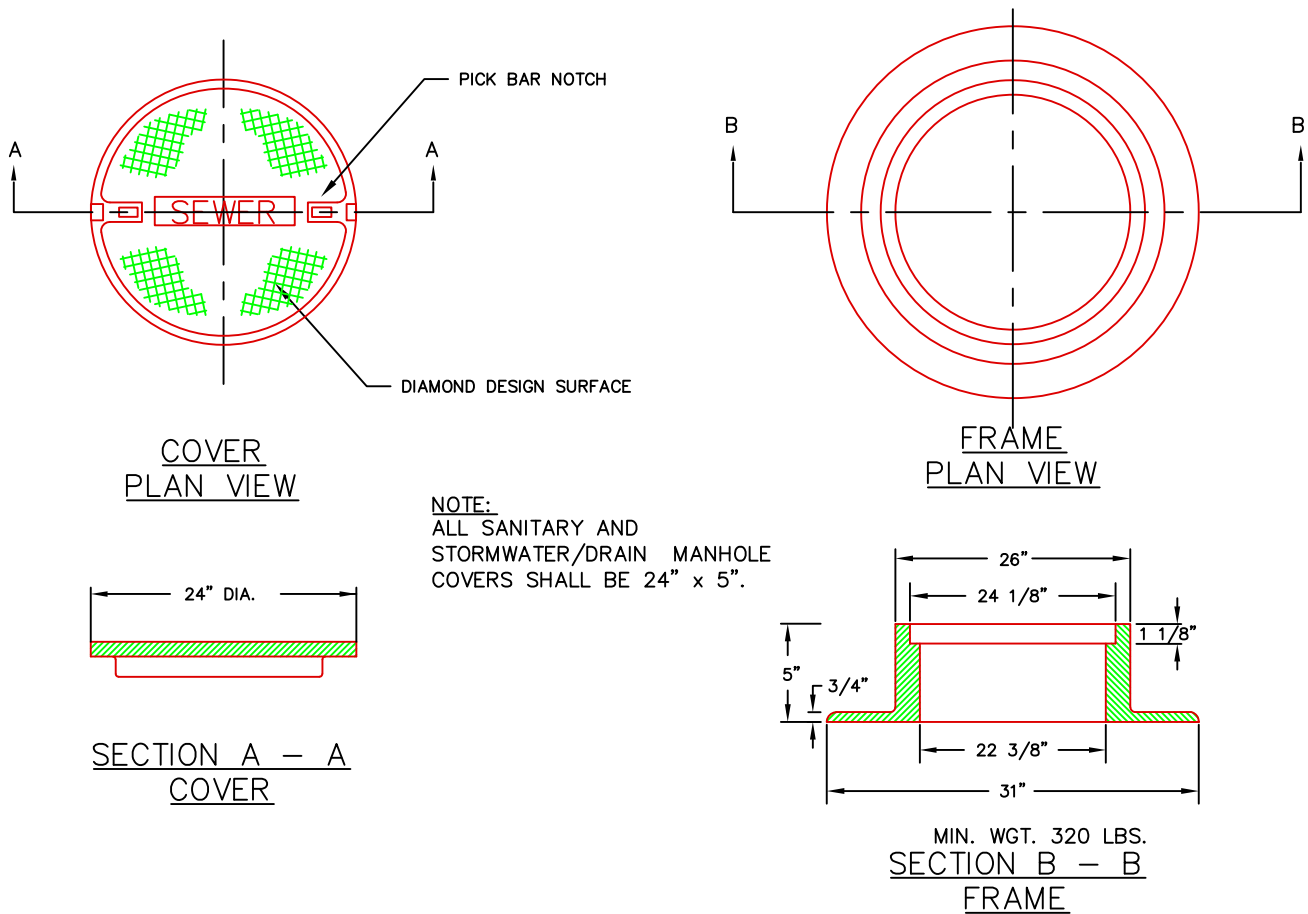
1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL PIPES ENTERING MANHOLES AND CATCH BASINS SHALL HAVE FLEXIBLE PIPE CONNECTIONS WITH STAINLESS STEEL BANDS. FILL ANY ANNUAL SPACE WITH NON SHRINK GROUT.
5. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID
6. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. INVERTS SHALL BE BUILT TO THE HEIGHT OF THE FOLLOWING AS DETERMINED BY THE LARGEST PIPE SIZE.
 - 8.1. FOR PIPE SIZES 4"-12" INVERTS SHALL GO TO THE TOP OF THE PIPE.
 - 8.2. FOR PIPE SIZES 15"-36" INVERTS SHALL GO TO THE SPRING LINE.
 - 8.3. FOR PIPE SIZES 42"-60" INVERTS SHALL GO TO THE 1/3 OF PIPE SIZE
9. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A HOOD / CASCO TRAP. SEE FIGURE II-09.
13. ALL MANHOLES AND CATCH BASINS REQUIRE BUOYANCY CALCULATIONS AND THE STRUCTURES SHALL BE MODIFIED AS NECESSARY BASED ON THOSE CALCULATIONS.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

DATE: MARCH 2019	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED: AUG 2022	GENERAL NOTES FOR MANHOLES AND CATCH BASINS		II-4

NOTES:

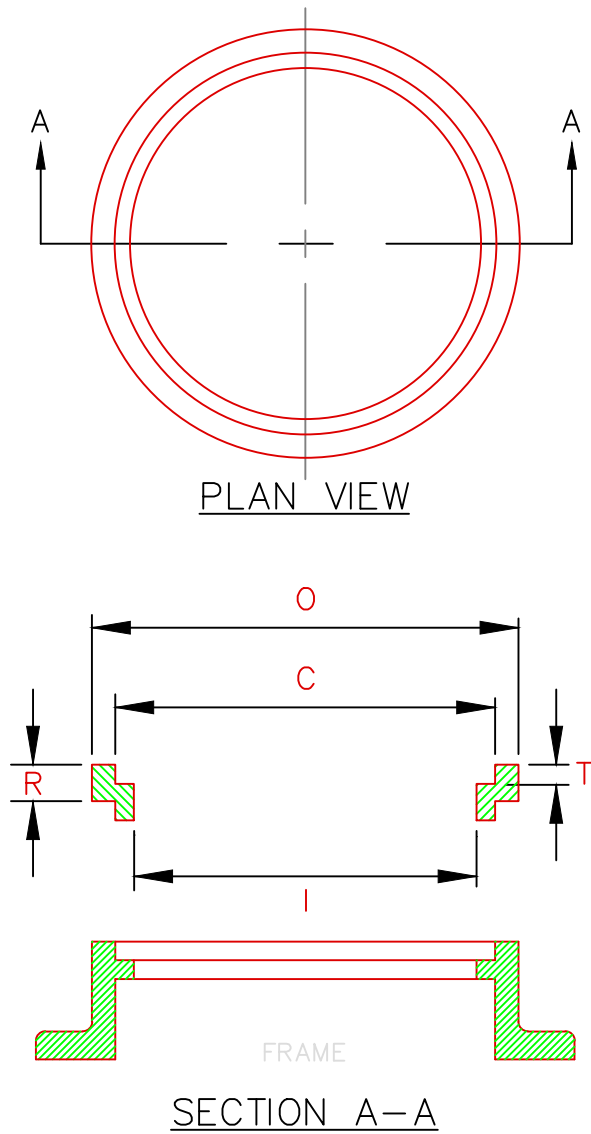
1. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
2. APPROVED MANHOLE FRAMES:
 - 2.1. EAST JORDAN = 1690Z
 - 2.2. NEENAH = R-1496
 - 2.3. OR APPROVED EQUAL
3. APPROVED MANHOLE COVERS
 - 3.1. EAST JORDAN = 2160A
 - 3.2. NEENAH = R-1496
 - 3.3. OR APPROVED EQUAL



CAST IRON MANHOLE COVER AND FRAME

NOT TO SCALE

DATE: AUG 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED: DEC 2021	CAST IRON MANHOLE COVER AND FRAME		II-5



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

MANHOLE RISER RING

NOT TO SCALE

DATE:
DEC 2009
REVISED:

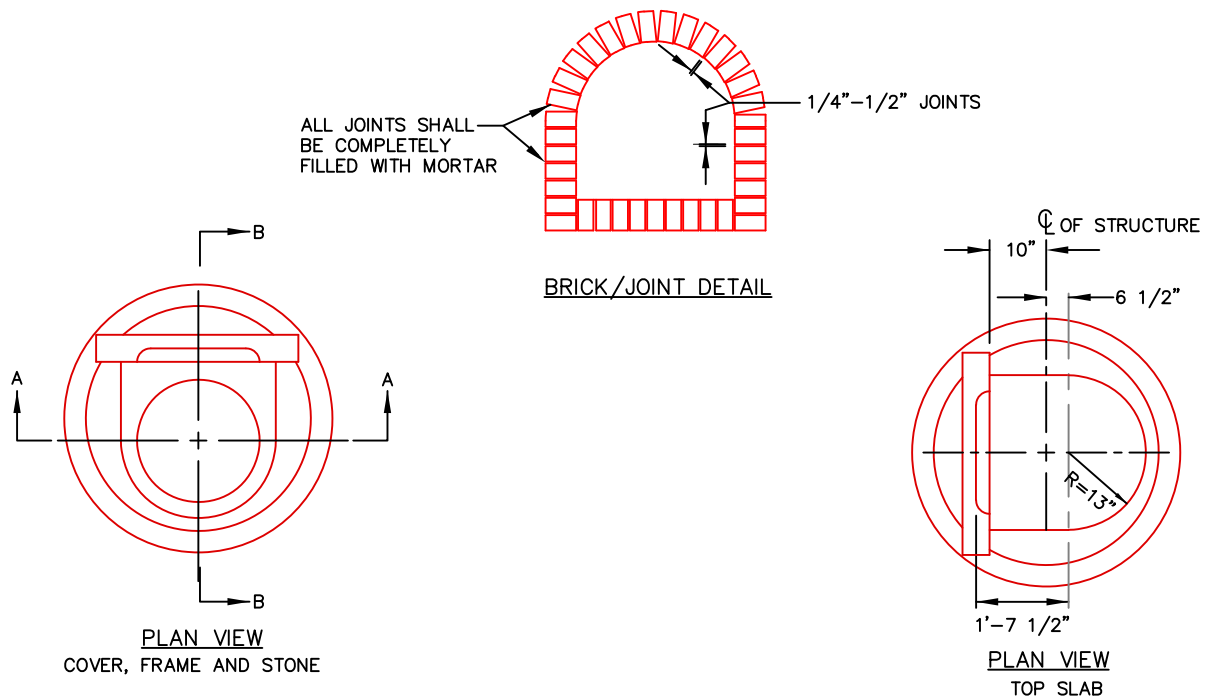
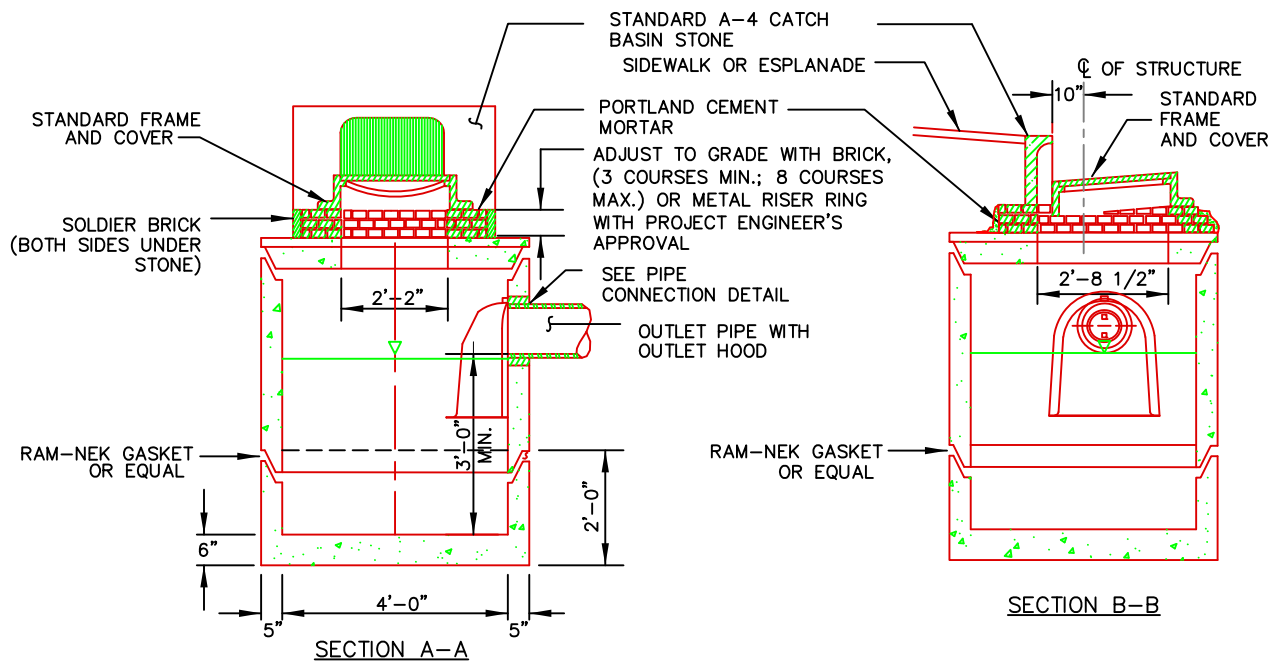
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-6

MANHOLE RISER RING



PRECAST CONCRETE CATCH BASIN – TYPE "E"
NOT TO SCALE

DATE:
MARCH 2009

REVISED:
AUG 2022

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

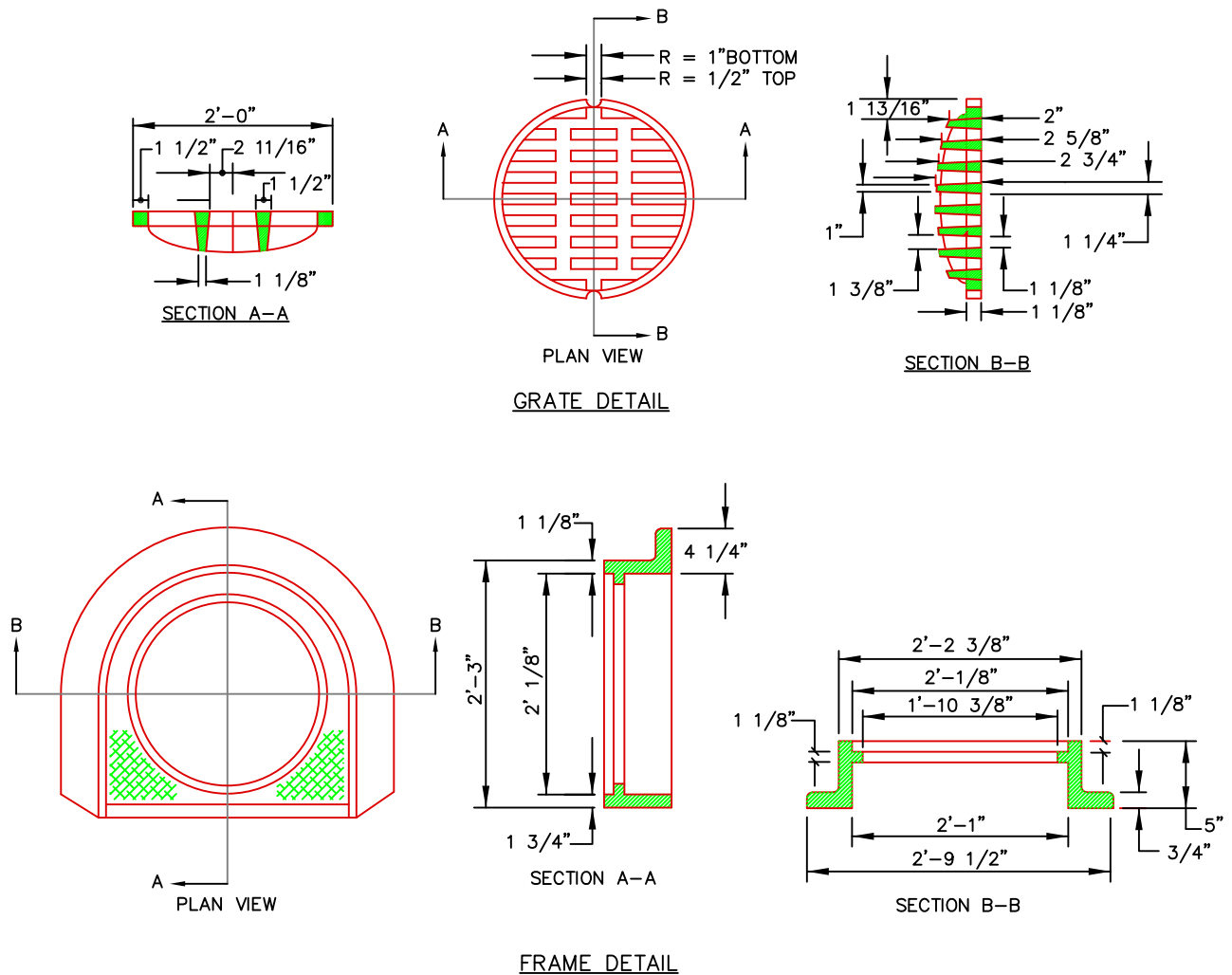
**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-7

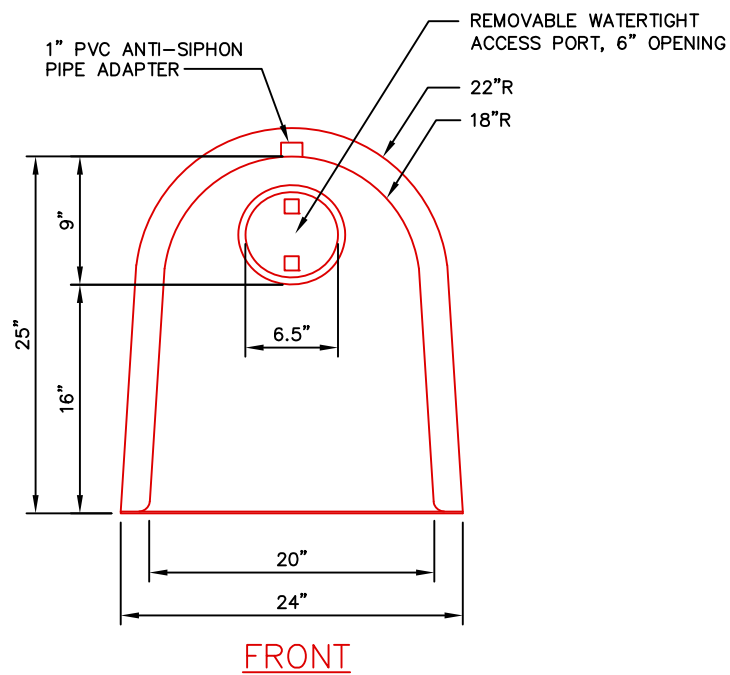
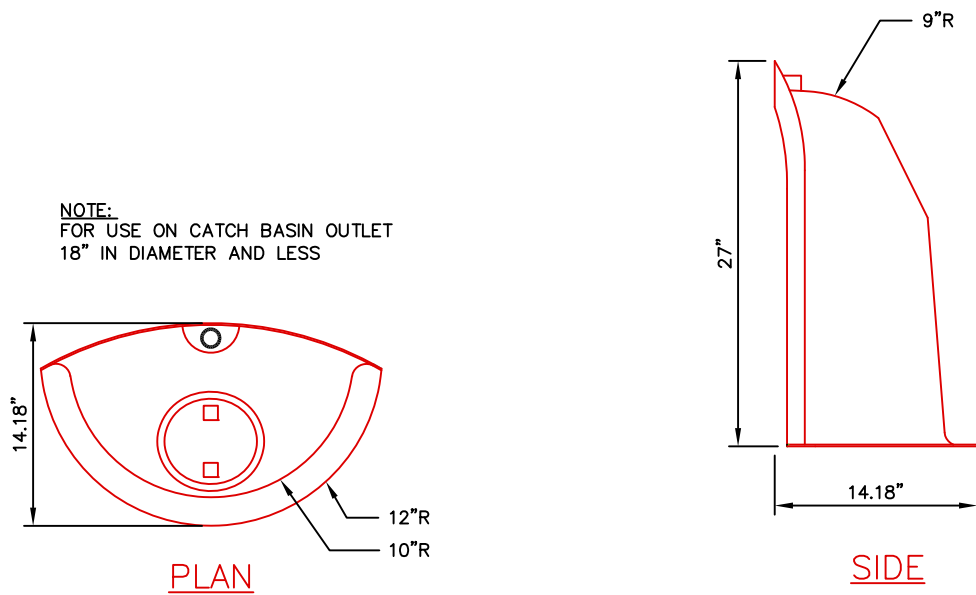
PRECAST CONCRETE CATCH BASIN

1. APPROVED CATCH BASIN FRAMES:
 - 1.1. EAST JORDAN = 7375Z
 - 1.2. NEENAH = R-3248
 - 1.3. OR APPROVED EQUAL
2. APPROVED CATCH BASIN GRATES
 - 2.1. EAST JORDAN = 2440M
 - 2.2. NEENAH = R-3248
 - 2.3. OR APPROVED EQUAL



CATCH BASIN FRAME & GRATE

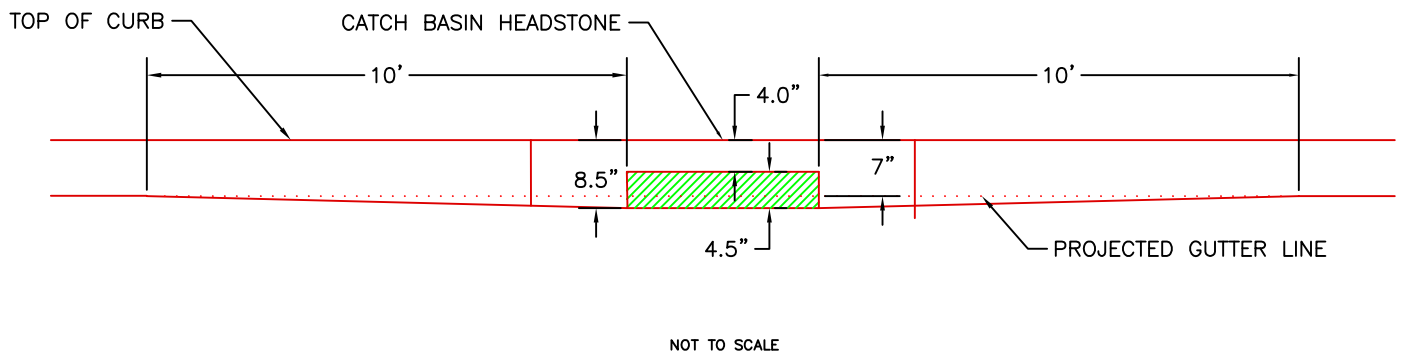
DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED: DEC. 2021	CATCH BASIN FRAME AND GRATE		II-8



CATCH BASIN HOOD
NOT TO SCALE

DATE: MARCH 2019 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-9
CATCH BASIN HOOD			

NOTE:
DISH 10' EITHER SIDE OF HEADSTONE FOR
CATCH BASIN AT LOW POINT



NOT TO SCALE

DATE:
AUG 2009

REVISED:
DEC. 2021

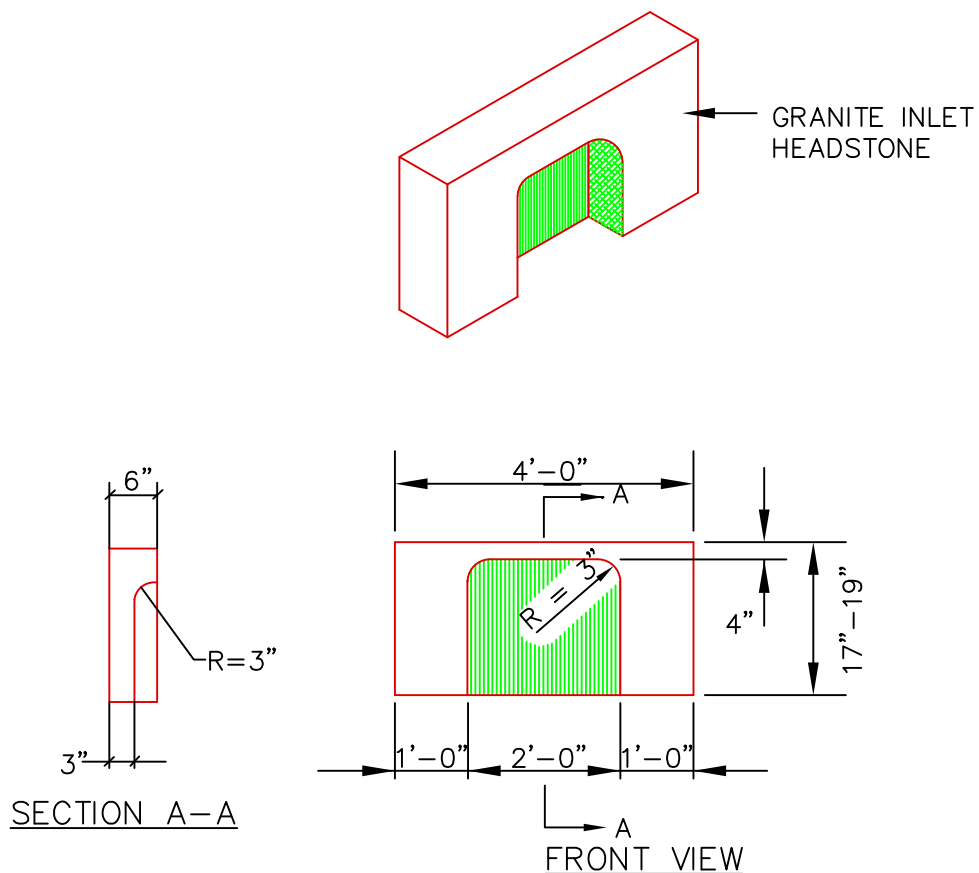
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

**TYPICAL PAVEMENT GRADING
FOR CATCH BASIN INLETS**

FIGURE:

II-10



4' GRANITE HEADSTONE FOR CATCH BASIN INLET

NOT TO SCALE

DATE:
AUG 2009

REVISED:
AUG 2021

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

4' GRANITE HEADSTONE FOR CATCH BASIN INLET

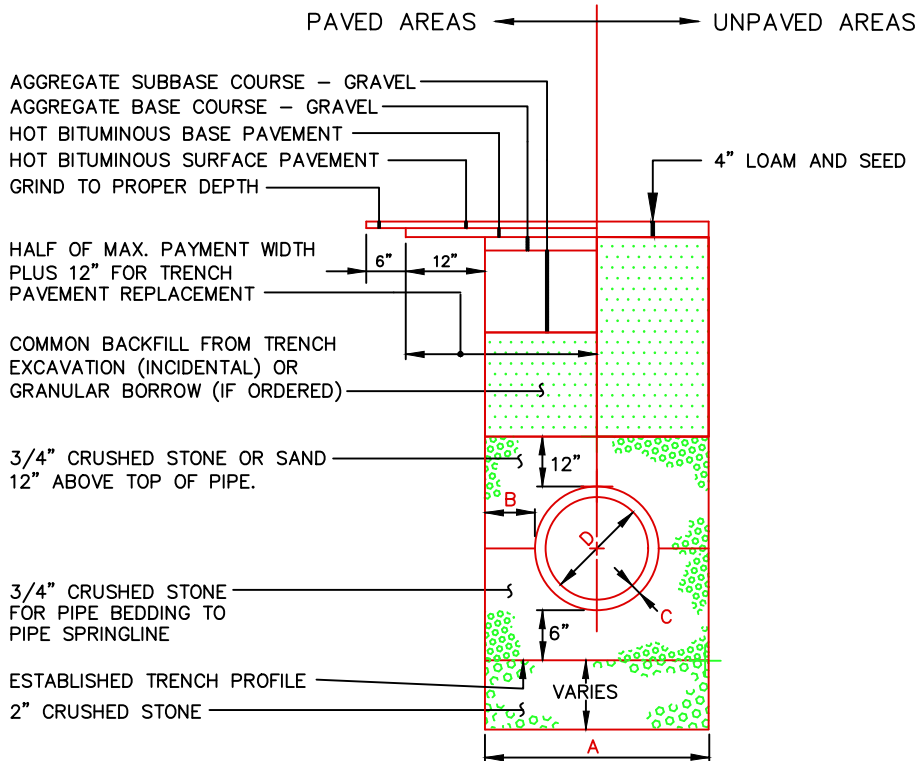
FIGURE:

II-11

NOTES:

DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..



NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. 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.
3. 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 DIMENSION **B** SHALL BE AT LEAST 9".
4. DIMENSION **A** IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION **A** SHALL BE BASED ON PIPE DIAMETER **D**, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36	6.0
42	7.0
48	7.0

TYPICAL PIPE TRENCH INSTALLATION

NOT TO SCALE

DATE:
AUGUST 2009

REVISED:
SEPTEMBER 2022

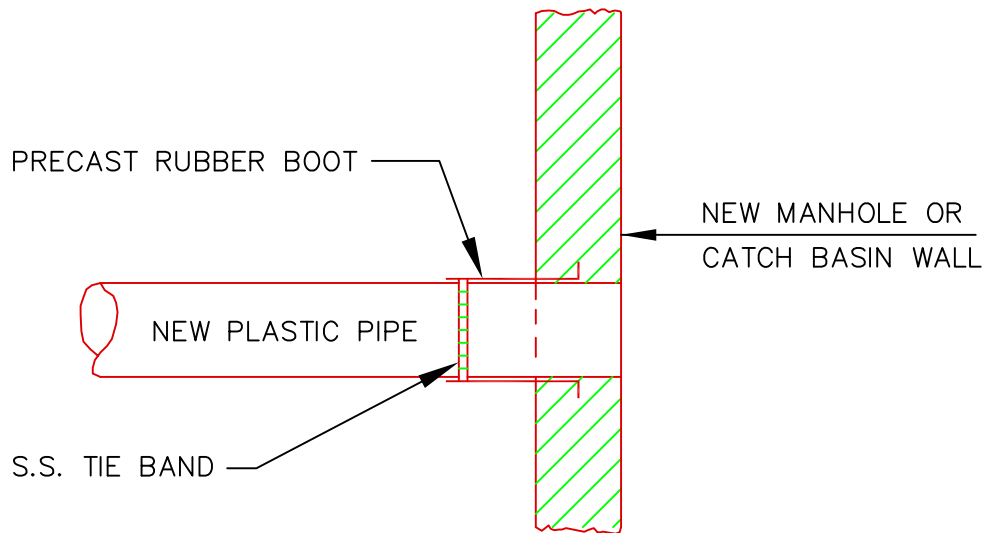
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

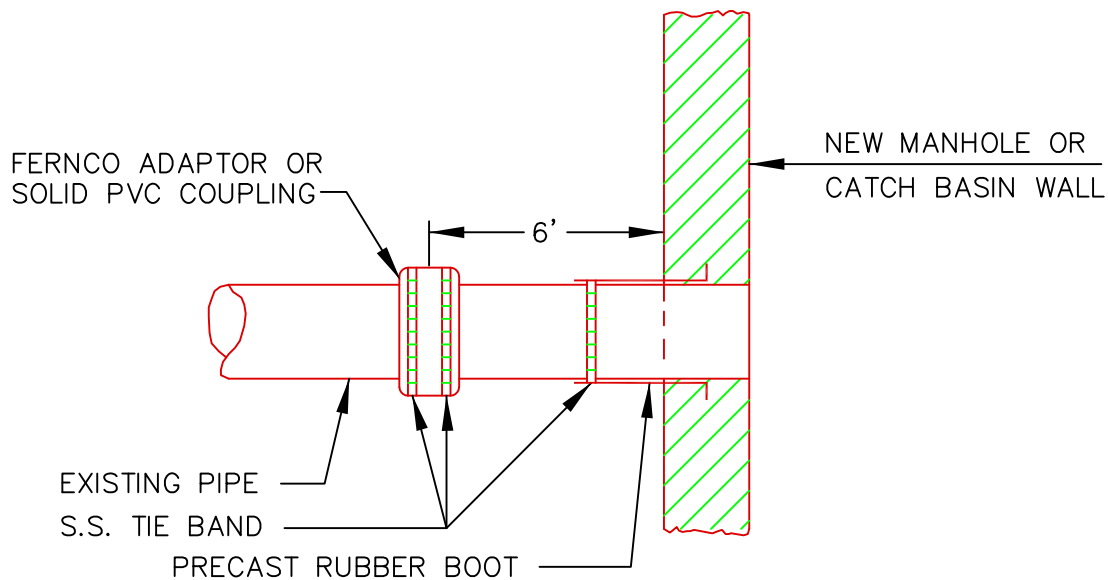
TYPICAL PIPE TRENCH INSTALLATION AND NOTES

FIGURE:

II-12



METHOD 2 – NEW CONSTRUCTION



METHOD 1 – EXISTING PIPE INTO NEW STRUCTURE

PLASTIC PIPE CONNECTIONS

NOT TO SCALE

DATE:
AUGUST 2009
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

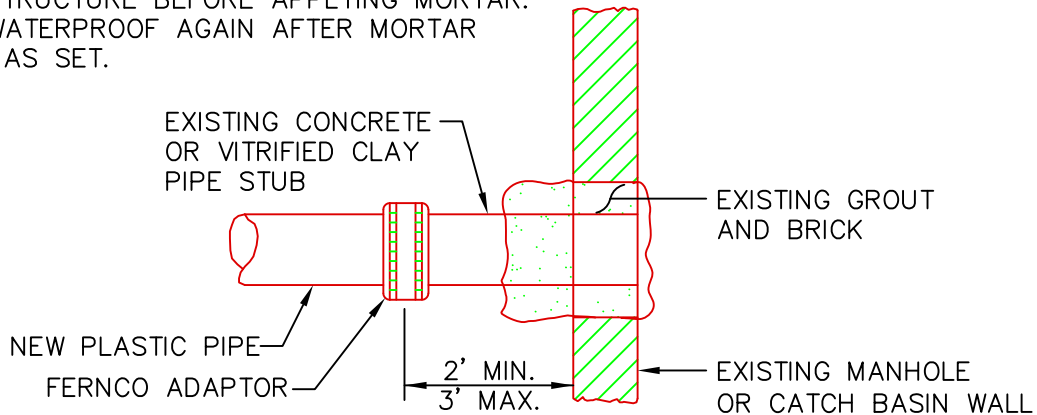
**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-13

PLASTIC PIPE CONNECTION METHODS 1 & 2

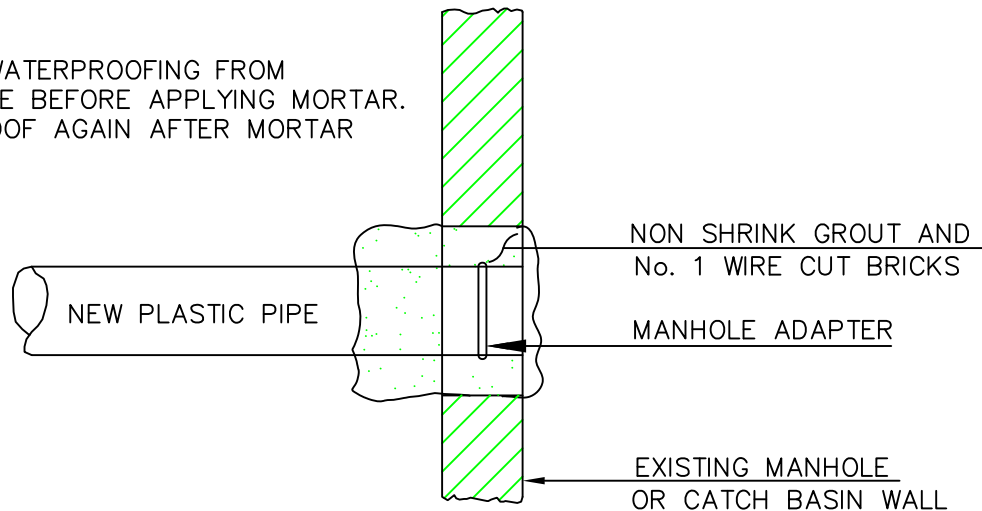
NOTE:
REMOVE WATERPROOFING FROM
STRUCTURE BEFORE APPLYING MORTAR.
WATERPROOF AGAIN AFTER MORTAR
HAS SET.



METHOD 4 – NEW PIPE TO EXISTING STRUCTURE STUB

NOTE: EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED
FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE
THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY
SAW CUT THE STRUCTURE TO CREATE PIPE OPENING.
THE NEW OPENING MUST THEN BE SEALED AND WATERTIGHT
BOTH INSIDE AND OUTSIDE THE STRUCTURE.

NOTE:
REMOVE WATERPROOFING FROM
STRUCTURE BEFORE APPLYING MORTAR.
WATERPROOF AGAIN AFTER MORTAR
HAS SET.

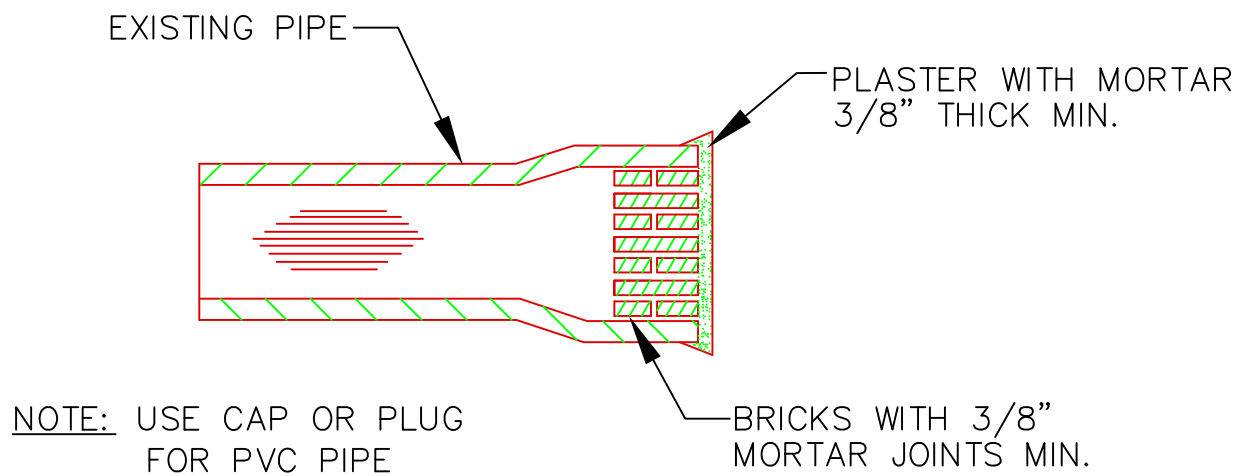


METHOD 3 – NEW PIPE INTO EXISTING STRUCTURE

PLASTIC PIPE CONNECTIONS

NOT TO SCALE

DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED:	PLASTIC PIPE CONNECTION METHODS 3 & 4		II-14



MASONRY PLUG

NOT TO SCALE

DATE:
AUGUST 2009
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

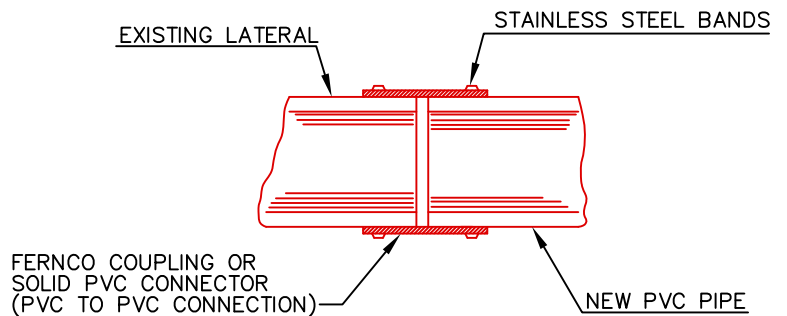
II-15

MASONRY PLUG

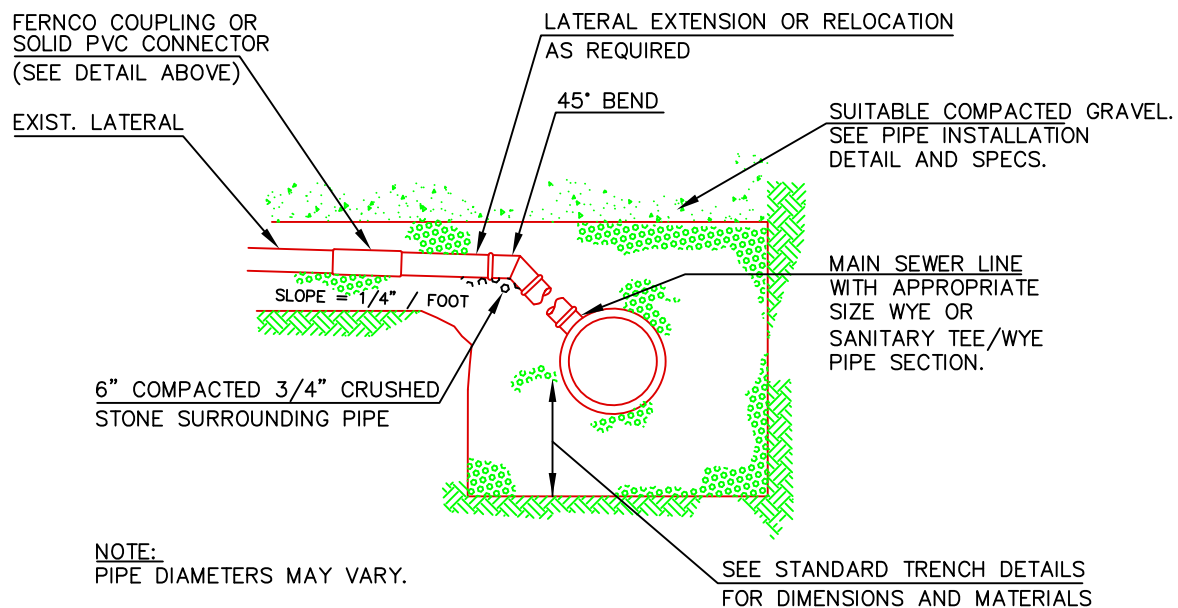
NOTE:

LOCATIONS AND ELEVATIONS OF STUBS SHOWN ON THE PLANS ARE TO BE CONSIDERED AS APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED TO SUIT FIELD CONDITIONS.

HOUSE CONNECTIONS AND CATCH BASINS CONNECTIONS TO THE MAIN LINE OF THE SEWER, SHALL CONSIST OF AN APPROPRIATE WYE BRANCH CONNECTION AS SHOWN ON THE PLANS, OR AS DIRECTED. ACTUAL WYE LOCATIONS FOR HOUSE CONNECTIONS AND CATCH BASIN CONNECTIONS SHALL BE DETERMINED DURING CONSTRUCTION. THE CONTRACTOR SHALL KEEP A COMPLETE RECORD OF WYE LOCATIONS WHICH SHALL BE GIVEN TO THE CITY OF PORTLAND UPON COMPLETION OF THE CONTRACT. ALL PVC TO PVC COUPLING SHALL BE "SOLID PVC COUPLINGS".



FERNCO COUPLING FOR REPAIR OR REPLACEMENT



SECTION

TYPICAL EXISTING LATERAL CONNECTION

NOT TO SCALE

DATE:
DEC. 2009

REVISED:
DEC. 2021

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-16

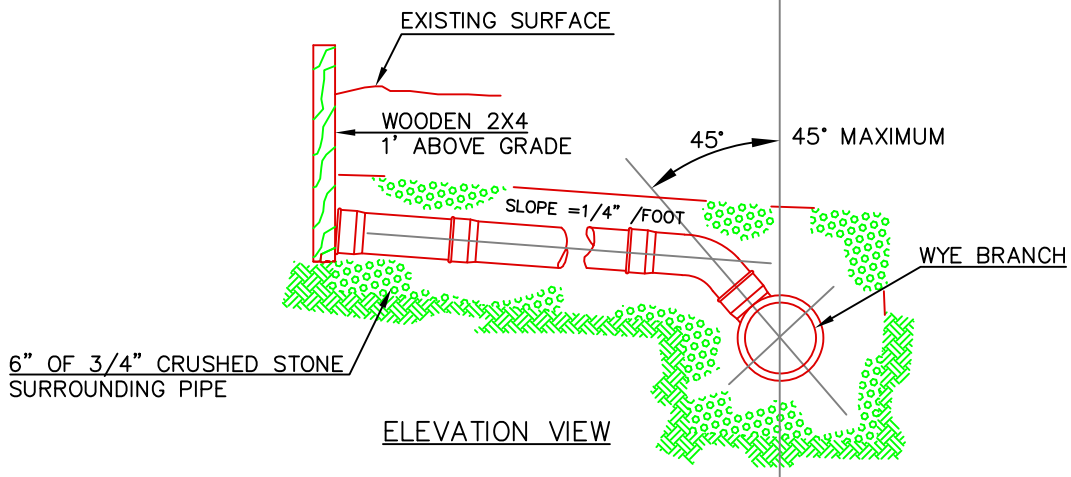
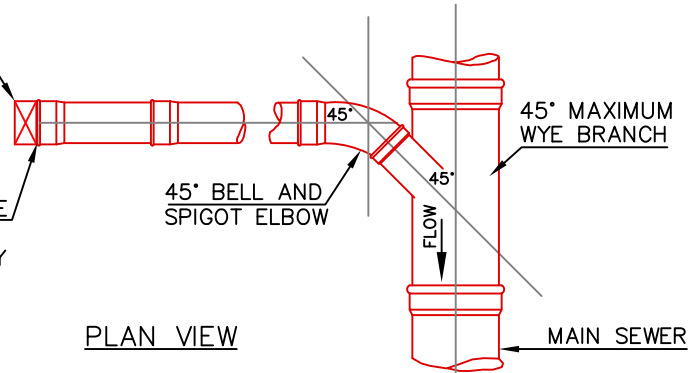
TYPICAL EXISTING LATERAL CONNECTION

NOTE:

LOCATION / WARNING TAPE SHALL BE
INSTALLED OVER CENTERLINE OF PIPE AT A
MAXIMUM OF 24 INCHES BELOW FINISH GRADE.

EXTEND WOODEN 2X4
TO 1' ABOVE GRADE TO
DELINEATE END OF STUB.
MARK 2X4 WITH THE DEPTH
FROM GRADE TO PLUG.

FOR FUTURE CONNECTION, TERMINATE
AND PLUG LATERAL AT STREETLINE.
PLUG TO BE IDENTIFIED AS SANITARY
OR STORM.



TYPICAL HOUSE LATERAL TEE/WYE CONNECTION

NOT TO SCALE

DATE:
AUGUST 2009
REVISED:

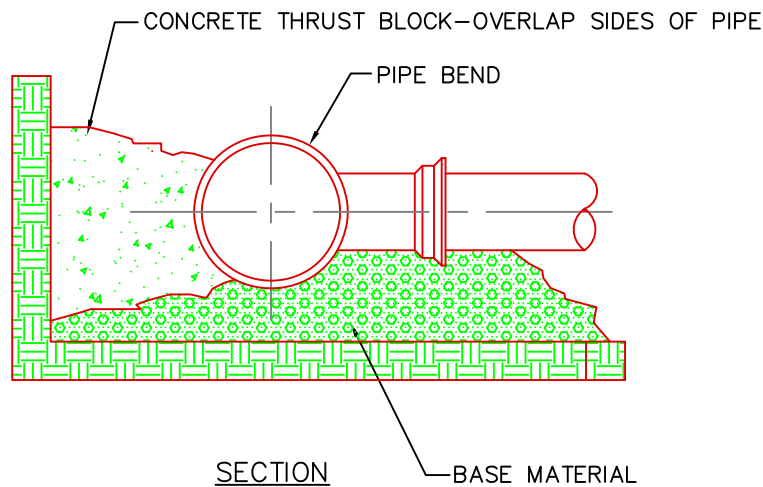
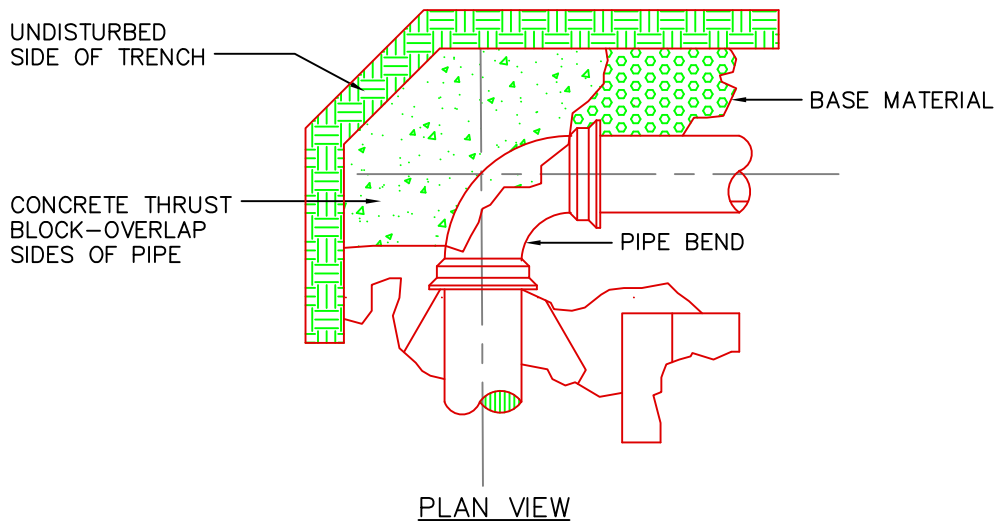
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-17

TYPICAL HOUSE LATERAL TEE/WYE CONNECTION



THRUST/RETAINER SCHEDULE		
1/4 BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK w/RETAINERS
1/8 BEND	(45°)	THRUST BLOCK w/RETAINERS
1/16 BEND	(22 1/2°)	THRUST BLOCK
1/32 BEND	(11 1/4°)	THRUST BLOCK

NOTE: KEEP CONCRETE LEAR OF PIPE JOINT, NUTS AND BOLTS

FORCE MAIN — CONCRETE THRUST BLOCK PLACEMENT ON VERTICAL & HORIZONTAL BENDS

NOT TO SCALE

DATE:
AUGUST 2009

REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-18

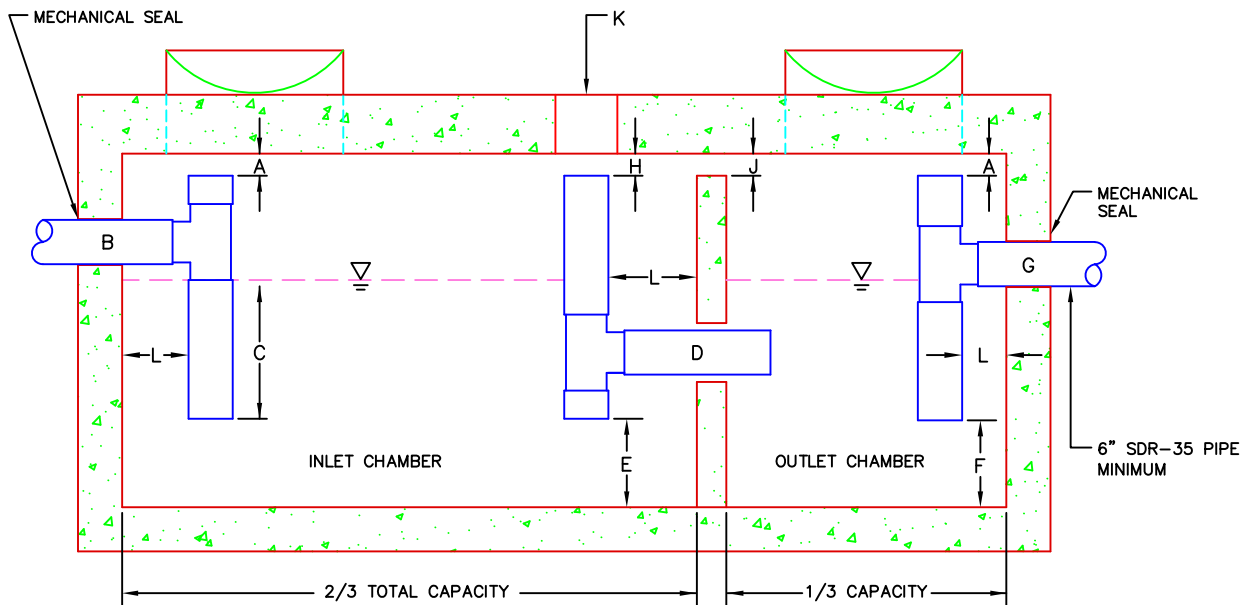
FORCE MAIN CONCRETE THRUST BLOCK PLACEMENT

1000 GALLON GREASE INTERCEPTOR:

- A) MINIMUM 6", BUT NOT LESS THAN PIPE DIAMETER.
- B) INLET PIPE INVERT TO BE 2 1/2" ABOVE LIQUID SURFACE.
- C) INLET PIPE TO TERMINATE 2/3 DEPTH OF WATER LEVEL.
- D) BAFFLE T
- E) 6" FROM FLOOR TO END OF BAFFLE PIPE.
- F) 6" FROM FLOOR TO END OF OUTLET PIPE.
- G) OUTLET PIPE NO SMALLER THAN INLET PIPE.
- H) TOP OF BAFFLE PIPE TERMINATES NO LOWER THAN BAFFLE HEIGHT.
- I) INLET CHAMBER IS $\frac{2}{3}$ TOTAL CAPACITY; OUTLET CHAMBER IS $\frac{1}{3}$ TOTAL CAPACITY.
- J) 6" MINIMUM DISTANCE FROM CEILING.
- K) MINIMUM 6" CLEANOUT.
- L) INLET AND OUTLET PIPES MUST BE SPACED SO THAT CLEAR ACCESS CAN BE MADE FROM MANHOLES.

THIS STRUCTURE MUST DISCHARGE TO A CITY OF PORTLAND STANDARD MANHOLE WITH CHANNEL AND MUST BE RATED.

DAILY PROCESS FLOW FROM THE FACILITY WITH NO SANITARY OR OTHER EXTRANEIOUS WASTES FLOWING THROUGH IT.

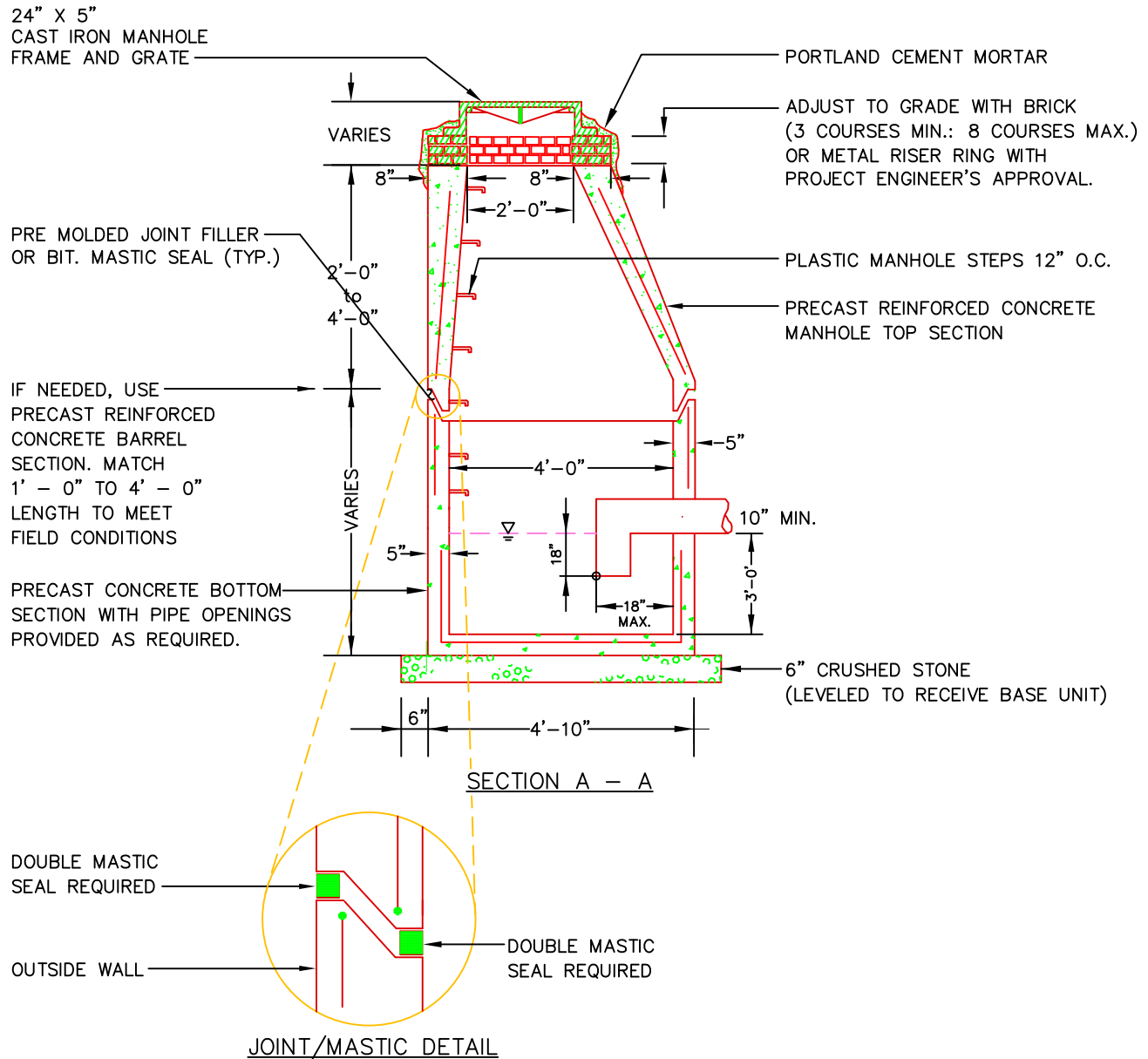


1000 GALLON GREASE INTERCEPTOR

DATE: APRIL 2014 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-19
EXTERNAL GREASE TRAP DESIGN			

NOTES:

- FOR USE IN PARTIALLY OR TOTALLY ENCLOSED PARKING GARAGES, AUTOMOTIVE REPAIR FACILITIES OR ANY OTHER PROPOSED STRUCTURE WHERE DEEMED APPROPRIATE BY THE CITY ENGINEER.
- DISCHARGE SHALL BE TO SANITARY SEWER.
- A VENT PIPE MAY BE REQUIRED THAT HAS A VERTICAL OUTLET OFF TO THE SIDE OF THE STRUCTURE.



OIL / GRIT SEPARATOR

NOT TO SCALE

DATE:
FEB 2015

REVISED:
AUG 2022

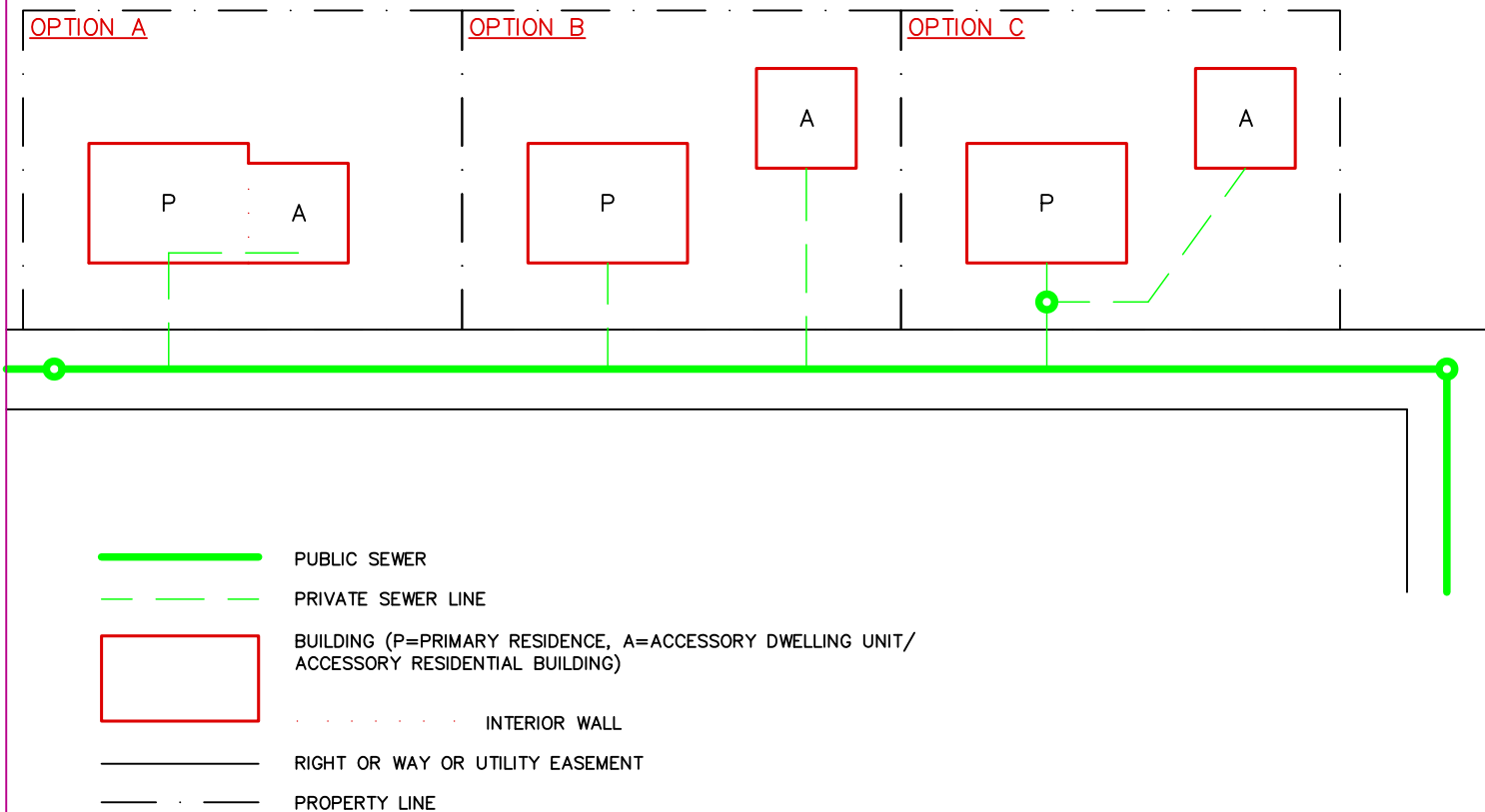
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-20

OIL / GRIT SEPARATOR



POTENTIAL SEWER LINE CONFIGURATION FOR PRIMARY RESIDENCES WITH AN ACCESSORY DWELLING UNIT
NOT TO SCALE

DATE:
APRIL 2022

REVISED:

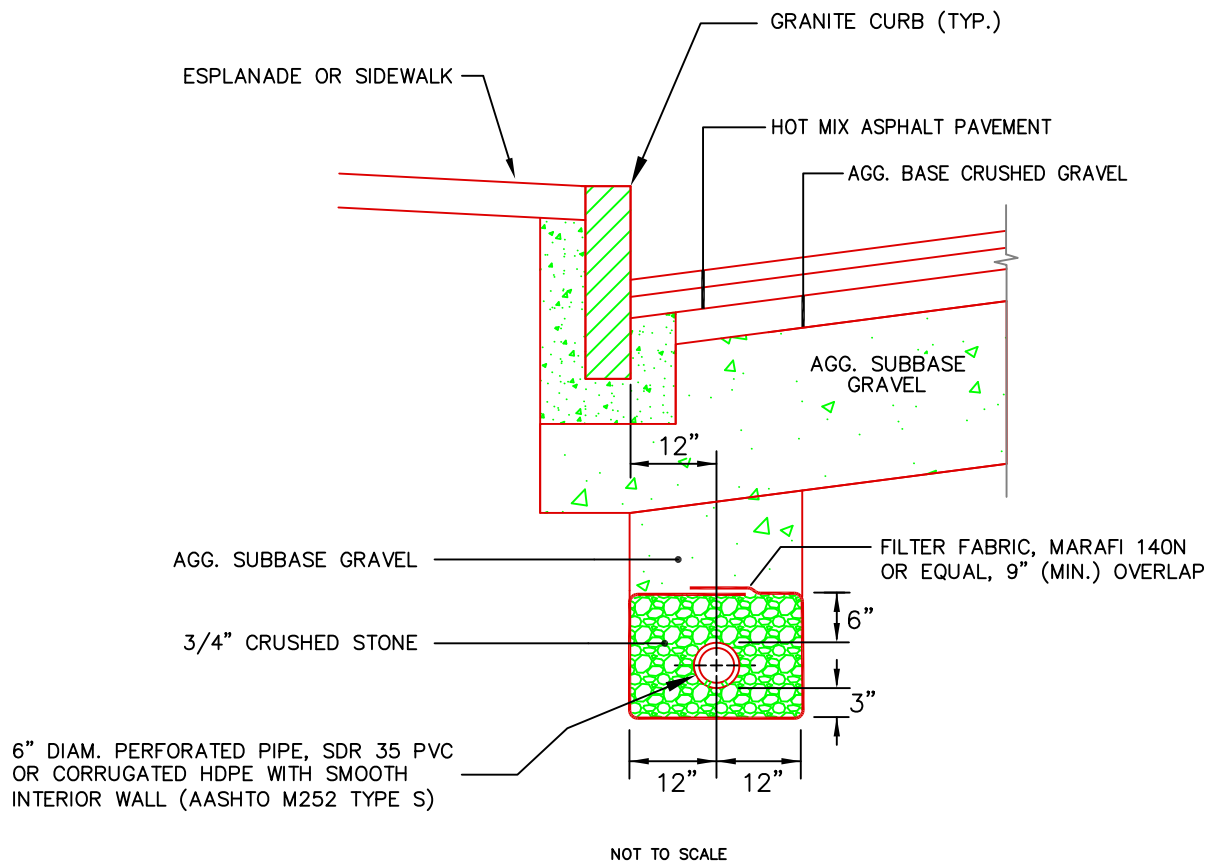
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-21

**SEWER LINE CONFIGURATIONS FOR PRIMARY
RESIDENCES WITH AN ACCESSORY DWELLING UNIT**



NOTES

1. UNDERDRAIN PIPE INVERT ELEVATIONS SHALL BE AT LEAST 42 INCHES BELOW GUTTER GRADES.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

DATE:
AUGUST 2009

REVISED:
AUG 2022

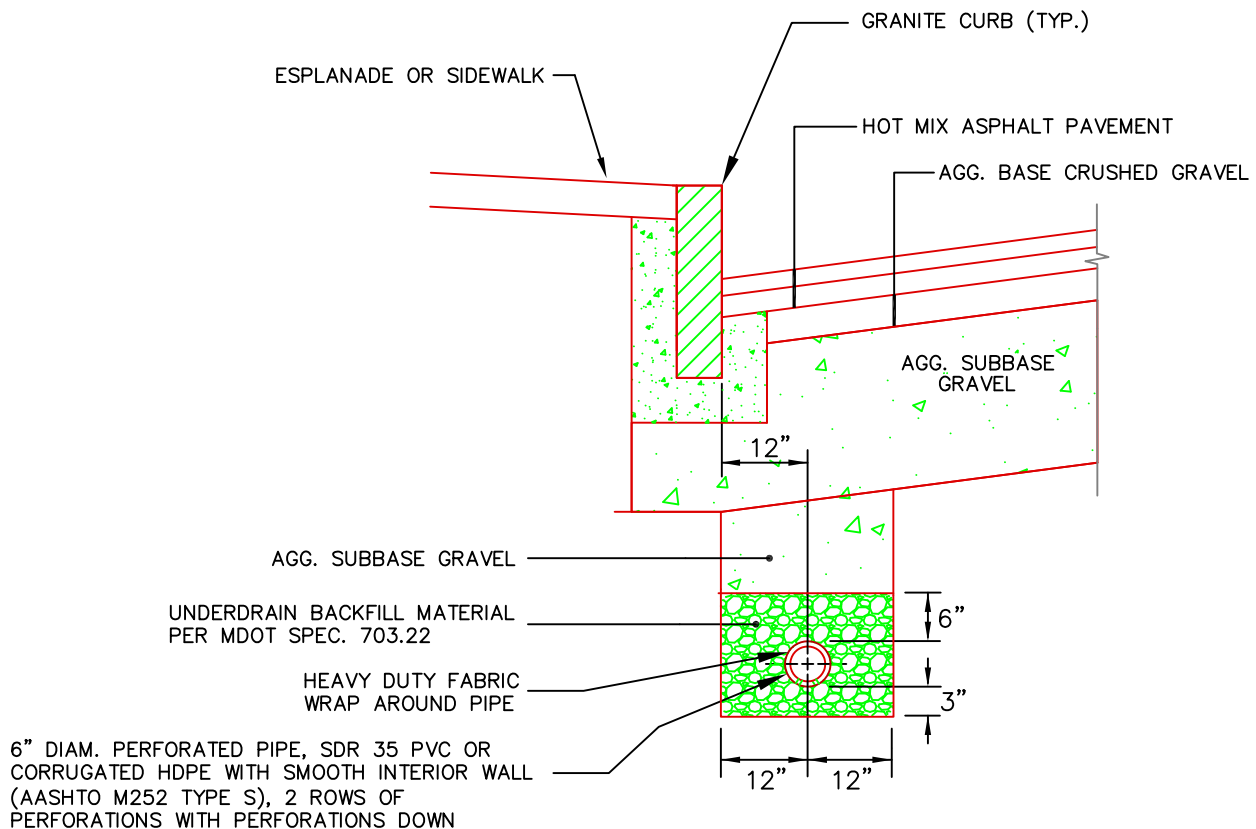
CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

FIGURE:

II-22

**TYPE "B" UNDERDRAIN INSTALLATION
ALTERNATIVE A**



NOT TO SCALE

NOTES

1. UNDERDRAIN PIPE INVERT ELEVATIONS SHALL BE AT LEAST 42 INCHES BELOW GUTTER GRADES.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN. THE PIPE SHALL BE FURNISHED WITH A HEAVY DUTY FABRIC WRAP, SUCH AS "FILTER SOCK" BY ADS.

DATE:
AUGUST 2009

REVISED:
AUG 2022

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**SANITARY SEWER AND STORM
DRAIN DESIGN STANDARDS**
SECTION II

**TYPE "B" UNDERDRAIN INSTALLATION
ALTERNATIVE B**

FIGURE:

II-23

4. LANDSCAPING AND LANDSCAPE PRESERVATION STANDARDS

4.1. DEFINITIONS

Feature mature tree: A tree located on privately owned property that meets at least one of the following criteria: 1.) Any tree that is on the Register of Big Trees promulgated by the Maine Department of Agriculture, Conservation & Forestry (the "Big Tree List"), 2.) Certain trees 24" inches in diameter or greater (diameter at breast height or DBH) as identified by City Arborist 3.) Rare tree specimen to include either a tree species classified as rare or endangered at either the state or federal level and/or included in the most current version of the Maine Register of Big Trees, published by the Maine Department of Conservation and/or stands of native trees that are rare or threatened as identified by City Arborist.

Rare tree specimen: A tree that is (1) of a species classified as rare or endangered at either the state or federal level and/or (2) included in the most current version of the Maine Register of Big Trees, published by the Maine Department of Conservation.

4.2. PRESERVATION OF SIGNIFICANT SITE FEATURES

The applicant shall clearly identify all significant natural features on the site, as defined in Article 14 of the Land Use Code, on the submitted boundary survey and site plan, and shall clarify the proposed measures for the preservation and protection of all such features both during and after construction.

4.3. PRESERVATION OF EXISTING VEGETATION

- 4.3.1. The applicant shall provide a tree survey performed by a licensed land surveyor, arborist, forester, or landscape architect. The tree survey shall clearly indicate forest type and the location, size and species of all existing trees 10" diameter at breast height (DBH) or greater on the site and in the right-of-way. For sites with a high density of existing trees, the survey shall identify all existing shade and ornamental trees that may have been part of a prior landscape scheme for the site and the location, average size and species of groves of trees, and of individual trees greater than 16" DBH.
- 4.3.2. Trees or groups of trees to be preserved shall be inspected and approved by the City Arborist or their designee and shall be clearly identified on the Site Plan, Subdivision Plat, Landscape Plan and Grading Plan. Where required by the reviewing authority, property deeds shall include language and plans to help ensure that current and future landowners are aware of all preservation

requirements tied to the property. ~~The grading plan shall clearly indicate any proposed grade changes within the drip line of trees designated for preservation.~~

4.3.3. Tree Preservation efforts shall include posted signs clearly identifying theing of 'Tree Protection Zones' or 'Limit of Work Zones' ~~in the form of obvious signage.~~

4.3.4. Fencing or other protective barriers and signage shall be erected outside the drip line of individual, groupings of or perimeter trees to be preserved.

- No storage of construction equipment, digging, trenching or other soil disturbance shall be permitted within the drip-line of trees to be preserved.
- Areas of trees or other vegetation to be preserved shall not be used for temporary stormwater runoff storage during construction.
- Protective barriers and signage shall remain in place until completion of the project.

During the pre-construction meeting and prior to the onset of any construction including site work, the Department of Public WorksServices or their designee shall inspect all installed protective barriers.

4.3.5. Tree preservation locations and measures to protect preserved vegetation shall be identified or noted in detail on the Landscape Plan and cross-referenced on the Site Plan, Subdivision Plat and Grading Plan.

4.3.6. Upon completion of the project, plant material that has been designated for preservation shall be subject to the maintenance and inspection requirements outlined in this section. Preserved vegetation ~~and new plantings~~ that show signs of construction damage within a one year period following construction, including but not limited to bark damage or excessive root damage, grade changes other than those originally indicated in the approved grading plan, soil compaction due to heavy equipment traversing closely, or general decline due to mechanical or natural conditions shall be rejected and must be replaced prior to the release of any defect guarantee. Any rejected tree will be subject to the following replacement requirements:

- For every existing tree rejected that is between 10" and 15" in caliper DBH, one (1) replacement tree listed on the City of Portland approved native species list shall be planted on the site.
- For every existing tree rejected that is 16" or more in caliper DBH, two (2) replacement trees listed on the City of Portland approved native species list shall be planted on the site.

- ~~For every existing tree rejected that is between 10" and 15" in caliper DBH, one (1) replacement tree listed on the City of Portland approved native species list shall be planted on the site.~~

4.3.7. The developer shall be responsible for making all contractors aware of preservation requirements prior to any construction activities. See ~~specification~~Figure IV-2 for typical tree preservation detail.

4.4. Reserved.

4.5. SITE LANDSCAPING

4.5.1. All Landscape Design

Site landscaping should ~~establish result in~~ attractive, low-maintenance outdoor spaces that incorporate site definition and screening and ~~be selected to achieve one or more of the following outcomes; promote a healthy and biodiverse urban ecosystem, further City goals around climate resiliency and mitigation, create or enhance areas of native habitat, improve stormwater treatment, and/or increase local food production.~~support biodiversity.

4.5.2. Screening and Buffers

Where required, buffer areas shall be comprised of existing trees and vegetation, new landscaping or a combination thereof to create a dense, mixed buffer incorporating both understory and tree canopy layers. While primarily of benefit from a ground level pedestrian viewpoint, such screening should also effectively provide screening when viewed from upper floors of surrounding properties, where applicable. New shrubs shall be approximately three (3) feet in mature height and shall be spaced ~~six (6) to eight (8)~~6-8 feet apart. ~~Specification~~Figure IV-3 provides an example of buffering between compatible uses.

Buffers between land uses: Buffers between contrasting land uses may incorporate earthen berms not exceeding 4:1 slope, opaque fencing ~~of high architectural quality~~, masonry wall or a combination thereof, in addition to landscape plantings. Where fencing or masonry wall is proposed as part of a buffer, less landscaping density is acceptable; however, buffers shall still include trees, shrubs and other vegetation. Figure IV-7 provides an example of

screening between different land uses.

Buffers between site components: Landscaped buffers within the site shall complement and enhance ~~and~~ structures and site amenities, provide screening between structures, and buffer undesirable views from general public areas, from existing structures and from residents of proposed units. Accessory site elements such as parking and loading areas, utility structures, dumpsters, storage areas and other hardscaped or unvegetated areas, shall be located and screened from view from public areas and adjacent properties. Screening shall be accomplished with opaque fencing of high architectural quality, masonry wall and/or dense evergreen landscaping. Where fencing or masonry wall is proposed as part of a buffer, less landscaping density is acceptable; however, buffers shall still include trees, shrubs and other vegetation. ~~Specification Figures~~ IV-6 and IV-7 provides an example of screening of accessory site elements.

4.5.3. Industrial and Commercial Development

In addition to other requirements of the City Code and of this section, industrial and commercial developments shall incorporate landscaping that:

- Enhances proposed buildings with foundation plantings in the vicinity of public entrances to all buildings and in areas with uninterrupted or predominantly blank facades (~~Illustration Figure~~ IV-5 provides an example of interior site landscaping for commercial and industrial sites).
- Defines roadways and driveway entrances.

4.5.4. Planned Residential Unit Development (PRUDs)

Required trees to be planted and/or preserved shall separate and screen proposed buildings and separate and screen proposed recreational uses. Where cul de sacs are provided, landscaping consisting of native or adapted low maintenance vegetation shall be provided. See ~~Illustration Figure~~ IV-4 for typical cul de sac landscaping.

4.5.5. Parking Areas

Landscaping shall be incorporated into the development of surface parking to reduce adverse environmental and aesthetic impacts, to shade pavement to reduce heat island effect and to screen parking areas from public view. Plant materials shall be selected for appearance, durability, and tolerance to salt. ~~Illustration Figures~~ IV-6a and IV-6b provide examples of parking lot screening.

Landscaping that abuts areas of vehicular use shall be adequately protected and

separated from vehicles. Protection should take the form of physical or visual separation, such as be in the form of curb stops, bollards, or continuous curbing-
~~or guardrails. Protection~~Curbing and guardrails shall be designed with adequate visibility and durability in order to withstand normal snow plowing operations.

Landscaped islands shall be curbed and a minimum of eight (8) feet in width, not including curbing. The incorporation of bioretention into landscaped islands is strongly encouraged.

4.5.6. Snow Storage

Snow storage areas ~~shall not encroach on areas designated to meet minimum parking requirements but~~ may be located in landscaped areas provided that appropriate landscape materials are selected which can withstand such snow storage. Snow storage shall not be located where it would adversely impact the functionality of bioretention or other stormwater management systems.

4.5.7. Walls and Fences

Fences and walls within public view must be of high architectural quality. Chain link and wire mesh fences shall be vinyl coated, dark in color, out of direct public view and shall be comple~~me~~mented with landscaping.

- For residential development, chain link fence shall be a minimum of 6-gauge fence fabric.
- For commercial or industrial development chain link fence shall be 9-gauge fence fabric mounted on schedule 40 pipe posts.

~~Electrified or barbed fencing is not permitted.~~ Masonry walls shall be constructed of stone, brick or other durable and attractive materials.

~~-Concrete block walls are not permitted except where variety in color, design and detailing of the materials are of high architectural quality.~~ Electrified or barbed fencing is not permitted.

4.5.8. Slope Stabilization

Stabilization of slopes between 5% and 50% shall incorporate installation of a mixture of vegetation, organic mulch and/or erosion control seed mix.

Stabilization of slopes greater than 50% must incorporate biotechnical and/or structural methods including but not limited to terracing rip rap or retaining

walls in addition to vegetation. Retaining walls, if four (4) feet in height or greater from the ~~proposed finished grade~~ bottom of the footing to the top of the wall and/or if supporting a surcharge, must be designed by a licensed ~~structural~~ engineer and require a City of Portland Building Permit.

4.5.9. Low Impact Development (LID) Practices

It is the City's policy to encourage Low Impact Design (LID) strategies and practices to capture and infiltrate stormwater runoff. LID is the process of developing land to mimic the natural hydrologic regime. It incorporates land planning and design practices and technologies to achieve this goal. LID is also discussed in Section V of this Technical Manual.

LID strategies and practices relating to site landscaping requirements include but are not limited to bioretention, grassed filter strips, green roofs, rain gardens and vegetated swales.

4.5.10. Climate Positive Planting

Site landscaping should be selected in part to further the City's goals around mitigating the effects of a locally changing climate, with consideration given to the viability of species in a warming environment, the equitable extension of tree canopy to address the urban heat island effect, and the use of landscaping elements to reduce energy consumption.

4.6. STREET TREES

Arrangement and spacing of trees proposed in the City right of way and/or private roadway, shall be coordinated with the Portland City Arborist or their designee. If it is determined by the City Arborist that there is not adequate space or conditions for street trees in the public right of way and/or private roadway or if there is a conflict between the location of proposed street trees and the location of existing or proposed underground utilities, the required number of street trees shall be provided on private property within twenty (2019) feet of the property line along the street frontage. Tree species shall be selected according to the City of Portland recommended tree list (Figure IV-1). Trees proposed in the sidewalk shall be planted in with approved tree wells/grates, as shown in Figures IV-4a, 4b, and 4c and as required by the City Arborist based upon site context and prospects for tree survival⁶.

4.6.1. Residential Development

Single-family residential: Single-family residential developments shall provide a minimum of two (2) street trees per unit, planted in the City right of way and/or

along private roadways unless otherwise approved and spaced twenty-five (25) to thirty-five (35) feet on center.

Multi-family residential: Multi-family residential developments shall provide a minimum of one tree per unit, planted in the City right of way and/or along private roadways unless otherwise approved and spaced thirty (30) to forty five (45) on center.

Single-family residential subdivisions: Single-family residential subdivisions shall provide a minimum of two (2) trees per lot, planted in the City right of way and/or along private roadways unless otherwise approved and spaced thirty (30) to forty-five (45) feet on center.

4.6.2. Planned Residential Unit Developments (PRUDs)

Where a manufactured housing park or subdivision is also a planned residential unit development (PRUD), the development shall provide a minimum of two (2) street trees per unit, planted within ~~eight (8) to ten (10)~~ 8-10 ft feet of the City right of way and/or private roadway proposed as part of the development.

4.6.3. Commercial, Industrial and Institutional Development

Commercial, industrial and institutional developments shall provide street trees thirty (30) to forty-five (45) feet apart on center in the City right of way along all street frontages unless otherwise approved.

4.6.4. Street Tree Alternatives

Section 14.6.2 of the Land Use Code states that where the applicant can demonstrate that site constraints prevent the planting of required street trees in the City right of way and/or along private roadways, the review authority may permit the following to be counted towards the street tree requirement. The alternatives to a street tree in the ROW should help achieve the objectives of a street tree and contribute to the street environment. The following specifications are provided to guide the applicant; the acceptability of the alternative to a street tree shall be at the discretion of the City Arborist.

- The preferable location for new street trees that cannot be located in the ROW along the frontage of the site is on public land ~~or facilities~~ elsewhere in the neighborhood, or in areas of the City with minimal tree coverage. Locations may include esplanades, ~~and~~ sidewalks and existing empty street tree wells or planting strips, in the neighborhood, and also places such as parks, playgrounds, and other areas where the public benefit would be derived from the addition of new trees. Evidence that the planting site was unlikely to be redeveloped in the near future and that the trees would be protected and maintained ~~looked after would also be~~ are required.

- ~~• The requirement for street trees may be met by incorporating measures to enhance tree survival (such as raised planters, irrigation and structural soils) where these have been recommended and agreed by the City Arborist. The objective is to improve the likelihood of the new tree becoming established and to reduce the need for costly maintenance in the future. The cost of the agree measure(s) would be the basis for the calculation, as follows:-~~

$$\text{(Cost of measure(s) : (Contribution currently assessed for a new street tree) = (# of street tree equivalent))}$$

- Existing healthy street trees located in the ROW along the frontage of the site may be counted as street trees. Plans for protection and preservation of these trees during construction shall be included as part of the development review.
- Existing healthy trees that are six (6) inches or more in caliper, visible from the right of way and on the site within 20 (twenty) feet of the property line may be counted as street trees. Plans for the protection and preservation of these trees during construction shall be included as part of the development review.
- New street trees may be planted where visible from the right of way within 20 (twenty) feet of the property line, subject to the species being appropriate to the location and from the Recommended Tree List (Figure IV-1). Applicants should note that trees planted within the site would be subject to the Performance Guarantee ~~d~~Defect period provisions and should be documented on deed plans for future preservation.
- ~~• Where the option to install other planted features is being considered, applicants will need to submit comprehensive information and document that the proposal would fully meet the ordinance requirements.-~~
- Where the other alternatives are demonstrated to be ~~not in~~feasible, a contribution for each required street tree may be made into the City of Portland's Tree Fund in accordance with the table below. The contribution ~~shall~~would be used by the City to provide street trees in the right of way or in the neighborhood of the proposals site or in other areas of the City with minimal tree coverage. The contribution would be considered a "one-time" ~~i~~nfrastructure ~~C~~ontribution which is payable prior to the issuance of a building permit. ~~It should be noted that at least 85% of the Tree Fund would be allocated towards new trees and 15% towards maintenance to ensure trees get established or to replace failing trees.-~~

Contribution for new street tree	\$400.00
Contribution for tree to replace "heritage" or feature mature tree	\$100.00 per inch diameter of the removed existing "heritage" or feature mature tree
Contribution where applicant plants a tree to replace "heritage" or feature mature tree	\$100.00 per inch diameter of removed existing "heritage" or feature mature tree less \$400.00

4.7. PLANT SELECTION

- 4.7.1. All trees and shrubs shall comply with the standards set forth by the American Standard for Nursery Stock (ANSI Z60.1 - 2004). These standards are available through the Department of Public ~~Works~~Services and at <http://anla.org/index.cfm?area=&page=Content&categoryID=260>
- 4.7.2. All trees and shrubs shall be nursery grown, healthy, free of disease and insect pests, and shall have a well-developed and compact root system. Plant material showing signs of a lack of proper nursery care or a lack of pruning or cultivation, or which is not true to name will be classified as collected stock regardless of its source and shall be rejected.
- 4.7.3. Proposed trees and shrubs installed as part of the landscaping plan shall be comprised of at least 50% native species.
- 4.7.4. The developer shall be responsible for preventing the spread of existing or the introduction of new invasive species on the site, as identified below. If, within one (1) year following construction, invasive species are identified on the site or if such species are pre-existing on the site but are determined to have spread by the City Arborist, the applicant shall be required to implement appropriate control measures prior to the release of the defect guarantee. Accepted mechanical and chemical control methods are provided by the Maine Natural Areas Program (MNAP) of the Maine Department of Conservation in their Invasive Plant Fact Sheets (available through the Department of Public Services and through the MNAP program website: <http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm>).

The following plant species are recognized as invasive species that are characteristically adaptable, aggressive, and have a high reproductive capacity.

- (1) Asiatic Bittersweet (*Celastrus orbiculata*);
- (2) Autumn and Russian Olive (*Elaeagnus umbellata* and *Elaeagnus angustifolia*);
- ~~-(3) Black Swallowwort (*Cynanchum louiseae*);~~
- (4) Brazilian Waterweed (*Egeria densa*);

- (5) Common and Glossy Buckthorn (*Rhamnus cathartica* and *Frangula alnus*);
- (6) Common Reed (*Phragmites australis*);
- (7) Eurasian Milfoil (*Myriophyllum spicatum*);
- (8) Fanwort (*Cabomba caroliniana*);
- (9) Garlic Mustard (*Alliaria petiolata*);
- (10) Hydrilla
(*Hydrilla verticillata*);
- (11) Japanese Barberry (*Berberis thunbergii*);
- (12) Japanese Honeysuckle (*Lonicera japonica*);
- (13) Japanese Knotweed (*Fallopia japonica*);
- (14) Japanese Stilt Grass (*Microstegium vimineum*);
- (15) Lesser Celandine (*Ranunculus ficaria*);
- (16) Mile-a-Minute Weed (*Polygonum perfoliatum*);
- (17) Morrow and Tartarian Honeysuckle (*Lonicera morrowii* and *Lonicera tartarica*);
- (18) Multiflora/Rambler Rose (*Rosa multiflora*);
- (19) Porcelainberry (*Ampelopsis*
- (20) Milfoil (*Myriophyllum heterophyllum*);
- (21) Water Chestnut (*Trapa natans*);
- ~~-(22) Norway Maple (*Acer platanoides*)~~
- (23) Yellow-flag Iris (*Iris pseudacorus*).

- 4.7.5. Trees selected from the Recommended Tree List, Figure IV-1 of this Section shall conform, at a minimum, to the sizes specified on the list.
- 4.7.6. All upright deciduous and evergreen shrubs shall be a minimum of 3 feet tall at mature height. All spreading evergreen and deciduous shrubs shall be a minimum of 2-2.5 feet in width at maturity.
- 4.7.7. Ground covers planted in lieu of grass shall be planted at a level of coverage equivalent to one complete growing season. Grass areas shall be planted with Kentucky Bluegrass (*Poa pratensis*), Red Fescue (*Festuca rubra*), Tall Fescue (*Festuca arundinacea*) or Perennial Ryegrass (*Lolium perenne* L.). Rolled turf, erosion reducing net or suitable vegetation mulch along with landscaping shall be used in swales or other areas subject to erosion. ~~Mulching material shall be a minimum of three (3) inch deep wood chip or bark mulch.~~
- 4.7.8. Mulching material shall be a minimum of three (3) inch deep wood chip or bark mulch. Inorganic mulches are not permitted.
- 4.7.9. No plantings used to satisfy City landscaping requirements shall be comprised of inorganic materials.

4.8 INSTALLATION AND MAINTENANCE OF PLANTINGS

- 4.~~8.17.10~~. Landscaping, earth moving and grading activities shall be performed according to standards accepted good planting and grading procedures and in accordance with the approved Site Plan, Subdivision Plat, Grading Plan and Landscape Plan.
- 4.~~8.27.11~~. No plant shall be moved after the bud break unless so authorized by the City Arborist or their designee. Planting periods are between April 1st and to July 1st and/or September 1st and November 1st. ~~Landscaping which cannot be installed prior to issuance of a Certificate of Occupancy shall be subject to a performance guarantee according to Article 14 of the City Land Use Code.~~
- 4.~~8.37.12~~. Tree planting and other landscaping for subdivisions that cannot be installed prior to release of the performance guarantee must be insured by a defect bond as described in Section Article 15 of the City Land Use Code.
- 4.~~8.47.13~~. All bare soil areas shall be vegetated and/or mulched prior to the issuance of a Certificate of Occupancy.
- 4.8.5. New vegetation that shows signs of construction damage within a one year period following construction, including but not limited to bark damage or excessive root damage, grade changes other than those originally indicated in the approved grading plan, soil compaction due to heavy equipment traversing closely, or general decline due to mechanical or natural conditions shall be rejected and must be replaced prior to the release of any defect guarantee.

City of Portland Recommended Tree List

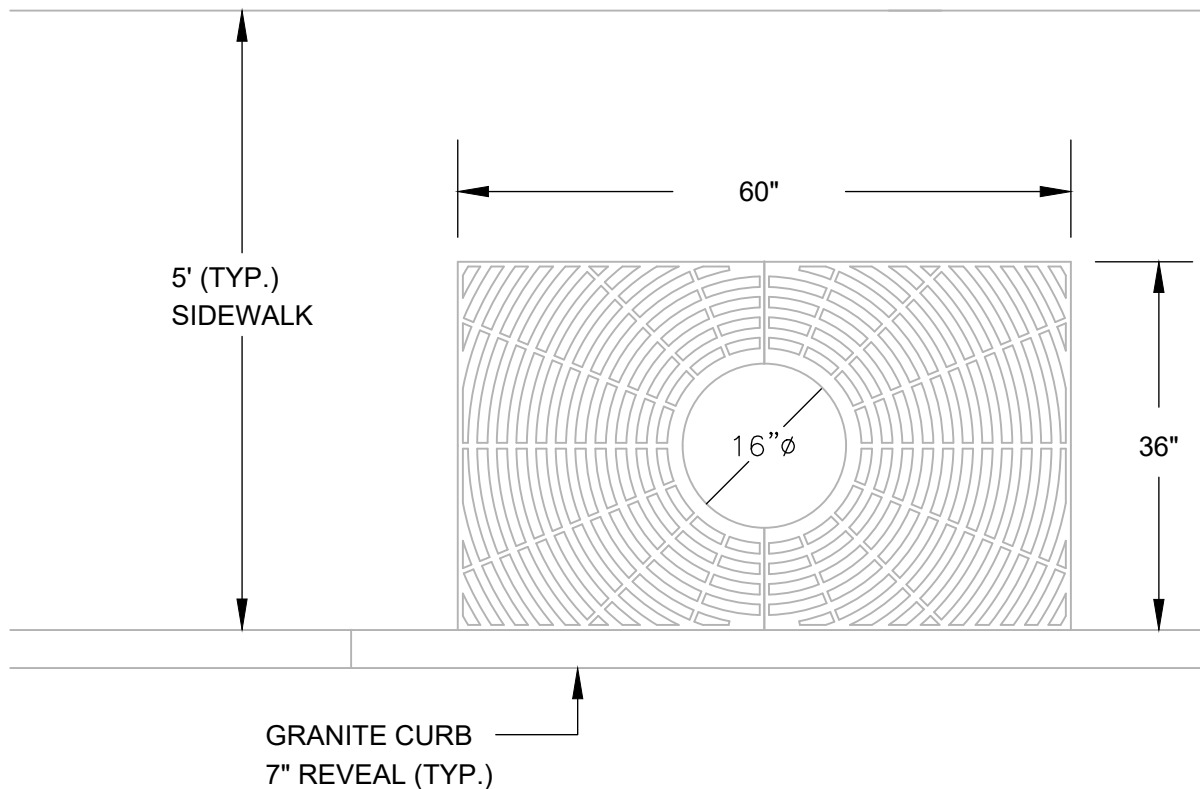
Small Trees - (Mature Height < 25')					
Common Name	Botanical Name	Cultivars	Uses	Native	Notes
Amelanchier or Shadbush	<i>Amelanchier</i>	"Autumn Brilliance", "Cumulus", "Robin Hill Pink"	Street tree/ Naturalize	X	Single stem tree forms
European Hornbeam	<i>Carpinus betulus</i>	Upright forms available	Street tree		
American Hornbeam	<i>Carpinus caroliniana</i>		Lawn, Landscape	X	
Hawthorn	<i>Crataegus crusgalli</i>	Cusgali', 'Winter King'	Street tree		Thornless
Flowering Crabapple	<i>Malus x</i>	"Adirondack", "Springsnow"	Street tree		
Sargent Cherry	<i>Prunus sargentii</i>	"Accolade", "Pink Flair"	Street tree & Ornamental		
Striped Maple	<i>Acer pennsylvanicum</i>		Naturalize	X	Naturalizing in shaded areas
Magnolia	<i>Magnolia spp.</i>	Many cultivars	Ornamental		
Hop-Hornbeam	<i>Ostrya virginiana</i>		Naturalize	X	Tolerates shade / understory
Sourwood	<i>Oxydendrum</i>		Ornamental	X	Interesting lat summer flower
"Arnold's Promise" Witchhazel	<i>Hamamelis</i>				

Medium Trees to Large trees 25' > 45'					
Common Name	Botanical Name	Cultivars	Uses	Native	Notes
Red Maple	<i>Acer rubrum</i>	"Armstrong", "Bowhall", "Karpick", "Red Pointe"	Street tree Landscape use	X	Cultivars from upright to oval shape
Sugar Maple	<i>Acer saccharum</i>	"Green Mountain"	Naturalize Landscape use	X	
White Birch		"Renaissance Reflection"	Naturalize	X	
River Birch	<i>Betula nigra</i>	"Heritage"	Naturalize	X	
Yellow Birch	<i>Betula lenta</i>		Naturalize	X	
Hackberry	<i>Celtis laevigata</i>		Street tree		
Ginkgo	<i>Ginkgo biloba</i>	"Mygar", "Autumn Gold"	Street tree		
Thornless Honeylocust	<i>Gleditsia inermis</i>	"Streetkeeper' (Upright form)	Street tree		
Tuliptree	<i>Liriodendron</i>		Street tree		
Tupelo	<i>Nyssa sylvatica</i>		Naturalize		
Swamp White Oak	<i>Quercus bicolor</i>		Street tree/Naturalize		
Red Oak	<i>Quercus rubra</i>		Street tree/Naturalize		
Upright-Growing Oaks	"Beacon" Oak "Urban Pinnacle" Oak "Kindred Spirit" Oak "Regal Prince"		Street tree/Naturalize Street tree/Naturalize Street tree/Naturalize Street tree/Naturalize		
American Elm	<i>Ulmus americana</i>	"Accolade", "Princeton"	Street tree	X	
Lacebark Elm	<i>Ulmus parvifolia</i>		Street tree		Interesting bark
Zelkova	<i>Zelkova serrata</i>	Musashino Zelkova	Street tree		

Conifers					
Common Name	Botanical Name	Cultivars	Uses	Native	Notes
Alaska Cedar	<i>Callitropsis nootkatensis</i>	Alaska Weeping Cedar	Buffer planting		Fast growing
Red Cedar	<i>Juniperus virginiana</i>		Naturalize/ Ornamental	X	
Eastern Larch or Tamarack	<i>Larix laricina</i>		Naturalize/ Ornamental	X	Deciduous
Dawn Redwood	<i>Metasequoia</i>		Ornamental		Deciduous
White Spruce	<i>Picea glauca</i>		Naturalize	X	
Serbian Spruce	<i>Picea omorika</i>		Ornamental		Upright / good for narrow locations
Pitch Pine	<i>Pinus rigida</i>	Small sizes available	Naturalize	X	Full sun, sandy soils
White Cedar	<i>Tuja occidentalis</i>	"Dark American", "Techny"	Naturalize	X	Can be pruned into hedge

NOTES:

1. 16"Ø EXPANDABLE TREE OPENING. 0.25" SLOT OPENINGS.
2. ALL TREE GRATES SHALL COMPLY WITH CITY TECHNICAL STANDARDS AND MUST BE APPROVED BY THE CITY ARBORIST.
3. FINAL PLACEMENT LOCATION OF TREE GRATES SHALL BE APPROVED BY DPW AND SHALL CONSIDER SIDEWALK WIDTH AND ADA COMPLIANCE, ON-STREET PARKING CONFIGURATIONS, ABOVE AND BELOW GROUND UTILITIES AND OTHER OBSTRUCTIONS.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY. SEE SIDEWALK CONSTRUCTION DETAILS IN SECTION 1 OF THE TECHNICAL MANUAL.
5. WHEN THE TREE GRATE IS INSTALLED IN A CONCRETE SIDEWALK, A NOTCH MUST BE INSTALLED ALONG THE EDGE TO HOLD THE GRATE, WHEN INSTALLED IN A BRICK SIDEWALK IT REQUIRES A FRAME TO BE INSTALLED TO HOLD THE GRATE IN PLACE.



PLAN VIEW

EXPANDABLE TREE GRATE **NEENAH MODEL R-8810**

NOT TO SCALE

<http://www.nfco.com/literature/TreeGrateCatalog22/Avenue.pdf>

DATE:
AUGUST 2022
REVISED:

CITY OF PORTLAND, MAINE
TECHNICAL STANDARDS MANUAL

**LANDSCAPE AND
LANDSCAPING PRESERVATION
EXISTING VEGETATION
STANDARDS - SECTION IV**

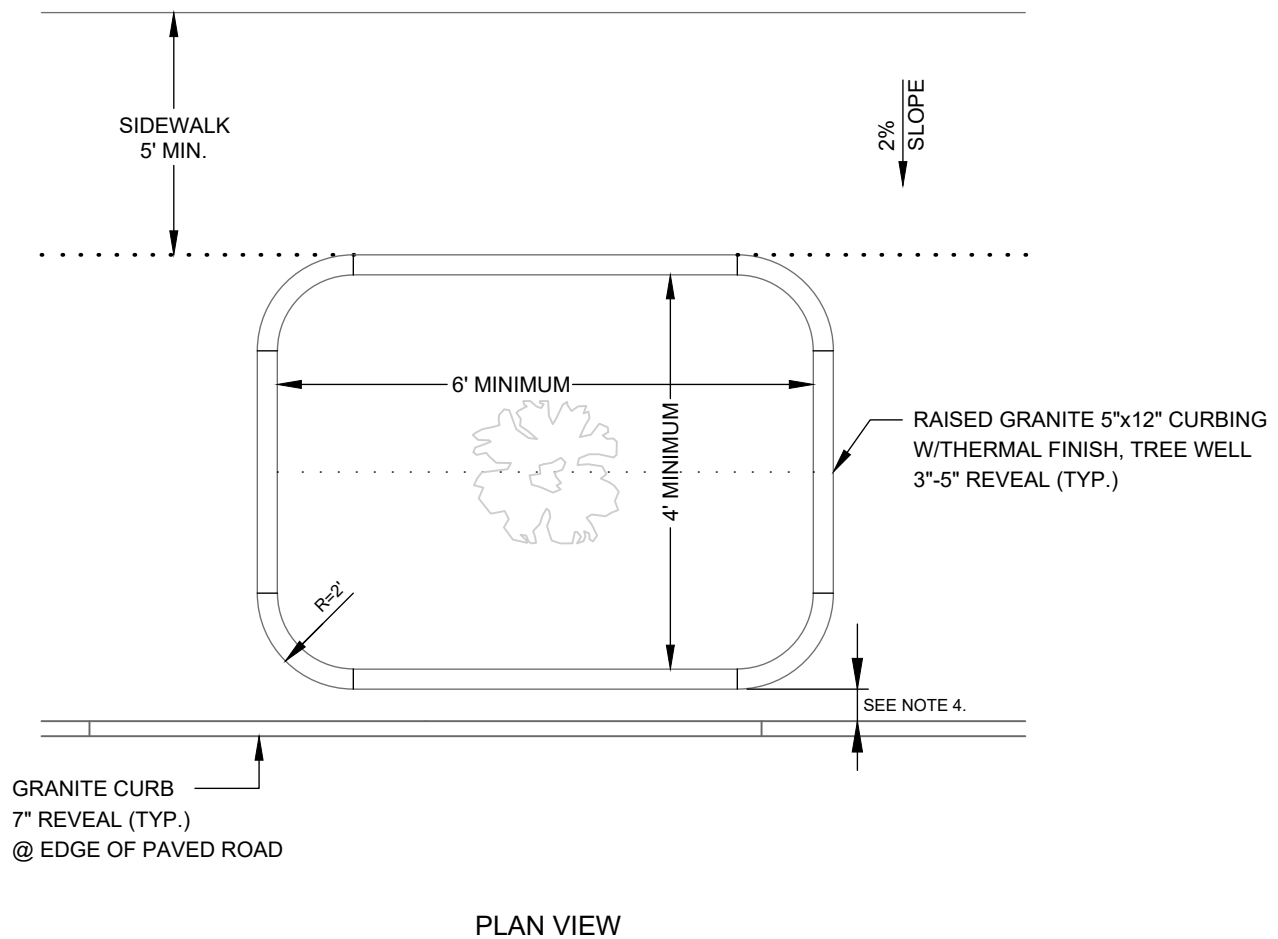
FIGURE:

**EXPANDABLE TREE GRATE FOR
NARROW RESIDENTIAL URBAN STREETS**

IV-4A

NOTES:

1. ALL TREE WELLS SHALL COMPLY WITH CITY TECHNICAL STANDARDS AND MUST BE APPROVED BY THE CITY ARBORIST.
2. FINAL PLACEMENT LOCATION OF THE GRANITE CURB TREE WELL SHALL BE APPROVED BY DPW AND SHALL CONSIDER SIDEWALK WIDTH, STREET PARKING STATUS, ABOVE AND BELOW GROUND UTILITIES AND OTHER OBSTRUCTIONS.
3. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY. SEE SIDEWALK CONSTRUCTION DETAILS IN SECTION 1 OF THE TECHNICAL MANUAL.
4. RAISED CURB TREE WELLS SHALL BE OFFSET A MINIMUM OF 2 FEET OFF THE CURB LINE IN LOCATIONS WHICH ABUT ON-STREET PARKING UNLESS IT CAN BE DEMONSTRATED THAT THE PLACEMENT OF THE TREE WELLS WILL NOT INTERFERE WITH THE OPENING OF VEHICLE DOORS.



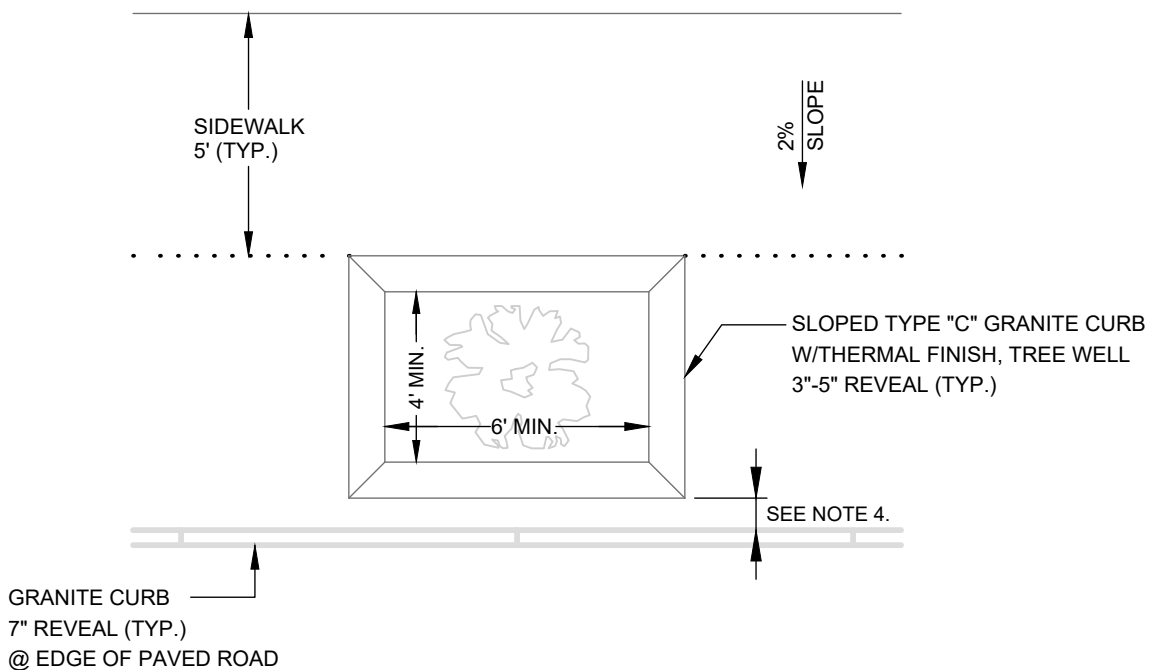
GRANITE BORDER TREEWELL IN SIDEWALK WITH NO ESPLANADE

NOT TO SCALE

DATE: AUGUST 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	LANDSCAPING AND LANDSCAPE PRESERVATION STANDARDS - SECTION IV	FIGURE: IV-4B
	GRANITE BORDER TREE WELL IN SIDEWALK WITH NO ESPLANADE		

NOTES:

1. ALL TREE WELLS SHALL COMPLY WITH CITY TECHNICAL STANDARDS AND MUST BE APPROVED BY THE CITY ARBORIST.
2. FINAL PLACEMENT LOCATION OF THE GRANITE CURB TREE WELL SHALL BE APPROVED BY DPW AND SHALL CONSIDER SIDEWALK WIDTH, STREET PARKING STATUS, ABOVE AND BELOW GROUND UTILITIES AND OTHER OBSTRUCTIONS.
3. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY. SEE SIDEWALK CONSTRUCTION DETAILS IN SECTION 1 OF THE TECHNICAL MANUAL.
4. RAISED CURB TREE WELLS SHALL BE OFFSET A MINIMUM OF 2 FEET OFF THE CURB LINE IN LOCATIONS WHICH ABUT ON-STREET PARKING UNLESS IT CAN BE DEMONSTRATED THAT THE PLACEMENT OF THE TREE WELLS WILL NOT INTERFERE WITH THE OPENING OF VEHICLE DOORS.



PLAN VIEW

SLOPED TYPE "C" TREE WELL IN SIDEWALK WITH NO ESPLANADE

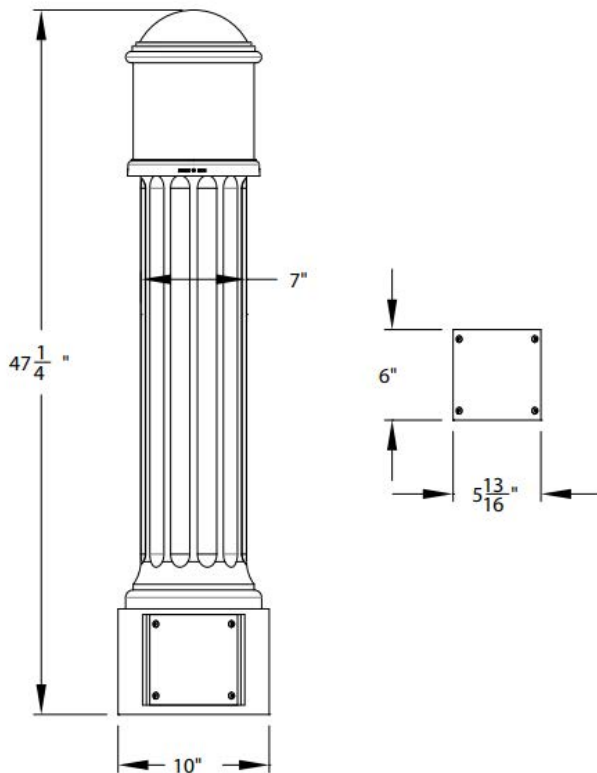
NOT TO SCALE

DATE: AUGUST 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	LANDSCAPING AND LANDSCAPE PRESERVATION STANDARDS - SECTION IV	FIGURE: IV-4C
	SLOPED TYPE "C" GRANITE TREE WELL IN SIDEWALK WITH NO ESPLANADE		



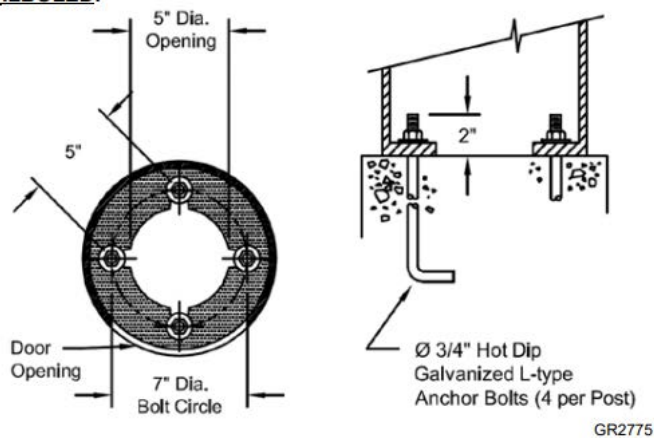
PORTLAND | me

Street & Sidewalk Lighting BOLLARD



Maximum standard weight - 58 lbs.
Maximum weight with Direct Burial Base Option - 88 lbs.

HLBOLED:



LUMINAIRE

Hamilton LED Series Cast Aluminum Bollard
Model: HLBOLED CA P40 30K MVOLT GL5 ACS BK
AO ABG

Mechanical Specifications

Be heavy grade A356.1 cast aluminum (aluminum with <1% copper)
Wet locations listed
One-piece casting with a removable top
All welders shall be certified per Section 5 of ANSI/AWS D1.2-90

Access door opening for anchor bolts and wiring access is 3" x 5" x 4.5"

The finish shall utilize a polyester powder coat paint to ensure maximum durability rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117) on standard BLACK.

Optical Specifications

IP65 light engine
Type 5 distribution with prismatic borosilicate glass and a smooth clear acrylic outer lens

Control Options

Field adjustable output to adjust output to luminaire - AO

Electrical Specifications

The driver shall meet the following requirements:

Certified by UL or CSA for wet locations
A factory programmable electronic driver with 0-10V dimming
LEDs shall have a minimum of 70 CRI and available in 3000K CCT

The electrical system shall be designed to meet ANSI/IEEE C62.41.2 and shall offer a 10kV/5kA surge protection, fail off.

FINISH

Black (standard)

APPLICATION

Sidewalk lighting where height is limited - underpasses, parks, piers

Can be used as a security bollard.

Spacing: To be determined by Department of Public Works per specific project

Date:
May, 2022

CITY OF PORTLAND, MAINE
TECHNICAL MANUAL

MUNICIPAL STREET
LIGHTING STANDARDS
SECTION 10

Figure:

X-3

Revised Date:

LIGHTED BOLLARD



LED Bollards

Pedestrian & Walkway Lighting

LED Bollards

Reliable Period Outdoor Lighting
for Pedestrian Areas
and Walkways



Holophane® decorative bollards provide an attractive pedestrian area solution to complement the full line of decorative posts by transitioning flawlessly from the street to pedestrian walkway. Our bollards offer robust cast aluminum construction, combined with a durable polyester powder coat finish. And now, our new LED bollards further enhances your space by providing an energy saving yet visually comfortable set of lighting solutions. The long life of our LED light engines is combined with robust construction to provide you an expected service life of 20 years or more.

The Holophane Difference

- + Lumen packages ranging from 520 to 3,070 lumens
- + Six period style form factors to compliment your architectural design
- + Three models with dedicated optics to further enhance performance and visual comfort
- + Five different optical distribution options
- + 2700K, 3000K and 4000K CCT
- + 20kV/10kA surge protection option available
- + Robust CSA rated mechanical design with IP66 optics
- + Polyester paint finish with 5,000 hour salt fog rating ensures system reliability
- + Utility-friendly design features including removable access door and optional three stage terminal block
- + Field-adjustable lumen output module to fine tune light levels
- + Optional external electrical receptacle
- + Eyebolts for chain linking bollards is also optional
- + Button style photocontrols with 3 voltage options

Optical LED Bollards

Each of the three optical LED bollards are available in multiple optical configurations to help control distribution and provide visual comfort. Options include prismatic glass refractors, specular louvers and opaque white lens.

Hamilton (HLBOLED)	Columbia (CLBOLED)	Plymouth (PLBOLED)
Optical Performance Options		
Two Aluminum louvered options + 520–1,330 lumens + White powder coat, Type V Symmetric + Anodized, semi specular, Type V Symmetric	Prismatic glass refractor + 1,260–3,000 lumens + Type III asymmetric + Type V symmetric	Opaque Lens + 1,000–2,500 lumens + No internal optic, Type V

Slotted LED Bollards

Slotted LED bollards all utilize a common optical configuration whereby light is emitted equally in all directions through an array of slots. This provides a symmetrical Type V distribution pattern.

North Yorkshire (NYBOLED)	Charleston (CHBOLED)	Wadsworth (WDBOLED)
Wide Slots + 920–2,260 lumens + No internal optic, Type V	Narrow Slots + 510–1,260 lumens + No internal optic, Type V	Wide Slots + 920–2,260 lumens + No internal optic, Type V



LED Bollards

Pedestrian & Walkway Lighting

Holophane Optical Engineering

Over a century of expertise in prismatic glass optics positions Holophane to provide customers with robust, reliable and highly efficient lighting solutions. The LED Bollards portfolio draws on that expertise to offer you multiple solutions for both your aesthetic and performance needs.



Acuity Brands Lighting, Inc.

Holophane Headquarters, 3825 Columbus Road, Granville, OH 43023

Acuity Brands Lighting Canada, Inc., 35B Minthorn Blvd., Markham, ON, L3T 7N5

Holophane, S.A. de C.V., Km. 31 Carretera Mexico-Cuautitlan 54900 Tultitlan Edo. De Mexico

Contact your local Holophane factory sales representative for application assistance, and computer-aided design and cost studies.

Warranty Five-year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Visit our web site at www.holophane.com

Prismatic Glass

Louver Options

Opaque White



Energy efficient LED Engine



Each of our optical configurations include an outer acrylic lens enclosure over the internal optical design

Catalog Number	HLBOLED CA P40 30K MVOLT GL5 ACS BK ABG	
Notes		Type

HLBOLED

Hamilton LED Series:
Cast Aluminum Bollard



General Description

The Hamilton is a decorative bollard which provides a fully integrated LED solution to complement the full line of decorative posts by transitioning flawlessly from the street to pedestrian walkway.

While maintaining the period style, the electronics are engineered to provide energy-efficient lighting and minimize maintenance components. Our bollards offer superior finish through the application of a polyester powder coat finish.

Intended use: Bollard for city streetscapes, public areas and parks, higher education campuses, paths and walkways.

Mechanical Specifications

The luminaire housing shall:

- Be heavy grade A356.1 cast aluminum (aluminum with <1% copper)
- Wet locations listed
- One-piece casting with a removable top
- Optical assembly is secured inside the shaft
- All welding shall be per ANSI/AWS D1.2-90
- All welders shall be certified per Section 5 of ANSI/AWS D1.2-90
- (4) 3/4" diameter by 18" long, hot dip galvanized L-type anchors bolts are provided and are to be installed on a 10.5" bolt circle
- Access door opening for anchor bolts and wiring access is 3" x 5" x 4.5"
- Optional Field or Factory installed hot-dip galvanized direct burial base for mounting without a concrete footing

The finish shall:

- Utilize a polyester powder coat paint to ensure maximum durability.
- Rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117) on standard and RAL finish options.
- RAL (RALxxxxSDCR) paint colors are Super Durable Corrosion Resistant, 80% gloss.

Electrical Specifications

The driver shall meet the following requirements:

- Certified by UL or CSA for wet locations
- A factory programmable electronic driver with 0-10V dimming
- LEDs shall have a minimum of 70 CRI and available in 2700K, 3000K and 4000K CCT
- The electrical system shall be designed to meet ANSI/IEEE C62.41.2 and shall offer a 10kV/5kA surge protection, fail off, as standard with an optional 20kV/10kA surge protection, fail off with indicator light, option
- Optional GFI receptacle with wet-location cover, not CSA listed

Optical Specifications

- IP65 light engine
- Type 5 distribution with a smooth white acrylic outer lens
- Type 5 distribution with a either a white or semi-specular louver and a acrylic smooth white acrylic outer lens
- Type 3 or 5 distribution with prismatic borosilicate glass and a smooth clear acrylic outer lens

Control Options

The control options shall include, but not limited to, the following:

- Field adjustable output to adjust output to luminaire - AO
- Button style photocontrol

Certification and Standards

- UL 1598 - Wet Locations Safety Listing
- Suitable for ambient temperatures -40°C to 40°C

Warranty

5-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/support/warranty/terms-and-conditions

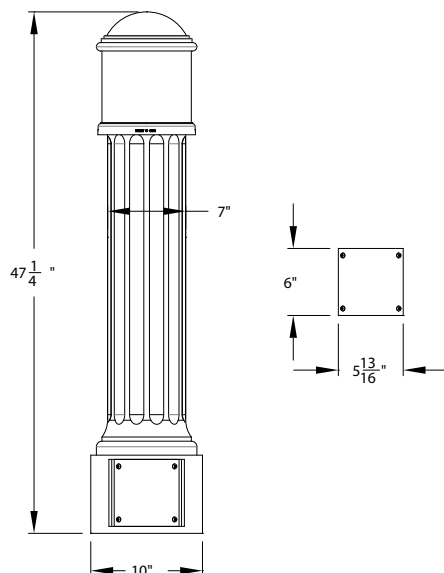
Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Important Installation Notes:

- Factory-supplied templates must be used when setting anchor bolts. Acuity Brands Lighting will not accept claim for incorrect anchorage placement due to failure to use factory template.
- Acuity Brands Lighting is not responsible for the foundation design.

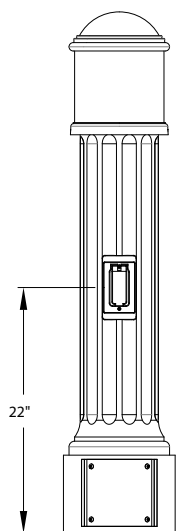


DIMENSIONAL DATA

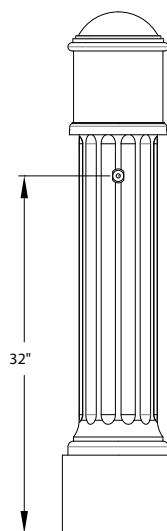


Maximum standard weight - 58 lbs.

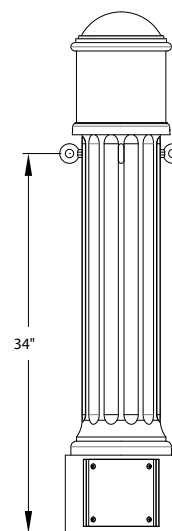
Maximum weight with Direct Burial Base Option - 88 lbs.



Receptacle Option



Photocell Option



Eyebolt Option

(more than 1 can be specified)

HLBOLED

Hamilton LED Series: Cast Aluminum Bollard



ORDERING INFORMATION

Example: HLBOLED CA P40 30K MVOLT GL5 ACS BK EB34B EB34D

Series	Material	LED Performance Package	Color Temperature	Voltage	Optics
HLBOLED	CA Cast Aluminum	P10 P10 Performance Package P20 P20 Performance Package P30 P30 Performance Package P40 P40 Performance Package	27K 2700K 30K 3000K 40K 4000K	MVOLT Auto-sensing voltage (120 thru 277) 50/60 HZ HVOLT Auto-sensing voltage (347-480) 50/60 HZ 120V 120V 50/60 HZ 277V 208-277V 50/60 HZ 347V 347V 50/60 HZ	GL3 Internal glass refractor, Type 3 GL5 Internal glass refractor, Type 5 LP5 Louver, painted white, Type 5 LS5 Louver, semi-specular, Type 5 NIO5 No internal reflector, Type 5

Lens	Color	Options / Controls
AWS Acrylic White Smooth Outer Lens ACS Acrylic Clear Smooth Outer Lens	BK Black BZ Bronze GH Graphite GN Green GR Grey PP Primer Paint WH White CMC Custom Match Color RALxxxxSDCR RAL Super Durable Corrosion Resistant, 80% Gloss Paint, replace xxxx with RAL number. XX Standard Finish, TBD	A0 Field adjustable output device EB34A Eyebolt (for chain by others) at 34° and 0° counterclockwise from door EB34B Eyebolt (for chain by others) at 34° and 90° counterclockwise from door EB34C Eyebolt (for chain by others) at 34° and 180° counterclockwise from door EB34D Eyebolt (for chain by others) at 34° and 270° counterclockwise from door PEC1 Button style photocontrol (120V) PEC2 Button style photocontrol (208V-277V) PEC3 Button style photocontrol (347V) DBB Factory Installed direct burial base for mounting without a concrete footing FGE GFI receptacle externally mounted with wet-location cover (120V) PIHEX Security Screws - Pin in hex exterior fasteners TB 3 position terminal block 20kV 20kv/ 10kA surge

Accessories: Order as separate catalog number.	
AABB2 R1	Bolt on 24" long, 3.5" scheduled 40 hot-dip galvanized steel pipe with 2" x 8" wireway opening: attachment hardware included
AB-31-4	Anchor bolts
TMP-58	Template

Important Installation Notes:

- Factory-supplied templates must be used when setting anchor bolts. Acuity Brands Lighting will not accept claim for incorrect anchorage placement due to failure to use factory template.
- Acuity Brands Lighting is not responsible for the foundation design.

HLBOLED

Hamilton LED Series: Cast Aluminum Bollard



OPTIONS MATRIX

Mounting		Performance Package				Voltage					Optic					Lens		Options															
		P10	P20	P30	P40	MVOLT	HVOLT	120V	277V	347V	GL3	GL5	LPS	LS5	NIO5	AWS	ACS	AO	DBB	EB34A	EB34B	EB34C	EB34D	FGE	PEC1	PEC2	PEC3	PIHEX	TB	20KV			
Performance Package	P10		N	N	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	P20	N		N	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	P30	N	N		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	P40	N	N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Voltage	MVOLT	Y	Y	Y	Y		N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N		Y	Y	Y		
	HVOLT	N	N	Y	Y	N		N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N		Y	Y	Y			
	120V	Y	Y	Y	Y	N	N		N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N		Y	Y	Y		
	277V	Y	Y	Y	Y	N	N	N		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N		Y	Y	Y			
	347V	N	N		Y	N	N	N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N		Y	Y	Y	Y			
Optic	GL3	Y	Y	Y	Y	Y	Y	Y	Y	Y		N	N	N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	GL5	Y	Y	Y	Y	Y	Y	Y	Y	Y	N		N	N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	LPS	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N			N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	LS5	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N				N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	NIO5	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N		Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Lens	AWS	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	Y		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	ACS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Options	AO	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y		
	DBB	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	EB34A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	EB34B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
	EB34C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y		
	EB34D	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y		
	FGE	Y	Y	Y	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
	PEC1	Y	Y	Y	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		N	N		Y	Y	Y		
	PEC2	Y	Y	Y	Y	N	N	N		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N		N		Y	Y	Y		
	PEC3	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N			Y	Y	Y		
	PIHEX	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y		
	TB	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y		
	20KV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			

LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use the factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient Temp		Lumen Multiplier
°C	°F	P10 - P40
0	32	1.04
5	41	1.03
10	50	1.02
15	59	1.02
20	68	1.01
25	77	1.00
30	86	0.99
35	94	0.98
40	104	0.97

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the platforms noted in 25°C ambient, based on 6,000 hours of IED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11). To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Lumen Maintenance - LLD (Same for all LED packages)									L70 Hrs
P10 - P40	Hours	0	25,000	36,000	50,000	60,000	75,000	100,000	
	Factor	1	0.97	0.96	0.95	0.94	0.93	0.91	> 60,000

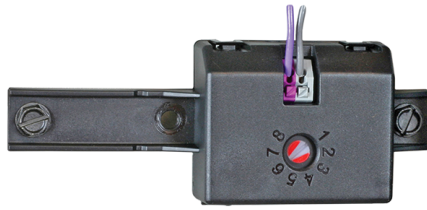
PERFORMANCE DATA

Performance Package	Distribution	Input Watts	27K (2700K CCT, 70 CRI)					30K (3000K CCT, 70 CRI)					40K (4000K CCT, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P10	GL3 ACS	12	1,181	98	1	3	2	1,197	100	1	3	2	1,260	105	1	3	2
	GL5 ACS		1,215	101	1	3	2	1,231	103	1	3	2	1,296	108	1	3	2
	LP5 ACS		499	42	0	3	1	506	42	0	3	1	532	44	0	3	1
	LS5 ACS		490	41	0	3	1	496	41	0	3	1	522	44	0	3	1
	NIO5 AWS		945	79	0	3	1	958	80	0	3	1	1,008	84	0	3	1
P20	GL3 ACS	19	1,812	95	1	3	2	1,836	97	1	3	2	1,932	102	1	3	2
	GL5 ACS		1,864	98	1	3	2	1,889	99	1	3	2	1,988	105	1	3	2
	LP5 ACS		781	41	1	3	1	791	42	1	3	1	833	44	1	3	1
	LS5 ACS		767	40	1	3	1	777	41	1	3	1	818	43	1	3	1
	NIO5 AWS		1,479	78	1	4	1	1,499	79	1	4	1	1,577	83	1	4	1
P30	GL3 ACS	25	2,322	93	1	3	2	2,352	94	1	3	2	2,475	99	1	3	2
	GL5 ACS		2,389	96	1	4	2	2,420	97	1	4	2	2,547	102	1	4	2
	LP5 ACS		1,030	41	1	3	1	1,044	42	1	3	1	1,098	44	1	3	1
	LS5 ACS		1,011	40	1	3	1	1,025	41	1	3	1	1,078	43	1	3	1
	NIO5 AWS		1,951	78	1	4	2	1,977	79	1	4	2	2,081	83	1	4	2
P40	GL3 ACS	32	2,802	88	1	4	3	2,839	89	1	4	3	2,988	93	1	4	3
	GL5 ACS		2,883	90	1	4	3	2,921	91	1	4	3	3,074	96	1	4	3
	LP5 ACS		1,246	39	1	3	1	1,263	39	1	3	1	1,329	42	1	3	1
	LS5 ACS		1,224	38	1	3	1	1,240	39	1	3	1	1,305	41	1	3	2
	NIO5 AWS		2,361	74	1	4	2	2,392	75	1	4	2	2,517	79	1	4	2

HLBOLED

Hamilton LED Series: Cast Aluminum Bollard

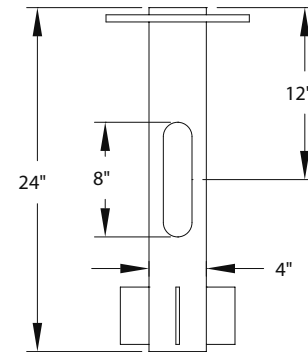
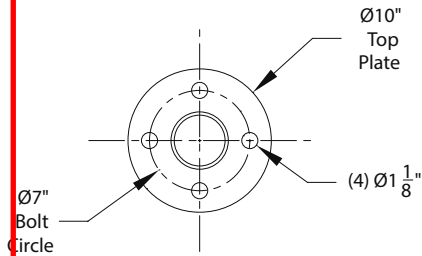
COMPONENTS & OPTIONS DATA



A0
Manual field adjustable output dimming device

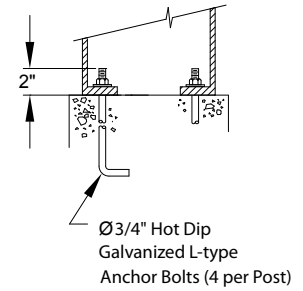
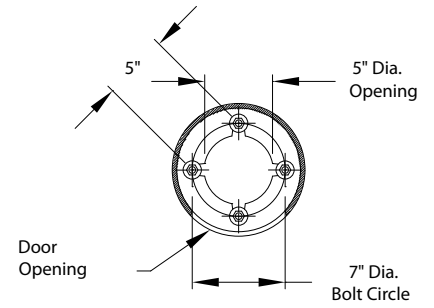


20KV
Safeguard your investment from extreme voltage spikes with our new Extreme 20kV/10kA SPD



DBB
Direct Burial Base

Weight - 30 lbs.



Base Detail

17. TRANSPORTATION STUDIES & PLANS

17.1. TRANSPORTATION STUDIES

17.1.1. Definitions. For the purposes of this section, **passenger car equivalents (PCE)** shall be defined as the number of passenger cars or, in the case of non-passenger vehicles, the number of passenger cars that would be displaced by non-passenger vehicles. One tractor trailer combination is the equivalent of two passenger cars.

17.1.2. Applicability: Developments that generate 100 PCE or more during a peak hour period, thus requiring a Traffic Movement Permit (TMP), shall meet the requirements of TMP regulations of State Law, in addition to all applicable transportation site plan standards of the City Code. For more information concerning state TMP requirements, please refer to <https://www.maine.gov/mdot/traffic/docs/229c305.pdf> <http://www.maine.gov/mdot/traffic-counts/traffic-mvmnt-app.php> or contact the Maine Department of Transportation (MaineDOT). The City of Portland is the delegated reviewing authority for TMP applications. The calculation of the PCE trip level for determination of TMP thresholds shall be made prior to trip reductions for other modes or shared trips.

Developments ~~that generating at least~~ less than 100 PCE and less than 100 PCE during a peak hour period may be required to complete a transportation study. The determination shall be made by the City Traffic Engineer, based upon the proximity of the development site to identified issues related to safety, congestion, and/or multi-modal accessibility. ~~passenger car equivalents (PCE) but require a scoping meeting because they generate 25 PCE or more and are located~~

~~(1) on an arterial; and/or~~

~~(2) within ½ mile of a high crash location; and/or~~

~~(3) within ¼ mile of an intersection that has been identified in a previous traffic study as a failing intersection, with an overall level of service below level of service D;~~

~~shall meet the following standards, if a traffic study is required:~~

17.1.3. Preparation: ~~Transportation~~ studies shall be prepared, stamped, and signed by a Professional Engineer licensed in the State of Maine.

17.1.4. Scope of Study: The City ~~Transportation~~ Traffic Engineer, in consultation with the applicant's engineer, shall determine the ~~need for and~~ scope of the ~~transportation~~ study. The scope of the study may include, but is not limited to, the following elements: ~~The requirements for the study shall be based on standard transportation engineering practice~~

A typical traffic study includes the following major sections:

- A description of the development proposal.
- A description of the existing multi-modal transportation conditions and context.
- Estimated trip generation by the development and design hour volume for site-affected driveway(s) and study intersections by mode.
- Trip generation, ~~will be~~ based upon ~~the latest edition of the current~~ Institute of Transportation Engineers data, or approved alternate methodology, by mode. Trip Generation publication unless suitable documented local data that meets ITE methodology is available.
- Trip distribution.
- Multi-modal level of service analysis pre-and post-development at study area intersections and roadway segments.
- Capacity analysis at study area intersections, including level of service (LOS), delay, volume-to-capacity ratios, and queue analysis. ~~for adjacent roadways and for any existing or proposed driveways.~~
- ~~C~~Traffic crash analysis within the study area, or expanded study area if deemed appropriate for adjacent roadways.
- Key findings ~~concerning regarding~~ multi-modal traffic and safety issues in the existing condition or as a result of project-generated trips. ~~impacts, problems, and deficiencies.~~
- Analysis of impacts to pedestrians, bicyclists, and transit service and users.
~~Proposed traffic improvements.~~
- Summary of findings and recommendations for transportation improvements and other impact mitigation measures.

17.1.5. Mitigation: Mitigation of development project impacts may be required under MaineDOT TMP regulations by the City of Portland. In some cases, where safety or capacity improvements to vehicle operations are not feasible due to constraints, mitigation may consist of in-kind multi-modal improvements to pedestrian, bicycle, and/or transit facilities. Where required, mitigation measures shall be included in the applicant's traffic transportation study, and shall be approved by the Department of Public Works prior to site plan approval.

17.2. PARKING STUDY

Parking studies shall be produced by a licensed transportation professional engineer.

Where a parking study is required, data shall be determined by values contained in the current most up-to-date version of the Institute of Transportation Engineers (ITE) publication titled Parking Generation, or through local, regional or other

pertinent national data. If local or regional data is to be used, the scope and methodology of the parking study shall be coordinated with the City Transportation Engineer.

Parking studies for mixed-use developments shall reference best practices for shared parking, both in terms of calculations and studies, such as the Urban Land Institute's Shared Parking.

Where a parking study is required, the ~~applicant's engineer shall have a scoping meeting with the City Transportation Engineer or their designee to determine the need for and required scope of the study~~ scope of study shall be determined in coordination with the City Transportation Engineer. The requirements for the study shall be based on standard transportation engineering practices.

17.3. TRANSPORTATION DEMAND MANAGEMENT (TDM)

All TDM Plans shall ~~include specific provisions for the following:~~

17.3.1. Include a Transportation Narrative:

Every TDM plan shall describe how the project fits within the multimodal transportation system serving the district in which the development or site is located. The narrative should address the specifics of the land uses, occupants, visitors, and location of the development and how it is anticipated to relate to its transportation context.

The narrative for the transportation context should address applicable existing conditions and TDM challenges and opportunities for the site related to vehicular access and circulation, the quality of the bicycling and pedestrian environment and facilities, transit service levels and the transit-supportive environment, and current levels of parking and parking policies. For existing developed sites, the current state of any TDM-related efforts should be described.

17.3.2. Identify a TDM Coordinator to administer the TDM plan:

Every TDM Plan ~~shall needs to~~ identify a TDM coordinator or coordinators ~~the plan administrator~~ and establish the roles and responsibilities of the ~~administrator~~ coordinator. The plan should demonstrate how the administration of the TDM plan and role of the TDM coordinator will reflect the scale of the site/development, proposed uses, parking and vehicle trip reduction targets, as well as the ownership and property management framework.

17.3.3. Employee and Customer Survey Document baseline TDM data:

The TDM plan shall identify baseline travel demand and supply data for the development or site in tabular format, against which future performance can be measured. Baseline data shall include:

- existing trip generation and future trip generation estimates, projections, (where applicable),
- existing or proposed parking supply and projected future demand estimates (where applicable), and
- existing or projected estimated modal split, recognizing modal split as the uniform metric to be used in TDM reporting in subsequent years.

Baseline data shall correspond to the transportation analysis required for the project, and shall represent best estimates of transportation demand and modal split at time of occupancy, given the transportation context, and shall be prepared by a qualified professional using ITE trip and parking generation data or project-specific trip and parking generation figures based on another methodology as approved by the reviewing authority. develop and use an employee and/or customer survey format that:

- Is specifically designed to reflect the use mix within the development.
- Is electronically tabulated.
- Produces comparable data from year to year
- Allows for compilation of data from multiple employers by third party.
- Allows for data use by employees to foster car pooling and ride sharing.
- Identifies barriers to or best practices in public transit, bicycle, and pedestrian transportation.
- Can be conducted periodically (typically annually) and can be used to monitor program effectiveness and provide the basis for periodic plan adjustment (see monitoring section below).

1.13.4. Set Parking and Trip Reduction TDM Targets:

The TDM plan shall establish short-term (3-5 year) and long-term modal split TDM targets, based on documented baseline transportation demand data, the combination of land uses, location, transportation context, and other data for the site. TDM Modal split targets shall relate directly to the transportation infrastructure provided, TDM strategies to be employed, and site context, and shall consider city-wide TDM goals as represented in plans, such as One Climate

Future. The metrics for TDM modal split targets shall be measurable, and shall include goals for reductions in single-occupancy vehicle trips and increases in non-single-occupancy trips, broken down by mode. The targets shall be described in both absolute values and percentage terms. The targets will be reviewed and updated based upon the annual TDM reporting. ~~intended TDM strategies to be employed use ITE trip generation and parking demand projections as the basis to establish a projected transportation demand and/or impact of the development. Alternatively, project specific parking and trip generation projections may be used in place of ITE standards, if estimated by a licensed professional engineer and approved by the City. A project specific demand analysis may be advantageous to projects that can demonstrate reduced parking demand and trip generation based on approved assumptions in their TDM and Site Plan.~~

~~The TDM plan must use the specific use, location, local alternative transportation opportunities, and initial survey results to establish an achievable percentage reduction in transportation demand for the project. The TDM plan will utilize the stated parking and trip reduction targets as the basis for reduced infrastructure and contribution requirements for the Planning Board's evaluation.~~

17.3.5. Set cCustomized d Parking and Ttrip Rreduction and modal split Sstrategies:

Every TDM plan shall include a set of strategies designed to achieve the TDM targets. The strategies should must be customized to reflect the specific mix of uses, the population that will access the site, the scale of development, the location, the vehicle trip and parking reduction targets, modal split targets, and the transportation opportunities available to the site. The strategies should also reflect a broad mix of TDM approaches, including approaches that:

- Provide TDM infrastructure and operations to the site (e.g. on-site lockers and shower facilities, transit capital or operation funding, programming that supports TDM, such as guaranteed ride home or ride-matching programs)
- Incentivize TDM options (e.g. through parking cash-out, preferential carpool parking, subsidized transit passes, subsidized bicycle maintenance, or bikeshare memberships), and
- Educate users of the site about TDM options (e.g. through site-level information-sharing mechanisms, provision of transit maps and schedules, etc.).

For additional information on TDM strategies, see

<https://www.portlandmaine.gov/721/TDM-Parking>. ~~proposed for the development. For example, A residential development will utilize a very different approach to reducing project generated parking and trips than an office building. Likewise, the administration of the TDM plan and the role of the TDM Coordinator must adequately respond to the scale of the development, the uses in the development, as well as the ownership framework and management of the~~

~~facility.~~

~~1.13.6. Education:~~

~~The TDM plan shall, at a minimum include provisions for the following. All educational information and programs shall be readily accessible to all project occupants.~~

- ~~• Transit maps and schedules. These shall be posted and updated by the TDM Coordinator, as necessary.~~
- ~~• Access to Information concerning transportation providers and guaranteed ride home services such as: carpooling list serves and/or van pool providers.~~
- ~~• Internal information sharing such as posting a "Ride Board" or employee email list serve to facilitate carpooling and to share the results of employee and customer surveys.~~
- ~~• Educational and promotional materials that describe and identify the advantages and cost saving opportunities of using alternative transportation, including specific incentives offered by the employer.~~
- ~~• Recognition of employees who reduce the traffic impact of the development through newsletter, email, bulletin board, or other announcements.~~
- ~~• Information on bicycling routes, parking infrastructure and locations and other amenities or incentives that may be available.~~

~~17.3.6.7. M~~Establish a monitoring and reporting plan:

All TDM plans must include provisions for monitoring program effectiveness over time to establish whether progress toward TDM ~~trip reduction~~ targets are being met.

Responsibility: TDM Coordinators and/or plan administrators are responsible for monitoring the efficacy of the TDM plan ~~periodically over time~~ and making adjustments to the plan as needed to achieve ~~trip reduction~~ modal split targets.

Methods: The methods ~~and scheduling~~ of monitoring shall be outlined in the TDM plan ~~and shall follow accepted transportation engineering~~. Monitoring methods will typically involve use of ~~the periodic~~ an annual survey combined with ~~direct observation~~ other data collection, such as parking utilization counts where needed.

Reporting: The results of TDM plan monitoring shall be reported to the City of Portland on an annual basis using reporting tools(s) provided by the city.
~~compiled into a report that compares the results to trip reduction targets and parking demand projections. The monitoring results shall be provided to the Reviewing Authority according to the monitoring schedule established in the TDM plan.~~

~~1.13.8. Project Specific Standards:~~

~~Individual TDM Plans shall assess the following topics on a site-specific basis tailored to the transportation needs of the development.~~

~~1. Infrastructure:~~

~~On-site and off-site infrastructure improvements may be incorporated to achieve trip reduction targets and may include the following:~~

- ~~• Public Transit Access: The TDM plan shall identify how occupants and/or visitors will access public transit. Pedestrian links to bus routes and/or other transit links shall be identified and their usability assessed for sidewalk condition, ADA accessibility, street lighting, cross walk facilities, wayfinding, and general safety and attractiveness. The nearest sheltered public transit facility shall be identified. Deficiencies in the links to public transit that constitute barriers to its use shall be addressed in the TDM plan and in the site plan.~~
- ~~• Bicycle Parking: Minimum bicycle parking is a site plan requirement according to Article 14 of the Land Use Code. The TDM plan may incorporate additional bicycle parking, bicycle wayfinding, and/or covered parking to further encourage bicycle use.~~
- ~~• On-site Shower and Locker Facilities: Access to showers and locker facilities may be incorporated into the TDM Plan in order to encourage human-powered transportation alternatives.~~
- ~~• TDM Bulletin Board or Kiosk: TDM plans shall identify to occupants where information and educational material will be provided within the development a visible and convenient facility such as a transportation bulletin board and/or kiosk. In multi-tenanted facilities, transportation information shall be provided in the lobby of the structure or other such location that is accessible and frequented by a significant majority of occupants and visitors to the facility. The TDM coordinator shall be responsible for keeping all material current and available, as needed.~~

~~2. Incentives: Incentives available to users and/or occupants of the development~~

~~may be incorporated to achieve trip reduction targets and may include the following:~~

- ~~• Parking “Cash Out”: TDM plans may include “parking cash out” incentives where employees have the choice of receiving monetary payments in lieu of provided parking. The efficacy of these programs will need to be carefully assessed and the method of monitoring must be described in the TDM plan.~~
- ~~• Public Transit Passes/Van Pool vouchers: Free or reduced price bus passes or van pool vouchers may be used as an incentive in the TDM plan. The use of transit options should be incorporated into the employee/customer survey and incorporated into the plan monitoring program. Transit payment options may be combined with parking cash out incentives, where appropriate.~~
- ~~• Preferred parking for car pool: Car pooling employees may be provided with more convenient and attractive parking, if available. If this option is incorporated into the TDM plan, the location of preferred parking shall be identified on the site plan and signed accordingly.~~
- ~~• Car sharing: Residential developments may incorporate shared car services or jointly owned vehicles into the TDM plan. Commercial development TDM plans may identify use of a shared vehicle for use by employees for either commercial or personal trips through the work day as a means to encourage alternative commuting to work.~~
- ~~• Telecommuting, flex time, and other flexible work scheduling mechanisms that promote fewer employee trips to work or promote alternative transportation travel.~~

~~*Other incentives infrastructure improvements and/or methods as may also be appropriate to the development.~~

1.1822. CONSTRUCTION PERMITTING AND TRAFFIC CONTROL PLANS

- 1.1822.1. Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & charges are all outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public [WorksServices](#).
- 1.1822.2. Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public S [WorksServices](#). Rules and Regulations for

these utility systems are available through the City Engineer's office of the Department of Public WorksServices. See also Section II of the Technical Manual for lateral abandonment requirements associated with demolition permits.

- 1.~~1822~~.3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects that will occur along ~~arterial and/or collector~~ accepted city streets are required to submit a satisfactory 'maintenance of traffic' (MOT) plan prior to any site plan, subdivision, or street opening permit approval.

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public by all modes of transportation through or along the construction work zone. On a case-by-case basis applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. These closures are to be limited to the shortest duration possible with durations specifically noted in the TCP documentation. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians. ADA-compliant access shall be maintained at all times and documented within Traffic Control Plans.
- In ~~extreme~~ some situations, flaggers may be required to allow for safe pedestrian and bicycle movement

Additional information for temporary traffic control plans is provided in Chapter 6 of the MUTCD. (https://mutcd.fhwa.dot.gov/htm/2009/part6/part6_toc.htm)

- 1.~~1722~~.4. All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public WorksServices.

- Traffic control for bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycles and pedestrians.
- Where pedestrian traffic is significant, and/or where a detour would present a significant delay and/or safety issue to pedestrians, a temporary walkway in the shoulder/parking lane/outside travel lane may be required

where possible. Any temporary walkway shall be ADA-accessible, including temporary ADA ramps leading to/from the walkway where needed, and solid, detectable barriers along the edges of the walkway. Temporary walkways shall be kept clear of snow, ice and debris by the contractor at all times. Temporary walkways shall have a minimum clear width of five (5) feet.

- Pedestrian detours shall be considered as a last resort where no other practical option is available. Where pedestrian detours are allowed, pedestrians shall be directed to cross at existing crosswalk locations where practical. Temporary crosswalks and curb ramps may be required to shorten the overall detour. Any temporary crosswalk shall be ADA-compliant and shall be located where sight distance is adequate. All temporary crosswalks shall be approved by the Department of Public Works.
- Where construction requires the closure of a bicycle lane or shared use pathway alongside a high-volume and/or high-speed roadway, bicycle traffic shall be managed by the contractor in coordination with the Department of Public Works. Treatments may include a barrier-protected bicycle lane or shared use path, or bicycle detours as a last resort.
- Barrier systems utilized to separate the construction activity from the public street and/or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.

For reference, see also “How to Plan, Document, and Implement Pedestrian Mobility in and around Work Zones”
(<https://portlandmaine.gov/DocumentCenter/View/30884/Work-Zone-ADA>)

- 1.22.5. Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works~~Services~~.

City of Portland | Department of Public Works

Michael Murray, Acting Director



To: Planning Board

From: Keith Gray, City Engineer, Justin Pellerin, Senior Engineer

Date: May 6, 2022 Updated 8/26/2022

Re: Summary of Updates to Chapter 21 of the Technical Manual

Notes: 8/26/2022 updates to this memo listed in red.

The Department of Public Works, Engineering Division, proposes to make changes to the City of Portland Technical Manual Section 1, Transportation Systems and Street Design Standards. The last time this section was updated was in 2017. The updates are significant in places, providing guidance for changes in best practices, removal of obsolete or overly complex items, and addition of a number of details. In addition, transportation study requirements have been moved to a new Section 17 for convenience of reference and shared commonality in the project approval process. These changes, in part are intended to address detail and design changes already informally adjusted by DPW to reflect current needs and practices. Further, the Department has recognized that many other best practice documents exist outside of this manual, including other City documents, and best exist separately from the Technical Manual. Items of note, changes or additions are as follows:

- Section 1 retitled as “Transportation Design Standards” to focus on specific design needs
- Moved Traffic Studies, Parking Studies, and TDM to a newly created “Section 17” for consistence
- “Sidewalks and Driveway Aprons” is now “Sidewalks and Curb Ramps” with driveway aprons in its own section
- Updated language on Americans with Disabilities Act (ADA) requirements to reflect current requirements
- Updated language on the City’s sidewalk Material Policy as per current policy requirements
- Updated language on curb extension and design approvals based on operational needs for vehicles
- New language on construction materials, pedestrian access routes, and design parameters for sidewalks
- Reduced discussion on requirements such as permitting and roadway design, with reference provided to MaineDOT Standard Specifications instead to promote consistence with City and State projects
- Parking requirements referencing the City Land Use Code for both automobiles and bicycles
- Bicycle routes and lanes design updates reference the City’s Bike Route Network Map and AASHTO design requirements for ease and consistency of reference
- Updates to City Traffic Control devices stating compliance with the Manual on Uniform Traffic Control Devices (MUTCD) and reference to the City’s Traffic Signal Policy and Guidance Manual
- The crosswalk subsection has been updated to specify that all public crosswalks shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). Other updates include public improvements definition, street markings, street lighting and signage guidance. All other standards were removed and referred to the MUTCD. Crosswalk types have been combined into a single, block-based crossing marking for consistency and clarity
- Language updated to address comments from third party transportation engineer reviewer Tom Errico throughout the document. See updated document with track changed updated language and responses to the review comments.

- Updates have been made to section 1.8 Roadway Construction, Surface and Aggregate standards to better align with Maine DOT standard specifications.

A list of the standard detail changes associated with Section 1 have been provided as part of this submission. Detail changes have been generally made for the following reasons:

- Consistency in numbering (subject to further adjustment prior to final Planning Board approval)
- More clarity in design requirements and updates where best practices have changed
- New details provided where new requirements have been provided
- Updates made to several details to address comments provided by Acorn Engineering who provided a third-party review of the section 1 details.
- Updates made to several details to provide further clarity.

In addition, the New Chapter 17, Transportation Studies includes:

- Transportation Studies section moved from Section 1, which references the location of MaineDOT's Traffic Movement Permit requirements and other requirements based on Passenger Car Equivalents (PCE's) generated by planned development projects
- Updated language to mitigation and reference to the City's Traffic Impact Fees
- Updated language on parking studies and data collection/analysis
- Updates to Transportation Demand Management (TDM) to reference emerging best practices and to provide Applicants with additional guidance for TDM Plan development
- **Updates made per Tom Errico's comments.**

Name of Detail	June 2022 Proposed		Comments (Aug 22 Updates in Red)
	2011 Detail Number	Detail Number	
LOCAL STREET CROSS SECTION	I-1	I-1	
COLLECTOR STREET CROSS SECTION	I-2	I-2	
ARTERIAL STREET CROSS SECTION	I-3	I-3	
UTILITY LOCATIONS IN STREETS	I-4	I-4	
TURNAROUND ON DEAD END STREET	I-5	I-5	
ACCESSIBLE RAMP GENERAL NOTES		I-6	New Detail
PERPENDICULAR RAMP FOR WIDE SIDEWALK WITH NO ESPLANE	I-6A	I-6A	
APEX PEDESTRIAN RAMP FOR SIDEWALK LESS THAN 6.5' WIDE		I-6B	New Detail
APEX PEDESTRIAN RAMP FOR SIDEWALK 6.5' WIDE AND GREATER		I-6C	New Detail
SIDE STREET PEDESTRIAN RAMP WHEN NO INTERSECTING SIDEWALK IS PRESENT		I-6D	
RAMP LENGTH TABLE		I-6E	
PEDESTRIAN RAMP REQUIREMENTS		I-6F	
ISLAND PEDESTRIAN CROSSINGS		I-6G	
PARALLEL ADA RAMP LAYOUT FOR NARROW SIDEWALK WITH NO ESPLANE	I-6B		
PERPENDICULAR RAMP FOR NARROW SIDEWALK WITH ESPLANE	I-6C		
DIAGONAL SIDEWALK RAMP LAYOUT FOR SIDEWALK WITH ESPLANE	I-6D		
PREFERRED SIDEWALK RAMP LOCATION AT INTERSECTION	I-6E		
SIDEWALK RAMP DETECTABLE WARNING PANEL	I-7	I-7	
SIDEWALK RAMP DETECTABLE WARNING PANEL (HISTORIC DISTRICT)	I-7A		Detail no longer needed. PB previously approved use of single DWP detail, citywide.
GRANITE STREET MONUMENT	I-8	I-8	
DRIVEWAY APRON LAYOUT	I-9	I-9A	2022 Detail specifies "Residential"
DRIVEWAY APRON LAYOUT COMMERCIAL/INDUSTRIAL		I-9B	
DRIVEWAY APRON AT CONSTRAINED SIDEWALK		I-9C	Removed 6.5' or less from title Aug 2022
DRIVEWAY APRON LAYOUT ALONG STREET FRONTAGE (NO SIDEWALK)		I-9D	Updated Detail title for clarity Aug 2022
BRICK SIDEWALK WITH BITUMINOUS BASE	I-10	I-11A	
BRICK DRIVEWAY APRON WITH BITUMINOUS BASE	I-11	I-10A	Fixed Typo Aug 2022
BITUMINOUS SIDEWALK	I-12	I-11C	
BITUMINOUS DRIVEWAY APRON	I-13	I-10C	Revised detail to add clarity Aug 2022
REINFORCED CONCRETE SIDEWALK	I-14	I-11B	
REINFORCED CONCRETE DRIVEWAY APRON	I-15	I-10B	Added salt guard note shown on I-11B Aug 2022
SIDEWALK EXPANSION JOINT		I-11D	Revised detail to add clarity Aug 2022
VERTICAL GRANITE CURB FULL DEPTH STREET CONSTRUCTION	I-16	I-12	Revised detail to add clarity Aug 2022
VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREETS	I-17		Detail no longer needed. Information included in I-12
SLOPED GRANITE CURB FULL DEPTH STREET CONSTRUCTION	I-18	I-13	
SLOPED GRANITE CURB INSTALLATION IN EXISTING STREETS	I-19		Detail no longer needed. Information included in I-13
MOUNTABLE BEVLED GRANITE CURB		I-15	
GRANITE RADIUS CURB		I-14	
SLIPFORM CONCRETE CURB			Removed Aug 2022.
TYPICAL CROSSWALK MARKINGS	I-22	I-17	Revised detail to show skewed crossing scenario and added notes Sept 2022
VEHICLE PARKING DIMENSIONS	I-27, I-28, I-29, I-30	I-16A	Consolidated into 1 detail
MOTORCYCLE PARKING	I-31	I-16B	
BIKE LANE CROSS SECTION WITH NO PARKING	I-36		Deleted Aug 2022
BIKE LANE CROSS SECTION WITH PARKING	I-37		Deleted Aug 2022
TYPICAL BICYCLE LANE PAVEMENT MARKINGS AND BICYCLE ROUTE SIGNAGE	I-38	I-18	Detail Number Changed August 2022
BICYCLE NETWORK MAP	I-35		Deleted Aug 2022; out of date
BUS STOP BOARDING AREA LAYOUT FOR SIDEWALK WITH OR WITHOUT ESPLANE	I-39	I-39	
BUS SHELTER AND SHELTER SITING LAYOUT FOR SIDEWALK WITHOUT ESPLANE	I-40	I-40	



To: Planning Board

From: Nathaniel Smith, Project Engineer Water Resources

Date: September 1, 2022

Re: Summary of Updates to Chapter 2 of the Technical Manual

The Department of Public Works, Water Resources Division, proposes to make the following changes to the City of Portland Technical Manual Section 2 Sanitary Sewer and Storm Drain Design Standards. The last time this section was updated was in 2011. The majority of this update was a reorganization of the standards to make it more clear which standards are based for sewer systems and which are for storm drain systems. Previously standards for sewer and storm were mixed together and described by item. Now each system has its own standards for pipes, manholes and other associated parts. Other global changes include changing all references of Department of Public Services to Public Works. Specific changes and or additions are as follows.

- New sections added:
 - New language about enclosed parking, mechanical rooms, and garages not exposed to the elements shall direct surface drainage to an oil/grit separator first then to the sanitary sewer. **Edited per Lauren Swett's review to include her comments.**
 - New Section providing standards for the use of force mains for sanitary sewers. **Revised 2.5.4 as recommended by Lauren Swett.**
 - New section providing standards for Accessory Dwelling Units. This section was added due to the increase of applicants wanting to install ADU's.
 - New language added on how to raise manhole frames to grade.
 - New language was added to Catch Basins to provide standards and the allowance to use field inlets when outside of the street right of way.
 - New language that all catch basins are required to have a hood on the outlet pipe.
 - New section providing standards for Grease Interceptors. These standards match Portland's Fat's, Oil, and Grease Program requirements.
 - New table showing the specifications for Gravel Aggregate.
- Edited Language
 - Revised sanitary manholes text to say that steps are not required.
 - Revised the two specifications for plastic pipe.
 - Revised the requirement that sanitary pipes shall have a minimum velocity of 2 ft/sec.
 - Revised the language on when and how a building sewer can connect to the city main with the use of a coring machine and Inserta-Tee's.

- Revised 2.6.10: Edited the language when a back flow preventer is necessary to be installed.
 - Revised the language on how to plug abandoned sewer laterals to clarify who to contact and the manner to plug the lateral.
 - Revised storm manholes text to say that steps are not required.
 - Revised language to storm drains laterals on when and how a connection can occur using a coring machine and an Inserta-Tee.
 - Added underdrain pipe specifications as recommended by Lauren Swett.
 - Revised 2.12 Aggregate specifications. Removed gravel and concrete specifications which are specified in chapter 1.
 - Revised the crushed stone pipe bedding specifications to match Maine DOT specifications for Type C crushed stone and deleted the separate different requirement for stone for pipes over 42 inches. Contractors just use the ¾" stone for all size pipes.
- Details:
 - Figure II-01 = A new table was added to list all of the details
 - Figure II-02 = Was figure 01 - Manholes - Removed the steps from the figure.
 - Figure II-03 = Changed figure from an outside drop manhole to an inside drop manhole.
 - Figure II-04 = Revised the manhole notes to give invert specifications for how large the pipes are. Added buoyancy calculations are required as recommended by Lauren Swett.
 - Figure II-05 = Revised the MH frames and covers to current approved ones. The old frames and covers are no longer made.
 - Figure II-06 = No changes.
 - Figure II-07 = Was #08. Also revised to provide more detail on the catch basin detail. Added Hood to the detail.
 - Figure II-08 = Was #07. Revised CB frames and covers to current approved ones like MH's. The old frames and covers are no longer made.
 - Figure II-09 = Revised CB hood from the old cast iron one to a new plastic one which we have been using on city projects.
 - Figure II-10 = Rotated detail and also reduced the dish from 3" to only 1.5".
 - Figure II-11 = Rotated detail. No other changes.
 - Figure II-12 = Rotated detail. No other changes. Revised gravel specifications to match Chapter 1 changes.
 - Figure II-13 through 15 = No changes.
 - Figure II-16 = Change "Y" to "WYE" in notes.
 - Figure II-17 = No changes.

- o Figure II-18 = Rotated detail. No other changes.
- o Figure II-19 = External Grease Trap – revised detail and notes to meet current text language.
- o Figure II-20 = New detail for Oil and Grit Separator. Added a note about vent pipes as recommended by Lauren Swett.
- o Figure II-21 = New detail for Accessory Dwelling Units that match the text changes.
- o Figure II-22 and 23 = These two details were in Section 1 – Transportation (#20 & #21). These both are how to install underdrains so they asked us to put them in Section 2. The details also were rotated and updated to match transportations changes.



MEMORANDUM

TO: Nell Donaldson, Director of Special Projects, City of Portland
CC: Nathaniel Smith, Project Engineer, Water Resources, City of Portland
FROM: Lauren Swett, PE
DATE: June 23, 2022
RE: Review of Revisions to Section 2 of the Technical Manual

Woodard & Curran has performed a technical review of Section 2 Sanitary Sewer and Storm Drain Design Standards from the City of Portland's Technical Manual. We have reviewed the red-lined version of the Section 2 text as well as the Section 2 Details. We have the following comments and suggestions for consideration as the City finalizes these documents.

Section 2 Sanitary Sewer and Storm Drain Design Standards

- 2.2.8 I would suggest adding additional clarification to the enclosed parking/garage requirements for drainage being directed to the sanitary sewer. There have been project questions in the past when there is a covered parking area that is open on the sides. I would suggest maybe adding the word covered (i.e. "covered or enclosed parking"). I also like how the oil separator detail refers to the spaces as "partially or totally enclosed parking garages". I would also suggest adding a statement that stormwater from outside of these areas shall be directed away from these areas so that additional stormwater is not directed to the sewer. **Added**
- 2.5.4 I do not understand this statement – it starts with an implication that existing brick manholes are allowed, but then says that replacement is performed. I think there may just be extra wording here. **Revised**
- 2.9.7 Should this restriction clarify that on-street catch basins could connect into other catch basins? In some cases drainage may run catch basin to catch basin in the street before connecting to a manhole. **At this time we want to leave it as is.**
- 2.11.8 For the option with a grease trap to install a manhole at the connection to the sanitary sewer, can this be done even for pipes smaller than 8" that wouldn't need a manhole at the main? **Removed**

Sewer and Storm Drain Details

- Figure II-4 I would suggest adding a note here that all manholes and catch basins require buoyancy calculations, and structures shall be modified as necessary based on those calculations. **Added**
- Figure II-7 The detail notes that an outlet hood is required but does not show it or give the reference to the detail. **Added**



- Figure II-9 The detail does not include any specific acceptable manufacturers. **As long as the meet the specifications we don't usually specify exact manufactures.**
- Figure II-20 One piece of the oil water separator that is often forgotten is that they typically need to have a vent pipe that has a vertical outlet off to the side of the structure. I would suggest adding a note that a vent pipe may be required. **Added**
- Figure II-22 I believe that the granite curb detail has been updated to require concrete embedment of the curb. I'm not sure if it's worth updating this detail to match? **Added**
- Figures II-22 & II-23 This detail gives specific allowable pipe requirements for underdrain. Should this information be added to the text of the standard with the information on stormdrain pipe materials? **Added**

Fwd: Technical Manual & bike lanes

Christine Grimando <cdg@portlandmaine.gov>
To: Helen Donaldson <hcd@portlandmaine.gov>

Wed, Aug 31, 2022 at 2:50 PM

Christine Grimando, AICP
Director
Planning & Urban Development Department
[389 Congress Street](#)
[Portland, Maine 04101](#)
cdg@portlandmaine.gov
www.portlandmaine.gov
<https://www.recodeportland.me>



----- Forwarded message -----

From: **Maggie Stanley** <MStanley@cwsarch.com>
Date: Wed, Aug 31, 2022 at 2:14 PM
Subject: RE: Technical Manual & bike lanes
To: Winston Lumpkins <winston.lumpkins@gmail.com>
Cc: planning@portlandmaine.gov <planning@portlandmaine.gov>, Matthew Grooms
<mgrooms@portlandmaine.gov>

Winston,

Thank you for your email. All of our communications on particular agenda items need to be included in the public record as public comment so I am copying planning staff here so they will be included. The meeting you attended was a workshop where the public and board members were able to provide feedback, but no vote occurred and this agenda item has not come back to us yet for final approval. If I remember correctly there had not been an evaluation of the separated bike lanes as of yet, but per my feed back would be considered, either in this update or future.

Your detailed comments and descriptions of the bike lane are exactly as I experienced them as a user, and with my own research came to the conclusion that they do not meet the standards of other cities that have installed them have used. They were a good idea, that was executed in rapid speed with very little public input and disregard of that input given. If there were fewer curb cuts in that stretch of roadway, they more properly connected to bike lanes at the end of the separated stretch and were wider, they may have been more successful. Thank you for including your comments and the Mass DOT standards.

Maggie Stanley

OFFICE 207-774-4441 | **MOBILE** 207-266-7803



From: Winston Lumpkins <winston.lumpkins@gmail.com>
Sent: Wednesday, August 31, 2022 1:32 PM
To: Maggie Stanley <MStanley@cwsarch.com>
Subject: Technical Manual & bike lanes

Dear Chair Stanley,

I hope you'll forgive my finding your email on google. Perhaps it's inappropriate for me to email the chair of the planning board. Please let me know if that's the case.

I'm Winston Lumpkins, Vice Chair of the Portland Bicycle & Pedestrian Advisory Committee, an Ad-Hoc committee which advises the city.

I've been researching the Technical Manual & happened to listen to the 5/10/22 Planning Board workshop on the Technical Manual. During that meeting you mention the lack of standards for Separated bike lanes, and mentioned your own experiences with the Park Ave bike lanes. I don't think Staff addressed your question?

I'm curious if you have any thoughts on what could be done to include them in the Technical Manual? Is it entirely up to the planning board?

I strongly believe that we need such standards & it seems like the Technical Manual is probably the right place to put them.

I'll include my own amature comparison between the Park Ave lanes & the Mass DOTs Standards, as it may interest you.

Sincerely,

~Winston

Winston Lumpkins IV (he/him/his)

Vice Chair, Portland Bicycle & Pedestrian Advisory Committee

<https://www.portlandbikeped.org/>

winston.lumpkins@gmail.com

207-408-1508

Technical Manual Planning Updates

Bill Weber <wjweber77@gmail.com>

Thu, Sep 1, 2022 at 4:46 PM

To: Kevin Kraft <kkraft@portlandmaine.gov>, hcd@portlandmaine.gov, Andrew Zarro <azarro@portlandmaine.gov>

Kevin, I noticed the Planning Board has a workshop next week on Technical Manual Updates. The sections to be reviewed include street design, sewer and storm drain design, site landscaping, etc. Section 16 of the Technical Manual covers Application Submission Requirements. Is there an opportunity to discuss revisions to these requirements? I am particularly interested in Greenhouse Gas estimates that the developer can provide when they submit their application.

As I am sure the Planning Department is aware, the One Climate Future Plan, Portland and South Portland Climate Action Plan, requires the city to consider the impact on climate change in its decision making process. Can we discuss this further? Thanks

--

Bill Weber
66 Roaring Brook Road
Portland, ME 04103
(207) 232-9802

To: Chair Stanley & Members of the Planning Board
From: Charles Tetelman
Date: September 9, 2022
Re: Preble Street Emergency Teen Shelter
Project ID: CU-002134-2022
CBL: 033 K004001
Meeting Date: September 13, 2022

I. INTRODUCTION

Preble Street has applied for a Conditional Use Application and a Minor Site Plan Application (change of use) to convert the existing teen center located at 343 Cumberland Avenue into a 24-bed emergency shelter for teens. The proposed applications would facilitate the reconfiguration of the building's interior to provide medical services, office space for caseworkers and support staff, and facilities related to the operation of an emergency shelter including laundry, bathroom, and beds. The proposed emergency shelter is located in the B-3 Downtown Business Zone.

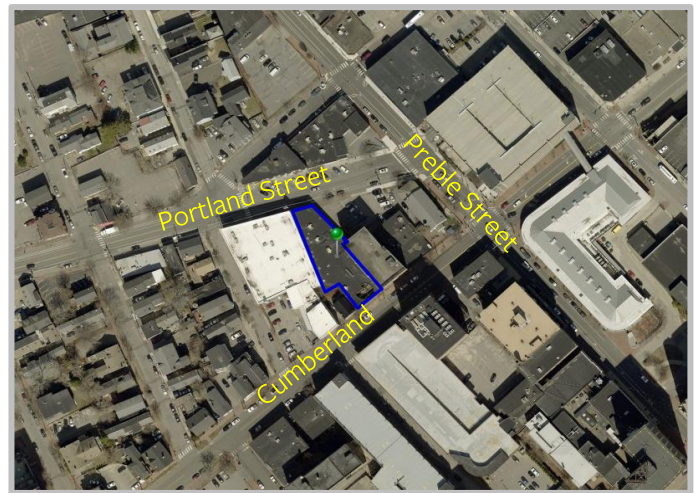


Figure 1: 343 Cumberland Avenue Aerial View

The proposed use as an Emergency Shelter within the B-3 zone requires a Conditional Use permit, reviewed by the Planning Board (Chapter 14 Section 6.5.1) for compliance with the Conditional Use standards including Chapter 14 Section 6.5.2 (General Conditional Use Standards) and Chapter 14 Section 6.5.6.B (Supplemental Use-Specific Conditional Use Standards for Emergency Shelters). Pursuant to site plan review thresholds, the Minor Site Plan application is under review by the Planning staff.

The Planning and Urban Development Department mailed 109 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the September 3 and 6, 2022 editions of the *Portland Press Herald*.

Applicant: Preble Street
Applicant: Donna Larson Kane, AICP (LK Planning)
Representatives:

II. REQUIRED REVIEWS

Review	Applicable Standards
General Conditional Use Standards	Chapter 14, 6.5.2 General Conditional Use
Supplemental Use-Specific Conditional Use Standards	Chapter 14, 6.5.6.B Emergency Shelters Conditional Use

III. PROJECT DATA

Existing Zoning	B-3 Downtown Business
Property Size	11,136 square feet
Existing Use	12-Hour Teen Center
Proposed Use	Emergency Shelter

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	11,136 square feet	11,136 square feet	0
Building Floor Area	11,136 square feet	11,136 square feet	0
Impervious Surface Area	98.8%	98.8%	0
Bicycle Parking Spaces	0	7	+7

IV. BACKGROUND

Preble Street is a private, non-profit organization currently operating a Resource Center and Emergency Shelter (5 Portland Street), three housing facilities (52 Frederic Street, 190 Valley Street, and 72 Bishop Street), a teen center (343 Cumberland Avenue), a teen emergency overnight shelter (38 Preble Street), and the Learning Collaborative in collaboration with Maine Medical Center (20 Portland Street). Additionally, Preble Street provides a variety of resources and services including rapid re-housing, veteran housing services, street outreach, anti-trafficking services, health services, and emergency food programs. According to the applicant the Preble Street Teen Center at 343 Cumberland Avenue serves as the primary location for services for homeless and runaway youth in Portland. The Teen Center provides immediate needs including clothing, nutritious meals, and crisis intervention as well as other critical services that promote growth, safety, stability, and independence. Currently, the Teen Center is open 8am to 8pm every day. Preble Street also operates the Joe Kreisler Teen Shelter (Emergency Shelter) at 38 Preble Street that provides homeless and runaway youth similar services to the Teen Center but also provides overnight shelter and is open 8pm to 8am every day.



Figure 2: 343 Cumberland Avenue Street View (Preble Street Teen Center)

On November 30, 2011, the Planning Board unanimously approved a Conditional Use Application (#2011-323) for the Joe Kreisler Teen Shelter at 38 Preble Street. On January 5, 2021, the Planning Board unanimously approved a Conditional Use Application (CU-001231-2020) to convert the Resource Center at 5 Portland Street into a 40-bed Emergency Shelter.

In 2017, the Portland City Council expanded zones where emergency shelters were permitted as conditional uses, as well as adopting new, expanded conditional use standards ([Order 252-16/17](#)) Passage: 8-o (Duson absent). The conditional use standards included new operational controls, such as requirements for a management plan, basic design guidelines related to facility and site layout, and access requirements for public transportation.

V. EXISTING CONDITIONS AND SURROUNDING AREA

The proposed Preble Street Teen Emergency Shelter is located at 343 Cumberland Avenue, which is currently operating as the Teen Center. The building is two stories in height, with a first floor entrance at 20 Portland Street (Learning Collaborative) and a second floor entrance along Cumberland Avenue (Teen Resource Center). The site is located within the B-3 Downtown Business zone in the Bayside neighborhood and is surrounded by a mix of residential, commercial, and institutional uses. The Preble Street Resource Center, currently undergoing renovations to convert to a 40-bed Emergency Shelter, is at the corner of Portland Street and Preble Street. Portland High School is located at 284 Cumberland Avenue approximately three blocks east from the proposed teen shelter and the Portland Public Library located at 5 Monument Square is approximately two blocks south.

343 Cumberland Avenue is in close proximity to three primary METRO transit hubs. Approximately two blocks to the east is the METRO Pulse at Elm Street, one block to the south is the Monument Square stop, and a few blocks to the southwest is a transfer point at the corner of Forest Avenue and Congress Street. Between these three nearby transit hubs, nearly all the METRO Routes are accessible. Additionally, the proposed Emergency Shelter is near the head of the Bayside Trail which connects into the Back Cove Trail and the Eastern Promenade Trail providing access to the shelter for pedestrians or bicyclists.

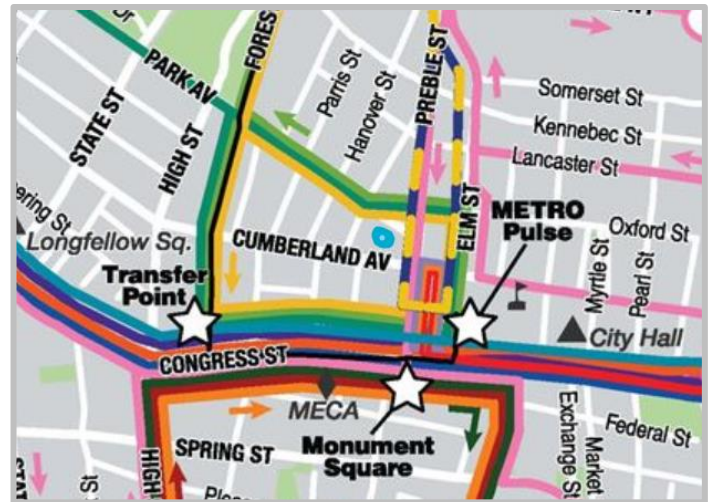


Figure 3: Transit Map (source GP Metro)

VI. PROPOSED DEVELOPMENT

Preble Street has submitted a Conditional Use Application alongside a Minor Site Plan Application to convert the existing Teen Center at 343 Cumberland Avenue into a 24-bed Emergency Shelter for teens. Currently, the Joe Kreisler Teen Shelter at 38 Preble Street and the Teen Center at 343 Cumberland Avenue serve youth experiencing homelessness between the ages of 12-20. The Teen Center provides services twelve hours per day but clients seeking shelter need to exit the facility and walk to the Teen Shelter across the street in the evening. Preble Street seeks to consolidate both facilities under one roof at 343 Cumberland Avenue. These applications would facilitate the renovation of the upper level (7,981 square feet) of the two story building. The Emergency Shelter will operate exclusively on the second floor of the

building and the existing Learning Collaborative on the first floor (entrance located at 20 Portland Street) will not be impacted or altered.

The frontage along Cumberland Avenue will serve as the sole entrance for the Emergency Shelter. There are minimal changes to the Cumberland Avenue building exterior which include a new illuminated sign, decorative wall sconces, new security cameras, new light fixtures, a card reader for badge access, and one-way privacy film on the windows (Plan 3). The applicant has submitted a photometric plan (Plan 2) demonstrating the exterior lighting changes in the courtyard and along the Cumberland Avenue exterior. In the courtyard (731 square feet), the applicant is proposing a combination of mounted wall fixtures and flexible lights mounted to the desks and planters. Additionally, three dark sky compliant fixtures and two decorative wall sconces are proposed to be installed on the exterior entrance along Cumberland Avenue. There are no proposed changes to the exterior of the building facing Portland Street.

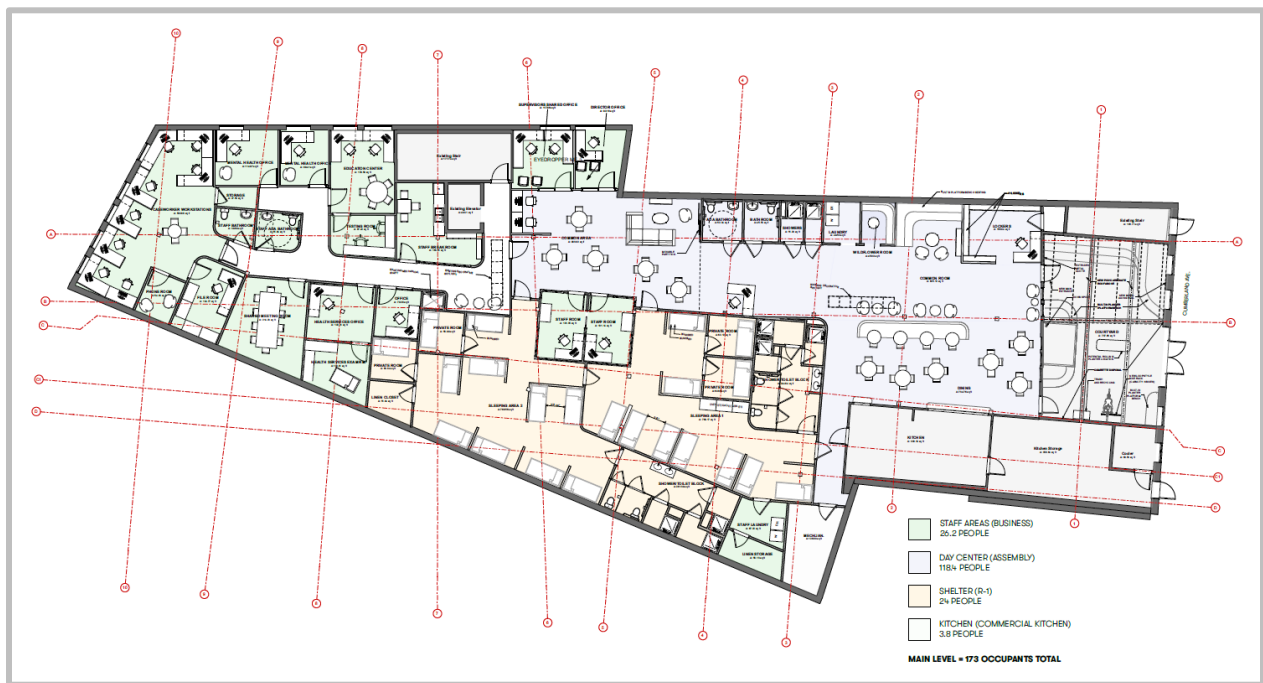


Figure 4: Proposed Floor Plan (Plan 5)

The interior renovations will convert the existing Teen Center into a 24-bed Emergency Shelter for teens. The sleeping areas are shown in yellow on the floor plan (Plan 5). There will be four beds in small private rooms, two bunk beds, and sixteen single beds across two sleeping areas separated by half-walls that are approximately 42 inches (similar height to approved shelter at 5 Portland Street) to provide privacy and clear sight lines for security purposes (Plan 7). Each sleeping area has a bathroom that contains two sinks, two toilets, and three showers.

The proposed Teen Emergency Shelter includes a kitchen, kitchen storage, a cooler, and a dining area as well as common areas separate from the sleeping areas. The dining and common space areas are shown in blue on the floor plan. The common areas include dedicated dining and lounging areas, two bathrooms, two showers, laundry, and lockers. Additionally, Preble Street is proposing a renovated 731 square foot courtyard space (Plan 9) that will be screened from Cumberland Avenue by a brick wall. The courtyard

currently has an existing soffit in the roof providing fresh air. The courtyard will be utilized as an outdoor private space for gatherings as well as storage for seven bicycles.

Areas shown in green on the floor plan will be staff offices. The updated office space will be used for Emergency Shelter support staff and caseworkers. The floor plan depicts the rooms and includes services such as health service office and exam rooms, staff offices and bathrooms, caseworker workstations, meeting spaces, mental health offices, and an education center and testing room. Staff will also have a staff-only laundry and storage space adjacent to the sleeping areas.

VII. RIGHT, TITLE, & INTEREST

The applicant has submitted a recorded deed dated January 2, 2002 granting ownership of the parcel at 343 Cumberland Avenue to Preble Street, formerly the Preble Street Resource Center. (Attachment E).

VIII. FINANCIAL & TECHNICAL CAPACITY

The applicant has submitted a document noting that the renovations and exterior changes are expected to cost between \$2,000,000 and \$2,500,000. Preble Street is committed to funding the entire project cost if necessary following a \$14,000,000 Capital Campaign. However, the financing for the project may include contributions from public funding sources including the Maine state Housing Authority (Attachment F).

Preble Street has been working with Kaplan Thompson Architects and LK Planning as applicant representatives for this project. The document provided states both firms have many years of combined experience designing and permitting projects in Portland (Attachment F).

IX. ZONING ANALYSIS

The proposed Teen Emergency Shelter is a conditional use in the B-3 zone. The Planning Board serves as the review authority for all conditional use applications in the B-3 zone according to Chapter 14 Section 6.5.1.A.

Additionally, the building is required to meet all of the B-3 dimensional requirements listed in Chapter 14 Table 7-E *Mixed-Use Zone Dimensional Standards* as shown below:

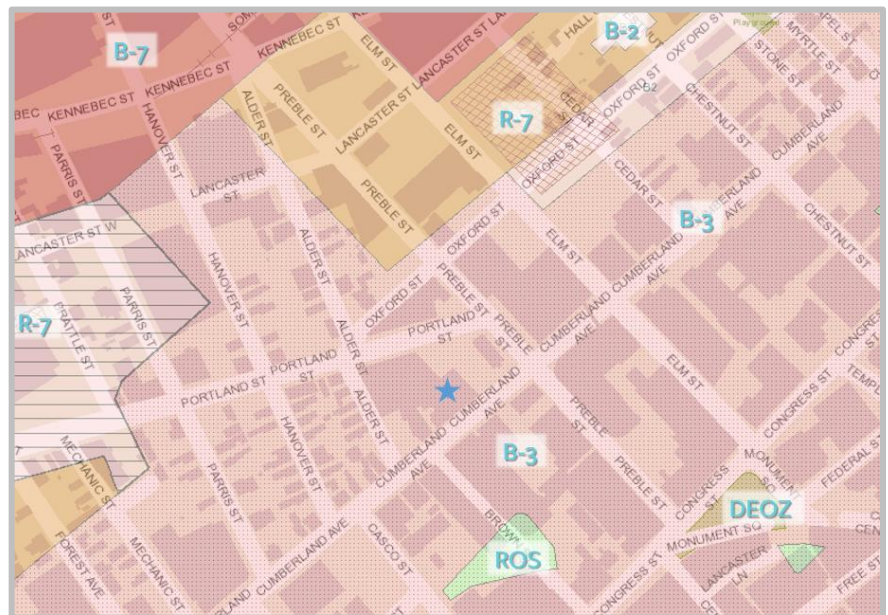


Figure 5: Zoning Context

	Required	Proposed
Lot Size (minimum)	None	11,135 sq. ft.
Street Frontage (minimum)	15 ft.	57.33 ft. (Cumberland Ave.) 35.06 ft. (Portland St.)
Front Yard (maximum)	5 ft.	0 ft.
Impervious Area (maximum)	None	98.8%
Off Street Parking	None Required	0
Bicycle	None Required	7

X. CONDITIONAL USE STANDARDS

This project has been reviewed by staff for conformance with the relevant review standards of Portland's Land Use Code Chapter 14, Section 6.5.2 General Conditional Use Standards and Chapter 14, Section 6.5.6.B Conditional Use Use-Specific Standards for Emergency Shelters. Staff comments are below:

1. General Conditional Use Standards (6.5.2)

- A. The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone.

Preble Street will be converting the Teen Center at 343 Cumberland Avenue into the proposed Teen Emergency Shelter. The existing structure provides 24-beds and services for clients. There are minimal alterations to the Cumberland Avenue exterior as most renovations would be occurring within the interior of the building. Preble Street is proposing limited work on the courtyard to open up the roof and provide more green space. As proposed, there are no additions or expansions to the building or pavement.

The proposed Teen Emergency Shelter has no new parking spaces proposed. As a change of use in the B-3 zone according to Chapter 14 Table 19-B: *Categorical Exceptions to Off-Street Parking Minimums*, no off-street parking is required. Furthermore, multiple METRO bus stops are located within a ¼ mile radius of the site. The courtyard area contains a bicycle rack with space for up to seven bicycles for clients. The City's third-party traffic engineer reviewed the proposal and noted that the use is not expected to create a substantial increase in traffic or impact circulation in the surrounding neighborhood. Although Preble Street is consolidating two facilities, the increase in pedestrians and traffic to 343 Cumberland Avenue is not substantially greater than other surrounding uses.

Currently, Preble Street operates the two separate teen facilities; the Teen Center (343 Cumberland Avenue) is open 8am to 8pm and the existing Teen Shelter (38 Preble Street) is open 8pm to 8am. The proposed consolidated Teen Emergency Shelter will operate 24-hours seven days per week (24/7) with onsite staff, on-call support services, and clinical support.

- B. The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.

The Management Plan explains the duties of staff members, equipped with a two-way radio for safety and emergency use, will walk the exterior perimeter of the building monitoring loiterers and picking up trash along the sidewalks. Staff will conduct this exterior walk of the building each shift in addition to the regular monitoring of external video surveillance. Preble Street is proposing two

cameras monitoring the Cumberland Avenue frontage and a third camera for the entrance along Portland Street.

The photometric plan (Plan 2) shows dark sky compliant fixtures on the exterior of the building limiting lighting beyond the exterior of the building. The courtyard lighting is not expected to impact the surrounding area as the area is enclosed by walls.

According to the applicant Preble Street Facilities team conduct daily trash pickup near all of the Preble Street properties and the surrounding streets. The facilities include 343 Cumberland Avenue, 5 Portland Street, 38 Portland Street, and 55 Portland Street on both sides of the streets.

The Management Plan states that loitering of non-clients in the proximity of the proposed Emergency Shelter will not be permitted and that disruptive and unsafe behavior is prohibited. The exterior staff sweeps will be the initial warning for those loitering, excessively loud, or creating an unsafe or dangerous environment. The Management Plan indicates that continued disruptive behavior will lead to restrictions from a specific area. Any further obstruction, refusal to leave, or dangerous behavior will lead to Preble Street staff notifying the Portland Police of trespassing. Preble Street will follow up with the Police Department to ensure that individuals do not continue to trespass in the area surrounding the proposed Teen Emergency Shelter.

- C. The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone. The B-3 zone allows a variety of uses including residential, institutional, and commercial including multi-family dwellings, offices, retail, restaurants, bars, theaters, elementary through high schools, and spaces for artists and creators. Surrounding uses within 500 feet of the proposed Teen Emergency Shelter include:

- Portland Public Schools Office
- Preble Street Resource Center
- Four Restaurants
- Retail Stores
- Employment Services
- Single Family Homes
- Multi-Family Homes
- Parking Garages
- Office Buildings
- Youth & Family Outreach

The proposed facility will be renovating the existing Teen Shelter space and not have a substantial impact on the exterior of the building, maintaining the existing street context along Cumberland Avenue and

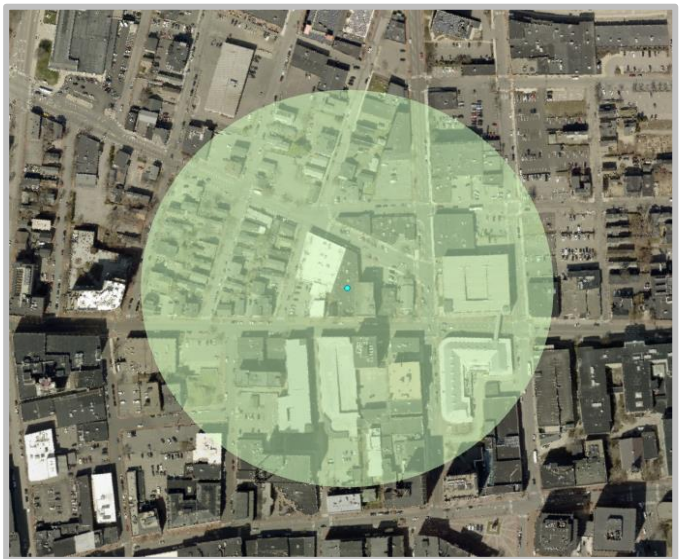


Figure 6: Locations within 500 ft. of Site

Portland Street. The City's Urban Designer reviewed the proposal and determined that the exterior alterations were minimal and did not impact or alter the building's form or appearance.

The Management Plan describes that the Teen Emergency Shelter will provide three meals per day. Food will be delivered to the shelter two days per week from the Preble Street Food Security Hub in South Portland and stored on-site. Trash will be stored adjacent to the kitchen with access to the outside so that trash collectors can get to it while keeping the facility secure.

D. The proposed use will meet any additional zone or use-specific standards identified in Table 6-A to 6-F and Subsections 6.5.6 and 6.5.7.

The Supplemental Use-Specific Conditional Use Standards for Emergency Shelters (6.5.6.B) are discussed in the following section.

2. Emergency Shelter Supplemental Use-Specific Conditional Use Standards (6.5.6.B)

The applicant has provided documentation speaking to the Emergency Shelter Supplemental Use-Specific Conditional Use Standards (Attachment H).

1. The facility shall provide adequate space for conducting security searches and other assessments.

The Emergency Shelter will have office space dedicated for client intake, appointments, and other supervision sessions. Sections IV and VI of the Management Plan speak to client intake and safety. Preble Street has indicated that no searches of personal belongings will be conducted unless staff have reason to believe someone may be in possession of a weapon or intend to inflict harm.

2. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas.

The applicant has provided Interior Safety Sightlines (Plan 7) that show staff areas nearby both sleeping areas. The sleeping areas are designed with half walls providing privacy and clear sight lines. The half walls are 42 inches tall and are the same height as the shelter approved at 5 Portland Street. There are two private rooms in each sleeping area. The Interior Safety Sightlines shows doors with large windows to allow for clear sightlines into the rooms. The common space and dining areas are open and provide ample supervision when staff are in the area. Section III of the Management Plan describes access restrictions and interior circulation of staff and clients.

3. A management plan adequately outlining the following areas shall be provided: management responsibilities; process for resolving neighborhood concerns; staffing; access restrictions; on-site surveillance; safety measures; controls for resident behavior and noise levels; and monitoring reports.

In accordance with Chapter 14 Section 6.5.6.B Supplemental use-specific conditional use standards for Emergency Shelters, Preble Street submitted a management plan (Attachment N) discussing management responsibilities, process for resolving neighborhood concerns, staffing, access restrictions, on-site surveillance, safety measures, controls for resident behavior and noise levels, and monitoring reports. Preble Street's management plan for the Teen Emergency Shelter consists of eleven sections describing in detail the operation and management of the site. The Management Plan is referenced throughout this memo.

Section II of the Management Plan discusses the staffing and management responsibilities of the proposed Teen Emergency Shelter. The shelter staff consists of a Program Director, Supervisors, Caseworkers, Housing Support Workers, Team Leaders, and Program Administrators. The existing staff and services will be consolidated and provide 24/7 onsite coverage. Exhibit 1 of the Management Plan shows the weekly staff coverage schedule broken down into shifts. Staff responsibilities also included monitoring the exterior of the property for safety and trash as well as monitoring security cameras. The plan also includes a variety of professional trainings to be offered for staff.

Section III and Section IV highlights client access, assessment, and intake at the facility. Clients enter the facility through the courtyard on Cumberland Avenue where staff complete intake procedures. The courtyard has a dual door system that controls access, provides area for security assessments, and safety and security to the facility. Preble Street staff will have to unlock the Cumberland Avenue doors to allow individuals into the courtyard and facility. The entrance on Portland Street will continue to be utilized for the existing services, teen emergency shelter staff entrance, and emergency egress for the entire building. The access to the bottom floor of the building is in the staff-only area where clients receive services provided by staff.

Section V and VI describe the on-site surveillance and safety measures taken on site. The proposed Teen Emergency Shelter will continue to have two surveillance cameras on Cumberland Avenue and Preble Street will be installing a third camera outside of the Portland Street entrance. The facility has been designed with open space and clear sightlines which allows staff to maintain a safe environment. Additionally, the management plan mentions how staff are trained to monitor the interior and exterior of the building as well as the courtyard while conducting duties related to their role. In addition to being designed for safety of clients and staff, the plan highlights safety protocols and procedures utilized on site. Professional staff will be trained in a variety of emergency and safety procedures including but not limited to CPR, First Aid, overdose response, crisis intervention, and de-escalation. The Teen Emergency Shelter will coordinate with the Portland Police Department, Portland Fire Department, and other public safety departments (City and State) as well as crisis responders and health professionals.

Section VII of the management plan discusses neighborhood concerns and how Preble Street approaches community feedback, engagement, and safety. Preble Street maintains responsibility for all of their clients at the community center and has a clear 'Rules and Expectations' agreement to reinforce the expectations. As discussed in other sections of this memo, Preble Street staff will monitor the exterior premises for cleanliness and safety and have established protocols to work with repeated offences. Preble Street staff will maintain regular attendance at the Bayside Neighborhood Association meetings and will provide contact information and respond to neighborhood questions or concerns. Section VIII also mentions the protocols for client behavior and noise levels.

Sections IX, X, and XI provide an overview of the transportation options near the facility, onsite and offsite social services, and monitoring reports. Preble Street will coordinate with the City of Portland's Health and Human Services Department and Police Department to submit any required reports on a regular bases if needed. Preble Street is also required to submit regular reports to funding sources including United Way, State of Maine, and Maine State Housing Authority.

Staff have shared the Teen Emergency Shelter Management Plan with the City of Portland Health and Human Services Department, Portland Police Department, and Life Safety. Comments are forthcoming.

4. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit.

The proposed Teen Emergency Shelter is within ¼ mile of multiple METRO transit hubs including the METRO Pulse at Elm Street, the Monument Square station, the Transfer Station at the corner of Forest Avenue and Congress Street, and bus stops near the Post Office and the Downtown Library.

5. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, housing assistance, or other programs.

Preble Street will continue to provide a variety of services on-site including medical services, employment and vocational training, substance abuse counselling, and mental health services. Sections II and X of the Management Plan describe in greater detail the services provided. The Floor Plan also depicts the spaces allocated for certain services.

6. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site.

Clients at the Teen Emergency Shelter will have access to a self-serve washing machine and two dryers. Additionally, there are staff-only washing and dryer machines. The kitchen will have a cook prepare three meals per day and the kitchen has adequate space for storage and cleaning as well as a cooler. The courtyard will contain spaces for seven bicycles. The facility will have a locker area allowing clients to store their personal belongings.

7. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

The courtyard (731 square feet) on the Cumberland Avenue portion of the building will serve as the outdoor area for clients of the Teen Emergency Shelter. According to the applicant the space will only be utilized by staff and clients and is screened from the street with a brick wall. A portion of the roof has been removed to allow for open-air. The courtyard contains seating, raised garden beds, and a five-loop bicycle rack that will store seven bicycles. The courtyard will also serve as a secure entrance to the facility.

XI. PUBLIC COMMENT

As of the writing of this report, one public comment has been submitted to the Planning & Urban Development Department (PC 1).

XII. NEXT STEPS

1. Planning Board Workshop: Provide preliminary comments and questions
2. Continue to evaluate proposal against Conditional Use standards
3. Applicant to address Planning Board Workshop comments

4. Prepare Final Submission
5. Schedule Next Planning Board Meeting

XIII. ATTACHMENTS

APPLICANT SUBMITTAL

- A. Cover Letter and Project Description
- B. Checklist – Minor
- C. Agent Authorization
- D. Conditional Use Checklist
- E. Right, Title, and Interest
- F. Financial and Technical Capacity Narrative
- G. Zoning-Assessment
- H. Use Standards
- I. Design and Operation
- J. Access and Circulation
- K. ADA Narrative
- L. Landscaping
- M. Traffic Impacts
- N. Management Plan

PLANS

- Plan 1. Site Plan
- Plan 2. Photometric Plan
- Plan 3. Front Elevation
- Plan 4. Floor Plan – Security
- Plan 5. Floor Plan – Main
- Plan 6. Floor Plan – Isometric 3D-View
- Plan 7. Floor Plan – Interior Safety Sightlines
- Plan 8. Floor Plan – Courtyard
- Plan 9. Courtyard Ceiling Plan

MEMO ATTACHMENTS

1. Cumberland Ave. 343 (Staff Preliminary Comments)

PUBLIC COMMENTS

- PC 1. Michael d'Hemecourt 9-2-22

Review Criteria:

- Conditional Use Supplemental Use-Specific Conditional Use Standards (Chapter 14 6.5.6.B Emergency Shelters)
- Planning Board Review Authority for Conditional Use Application in B-3 Zone
- CU Performance Standards:
 - Downtown Urban Design Guidelines (CU All Development in B-3 Zone 6.8.1)
 - Noise Standards (CU in B-3 6.8.9)
- Article 14 Site Plan Review Standards (Chapter 14 14.6)

GENERAL

- A detailed construction management plan submittal should be added as a condition of approval once construction sequencing scenario has been finalized by the applicant for review and approval by DPW and development review coordinator prior to the pre-construction meeting. The construction management plan should provide more detail on contractor parking, sidewalk and parking disruptions and material delivery schedules.
- Please provide updated elevations to determine if exterior changes would require a design review.

ZONING

- Please provide documentation (similar to the Site Plan Standards Assessment) that speaks to the General conditional use standards and Supplemental use-specific conditional use standards for Emergency Shelters (Chapter 14 6.5.6.B).

TRANSPORTATION

- Will the bike rack, with capacity for storing 6 bikes, be enough to support the shelter? With 24 beds, services, and staff, would more bike parking be needed?
- City Traffic Consultant concurs with the analysis and the project is not expected to have any impact to traffic mobility or safety.
- The applicant should consider exterior bicycle racks given expected usage. City Transportation Program Manager Bruce Hyman should provide specific direction on bicycle rack details and recommendations.

LANDSCAPING

- Please provide additional information regarding plantings, layout, and operation of courtyard on site.

June 6, 2022

Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101



Subject: Preble Street Emergency Teen Shelter
343 Cumberland Avenue, Parcel ID 033 K004001
Conditional Use and Minor Site Plan
Change of Use <20,000sf

To Whom It May Concern,

Preble Street is pleased to submit this application and supporting documentation for the change of use at 343 Cumberland Avenue. This project reconfigures the inside of the building to combine the existing 12-hour teen center with a 24-bed, teen shelter. The teen shelter is currently 500 feet away at 38 Preble Street. Consolidating the two facilities under one roof will significantly improve the delivery of services and the clients' experience.

The building, constructed in 1908, covers the entire 11,136 sf parcel and is in the B-3 District. The property is in a mixed-use neighborhood with a combination of parking garages, offices, restaurants, a public school, social services providers, and a variety of medium and high-density residential buildings.

The building at 343 Cumberland Avenue is two stories. The lower level of the building is accessed from Portland Street. This project will not change the configuration or use of the lower level of the building. This application is for the 7,981 sf of the upper level of the building.

The project includes interior renovations for:

1. Updated office space for caseworkers and other support staff.
2. Updated teen center space that includes tables and chairs, bathrooms and showers, lockers for securing personal belongings, laundry facilities, and staff offices.
3. New 24-bed teen shelter: four beds in small private rooms, two bunk beds, 16 single beds, bathroom blocks with toilets and showers, and staff offices. Half-walls separate the beds to offer some privacy while also providing security and clear sight lines.
4. Updated outdoor courtyard: the courtyard will be slightly smaller than its current size. The enclosure is thoroughly screened from Cumberland Ave. by the original brick wall of the building. An existing soffit in the roof provides fresh air. The courtyard

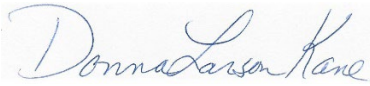
LK Planning, LLC, 30 Spear Ave., South Portland, ME 04106
(207) 767-4688, admin@lkplanningmaine.com

offers an outdoor but private space to gather and get fresh air and a safe space for bicycle storage. Improvements to the courtyard include: 6 bike racks, relocation of garden beds, a new main entrance on the inside wall of the courtyard, and new benches with attached planters.

5. An existing kitchen will remain in its current location and configuration. Three meals per day will continue to be prepared in the kitchen.

We look forward to working with you and the Planning Staff to review this project. Please feel free to contact me to discuss any questions or concerns regarding the attached application materials.

Sincerely,

A handwritten signature in blue ink that reads "Donna L. Kane". The signature is written in a cursive, flowing style.

Donna L Kane, AICP
Community Planner

CITY OF PORTLAND
Planning & Urban Development Department

MINOR 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 SEPARATELY THE ZONING ASSESSMENT TABLE AND WAIVER TABLE 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 Article 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, if 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 waiver standards
Yes	NA	Evidence of Financial and Technical Capacity* - Letter or evidence from a financial institution or third party verifying financial capacity to undertake project - Evidence of the project team's technical capacity to undertake project *NOTE: Not required for Minor Residential and Low Impact Site Development projects

MINOR 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)) • Provide stormwater management plan in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general, and flooding standards, as applicable • Provide erosion control plan and measures • Provide evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Describe subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND 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(D)) (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 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, Appen. 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

MINOR SITE PLAN DRAWINGS CHECKLIST

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

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:

- Location, area, and limits of the proposed site disturbance or alteration, including any proposed pier, dock, or wharf reconstruction
- Proposed structures, including floor area and finish floor elevation and distance from the property line
- Proposed paved areas, including parking spaces and dimensions if applicable
- Location of proposed utilities
- Proposed protection measures for watercourses, wetlands, or other significant natural features
- Proposed grades and contours
- Erosion control plan
- Proposed landscaping, screening, and proposed street trees, including existing vegetation to be preserved
- Proposed stormwater management controls

- Proposed curb and sidewalk (show any proposed geometric modifications, if applicable) - Engineered specifications and cross-sections for proposed driveways, sidewalks and paved areas, if applicable - Location, dimensions and ownership of proposed easements, public or private rights-of-way - Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed *NOTE: Minor Residential and Low-Impact Site Development projects may optionally submit the drawings below, but are not required to do so; all other Minor Site Plan applications should include the below drawings in their submission.
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

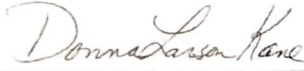
AGENT AUTHORIZATION

APPLICANT/ OWNER	Name	Preble Street, Teen Shelter		
PROPERTY DESCRIPTION	Physical Address	343 Cumberland Ave, Portland	Map	033
			Lot	K004001
APPLICANT'S AGENT INFORMATION	Name	Donna Larson Kane, AICP		
	Business Name & Mailing Address	LK Planning 30 Spear Ave South Portland, ME 04106 admin@lkplanningmaine.com 207 767-4688		


 APPLICANT SIGNATURE _____ DATE 5/5/2022

 PLEASE TYPE OR PRINT NAME HERE _____

CO APPLICANT SIGNATURE (If applicable) _____ DATE _____
 PLEASE TYPE OR PRINT NAME HERE _____


 APPLICANT'S AGENT SIGNATURE _____ DATE March 8, 2022
 Donna Larson Kane, AICP
 PLEASE TYPE OR PRINT NAME HERE _____

Said agent is also authorized to represent the applicant with the City of Portland as necessary to permit the proposed development.

CITY OF PORTLAND
Planning & Urban Development Department

**CONDITIONAL USE – PLANNING BOARD REVIEW
SUBMISSION CHECKLIST**

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes in the left-hand column.

Conditional uses are listed in the land use code for each zone. The applicant must address the general standards as well as any use- or zone-based conditional use standards contained in Article 6.5 of the land use code in the written application.

GENERAL APPLICATION DOCUMENTS

☒	N/A	Project Description Cover letter with detailed project description
☒	N/A	Completed Checklist – Conditional Use (this document)
☒	N/A	Evidence of Right, Title and Interest Deeds, leases, or purchase and sales agreements

CONDITIONAL USE STANDARDS AND CRITERIA

☒	N/A	Traffic Demonstrate that the volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the zone.
Yes	☒	Environmental Impacts Demonstrate that the proposed use will not create any unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.
☒	N/A	Design and Operation Demonstrate that the design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.
☒	N/A	Use- and Zone-Specific Criteria Address any use- or zone-specific standards in Sections 6.5.6 and 6.5.7 of the land use code.

KNOW ALL MEN BY THESE PRESENTS,

THAT, CASCO PAPER BOX REALTY ASSOCIATES, a partnership organized and existing under the laws of the State of Maine and having a place of business at 136 Oakhurst Road, Cape Elizabeth, County of Cumberland, State of Maine in consideration of One Dollar (\$1.00) and other good and valuable consideration paid by PREBLE STREET RESOURCE CENTER, a Corporation organized and existing under the laws of the State of Maine and whose mailing address is 252 Oxford Street, Portland Maine 04101, the receipt and adequacy whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said Preble Street Resource Center, its successors and assigns, to its own use and behoof forever, the following described real estate:

A certain lot or parcel of land with the building thereon situated in Portland, County of Cumberland and State of Maine, on the north-westerly side of Cumberland Avenue, and bounded and described as follows:

Beginning at the southwest corner of land formerly of Major Sweetsir, more recently by the Jewish Community Center of Portland; thence running northwest by said Community Center's land about one hundred (100) feet to a stake; thence northeast about twelve (12) feet to a passageway in front of land formerly of John Dain, and now or formerly of Dorothy S. Hillman; thence northwesterly by said passageway about eighty-six (86) feet to Portland Street; thence by said Portland Street westerly about thirty-four (34) feet to land formerly of Samuel Hazelton, and now or formerly of the Portland Nash Holding Corporation; thence south by said Portland Nash Holding Corporation's land about one hundred fifty (150) feet to land now or formerly of William D. Bryant, Trustee; thence by said Bryant's land northeast about twenty-six (26) feet to a stake; thence by said Bryant's land southeast fifty-three (53) feet, more or less, to Cumberland Avenue; thence by said Cumberland Avenue northeast about fifty-seven (57) feet to the point of beginning.

The Grantor herein also conveys any and all rights which the Grantor may have in said passageway running in a southeasterly direction from said Portland Street and adjoining the above-described premises for a part of their length on their northeast side.

Meaning and intending to convey and hereby conveying the same premises conveyed to the Grantor herein by Maine Air Conditioning Company by deed dated April 6, 1979 and recorded in the Cumberland County Registry of Deeds in Book 4402, Page 235.

MAINE REAL ESTATE TAX PAID

AND said Grantor Corporation does covenant with the said Grantee, its successors and assigns, that it is lawfully seized in fee of the premises, that they are free of all encumbrances; that Grantor partnership has good right to sell and convey the same to the said Grantee to hold as aforesaid, and that it and its successors shall and will WARRANT AND DEFEND the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said CASCO PAPER BOX REALTY ASSOCIATES, as Grantor, has caused this instrument to be sealed and signed in its partnership name by Laures T. Perkins, its General Partner, duly authorized, this day of January, 2002.

SIGNED, SEALED and DELIVERED
in the presence of,

D. Perkins

Casco Paper Box Realty Associates

By *Laures T. Perkins*
Laures T. Perkins
Its General Partner

STATE OF MAINE
CUMBERLAND, ss.

January 2, 2002

Personally appeared the above-named Laures T. Perkins, General Partner of said Grantor partnership as aforesaid, and acknowledged the foregoing instrument to be her free act and deed in her said capacity, and the free act and deed of said partnership.

Before me,

Gary D. Vogel
Notary Public/Attorney-at-Law
Print: GARY D. VOGEL

EXCLIENTS\CASCOPAP deed - 12-18-01.doc

RECEIVED
RECORDED REGISTRY OF DEEDS

2

2002 JAN -3 PM 2: 24

CUMBERLAND COUNTY

John B O'Brien

Joe's Place
Preble Street Teen Shelter and Center

Evidence of Financial and Technical Capacity

The estimated cost of the project is \$2 - \$2.5M.

The details of funding for the project have not been firmly established. Preble Street recently completed a \$14 million Capital Campaign. Discussion of public funding sources, such as the Maine State Housing Authority is ongoing. Therefore, the financing for the project is expected to be a combination of public and private funds. However, Preble Street is committed to funding the entire project cost if necessary.

Preble Street engaged Kaplan Thompson Architects to design the project, and LK Planning to coordinate permitting with the city. Both firms have many years of experience designing and permitting projects.


ZONING ANALYSIS Relevant Zone(s) B-3
All Projects: Joe's Place - Preble Street Teen Shelter and Center

	Required	Proposed
Lot Size	10,000 sf	11,135 sf
Area Per Dwelling Unit	435 sf	N/A
Minimum Street Frontage	15 ft	57.33 ft Cumberland Ave 35.06 ft Portland Street
Front Yard Minimum		
Front Yard Maximum	5 ft	at property line on Cumberland Ave and Portland St.
Rear Yard	20 ft	N/A
Yard Right		
Yard Left		
Side Street Setback	10 ft	
Step Back		
Maximum Lot Coverage	N/A not over 125 ft height	11,001 sf
Minimum Lot Coverage		
Maximum Height		
Open Space		
Maximum Impervious Area	80%	98.8%
Pavement Setback		
Floor Area Ratio	none	
Off Street Parking Spaces		0
Loading Bays		
Other 1		
Other 2		
Other 3		

USE STANDARDS
Joe's Place
Preble Street's Teen Shelter and Center

B. Emergency shelters

1. The facility shall provide adequate space for conducting security searches and other assessments.

Office space on the Portland Street side of the building has office space for client intake, case work appointments, and supervision sessions. No searches of personal belongings are conducted unless staff has reason to believe that someone may have weapons that could be used to inflict harm on guests or staff. COVID assessments will be conducted daily until that threat subsides. See Sections IV. Client Intake Office and Social Work Appointment Rooms and Food Programs and Sec. VI. Safety of the Management Plan for more details.

2. The facility shall be designed with a centralized shelter operations office on each level providing sight lines to sleeping areas.

The facility is designed with half walls to provide some privacy while also providing staff with clear sight lines to protect the safety of guests. So that staff has clear sight lines, the staff area is somewhat centrally located and has many glass panels. See the Interior Safety Sightlines Floorplan for visibility details and Section III. Client Access, Assessments and Access Restrictions of the Management Plan.

3. A management plan adequately outlining the following areas shall be provided: management responsibilities; process for resolving neighborhood concerns; staffing; access restrictions; on-site surveillance; safety measures; controls for resident behavior and noise levels; and monitoring reports.

Preble Street is committed to being a good neighbor. Clients are given a set of reasonable expectations regarding their behavior, and staff enforce those expectations as needed. Preble Street also will facilitate neighborhood meetings as needed and they will participate in the Bayside Neighborhood Association, the Cumberland County Crisis Response Team and the Portland Police Dept. Community Policing program. For more details, see Sec. V. On-Site Surveillance, Sec. VII – Neighborhood Concerns of the Management Plan and the Security Floor Plan for the location of cameras.

4. Adequate access to and from METRO service shall be provided. The facility shall be within a ¼ mile of a METRO line, or shall be within ½ mile of a METRO line and provide adequate indoor space to permit all shelter guests day shelter, as well as implement strategies to help residents utilize transit.

Combining the teen center and the teen shelter will provide all-day shelter for guests. The facility has excellent access to public transit and seen in the chart below.

Transit stop/hub	Distance from 343 Cumberland Ave.	Transit routes available
METRO Pulse at Elm St.	825'	METRO Rts- 2, 4, 5, 7, 8, Husky
Monument Square	900'	METRO Rts – 1, 8, 9B, 7 Breez South Portland Rts – 21, 24A, 24B ZOOM express
Post Office (Portland St/Forest Ave)	1,060'	METRO Rt - 5
Library Congress/Casco Sts	790'	METRO Rt 1, 9A

5. The facility shall provide on-site services to support residents, such as case management, life skills training, counseling, employment and educational services, housing assistance, or other programs.

A variety of services are provided on-site. Three collaborative partners have offices in the facility providing medical services, employment and vocational training, substance abuse counselling, and mental health services. See Program Use Changes and Sec. II – Staffing and Management Responsibilities, and Sec. X Social Services: Onsite and Offsite of the Management Plan for more details

6. Suitable laundry, kitchen, pantry, bicycle storage, and secure storage facilities for shelter stayers shall be provided on-site.

The Shelter has a self-serve washing machine and two dryers. Clients have access to the laundry facility on a first come-first served basis. There is a fully equipped kitchen on-site and a cook that prepares three meals/day. Food is delivered to the Shelter 2 days/week from the Preble Street Food Security Hub in South Portland. Bicycles can be stored in the open-air secure courtyard. A locker area will provide clients with a locked locker for their personal belongings.

7. An outdoor area for guest use shall be provided on-site with adequate screening to protect privacy of guests.

An outdoor courtyard is available for clients. The space is completely screened from Cumberland Ave. a portion of the roof has been removed to create an open-air space. The courtyard includes seating for clients to relax and congregate. Raised garden beds will be planted annually with vegetables, herbs, and flowers. The plants will be selected, plants and cared for by the quests of the teen center and shelter. A five-loop bicycle rack that holds 7 bicycles is proposed for the facility. The size of the bicycle rack is based on the typical number of bicycles that are currently at the facility during the warmer months. See the Courtyard Floor Plan for details.

Design and Operation

The courtyard is a safe, enclosed, open air area that serves as a secure entrance to the facility and gives guests a place to congregate and relax. The seating selected for the courtyard includes planting areas. All plantings will be annuals and will be selected, planted and cared for by the guests of the facility. Plants will be a changing combination of vegetables, herbs, and flowers.

The sign location of the sign is the same. The sign message identifies the facility as “Joe’s Place A Preble Street Wellness Shelter for Youth”. The new sign will be illuminated.

The existing exterior light fixtures will be replaced with dark sky compliant fixtures. Two decorative wall sconces will be added to both sides of the front entrance. The new lighting is designed to help guests find the facility and for safety. See the photometrics plan for details on the impact of the new lighting on the sidewalk and surrounding areas.

Access and Circulation

No changes to the site access is proposed. The entrance will be ADA accessible as shown in the floor plan.

No changes to the loading and servicing areas are proposed. The existing loading zone in the front of the building will be adequate to meet the needs of the teen shelter.

The sidewalks in front of the building are brick. No changes to the sidewalk system is proposed.

343 Cumberland Street: Teen Shelter and Center
June 10th, 2022

Accessibility (ADA) Narrative:

The existing building will follow Title III of the Americans with Disabilities Act - New Construction and Alterations – ADAAG.

The main building entry, off 343 Cumberland Street, has an accessible route of travel to arrive on the site and approach the entry door. An accessible route has been provided within the courtyard to the main entrance. The new main entry door will be designed to meet ADA guidelines for size, operability, and clearances.

Upon entry of the building, there will be a check in desk designed with a portion of the counter lowered for accessibility. The café will include a variety of seating, including fixed and flexible seating, accounting for all minimum accessible requirements to be met following Table 221.21 Number of Wheelchair Spaces in Assembly Areas.

All shower and bathroom facility locations will provide a minimum of (1) ADA accessible toilet, shower stall and sink within the same location as the rest of the showers and bathrooms. All of the bathrooms designated as accessible will meet plumbing requirements of Chapter 6.

The sleeping areas provide a clear accessible route throughout the room to both the main entrance and the secondary emergency exits. Clear floor space, complying with Section 305, has been provide on at least one side of the beds.

Full plans, elevations, and details will be provided with submission of the building permit and barrier free accessibility review.



Site Landscaping and Buffering

New landscaping is limited to inside the courtyard. The courtyard is a safe, enclosed, open air area that serves as a secure entrance to the facility and gives guests a place to congregate and relax. The seating selected for the courtyard includes planting areas. All plantings will be annuals and will be selected, planted and cared for by the guests of the facility. Plants will be a changing combination of vegetables, herbs, and flowers.

**Joe's Place
Preble Street Teen Shelter and Center**

A. Impact on Surrounding Street System

The project combines two existing facilities within 500' of each other into one building; therefore, it isn't expected to increase traffic on the street system. The 24-bed teen shelter at 38 Preble Street will move to 343 Cumberland Ave. No additional beds are proposed. This project combines two 12-hour facility, teen center 8AM – 8PM, teen shelter 8PM – 8AM into one 24-hour facility.

Client traffic: Clients tend to get to the facility on foot, bike, or on transit. The facility is within 900 feet of the Monument Square and Elm Street Hub. Most transit routes serving the greater Portland area go through one of those transit stops.

Employee traffic: Employees who work at the site get to work by driving and parking on the street, walking, biking, or on public transit. The current level of staffing will be adequate to serve this project. No new staff will be needed.

Bicycle parking: The facility has a secure, open-air courtyard. Bicycles are stored in the courtyard on a 5-loop bicycle rack that holds 7 bicycles. The size of the bicycle rack is based on the typical number of bicycles at the facility currently.

Delivery traffic: The building at 343 Cumberland Ave has a designated loading/unloading area along the street opposite the front door. Food deliveries are brought to the site on Tuesday and Thursday mornings during the off-peak hours. Food is brought from Preble Street's Food Security Hub in South Portland. Other non-food deliveries are made at the loading/unloading area. Typically, non-food deliveries are limited to 1 – 2 deliveries/week. These deliveries also tend to be during off-peak hours.

Trash pick-up: Trash is picked up by a licensed hauler at night. The loading/unloading zone is used by the hauler.

There are no parking spaces on the site. No new pavement is proposed.



Joe's Place: Preble Street's Teen Shelter and Center

Management Plan

I. Overview:

Description:

Preble Street established Preble Street Teen Services (PSTS) in 1996 to provide low-barrier day and shelter services to youth experiencing homelessness in a setting separate from adults. In the ensuing 25 years, Teen Services has grown to include the largest licensed youth shelter in the state, a teen center, a statewide outreach program, and several different types of transitional and rapid rehousing housing programs for youth. Today, Teen Services provides a comprehensive continuum of prevention, shelter, and housing services to runaway and homeless youth 24/365.

The Joe Kreisler Teen Shelter and Center at 343 Cumberland Avenue provides low-barrier shelter, basic needs social work, healthcare, educational/vocational, mental health, substance use, and housing navigation services to youth ages 12 to 20, working collaboratively with providers both on and off site. More than 400 youth each year come for meals, safety and a chance to find their way back to families, into safe placements, or on to independent living.

Preble Street Teen Services Joe Kreisler Teen Shelter (JKTS) is a State of Maine DHHS Licensed Shelter for Homeless Youth (ID # 659627) with a capacity of 24 beds for youth ages 12-20. The JKTS operates under Maine's Shelter for Homeless Youth license, defined as "an emergency shelter designed to provide overnight lodging and supervision" for youth. The JKTS operates under this licensing definition and is open and staffed between 8:00pm-8:00am seven days/week. Preble Street has maintained this license in good standing and full compliance with successful annual audits and licensing reviews since the shelter was built in 2013. Preble Street previously maintained a Shelter for Homeless Youth license between 2004-2013 for the Lighthouse Shelter, the Preble Street-operated youth shelter prior to Joe Kreisler Teen Shelter. The JKTS is one of only three licensed youth shelters in Maine, the largest one in the state, and is the only licensed youth shelter south of Lewiston.

Preble Street Teen Center has historically been open from 8:00am to 8:00pm seven days/week, with a food program that provides three meals/day, including breakfast (8:00-9:00am), lunch (noon-1:00pm), and dinner (6:00-7:00pm). Additional services include private showers, a clothing closet, personal lockers for storage, access to phones and internet, computers, mail, laundry, etc. The Joe Kreisler Teen Shelter and Center have never closed (even during the fiercest winter storms and the COVID-19 pandemic) and are always open as an accessible, low-barrier day and night shelter for youth. Teen Shelter staff are trained in crisis management and social work best practices and are prepared to meet youth where they are when they enter our space.

Population Served:

The Joe Kreisler Teen Shelter and Teen Center serves youth experiencing homelessness between the ages of 12-20. In 2022, nearly 1 in 4 (24%) of homeless individuals, or 815 people, in Maine were under age 18, and the unaccompanied young adult homeless population (ages 18-24) had increased to 147 people. These youth need an intensive level of age-appropriate services to remain safe and establish a foundation for a stable future. Teen Services meets these urgent needs of homeless and runaway youth—providing warmth and safety, nutritious meals, clothing, crisis intervention, and overnight shelter. Recognizing that LGBTQIA+ and BIPOC youth are disproportionately likely to experience homelessness, PSTS provides services that actively work to reduce race and gender inequities.

Runaway and homeless youth in Portland experience high rates of abuse and trauma, including sexual assaults, prior to leaving home, along with the risk of poor health, violence, and exploitation after. Most are fleeing a range of family problems and challenges, including family alcohol and substance use disorders; personal mental health and substance use issues; high rates of drop-out, academic struggles, and educational deficiencies; and are high risk for pregnancy, HIV/AIDS, sexually transmitted infections, exploitation, and human trafficking. LGBTQIA+ and BIPOC youth face additional barriers and experience homelessness at disproportionately high rates.

Youth without a safe place to stay at night often must resort to unsafe shelter in doorways or abandoned buildings and can be exposed to offers of sex for a place to stay. These dangerous situations not only have a destructive impact on youth – increasing the possibility of trauma, addiction, illness, and/or injury – but also on the community, adding a burden to city and county law enforcement, emergency responders, hospital emergency rooms, etc.

Program Use Changes:

For the past ten years, the Joe Kreisler Teen Shelter and Teen Center have been located in buildings across the street from one another. It was never the intention to create two separate spaces for these services. The history of how this came to be is complicated and reveals a tale of services closing abruptly due to lack of funding and resources. In 2001, Preble Street acquired and renovated the building at 343 Cumberland Avenue in the heart of Portland to create a welcoming, versatile, state-of-the-art facility to house its youth-oriented day programs, now called the Teen Center. Shortly after opening the new Teen Center, Preble Street was asked to assume responsibility for the only youth emergency overnight shelter in Portland, then called the Lighthouse Shelter. The agency that ran the Lighthouse Shelter announced on Monday that it was closing the shelter and by Friday of that week, Preble Street stepped in to fill the gap and take over operations ensuring the only youth shelter didn't close its doors. Preble Street ran the Lighthouse Shelter for nine years in its location on Elm Street. Then, in 2013 Preble Street purchased the building at 38 Preble Street, directly across the street from the Teen Center at 343 Cumberland Avenue and renovated it into what is now the Joe Kreisler Teen Shelter to provide trauma-informed overnight shelter for runaway and homeless youth. Teen Services now operates these two separate, functional, and trauma-informed spaces as a 24-hour staffed program.

There are significant challenges, however, to operating out of two spaces. The most significant challenge is requesting youth to leave one space at 8pm and 8am to walk across the street to the other space. This “cross-over” time is a period of vulnerability and risk for youth. Asking youth to leave one safe space to walk outside to another safe space is not trauma-informed, it is extremely disruptive to youth seeking stabilization, and by creating unnecessary foot traffic in the neighborhood, prevents our spaces from being fully confidential. Additionally, operating out of two locations that are required to close and open at the same time creates consistent challenges for staffing.

By renovating the space at 343 Cumberland into a combined night and day shelter, these harms are reduced and Preble Street Teen Shelter services can be consolidated under one roof, in line with established best practices in the field. The shelter will continue to operate under its' current state of Maine license but will be embedded within the Teen Center space.

The new combined space, named **Joe's Place**, will remain a low-barrier day shelter at the front of the building. Clients enter through the existing outdoor courtyard from the sidewalk into an open, well-lit day space that comprises the kitchen (not moving from its' current location), dining area with tables, locker storage area, and multiple comfortable sitting spaces. This day center is an inviting space that offers space for youth to congregate, socialize and relax in the daytime and early evening hours. Computers, TV, books, and board games are available for use. Clients have access to private showers and bathrooms, nutritious snacks and private storage areas at all times. A partitionable wall will be closed nightly to create a smaller evening common living room space directly next to the shelter dorms, which will be opened for use by 8pm nightly. The dorms, separated by gender identity, are open-concept and trauma-informed. Beds are spaced six feet apart and clients are assigned the same bed each night. As is the case with our current shelter, there are also two small private bedrooms in each dorm for youth who need a more secluded sleeping space. These rooms are most frequently used for minors, youth in acute crisis, or victims of trafficking. Staff desks and offices are located centrally within the night shelter spaces to ensure sight lines to all sleeping areas.

Toward the back of the building, through a locked door accessible only by staff badge are the staff offices, administrative spaces, and office space for our collaborative partners. Since 2004, Preble Street has maintained strong, collaborative relationships with three outside entities to ensure programs are co-located on site at the Teen Center to provide critical services within this building. Our three on-site collaborative partners are:

- **City of Portland Public Health Division**, operating the Teen Health Clinic which provides primary and preventive medical services. This space is staffed by a part time nurse practitioner and supplemented by volunteer doctors.
- **Portland Adult Education (PAE)**, operating the "Street Academy" which provides alternative education options, including the HiSet, re-integration into a traditional school setting, and support for employment and vocational training, including the Learn to Earn internship-style program. This program is staffed by two full-time educators employed by PAE.
- **Day One**, operating "Street Program" which provides individual and group clinical mental health counseling for youth and also provides supportive, low-barrier educational and substance use counseling services to youth using alcohol and other drugs, with a harm reduction philosophy that does not require abstinence before counseling begins. This program is staffed by two full-time licensed mental health and substance use clinicians.

The collaborative partners are on site during working business hours and serve current clients at the Joe Kreisler Teen Shelter and Center.

II. Staffing and Management Responsibilities

Joe's Place will be operated by a management team consisting of a Program Director and three Program Supervisors, which supports the full team consisting of a Team Leader, Caseworkers on the first and second shifts, Housing Support Workers on the third shift, and a Program Administrator.

- The Program Director has expertise in management of programs working with individuals experiencing homelessness as well as extensive training in mental health and substance use issues. The Director will be accountable for hiring and managing staff, ensuring that all staff meet professional training requirements, and developing and implementing policies and procedures aimed at maintaining a safe environment and furnishing quality social services.
- Supervisors are accountable for supervising and providing leadership to caseworkers and housing support staff while ensuring the daily operations of the shelter and center are in alignment with the mission and meeting regulations. Supervisors are a part of the Teen Services management team.
- Caseworkers and Housing Support Workers will work directly with Joe's Place clients to ensure that basic needs are met. Individual service plans will be developed for each client including a housing stability plan, assistance with applications for benefits, income support, or employment that improve self-sufficiency in housing, and referrals to relevant community resources.
- The Team Leader is additionally responsible for staff scheduling and program operations support.
- The Program Administrator is responsible for HMIS (the federal Homeless Management Information System) data tracking, Client Track case management data system, ESAC (Portland's Emergency Shelter Assessment Committee) shelter usage reporting, reporting for funding requirements, and reporting and tracking for shelter licensing requirements.

The Program Director along with assistance from the Program Administrator will be responsible for the Shelter Program Monitoring Report.

In addition to having 24-hour seven day per week (24/7) onsite staff, Joe's Place also has a 24/7 On-call support service with access to additional coverage and clinical support as needed from Teen Services' full management team including the Senior Director, two Program Directors, one Assistant Director, and four Supervisors.

Teen Shelter state DHHS licensure currently requires a ratio of one awake staff member to eight youth clients. Preble Street will ensure our client to staff ratio, as required by state licensing, is met at all times.

Attached as **Exhibit 1** is a staffing coverage schedule for Joe's Place. The staffing schedule is a sample and may be changed, without reducing overall supervisory effectiveness.

At least one Preble Street LCSW (Licensed Clinical Social Worker) will be available to the Joe's Place team to provide clinical client assessments required for specific housing subsidies.

In addition, staff will be responsible for monitoring safety in the building and on the property. Safety will be monitored by staff at the front desk, requiring that all persons who enter the building are exhibiting safe behavior, and by doing hourly walks throughout and around the facility. Staff will also regularly monitor security cameras placed on the premises (see additional information under Client Access, Assessment and Restrictions).

Caseworkers and Housing Support Workers will receive professional social work training to understand and effectively respond to the complex issues that face homeless, runaway and street youth. This training will include Positive Youth Development, CPR, First Aid, mental health, substance use, co-occurring disorders, homelessness, Housing First, crisis intervention, overdose prevention, intervention and de-escalation of potential conflict, trauma informed care, harm reduction and essential community resources.

In addition, the Program Director and the three Supervisors are expected to demonstrate Preble Street's Management Core Competencies (**see Exhibit 2**) and will receive ongoing training that supports and

further develops those competencies. Similarly, the Caseworkers and Housing Support Workers will demonstrate and receive ongoing professional development and training in Preble Street's Core Competencies for Case Management Staff (see Exhibit 3). Managers are professionally trained and expected to uphold Preble Street's "Management Competencies: Eight Core Competencies." Those core competencies are Self-Aware, Effective Communicator, Problem Solver/Decision-Maker, Accountable, Team Builder, Talent Manager, Cultivator of Cultural Competence and Diversity, and Strategic Leader. Please see the "Management Competencies: Eight Core Competencies" document describing each core competency.

Supervisors will receive additional training in supervision, policy implementation, and crisis intervention and will be directly supervised by the Program Director. Management responsibilities include ensuring the operation of a safe and healthy shelter from intake to case management, providing for basic needs of hot meals, hygiene, clothing, and mail, providing for health, mental health, substance use, dental, education, employment, training, safety and spiritual needs through community partners, and discharge to temporary and permanent housing placements. Management is responsible for working with community partners to optimize the services for the clients, with neighbors and the neighborhood association to ensure helpful and positive communications that inform changes in operations, and with the Portland Police to ensure safety for the shelter clients, neighbors and staff.

III. Client Access, Assessments and Access Restrictions

Joe's Place will only allow clients who meet eligibility for services to enter, as determined by an initial screening and intake. Clients must be between the ages of 12-20 and must be literally homeless with no other safe space to go in order to access services. Joe's Place is accessible twenty-four (24) hours per day. Shelter beds are available on a first come, first served nightly basis. Minors (youth under the age of 18) are always guaranteed a bed. Any youth who completes a shelter intake is permitted to stay at the shelter conditional upon availability of a bed and their following the safety and respect expectations of the shelter. Prioritization will be given to minors, youth who have no other options of a place to stay, and youth who have experienced human trafficking or other forms of violence.

When accepted into the shelter for the first time, the client goes through the Wellness/Health Screening at the check-in location and has an intake meeting with a caseworker. This intake process includes the completion of the Teen Services Intake, review of Teen Services Rules and Expectations (including wellness rules and neighborhood behavior expectations), signing of HMIS and other release forms, and signing the Teen Services Rules and Expectations Agreement.

Knowing the trauma and physical, mental and spiritual toll that experiencing homelessness takes, the design of the shelter allows for adequate rest, nutrition, cleanliness and fresh air, which are all crucial to healing, recovery, and moving out of homelessness.

Joe's Place design includes an enclosed Outdoor Courtyard only accessible to youth clients. The courtyard is located off the sidewalk behind a brick wall and is screened from Cumberland Avenue. A portion of the roof has been removed to create an open-air space, and there are fixed benches and raised bed gardens to create a relaxing and safe space outdoors.

There will be a dual door system that controls shelter access, ensuring proper assessments, safety and security. The primary entrance will be on Cumberland Ave. to the secure outdoor courtyard. The first locked door allows the client to come into the enclosed open-air courtyard, off the street. The second set

of doors will be unlocked and lead from the courtyard to the staffed front desk in the main lobby. This front desk will be staffed by Teen Services staff 24/7. All people entering the courtyard space will have to be buzzed in by Preble Street staff.

Wellness/Health screenings also happen here for all clients, including hand cleansing, masking and COVID-19 screening questions. From this front desk screening area, the client can enter the centralized shelter area. **Refer to floor plan for “staffed front desk” location.**

In addition to individual bathrooms and showers, the day shelter also has a self-serve washing machine and dryer. Clients have access to the laundry facility on a first-come-first-served basis. There is a fully equipped kitchen on-site that provides three meals/day 365 days per year. Food is delivered to the Shelter 2 days/week from the Preble Street Food Security Hub in South Portland and is stored in the pantry located on site at the Shelter. Bicycles can be stored in the open-air secure courtyard. A locker area will provide clients with a locked locker for their personal belongings. Clients will additionally have access to a telephone, computer and internet, and mail services at Joe’s Place.

Clients are not permitted to have guests other than service providers. This teen shelter is designed with the latest health knowledge to prevent the spread of COVID-19 and is considered a ‘controlled shelter’ in that only clients are allowed to access it along with Preble Street staff, pre-approved volunteers and community providers. Only visitors who are service providers will be allowed in the shelter to meet with the clients. The private courtyard in the fresh air and sunshine will have benches and tables to allow an additional COVID safe place for clients to meet with community caseworkers as well as to eat, feel safe and heal.

There is a range of time that individuals stay at Joe’s Place and the turnover rate will depend on this range. Average length of stay for clients in 2021 was 37 nights, but individual lengths of stay vary greatly depending on a number of factors, including rental housing availability and affordability, access to support services that assist people with mental health and substance use treatment, ability to return home, or availability of permanent or transitional supported youth-focused housing. In 2021, most youth (96 of them) stayed in the shelter 50 nights or less, but almost 40 youth stayed between 51-200 days.

Both the physical design of the facility and the program design will act in tandem to control access to the building. The front desk staff person is responsible for monitoring entry into and exit from the building through the one main door on Cumberland Avenue through the private courtyard. The front desk staff will also be monitoring video surveillance placed at doorways around the building to ensure security and restricted access. Three functional surveillance cameras will be situated to monitor the outer perimeter of the property. The Portland Police Department will be asked for help in locating the cameras at optimal places. The cameras are part of a digital video security system that will allow for live viewing of each camera from a central computer as well as the recording of data.

There are two access points to the building:

- The primary entrance will be on Cumberland Avenue into a secure open-air courtyard. This door from the sidewalk into the courtyard will be locked and controlled by a buzzer system. The door from the courtyard into the shelter will be unlocked and lead to the staffed front desk in the main lobby. This front desk will be staffed by Preble Street employees. All people entering the courtyard will have to be buzzed in by Preble Street staff.

- There is one lower-level exit door onto Portland Street. This door provides access for staff, limited access for some clients receiving specific services from providers during the day, and for emergency egress.

Joe's Place is accessible to clients 24 hours a day. Once the night shelter area closes at 8:00am, clients may stay in the day shelter part of the building all day until the night shelter space re-opens at 8:00pm. All services are located on site in the same building as proposed, ensuring 100% of basic needs services can be accessed without having to leave the space. This model is trauma-informed and considered best practice for shelters and creates a safe and secure environment for the clients, staff and neighborhood.

The open concept design of Joe's Place was largely informed from the trauma-informed design features at the current Joe Kreisler Teen Shelter and Teen Center spaces. Having large, open, high-ceilinged spaces at Joe's Place will ensure clear sight lines to sleeping areas and ensure safety. The new night shelter is designed with half walls to provide clear sight lines to protect the safety of clients while also providing privacy. The staff area within the night shelter is centrally located, enclosed with glass panels, providing clear sight lines throughout the sleeping areas. Two private rooms with doors are provided for minor clients (under 18 years), clients in crisis, or, occasionally, clients who are sick.

Staff desks with robust workstations will be located in both the night and day areas of the shelter, allowing staff to have constant ability to monitor the shelter. Workstations will include a computer for entering information and monitoring security cameras, staff phone and two-way radio for immediate communication with other staff who are performing security rounds inside and outside of the building, and hand sanitizer and masks readily available for anyone who may want them. It is Preble Street's experience that clients feel safe and enjoy talking with staff outside of casework appointments so the areas around the staff workstations should include seating for clients. Staff areas have been marked on the floor plan with sight lines to sleeping areas. **Please refer to floor plan for staff operation areas.**

Preble Street's professional social work practices focus on engaging in supportive, trusting relationships with the clients using trauma-informed care approaches. This model creates safe environments as safety is in the relationship between the client and the casework staff.

IV. Client Intake Office, Social Work Appointment Rooms and Food Programs

The space toward the back of the building (Portland Street side) will consist of offices in which client intakes, case work appointments, supervision sessions, and administrative work will be held. This space is also where the three collaborative partners – Day One Street Program, Portland Adult Education Street Academy, and the Teen Clinic – will have permanent office space in order to provide mental health and substance use counseling sessions, educational and employment services, and physical health clinic services. These offices are accessible through a locked door directly out back from the client-focused spaces and will only be accessible to clients if they are directly working with – and supervised by – a staff member or collaborative partner.

The Program Director's office and first and second shift Supervisor's shared office will be located directly within the day shelter space to ensure regular additional support to caseworkers who are working in the day shelter space.

Preble Street Food Services will continue to operate the existing commercial kitchen and pantry within the day shelter space, providing 3 meals/day 365 days/year. Meals are provided between 8-9am, 12-1pm,

and 6-7pm daily. The kitchen is staffed by a full-time Teen Services Cook with support from a robust volunteer program. Light snacks are available outside of mealtime 24 hrs/day.

V. On-Site Surveillance

Three functional surveillance cameras will be situated in order to monitor the outer perimeter of the property and will be directed to avoid monitoring any neighboring properties unless explicitly agreed with the owner of that property. Two cameras monitoring the Cumberland Avenue frontage already exist. The exact mounting location of the third camera for the Portland Avenue entrance will be selected to maximize viewing coverage, in consultation with the Portland Police Department; and mounting height will be a minimum of 10 feet above the ground to prevent vandalism.

The cameras are part of a digital video security system that will allow for live viewing/playback of each camera from a central computer as well as the recording of data. This data is saved until the footage overwrites itself approximately every 30 days. Front desk staff will be responsible for monitoring the cameras. Any changes in camera locations will be in consultation with the Portland Police Department.

The interior design with open space and clear sightlines allow staff to be located in different stations in order to share responsibility for maintaining a safe environment. Collectively, staff will be able to fully monitor 100% of indoor client space from their workstations. In addition to the visual surveillance that staff are trained to incorporate into their work, there is frequent walking through the shelter spaces, engaging with clients and monitoring for safety.

The front desk staff also monitor safety of entry into and exit from the building as well as activity around the building through video surveillance. Regularly, a staff person equipped with a two-way radio for safety and emergency use, will walk the exterior perimeter of the building, asking people who may be loitering to move along and picking up any trash on the sidewalks. This exterior staff walk is followed by one in the interior courtyard. This collective surveillance of the interior and exterior of the shelter and the courtyard, using video monitors, roving staff and stationed staff in partnership with clients' agreement and assistance will maintain a safe, shelter environment.

VI. Safety Measures

The safety of clients, staff, interns, volunteers and neighbors are the utmost concern to Preble Street. Joe's Place is designed to specifically meet the unique needs of youth and young adults experiencing homelessness. Both the facility and program model are designed to be trauma-informed and are considered best practice for youth shelter, which creates a safe and secure environment for the clients, staff and neighborhood. Using a Positive Youth Development model, Teen Services staff ensure that the program is youth-centric and that youth voices play a prominent role in the program model. By building relationships and trust with staff and collaborative partners, youth are better equipped to identify and work on their goals. Joe's Place is also designed for safety by:

- Creating a small, specialized shelter prioritizing the safety and needs of Maine's homeless youth and young adults.
- Designing a large open indoor space and private outdoor space with a focus on meeting clients' housing, life skills, education, and employment goals.
- Practicing COVID-19 prevention

The vast majority of safety issues can be prevented with evidence-based de-escalation techniques and support services. No metal detectors are used. No searches of personal belongings are conducted unless staff have reason to believe that someone may have weapons. External shelter doors are locked, allowing staff assessment to ensure only eligible youth are permitted entry into the space. COVID assessments are conducted daily and include screening, for COVID symptoms and requiring masks for entry to common spaces in the shelter.

This shelter will have professional staff that are extensively trained and practiced in those skillsets. Preble Street provides extensive trainings to all staff on basic safety including CPR, First Aid, overdose response, crisis intervention and de-escalation of potential conflicts, how to communicate with crisis services and with 911, and the role of police, firefighters and Medcu in on site situations. Preble Street and Teen Services Management has developed specific safety protocols and regularly meets and communicates with the Portland Police and other emergency personnel.

When necessary, Joe's Place staff will work closely with the Portland Police Department, Portland Fire Department, Medcu, other public safety departments and other crisis and health responders including the Maine CDC, Maine Department of Health and Human Services, Maine Medical Center, and TOA Crisis Response Services.

Joe's Place will continue to maintain current licensure in good standing, including compliance with all required safety measures, with the Maine Department of Health and Human Services to serve youth and young adults experiencing homelessness between the ages of 12-20.

Attached as **Exhibit 4** is an outline of the Preble Street training topics and material.

VII. Neighborhood Concerns

Preble Street will take the steps below aimed at ensuring three goals: first, clients of the shelter are given a reasonable and clear set of expectations concerning their behavior at the shelter and in the surrounding neighborhood; second that clients are made aware of these expectations and the expectations are enforced by shelter staff; and third, the mechanisms are in place to receive and respond to any concerns or questions raised by neighbors or other stakeholders. In furtherance of these priorities, Preble Street will take the following steps:

- Preble Street staff facilitate periodic community meetings for clients of the program which include discussion of expectations related to being a good neighbor.
- Preble Street staff will have all clients sign a "Rules and Expectations" agreement upon intake to reinforce and make clear program and neighborhood behavioral expectations, **a copy of which is attached, as Exhibit 5.**
- Preble Street staff promote community-building in the neighborhood through staff and client participation in neighborhood clean ups and regular staff attendance at the Bayside Neighborhood Association meetings.
- Preble Street staff work to connect clients with resources necessary to meet basic needs using a trauma informed, harm reduction approach.
- Preble Street staff meet with and communicate regularly with the Cumberland County Crisis Response Team and the Portland Police Department Community Policing to prevent and/or respond proactively to public safety concerns.

- Preble Street Managers readily provide their contact information and respond in a timely way to questions or concerns from community members.
- Each shift will conduct regular safety rounds of the external perimeter of the shelter, ensuring that the sidewalks are clear of any loitering and all trash is picked up. This is in addition to regular monitoring of external video surveillance.

Additionally, Preble Street Facilities team will continue to conduct daily trash pickup surrounding the entire shelter building at 343 Cumberland Avenue, on both sides of the street around the Wellness Shelter at 5 Portland Street, up to and around the former Joe Kreisler Teen Shelter at 38 Portland Street, and down to 55 Portland Street, on both sides of the street.

Please see the attached map illustrating the daily trash pickup.

Mechanisms to resolve neighborhood complaints include:

1. Preble Street will provide a 24/7 telephone number that community members can call any time of the day or night to report any problems related to the Teen Shelter.
2. All calls will be logged and tracked
3. Staff will take immediate action to try to resolve the concern. Resolution could include:
 - A client intervention if the complaint was directed toward the behavior of a shelter client.
 - Staff asking people who are loitering outside and who are not shelter residents to move on.
 - Staff conducting an external safety check of the building perimeter.
 - Supervisory review of camera recordings made during the time period that the neighbor called about.
 - Calling 911 or Community Policing.
 - Calling Medcu.
 - Requesting assistance from mobile crisis response services.
4. A manager will make a return call to the neighbor within 24 hours informing them of the action taken by staff.
5. A copy of the call and a report of the attempted resolve will be given to the Program Director
6. During the monthly Portland Police Department - Preble Street meetings, calls will be reviewed and analyzed to address individual concerns and systemic issues.
7. Management staff will meet with any neighbor at their request in order to discuss concerns.

VIII. Controls for Client Behavior and Noise Levels

Clients' behavior is expected to be safe and appropriate. Upon acceptance into the shelter, clients are required to execute the Preble Street Teen Services Rules and Expectations Agreement.

Clients may not unreasonably disturb others, use the premises for any purpose deemed hazardous, conduct any activity or occupation which is illegal, noisy or dangerous, nor cause any damage or waste to the premises. No alcohol or illicit substances are permitted in any indoor or outdoor shelter area.

Staff are expected to ensure and monitor for a safe and respectful atmosphere at Joe's Place, in the enclosed Courtyard and on the sidewalks surrounding the space.

Loitering of non-clients around Joe's Place is not permitted nor is any behavior that is disruptive or unsafe. Any behavior that does not meet safety and noise expectations as well as any loitering will be addressed immediately by procedures that will vary based on the severity and the responsiveness of the person whose behavior is inappropriate:

- First, the individual(s) is asked to leave the area and staff use any existing relationship with them as well as offers of alternative resources, if needed, to make sure that the individual(s) leave the area and understand the need to change this behavior in the future.
- Second, in the event that the person returns to the area or refuses to leave, Preble Street staff will serve the individual(s) with paperwork approved by the City of Portland Police and Legal Department that lets them know that they are restricted from a specific area around the building.
- Third, if the individual(s) still does not leave the area or returns, the police will be notified to move the individual(s) along and/or to make an arrest for trespassing. Preble Street staff follow up with the Police Department to ensure that individuals do not return to the area and that they understand that continued trespassing can result in incarceration.

Preble Street staff facilitate periodic community meetings for clients of the program which include discussion of expectations related to being a good neighbor, and staff are proactive in addressing concerning behaviors around the building, including outreaching individuals engaging in that behavior and addressing the behavior individually and in community meetings.

IX. Client Transportation Assistance

There are several Metro Bus Stops within close distance to the JKTS at 343 Cumberland Avenue, as described in the table below:

Transit stop/hub	Distance from 343 Cumberland Ave.	Transit routes available
METRO Pulse at Elm St.	825'	METRO Rts- 2, 4, 5, 7, 8, Husky
Monument Square	900'	METRO Rts – 1, 8, 9B, 7 Breez South Portland Rts – 21, 24A, 24B ZOOM express
Post Office (Portland St/Forest Ave)	1,060'	METRO Rt - 5
Library Congress/Casco Sts	790'	METRO Rt 1, 9A

Joe's Place staff will work with clients in implementing strategies for utilizing transportation options including:

- Post transit schedules and metro maps in the shelter
- Communicate new information from Metro by posting this information or by relaying the information through caseworkers' individual work with clients
- Make referrals to collaborative partners who provide bus passes for clients
- Pay for taxis when a client has a medical appointment. Preble Street maintains a contract with a local taxi service to ensure reliable service for clients.
- Provide transportation for clients to apartment viewings, meeting with potential landlords and, periodically, medical appointments.

- Assist clients with RTP applications for MaineCare transportation for medical appointments via phone or fax services as required by RTP
- Providing bicycle storage outside the shelter or at a secure Preble Street location for longer storage needs.

X. Social Services: Onsite and Offsite

Joe's Place is essential to the safety net for homeless youth in York and Cumberland County, including Portland, that is designed to rapidly re-house youth, reunifying them with family when possible, or connecting them with other supportive or independent housing options. Providing the entry point for alternatives to the street, Joe's Place is a space where youth engage with caring and skilled adults and begin working on housing, education, mental health, substance use, employment, and health to increase their potential to be a stable, productive adult.

Once basic needs are met for youth at Joe's Place, staff work with that client to develop a Service Plan, supporting youth to develop the coping and problem-solving skills essential for successful goal planning and growth. We recognize that youth have strengths and resilience which, if properly identified and supported, can help them achieve more stable lives and realize their full potential.

As a professional social work agency, Preble Street incorporates casework into all services it provides. Preble Street's Caseworker Core Competencies (**see attached Exhibit 3**) include "Accountable", "Advocate and System Navigator", "Critical Thinker and Problem Solver", all of which lead to proficiency in providing on-site support services.

Joe's Place provides a full spectrum of supportive services, including crisis intervention, family mediation to support permanent connections to family, assessments and referrals, comprehensive case management, life skills groups, and positive youth development activities such as enrichment groups, gardening, music, and community outings.

Youth at Joe's Place have access to the following case management services:

- Support in acquiring credentials and identification (e.g., IDs, birth certificates, SS card, etc.)
- Referrals to health, mental health, substance use treatment, legal services, housing, etc.
- Collaboration with partners, including Day One Street Program, City of Portland Adult Education, Teen Health Clinic, Teen Housing and Outreach Services, and Preble Street Anti-Trafficking services
- Goal setting and everyday problem solving
- Assisting with applications for housing vouchers and subsidies, MaineCare, SSI, SNAP, TANF, and other programs including Maine Housing's Rent Smart Program.
- Skill building (e.g., job searching, interviews, maintaining employment)
- Multicultural support (e.g., translation, connections to community services, linkages to immigration services and supports)
- Conflict resolution; building positive, healthy relationships; and communication
- Family reunification and developing other helpful social supports
- Independent living skills (e.g., money management, being a good tenant)
- Health and wellness (e.g., self-care, stress relief, physical well-being)

With the skills and support provided through holistic casework services and by meeting immediate basic needs, youth can work toward their goals, including graduating from high school or completing the

HiSET, finding employment, accessing needed behavioral health services, making a housing stability plan, gaining independent living skills, and establishing a foundation for stable independent living.

Preble Street Teen Services' innovative collaborative model includes three outside providers who are co-located on site at Joe's Place, allowing daily connection and communication among providers who are working with the same population of youth. The on-site collaborative partners include:

- **Teen Health Clinic:** operated by the City of Portland Public Health Division, it provides primary and preventive medical services supplemented by volunteer doctors.
- **Street Academy:** operated by Portland Adult Education, it provides alternative education options, including the HiSet, re-integration into a traditional school setting, and support for employment and vocational training. It also implements the Learn to Earn internship-style program.
- **Day One Street Program:** provides individual and group clinical mental health counseling for youth and also provides supportive, low-barrier educational and substance use counseling services to youth using alcohol and other drugs, with a harm reduction philosophy that does not require abstinence before counseling begins.

Preble Street Teen Housing and Outreach Services also falls under the Preble Street Teen Services umbrella and provides additional support for youth experiencing or at risk of homelessness throughout Maine. Outreach services include Street Outreach throughout York and Cumberland counties and Mobile Diversion and Navigation for youth between the ages of 12-24 in eleven counties throughout southern and central Maine. Teen Housing services includes Transitional Living Programs, Transitional Housing, and Rapid Rehousing programs for youth and young adults throughout southern and central Maine.

XI. Monitoring Reports

On a regular basis determined by the City of Portland's Health and Human Services Department (HHS), Preble Street will submit any required reports to HHS and the City of Portland Police Department.

Additionally, Preble Street will submit regular reports to the funding sources of Joe's Place, as required (United Way, State of Maine, Maine State Housing Authority, etc.). In addition, Preble Street is an active member of three planning and monitoring entities – the local Emergency Shelter Assessment Committee, the Region One Homeless Council, and the Maine Continuum of Care, including the Homeless Youth Provider Group subcommittee of the MCoC. Preble Street will regularly report on the work of Teen Services at those meetings.

While the COVID-19 pandemic is occurring, Preble Street also actively participates on Portland Shelter and COVID Homeless Needs meeting on weekly calls and the Coordinating Clinical Support-COVID & Portland Homeless Providers biweekly meetings facilitated by the DHHS Commissioner's Office. Preble Street reports on all their shelters at these meetings.

Exhibit 1

Joe's Place Staff Coverage Schedule

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1st Shift							
1 st Shift Supervisor			7:00a-3:30p				
Team Leader			7:00a-3:30p				
FTE Caseworker 1			7:00a-3:30p				
FTE Caseworker 2	7:00a-3:30p						
FTE Caseworker 3	7:00a-3:30p						
As Needed	7:00a-11:30a						
2nd Shift							
2 nd Shift Supervisor	12:30-9:00p						
FTE Caseworker 4	11:30-10:00p						
FTE Caseworker 5			11:30-10:00p				
FTE Caseworker 6			12:30-9:00pm				
FTE Caseworker 7			12:30-9:00pm				
PTE Milieu Worker	3:30-9:00pm					3:30-9:00pm	
3rd Shift							
3 rd Shift Supervisor	10:00p	-8:00a 10p	-8:00a 9p	-8am 10p	-8a 9p	-7am	
Housing Support Worker 1		9p	-7a 9p	-7am 9p	-7a 9p	-7am	
Housing Support Worker 2	-7am 9:00pm	-7:00am 9p	-7a 9p	-7a 9p			9pm
Housing Support Worker 3	-7am				9p	-7am 9pm	-7am 9pm
Housing Support Worker 4	-7am 9:00pm	-7:00am			9p	-7am 9pm	-7am 9pm
As Needed						9pm	-7am
Program Admin							
Senior Director of Teen Services							
Teen Shelter Services Director							
Teen Housing & Outreach Director							
Program Administrator							



Management Competencies: Eight Core Competencies

A competency is a broad indicator of best practice; an area of knowledge critical to be able to perform your job well. Competencies are also connected to the goals and outcomes of the larger agency. These management competencies will provide a framework for training, coaching and evaluation to support your management level role and supervisory/management responsibilities.

Self-Aware

- Works to be conscious of own strengths and motivations, manages assumptions and professional development needs.
- Attends to own personal wellness and responsibility, and promotes this in the work environment.
- Provides individual and team feedback based on open, objective observation.
- Uses a strength-based approach to promote learning and professional development as a supervisor.

Effective Communicator

- Communicates in a clear, organized manner.
- Applies active listening skills by checking for understanding and asking for clarification.
- Encourages diverse perspectives.
- Applies skills in communicating with diverse interaction and learning styles.

Problem-Solver/Decision-Maker

- Identifies and analyzes challenges and implements solutions from a strength-based perspective.
- Evaluates information and resources to develop viable, sustainable solutions.
- Facilitates effective problem solving, consulting with others when appropriate.
- Uses supervision to communicate obstacles to accomplishing essential job functions and goals.
- Effectively prioritizes issues and projects in alignment with goals and outcomes of Preble Street.

Accountable:

- Displays an understanding of essential job functions.
- Creates a standard of work and follow-through to ensure the standard is upheld.
- Dedicated to meeting and exceeding exceptional service and performance.
- Maintains knowledge of and compliance with Preble Street policy, procedures and legal obligations.
- Displays continuous work toward understanding, integrating and achieving supervisory best practices.
- Monitors performance measures connected to programs and activities.
- Demonstrates financial stewardship including the careful use and protection of financial resources.
- Acts in a professional and ethical manner.
- Creates and facilitates effective, relevant and productive agendas and meetings.

Team Builder

- Inspires and fosters team commitment, trust and group excellence and positive morale.
- Coaches and guides employees towards desired outcomes.
- Promotes positive partnerships and collaboration within the agency and throughout the community.
- Encourages group problem solving through collaborative decision-making, when appropriate.
- Promotes the team in working collectively in support of the agency mission.

Talent Manager

- Ensures appropriate selection and development of qualified staff.
- Swiftly and confidently addresses performance problems.
- Ensures compliance with Human Resources policies and procedures.
- Develops employees through effective, proactive coaching and mentoring.
- Actively works with employees to facilitate continuous improvement.
- Assesses individual, program and agency strengths and weaknesses to increase effectiveness of performance.

Cultivator of Cultural Competence and Diversity

- Challenges stereotypes and holds self and others accountable for addressing bias or prejudice.
- Fosters an inclusive workplace where diversity and individual differences are valued.
- Develops and maintains a culturally diverse environment.
- Uses fair and equitable hiring practices.
- Fosters a culture that promotes creativity and innovation in alignment with the Preble Street mission.

Strategic Leader

- Builds a shared vision and acts as a catalyst for change.
- Influences others to translate a vision into positive action.
- Participates in succession planning efforts and development plans.
- Supports strategic planning by connecting implementation plans to current and future agency goals.
- Applies varied perspectives to develop goals and strategies in line with the Preble Street mission.
- Effectively communicates program initiatives, strengths, and challenges within and across programs.



Caseworker Core Competencies

The mission of Preble Street is to provide accessible barrier-free services to empower people experiencing problems with homelessness, housing, hunger, and poverty, and to advocate for solutions to these problems.

Preble Street develops a culture of casework teams who understand and practice the following throughout their role:

- Relationship is the foundation of our work
- Social work is rooted in love, compassion and curiosity
- Dignity, self-determination, and respect is inherent in how we work with all clients and each other

A competency is a broad indicator of best practice, and an area of knowledge essential to be able to perform a job effectively. Competencies are connected to the goals and outcomes of the larger agency. These casework competencies will provide a framework for ongoing training, coaching and evaluation.

Throughout this document our reference of colleagues is inclusive of co-workers across agency and community partners.

Oriented to Mission

- Promotes working collectively in support of the mission as an individual and as a member of the team
- Works to advance social and economic justice by connecting direct services work and policy change
- Demonstrates a commitment to client centered service provision utilizing person-first language, a strengths-based, non-judgmental approach, and offering low-barrier services
- Builds relationships based on unconditional positive regard, empathy, and authenticity
- Develops awareness of how systems of oppression including racism, sexism, xenophobia, ableism, homophobia, transphobia, classism and/or other social dynamics intersect and combine to impact us as individuals and the people we serve based on the multiple identities we each hold
- Ensures that delivery of services is inclusive and accessible

Oriented to Population

- Cultivates knowledge of the experience of those served across Preble Street programs including adult and youth homelessness, trauma, human trafficking, military service, mental illness, and substance use
- Develops comprehensive knowledge of resources necessary for the stability of clients including but not limited to housing, food, primary and mental health care, substance use treatment, education, legal services and employment
- Utilizes social work assessment to help understand client behavior
- Learns and implements evidence based best practices including but not limited to person centered care, trauma informed care, harm reduction, motivational interviewing, and Housing First

Self-Aware

- Utilizes reflective and critical thinking skills to gain insight into the impacts of personal experience, privilege, marginalization, bias, and prejudice and how they shape assumptions, worldviews, values, and beliefs
- Applies principles of mindfulness to enhance capacity to pause and respond rather than immediately react
- Utilizes supervision in an open and self-reflective manner in alignment with the agency definition of supervision
- Receives and provides feedback in a professional manner based on open, objective observation and individual professional development needs
- Takes responsibility for personal wellness, and promotes this with colleagues

Effective Communicator

- Communicates in a clear, organized manner in both verbal and written communication
- Applies active listening skills as a foundation for developing professional relationships
- Demonstrates openness to and respect for diverse perspectives
- Adapts communication strategies as required to effectively communicate with a diversity of individuals

- Ensures coordinated programming and service provision through active communication and collaboration across the agency

Promotes Safety

- Ensures safety in our programs through relationships, assessments, self-awareness, de-escalation strategies, crisis intervention and compliance with program and agency policies and procedures
- Practices effective crisis intervention skills, conducting crisis and risk assessments in consultation with supervisor and team and providing intervention, support, and follow up as appropriate in accordance with agency protocols
- Establishes and maintains professional boundaries with colleagues and clients, utilizing supervision and other appropriate resources to ethically navigate boundary challenges as they arise
- Monitors, assesses, and intervenes to maintain a safe working environment both in the community and within low barrier program spaces

Accountable

- Maintains knowledge of and compliance with Preble Street policies, procedures, and legal obligations
- Maintains professional, timely documentation of services provided to clients in a manner consistent with program and agency practice
- Develops, implements, accesses, and updates client-driven service plans with consistent follow-through, regular monitoring, and support to the client throughout each stage of the plan
- Practices effective time management, works efficiently in tight time frames, and responds in a timely way to clients and colleagues to ensure adequate follow-through
- Reliably completes tasks assigned or undertaken in alignment with job description

Advocate and System Navigator

- Works from an empowerment perspective in support of client efficacy
- Collaborates with colleagues in a professional manner that promotes respect and increases access to quality care for clients
- Navigates systems and resources relevant to client needs, and advocates for access to these systems and resources
- Engages in advocacy for and with clients at all levels, including direct services, community resources/benefits administration, and policy changes/legislation
- Maintains familiarity with and actively supports the advocacy work of Preble Street by connecting direct services and policy change

Critical Thinker and Problem Solver

- Applies problem solving techniques and informed professional judgment in order to practice solution-oriented approach to challenges
- Positively contributes to the planning and implementation of sustainable improvements in service delivery and the quality of services
- Demonstrates an ability to navigate client services through assessment and research, identifying available options, and taking appropriate action, including identifying when to consult with a supervisor
- Aims to work to the highest level of autonomy within the scope of the position
- Maintains ethical practice at all times, supported by the use of appropriate resources, including team members, supervision, legal and ethical codes, and the agency mission, policies, and resources

Collaborative Member of Program and Agency

- Grows professionally through actively engaging in the three components of agency supervision; administrative, educational, and supportive
- Maintains a flexible, team-oriented approach to the work and assumes positive intent with colleagues
- Readily and actively participates in program and agency-wide activities and initiatives
- Practices direct, respectful, solution-oriented collaboration, within team, agency, and colleagues
- Recognizes and acts on opportunities to promote and integrate team member diversity to strengthen teams and improve client services

Exhibit 4:

Preble Street Training Material Outline

Preble Street Required Training for All Agency Staff

I. Orientation:

- a. Preble Street mission and values
- b. Preble Street Handbook and Policies
- c. Confidentiality Policy and Unlawful Harassment Policy
- d. Exposure Risk Policies (Universal Precautions, Bloodborne and Airborne Pathogens)
- e. Incident and Accident reporting, Worker's Compensation, and Trauma Protocol
- f. Low barrier services
- g. Empathy and unconditional positive regard
- h. Structural causes of homelessness, including racism, redlining and LGBTQIA+ prejudice
- i. Harm reduction philosophy
- j. Self-awareness and bias
- k. Language and stigma

II. Maintaining a Safe Work Environment:

- a. Boundaries & Confidentiality
- b. Crisis Prevention, Intervention, and De-escalation
- c. Challenging Behaviors
- d. Emergency Services
- e. Intervention Basics
- f. Weapon Policy and Trauma Procedures
- g. Emergency & Non-Emergency Procedures
- h. Mental Health Crisis Intervention
- i. Overdose Response Training
- j. Supervision

Additional Annual Training:

- Unlawful Harassment & Safety Training
- Video Display Terminal Training (for office staff)

Preble Street Specific Program Training – Required for all Teen Services Staff

III. Teen Services Program Orientation

- a. Program overview and staff expectations
- b. Introduction to the milieu: policies and procedures
- c. Expectations, consequences, and restorative interventions
- d. Universal policies and procedures, including weapons, grievance and CTOs
- e. Mandated Reporting
- f. Introduction to Collaborative partners
- g. Emergency and Safety Procedures – site specific

- h. Evacuation Instructions – site specific
- i. Documentation expectations and file upkeep/ maintenance
- j. Client presentation, engagement, and intervention
- k. Understanding street culture
- l. Mental and Behavioral Health, including Suicide Prevention Training
- m. Introduction to screenings and assessments
- n. Community Resources

IV. Additional Trainings/Requirements

- a. CPR/ First Aid
- b. Trauma-informed care: Approach and Practices
- c. Human Trafficking in Maine: Identification and Response
- d. Positive Youth Development
- e. Motivational Interviewing
- f. Upon Hire and as required by shelter license:
 - i. Physical exam for staff
 - ii. TB testing
 - iii. First Aid/CPR (American Red Cross)
 - iv. FBI Fingerprinting background check
 - v. Maine DHHS background check

Welcome to Preble Street Teen Services

Joe's Place Hours:

8:00am to 8:00pm, 7 days a week, 365 days a year.

Breakfast 8:00-9:00am

Lunch 12:00-1:00pm

Dinner 6:00-7:00pm

Overnight Hours:

8:00pm to 8:00am, 7 days a week, 365 days a year.

Teen Services serves ages 12-20 and offers basic needs, shelter, food and casework.

Street Academy:

Monday-Friday, 8am-3pm

- School Enrollment and Tutoring
- HiSET Pre-Testing & Testing
- Learn to Earn Employment
- Career Exploration and College Prep

Day One Street Program:

Monday-Friday, 9am-5pm

- Mental Health/ Substance Use Counseling
- Intensive Case Management
- Referrals for medication management
- Maine Mother's Network connections

Teen Health Clinic:

3 days weekly

- Address medical concerns & issues
- First Aid
- Referrals to medical homes (PCPs)
- Sexual health services

The mission of Preble Street is to provide accessible, barrier-free services to empower people experiencing problems with homelessness, housing, hunger, and poverty; and to advocate for solutions to these problems.

While you are here, we commit to supporting you, respecting you, and maintaining a safe environment.

We ask that you are safe and respectful of yourself and others.

We believe that people should have equitable access to our space and not face unnecessary barriers.

Our rules are grounded in this belief and our basic values of safety and respect for you, staff, and others.

Joe's Place Basic Rules + Expectations

1. **Violence, Bullying + Hate Speech:** Violence or threats of violence in any form—verbal, physical, emotional, or cyber bullying—will not be tolerated at Teen Services. Hate speech—saying things that put down or demean a person or group of people in some way or saying something that may make another person or group of people feel unsafe—is not permitted at Preble Street. Engagement in any of the above directed toward other clients or staff may result in being asked to leave the space, and a longer consequence may be decided by staff.
2. **Weapons:** Absolutely NO firearms are allowed on Teen Services property. **Clients who bring firearms onto Teen Services properties will be permanently restricted from our services.** No weapons of any kind are allowed within Teen Services programs. Weapons other than firearms **MUST BE** checked in with staff upon entry. Staff reserve the right to determine what is a weapon and may choose to not check in weapons based on size or other factors.
3. **Animals** are only allowed on Teen Services properties if they are documented service, therapy, or emotional support animals and have current and appropriate vaccinations as required by law.
4. **Babies** and children are only allowed in the Teen Center with their program-eligible parent/guardians during meals, appointments, appropriate groups, and family laundry times. Clients who bring their child into the Teen Center are solely responsible for the safety and care of their child while in the space.
5. **Bathrooms/Showers:** One person at a time may use the bathrooms and showers, with the door kept shut for privacy. Youth may do hair, make-up, etc. together with the door open. If youth have been in the bathroom for an extended period of time, staff will perform bathroom checks to ensure their safety. This can range from knocking on the door to entering the bathroom or shower.
6. **Buying and Selling:** There is no buying or selling of any items on Teen Services property; youth cannot exchange money and youth are encouraged not to have any money visible in the space.

7. **Cell Phones + Cameras:** Youth may use cell phones (respectful voice level, no drug selling/seeking), though staff may ask youth to take conversation outside if conversation becomes too loud or inappropriate for the space. For confidentiality reasons, youth are not allowed to do video calls, take videos, or take photos on Teen Services property—this includes selfies!
8. **Computers:** Youth are permitted to use Teen Services client computers at any time. If multiple people are interested in using computers staff will start a list of names and each person will be given 30 minutes of time. If staff believe that inappropriate behavior is occurring on computers in the space, staff have the right to end someone's computer time and potentially limit their access to Teen Services' computers. *Staff computers are not available for use by clients.*
9. **Clothing Policy:** Any clothing that refers to drugs or alcohol; has explicit violent or sexual language, images or references; or clothing that might be deemed offensive to a group of people is not acceptable in the space. Clothes must be worn in a way such that genitals, buttocks, and nipples are covered with opaque material. Shirt (with fabric on front, back and sides), bottoms and shoes must be worn at all times. This policy is intended to ensure that all people are treated equitably regardless of gender/gender identification, sexual orientation, race, ethnicity, body type/size, religion, and personal style.
10. **Doors:** Only staff are permitted to open the entry and exit doors to allow people to come into the Teen Center or Shelter.
11. **Drugs + Alcohol:** If youth are *seeking, selling, using, or sharing* drugs or alcohol—or there is reasonable suspicion of this behavior—they will be asked to leave the space and a longer consequence may be decided by staff. No scales or paraphernalia (for example – bowls or bongs) are allowed in the space. Clients may seek services at Teen Services while under the influence of drugs or alcohol. Clients will be referred to another safe place (ex- the hospital emergency room) if their condition or behavior jeopardizes their safety or the safety of others in the community.
12. **Food:** Meals are served 3 times a day: Breakfast at 8am, Lunch at 12pm, and Dinner at 6pm. Between meals there is cereal, bread, milk, and other snacks available. Teen Center dishes, cups and silverware cannot be taken outside of the drop-in space (i.e., courtyard, sidewalk, etc.). To-go (“bagged”) meals are provided for youth who may be working during meals, have been at the hospital or in school, or have been restricted from eating meals inside the Teen Center.
13. **Lockers:** Youth may sign up for a locker by checking in with staff + signing a locker agreement.
14. **Music:** If you wish to listen to music, movies, or videos while in the Teen Center or Joe Kreisler Teen Shelter, you can do so while wearing headphones in common areas, and at a respectful volume in the bathrooms or courtyards.
15. **Physical Contact:** Extended physical contact (sitting on laps, kissing, etc.) and any physical contact that could hurt another person (fighting, wrestling, or horseplay) is not permitted.
16. **Smoking + Nicotine Vapes:** Clients can use tobacco in the courtyards outside the Teen Center and the Joe Kreisler Teen Shelter. **Clients are not permitted to use tobacco inside Teen Services Buildings, including nicotine vapes.**
17. **Television and Movies:** Movie and television content may not contain extreme language, sex, or violence, and staff have the discretion to determine what is appropriate to be shown in the space.
18. **Grievances:** Please contact staff if you have a problem you need staff support to solve. If the matter is not resolved, you may request a Grievance Form. Please give completed forms to a staff person, and a supervisor or director will meet with you to address your concerns.
19. **Termination of Services:** If a client's behavior becomes unsafe based on the rules, norms and expectations in this document, staff may suspend or terminate services. Clients will be notified of the decision to terminate services and will be provided a Grievance Form if desired. Clients who have shelter services terminated will be referred to casework services off site and will be encouraged to work with a caseworker to find other appropriate housing/shelter options.

Shelter Space Specific Expectations

1. Youth must be in the sleeping areas between 11pm-7am. Lights are out by 11pm, unless there is an early "lights out" request, which could be as early as 8:30pm. Quiet is expected in the dorm after "lights out".
2. Youth under the age of 18 (minors) are required to sign into the shelter by 9:00pm (10:00pm during summer and weekends). If this curfew is missed, youth may only access the Teen Center drop-in the following day if they engage in meaningful work toward goals with their caseworker.
3. The shelter curfew for adults (18+) is 2:00am. Youth are not permitted to enter the shelter after 2am.
4. Leaving the property after signing into the shelter is equivalent of signing out. Youth who sign out and return the same evening will have to plan to spend the following night out of the shelter.
5. Youth are permitted to go to the outside courtyard for smoke breaks periodically throughout the night. Youth are expected to respect the time frame provided by staff for length of smoke break (generally, 15 minutes).
6. Youth must stay in the dorm and the bed they are assigned to.
7. Youth are responsible for making their bed in the evening and bringing their linen to the laundry cart in the morning.
8. Please check in prescription medications when signing into the shelter. All medications will be returned each morning

Client Name and Signature

Date

_____ (client initials) I have been informed that if I have any concerns around the expectations of the space or feel that I have been unfairly treated, I have the right to file a written grievance which will be submitted to and reviewed by management. Staff can provide me with a grievance form upon request.

My signature below indicates that I AGREE to follow all the rules and have been orientated with and clearly understand the emergency procedures, locations of all emergency exits and where to assemble in case of an emergency.

Client Name and Signature

Date

Preble Street Teen Services Mask Requirement

I, _____ understand that it is a requirement for me to wear a mask at all times while inside the Teen Center Drop-In and the common areas of the Joe Kreisler Teen Shelter.

I understand that I am not required to wear a mask when I am:

- On my bed at the Teen Shelter
- Eating
- In the outside courtyards of the Drop-In and shelter.

I understand that this rule is about keeping myself and others safe during the Covid-19 pandemic.

Client Signature

Date

Sep 2, 2022, 11:31:51 AM (3 days

mike@harborlightadvisors.com <mike@harborlightadvisor... ago)
to planningboard@portlandmaine.gov, ctetelman@portlandmaine.gov

Hello, I am writing in regards to the Minor Site Plan Application notice received for PL-002095-2022 at 343 Cumberland Avenue. I am one of the owners of 24 Preble Street. We think it is a good idea to consolidate services in one building at 343 Cumberland Avenue and understand the efficiencies that will bring. With that said, we do have some concerns. Our building has a vacant first floor storefront that we are trying to lease. There are constantly people hanging out on the steps and leaving trash. I don't know where the people are coming from but a lot of the time it is teenagers. The adjacent alley to our building has also been used to as a dumping ground for trash requiring us to spend a decent amount of money constantly cleaning up for something that we do not even own. We do the cleanup though since it reflects poorly on our building. We did work with the abutting property to install a locked gate on the alley that we paid for to help mitigate this. We have received feedback from multiple prospective tenants that this is an area of concern for them.

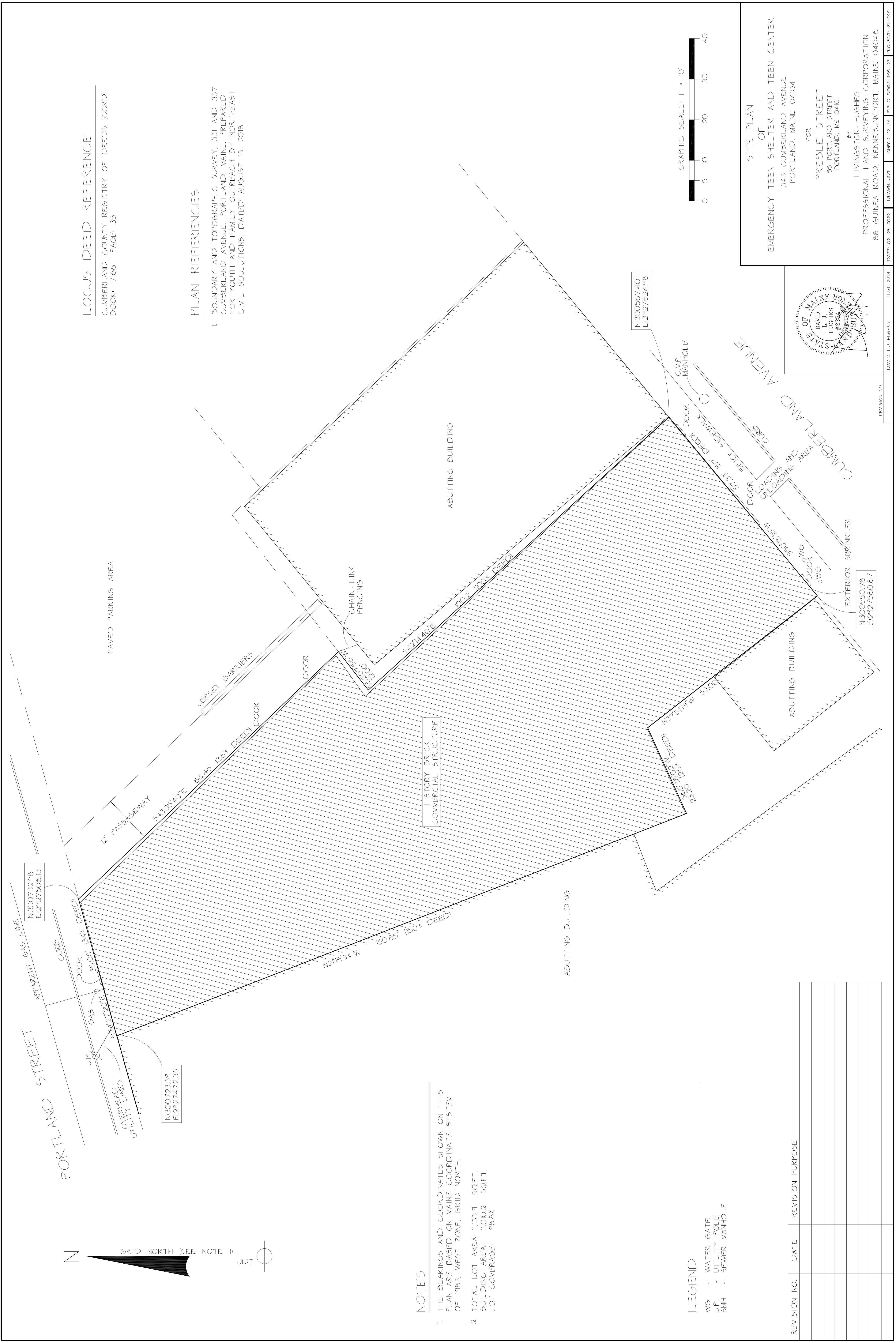
Lastly, we would like to know the plan for 38 Preble Street.

I appreciate your consideration to these issues.

Mike

--

Michael A. d'Hemecourt
Principal



LOCUS DEED REFERENCE

CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD)
BOOK: 17166 PAGE: 35

PLAN REFERENCES

- BOUNDARY AND TOPOGRAPHIC SURVEY, 331 AND 337 CUMBERLAND AVENUE, PORTLAND, MAINE, PREPARED FOR YOUTH AND FAMILY OUTREACH BY NORTHEAST CIVIL SOLUTIONS, DATED AUGUST 15, 2018

NOTES

- THE BEARINGS AND COORDINATES SHOWN ON THIS PLAN ARE BASED ON MAINE COORDINATE SYSTEM OF 1983, WEST ZONE, GRID NORTH.
- TOTAL LOT AREA: 11,135.9 SQ.FT.
BUILDING AREA: 11,010.2 SQ.FT.
LOT COVERAGE: 98.8%

LEGEND

- WG - WATER GATE
- UP - UTILITY POLE
- SMH - SEWER MANHOLE

REVISION NO. DATE REVISION PURPOSE

REVISION NO.

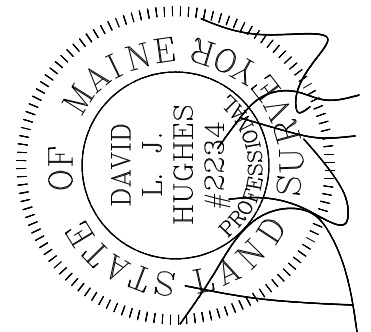
DAVID L.J. HUGHES P.L.S. 2234

DRAWN: JDT

CHECKED: D.J.H.

FIELD BOOK: 185-271

PROJECT: 22-005

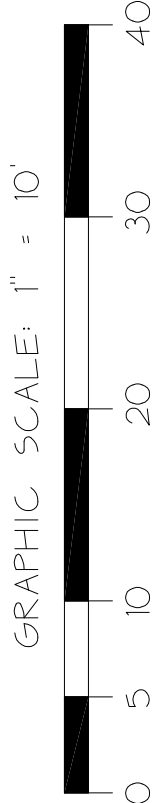


SITE PLAN

OF
EMERGENCY TEEN SHELTER AND TEEN CENTER
343 CUMBERLAND AVENUE
PORTLAND, MAINE 04104

FOR
PREBLE STREET
55 PORTLAND STREET
PORTLAND, ME 04101

BY
LIVINGSTON-HUGHES
PROFESSIONAL LAND SURVEYING CORPORATION
88 GUINEA ROAD, KENNEBUNKPORT, MAINE 04046





Luminaire Schedule

Symbol	Qty	Label	Description	Tag	Luminaire Lumens	Luminaire Watts	LLF
	70	P	TIVOLI: LSL2-B-24-H-30-C-12		14	0.4	0.900
	24	T1	NOVA FLEX: NF-DS-W-64-24V-3000K CHANNEL NF-CH-3525-2M	Product dimmed in photometric to 25 lm/ft level to meet town requirements, Reflex to provide necessary local controls to restrict light fixtures from exceeding town FC requirements.	238	3.06557	0.095
	7	WS1	LIGMAN: UAB-30003-14w-W30-XX-120/277v	Product dimmed in photometric to 382 lm level to meet town requirements, Reflex to provide necessary local controls to restrict light fixtures from exceeding town FC requirements.	765	11.1	0.450

Calculation Summary

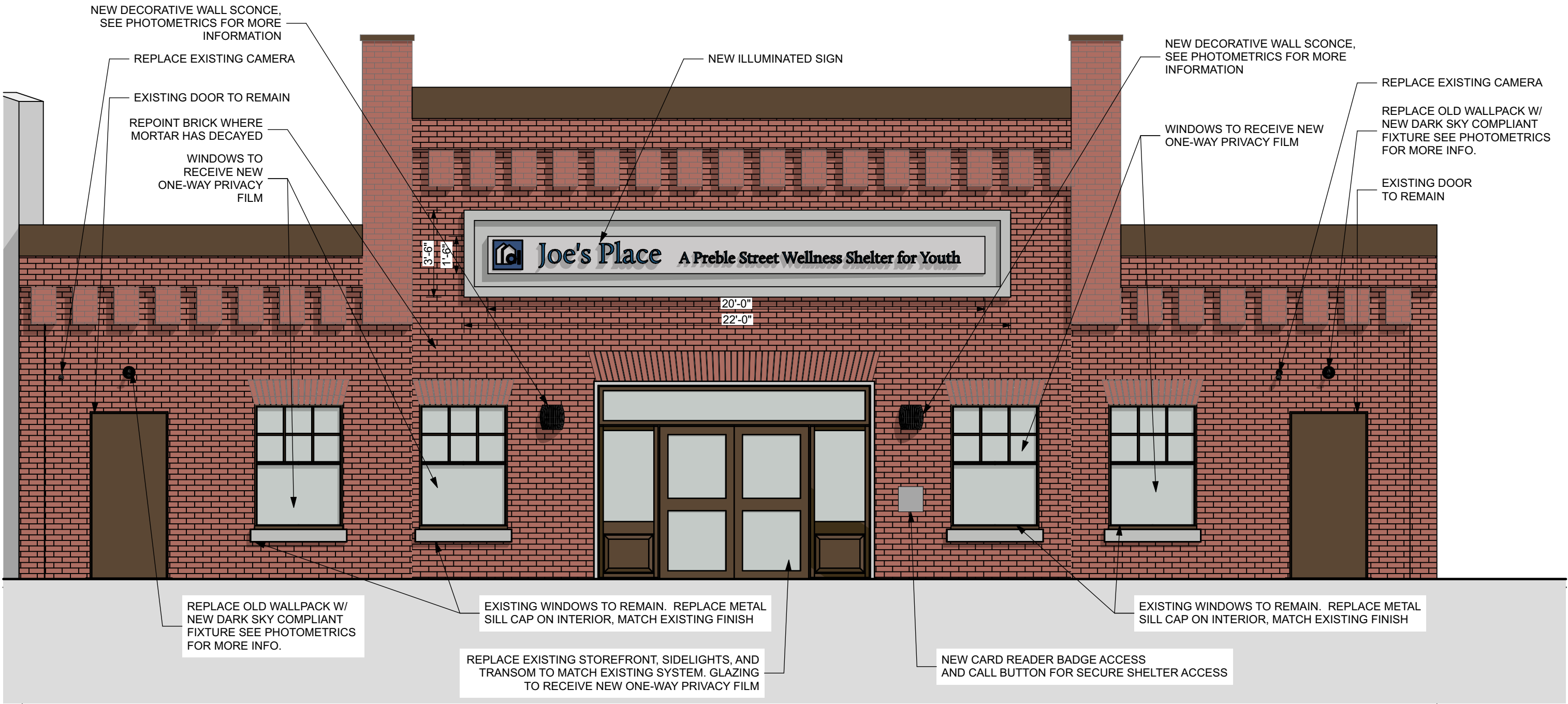
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Bench_1_Top	Fc	2.20	2.3	2.1	1.05	1.10
Bench_2_Top_1	Fc	4.05	4.6	3.5	1.16	1.31
Bench_4_Top_1	Fc	2.30	4.7	1.2	1.92	3.92
Bench_Top	Fc	2.25	2.8	1.1	2.05	2.55
Exterior	Fc	1.00	2.5	0.1	10.00	25.00
Floor	Fc	1.86	5.0	0.5	3.72	10.00
Grass_Top	Fc	1.16	1.6	0.7	1.66	2.29
Step_1_Top	Fc	1.63	2.0	1.3	1.25	1.54
Step_2_Top	Fc	1.54	1.7	1.3	1.18	1.31
Step_Top	Fc	1.60	2.0	1.1	1.45	1.82
Step_Top_1	Fc	1.26	1.7	0.9	1.40	1.89



2 EXISTING ELEVATION
SCALE: 1/4" = 1'-0"

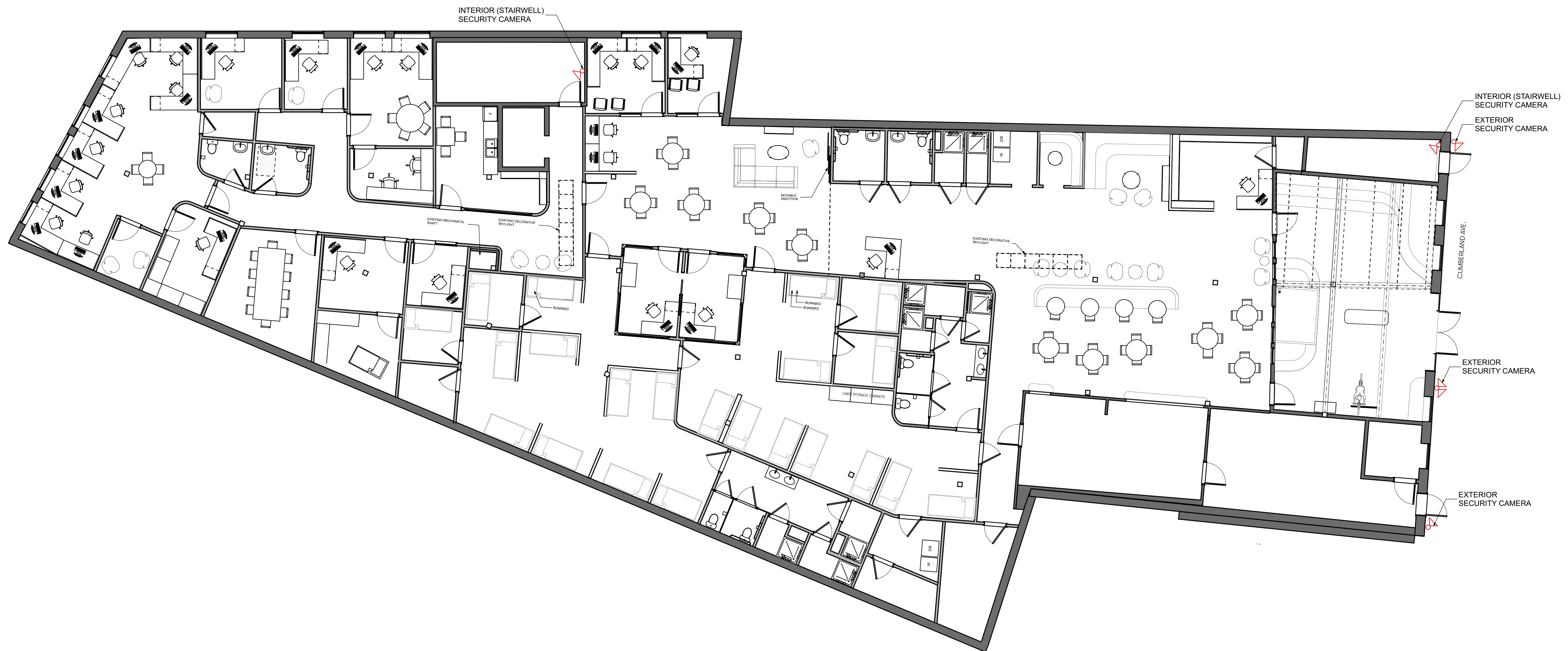


EXISTING CONDITIONS PHOTO

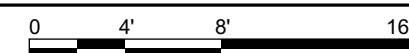


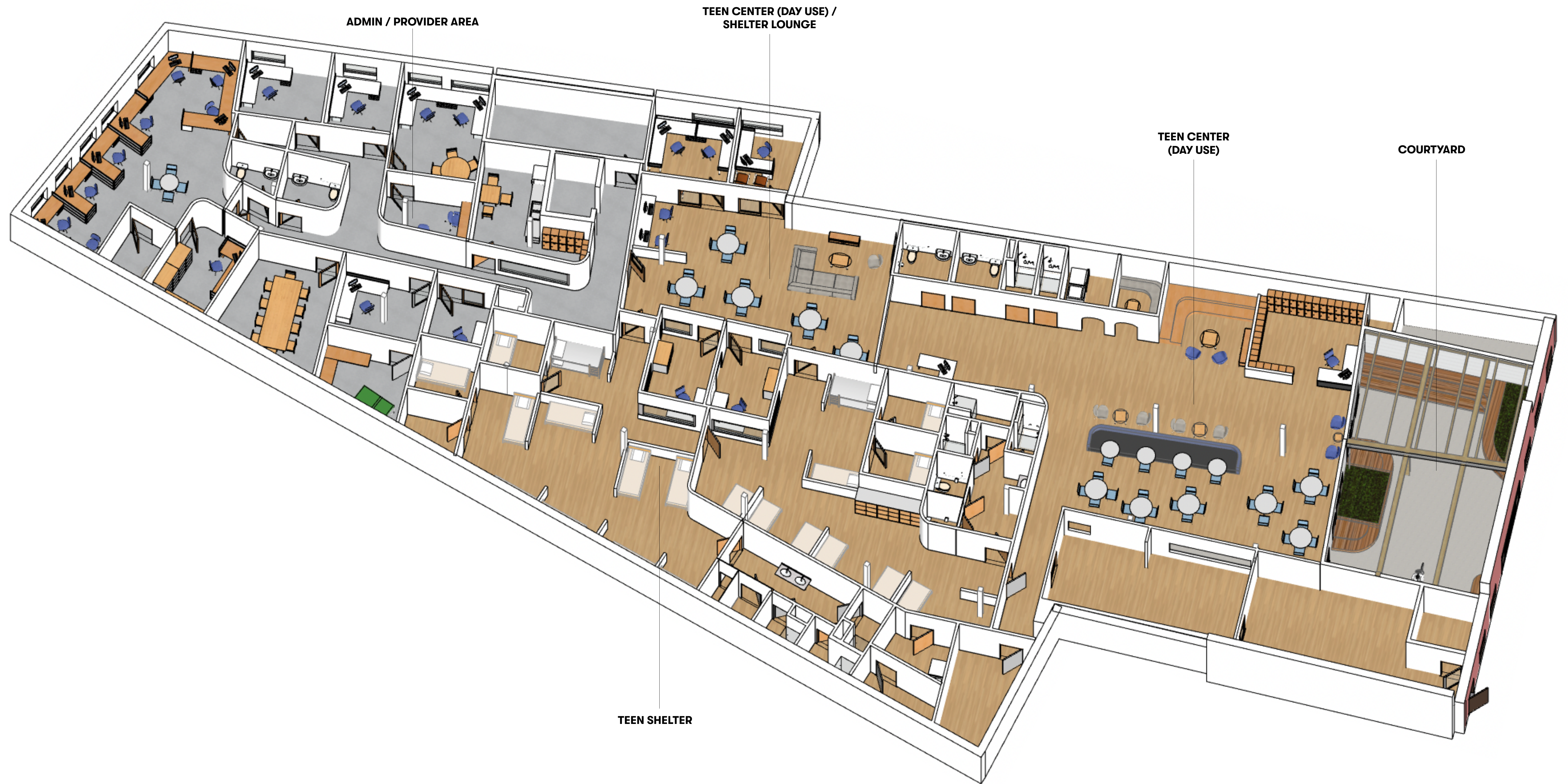
1 PROPOSED EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

EXTERIOR IMPROVEMENTS



1 MAIN FLOOR
SCALE: 1/8" = 1'-0"





ISOMETRIC 3D VIEW



① VIEW OF STAFF AREA @ SLEEPING AREA 1
SCALE: 1:55.83



③ VIEW OF STAFF AREA @ SLEEPING AREA 2
SCALE: 1:55.55

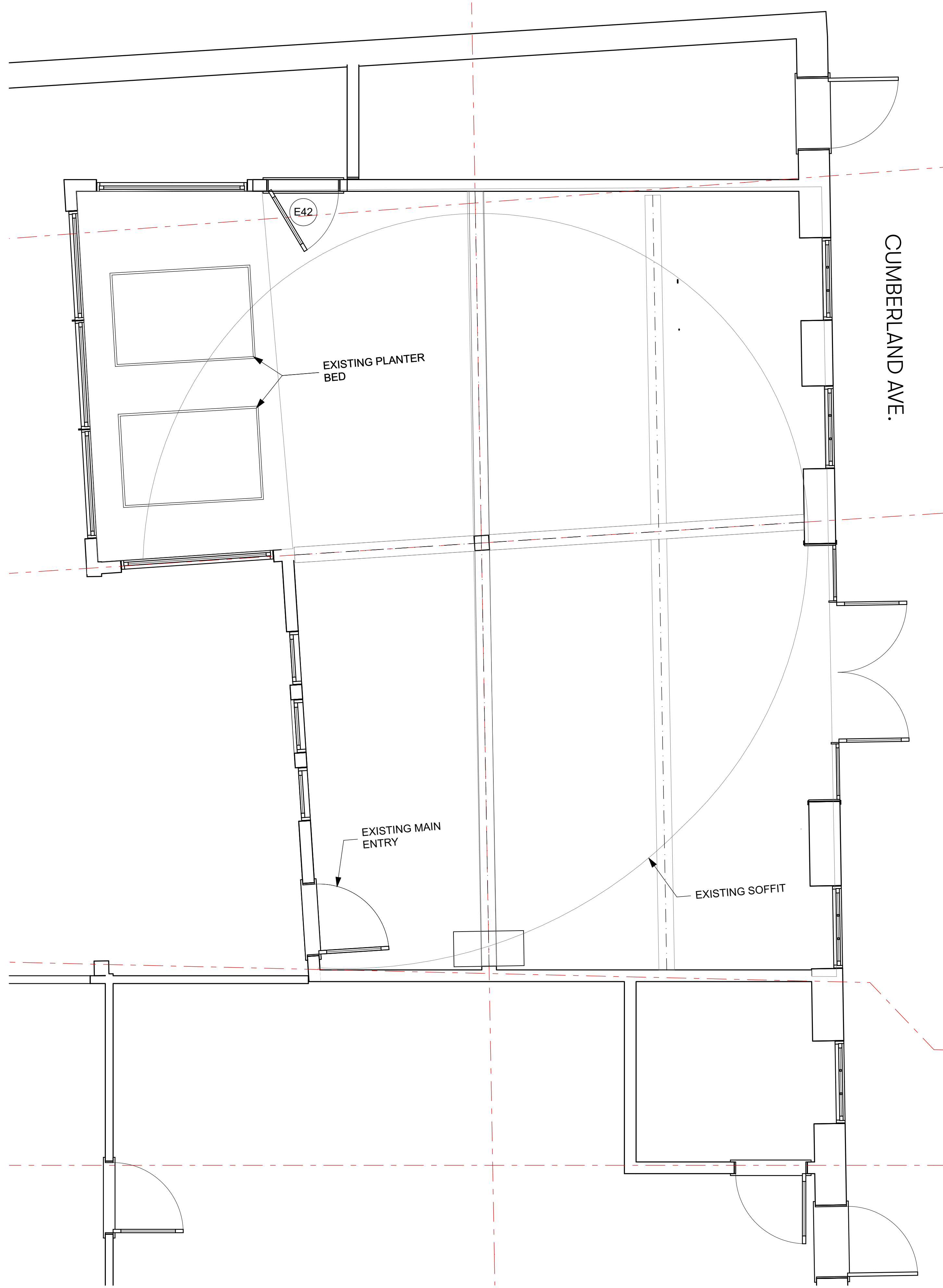


③ VIEW OF SLEEPING AREA 1
SCALE: 1:55.59



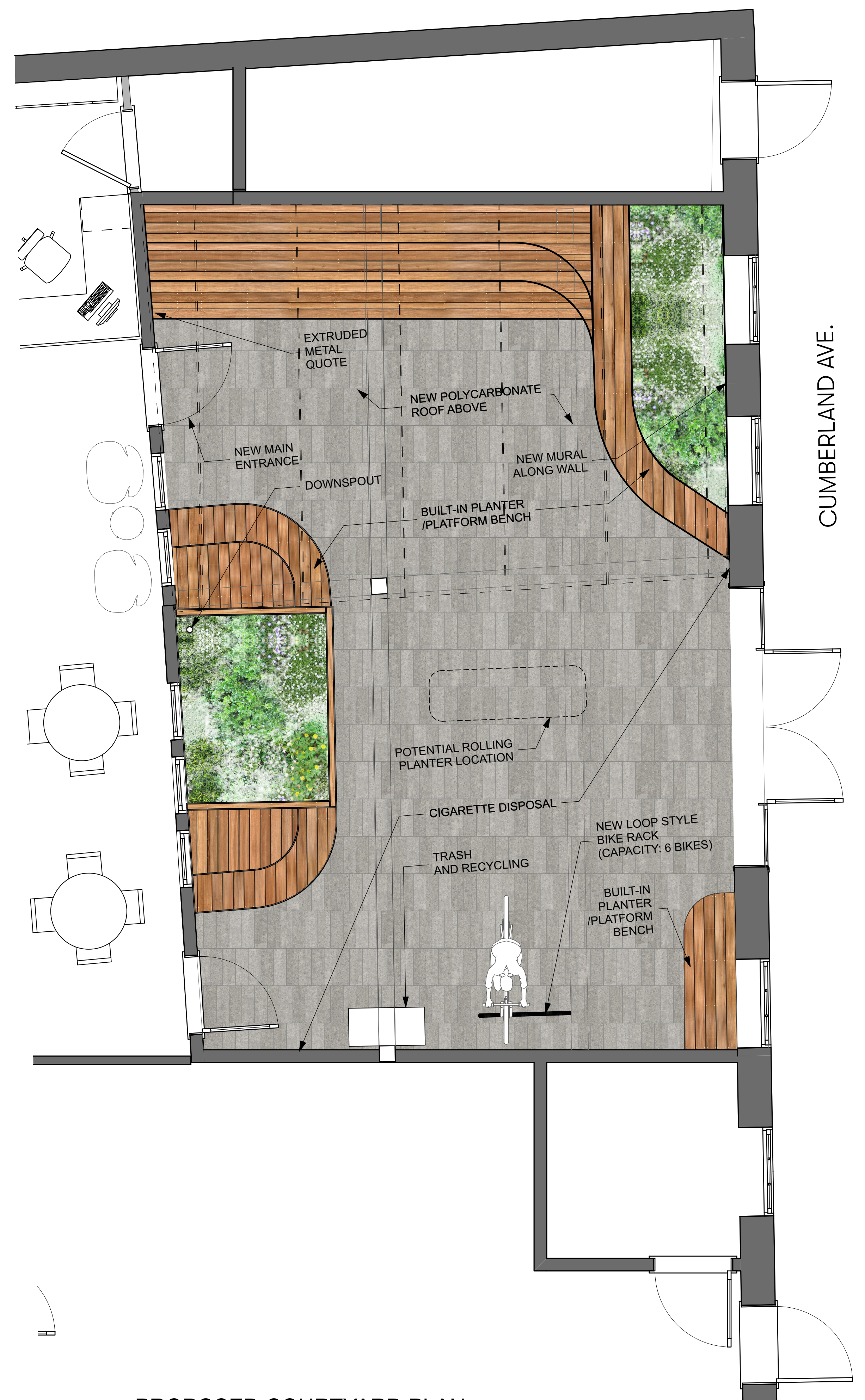
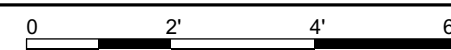
④ VIEW OF SLEEPING AREA 2
SCALE: 1:55.74

INTERIOR SIGHTLINES



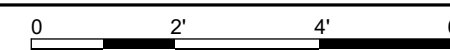
2 EXISTING CONDITIONS

SCALE: 3/8" = 1'-0"



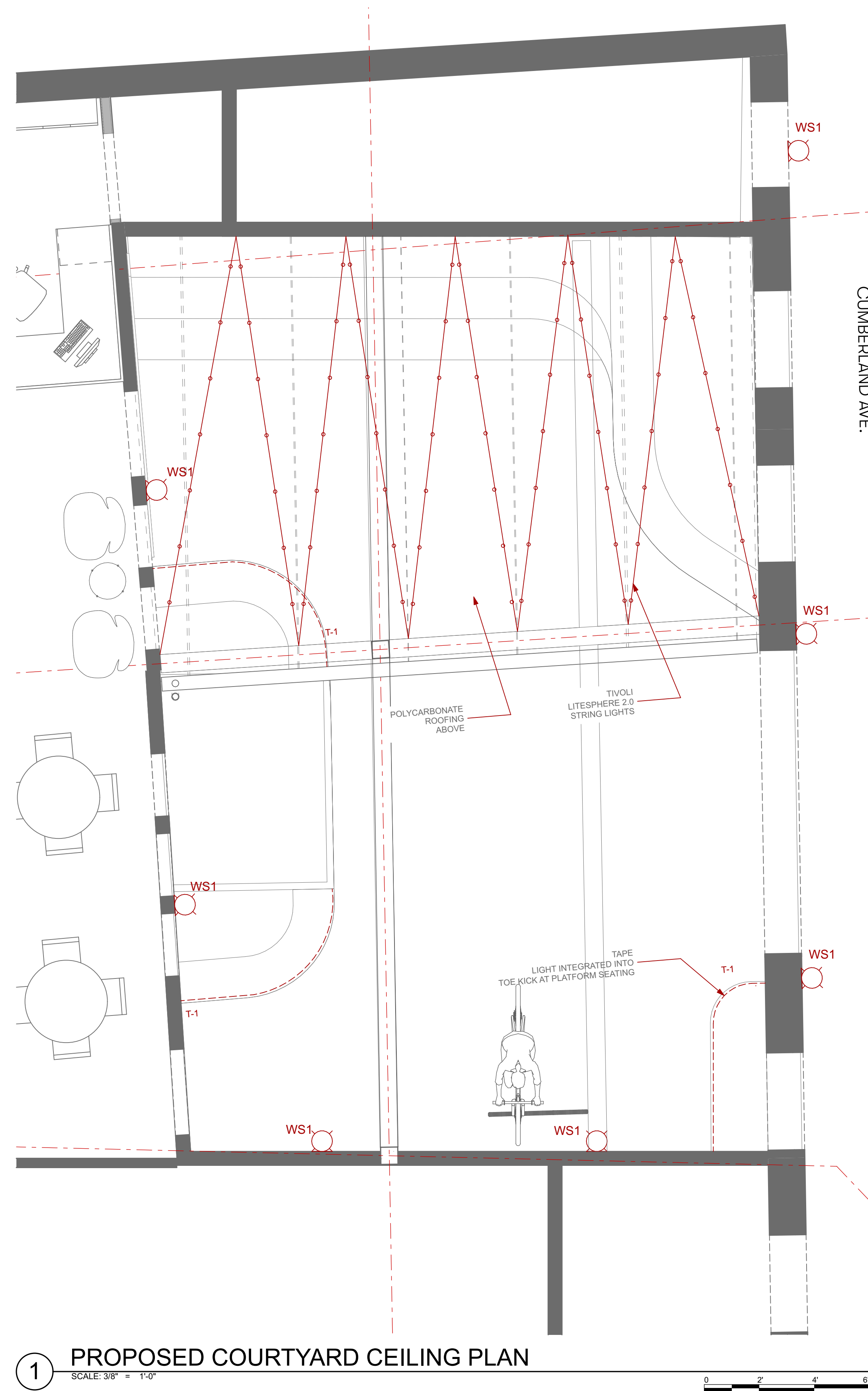
1 PROPOSED COURTYARD PLAN

SCALE: 3/8" = 1'-0"

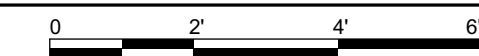


COURTYARD ENLARGED PLANS

Kaplan
Thompson
Architects



1 PROPOSED COURTYARD CEILING PLAN
SCALE: 3/8" = 1'-0"



COURTYARD CEILING PLANS

PLANNING BOARD REPORT PORTLAND, MAINE

Rezoning from I-L to B-2
50 County Way
Zoning Map Amendment
ZN-001944-2022

Submitted to:	Portland Planning Board	Prepared By:	Austen Torres Davis
Public Hearing Date:	September 13, 2022	Date:	September 9, 2022

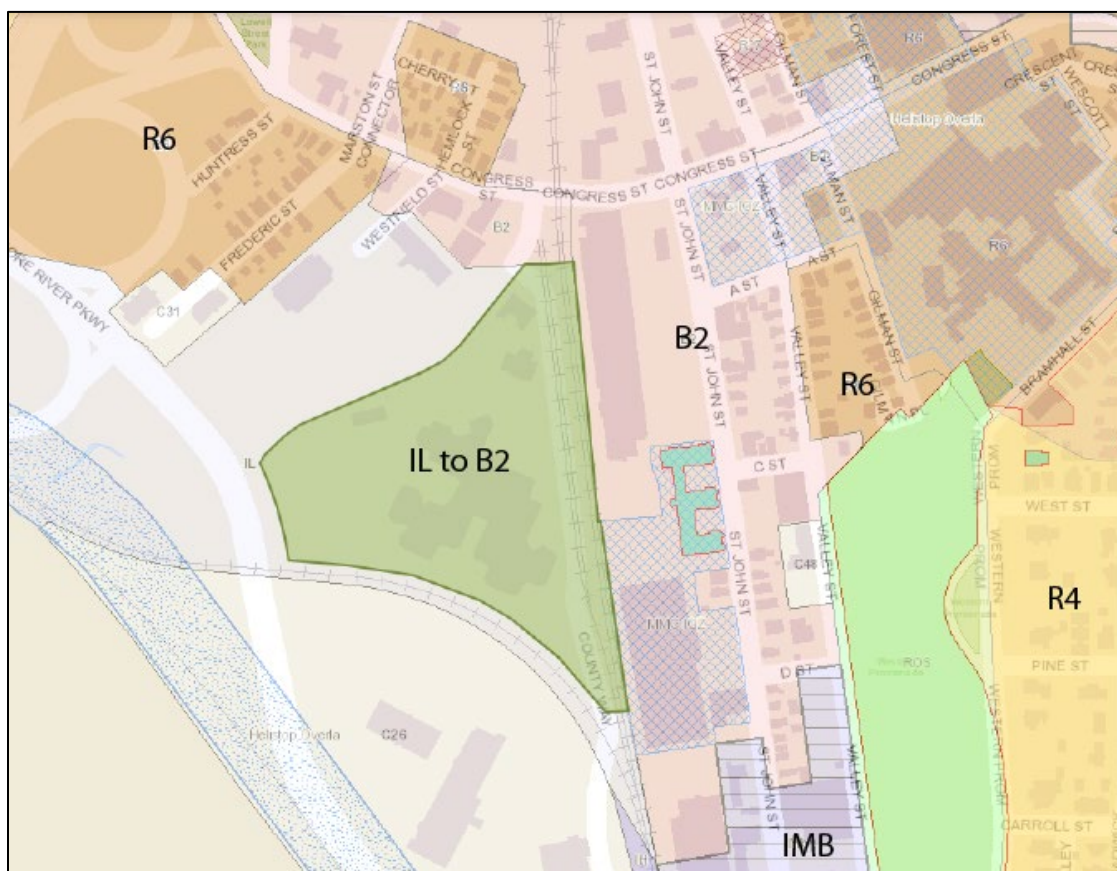


Figure 1: Existing zoning context with approximate rezoning area highlighted in green.

I. INTRODUCTION

Cumberland County Government is seeking a zoning map amendment to change an I-L Industrial low-impact zone to a B-2 Community Business zone. The subject area for the rezoning consists of approximately 15 acres of County property located at 50 County Way (CBL: 064 A013001) in the Libbytown neighborhood. The existing I-L zone does not allow governmental uses, general services, or pre-release facilities. Therefore, some of the existing uses at 50 County Way are currently non-conforming to the standards of the I-L zone.

The requested zoning map amendment would facilitate the construction of an enhanced medical wing to the existing Cumberland County Jail, as well as the future construction of a building to house the Cumberland County Register of Deeds. These actions would allow for the provision of improved medical care to inmates, as well as the future consolidation of most County functions onto one property. Each of these future projects would be required to go through the site plan application process.

The Planning and Urban Development Department mailed 61 notices advertising this meeting to interested parties and property owners within 500 feet of the site. The legal advertisement ran in September 3 and 6, 2022 editions of the *Portland Press Herald*. The applicant held a neighborhood meeting on July 23, 2022 with no members of the public in attendance. The Planning Board held a workshop on June 28, 2022.



Figure 2: Aerial View of Site (facing north)

Applicant: Cumberland County Government
Applicant Representative: James H. Gailey, County Manager

II. PROJECT DATA

Existing Zoning	I-L Industrial – Low Impact
Proposed Zoning	B-2 Community Business
Existing Use	Governmental Uses
Proposed Use	Governmental Uses

III. EXISTING CONDITIONS

The subject property is comprised of three County-owned parcels at 50 County Way, improved with the existing Cumberland County Jail, as well as the Community Corrections and Sheriff's Office. The site is bordered on the east and southwest by active rail lines owned and operated by Amtrak. To the south, beyond the rail lines is Northern Light Mercy Hospital at 175 Fore River Parkway. From the west, the site is bounded by the Fore River Parkway and vegetated land. An access road leads from the Fore River Parkway into the site. The site's primary access point is from County Way, which leads from Congress Street. Congress Street is identified as a priority corridor in Portland's Comprehensive Plan and is predominantly commercial, mapped with B-2 zoning between Forest Street and Park Avenue. Portland's Comprehensive Plan also identifies the area around Congress and St. John streets as a priority node for transformation. Across the rail line to the east is developed with a wide range of building typologies and mix of uses including one-to-four story mixed-use, commercial, residential, and industrial buildings zoned B-2. Union Station Plaza, a one-story building with a number of retail establishments and surface parking as well as the Maine Central Railroad General Office Building at 222 St. John Street, which was designated on the national register in 1988, is immediately east of the site, abutting the rail line. Maine Medical Center's Bramhall Campus is east of the site approximately 0.2 miles.

The site is proximate to transportation including the Portland Transportation Center (approximately one mile), Greater Portland Metro routes B, 1, 5, 9A, and 9B, Fore River Parkway Trail, as well as Interstate 295.

IV. BACKGROUND

Historically, the site now known as 50 County Way was owned by the Portland Terminal Company, which managed railways in the Portland region. The Cumberland County Government acquired the property from the Portland Terminal Company in 1990. The County acquired the site in order to build the current County Jail, which opened in 1994. In addition to the jail, the roughly 15 acre complex includes a prerelease center and an office building used by the Cumberland County Sheriff's Office.

Prior to 1997, 50 County Way was zoned as I2, an industrial zone that no longer exists. 1997 zoning maps show the site within the I-L zone.

On June 28, 2022 the Planning Board held an initial Workshop on the proposed zoning map amendment. The applicant team described the site, the requested zoning map amendment, and stated how the existing use is not permitted within the I-L zone and how the zone change will facilitate their future plans to expand on the site. City staff described the proposed application, and surrounding context, including zoning and land use. The Planning Board asked staff questions regarding the history of the site, and how the existing use became non-conforming to the I-L zone. The Planning Board also asked staff to clarify whether a map amendment or a text amendment would be appropriate for this site. Staff noted that a text amendment to allow governmental uses in the I-L Industrial zone would not be appropriate in this instance because it would introduce the use throughout all I-L zones. Staff noted that a zoning map amendment would be appropriate to address the site's existing non-conformity as it relates to use and would rezone a legacy industrial zone into a Community Business zone that better aligns with the site's current use and surrounding mixed-use context. Additionally, the site is adjacent to an existing B-2 zone to both the north and east. Other nearby zones include the I-L zone and R-6 residential zone.

Board members also questioned the B-2 dimensional standards and whether the proposed rezoning would cause future non-conformities related to maximum front setback requirements. Staff note that front setbacks are defined (Article 3 Definitions) as *"a setback along the front lot line, extending between side lot lines, the depth of which shall be the shortest horizontal distance between the front lot line and any structure. In the case of lots with frontages on two or more streets, the orientation of the principal entry to the principal building shall prevail. In the case of lots without frontage on a street, the property line that parallels the nearest developed street shall be considered the front."*

The front setback of 50 County Way would therefore be measured from the entrance of the County Jail (i.e. the principal building) to the Congress Street intersection with County Way (i.e. the principal entry). The change from I-L to B-2 will not create front setback issues for future construction on the site as per Land Use Code Section. 7.5.5 (F), which states that within the B-2 zone:

- a. Building additions do not have to meet maximum front setback requirements.
- b. The Planning Board or Planning Authority may approve a different front setback for irregularly shaped lots or lots with frontage greater than 40 feet in width provided the front setback is met to the maximum extent practicable.
- c. If a lot has less than 40 feet of frontage and is more than 100 feet deep, then no maximum setback is required.

The above standards ensure that a map amendment rezoning 50 County Way from I-L to B-2 would allow the site to be developed, as it is an irregularly shaped lot with less than 40 feet of frontage and greater than 100 feet of depth. Development proposals for 50 County Way described in this report are conceptual and subject to future site plan review and approval.



Figure 3: Plan View (facing west) Showing Site with Existing Buildings

V. CONCEPTUAL DEVELOPMENT PROPOSAL

The proposed rezoning from I-L to B-2 would facilitate the expansion of county government services on the site.

The County intends to build a 6,000 square foot addition to the existing County Jail for a new medical wing. The Covid-19 pandemic led the County to realize its medical services on site were inadequate to address needs of inmates. This wing will improve the ability of the County government to deliver services to inmates, as the County's current medical facility is undersized and dated. Additionally, the County may explore a small free-standing building for administrative uses along the Fore River Parkway. This building would also be used to house the Cumberland County Register of Deeds, which is currently housed in a leased space on Pearl Street that does not have the capacity for expansion.

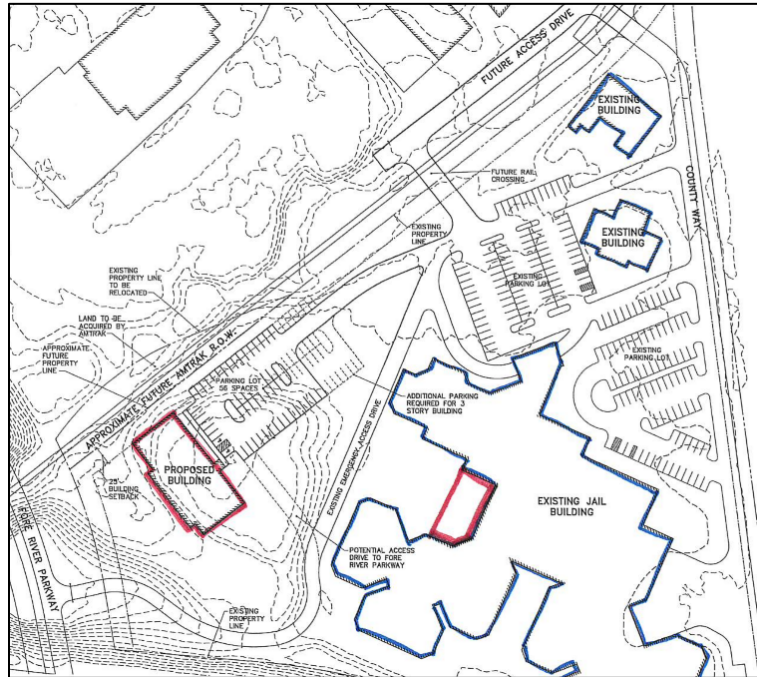


Figure 4: Proposed Development Facilitated by Rezoning

The development contemplated in this application is conceptual at this stage – no site plan application has yet been submitted - but the current 50 County Way map amendment application package submitted by the applicant includes a concept showing a new building, as well as an addition to the existing jail (see Figure 4).

Should the proposed rezoning be approved by the City Council, a site plan application would be submitted by the applicant. In addition to applicable land use standards, the future project would be subject to the standards contained in the City's Technical Manual and B-2 design guidelines.

VI. PROPOSED ZONING MAP AMENDMENT

The B-2 Community Business zone is a moderate-density mixed-use zone mapped in locations throughout the city, both on and off-peninsula. The I-L Industrial Low-Impact zone is less widespread throughout the city, with small-scaled pockets of low intensity industries that border residential areas. Some examples of permitted uses in the I-L zone include bakeries and breweries, as well as warehousing and distribution. I-L zones do not permit governmental uses or offices other than back office uses.

The two zones permit a wide and sometimes-overlapping range of uses. However, they vary significantly in terms of the form of building that is promoted through the dimensional requirements, as well as permitted and conditional use standards.

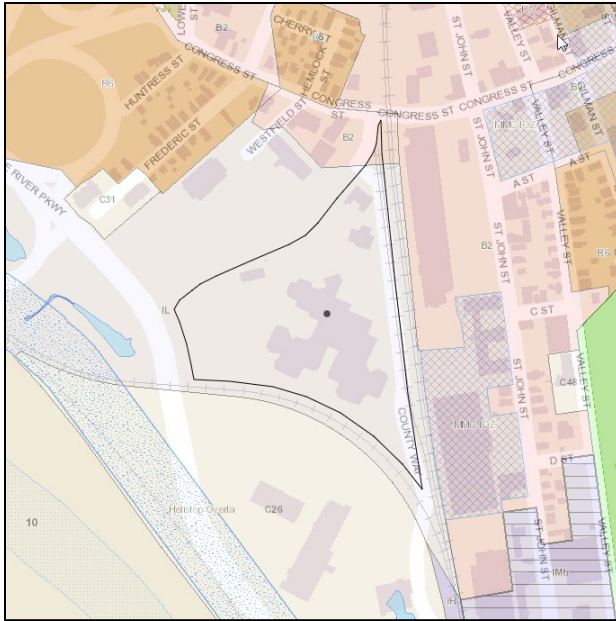


Figure 5: 50 County Way Property Line

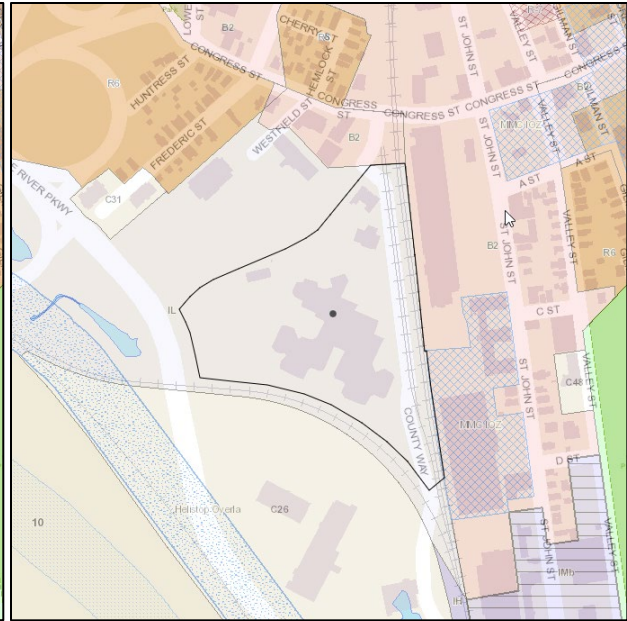


Figure 6: Area to be Rezoned I-L to B-2

VII. ZONING ANALYSIS

A. Existing Zoning: I-L Industrial Low-Impact

The City's zoning code describes the purpose of the I-L Low Impact Industrial zone as:

"To provide areas in which low-impact industrial uses, and limited other uses serving employees and residents of the surrounding neighborhood, will be compatible with adjacent residential uses, will provide a buffer between residential neighborhoods and higher impact industrial zones, or will stand alone as a smaller scale industrial district. The I-L zone is located adjacent to residential neighborhoods, business uses and other industrial uses where the low-intensity nature of the uses, as well as their strict performance standards, will ensure the compatibility of the uses with other adjacent industrial and nonindustrial uses. Performance standards for uses in the I-L zone are designed to maintain compatibility between low impact industrial uses and neighboring nonindustrial and industrial uses."

B. Proposed Zoning: B-2 Community Business

The City's zoning code describes the purpose of the B-2 Community Business zone as:

"To provide appropriate locations for the development and operation of community centers offering a mixture of commercial uses, housing, and services serving the adjoining neighborhoods and the larger community. The variety, sites, and intensity of the permitted commercial uses in the B-2 zone are intended to be greater than those permitted in the B-1/B-1b zones. The zone provides a broad range of goods and services with a mixture of large and small buildings, such as grocery stores, shops and services located in major shopping centers and along arterial streets. Such establishments should be readily accessible by automobile, by pedestrians and by bicycle. Development in the B-2 zone should relate to the surrounding neighborhoods by design, orientation, and circulation patterns. The zone should provide locations for moderate to high-density housing in urban neighborhoods along arterials"

Planning staff firmly believes in the strong need to support opportunities for industrial uses and growth throughout the city. In its review of rezoning applications, Planning staff carefully considers whether the proposed uses, density, building form, and scale of new buildings, are appropriate for the location, and

whether a rezoning can further public policy objectives. These considerations include whether an area under consideration for rezoning is located along or near a priority corridor or node identified in the Comprehensive Plan, whether it is proximate to transit, public services, jobs, and open space, whether the existing zoning is still serving its intent, whether a rezoning can bring a site(s) into conformance, as well as whether there are any potential significant use impacts or conflicts. Planning staff believes that the proposed B-2 zone is an appropriate district for the subject area because the site has been operating as a non-industrial use for over three decades and the existing governmental and pre-release uses are non-conforming in the I-L zone. In addition, the surrounding area contains a mix of uses, including commercial, residential, and institutional. Additionally, an existing B-2 zone abuts the site to the north and east, such that expanding the B-2 would fit within the character of the surrounding area. Furthermore, the City's Comprehensive Plan identifies Congress Street as a priority corridor and the area around Congress and St. John's streets as a priority node for transformation. The site is proximate to public transit including Greater Portland METRO routes, the Fore River Parkway Trail, I-295, and the Portland Transportation Center as well as many job centers including Maine Medical Center, Northern Light Mercy Hospital, and many commercial businesses. Nearby open space includes Deering Oaks Park, the Western Promenade, and Dougherty Field.

Staff have conducted an analysis comparing the proposed B-2 zone requirements with the existing I-L industrial zone and have highlighted the differences in the tables below.

Use Summary:

The existing I-L zoning district permits a range of institutional, commercial, and industrial uses. These include low-impact industrial uses. Low-impact industrial uses involve manufacturing, packaging, assembly, and distribution of previously processed materials. Businesses that fit in this category range in operations from bakeries and breweries to machine shops and tree nurseries. In addition to these industrial operations that are generally compatible with adjacent residential and commercial zones, the I-L zone allows miscellaneous uses such as solar and wind generation. The I-L zone does not permit governmental uses such as those that already exist at 50 County Way or residential or office uses.

The B-2 zone is a mixed-use zone permitting residential, institutional, commercial/service, and industrial uses. Some permitted uses in the B-2 zone include institutional uses such as clinics, intermediate care facilities, as well as commercial uses such as bars, restaurants, and general offices. Low-impact industries are also permitted in the B-2 zone, such that this proposed map amendment would not preclude future industrial development in the area. The B-2 zone would bring the existing governmental uses into conformance and would allow for the expansion of facilities at 50 County Way.

Table 1 provides a comparison of the permitted uses between existing and proposed zone. Uses marked with a 'P', are permitted uses in the zone. A 'C' indicates a conditional use, otherwise uses are not permitted. Highlighted in yellow shows any changes between zones

TABLE 1: PERMITTED AND CONDITIONAL USES IN I-L Industrial & B-2 Business Community Zones		I- L	B- 2	Notes
Residential	Single-family dwellings		P	
	Two-family dwellings		P	
	Multi-family dwellings		P	
	Combined living/working spaces		P	
	Lodging houses		P	
Institutional	Clinics		P	
	Elementary, middle, and secondary schools		P	
	Governmental Uses		P	This would be the proposed use of the site at 50 County Way.
	Intermediate Care Facilities		P	
	Long-Term and Extended Care Facilities		P	
	Places of assembly (< 10,000 SF)	P	P	
	Places of assembly (> 10,000 SF)		P	
	Preschool facilities	P	P	
	Emergency shelters	C U		
	Post-secondary schools		P	
Commercial	Adult business establishments		P	
	Auto, boat, and related dealerships		C U	
	Auto service stations		C U	
	Bars		P	
	Bed and breakfasts		P	
	Funeral homes		P	
	General offices (<5,000 SF)	P	P	
	General offices (>5,000 SF)	P	P	Cumberland County plans to eventually expand uses at 50 County Way to include more office space.
	General services (<5,000 SF)		P	
	General services (>5,000 SF)		P	
	Hotels		P	
	Recreation and amusement centers	P		
	Marijuana retail store		P	
	Registered marijuana dispensary		P	
	Restaurants		P	
	Retail (< 5,000 SF)		P	
	Retail (5,000 – 25,000 SF)		P	

	Retail (>25,000 SF)		P	
	Small-scale marijuana caregiver		P	
	Theaters and performance halls		P	
	Veterinary services		P	
Industrial	Communication studios		P	
	Animal-related services	P		
	Construction & engineering services	P		
	Dairies	P	P	
	Intermodal transportation facilities	P		
	Laboratory and research facilities	P	C U	
	Low-impact industrial (<10,000 SF)	P	P	
	Low-impact industrial (>10,000 SF)	P	P	
	Lumber yards	P		
	Marijuana cultivation facility (<2,000 SF plant canopy)	P		
	Marijuana manufacturing facility	P		
	Marijuana testing facility	P		
	Printing and publishing	P	C U	
	Repair services	P	P	
	Studios for artists and craftspeople	P	P	
	Warehousing, storage, and distribution	P	C U	
Other	Correctional pre-release facilities			Pre-release facilities are not permitted in either the I-L or the B-2 zones.
	Marinas	P		
	Parks and open spaces		P	
	Solar energy system (minor)	P	P	
	Utility substations	P	P	
	Wind energy system (minor)	C U	C U	

B-2 Community Business zone dimensional standards have no minimum lot area or lot coverage requirements. The lot area per dwelling unit is 435 square feet for residential uses. Buildings have a maximum front setback of 10 feet, a minimum rear setback of 10 feet, and no side setback. Buildings are permitted a maximum building height of 45 feet, except 50 feet if the first floor is in commercial use, and 65 feet on lots greater than five acres. There is a required five foot side setback and 15 foot rear setback for

portions of buildings above 35 feet when the property line abuts a residential zone. The impervious surface ratio maximum is 80% for non-residential uses.

Table 2 provides a comparison of the dimensional requirements between existing and proposed zone. Highlighted in yellow shows any changes between zones

TABLE 2: Zoning Requirements by Use	I-L	B2
Lot area (min.)	None	None
Lot area per dwelling unit (min.)	N/A	435 SF (on-peninsula)
Lot area per rooming unit (min.)	N/A	150 SF (on-peninsula)
		350 SF (off-peninsula)
Street frontage (min.)	60 ft.	20 ft.
Lot width (min.)	None	None
Front setback (min.)	25 ft.	10 ft.
Rear setback (min.)	25 ft., except 40 ft. when abutting residential zone	10 ft. (principal)
		5 ft. (accessory)
Side setback (min.)	25 ft., except 40 ft. when abutting residential zone	None
		5 ft. (accessory)
Stepbacks (min.)	None	Side: 5 ft.; Rear: 15 ft.
Structure height (max.)	45 ft.	45 ft., except 50 ft. if first floor is in commercial use, 65 ft. in B-2 and B-2c on lots >5 ac. if required side and rear setbacks are increased by 1 foot for each foot of height over 45 ft
Lot coverage (max.)	None	None
Impervious surface ratio (min.)	65%	80% for non-residential
Pavement setback (min.)	15 ft.	None

VIII. COMPREHENSIVE PLAN ANALYSIS

Portland's Plan 2030

Comprehensive Plan goals and policies relevant to the proposed zoning map amendment are included below as well as provided in the analysis submitted by the applicant (Attachment C). In the provided analysis the applicant lays out various portions of Portland's Plan 2030 that their proposal adheres to.

Several aspects of the proposed map amendment to B-2 Community Business are consistent with the Comprehensive Plan. *Portland's Plan 2030*, places emphasis on areas most important to its growth over the coming years. It contains three maps including a map of identified corridors and nodes that are poised to accommodate additional growth. Nearby Congress Street and St. John Street are currently mapped B-2 and are identified as a priority corridor and priority node, respectively. In addition, the Fore River Parkway and adjacent lands are identified as an area to “evaluate”, prioritized for its potential to support growth, accommodate a variety of services, and higher-density to take advantage of the nearby transit benefits and walkability. The Comprehensive Plan highlights the importance of priority corridors as major arterials that have the capacity to improve mobility by capitalizing on their potential for increased walking, bicycling, and transit use. The proposed change to B-2 would align with the mixed-use nature of the surrounding area and is consistent with the surrounding zoning, and land uses. The rezoning would allow mixed-uses at a higher density and would accommodate residential development where residential is not currently permitted and non-residential job generating uses, including general office, general services, low-impact industrial, and retail among others. The site is proximate to transit, and offers potential connections to the Fore River Parkway Trail, which would further expand opportunities for multi-modal connections to and from the area.



Figure 7. Visions of Portland's Plan 2030

Relevant Comprehensive Plan goals have been excerpted below:

Environment:

- Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation.
- Coordinate future land use policy changes with long-range regional transportation planning, including planning for transit, pedestrian, and bicycle improvements, to reduce local and regional vehicle miles traveled.

Economic:

- Promote an economic climate that increases job opportunities and overall economic well-being.
- Ensure that new employment can be accommodated in priority growth areas across the city.

Housing:

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.
- Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.

Transportation:

- Promote multi-modal accessibility, enabling residents and visitors of all ages and abilities to participate fully in the social and economic life of the community.
- Support the economic vitality by ensuring the efficient movement of goods, services, and people.

IX. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting on June 23, 2022 at the Cumberland County Law Enforcement Center. No members of the public were in attendance, and as of the writing of this report no public comments have been received by Planning & Urban Development staff.

X. REQUISITE COUNCIL ACTION

Any proposed rezoning, regardless of whether it is recommended by the Planning Board, must be approved by City Council vote in order to take effect.

XI. PROPOSED MOTION

1. On the basis of materials submitted by the applicant, the City of Portland Land Use Code, Portland's Comprehensive Plan, public comment, and the information provided in the public hearing on September 13, 2022 for the application ZN-001944-2022 (50 County Way), and/or other findings, the Planning Board finds that the proposed zoning map amendment **[is/is not]** consistent with the Comprehensive Plan for the city of Portland; and therefore, the Planning Board **[recommends/does not recommend]** to the City Council adoption of the Zoning Map Amendment for the area of land that includes 50 County Way as shown below:

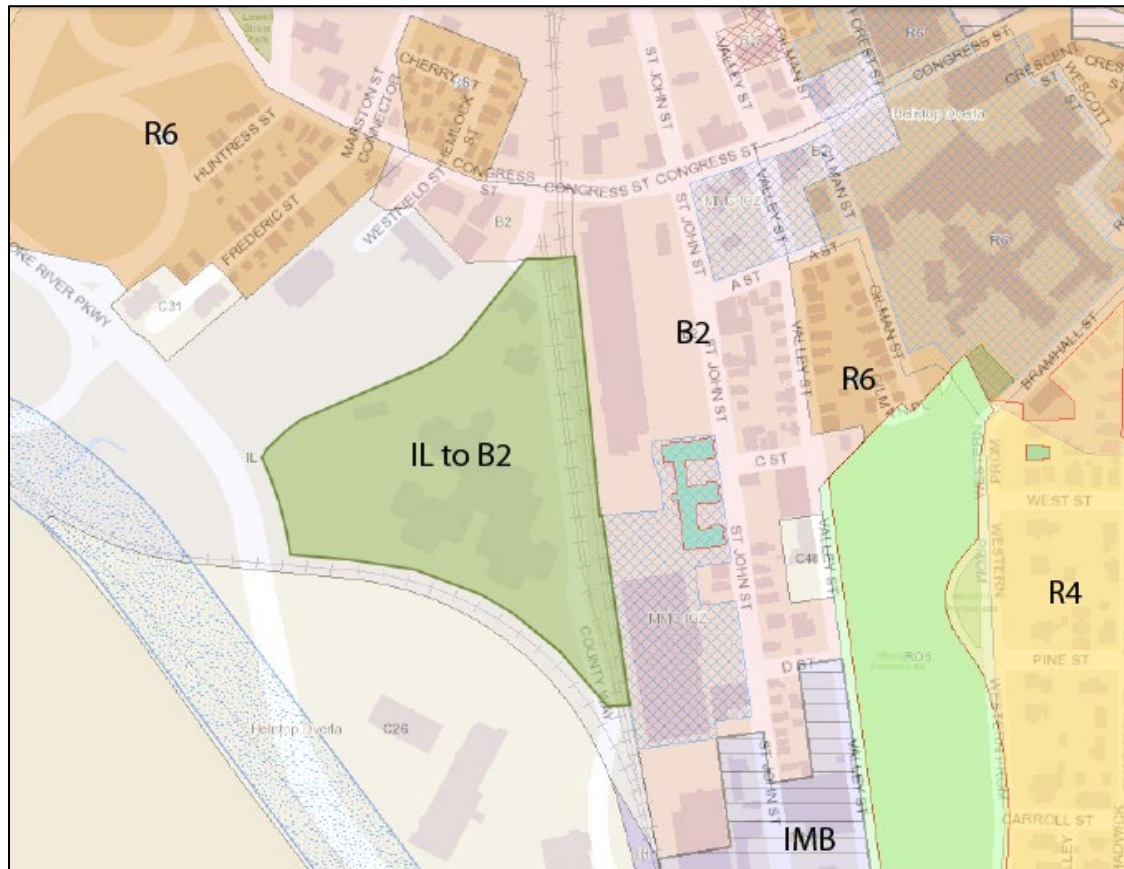


Figure 8: Area of zoning map to be amended highlighted in green.

XII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

APPLICANT'S SUBMITTAL

- A. Project Cover Letter
- B. Map Amendment Application Checklist
- C. Jail Deed
- D. Consistency with Comprehensive Plan Analysis

PLANS

- Plan 1. 50 County Way Boundary Survey with Photo
- Plan 2. Draft County Building Expansion
- Plan 3. Map Amendment
- Plan 4. Vicinity Map – 50 County Way

Cumberland County Government

142 Federal Street, Portland, Maine 04101
207-871-8380 • cumberlandcounty.org

James H. Gailey, County Manager



March 3, 2022

City of Portland Planning Dept.
C/o Christine Grimando, Director
389 Congress Street, 4th Floor
Portland, Maine 04101

RE: Zoning Map Change – 50 County Way

Dear Director Grimando,

On behalf of the Cumberland County Commissioners I submit the enclosed Zoning Map Change for the County's property located at 50 County Way, Map 64 Lot A013, Map 75 Lot A001 and Map 76 Lot A039. The 14.83 acre site is currently the home of the County Jail and Law Enforcement Center (Sheriff's Office). The property currently has four buildings on the site.

The current zone of the property is Light Industrial I-L. In reviewing the City's Zoning Ordinance, the County finds that sometime between when the Jail was built in the early 1990's and today, the zoning was changed as the current I-L zone no longer allows Jails or Government uses. The I-L does allow Correctional pre-release facilities, which does exist on the property, but is accessory to the Jail use.

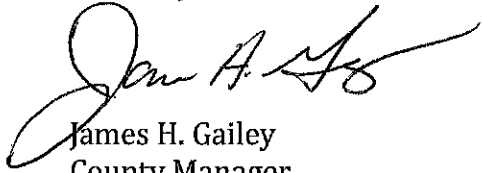
The pandemic taught us a lot of lessons and showed us our weaknesses, one of which was the lack of an appropriately sized medical facility at the Jail. The County currently has plans to construct a 6,000± SF medical wing onto the Jail. The County also is in the discussion stages of exploring a small office building on the Parkway side of the site for County offices in hopes of providing greater spacing of employees at the courthouse. It is our opinion that the current use at 50 County Way does not meet the I-L zoning district and that our future plans do not either.

The County requests the opportunity to rezone the property to the Mixed Use B-2 District, allowing for Government Uses. A portion of the B-2 Purpose Statement reads "The variety, sites and intensity of the permitted commercial uses in the B-2 zone are intended to be greater than those permitted in the B-1/B-1b zones." And "Development in the B-2 zone should relate to the surrounding neighborhoods by design, orientation and circulation patterns." The B-2 District currently abuts the County's I-L zoned property. This request would only extend the B-2 District.

We would request the opportunity to work with Planning staff and the Planning Board through the process of changing the zoning designation for this property from the I-L to the B-2.

I look forward to further contacts from the Planning Office as we move through this rezoning opportunity.

Sincerely,



James H. Gailey
County Manager

Cc: County Commissioners

CITY OF PORTLAND
Planning & Urban Development Department

MAP AMENDMENT SUBMISSION CHECKLIST	
* Please submit each document and drawing as a separate PDF file * Please submit all drawings in a 24 x 36 sheet size * Please confirm each item by electronically checking the boxes to the left for each document/drawing	
GENERAL APPLICATION DOCUMENTS	
☒	Project Description Cover Letter with detailed project description
☒	Consistency with Comprehensive Plan Analysis of the consistency of the zone change request with the goals, policies and land use plan of Portland's Comprehensive Plan.
☒	Completed Checklist – Map Amendment Application (this document)
☒	Right, Title and Interest Deeds, leases, or purchase and sales agreements
PLANS	
☒	Vicinity Map
☒	Proposed Map Amendment (please use the Portland zoning map as a reference)
☒	Site Plan (if applicable) Provide a site plan of the property showing existing and proposed improvements, including such features as buildings, parking, driveways, walkways, landscape and property boundaries.

PLAN # ZN-001944-2022

DK9382FG0061

054412
RELEASE DEED

PORTLAND TERMINAL COMPANY, a corporation duly organized and existing under the laws of the State of Maine, with offices at Iron Horse Park, North Billerica, Middlesex County, Massachusetts (the "Grantor") in consideration of One Million Two Hundred Thousand (\$1,200,000.00) Dollars paid to it by the INHABITANTS OF THE COUNTY OF CUMBERLAND, STATE OF MAINE, a body corporate and politic having a mailing address of 142 Federal Street, Portland, Maine 04101 (the "Grantee") hereby grants to the Grantee all the Grantor's right, title and interest, without any warranties or covenants of title whatsoever, in a certain parcel of land, and the buildings, bridges, structures, crossings, fixtures and improvements thereon, if any, situated in Portland, Cumberland County, Maine (the "Premises") described as follows:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE
A PART HEREOF BY THIS REFERENCE.

This conveyance is made subject to the following reservations, conditions, covenants and agreements:

1. This conveyance is made without granting any right of way, either by necessity or otherwise over any remaining land or location of the Grantor.
2. The Grantor excepts from this conveyance any and all railroad tracks, railroad track materials (including, but not limited to, ties, connections, switches and ballast), and/or related equipment of any description located in whole or in part within the Premises (the "Trackage") and this conveyance is subject to the right of the Grantor to enter the Premises from time to time and at any and all times within the ninety (90) day period commencing with and subsequent to the date of delivery of this deed, with such men, equipment and materials as, in the sole and reasonable opinion of the Principal Engineering Officer of the Grantor, are necessary for the removal of such Trackage. Days during the months of December, January, February and March shall not be included in the aforesaid ninety (90) day period. If the Trackage is not removed from the Premises by the expiration of said ninety (90) day period, the Trackage shall be deemed abandoned by the Grantor and shall then become the property of the Grantee.

- 2 -

3. By the acceptance of this deed and as part consideration therefor, the Grantee hereby assumes any and all agreements, covenants, obligations and liabilities of the Grantor in respect to any underground facilities, drainage culverts, walls, crossings and/or other structures of any nature and description located in whole or in part within the Premises.
4. By the acceptance of this deed and as part consideration therefor, the Grantee agrees to release and hold harmless the Grantor (including its officers, employees, agents, directors, shareholders and affiliates) from and against any and all loss, liability, damage, cost and expense (including reasonable attorneys' fees) occasioned by or associated with any claims, suits and/or enforcement actions (including any administrative or judicial proceedings and any remedial, removal or response actions) ever asserted, threatened, instituted or requested by any person and/or governmental agency on account of: (a) any release of oil or hazardous materials or substances of any description on, upon or into the Premises in contravention of any ordinance, law or statute (including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. Section 9601, et seq., as amended); and (b) any and all damage to real or personal property, natural resources and/or harm or injury to persons alleged to have resulted from such release of oil or hazardous materials or substances.
5. By the acceptance of this deed and as part consideration therefor, the Grantee hereby agrees to build and forever maintain fences (together with any necessary gates), suitable to the Principal Engineering Officer of the Grantor, along the boundaries of the Premises which are common to remaining land or location of the Grantor (the "Fences"), if Fences are ever required in the reasonable opinion of said Principal Engineering Officer in order to prevent encroachments or unauthorized entry upon adjoining land of the Grantor. If the Grantee fails to install, maintain, repair or replace the Fences within sixty (60) days after having been requested or ordered to do so by the said Principal Engineering Officer of the Grantor, then the Grantor shall have the right to so install,

- 3 -

maintain, repair or replace the Fences. The Grantee further covenants and agrees that, upon the rendering of a bill for the expense of such installation, maintenance, repair or replacement of the Fences, the Grantee shall pay said bill in full within thirty (30) days from the date of receiving it. The Grantee further covenants and agrees that if said bill is not paid within thirty (30) days, it shall become subject to a finance charge computed at a periodic rate of 1.5% per month applied to the previous balance after deducting any current payment. If said finance charge is not lawful, then the finance charge shall then be the highest lawful amount which does not exceed said 1.5% per month charge. If the Grantee, for any reason whatsoever, fails to pay said bill (and finance charges, if applicable) the Grantee shall pay all Grantor's costs of collection, including reasonable attorneys' fees and expenses.

6. This conveyance is subject to the following restrictions for the benefit of other land or location of the Grantor, to wit: that from the date of this deed, the Grantor shall not be liable to the Grantee or any lessee or user of the Premises (or any part thereof) for any damage to any buildings or property upon them caused by fire, whether communicated directly or indirectly by or from locomotive engines of any description upon the railroad operated by the Grantor, or otherwise.
7. By the acceptance of this deed and as part consideration therefor, the Grantee hereby agrees to make no use of the Premises which, in the reasonable opinion of the Principal Engineering Officer of the Grantor, unreasonably and adversely affects, increases or decreases drainage to, from, upon or in any remaining land or location of the Grantor. The Grantee agrees to indemnify and save the Grantor harmless from and against any and all loss, cost, damage or expense including, but not limited to, the cost of defending all claims and/or suits for property damage, personal injury or death arising out of or in any way attributable to any breach of the foregoing covenants.
8. The Grantor excepts from this conveyance any and all overhead, surface or underground signal and communication line facilities of the Grantor located

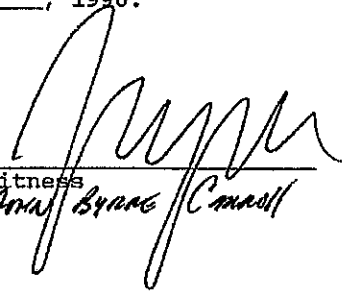
- 4 -

within the limits of the Premises and this conveyance is subject to the Grantor's use of any such facilities in their present locations and entry upon the Premises from time to time to maintain, repair, replace, renew, relay or remove such facilities.

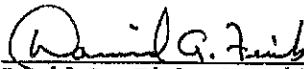
9. Whenever used in this deed, the term "Grantor" shall not only refer to the PORTLAND TERMINAL COMPANY, but also its successors, assigns and affiliates and the term "Grantee" shall not only refer to the above-named Grantee, but also the Grantee's successors, assigns and grantees, as the case may be.
10. The several exceptions, reservations, conditions, covenants and agreements contained in this deed shall be deemed to run with the land and be binding upon the Grantee forever. In addition to the acceptance and recording of this deed, the Grantee hereby signifies assent to the said several exceptions, reservations, conditions, covenants and agreements, by joining in its execution.

- 5 -

IN WITNESS WHEREOF, the said PORTLAND TERMINAL COMPANY has caused this release deed to be executed in its name and its corporate seal to be hereto affixed by David A. Fink, its President, thereunto duly authorized this 9 day of November, 1990.

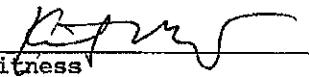

 Witness
John Bryant Small

PORTLAND TERMINAL COMPANY

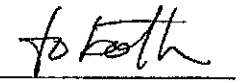
By: 
 David A. Fink, President

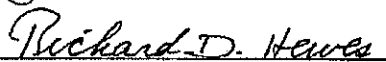
SEAL

GRANTEE:
 INHABITANTS OF THE COUNTY OF
 CUMBERLAND, STATE OF MAINE


 Witness

By: 


 Witness

By: 

Witness

By: _____

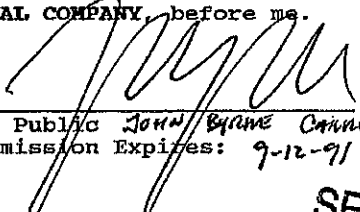
- 6 -

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

November 9, 1990

Then personally appeared the above-named David A. Fink, the President of the **PORTLAND TERMINAL COMPANY** and acknowledged the foregoing release deed to be his free act and deed and the free act and deed of said **PORTLAND TERMINAL COMPANY** before me.


Notary Public: John Byrne Cannoll
My Commission Expires: 9-12-91

SEAL

STATE OF MAINE

Cumberland, ss.

November 9, 1990

Then personally appeared Commissioners Richard
NEWES & Joseph MAZZIOTTI

and acknowledged the foregoing release deed to be ~~his/hers~~/their free act and deed, and the free and and deed of said **INHABITANTS OF THE COUNTY OF CUMBERLAND, STATE OF MAINE** before me.

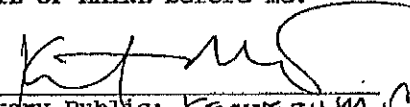

Notary Public: Kenneth M. Cole
My Commission Expires:

EXHIBIT A

A certain lot or parcel of land with any buildings thereon situated southerly of Congress Street, easterly of the Fore River and westerly of Saint John Street in the City of Portland, County of Cumberland and State of Maine, and being more particularly bounded and described as follows:

Beginning at a 5/8" rebar with cap stamped "ECJ RLS 509" located at the intersection of the southerly sideline of said Congress Street, with the westerly sideline of the Maine Central Railroad right-of-way as it crosses said Congress Street, being the northerly corner of the parcel herein described:

Thence along said Maine Central Railroad (MCRR) right-of-way following a curve to the left having a radius of 2474.92 feet, an arc distance of two hundred fifteen and sixty-nine hundredths (215.69) feet to a rebar;

Thence S 07°-08'-85" E along said MCRR right-of-way eight hundred twenty-five and eighty-four hundredths (825.84) feet to a rebar;

Thence continuing along said MCRR right-of-way following a curve to the left having a radius of 5776.94 feet, an arc distance of three hundred eighty-seven and ninety-seven hundredths (387.97) feet to a rebar;

Thence S 11°-04'-30" E along said MCRR right-of-way one hundred thirty-two and sixty-seven hundredths (132.67) feet to a rebar located at the intersection of the westerly sideline of said MCRR right-of-way with the easterly sideline of the Portland Terminal Company (PTC) rail right-of-way; provided, however that the Grantor and Grantee expressly agree that notwithstanding the line described by the preceding five paragraphs, the boundary between said parcel and said MCRR right-of-way shall be a line parallel to and thirty-three (33) feet westerly of the center line of the most western main line track in said MCRR right-of-way; except that this exception shall not apply to Parcel 2 described hereafter;

Thence along said PTC rail right-of-way, being 66 feet wide, 33 feet from the center line of the existing railroad tracks, following a curve to the left having a radius of 988.37 feet an arc distance of nine hundred forty-four and seventy-five hundredths (944.75) feet to a rebar;

Thence N 85°-15'-30" W along said PTC rail right-of-way, three hundred forty-seven and ninety-eight hundredths (347.98) feet to a set 5/8" rebar with aluminum cap stamped "SMRT RLS 1314" (set rebar 1314), said rebar being on the easterly sideline of the proposed Ogdensburg Street;

Thence N 04°-24'-55" E along said Ogdensburg Street eighty-three and ninety-two hundredths (83.92) feet to a rebar;

Thence along said Ogdensburg Street following a curve to the right having a radius of 375.00 feet an arc distance of four hundred nine and forty-seven hundredths (409.47) feet to a set rebar;

Thence N 66°-58'-35" E along said Ogdensburg Street three hundred thirty-four and ninety-five hundredths (334.95) feet to a set rebar;

Thence along said Ogdensburg Street following a curve to the left having a radius of 325.00 feet an arc distance of one hundred sixty and sixty-four hundredths (160.64) feet to a set rebar;

Thence N 38°-39'-25" E along said Ogdensburg Street two hundred fifty-nine and thirty-two hundredths (259.32) feet to a set rebar;

Thence N 47°-25'-55" E along said Ogdensburg Street thirty-two and seventy-seven hundredths (32.77) feet to a set rebar;

Thence along said Ogdensburg Street following a curve to the left having a radius of 205.00 feet, an arc distance of one hundred nineteen and seventy-six hundredths (119.76) feet to a set rebar;

Thence N 05°-11'-10" E along said Ogdensburg Street sixty-two and thirty-eight hundredths (62.38) feet to a set rebar;

Thence N 34°-16'-00" E along said Ogdensburg Street fourteen and eighty-eight hundredths (14.88) feet to rebar 509 being the point of beginning.

Said parcel containing 15.0 acres more or less.

ALSO another certain lot or parcel of land situated in said City of Portland, County of Cumberland and State of Maine located southerly of said Congress Street and being more particularly described as follows;

Beginning at a 5/8" rebar with cap stamped "ECJ RLS 509" located at the intersection of the southerly sideline of said Congress Street, with the westerly sideline of the Maine Central Railroad right-of-way as it crosses said Congress, said point also being the northeasterly corner of the proposed Ogdensburg Street and the northerly corner of the first parcel described above;

Thence S 34°-16'-00" W along said first parcel fourteen and eight-eighth hundredths (14.88) feet to a 5/8" set rebar stamped "SMRT RLS 1314";

Thence S 05°-11'-10" W along said first parcel sixty-two and thirty-eight hundredths (62.38) feet to a set rebar;

Thence along said first parcel following a curve to the right having a radius of 205.00 feet an arc distance of one hundred nineteen and seventy-six (119.76) feet to a set rebar;

Thence S 47°-25'-55" W along said first parcel thirty-two and seventy-seven hundredths (32.77) feet to a set rebar;

Thence S 38°-39'-25" W along said first parcel two hundred fifty-nine and thirty-two hundredths (259.32) feet to a set rebar;

Thence along said first parcel following a curve to the right having a radius of 325 feet, an arc distance of one hundred sixty and sixty-four hundredths (160.64) feet to a set rebar;

Thence N 23°-01'-25" W across Ogdensburg Street fifty and no hundredths (50.00) feet to a set rebar;

Thence along other land of the PTC following a curve to the left having a radius of 275.00 feet an arc distance of one hundred thirty-five and ninety-two hundredths (135.92) feet to a set rebar;

Thence N 38°-39'-25" E along other land of the PTC two hundred fifty-nine and thirty-two hundredths (259.32) feet to a set rebar;

Thence N 29°-52'-55" E along other land of the PTC thirty-two and seventy-seven hundredths (32.77) feet to a set rebar;

Thence along other land of PTC following a curve to the left having a radius of 145.00 feet an arc distance of eighty-four and seventy-one hundredths (84.71) feet to a set rebar;

Thence N 5°-11'-10" E along other land of PTC sixty-two and thirty-eight hundredths (62.38) feet to a set rebar;

Thence N 23°-51'-15" W along other land of PTC fourteen and eight-six hundredths (14.86) feet to a rebar on the southerly sideline of Congress Street, also being the northeasterly corner of lands now or formerly of Hutchins recorded in the Cumberland County Registry of Deeds in Book 2982, Page 407;

Thence N 84°-48'-50" E along said Congress Street seventy-four and forty-five hundredths (74.45) feet to rebar 509, being the point of beginning.

Meaning and intending to describe a strip of land tapering from seventy-four and forty-five hundredths (74.45) feet wide to fifty (50.00) feet wide to be known as Ogdensburg Street.

Excepting herefrom and reserving to the Grantor, Portland Terminal Co., its successors and assigns, a right-of-way in common with the said Grantee, its successors and assigns, over the above described premises for access and egress to other land of said Portland Terminal Co. as if the above premises were an accepted City Street, including the right to install utilities over, in, under or through said premises but with the condition to restore said street thereafter, except to the extent that a portion of said premises may be still a City Street known as Ogdensburg Street.

A right-of-way in common with others for vehicular access and egress and surface and storm water drainage over a certain lot or parcel of land situated southerly of Congress Street in the City of Portland, County of Cumberland and State of Maine and being more particularly described as follows:

Beginning at the most southeasterly corner of the second parcel described above at a set 5/8" rebar with aluminum cap stamped "SMRT RLS 1314" (set rebar 1314) on the northwesterly sideline of the first parcel described above;

Thence S 66°-58'-35" W along said first parcel three hundred thirty-four and ninety-five hundredths (334.95) feet to a set rebar;

Thence along said first parcel following a curve to the left having a radius of 375.00 feet an arc distance of four hundred nine and forty-seven hundredths (409.47) feet to a set rebar;

Thence S 04°-24'-55" W along said first parcel eighty-three and ninety-two hundredths (83.92) feet to a set rebar, said rebar being at the northerly line of the Portland Terminal Co. (PTC) rail right-of-way also being the westerly corner of said first parcel;

Thence N 85°-15'-30" W along said PTC rail right-of-way fifty and no hundredths (50.00) feet to a set rebar, said rebar being on the westerly sideline of proposed Ogdensburg Street;

Thence N 85°-15'-30" W along said PTC rail right-of-way forty-one and eighty-two hundredths (41.82) feet to a 5/8" rebar with cap stamped "ECJ RLS 509";

Thence along said PTC rail right-of-way following a curve to the right having a radius of 922.37 feet an arc distance of four hundred ninety-four and ninety-seven hundredths (494.97) feet to a rebar;

Thence N 54°-28'-55" W along said PTC rail right-of-way thirty-four and ninety hundredths (34.90) feet to a rebar, said rebar being on the easterly line of lands now or formerly of the Maine Department of Transportation;

Thence along said Maine Department of Transportation land following a curve to the left having a radius of 375.00 feet an arc distance of sixty-three and sixty-two hundredths (63.62) feet to a set rebar;

Thence northerly of and fifty (50) feet distant from said PTC rail right-of-way following a curve to the left having a radius of 872.37 feet an arc distance of four hundred sixty-three and eighty-three hundredths (463.83) feet to a set rebar;

Thence S 85°-15'-30" E forty-one and fifty-four hundredths (41.54) feet to the westerly sideline of proposed Ogdensburg Street;

Thence N 04°-24'-55" E along said Ogdensburg Street thirty-three and sixty-four hundredths (33.64) feet to a set rebar;

Thence along other land of PTC following a curve to the right having a radius of 425 feet an arc distance of four hundred sixty-four and seven hundredths (464.07) feet to a set rebar;

Thence N 66°-38'-35" E along other land of PTC three hundred thirty-four and ninety-five hundredths (334.95) feet to a set rebar;

Thence S 23°-01'-25" E across said Ogdensburg Street fifty and no hundredths (50.00) feet to rebar 1314 being the point of beginning.

Meaning and intending to convey and hereby conveying a right-of-way over an extension of Ogdensburg Street and an easement running northwesterly thereof to provide access from the terminus of said Ogdensburg Street right-of-way as extended to land of the State of Maine, Maine Department of Transportation at the most southwesterly end of Frederick Street in said City of Portland, County of Cumberland and State of Maine, said right-of-way to be used for vehicular access and egress to parcels 1 and 2 described above, and parcel 4 hereafter, including the right to construct and maintain, including winter plowing as necessary, a graveled road over, under and through said right-of-way, and to construct and maintain a surface and storm water drainage system over, under and through said right-of-way, including specifically a drainage easement therein.

ALSO a non-exclusive easement for surface and storm water drainage and detention over a certain lot or parcel of land situated westerly of said proposed Ogdensburg Street, in the City of Portland, County of Cumberland and State of Maine being more particularly described as follows:

Beginning at a point on the westerly sideline of proposed Ogdensburg Street on a curve having a tie measurement along a chord of S 10°-54'-04" W, ninety-six and two hundredths (96.02) feet, and another chord of S 04°-24'-55" W, eighty-three and sixty-four hundredths (83.64) feet from a set 5/8" rebar with aluminum cap stamped "SMRT RLS 1314" located on the northerly line of the Portland Terminal Company (PTC) rail right-of-way at the southwesterly terminus of proposed Ogdensburg Street;

Thence from said point of beginning S 48°-21'-44" W through other land of the PTC seventy-three and seventy hundredths (73.70) feet to a point;

Thence S 14°-01'-25" E through other land of PTC seventy-nine and ninety-nine hundredths (79.99) feet to a point, said point being on the northerly right-of-way line of the third parcel described above;

Thence N 85°-15'-30" W along said third parcel twenty-six and fifty-four hundredths (26.54) feet to a set rebar;

Thence along said third parcel following a curve to the left having a radius of 872.37 feet an arc distance of ninety-five (95) feet, to a point;

Thence N 44°-20'-01" W through other land of PTC three hundred eight and thirteen hundredths (308.13) feet to a point, said point being on the easterly line of the lands now or formerly of the Maine Department of Transportation;

Thence along said lands of Maine Department of Transportation following a curve to the left having a radius of 375.00 feet an arc distance of seventy (70.00) feet to a point;

Thence S 53°-05'-10" E through other land of PTC three hundred thirteen and fourteen hundredths (313.14) feet to a point;

Thence N 48°-21'-44" E through other land of PTC one hundred thirty-four and nine hundredths (134.09) feet to a point, said point is on the westerly sideline of proposed Ogdensburg Street;

Thence along said Ogdensburg Street following a curve to the left having a radius of 425.00 feet an arc distance of sixty-seven and forty-eight hundredths (67.48) feet to the point of beginning.

Meaning and intending to describe in all the previously herein described parcels a portion of the premises conveyed to Portland Terminal Company by deeds dated July 1, 1911 and recorded in the Cumberland County Registry of Deeds, Book 881, Page 299 and Page 318, and as shown on the Recording Plat of the Cumberland County Jail for the Cumberland County Commissioners by Stevens Morton Rose & Thompson dated November 08, 1990 intended to be recorded. No monuments have been set as a result of this survey.

The basis of bearing is true north as shown on the above stated plan.

RECEIVED
RECORDS REGISTRY OF DEEDS

1990 NOV 13 AM 8:30

CUMBERLAND COUNTY

[Signature]

-7-

PORTLAND'S PLAN 2030

In reviewing the Portland Comprehensive Plan, one quickly realizes that Comprehensive Plans do not typically focus on government uses/buildings. Especially those government properties/buildings that are not associated with the community who undergoes the planning process. Government uses is a very narrow defined use that can only fit into a few areas. Many of the following are referring to City services, but one could believe that regional County services, particularly public safety could be a good fit.

After reading the Plan, the following areas could apply to the County's Zoning Map Change request:

Vision Statement – Page 6

Our success will be tied to our connections to each other, our state and our region.

As a region, government entities need to partner in order to provide the most cost effective and efficient service delivery for the tax payers.

Environment – Page 19

Local Goal: Make energy efficiency and renewable energy measures a city-wide priority.

Any current or new building gets a thorough review of energy consumption and whether this is mitigating opportunities.

Historical Resources – Page 27

Local Goal: Promote historical preservation as a key economic, sustainability and community development strategy.

Local Goal: Ensure an appropriate balance of continuity and change as Portland grows and evolves.

Strategies: Maintain City-owned historic resources to high preservation standards.

As stated in the cover letter, one discussing item under review is exploring a new office building down along the Fore River Parkway. The current office climate is at the seams in the 1908 courthouse and there is no space left, which has put employees in very close range to one another. Uncomfortable during good times, scaring during a pandemic. Expanding within the confines of the courthouse would be detrimental to the historical character of the building's

interior and common spaces. Opportunities outside the courthouse are the preferred route as we want to maintain our commitment to the historical character of the courthouse building.

Economy – Page 43

Local Goal: Invest in, attract, and retain human capital to support growing economy.

Future Strategies: Evaluate zoning and the condition of existing infrastructure in priorities areas – downtown, identified neighborhood nodes, and along transit corridors – to ensure that employment and housing growth can be supported.

The County property sits nicely between Congress and the Fore River Parkway, two major arterials able to handle traffic and growth in the area. A need exists to potentially provide a suitable and safe office environment for future County employees for attracting and retaining purposes.

Facilities & Services – Page 64

State Goal: To plan for, finance and develop an efficient system of public facilities and services to accommodate anticipated growth and economic development.

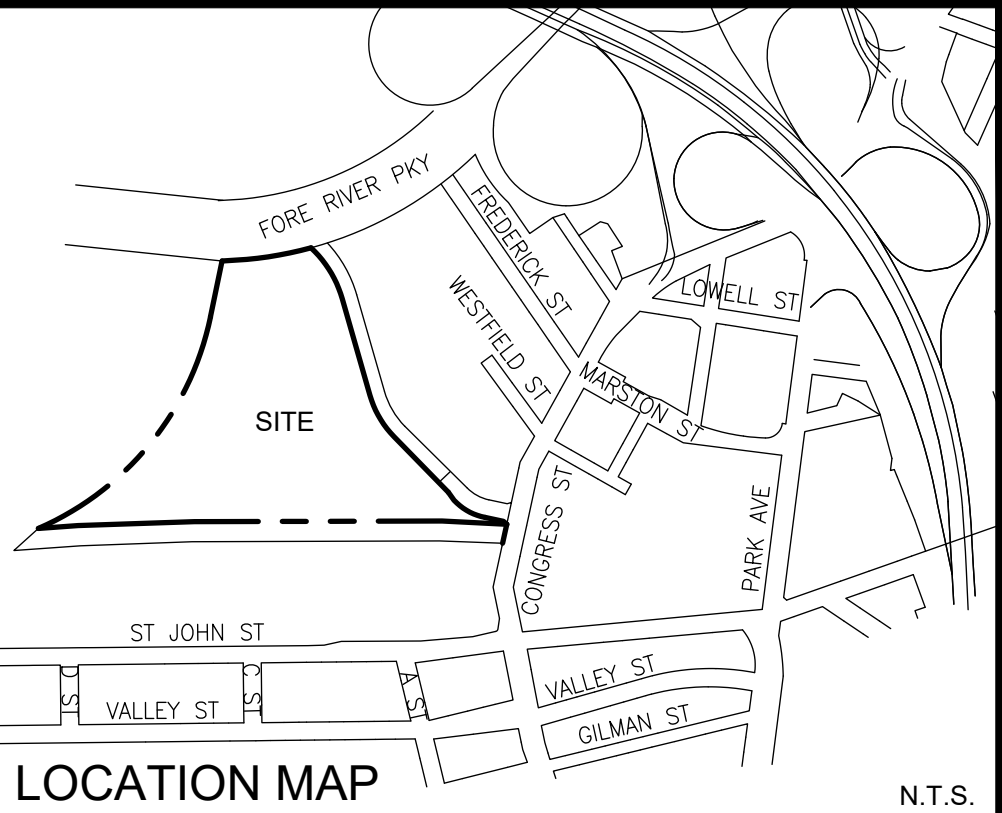
Local Goal: Provide public safety, emergency response, and emergency management facilities and services that can effectively meet the needs of the residents.

Strategies: Leverage community partnerships to plan and implement steps to improve emergency preparedness.

Strategies: Continue to develop partnerships to explore all available avenues to address the region's substance abuse misuse and addiction issues.

Strategies: Continue to work in partnership with regional and State agencies, neighboring communities, non-profit organizations, and private property owners in support of efficient, sustainable City services.

The Jail medical wing will be enhanced by a larger footprint building addition. This will allow the Jail to quarantine inmates in the medical facility, versus needed to open an empty Pod and staff the Pod 24/7. This significantly reduces staffing and requires alternative measures to take place due to the lack of staff (i.e. closing the jail). This will enhance the medical services at the Jail, create for a more efficient and safe medical practice and will allow the exploration of converting the existing medical office into a behavioral health clinic. The County offers many medical assisted treatment programs through a variety of grants. These grants not only help those who are incarcerated, but provides wrap-around services to those individuals upon their release from the Jail.



LEGEND

●	IRON PIPE OR ROD FOUND	—X—X—	FENCE
■	MONUMENT FOUND	—	CURB
⊙	UTILITY POLE	—OHW—	OVERHEAD WIRES
○	MANHOLE	—IPF/IRF—	IRON PIPE OR ROD FOUND
⊗	ELECTRIC/GAS METER	N/F	NOW OR FORMERLY
⊗	⊗	000/000	DEED BOOK / PAGE
⊗	SIGN		
⊗	CATCH BASIN		
⊗	HYDRANT		
⊗	WATER VALVE OR SHUTOFF		
⊗	LIGHT POLE		

- PLAN REFERENCES**
- "RECORDING PLAT FOR CUMBERLAND COUNTY COMMISSIONERS, 142 FEDERAL STREET, PORTLAND, MAINE, CUMBERLAND COUNTY JAIL, 990 CONGRESS STREET, LOCATED IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE" DEC. 11, 1991 BY STEVENS MORTON ROSE & THOMPSON RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 191 PAGE 200.
 - "BOUNDARY SURVEY OF: PORTLAND TERMINAL CO. PROPERTY, COUNTY WAY, PORTLAND, MAINE FOR: PORTLAND TERMINAL COMPANY" MAY 20, 2002 REVISED THRU SEPT. 10, 2002 BY SEBAGO TECHNIQS.
 - "ALTA/NSPS LAND TITLE SURVEY, UNION STATION PLAZA, 240-292 ST. JOHN STREET & 966-982 CONGRESS STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR RECORD OWNER UNION STATION LIMITED PARTNERSHIP" MAY 22, 2017 BY OWEN HASKELL, INC.
 - "ALTA/ACSM LAND TITLE SURVEY, 175 FORE RIVER PARKWAY, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR STEWARD HEALTH CARE SYSTEMS, LLC" DATED NOVEMBER 12, 2012 BY OWEN HASKELL, INC.
 - "SAINT JOHN ST./VALLEY ST. STREETScape IMPROVEMENTS EXISTING CONDITIONS PLAN" CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION DATED NOV. 2011
 - "RIGHT OF WAY MAP STATE HIGHWAY 10, CITY OF PORTLAND" DATED SEPTEMBER 2002 DOT FILE NO. 3-483.

- GENERAL NOTES**
- OWNER OF RECORD:
INHABITANTS OF THE COUNTY OF CUMBERLAND
C.C.R.D. BOOK 9382 PAGE 61
TAX MAP-BLOCK-LOT: 64-A-13, 74-A-8, 75-A-1, 75A-B-1, 76-A-39
 - BEARINGS AND COORDINATES ARE BASED ON CITY MONUMENTS AT "D" STREET AND "A" STREET AS SHOWN ON PLAN REFERENCE 5 AND PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
 - COUNTY WAY (RENAMING OF OGDENSBURG ST.) IS A PUBLIC RIGHT OF WAY DESCRIBED IN DEED BOOK 12148, PAGE 146 AND ACCEPTED BY THE CITY OF PORTLAND BY BOOK 3, PAGE 53 DATED JULY 5, 1995.
 - FEATURES SHOWN ARE TAKEN FROM AN ORTHOMETRIC PHOTO DATED 2017 DOWNLOADED FROM THE MAINE GEOLIBRARY ORTHOMAGERY DISCOVERY AND DOWNLOAD APPLICATION, EXCEPT FOR THE FEATURES ALONG COUNTY WAY AND THE NORTHERLY AND WESTERLY PROPERTY LINES.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

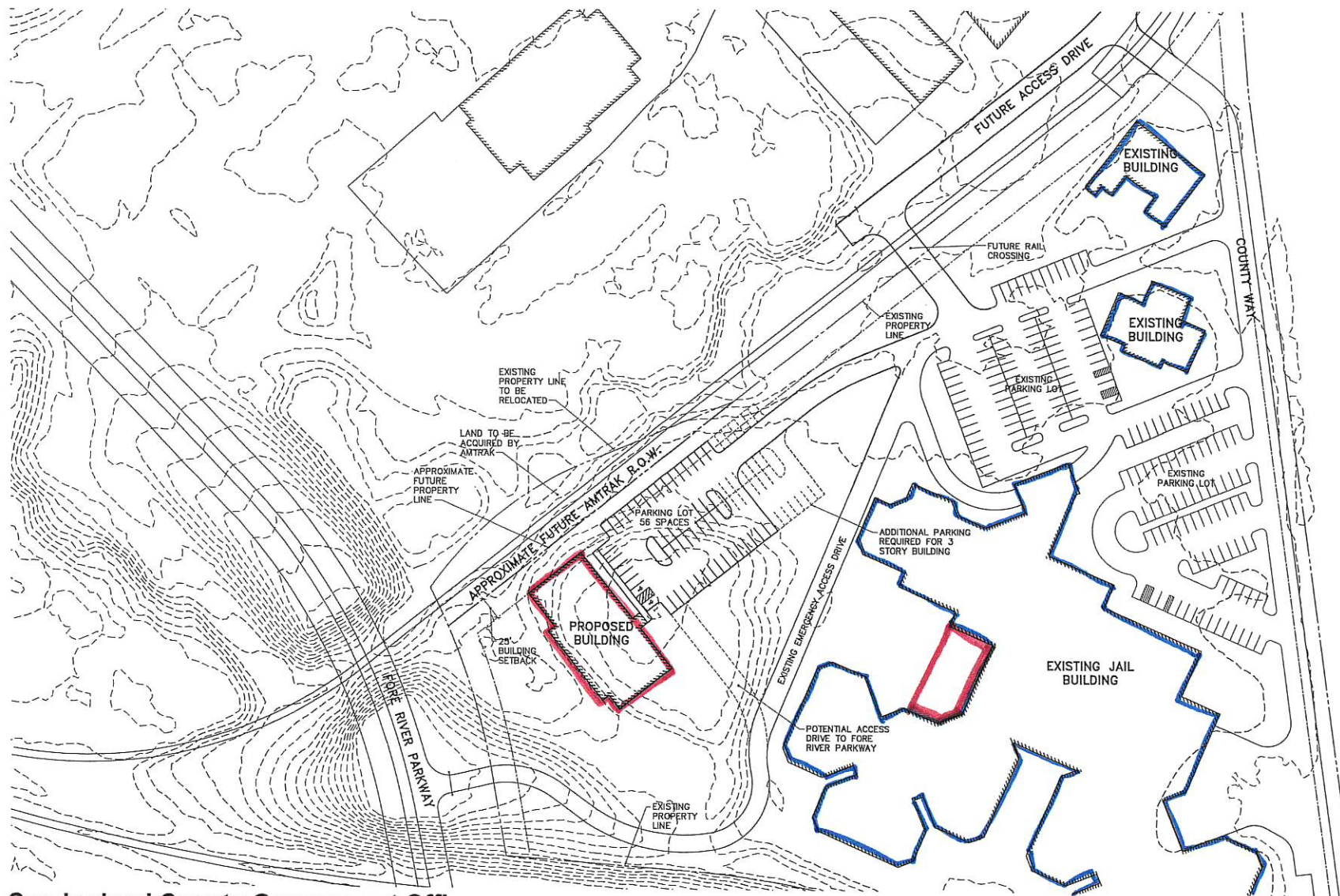
RANDY R. LOUBIER, PLS #2407

7/26/19
DATE

Boundary Survey
At
50 County Way, Portland, Maine
Made for
Cumberland County
42 Federal Street, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: RRL/JLW	DATE: JULY 26, 2019	JOB NO. 2019-099 P
CHECKED BY: RRL	SCALE: 1" = 60'	DRWG. NO. 1



Cumberland County Government Offices
Cumberland County Jail - Concept Site Plan

April 19, 2018



ARCHITECTURE ■ ENGINEERING ■ PLANNING

ArcGIS Web Map



3/3/2022, 1:19:44 PM

1:3,102

 Override 1

Zoning

-  IR-1 Island Residential
-  IR-2 Island Residential
-  IR-3 Island Residential
-  I-B Island Business
-  I-TS Island Transfer Station
-  R1 Residential
-  R2 Residential
-  R3 Residential
-  R4 Residential
-  R5 Residential
-  R-5A Residential
-  R6 Residential
-  R-6A Residential
-  RP Residential Professional

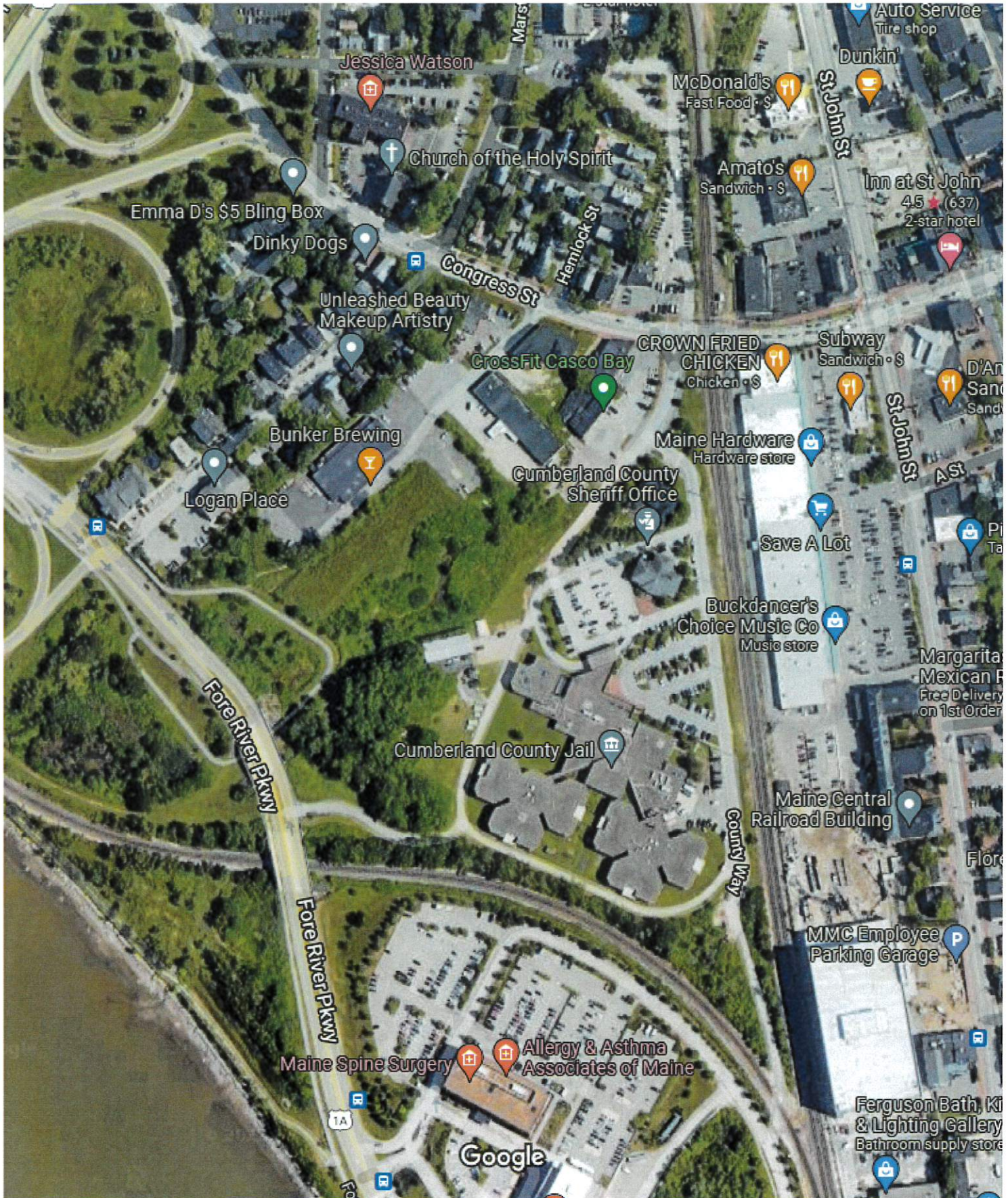
-  AB Airport Business
-  OP Office Park
-  B1 Neighborhood Business
-  B1b Neighborhood Business
-  B2 Business Community
-  B2b Business Community
-  B2c Business Community
-  B3* Downtown Business
-  B3c Downtown Business
-  B4 Commercial Business
-  B5 Urban Commercial Business
-  B5b Urban Commercial Business
-  B6 Urban Commercial Business
-  B7 Urban Commercial Business
-  IS-FBC India St Form Based
-  IL Industrial - Low Impact

-  ILb Industrial - Low Impact
 -  IM Industrial - Moderate Impact
 -  IMb Industrial - Moderate Impact
 -  IH Industrial - High Impact
 -  RPZ Resource Protection
 -  ROS Recreation Open Space
 -  WPDZ Waterfront
 -  WCZ* Waterfront
 -  WSUZ Waterfront
 -  EWPZ Waterfront
 -  Conditional or Contract (see list); C55
- Overlay Zones**
-  Downtown Entertainment (DEOZ)
 -  MMC IOZ
 -  Munjoy Hill Neighborhood Conservation
 -  Residential (R-6)

A number line with two scales. The top scale is labeled in miles (mi) with major tick marks at 0, 0.04, 0.07, and 0.14. The bottom scale is labeled in kilometers (km) with major tick marks at 0, 0.05, 0.1, and 0.2. The scales are aligned such that 0.04 miles corresponds to 0.064 kilometers, 0.07 miles corresponds to 0.112 kilometers, and 0.14 miles corresponds to 0.224 kilometers.

City of Portland, DPS

Google Maps 50 County Way



Imagery ©2022 Maine GeoLibrary, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2022 200 ft