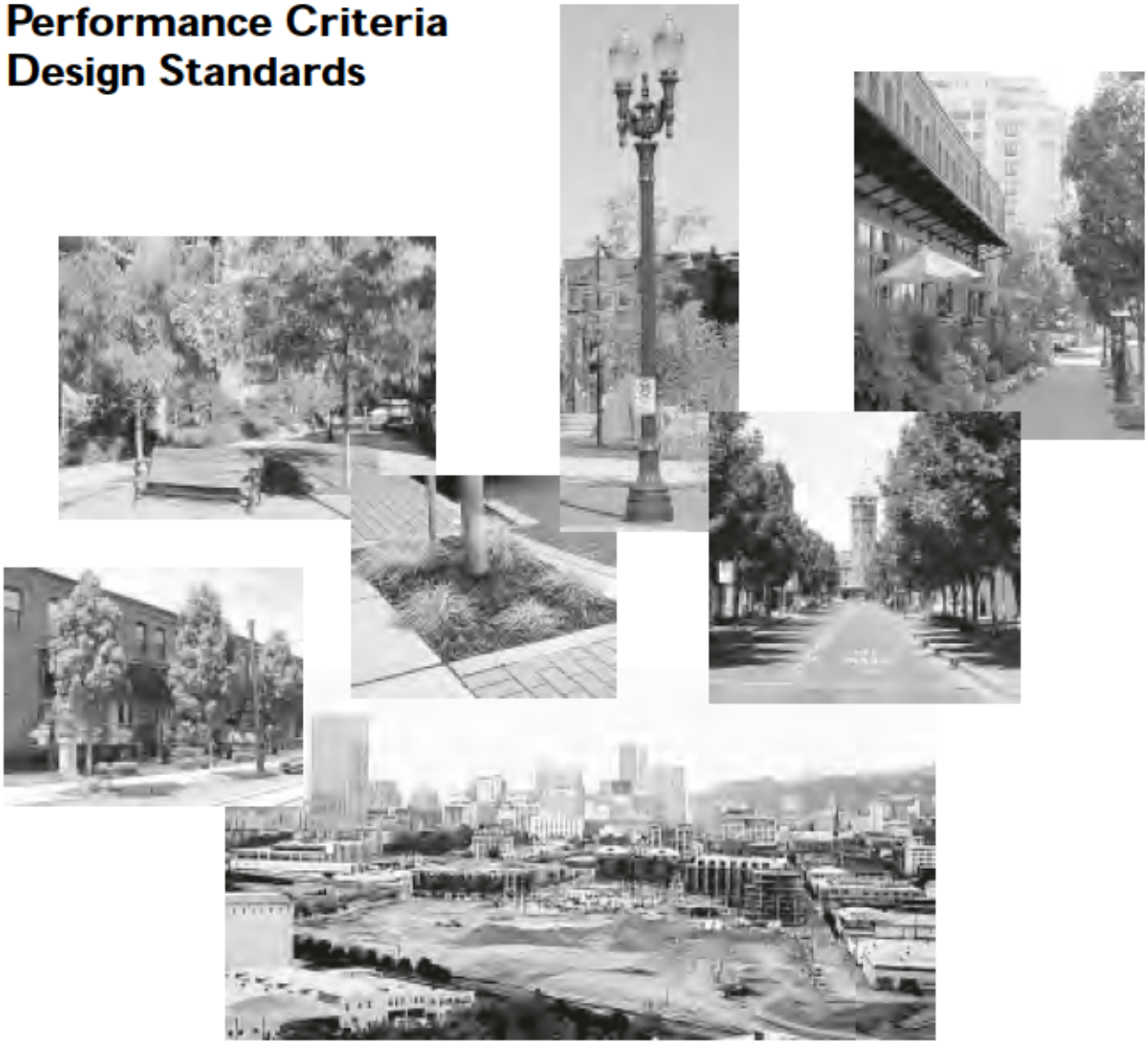
189932

Substitute Exhibit A as approved by Council April 15, 2020

UPDATED

River District Right-of-Way Standards

Framework Plans
Performance Criteria
Design Standards



April 2020
City of Portland
Bureau of Transportation

Prepared by
CITY OF PORTLAND
BUREAU OF TRANSPORTATION

Original version adopted in spring 1996

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Funding for this project was provided by the Portland Development Commission

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Performance Criteria
Design Standards

PBOT

PORTLAND BUREAU OF TRANSPORTATION

TABLE OF CONTENTS

INTRODUCTION

1.0 INTRODUCTION TO 2020 UPDATE

The 2020 update to the River District Right-of-Way Standards reflects changes recommended as part of the Central City 2035 plan, Central City in Motion implementation plan, and Broadway Corridor Master Plan. These plans recommend changes to the function and design of River District streets and pedestrian connections. This document embraces these changes as the framework for future development and design in the district. The following amendments have been added to the River District Right-of-Way Standards:

- Custom street design standards and performance criteria for segments of NW Johnson St and NW Park Ave to set the expectation for new street development in the former US Post Office site as envisioned through the USPS Masterplan process.

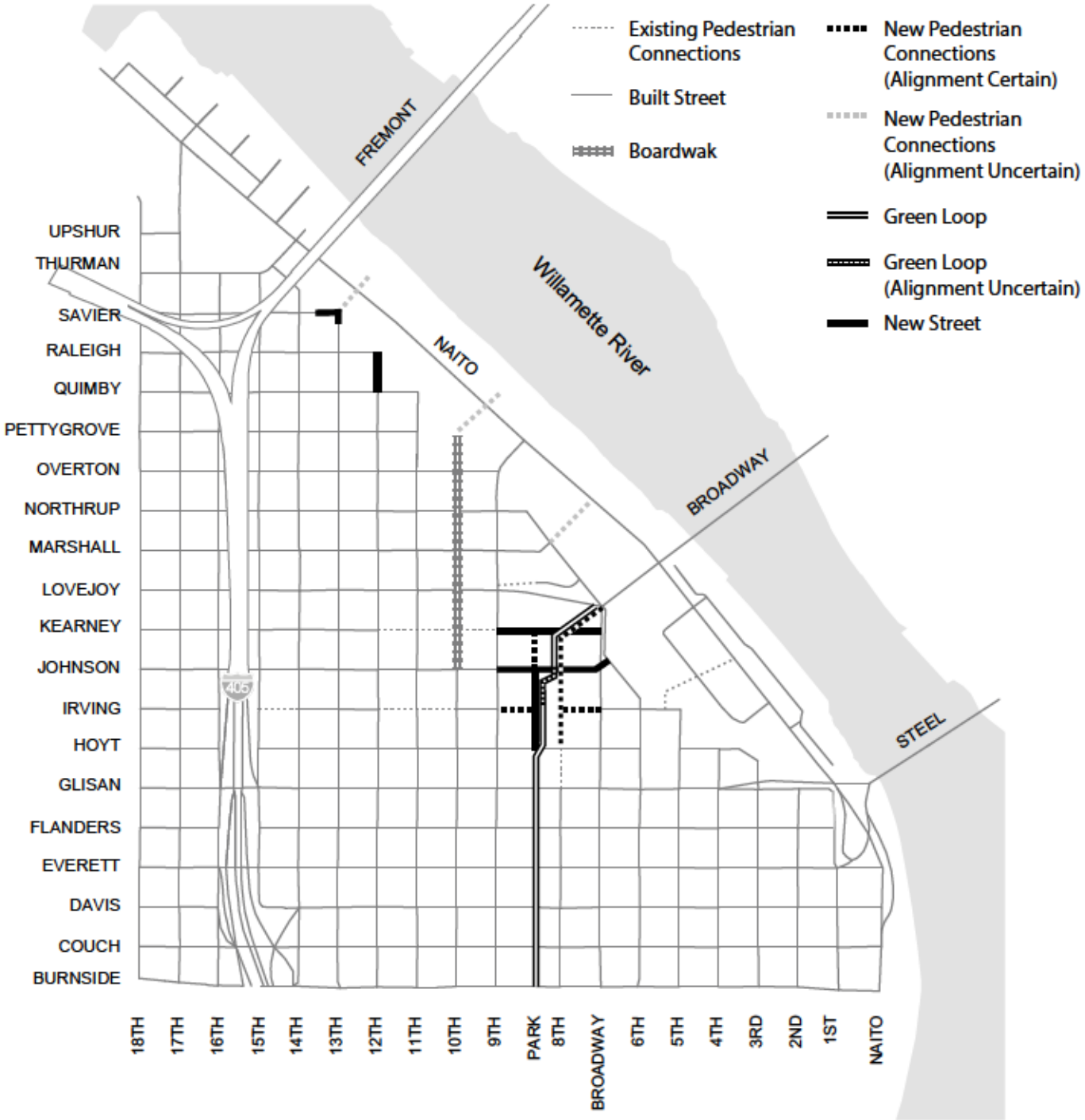
- Updated performance criteria to reflect new facility types and design features adopted by Central City in Motion to support safer bicycling and more efficient transit through the district.

- The Green Loop, as described in Central City 2035, is included as a new special street classification to integrate a signature walking and biking connector through the district. New performance criteria provide expectations for critical design dimensions and design principles for the Green Loop.

INTRODUCTION

The resulting updated document retains most elements of the original, updates the street network to reflect new streets, both built and planned, and amends selected performance criteria and standards to reflect changes in City policy and community issues.

River District Street Network



0.1 HOW TO USE THIS DOCUMENT

This document establishes a common understanding of the improvements required in the River District's public rights-of-way. Both private and public street improvements are subject to this document and approval by the City Engineer. The operational aspects of how the street system is managed, such as traffic control, are guided by Title 16 and 17 rather than this document.

The document is divided into three sections: framework plans (section 1.0), performance criteria (section 2.0) and design standards (section 3.0). The framework plans and design standards are intended to be used as the basic 'standards' for street design. The framework plans provide a district-wide perspective of the standards to illustrate issues related to the functional intent established by policy (section 1.1) and design continuity. The design standards provide a more detailed, engineering-level perspective that supplement the City's Standard Construction Specifications and Plans. The performance criteria are intended to guide the design detail of individual right-of-way elements where either case-by-case design is needed, or flexibility is allowed to encourage streetscape diversity.

The use of these design standards and performance criteria are primarily intended to ensure design continuity of right-of-way improvements over time that reinforce the desired character and function of the district. The standards and performance criteria themselves are not intended to be inflexible, since unique implementation situations that require some tailoring of the standards are common.

All modifications or exceptions to the design standards and performance criteria require approval from the City Engineer. An appeal of the decision by the City Engineer may also be requested- (see Section IV of Creating Public Streets and Pedestrian Connections through the Land Use and Building Permit Process, Portland Office of Transportation).

If an exception being requested affects the "look" of the streetscape, the exception is also subject to design review per City Code for non-standard public right-of-way improvements (33.420.041.C). Approval from the City Engineer is a prerequisite to Design Commission review.

New Parks

The provision of new parks provide important amenities for the River District and the uniqueness of their design can make a positive contribution to the district. The new parks can influence the right of way design of the adjacent streets. As design exceptions, these are subject to design review. The design review process provides the opportunity to merge the park design with right-of-way functions and continuity.

0.2 BACKGROUND

In the spring of 1991, a group of citizens gathered to consider the future of North Downtown. They shared an inclination to make a collective contribution to its health and redevelopment and spent six months developing a vision for the area. Identified as the River District Vision, it was presented to the Portland City Council in March 1992, for consideration. The Council members found the vision stimulating, substantial and consistent with their view of a desirable future for Portland. In response, the City Council directed the execution of a Development Plan to implement the Vision.

The River District Steering Committee, whose membership includes representatives from private sector property and business owners, from the neighborhood associations and social service agencies and from the City, oversaw the work of consultants and City staff to complete the planning and engineering analysis needed to develop the River District Development Plan. City Council endorsed this Plan in May 1992. The Plan calls for constructing up to 5,500 new housing units, supports commercial uses and open space and transportation infrastructure to support and facilitate this new community of neighborhoods.

The development of the Plan was guided by the following goals:

Goal #I. To develop a functional and symbolic relationship with the Willamette River.

The biased orientation of the river to the street grid provides a strong association between the river and the land that cannot be replicated in other Portland neighborhoods. The development of Tanner Creek Basin and Park will provide an image and focus for development.

Goal #2. To promote the development of a diverse inventory of housing.
For the past three decades, Portland has pursued a strategy to develop its downtown as the heart of a livable, sustainable city. Future growth in the region prescribes an even larger effort to attract and accommodate new residents to live and work in the Central City. The River District encourages and supports economic, social and cultural diversity and will provide a range of multi-family housing in terms of style and economics. The opportunity for these new residents to work and play near where they live is fundamental.

Goal #3. To become a community of distinct neighborhoods.
There are three established neighborhood associations whose boundaries are to be found in the River District. In addition, there are areas within these boundaries whose physical character and cultural traditions are emerging. It is the goal of the River District to secure a future which binds all of these existing and potential neighborhoods and provides to them the support they need.

Goal #4. To enhance the best of what exists.
While much of the River District is undeveloped, areas exist which are healthy and secure and others demonstrate an ability to renew themselves. As the River District develops, it should balance its enthusiasm for a new future with a commitment to respect and improve existing structures, activities and characteristics which are strong and indigenous.

Goal #5. To strengthen connections between the River District and its neighbors.
The River District's distinct physical boundaries are an asset to development. However, those boundaries must be bridged by strong connections to neighboring communities to attract their support and secure complementary relationships.

Goal #6. To enhance the economy and functional efficiency of the City.
It is an objective of the City to provide access between home, work, services and recreational destinations. It is also an objective to provide that access with economy, efficiency and sensitivity to natural and man-made environments. More than any other transportation or land use measure, the

attraction and accommodation of a large resident population, proximate to the region's greatest concentration of employment, service and recreational opportunities, will effectively improve access while limiting car trips.

In order to facilitate the desired implementation of the Development Plan, the Steering Committee has recommended and the City Council has adopted or approved of the following mechanisms:

- River District Housing Implementation
- Strategy River District Strategic Investment Plan
- City/Developer Master Development Agreements
- River District Design Guidelines
- River District Right-of-Way Standards

0.3 PURPOSE

The Right-of-Way Design Standards have been developed to guide physical solutions that achieve the objectives for the River District. They are also intended to complement the other implementing mechanisms, as well as applicable City Policies and Plans. The design and use of the internal street system will provide the foundation upon which the neighborhood will operate. A sensitivity to and an appreciation for the various needs, sometimes conflicting needs, of a true multi-modal environment are an integral part of this document.

The River District is classified as a pedestrian district. These districts are intended to give priority to pedestrian access. Walking is the mode of choice for all trips. All streets are of equal importance in serving pedestrian trips with the exception of Special Function River District streets that include a loading dock design. River District streets are functionally classified in the Central City Transportation Management Plan (CCTMP) for traffic, truck, transit, pedestrian, bicycle, parking access and loading operations. Typical of mature urban districts, several River District streets fall into multiple classifications and include a variety of design configurations (number of lanes, width of sidewalks, parking, etc.). This document recognizes two broad categories of design configurations:

- Typical River District Streets– 60 foot right-of-way, 36 foot street width, 12 foot sidewalks, circulation, landscape and lighting vary.

- Special Function River District Streets– right-of-way, street widths, sidewalks, circulation, landscape and lighting vary widely.

The original plan criteria and standards were reviewed for the technical and maintenance issues by the Technical Advisory Committee and for overall design character and quality by the River District Steering Committee. On April 18, 1996, the Design Commission endorsed the River District Right-of-Way Design Criteria and Standards. The updated Right-Way-Standards were also reviewed by a Technical Advisory Committee and the Pearl District and Old Town China Town neighborhood associations, and Design Commission in the Fall of 2003.

0.4 ACTION ITEMS

The following list of action items was developed during the plan update process to identify issues related to right-of-way design in the River District but are either outside the scope of this plan or require further analysis to resolve. These action items are intended to provide guidance to the neighborhood associations, the Portland Office of Transportation and related agencies for future study.

- Develop City policy for Belgian block paving stones (cobblestones) that encourages their preservation and maintenance within the River District, and sets standards for their use in public right-of-way improvements.
- Study the potential for decoupling 10th and 11th Ave north of Lovejoy St.
- Consider improvements to pedestrian safety on existing overpass bridges along I-405 at Couch, Everett and Glisan Streets.
- Analyze transportation system operations district wide to develop strategies to improve capacity and safety.
- Continue to pursue a supplier for a device that will mitigate light intrusion from single and twin ornamental lights on residential development.

FRAMEWORK PLANS

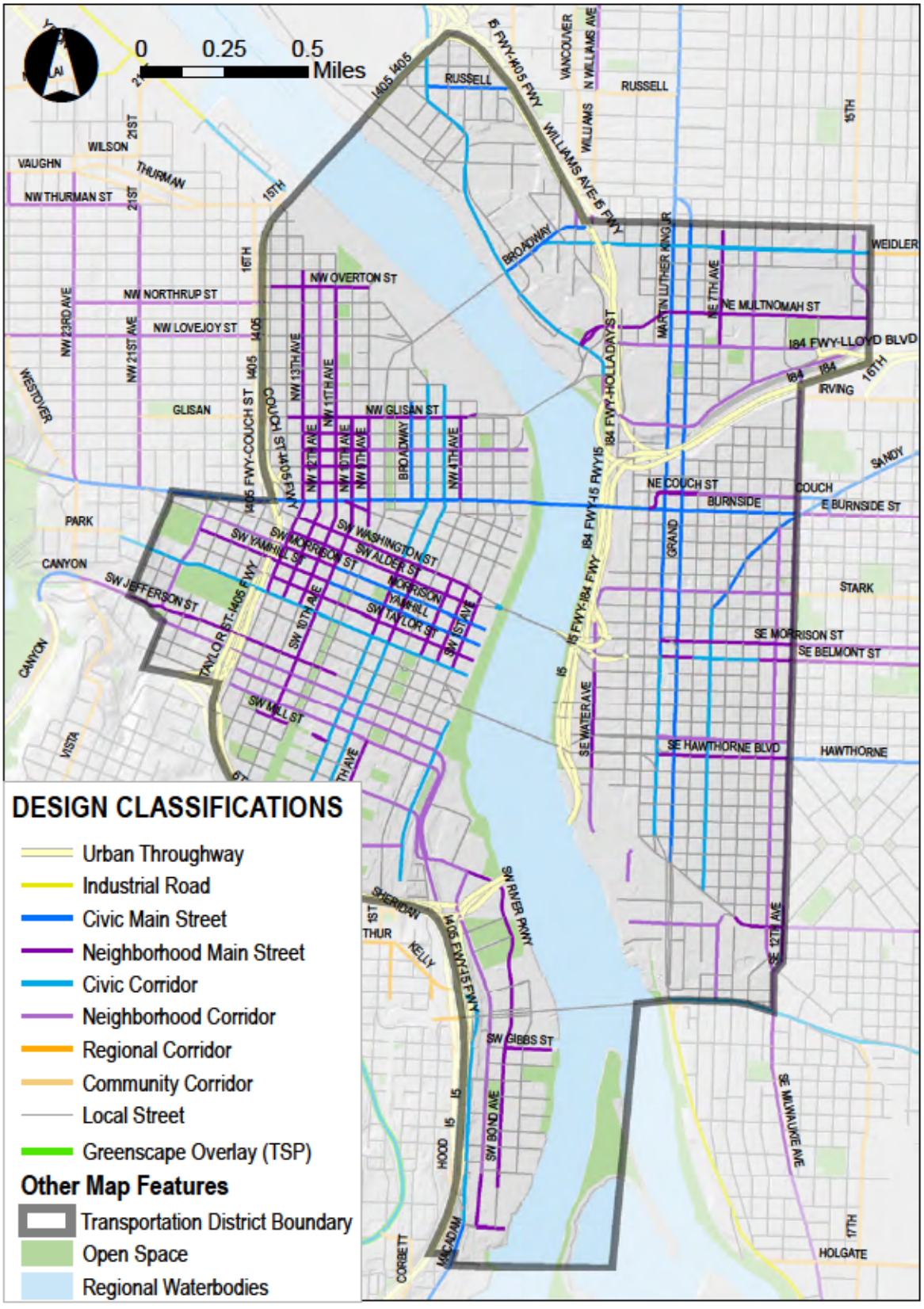
1.0 FRAMEWORK PLANS: POLICY

The Policy Framework section describes the policy foundation upon which the River District Right-Of-Way Standards are built. The original standards were a by-product of the 1992 River District Development Plan, which established six goals to guide development and implementation of the development plan, reviewed in the previous Background section.

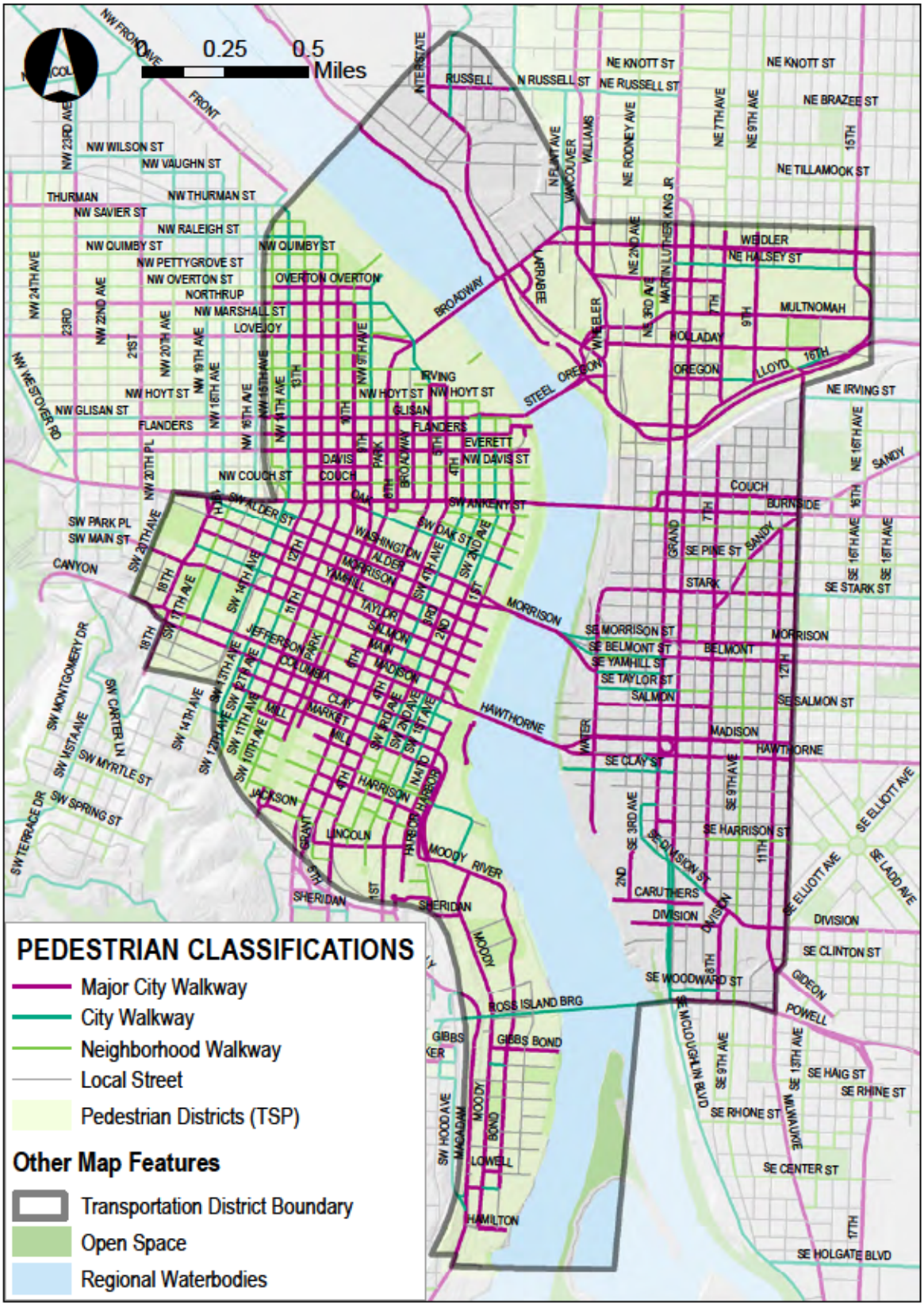
Since the adoption of the original right-of-way plan there have been a number of refinements to River District policy and plans related to right-of-way. These include:

- River District Design Guidelines (1996, 1998, 2008)
- Pearl District Development Plan (2001)
- Old Town/Chinatown Development Plan (1999)
- Pearl District Access and Circulation Plan (2012)
- Central City 2035 (2018)
- Central City in Motion (2019)

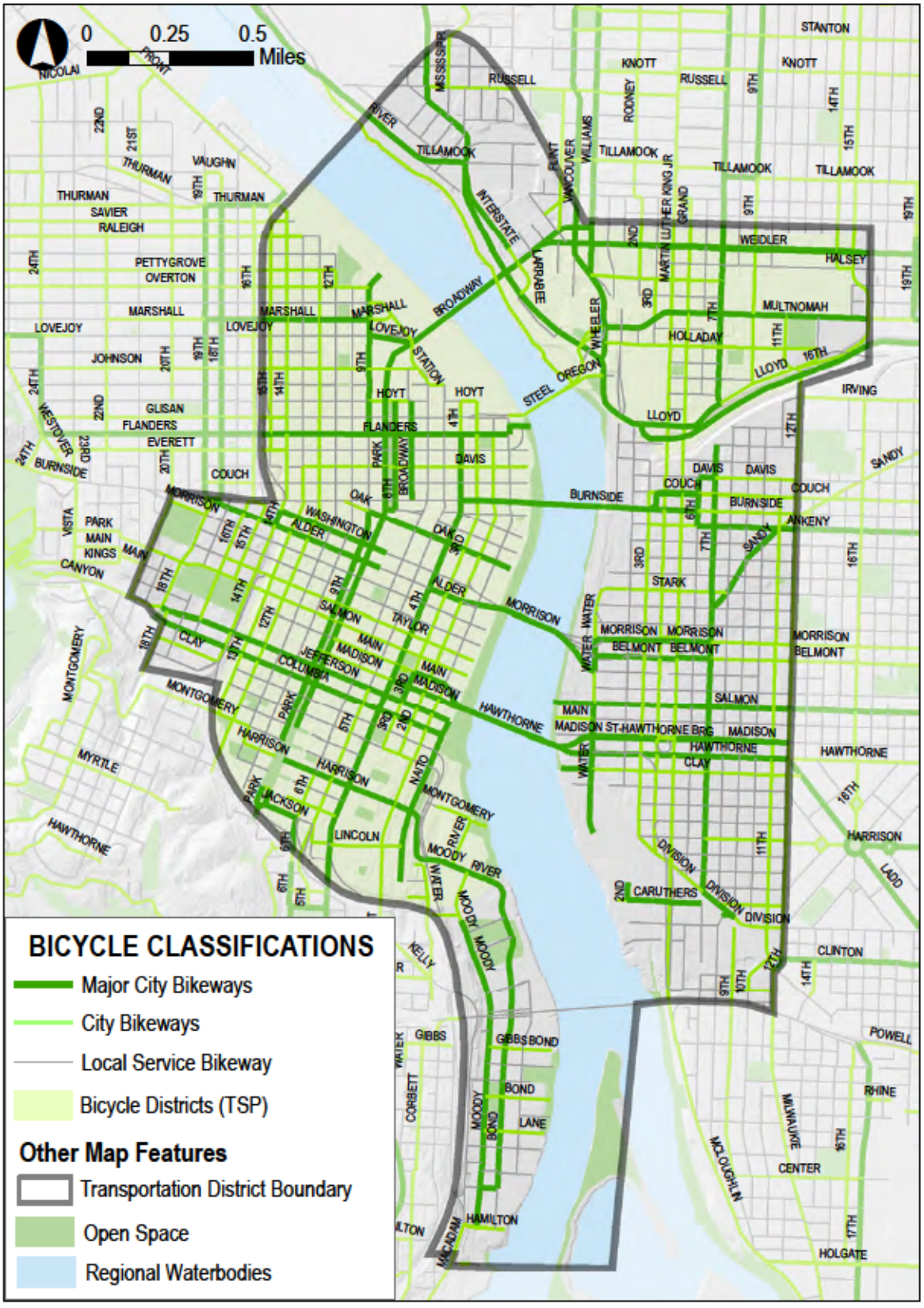
PORTLAND TRANSPORTATION SYSTEM PLAN - STREET DESIGN CLASSIFICATIONS



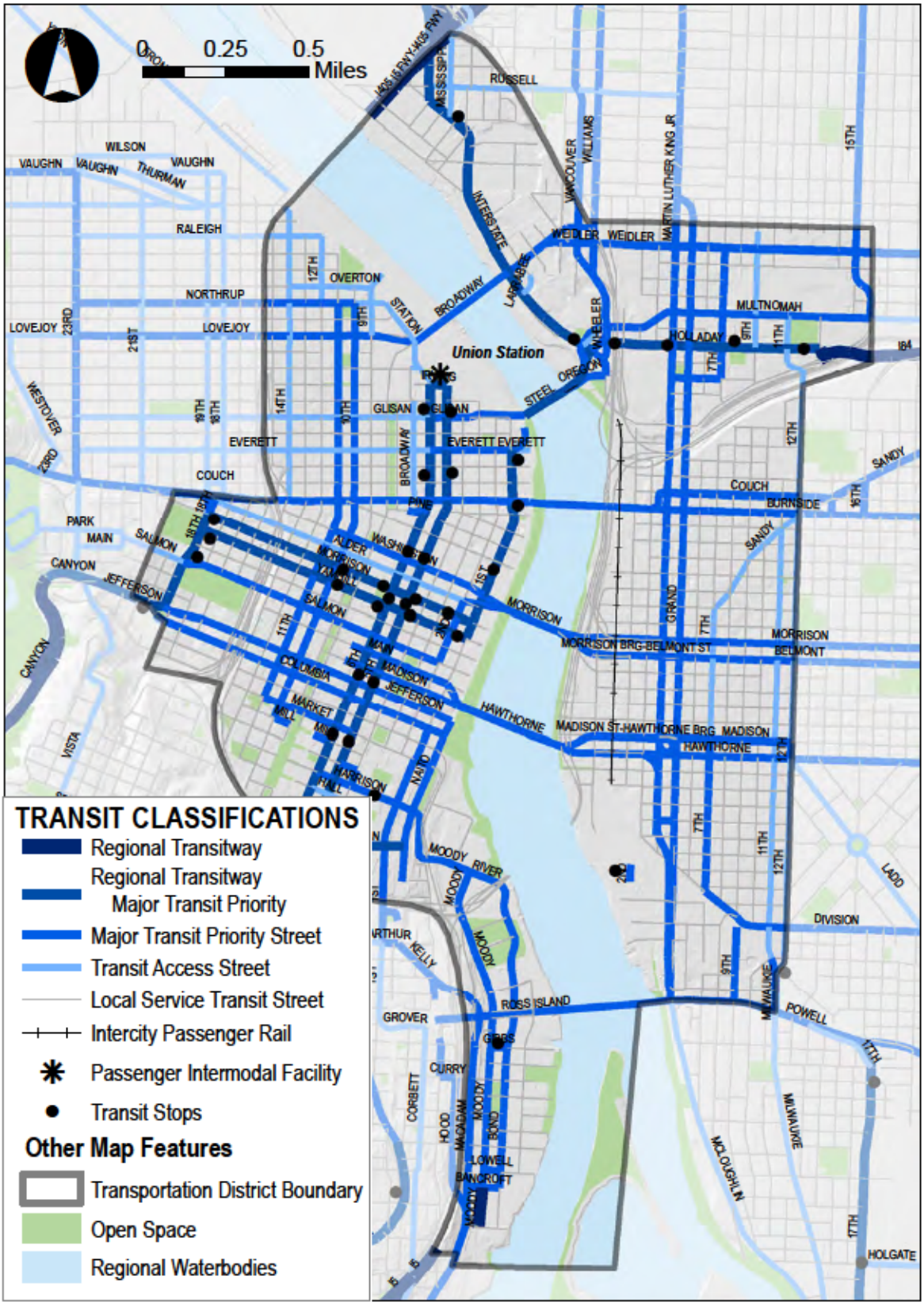
PORTLAND TRANSPORTATION SYSTEM PLAN - PEDESTRIAN CLASSIFICATIONS



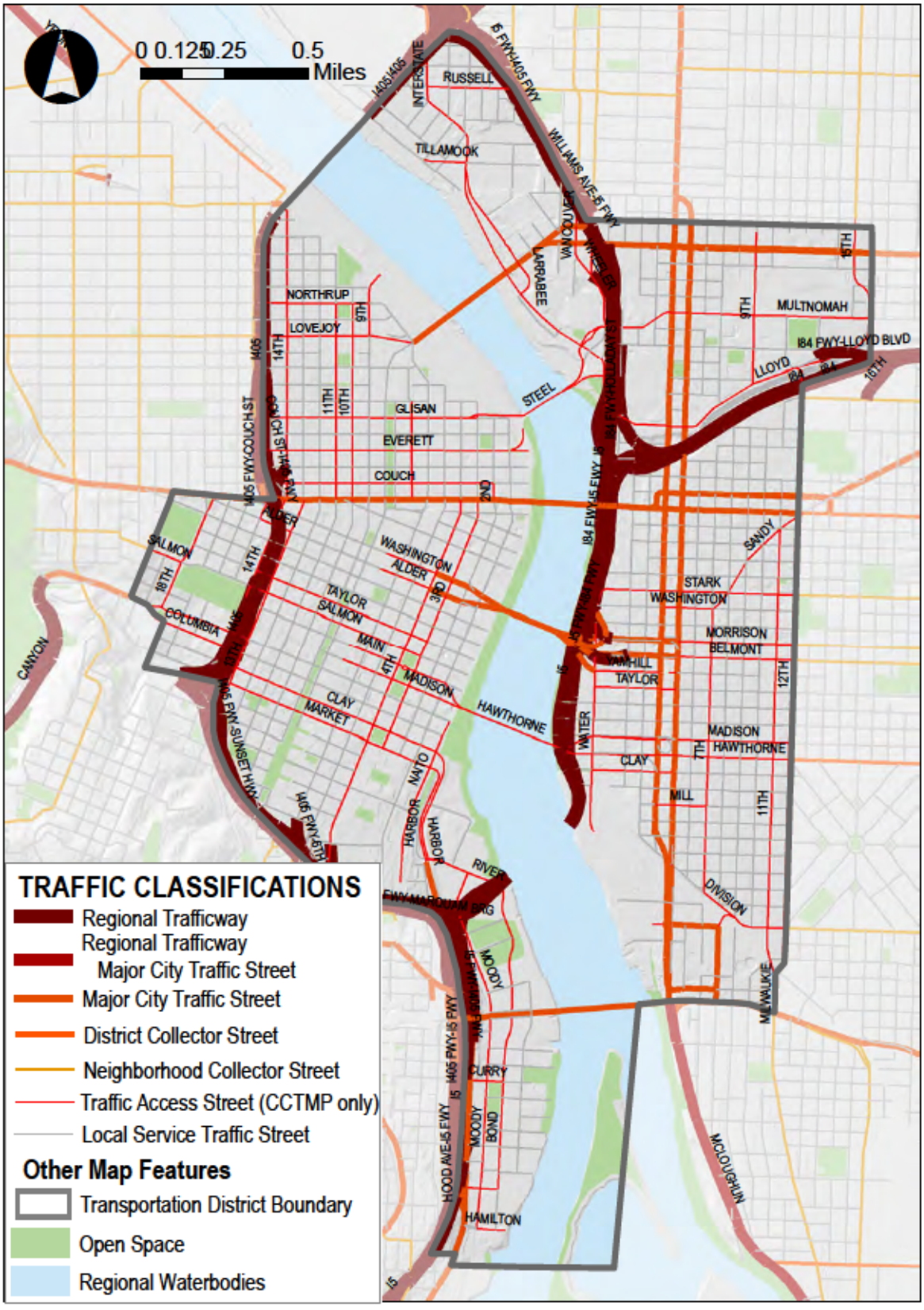
PORTLAND TRANSPORTATION SYSTEM PLAN - BICYCLE CLASSIFICATIONS



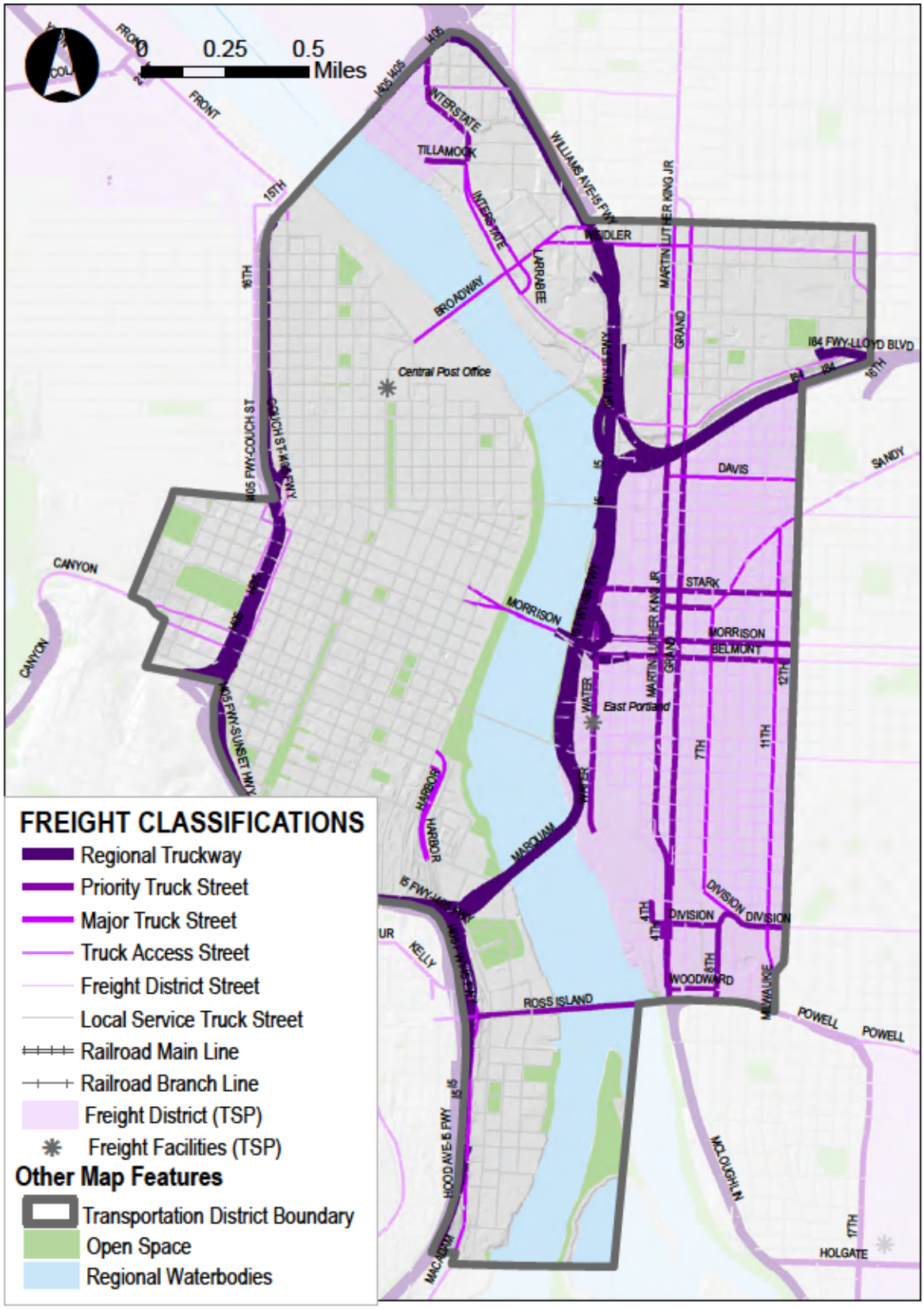
PORTLAND TRANSPORTATION SYSTEM PLAN - TRANSIT CLASSIFICATIONS



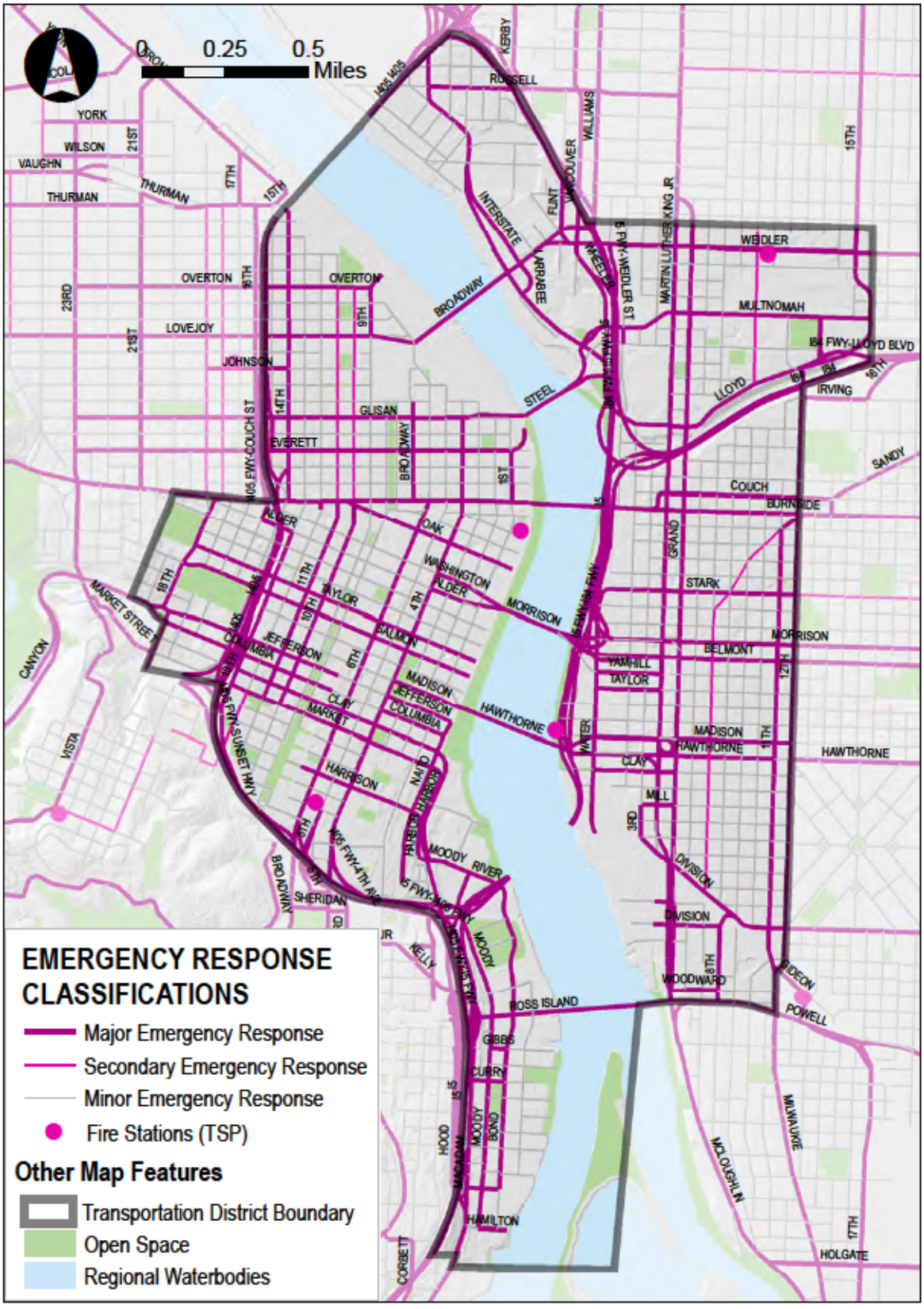
PORTLAND TRANSPORTATION SYSTEM PLAN - TRAFFIC CLASSIFICATIONS



PORTLAND TRANSPORTATION SYSTEM PLAN - FREIGHT CLASSIFICATIONS



PORTLAND TRANSPORTATION SYSTEM PLAN - EMERGENCY RESPONSE CLASSIFICATIONS



1.0.1 RIVER DISTRICT DESIGN GUIDELINES

The River District Design Guidelines, amended in 2008, are used in conjunction with the Central City Fundamental Design Guidelines as the approval criteria when conducting design review within the River District. The guidelines include the following design directives to all projects constructed within the district:

- Link the Willamette River to the community reinforcing the river's significance.
- Provide for convenient linkages throughout the River District that facilitate movement for pedestrians to and from the river, and to adjacent neighborhoods.
- Enhance the qualities that make each area distinctive within the River District.
- Incorporate water features or water design themes that enhance the quality, character and image of the River District.
- Incorporate works of art or other special design features that increase the public enjoyment of the River District.
- When developing at gateway locations, provide a distinct sense of entry and exit that relate to the special qualities of the area.
- Provide human interest and scale to buildings along sidewalks and walkways.
- Orient building entrances at pedestrian circulation points which conveniently and effectively connect pedestrians with transit.
- Design surface parking and parking garage exteriors to visually integrate with their surroundings.
- Locate and design buildings to provide for future infill development on surface parking areas.
- Reduce the impact on pedestrians from cars entering and existing garages by locating access on alleys and locating active spaces on ground floors that abut streets.
- Increase river and waterway view opportunities to emphasize the River District ambiance.

1.0.2 OLD TOWN CHINATOWN DEVELOPMENT PLAN

The Old Town/Chinatown Development Plan provides a strategy for implementation of the Old Town/Chinatown Vision Plan adopted by City Council in 1997. The goal of the Development into a vibrant, urban neighborhood, rooted in a rich historical past. Four of the Plan's immediate or shortterm development of new street plan for Burnside St, rededication of 2nd Ave and Flanders St near the Classical Chinese Garden and Port of Portland development, improvements to 3rd and 4th Aves, and extension of 6th Ave adjacent to Union Station.

1.0.3 PEARL DISTRICT ACCESS AND CIRCULATION PLAN

Adopted in 2012, the Pearl District Access and Circulation Plan identified multi-modal transportation needs and recommended projects to support the vision and development of the Pearl District. The plan built on past studies to develop the first comprehensive transportation plan for the district, with a key emphasis of providing improved multimodal access for residents, workers, and visitors to the Pearl District.

1.0.4 CENTRAL CITY 2035

The Central City 2035 Plan is part of Portland's 2035 Comprehensive Plan. Central City 2035 updates the plan and policies for downtown and central areas of Portland. The plan includes a vision for the Green Loop, a 7 mile linear park and active transportation loop connecting central city neighborhoods. To support these changes and concepts, the River District Right of Way Standards have been updated with:

- Inclusion of the green loop as a Special Function River District Street type in Section 1.4.
- Description of Green Loop design specifications in the Performance Criteria 2.12

1.0.5 USPS MASTER PLAN

The USPS site is one of five sites in downtown Portland required to complete a Central City Master Plan (CCMP) in the Central City 2035 plan. The 14-acre USPS site is jointly owned with the Portland Housing Bureau (PHB) and Prosper Portland. The USPS redevelopment offers the potential to create nearly 4 million square feet of new economic, business, social and community development opportunities.

The foundation of the USPS Master Plan is the role of the public realm, which will include new streets that strengthen vibrant and safe connections between existing destinations and services within the Central City, and expand the open space network through the addition of two new park blocks, the Green Loop, and the Bridge Landing Plaza.

To support these changes and ideas, the River District Right of Way Standards have been updated with:

- Adjustments to Special Function River District Street classifications to include NW Johnson St and NW Park Ave as special function streets.
- Creation of design guidelines for NW Johnson St and NW Park Ave in Performance Criteria Section 2.11
- Amendments to the Street Design Standards for NW Johnson and NW Park Ave to include schematic design standards for the master plan concept for level surface street designs.

1.0.6 CENTRAL CITY IN MOTION

Central City in Motion is a Council-approved plan to prioritize, and implement transportation improvements in the city's core, including the River District. Eighteen projects were prioritized through this planning effort. They include new pedestrian crossings, bus lanes, and bikeways. To support these changes and ideas, the River District Right of Way Standards have been updated with:

- Refinement of Section 2.2 Bicycle Criteria to retire obsolete facility types and to introduce Neighborhood Greenway and Protected Bike Lane facility types.

- Expansion of Section 2.3 Transit Criteria to include Dedicated Bus Lanes, Business Access and Transit Lanes, and Transit Stops with Bikeways.

1.1 FRAMEWORK PLANS: RIGHT-OF-WAY DESIGN

The Right-of-Way Design Framework Plans take the policy directives regarding right-of-way form and function contained in the previous section and translates them into the required basic design elements of each River District street, such as widths, number of travel lanes, on-street parking, street trees and street lighting. The Design Framework Plans are divided up into two broad design categories:

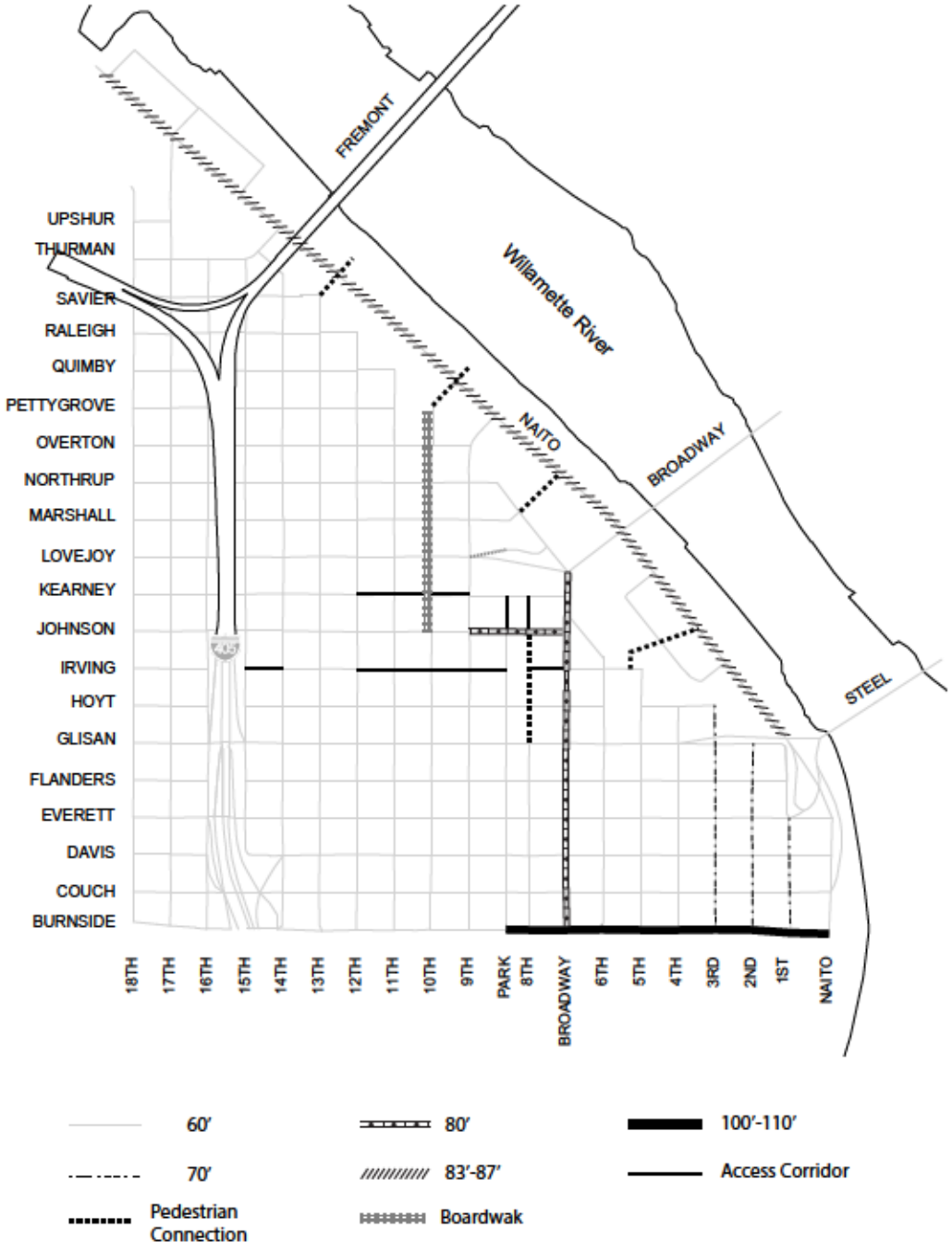
- Typical River District Streets
  36 foot curb-to-curb widths within 60 foot rights-of-way
- Special Function River District Streets
  Right-of-way and curb-to-curb widths vary

The Design Framework Plans are based on the following propositions:

- That the character of streets may vary by subdistrict.
- That the character of regional streets may maintain consistency with precedents outside the District.
- That the character and use of some Special Function Streets and new typical streets may be without precedent.
- That street trees will vary from street to street and between subdistricts.
- That street lighting will vary according to street function, pedestrian activity and existing patterns.

1.2 STREET WIDTHS: RIGHT-OF-WAY

The predominant existing right-of-way pattern is 60 feet throughout the River District. The exception to this norm are several of the Special Function streets where either wider right-of-way exist or will be provided or where new right-of-way will be established as streets are extended.

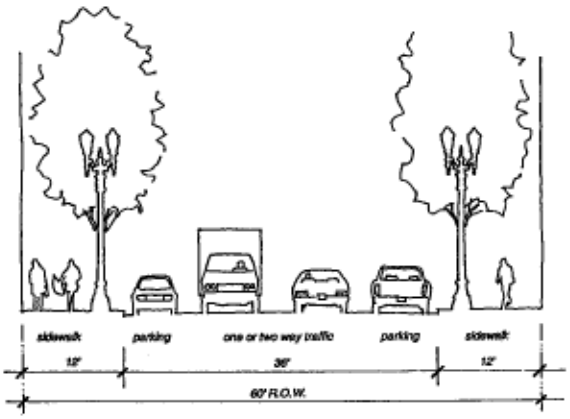


1.3 TYPICAL RIVER DISTRICT STREETS

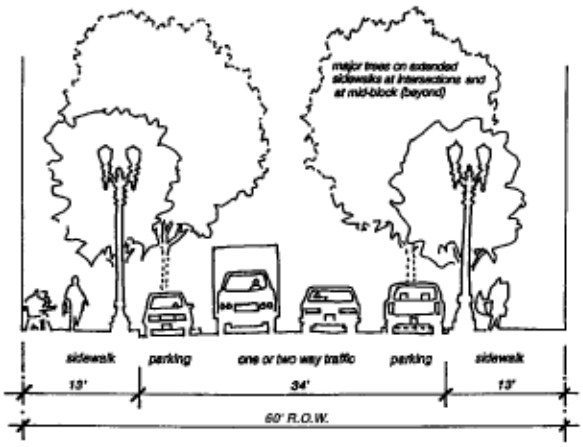
The predominant existing street width for two lane streets with on-street parking in the River District is 36 feet curb-to-curb. An optional width for new two lane street extensions is 34 feet which allows wider sidewalks in more pedestrian intensive areas.

TYPICAL STREETS

	1.3.1 Typical Existing River Ditrict Streets	1.3.2 Typical New or Redeveloped River Ditrict Streets
Right-of-Way	60 ft.	60 ft.
Roadway	36 ft.	34 ft.
Sidewalks	12 ft. both sides	13 ft. both sides
Curbline	May be extended at corners	May be extended at corners
Circulation	One or two-way Two lanes	One or two-way Two lanes
Parking	Allowed both sides	Allowed both sides



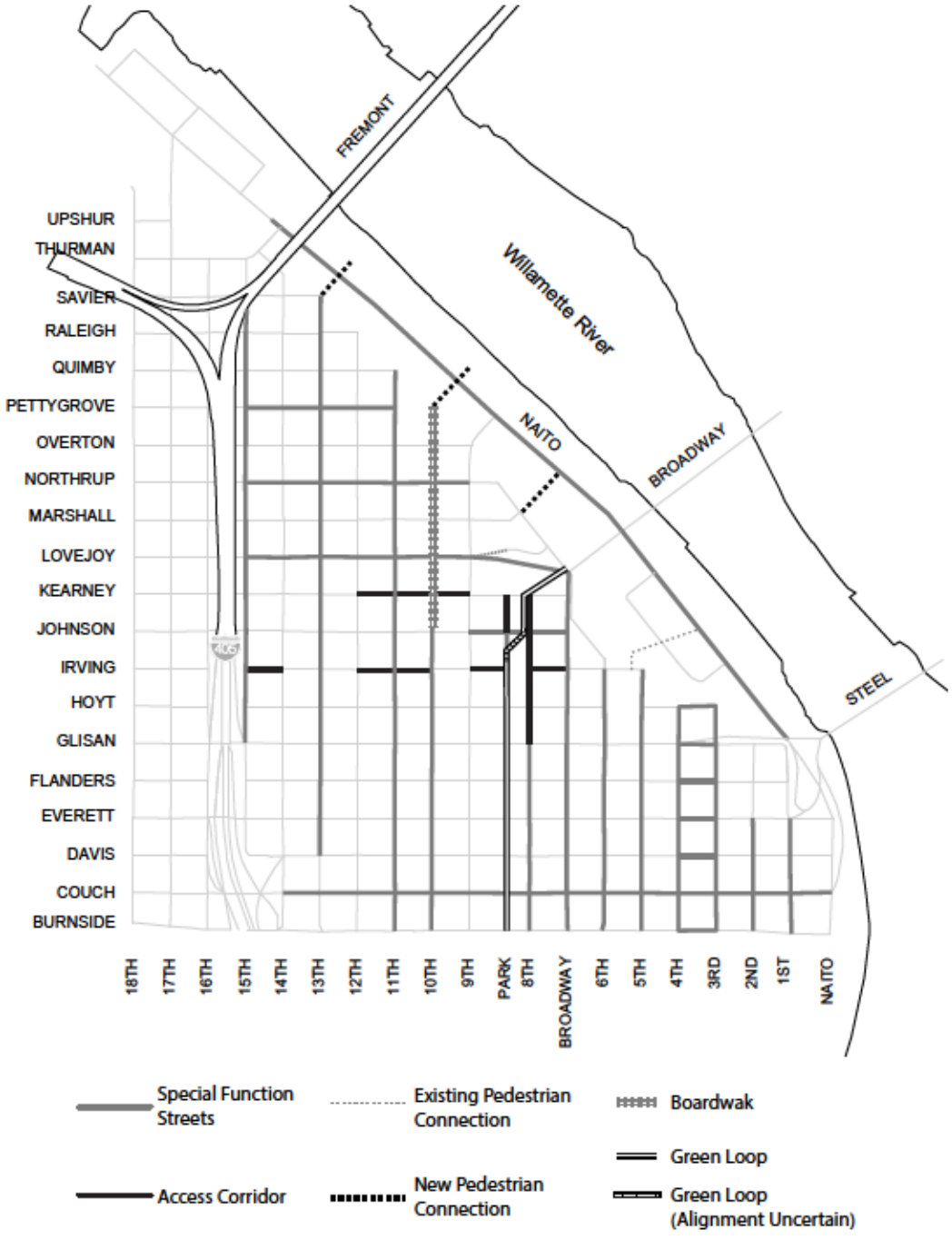
Typical Existing River District Street



Typical New or Redeveloped River District Street

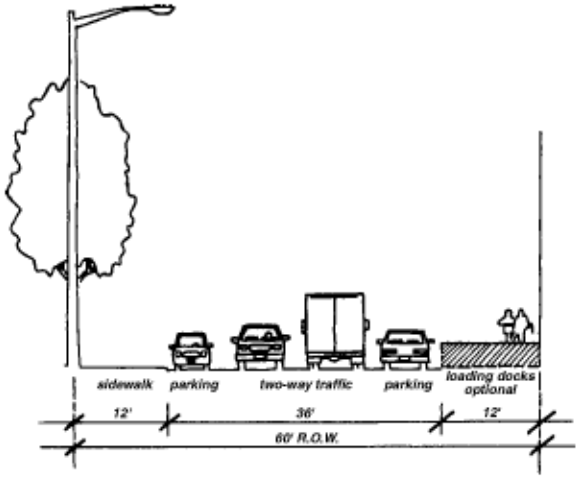
1.4 SPECIAL FUNCTION RIVER DISTRICT STREETS

There are a variety of street widths for Special Function Streets in the River District. Naito, Broadway, 1st, 2nd and 3rd carry through-traffic from beyond the area and thus are wider than typical River District streets. Others, such as the North Transit Mall, the Park Block streets and the access corridors are specialized in their use and design configuration. Pettygrove is envisioned as a "green street" with wide sidewalks and less on-street parking, eventually leading from the Fields Park to Wallace Park in Northwest. See Appendix for details.



SPECIAL FUNCTION STREET STANDARDS

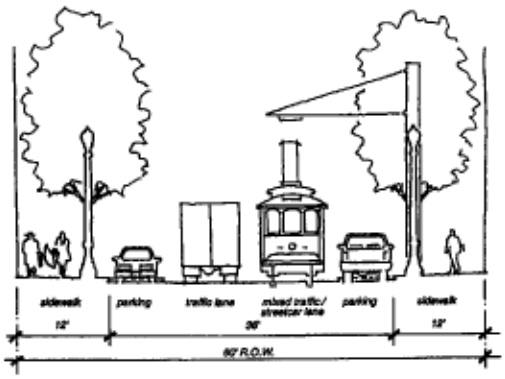
	1.4.1 15th Avenue
Right-of-Way	60 ft.
Roadway	36 ft.
Sidewalks	12 ft. Loading docks/raised platforms are also allowed, must provide 6 ft. clear pedestrian through zone and meet ADA guidelines.
Curbline	May be extended at corners
Circulation	Two-way Two lanes
Parking	Allowed both sides
Trees	Infill/Established Street Trees If a loading dock is approved-trees are not required along the loading dock.



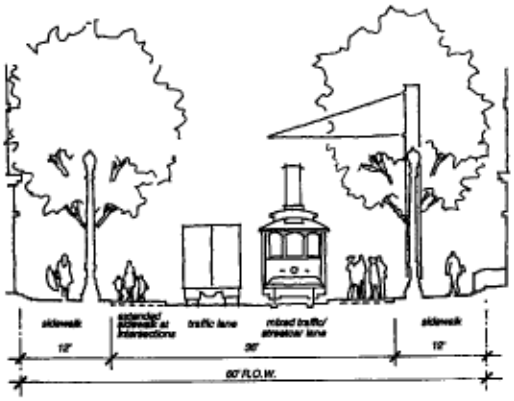
15th Avenue

	1.4.2 10th & 11th Avenue
Right-of-Way	60 ft.
Roadway	36 ft. 10th Ave 29 ft. adjacent to Boardwalk
Sidewalks	12 ft. both sides 10th Ave west side Boardwalk 19ft. - Johnson St north (see Pedestrian Performance Criteria 2.5.1.5)*
Curbline	May be extended at corners
Circulation	One or two-way Two lanes
Parking	Allowed both sides except 10th Ave next to Boardwalk

**At parks, design exceptions subject to design review (see page 4).*

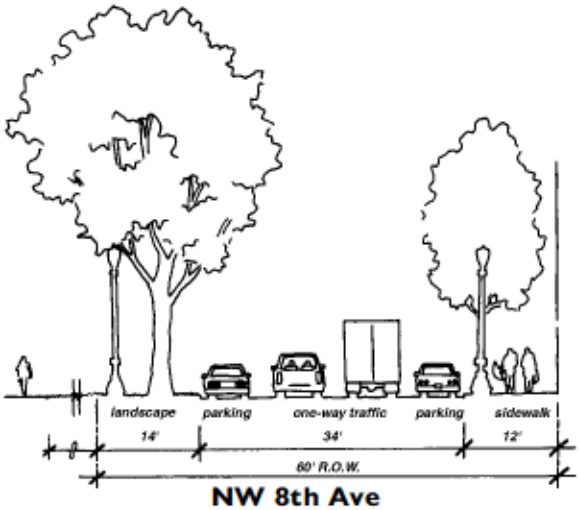


10th/11th Avenues - Burnside to Hoyt

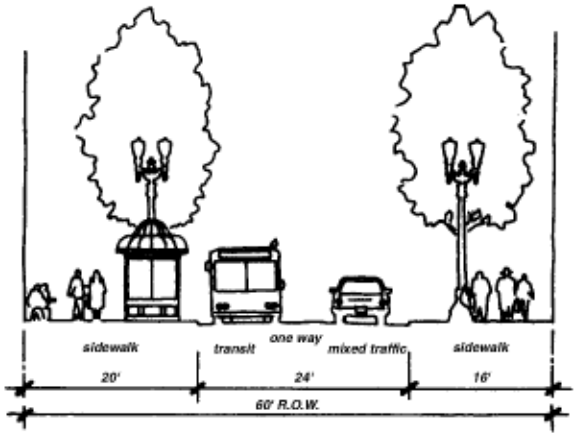


10th/11th Avenues - Hoyt to Lovejoy

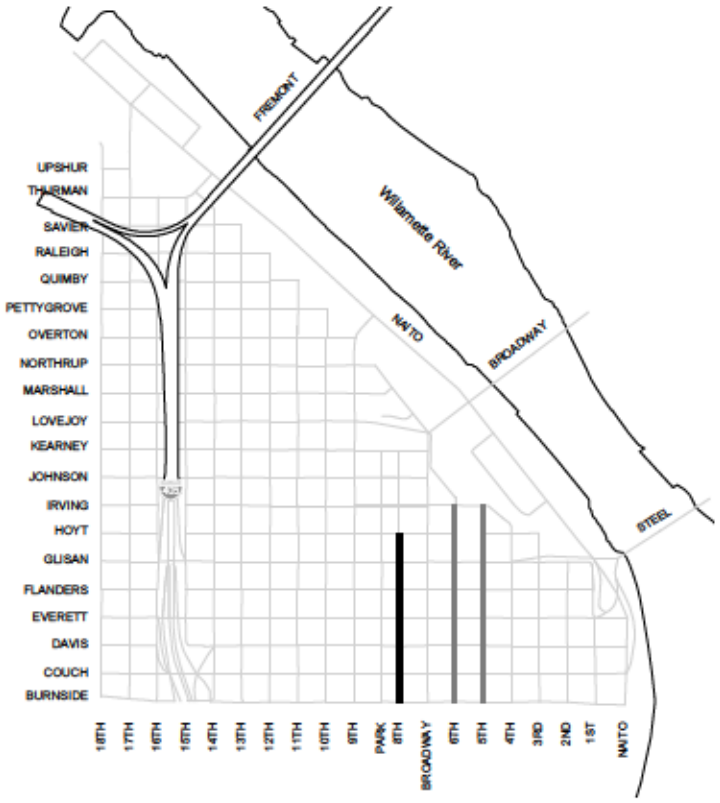
	1.4.3 NW 8th Ave	1.4.4 North Transit Mall
Right-of-Way	60 ft.	60 ft.
Roadway	35 ft.	24 ft.
Sidewalks	Continue existing pattern (no sidewalk on park side frontage)	20 ft. transit loading side 16 ft. opposit side
Curbline	Straight	Straight
Circulation	One-way Two lanes	One-way, one lane exclusive transit One lane mixed traffic
Parking	Allowed both sides	Not allowed



NW 8th Ave

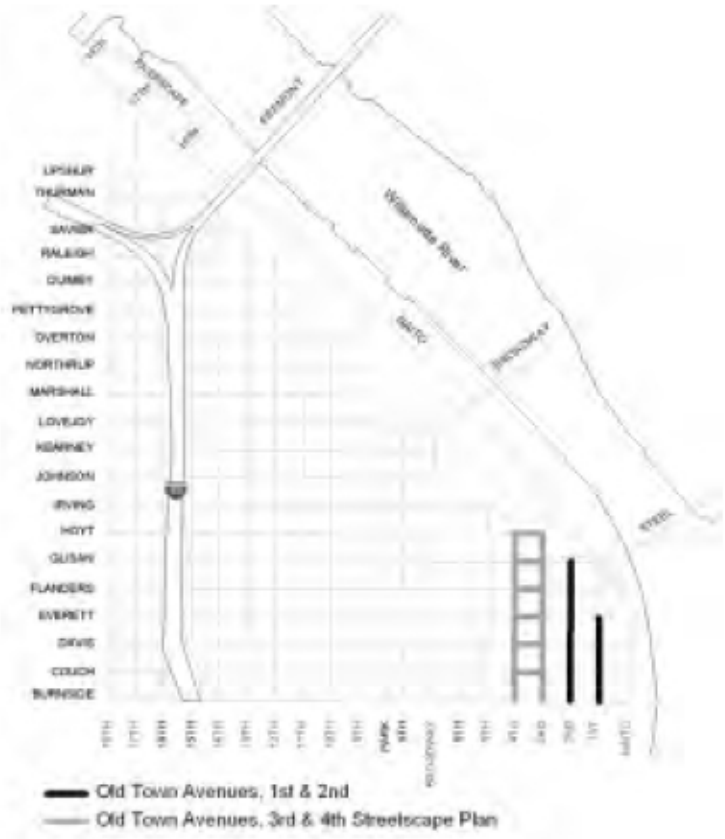


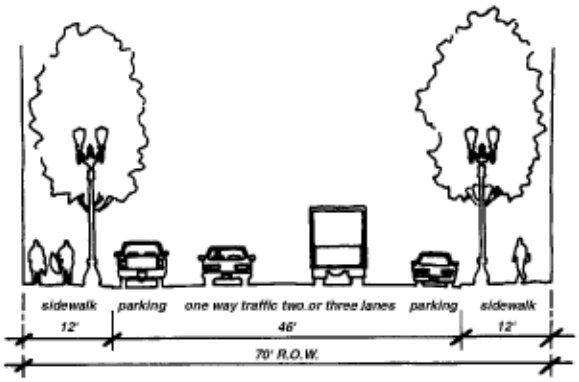
North Transit Mall



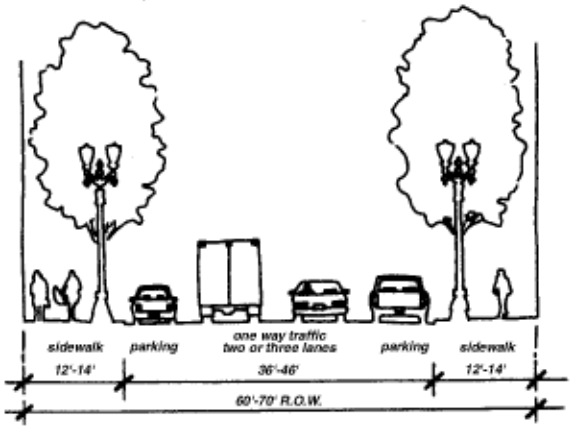
	1.4.5 Old Town Avenues 1st & 2nd Avenue	1.4.6 Old Town Avenues 3rd & 4th Avenues**
Right-of-Way	70 ft.	60 or 70 ft.
Roadway	46 ft.	36 or 46 ft.
Sidewalks	12 ft. both sides*	12 or 14 ft.
Curbline	May be extended at corners	May be extended at corners
Circulation	One-way Two or three lanes	One-way Two or three lanes
Parking	Allowed both sides*	Allowed both sides

** 1st Avenue with Light rail transit is the exception to these standards.*
*** For more detail reference the 3rd and 4th Avenue Streetscape Plan, Portland Office of Transportation.*





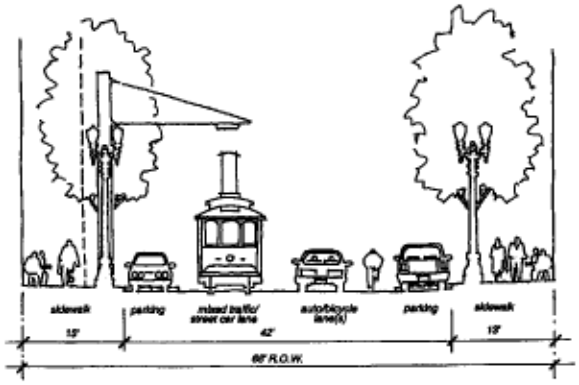
Old Town Avenues
1st and 2nd Avenues



Old Town Avenues
3rd and 4th Avenues

	1.4.7 Lovejoy/Northrup (9th-15th Avenues)
Right-of-Way	60 ft. 68 ft., Lovejoy 9th-12th Ave, 13th-14th Ave
Roadway	35 ft. (within 60 ft. r.o.w.) 42 ft. (within 68 ft. r.ow.)
Sidewalks	13 ft. streetcar side 12 ft. opposite side
Curbline	May be extended at corners and streetcar stops
Circulation	Two-way Two lanes*
Parking	Allowed both sides (except Lovejoy 12th-13th, north side only)

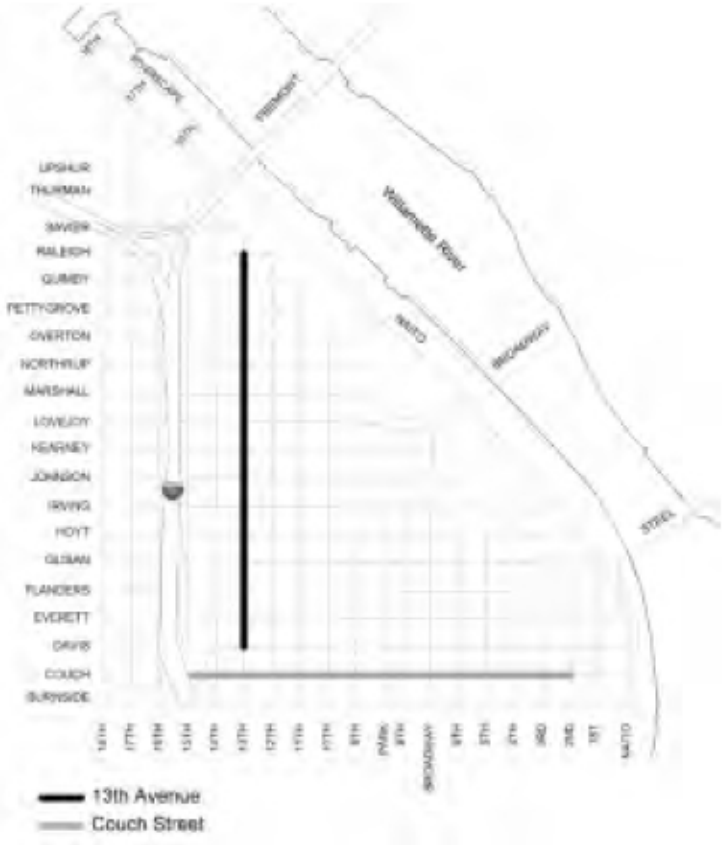
** One through lane, one mixed traffic/streetcar lane.*

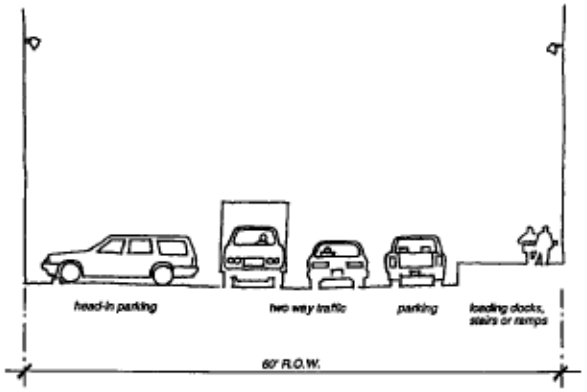


Lovejoy/Northrup-9th to 15th
(except Lovejoy 12th-13th)

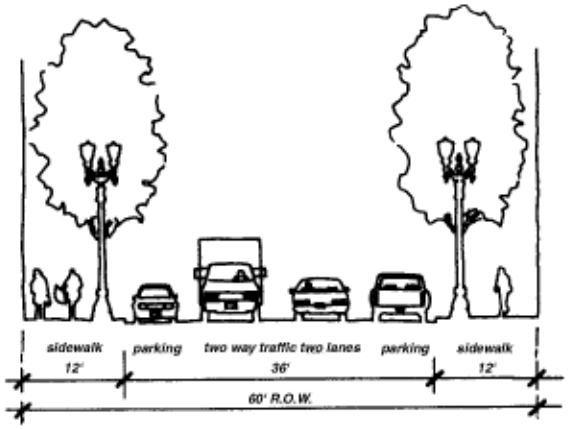
	1.4.8 13th Avenue	1.4.9 Couch Street
Right-of-Way	60 ft.	60 ft.
Roadway	22 ft. travel lane	36 ft.
Sidewalks	None, Zone for loading docks, pedestrian stairs, ways and ramps are allowed in lieu of sidewalk *	12 ft. both sides
Curbline	None	May be extended at corners
Circulation	Two-way Two lanes	Two-way, two lanes One-way 2nd to 15th Ave **
Parking	Parallel to docks; 90° head-in allowed in lieu of docks	Allowed both sides

** Maximum projection 11 ft. into the right-of-way.*
*** Upon implementation of the Burnside Transportation Plan.*



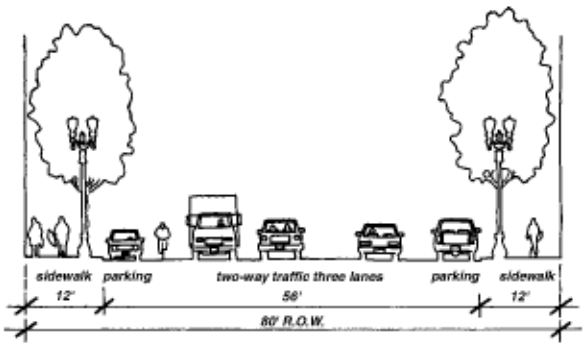


13th Avenue With Loading Docks



Couch Street

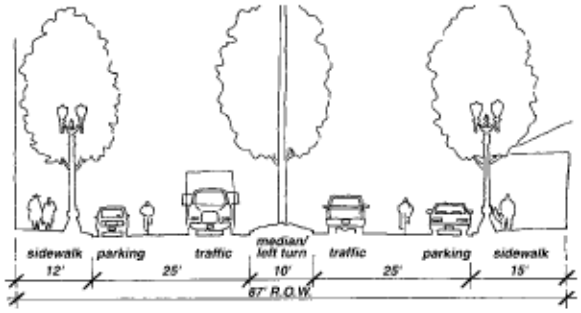
	1.4.10 Broadway	1.4.11 Bridge Ramps
Right-of-Way	80 ft.	Broadway: 61 ft. Lovejoy: 60 ft.
Roadway	56 ft.	Broadway: 45 ft. Lovejoy: 40 ft.
Sidewalks	12 ft. both sides	Broadway: 8 ft. both sides Lovejoy: 10 ft. both sides
Curbline	May be extended at corners	Varies
Circulation	Two-way Three lanes	Broadway: Two-way, four lanes Lovejoy: Two-way, three lanes
Parking	Allowed both sides	Not allowed



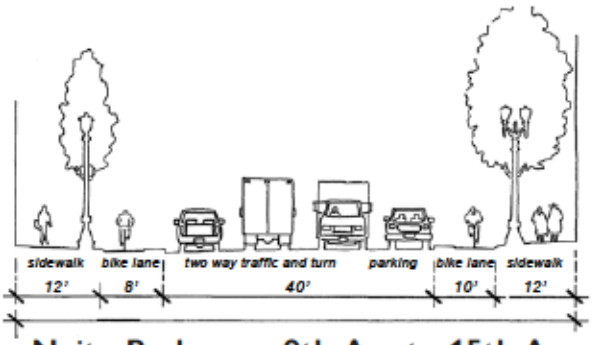
Broadway

	1.4.12 Naito Parkway Steel Bridge to 9th Ave	1.4.13 Naito Parkway 9th Ave to 15th Ave	1.4.14 Front Avenue 15th Ave to 18th Ave
Right-of-Way	87 ft.	Varies	Varies
Roadway	60 ft. including median	58 ft.	58 ft
Sidewalks	15 ft. east side 12 ft. west side	12 ft. both sides	12 ft. both sides
Curbline	Straight; median curbline varies at left turn lanes	Straight	Straight
Circulation	Two-way Two lanes +turn lane	Two-way Two lanes with turn lane and protected bike lanes	Two-way Two lanes with turn lane and protected bike lanes
Parking	Allowed both sides	Allowed east side only	Allowed west side only

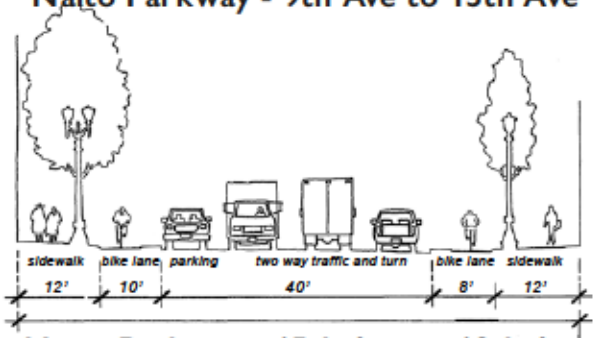
Front Avenue, 15th Avenue to Steel Bridge
Naito Parkway, Steel Bridge to 9th Avenue
9th Avenue to 15th Avenue Final Design added in 2012. See Appendix.



Naito Parkway- Steel Bridge to 9th Avenue



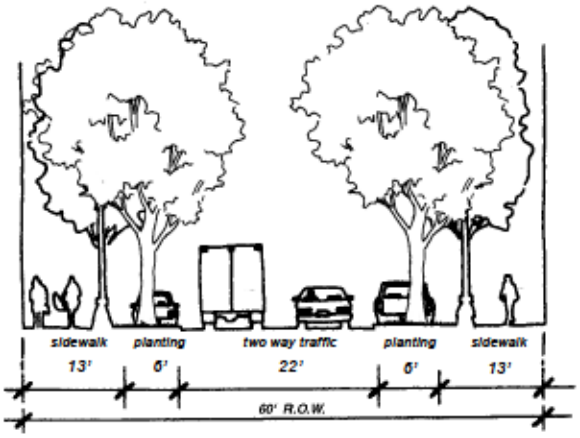
Naito Parkway - 9th Ave to 15th Ave



Naito Parkway - 15th Ave to 18th Ave

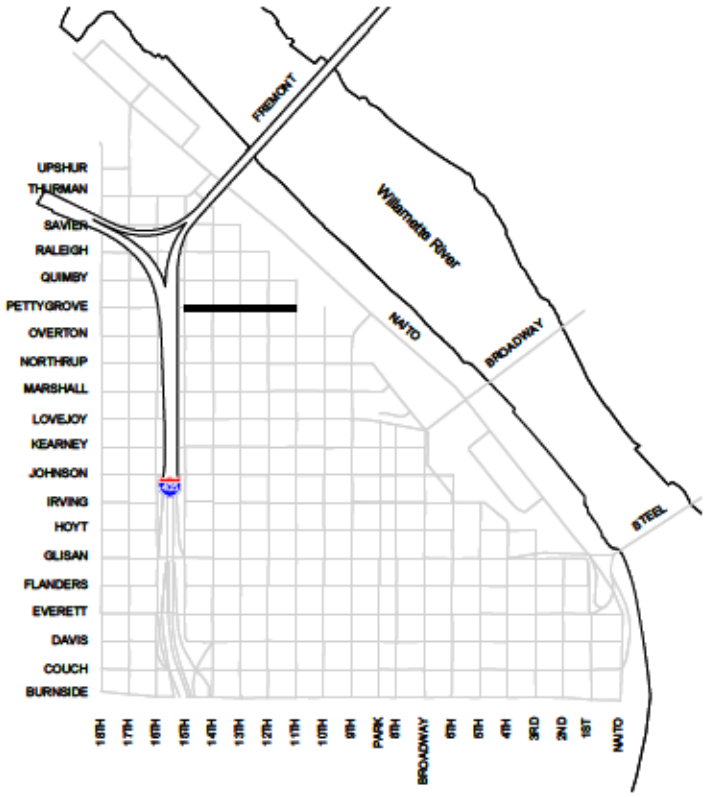
	1.4.15 Pettygrove Street (Option A)	1.4.16 Pettygrove Street (Option B)	1.4.17 Pettygrove Street (Option C)
Right-of-Way	60 ft.	60 ft.	60 ft.
Roadway	22 ft. clear zone	22 ft. clear zone	22 ft. clear zone
Sidewalks	13 ft. both sides	13 ft. both sides	13 ft. both sides
Curbline	Extensions to accommodate stormwater and tree wells	Extensions to accommodate stormwater and tree wells	Extensions to accommodate stormwater and tree wells
Circulation	Two-way Two lanes	Two-way Two lanes	Two-way Two lanes
Parking	Allowed both sides (4 stalls)	Allowed both sides (3 stalls)	Not allowed

NW Pettygrove from NW 11th Avenue to NW 15th Avenue



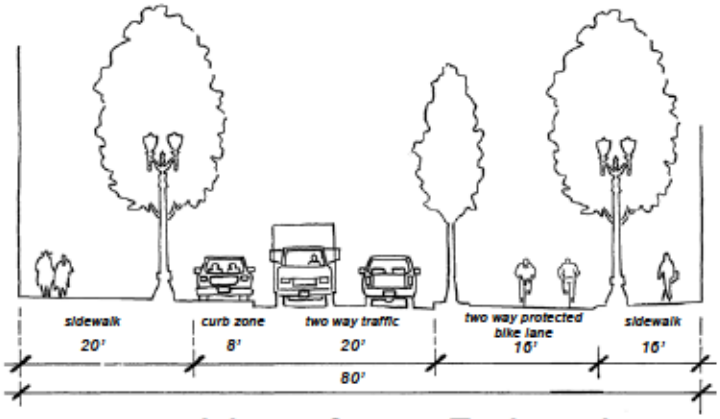
Pettygrove Street

Select from three (3) options for parking and landscaping (please refer to standard drawings RD 25A, RD 25B and RD 25C)

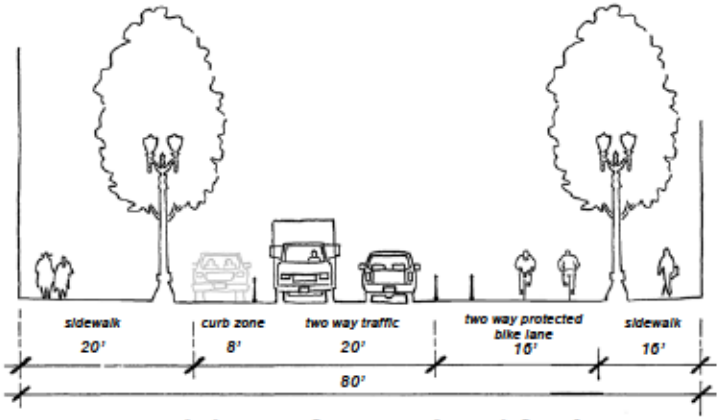


	1.4.18 Johnson Street NW 9th Ave to NW Station Way*	1.4.19 Johnson Street NW Park Ave to NW 8th Ave
Right-of-way	80 ft.	80 ft.
Roadway	28 ft.	28 ft.
Sidewalks	15 ft. and 20 ft on north side; 15 ft on south side	15 ft. and 20 ft on north side; 15 ft on south side
Curbline	May be extended at corners	May be extended at corners
Circulation	Two-way two lanes with protected bike lane	Two-way two lanes with protected bike lane
Parking	Allowed one side	Allowed one side

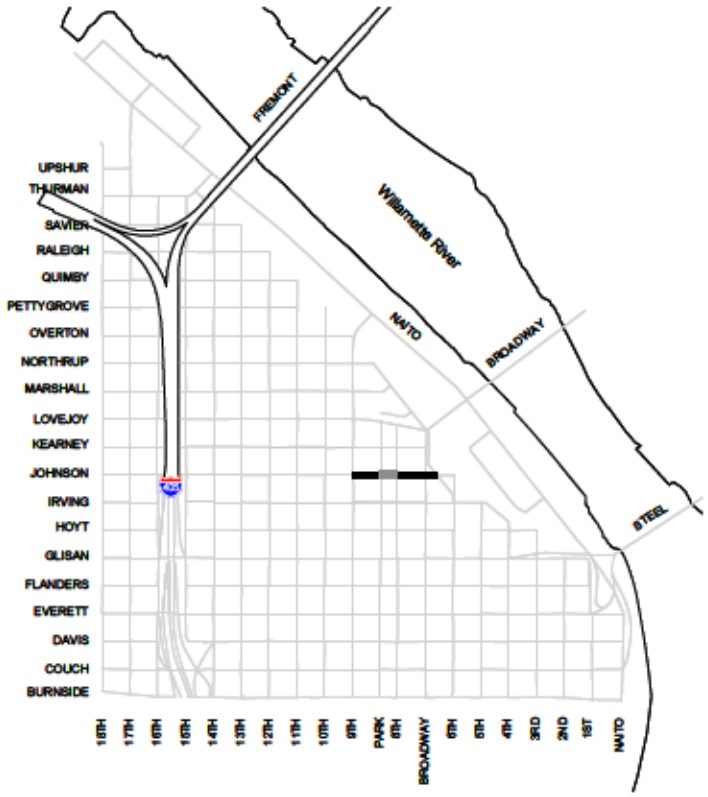
*Curbless level surface design from NW Park Avenue to NW 8th Avenue
Wide sidewalk furnishing zone on north side supports larger tree canopy sizes.



Johnson Street - Traditional



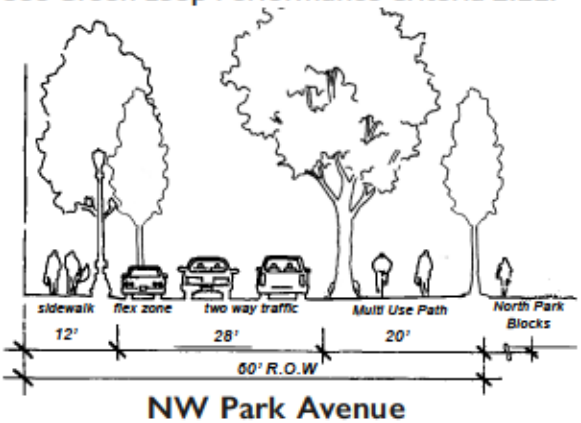
Johnson Street - Level Surface



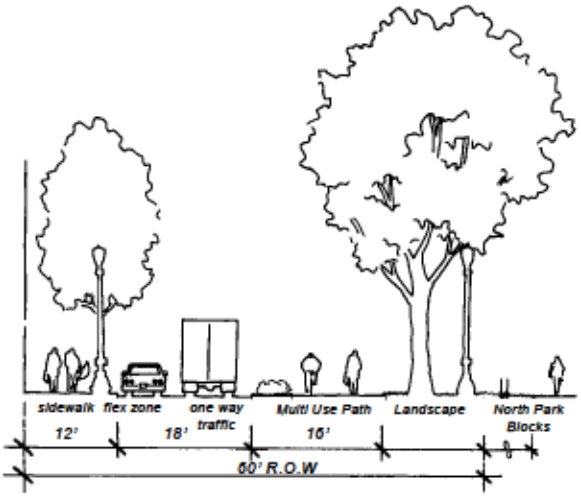
Traditional Johnson Street - 80 ft right-of-way
Level Surface Johnson Street - 80 ft right-of-way

	1.4.20 Park Avenue W Burnside to NW Hoyt	1.4.21 Park Avenue NW Hoyt to NW Johnson
Right-of-way	60 ft	60 ft
Roadway	18 ft	28 ft
Sidewalks	Continue existing pattern (no sidewalk on west side frontage, walkway in the park)	Continue existing pattern (no sidewalk on west side frontage, walkway in the park)
Green Loop	Multi use path integrated within roadway, preserves park landscaping.	Through pedestrian zone integrated into North Park Blocks.
Curbline	Straight	No curb. Tree well and landscape should be extended.
Circulation	One-Way, one lane with Green Loop path	Two-Way, Two lanes with Green Loop path
Parking	Allowed west side	Allowed west side

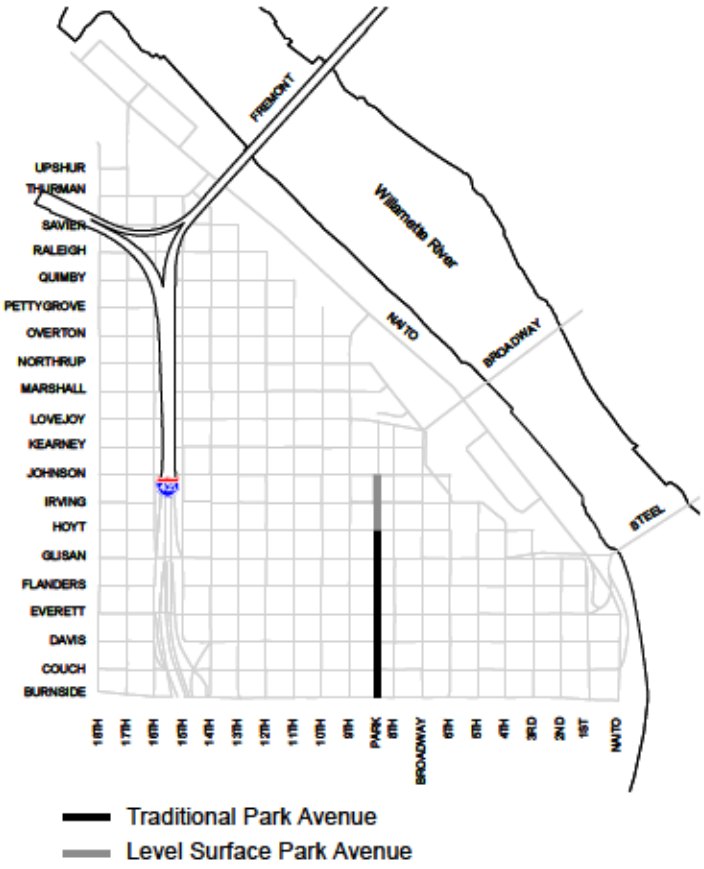
Curbless level surface design from NW Glisan to NW Johnson.
See Green Loop Performance Criteria 2.11.



NW Park Avenue
NW Hoyt to NW Johnson



NW Park Avenue
N Burnside to NW Hoyt

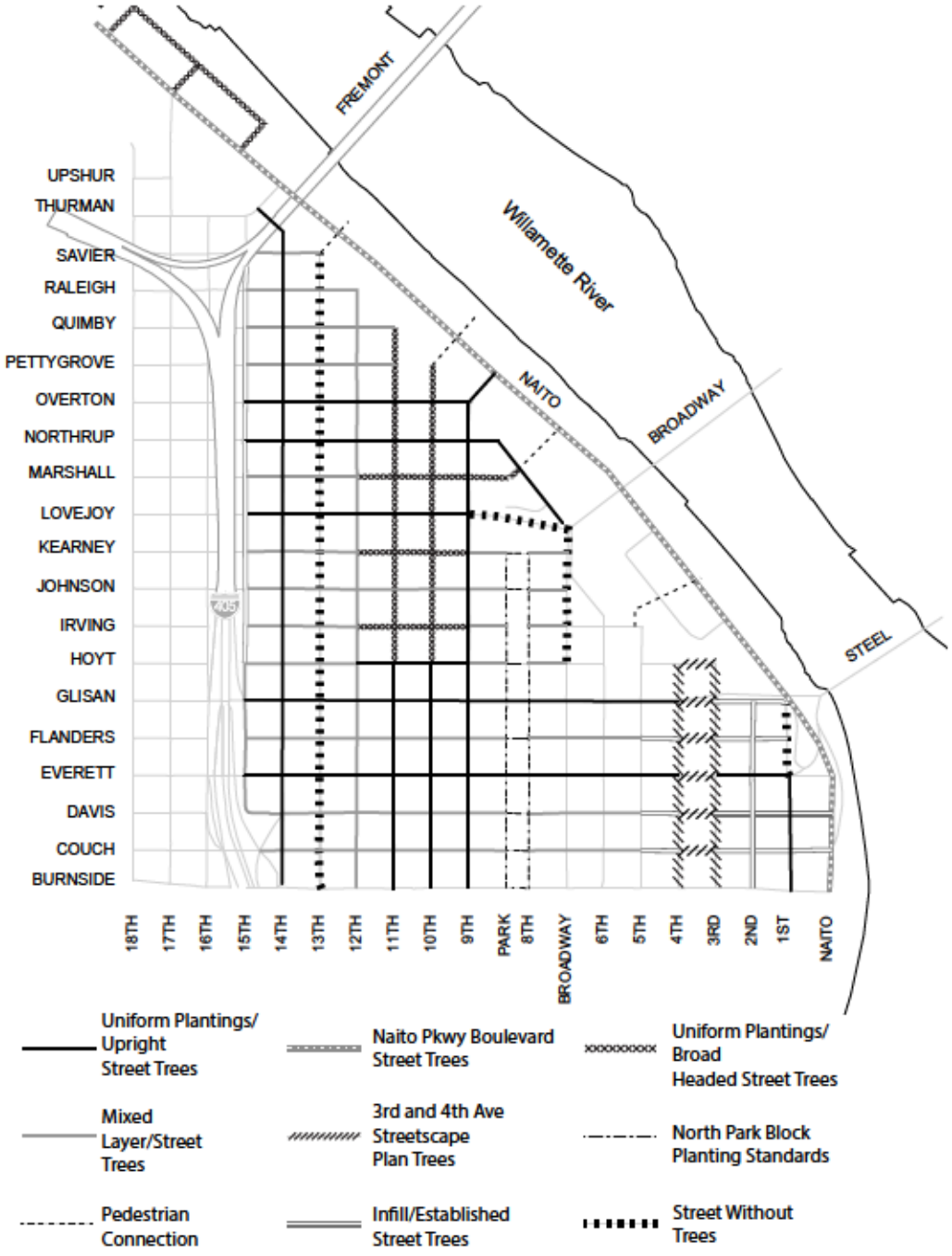


1.4.22 ACCESS CORRIDOR

Private pedestrian/bicycle/vehicle tracts with landscaping and street lighting on public easements, 40-60 feet wide, which approximates the original 200 ft. block pattern. See Performance Criteria 2.5.1.4.

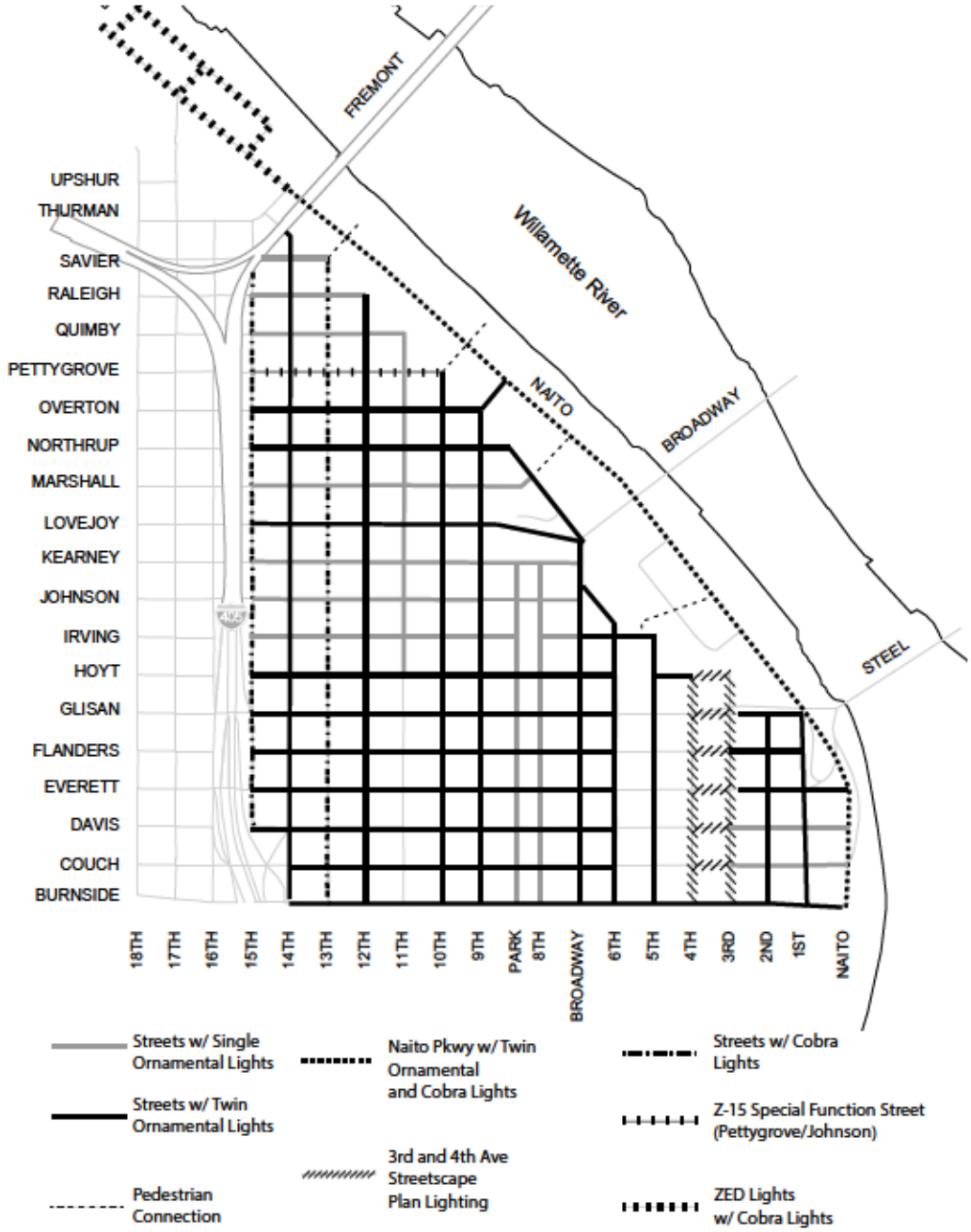
1.5 STREET TREES

The selection of tree species and the layout of trees on different streets is related to both the operation and desired character of a particular street. Examples range from significant traffic streets with narrow upright street trees to minor traffic streets with broad headed street trees. Species selection and tree spacing has been coordinated with the City Forestry Division.



1.6 STREET LIGHTING

The street lighting plan reflects existing and proposed fixtures for various streets in the River District. The indication of fixture type and spacing for a particular street is based on the continuation or extension of existing design character within the district and continuity with the urban design pattern beyond the district. These recommendations have been coordinated with the Street Lighting Division of the Bureau of Transportation Engineering and Development.



PERFORMANCE CRITERIA

2.0 PERFORMANCE CRITERIA

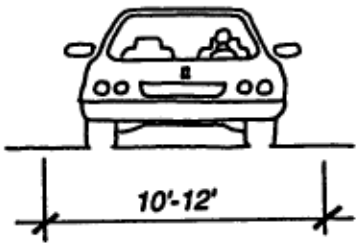
The Right-of-Way (R.O.W.) Performance Criteria describe the size and application of key R.O.W components. Each criterion is illustrated to clarify its intent, but the illustrations are not to be used as standards. The Criteria are to guide and not to prescribe design solutions.

2.1 VEHICULAR CRITERIA

2.1.1 Through Lane: a linear, continuous zone for vehicles in the street; can be exclusive or combined with left or right turn movements.

Size: 10-12 feet for typical through lanes

Application: Throughout the River District



Parking and loading pull-out width

2.1.2 Left Turn Lane: a linear zone for vehicles near the center of the street; may not be continuous to the next block; is typically an exclusive lane for left turning vehicles on a two-way street.

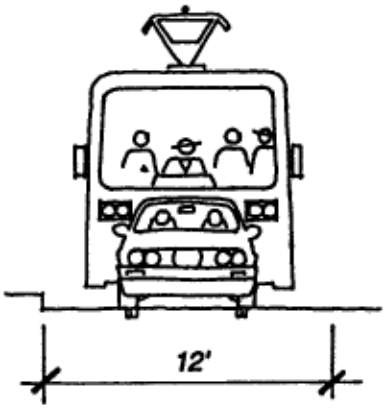
Size: 10-12 feet for general left turn lanes

Application: Throughout the River District

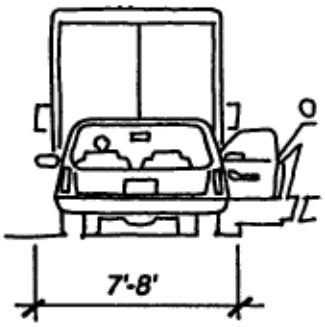
2.1.3 Mixed Traffic - and Streetcar Lane: a linear, continuous zone for both motorized vehicles and a streetcar trackway in the street; typically located in the right or left hand lanes; turning movements for motor vehicles may be restricted.

Size: 12 feet

Application: On Special Function Streets (see Framework Plan 1.3)



Transit lane width



Parking and loading pull-out width

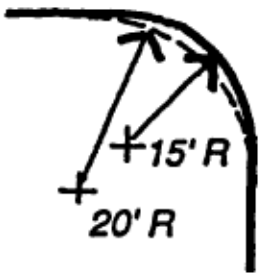
2.1.4 Curbside Parking: a linear zone for motorized vehicles at the edge of the street; can be exclusive at all hours or used as a moving traffic lane at AM and PM peak hours.

Size: 7 feet on lower volume streets or higher volume streets with a bike lane separating parking and the traffic lane; 8 feet on higher volume roadways or streets with loading zones.

Stall length - see Code of the City of Portland Chapter 33 Zoning Standards.

Federal ADA requirements for new parallel, on-street van parking spaces will be adopted by the City of Portland. These standards may affect design section, street lighting, street trees and pedestrian criteria contained in these guidelines.

Application: Throughout the River District



Corner radii

2.1.5 Corner Radii: the curved section of street edge at intersections; allows adequate space for vehicular turning movements around sidewalk corners.

Size: Minimize radii where possible.15 feet radius at typical corners; curb radii on designated bus and truck routes to be determined on an individual basis, larger radius may required; on-street parking may affect final radius requirement.

Application: Throughout the River District

2.1.6 Loading Zone: a linear zone for delivery unloading at the street edge; similar to curbside parking; should be located at least 30 feet away from intersections.

Size: 8 feet wide at typical loading zones (7 feet cannot be used adjacent to 10 foot traffic lanes).

Length varies-see Code of the City of Portland Chapter 33 Zoning Standards.

Applications: Throughout the River District; loading zones are typically discouraged or minimized on streets with frequent transit service-where unavoidable, loading is provided on the side of the street opposite bus or streetcar stops; see the Transportation System Plan.

2.1.7 Loading Dock/Parking Zone: a zone where existing loading docks take up the street edges normally reserved for sidewalks; where the dock remains but is not in use, parallel parking can be provided adjacent to it; where the dock has been removed, 90 degree head-in parking can be provided; this street configuration assumes vehicles and pedestrians mix in the space between docks or between docks and buildings.

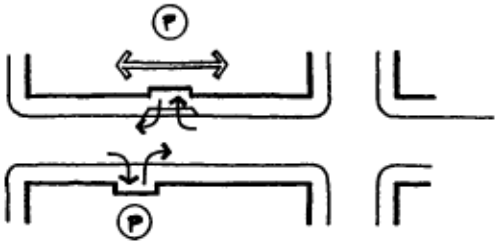
Size: 11 feet maximum width at a typical dock length varies-see Code of the City of Portland Chapter 33 Zoning Standards Loading Bays-10 feet wide by 35 feet long.

Application: On a Special Function Streets with raised loading docks/raised platforms.

2.1.8 Parking Access: a driveway for vehicular access to surface or structured, off-street parking; preferably located near mid-block, away from intersections; driveway design should emphasize that vehicles are crossing a pedestrian zone; garage ramps perpendicular to the street direction are encouraged; ramps parallel to the street direction are discouraged.

Size: Width conforms to the adjacent sidewalk Length varies-see Code of the City of Portland Chapter 33 Zoning Standards.

Application: Encouraged on certain streets in the CCTMP section of the Transportation System Plan; typically discouraged on streets with significant transit service.



Mid-block parking access

2.2 BICYCLE CRITERIA

Bicycle facilities shall conform to the Portland Bicycle Plan for 2030 and council adopted bikeway design guidelines.

2.2.1 NEIGHBORHOOD GREENWAY:

A street with low volumes of motor vehicle traffic that are prioritized for bicycles and enhanced crossings for pedestrians

Size: Typical local street dimensions (see 1.3 Typical Streets)

Application: on local streets designated as Major City Bikeways or City Bikeways, traffic calming and traffic diversion tools should be used to create and maintain appropriate traffic conditions. Council adopted performance criteria are:

- Vehicle speeds of 20 mph, measured as 85th percentile speed;
- Automobile volume target of 1,000 Average Daily Traffic (ADT), with 1,500 ADT acceptable and 2,000 ADT maximum. Alternatively, may be measured as peak direction hourly volume of 50 vehicles per hour (VPH), with 75 VPH acceptable and 100 VPH maximum;
- Bicycle and pedestrian crossing opportunities, measured as a minimum of 50 crossing opportunities per hour, with 100 crossing opportunities per hour the preferred level of service.

2.2.2 STRIPED BIKE LANE:

a striped portion of the street adjacent to the curb that is used for exclusive bicycle circulation; these should be planned for in new or redeveloped streets.

Size: 6 feet (5 feet minimum) adjacent to the curb or parking lane.

Application: On streets with average daily traffic volumes greater than or equal to 1,500 and designated as Major City Bikeway or City Bikeway in the Transportation System Plan. May also be striped on Local Service Bikeways in the Transportation System Plan.

2.2.3 PROTECTED BIKE LANE:

a portion of the street adjacent to or integrated with the sidewalk, used for exclusive bicycle circulation, separated from motor vehicle traffic with a buffer zone and a vertical element. These should be planned for in new or redeveloped streets.

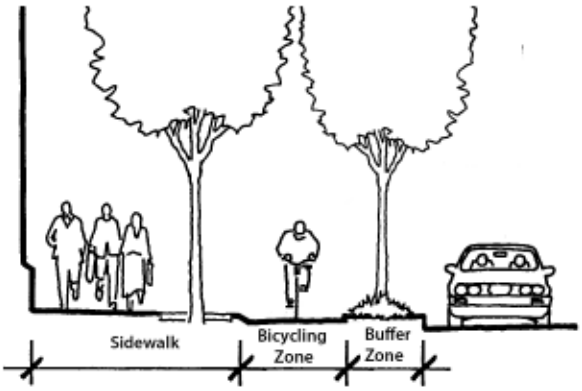
Size: Dimensions described here apply to directional (one-way) bikeways. Use of minimum dimensions or adjustments from standard dimensions must go through a design exception process.

- Bicycling zone standard is 7 feet (5 feet minimum) exclusive from the buffer zone or vertical separation.
- Buffer zone standard is 3 ft (1.5 feet minimum, 2.5 feet minimum next to parking). Buffer zone width may increase to fill available space. Additional width is desirable when on-street parking and loading is adjacent and or tree planting is desired.

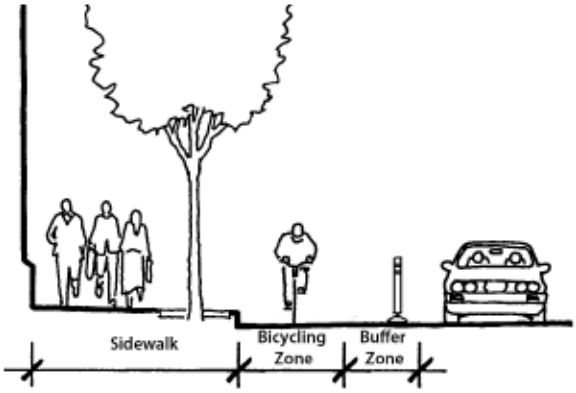
Separation Types: Protected bike lane separation methods vary in response to the level of investment and desired streetscape quality. Types of separation include:

- Delineator posts, a typical low-cost retrofit design;
- Traffic separator or concrete island, where more robust separation is desired;
- Modular planter protected, where an attractive environment is desired;
- Raised to sidewalk-level, where significant reconstruction is expected, or a high-quality permanent streetscape experience is desired.

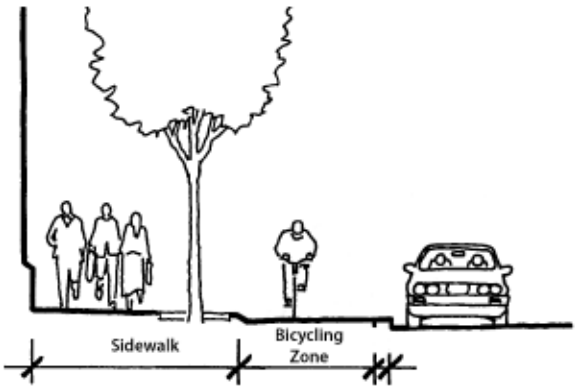
Application: On streets designated as Major City Bikeway or City Bikeway in the Transportation System Plan, and recommended as a Protected Bike Lane in Central City in Motion or a Separated In Roadway Bikeway in the Portland Bicycle Plan for 2030.



Raised protected Bike Lane integrated into the sidewalk with a planted furnishing zone are a possibility as part of a major redevelopment or large scale capital project.



Street level protected bike lane with delineator posts is most appropriate in retrofit situations.



Raised protected bike lanes can offer a protected experience in narrow conditions.

A simple staple rack is the preferred type of bicycle parking on standard sidewalks.

2.2.4 BICYCLE PARKING:

install bicycle parking as needed in conformance with guidelines in the Portland Pedestrian Design Guide and City Code. Bicycle parking should not conflict with transit waiting and loading on transit streets or pedestrian circulation. Staple racks are preferred.

Application: Throughout the River District

2.2.5 BICYCLE PARKING CORRALS:

groups of 6, 9, or 12 bicycle racks installed in the roadway or integrated into sidewalks in areas with high bicycle parking demand. Bicycle Corrals accommodate 12 to 24 bicycles in one or two auto parking spaces.

Application: Throughout the River District where bicycle demand is expected to be high, generally along and at intersections of streets classified as Major City Bikeway and City Bikeway in the Transportation System Plan.

2.3 TRANSIT CRITERIA

Transit facilities shall conform to the Enhanced Transit Corridors Plan Capital/Operational Toolbox and other adopted design guidelines.

2.3.1 MIXED TRAFFIC AND TRANSIT LANE (SEE 2.1.1 THROUGH LANE):

buses will circulate and pick up passengers at stops in the River District from right hand through lanes.

Size: 11 feet for typical through lanes with buses. 10 feet minimum with design exception.

Application: On streets designated for Transit Access in the Transportation System Plan.

2.3.2 BUS TURNING RADII (SEE 2.1.5 CORNER RADII):

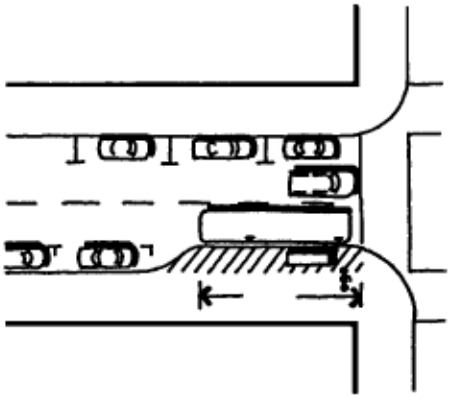
allow wider radii at corners with major bus turning movements; minimum radius requirements to be determined by the Engineering Services Group in the Portland Bureau of Transportation.

2.3.3 TRANSIT STOP:

provide a widened sidewalk zone (projecting into the curbside parking zone) at transit stops; vehicle dwells and loads passengers in the right hand through lane; shelter type and placement is subject to TriMet Standards and River District Design Guidelines.

Size: Edge of widened sidewalk aligns with the edge of the right hand through lane, providing a 6-7 foot zone; length is 40 feet minimum tangent length not including transition back to normal curb line.

Application: On streets designated for Transit Access in the Transportation System Plan.



Bus stop at near side of intersection with extended sidewalks

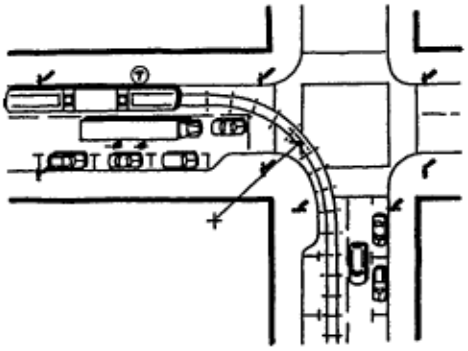
2.3.4 STREETCAR LANE:

the streetcar trackway may be treated as a conventional through lane (see 2.1.3 Mixed Traffic and Streetcar Lane), a Transit Only Lane, or Business Access and Transit Lane in the River District; pavement will be a concrete trackway slab.

2.3.5 STREETCAR TURNING RADII:

special requirements at intersections for streetcar turning movements; right turns from the right hand lane may require a trackway weave into the center lane of the next block in order to make the turn in a 60 foot right-of-way; special traffic operations- such as no free right turns, signal pre-emption, etc., may be required at these intersections.

Size: To be determined based on vehicle selection; transition weave of one block may be required where the streetcar turns from one street to another.



Streetcar turn in 60 foot right-of-ways

Application: On streets designated for Transit Access in the Transportation System Plan and selected for Streetcar route by the Bureau of Transportation.

2.3.6 STREETCAR STOP:

provide a widened sidewalk zone at streetcar stops to the near side of intersections; streetcar dwells and loads passengers in the right hand through lane then proceeds through the green light; shelter type and placement is subject to Streetcar Design Standards and River District Design Guidelines if stops serve both buses and streetcar.

Size: Edge of widened sidewalk aligns with the edge of the right hand through lane providing an 8-9.5 foot zone; length is 40 feet minimum not including transition back to normal curb line (may be longer, depending on vehicle selection).

Application: On streets with streetcar service.

2.3.7 TRANSIT ONLY LANE:

Also called a "Dedicated Transit Lane," is an exclusive lane allowing transit use only during all or part of the day.

Size: 11 feet for typical through lanes with buses. 10 ft minimum.

Application: High-volume, highly-congested corridor segments. Can be right- or left- side running in curb-tight or floating adjacent to parking/bike facilities. May be marked with red coloring in part or whole to reinforce exclusive transit use.

2.3.8 BUSINESS ACCESS AND TRANSIT (BAT) LANE:

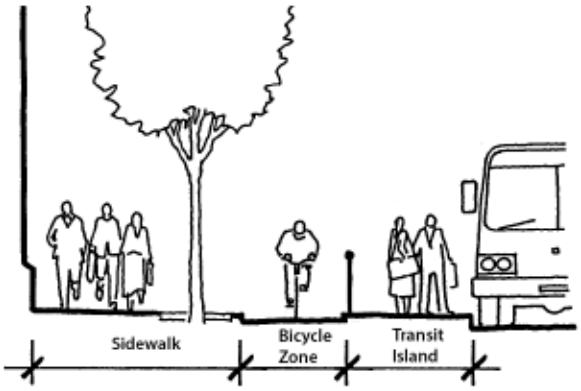
Also called a "Bus and Turn" lane, BAT lanes are primarily dedicated for transit use, but allow some general traffic circulation for turning into driveways or onto the next intersecting street.

Size: 11 feet for typical through lanes with buses. 10 ft minimum.

Application: High-volume, highly-congested corridor segments. Can be right- or left- side running in curb-tight or floating adjacent to parking/bike facilities.

2.3.9 TRANSIT STOPS WITH BIKEWAYS:

Also called "Bikes Behind Station," or "island" stations, these passenger boarding bus platforms feature a channelized protected bike lane behind the station area, clearly delineated from the adjacent sidewalk and transit platform.



Size: Typical Through Pedestrian Zone width preferred; 7 ft bikeway preferred (5 ft minimum); 11 ft transit island preferred (9 ft minimum).

Application: Streets with heavily-used transit routes and protected bikeways where adequate roadway space permits the "island" configuration.

2.4 UTILITIES CRITERIA

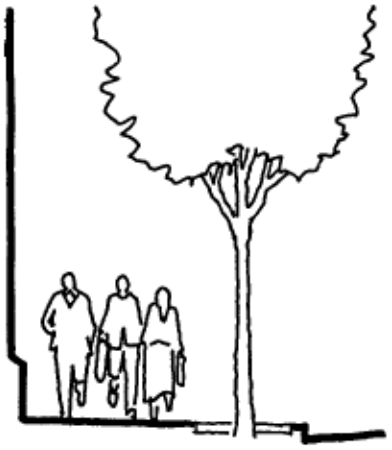
To be completed at preliminary engineering of individual street improvement projects.

2.4.1 Major R.O.W. Corridors for Utilities: to be determined.

2.4.2 "Utility-free" Zones: locate major longitudinal utility lines below grade to the extent possible and outside of trackway lanes; crossing lines under trackways are acceptable.

2.4.3 Special Requirements: pump stations, below grade vaults, transformer and signal cabinets, etc.: subject to specific utility company, agency or bureau criteria in addition to River District Guidelines.

2.4.4 Utility Work: Streets shall be restored in good condition and with the same materials existing prior to utility work.



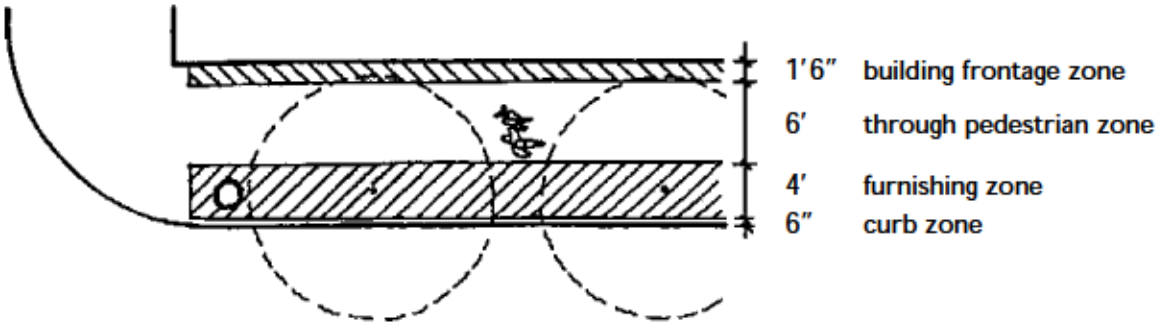
Twelve foot sidewalk with grated tree well.

2.5 PEDESTRIAN CRITERIA

2.5.1 SIDEWALK WIDTHS AND DESIGN TREATMENTS

2.5.1.1 Twelve Foot: the standard existing sidewalk width on streets in the River District through pedestrian and curb zones are paved - pavement material and texture is pedestrian oriented; for redevelopment projects on existing streets, these standards are required for any sidewalk replacement.

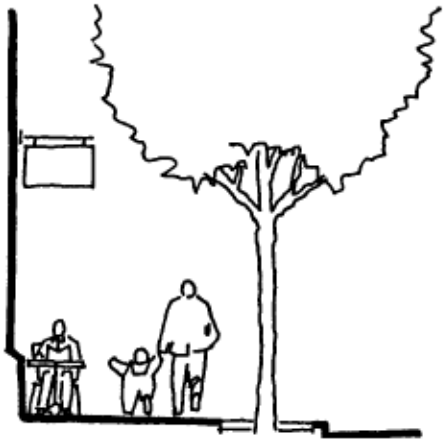
Size:	12 feet
Application:	Existing streets throughout the River District



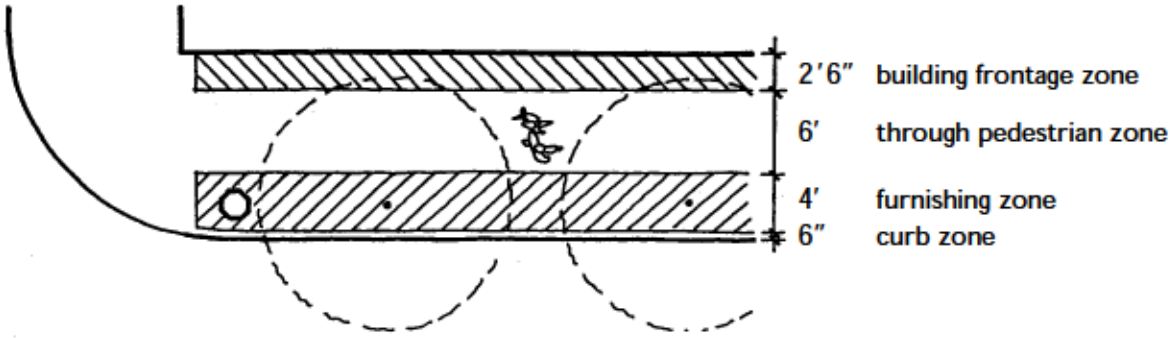
2.5.1.2 Thirteen Foot: a recommended sidewalk width on typical new or redeveloped streets in the River District; an extra foot in width allows a more usable building frontage zone (BFZ); through pedestrian and curb zones are paved-pavement material and texture is pedestrian oriented, building frontage and furnishing zones can be paved or pervious.

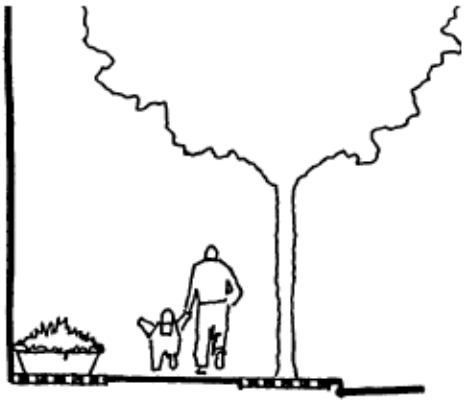
Size: 13 feet

Application: Typical new or redeveloped streets



Thirteen foot sidewalk with cafe and pervious paving in the building frontage zone.



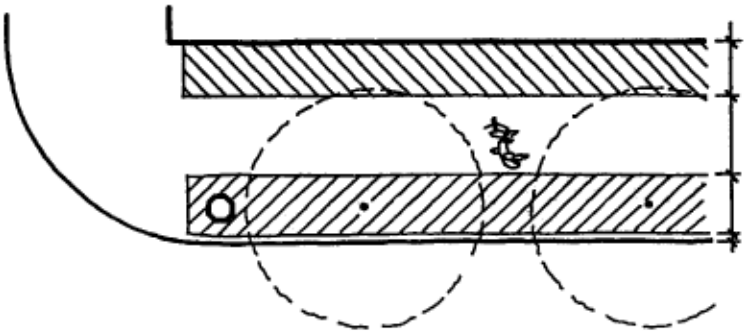


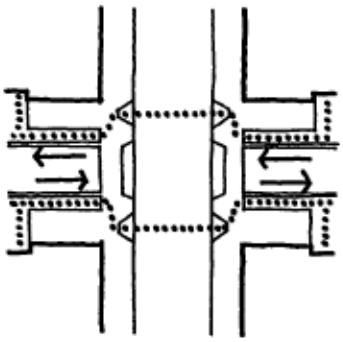
Fifteen foot sidewalk with pervious paving in the building frontage and furnishing zones.

2.5.1.3 Fifteen Foot: a recommended sidewalk width on special function streets (see Framework Plan 1.3) and an existing sidewalk width on Old Town Avenues with 70 foot right-of-way; an extra 2.5 feet in width allows a more usable building frontage zone (BFZ) - particularly for merchant use; through pedestrian and curb zones are paved -pavement material and texture is pedestrian oriented; building frontage and furnishing zones can be paved or pervious.

Size: 15 feet

Application: On Special Function River District Streets



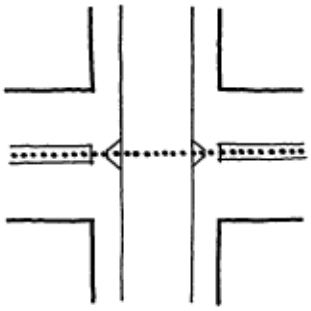


With shared pedestrian vehicular access on one or both sides of a public street: two aligned crosswalks are required.*

2.5.1.4 Access Corridors: Private pedestrian/bicycle/ vehicle tracts with landscaping and street lighting on public easements, 40-60 ft. wide which approximates the original 200 foot block pattern. Per the conditions of the Hoyt St Yards Master Plan and development agreements with City of Portland, Land Use Action No. LUR 93-00279 SU. Can accommodate pedestrian and bicycles only or shared pedestrian-vehicular circulations; driveway and crosswalk configuration at access corridors varies according to how corridor is used.

Size: 40-60 feet

Application: On private pedestrian/vehicle tracts



With pedestrian only access on both sides of a public street: one aligned crosswalk is required.*

* Design is subject to approval by the City Engineer.

2.5.1.5 Boardwalk: begin after any grade transitions at corners/ curb extensions have been completed for ramps and landings. Corners incorporating ramps, landings and grade changes to be constructed in concrete. Cross slope between right-of-way and curb shall be two percent. Surface shall be IPE wood decking or approved equal. IPE wood decking cannot be used for grades steeper than 4%. The decking shall have a support system and drainage system designed for individual site application by a structural engineer and approved by the City Engineer. Design live load shall be no less than 250 psf.

Size: 19 feet on blocks with development, 26 feet on blocks with parks.

Application: In place of sidewalk along west side of 10th Ave from Johnson St north to river.

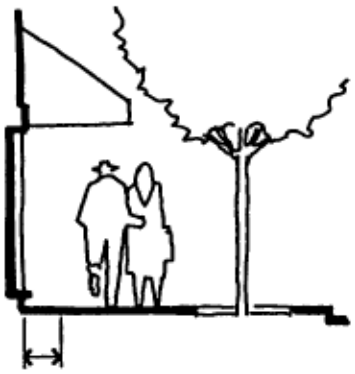
2.5.1.6 North Transit Mall: existing special sidewalks at the Portland Transit Mall in the River District; any new developments along these streets must replace Mall materials and finishes in kind; see Framework Plan 1.4.4.

2.5.2 SIDEWALK USE ZONES

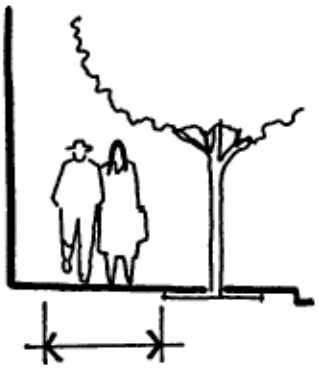
2.5.2.1 Building Frontage Zone (BFZ): The area of sidewalk directly abutting buildings is defined as the building frontage zone (BFZ). This space is outside of the through pedestrian zone and typically accommodates pedestrian furniture such as cafe tables and minor building projections such as meters and down spouts.

Size: 1.5-4 feet

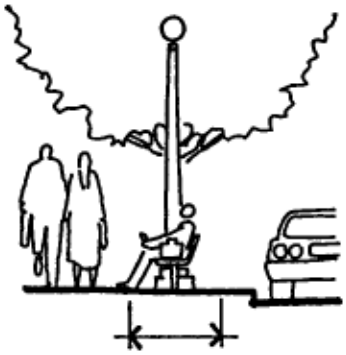
Application: Throughout the River District



Building frontage zone



Through pedestrian zone



Furnishing zone

Curb zone

2.5.2.2 Through Pedestrian Zone (TPZ): space for through-pedestrian traffic; unencumbered by any obstructions.

Size: 5 to 7 feet (typical 6 feet)

Application: Throughout the River District

2.5.2.3 Furnishings Zone (FZ): space for elements supporting pedestrian and vehicular use of the right-of-way including signage, lighting, furniture, landscape, stormwater management, and transit facilities; if intended to be pervious it must be filled with soft landscape such as grass or groundcover or it can be paved with sand-set, pervious pavers; in limited areas with intense use, it can be filled with rigid pavement; all permanent vertical objects should be set back 18 inches minimum from the face of curb.

Size: 3 to 4.5 feet or greater
Application: Throughout the River District

2.5.2.4 Curb Zone (CZ): on the typical River District street with sidewalk widths at 12 or 13 feet, this zone is simply the width of the curb; on some special function streets such as the North Transit Mall, the curb zone includes a clear space for minor circulation by transit riders.

Size: .5 to I feet

Application: Throughout the River District

2.5.3 ADA REQUIREMENTS

2.5.3.1 Accessible Routes, Curb Ramps, Required Warning Strips, etc.: must meet the Americans with Disabilities Act Regulations and City of Portland Office of Transportation standards for disabled access.

Application: Throughout the River District

2.5.4 CURB EXTENSIONS

Curb extensions may be allowed on most River District streets to improve pedestrian crossing safety. Design of curb extensions should minimize tangent length.

Application: See Framework Plans 1.3-1.4

2.6 STREET LIGHTING CRITERIA

2.6.1 Fixture Types:

2.6.1.1 Twin Ornamental: historic Portland fixture.

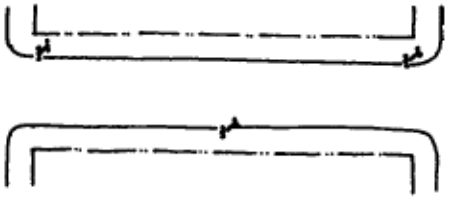
Configurations:

- 6 per block - symmetrical, 3 on each side (at corners and mid-block)
- 3 per block - staggered, 2 on one side (at corners) one on other side (at mid-block)

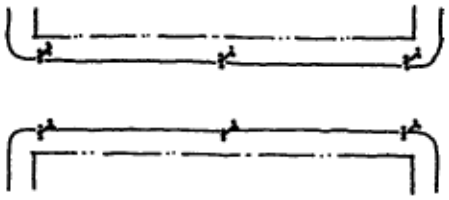
Separation Criteria:

- 12 feet from upright street trees; 20 feet from broadheaded trees
- 2.5 feet from furnishings - such as benches or litter receptacles
- 4 feet from right-of-way line at intersections., 5 feet from driveways

Application: See Framework Plan 1.6



Twin ornamentals, 3 per block, staggered



Twin ornamentals, 6 per block, aligned

2.6.1.2 Single Ornamental: historic Portland fixture.

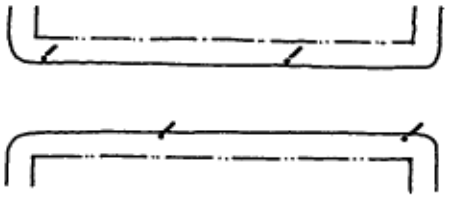
Configurations:

- 4 per block, staggered
  6 per block, aligned or special pattern

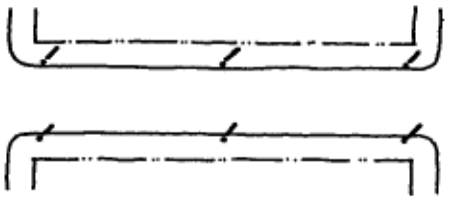
Separation Criteria:

- 12 feet from upright street trees; 20 feet from broadheaded trees
- 2.5 feet from furnishings - such as benches or litter receptacles
- 4 feet from right-of-way line at intersections, 5 feet from driveways

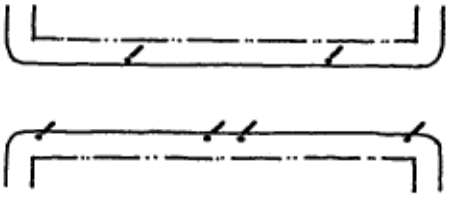
Application: See Framework Plan 1.6



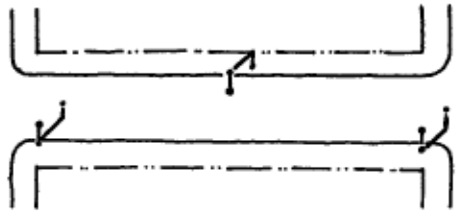
Single ornamentals, 4 per block, staggered



Single ornamentals, 6 per block, aligned



Single ornamentals, 6 per block, special pattern for North Park Blocks



Cobra, 3 per block, staggered

2.6.1.3 Cobra: a traditional street light used on commercial and industrial streets throughout Portland.

Configurations:

- 3 per block, staggered, 2 on one side at corners, one on opposite side at mid-block

Separation Criteria:

- 0 - 35 feet from right-of-way line at intersections
- 5 feet from driveways

Application: Standard for fixture types on Framework Plan 1.6

2.6.2 FIXTURE PAINT COLOR

2.6.2.1 Old Town/Chinatown fixtures: Black

2.6.2.2 Remainder of River District fixtures: Portland Green

2.6.3 3RD AND 4TH AVENUE STREETSCAPE PLAN LIGHTING

Fixture type to be determined by final design of 3rd and 4th Avenue Streetscape Plan.

Application: See Framework Plan 1.6, 3rd and 4th Avenue Streetscape Plan streets

2.7 STREET FURNITURE CRITERIA

2.7.1 Typical Street Furnishings: bench, planter, trash receptacle, drinking fountain, newsrack, kiosk, signage, transit shelter and bike racks.

2.7.2 Continuity or Diversity: typical River District streets should either be consistent with established precedents for the entire corridor outside of the district or consistent with established patterns in the immediate area. For new streets where there is no established precedent for street furniture, selections should be consistent with the River District Design Guidelines, the Central City Fundamental Guidelines and Bureau of Maintenance criteria.

2.8 STREET TREE CRITERIA

2.8.1 Uniform Plantings/Upright Street Trees:

plantings which provide continuity of form, texture, and color where space is constrained.

Tree types:

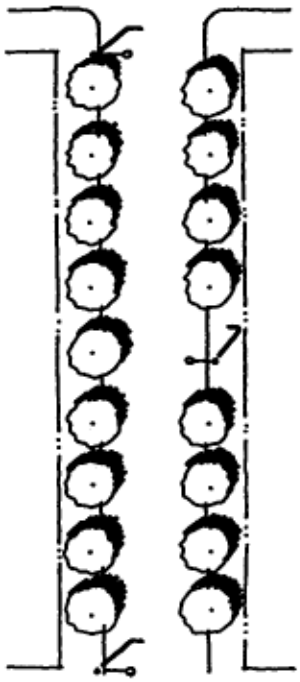
Acerplatanoides 'Olmsted'
Olmsted Norway Maple
Acer rubrum 'Armstrong II'
Armstrong II Red Maple
Acer rubrum 'Bowhall'
Bowhall Red Maple

Size: 4 inch caliper, minimum

Spacing: 21 feet o.c.

Planting Condition: 4 x 4 feet tree well minimum (4 x 9 feet preferred) with root barrier

Application: See Framework Plan 1.5



Uniform, upright street trees

2.8.2 Uniform Plantings/Broad-headed Street Trees:

plantings of substantial scale which provide a physical and visual link between neighborhoods and parks.

Tree types:

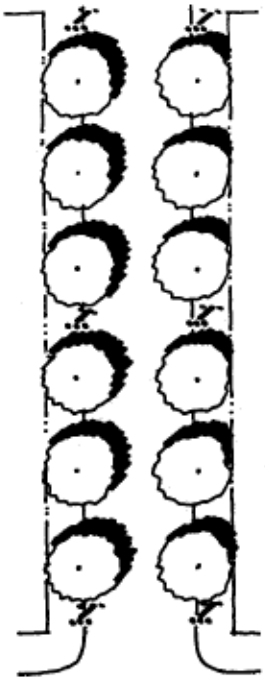
Acer rubrum 'Red Sunset'
Red Sunset Red Maple
Fraxinus pennsylvanica 'Marshall'
Marshall Ash
Quercus rubra
Red Oak
Uhnus 'Homestead'
Homestead Elm
Uhnus 'Pioneer'
Pioneer Elm
Zelkova serrata 'Village Green'
Village Green Zelkova

Size: 4 inch caliper

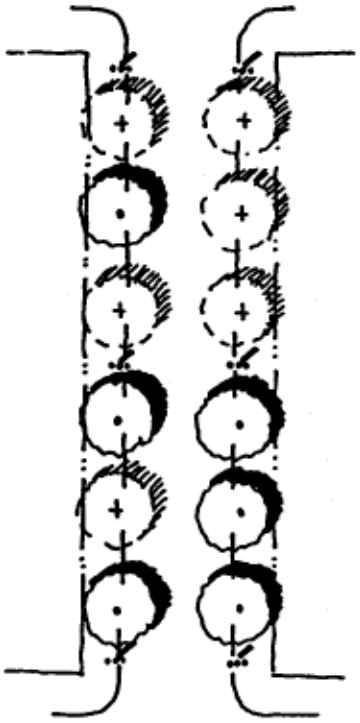
Spacing: 30 feet o.c.

Planting Condition: greater 4 x 4 feet tree well minimum (4 x 9 feet or preferred) with root barrier

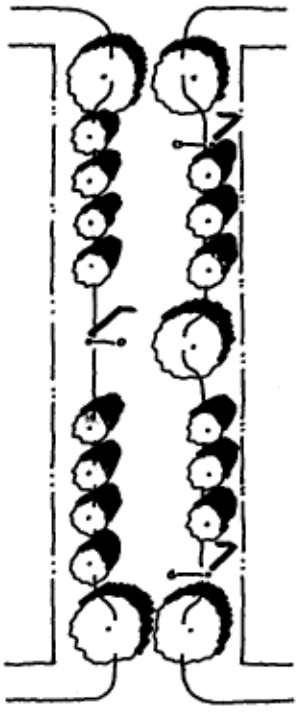
Application: See Framework Plan 1.5



Uniform, broadheaded street trees



Infill street trees



Mixed layer street trees in off-set pattern

2.8.3 Infill/Established Street Trees: plantings which infill and reinforce existing street tree plantings.

Tree types:	Crataegus x lavallei Lavalle Hawthorn Primus yeddoensis 'Akebono' Akebono Flowering Cherry
Size:	3 inch caliper, minimum
Spacing:	varies, 20 feet o.c., minimum
Planting Condition:	4 x 4 feet tree well minimum with root barrier; head trimmed for pedestrian clearance
Application:	See Framework Plan 1.5

2.8.4 Mixed Layer Street Trees: plantings which feature a single tree variety of moderate spread at corners and mid-block with other tree varieties of columnar habit in between; continuity along the street corridor will be provided by the major tree species while visual diversity and rhythm will be provided by varying minor tree species on a street-by-street basis.

Major Tree types:

Fraxinus oxycarpa 'Raywood'
RaywoodAsh
Tilia cordata 'Greenspire'
Greenspire Littleleaf Linden

Minor Tree Types:

Carpinus betulus 'Fastigiata'
Hornbeam
Ginkgo biloba 'Fastigiata'
Fastigiate Ginkgo
Prunus sargentii columnafis
Columnar Flowering Cherry
Pyrus calleryana 'capital'
Capital Flowering Pear
Quercus robur 'Fastigiata'
Skyrocket Oak

Size:	4 inch caliper, minimum, major trees 3 inch caliper, minimum, minor trees
Spacing:	major trees – 25-30 feet o.c. minor trees–15-20 feet o.c.

Planting
Condition: 4 x 4 feet tree well minimum (4 x 9 feet or greater preferred) with root barrier; a 6 x 6 feet tree well is preferred for large trees on widened sidewalks at corners and mid-block

Application: See Framework Plan 1.5

2.8.5 Streets Without Street Trees: certain streets within the district where street trees are not appropriate.

Application: Streets with freight rail service, substantial loading docks and driveways, ramped approaches to bridges.

2.8.6 North Park Block Streets: a zone where plantings are based upon existing historic pattern; follow current Bureau of Parks and Recreation plans and guidelines for landscape design in the North Park Blocks. Along street frontage opposite park, use infill/established trees standard.

Application: Streets adjacent to existing North Park Blocks and their proposed extension.

2.8.7 15th Avenue Street Trees: street trees may be placed along the back side of the sidewalk adjacent to I-405.

Application: 15th Ave, Davis to Savier, westside

2.8.8 Boardwalk: follow current pattern of spacing and species established by existing Boardwalk. Subject to the approval of the City Forester.

Application: In place of sidewalk along west side of 10th Ave from Johnson St north to river.

2.8.9 Tree Well Design: design diversity in treatments is encouraged to specify a richer, more diverse streetscape. A variety of treatments is permitted, including ground cover, grass, gravel, mulch, tree grates, and sandset pavers. Other types of treatments are subject to approval by the City Engineer. Surface treatment shall be flush with grade of adjacent sidewalk.

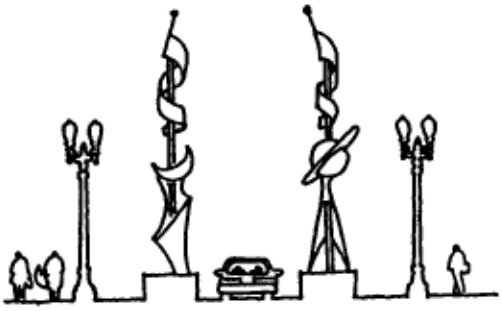
Application: Throughout River District

2.9 SPECIAL FEATURES (INCLUDING PUBLIC ART) CRITERIA

Public art efforts for public works in the River District would be funded by the City's 1% art program associated with, but not limited to, the Office of Transportation and the Bureau of Environmental Services. All projects would be administrated by the Regional Arts and Culture Commission's (R.A.C.C.) Percent for Art Program in consultation with the associated city bureau.

2.9.1 Stand-alone Art: such public art could take the form of, but not be limited to:

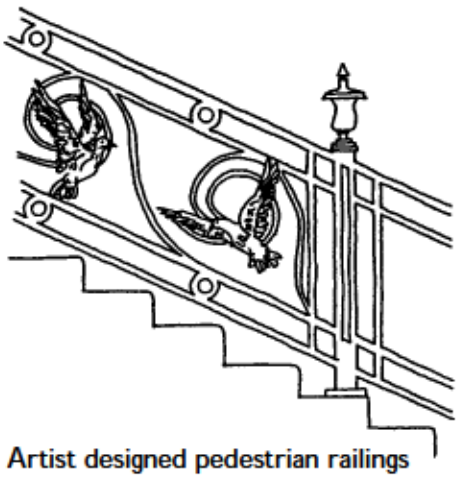
- Gateways
- Monument type artworks in the street environment at designated intersections (like the Elk at Main Street)



District gateways

2.9.2 Integrated Artworks: artists can be hired with Percent for Art dollars to work as a "design team" member with architects, engineers, landscape architects, planners and associated designers working in the district. Large projects such as parks, bridges, plazas, walkways, and buildings lend themselves to artist integration. Public art in these conditions could address itself, but not be limited to, enhancements of the built environment through design team involvement, the creation, fabrication and installation of architecturally integrated artworks, or the identification of sites or projects for other artists to be involved (through the supervision of R.A.C.C.). Examples include: pump stations, vault covers, electrical cabinets, signal cabinets, manhole covers, tree grates, etc. Candidate projects include:

- Pedestrian access from the PDC housing project through McCormick Pier
- New designs for Lovejoy and Broadway ramps and lighting Front Avenue bridges
- Tanner Park
- Tanner Basin
- Relocation and utilization of the existing Lovejoy Viaduct Piers with historic Stefopoulos murals



Artist designed pedestrian railings

2.9.3 Privately Funded Public Art: an additional area of funding for art projects could also be patterned after the current City of Portland F.A.R. bonus for art program. All projects would be administrated by the Regional Arts and Culture Commission's Percent for Art Program in consultation with the associated City Bureau(s).

2.10 PETTYGROVE GREEN STREET SPECIAL FUNCTION STREET

Pettygrove is classified as a Special Function Street to advance the vision of a "Green Street" between The Fields and Wallace Park. Select from three (3) options (please refer to standard drawings RD 25A, RD 25B and RD 25C):

- Option A: Four (4) motor vehicle parking spaces per block face, mix of large canopy and broad headed trees
- Option B: Three (3) parking spaces per block face, mix of large canopy and broad headed trees
- Option C: No motor vehicle parking spaces per block, large canopy trees

2.10.1 SIDEWALK

- Thirteen (13) to nineteen (19) ft of sidewalk space
- At least six (6) ft of clear pedestrian through zone
- Americans with Disabilities Act (ADA) accessible dual curb ramps with truncated domes
- Curb extensions at both intersections
- Allow for pedestrian movement, street furniture, bike racks and traffic signalization poles at intersections
- Curve radii for curbs should be fifteen (15) ft and ten (10) ft for reverse curves
- The placement of utility vaults and vaulted basements on Pettygrove right-of-way is strongly discouraged; an attempt shall be made to locate them away from Pettygrove. If it can't be avoided, strive, with implementation of utility vaults and vaulted basements, to avoid impacting the placement and number of street trees and street lights.

2.10.2 ROADWAY

- A minimum of twenty (20) feet clear will be maintained throughout to allow two-way direction of travel and accommodate emergency vehicles. A minimum of twenty-two (22) feet clear would be maintained between curbs.

2.10.3 ON STREET PARKING

- Zero (0) to four (4) motor vehicle spaces per block face
- Provide sufficient bicycle racks per block face to meet demand. Between two (2) and five (5) per block face are recommended.

2.10.4 TREES

- Minimum six (6) trees per block face using a mix of larger canopy (where sidewalk is wider) and smaller canopy trees (elsewhere). Aim for as many larger canopy trees as feasible
- Trees approved by City Forester/River District Right-of-Way Standards. List of large canopy trees:
    - London Planetree

- Accolade Elm
- Bur Oak
- Kentucky Coffee Tree
- Legacy Sugar Maple
- Green Vase Zelkova
- Shumard Oak
- Black Tupelo (for use in swales only if needed)

- List of smaller trees: Refer to section 2.8.2 Uniform Plantings/Broad-headed Street Trees of the River District ROW Standards. Trees that can be planted in swales are also allowed.
- Minimum size of tree planted will be four (4) inch caliper
- Tree wells will be four by four (4x4) ft for trees in River District Right-of-Way Standard section 2.8.2, and about eight-and-a-half by eight-and-a-half (8.5x8.5) ft for "large trees" (see above)
- Spacing between trees will be about thirty (30) ft
- No tree grates required.

2.10.5 STORMWATER RUNOFF

Manage all of the stormwater runoff in block face and roadway from centerline (or high point of crown) to curb to meet the current sizing requirements at the time of development in the Stormwater Management Manual. Recommended approach: Swale/planter (estimated to be about 250 sf, less if accompanied by the following elements)

- Landscaping using City approved practices
- Permeable materials
- Trees and tree wells.

2.10.6 Street lighting

- Three (3) street lights per block face
- Preference for LED type lighting or white induction light with dimmable function
- Street light type is Lumec Z-15, with straight pole, painted black, non-fluted, tapered shaft.

2.10.7 STREET FURNITURE AND ART

- Two (2) to four (4) benches
- Installation of art pieces while maintaining the pedestrian functionality of the sidewalk, per River District Right-of-way Standards
- Other (planters, trash receptacles, drinking fountain, news racks, kiosks, signage, and bike racks) per River District Right-of-Way Standards.

2.10.8 ENCOURAGED BUT NOT REQUIRED

- **Landscaping** in the area adjacent to the building in the frontage zone (1-2 feet) while keeping six-to-seven (6-7) ft of clear through pedestrian zone
- **Permeable materials** in on street parking area (it can reduce the impervious surface calculation) if it meets technical requirements
- **Vehicle access** is strongly discouraged on Pettygrove. An attempt shall be made to locate **driveways** and **truck loading** not on Pettygrove but on adjacent streets
- Encourage **electric vehicle charge stations** and car sharing on or on streets adjacent to Pettygrove
- **Landscaping** in the tree wells, particularly the large ones
- **Art pieces** encouraged along Pettygrove.

2.10.9 Important notes on implementation:

Early submission of thirty (30) percent Public Works Permit with Type III Design review is strongly encouraged.

While these designs provide flexibility by providing design options, site specifics may limit what may be feasible on a particular block face, primarily the location of stormwater facilities. This may result in adjustments to the designs or limitations in the number of options. Strive to maintain the integrity of the overall designs, particularly the number, size and location of large canopy trees.

For options A and B only, the pattern for a full built out block (both sidewalks) will have staggered trees and parking between the north and south sidewalk areas.

The overall intent is to develop Options A and B in a manner that large trees are on the opposite side of the block, and avoid segments along Pettygrove without large canopy streets.

For example, when the first developer facing Pettygrove comes in for a public works permit, he or she can opt for any of the three options (A, B or C). If the developer chooses, say Option A, he or she has the option of where to locate the motor vehicle parking and large sidewalk area with large trees (east of west ends of the block face.) Subsequently, when the developer of the block across Pettygrove redevelops the property, he or she can also opt for any of the three options (A, B or C.) However, if the developer chooses options A or B, then the parking must be on the other side of the block face (east or west) as the block face already built.

2.11 JOHNSON AND PARK SPECIAL FUNCTION STREETS

NW Johnson and NW Park Ave are classified as Special Function Streets to advance the recommendations of the USPS Master Plan through a distinctive streetscape and urban design form.

Schematic design standards for NW Johnson and NW Park are available in 3.6 Special Function Street Design Standards. The schematic design standards show major streetscape design elements and generalized facility dimensions, but don't articulate fine details related to materials and construction. These streets are required to go through a detailed design process as a part of the design and engineering phase for construction. Final street design, construction and material selection requires approval from the City Engineer.

Common elements to these streets include:

- Level surface "curbless" street design, designed flush from lot line-to-lot line;
- Textured materials that distinguish active and social spaces;
- Limited amounts of on-street parking to provide short-term retail access for those arriving by automobile;
- Speed management features such as narrow lanes, in-street landscaping, slight chicanes;
- Bollard-controlled access to manage streets for public events, farmer's markets, and other car-free events.

2.11.1 LEVEL SURFACE DESIGN

The use of a level surface design provides a unique building-to-building park-like experience through the USPS site.

- Follow best practices for accessible design and compliance with the Americans with Disabilities Act (ADA).
- Use bollards, landscaping and trees where appropriate to establish physical separation between walking and biking zones and the motor vehicle travel area.
- Design stormwater drainage to manage water flows to prevent unwanted flows and ponding in pedestrian or bicycle-oriented areas.
- Consider maintenance needs as a part of the design process.

2.11.2 TEXTURED MATERIALS

Construction materials should be selected to provide a high quality finish and to delineate different street-use zones while accommodating needs for maintenance and utility access.

- Design the pedestrian realm for visual compatibility with the standard concrete scoring patterns used in the River District. See 3.11 Modular Layout of Sidewalks and Vertical Elements.
- Distinct paving block patterns and pattern orientations should be used to distinguish between street use zones. For example, different interlocking patterns or subtle material color variation should be used to visually separate the pedestrian area from the roadway travel area.
- Textured materials in space designed for bicycles should be compatible with that use.
- Consider use of rough-surface materials such as Belgian blocks or cobblestones within furnishing zone or buffer areas as a detectable surface.
- Select materials for durability and ongoing maintenance considerations.

2.11.3 FLEXIBLE USE AND LIMITED ON-STREET PARKING

The curb zone should emphasize access and place-making functions such as parking, loading, street trees, curb extensions, and street seats as needed to support adjacent land use and improve the pedestrian realm.

- Design for easy conversion for use as street seats by using pedestrian-scaled construction materials that are distinct from those used in the roadway.

- Where on-street motor vehicle parking is provided, manage the curb-zone to prioritizing short stops and turnover to serve retail and visitor access. (TSP 9.54).

2.11.4 DESIGN FOR SLOW SPEEDS

Roadway design should use all available tools to create slow, people-friendly design speeds. This may include: textured surfaces, narrow lanes, in-roadway landscaping, horizontal shifts, tabled intersections and midblock crossings.

2.11.5 BOLLARD-CONTROLLED ACCESS MANAGEMENT

These streets should be designed for easy access management during community events through the use of removable or retractable bollards.

2.12 GREEN LOOP CRITERIA

The Green Loop is a signature linear park and urban promenade that connects east and west side neighborhoods to open spaces and the Willamette River, with high quality active transportation accommodations, urban social activities, tree canopy, park-like pedestrian environments, and wildlife habitat connections. Final design will be completed as part of engineering individual street improvement projects.

2.12.1 GREEN LOOP USE ZONES

Dimensions described here assume typical street conditions and may fluctuate in response to available street space, adjacent land use, building interactions, coordination with adjacent open space, or to create a more dynamic public space environment. Use of minimum-dimensions for all zones or exclusion of zones is not recommended except where necessary in constrained conditions and is subject to approval from the City Engineer. Where the Green Loop travels adjacent to a public park, explore the opportunity to merge the park design with right-of-way functions for increased facility integration.

2.12.1.1 Building Frontage Zones:
The area of sidewalk directly abutting buildings. This space is outside of the through pedestrian zone and typically accommodates pedestrian furniture such as café tables. Along the green loop, this space should also be used for building adjacent landscaping and living-wall installations.

Size: 2.5 feet or greater (1.5 ft minimum).

Application: On Green Loop segments in the CC2035 Plan.

2.12.1.2 Through Pedestrian Zone:
an accessible path for the exclusive use of pedestrians.

Size: 8 feet (6 feet minimum)

Application: On Green Loop segments in the CC2035 Plan. The through Pedestrian Zone may be excluded on segments immediately adjacent to park land if a nearby parallel pedestrian walkway is provided within the park.

2.12.2.3 Separation Zone:
provides physical separation between the Through Pedestrian Zone and the Multi-Use Path Zone. This zone provides a detectable edge between zones and is an opportunity for additional landscaping and placemaking uses.

Size: 6 ft or greater (1 ft minimum).

Application: On Green Loop segments in the CC2035 Plan. Must be detectable by people with vision disabilities.

2.12.1.4 Multi-Use Path Zone:
an accessible path designed to support bicycling, scooting, skateboarding, roller-skating, people using mobility devices and other similar uses. People walking are welcome to share the path with other users.

Size: 16 feet for typical for high capacity accommodation (12 feet minimum).

Application: On Green Loop segments section of the CC2035 Plan.

2.12.1.5 Path Furnishing Zone:
provides physical separation from the adjacent travel lanes. Along the green loop, this space should be used for landscaping, in addition to conventional furnishing zone uses (see 2.5.2.3 Furnishing Zone).

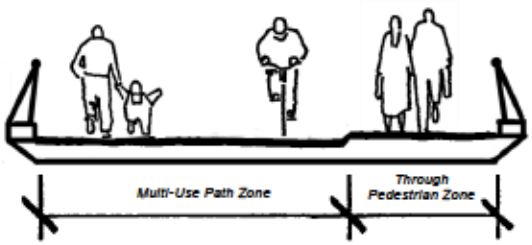
Size: 6 ft or greater (4 ft minimum).

Application: On Green Loop segments in the CC2035 Plan.

2.12.1.6 Curb Edge:
the curb separating the green loop path from the roadway. On special streets with level surface street designs, other design tools may be used to separate the path from the roadway.

Size: 1 ft (0.5 ft min)

Application: Along the green loop alignment in the CC2035 Plan.



Segments of the green loop on bridges, viaducts, structures and other constrained conditions may be reduced to minimum dimensions.

2.12.2 GREEN LOOP DESIGN PRINCIPLES

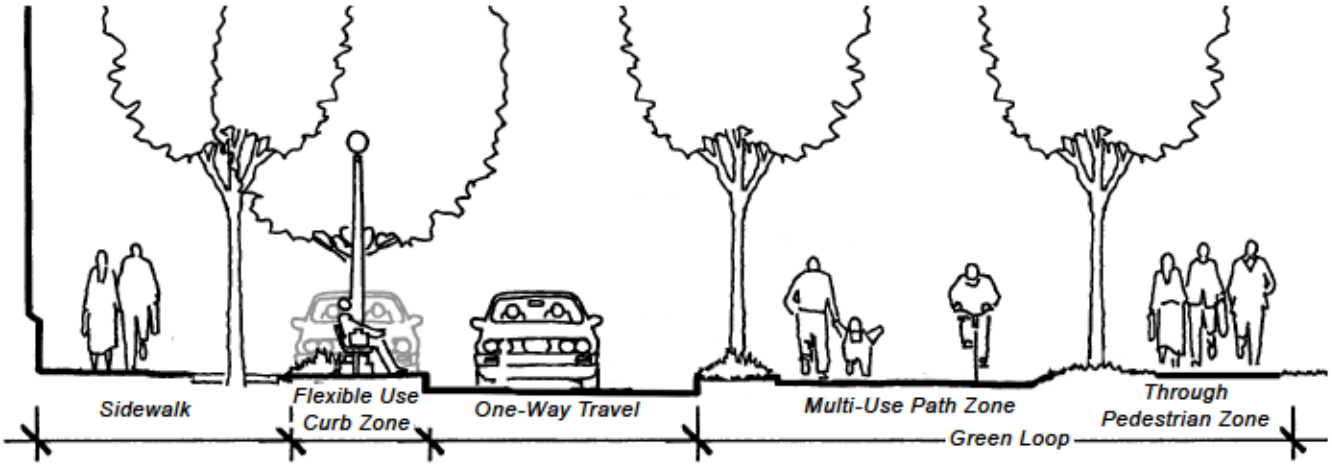
Standards for detailed Green Loop designs and land use integration will be addressed in future updates of the Central City Fundamental Design Guidelines, and the creation of the Green Loop Streetscape Design Standards. The following Design principles apply to all segments of the green loop.

- **Building Orientation:** New development should orient its storefronts or building lobbies toward the Green Loop. New ground floor activity will provide greater visibility and connectivity to the loop and create a safe and more active environment.

- **Multi-Use Path:** The Green Loop path can accommodate a variety of different active uses at low speeds including walking, jogging, biking, scooting and skating and will be a defining feature of the Green Loop. Depending on the context these uses can be clustered together or separated by greenery or other features.

- **Physical Separation:** The Green Loop concept includes physically separated paths to minimize conflicts between people using the paths and people driving. These separated corridors will create safer, more intuitive pathways through the Central City for people no matter how they actively get around.

- **Connected Canopy:** A key wayfinding element of the Green Loop will be a distinctive approach to trees and other green features. The character of landscape plantings will vary along different segments of the Green Loop, being responsive to adjacent needs and local character while helping to clarify the route and improve environmental performance.



Green loop design dimensions will respond to available right-of-way, parking, and circulation considerations.

- **Branding/Identity:** The paths and adjacent properties will feature wayfinding and environmental design tools to help residents and visitors identify where they are while reflecting the local character of the various districts that the loop moves through.

- **Unique Street Furnishings:** Street furnishings along the Green Loop will help distinguish the path, emphasizing its linear park environment and supporting activity nodes. The specific amenities and their locations will vary with right-of-way width and the adjacent ground floor uses and local character..

2.13 CONSTRUCTABILITY AND MAINTENANCE

All proposed designs should be reviewed for ease of construction and maintenance by the Bureau of Transportation Maintenance and Operations Group.

2.13.1 In-place Construction:

pavement, walls, structures, landscape, etc., should be designed in a manner that allows straightforward and efficient construction techniques; minimize designs that require complicated construction sequences with multiple trades; if work is to be phased, provide clear joints or breaks in construction that make subsequent additions or replacements easy; build with proven, durable materials.

2.13.2 Manufactured Components:

joint materials, wall materials, vault doors, fasteners, etc., use items that meet all applicable codes and standards; should be proven, durable components in standardized sizes to simplify replacement.

2.13.3 Fabricated Items:

shelters, railings, grates, protective plates, covers, etc., build items that meet all applicable codes and standards; should be designed for shop fabrication whenever possible-minimize field modifications or adjustments; should use proven, durable components in standardized sizes to simplify replacement.

2.13.4 Manufactured Stand-Alone Fixtures:

furnishings, light standards, etc.; use items that meet all applicable codes and standards; where continuity is desired within subdistricts or along continuous corridors, match previous installation; use proven, durable items; use fastening design that allows easy but tamperproof removal for maintenance.

2.14 STORMWATER MANAGEMENT CRITERIA

2.14.1 STORMWATER MANAGEMENT GOALS

Incorporate stormwater management per the City of Portland Stormwater Management Manual (SWMM) to provide stormwater treatment, detention and/or infiltration. Implementation of stormwater management in compliance with the SWMM will reduce stormwater runoff, remove pollutants, reduce demands on the City's collection system, support regulatory compliance and enhance watershed health.

2.14.2 STORMWATER FACILITIES

Depending on site conditions, stormwater facilities may include vegetated stormwater planters or swales, or underground injections controls (such as sumps). Vegetated surface facilities are often installed in the furnishing zone, which may require additional furnishing zone width depending on street layout and facility design.

Size: Per current SWMM sizing criteria

Application: Throughout the River District

DESIGN STANDARDS

3.0 DESIGN STANDARDS

The R.O.W. Design Standards provide detailed sections, elevations and plans which supplement the City's *Standard Construction Specifications and Plans*. The River District standards represent requirements whose application may only be altered by the City Engineer.

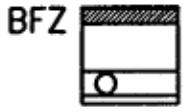
The City of Portland, through its policies, regulations and guidelines encourages the dense development of the River District. Since dense development will increase area storm water requirements, every opportunity to construct pervious surfaces within public and private rights-of-way is encouraged. The following design standards include several options for absorptive surfaces within side walk zones. These options are also designed to accommodate future storm water programs that would filter and divert run-off to dry wells or sumps. Conformance with these standards is required for new street and sidewalk construction or street and sidewalk reconstruction.

3.1 SIDEWALKS DIAGRAMMED BY ZONE

Symbols are used to identify the four sidewalk zones in these standards.

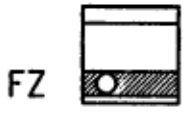
3.1.1 MODULAR LAYOUT OF SIDEWALKS AND VERTICAL ELEMENTS

RD-1: Blockface Layout - Upright Trees
RD-2: Blockface Layout - Broadheaded Trees
RD-3: Blockface Layout - Mixed Layer Trees
RD-6: 12' Sidewalk, Base Condition
RD-7: 12' Sidewalk, Rigid Paving
RD-8: 12' Sidewalk, Extended
RD-9: 13' Sidewalk, Base Condition
RD-10: 13' Sidewalk, Extended
RD-11: 15' Sidewalk, Base Condition
RD-13: 15'Sidewalk, Pervious Paving
RD-14: Driveways and Crosswalks at Access Corridors
RD-15: Curb Ramp - Typical Condition
RD-16: Construction Joint Curb - Typical Condition
RD-22: Boardwalk

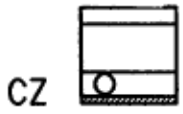


Building Frontage Zone

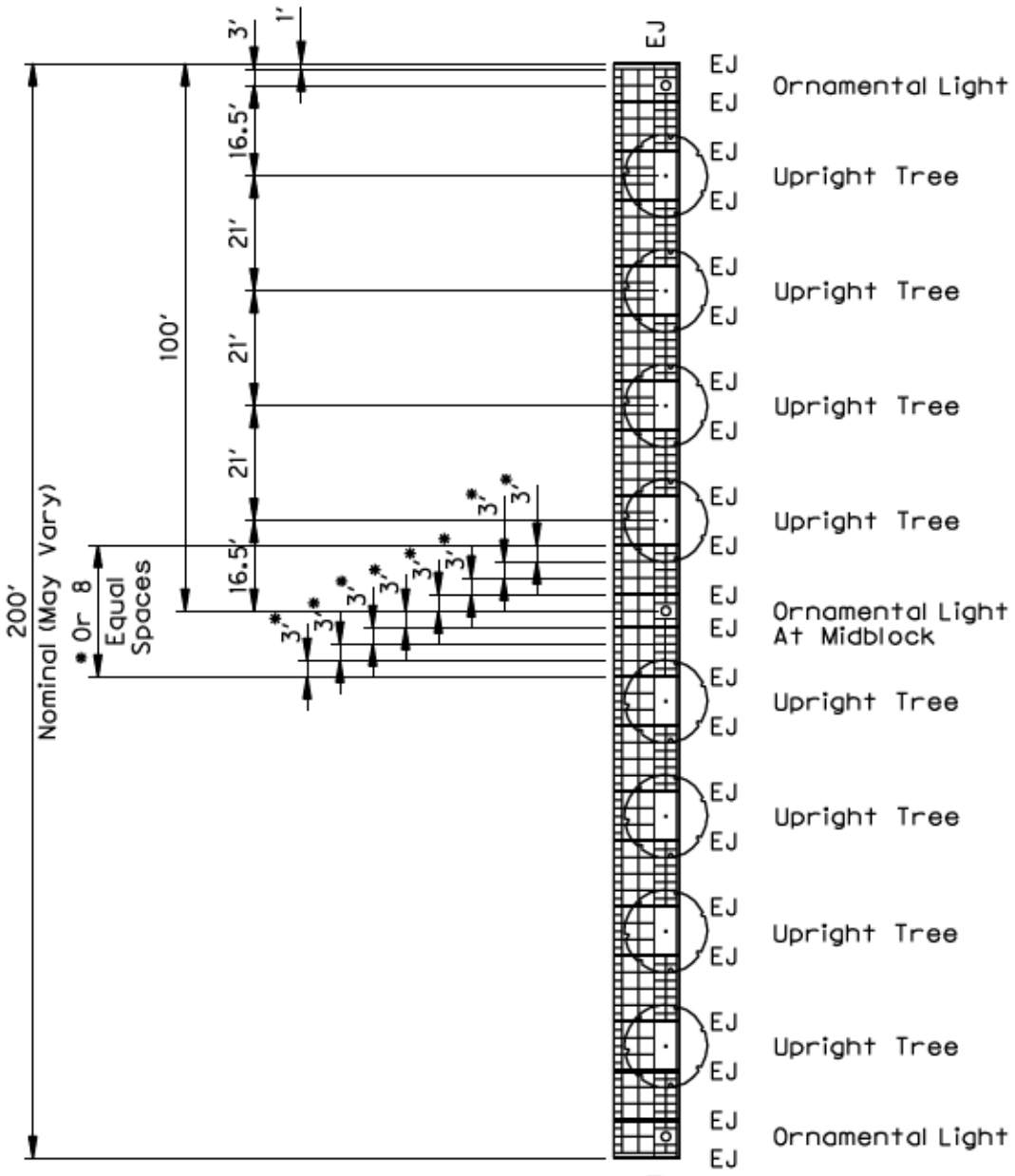
Through Pedestrian Zone



Furnishing Zone



Curb Zone



Scale: 1" = 30'

TITLE OF STANDARD PLAN

BLOCKFACE LAYOUT UPRIGHT TREES

NO.	REVISIONS	DATE	BY

APPROVED

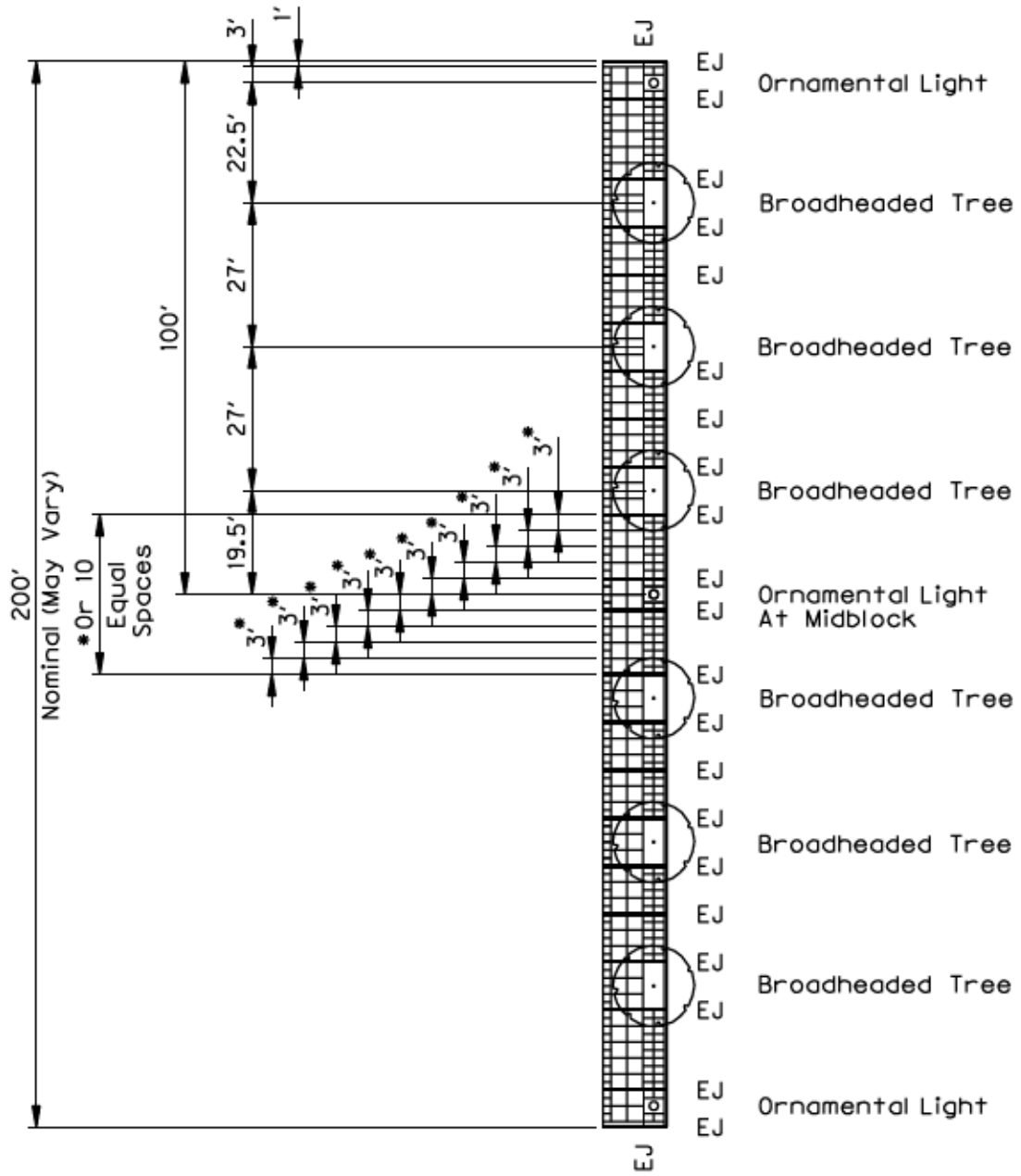
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-1

Plot Date: 06/23/03 Filename: Us\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-01.dgn



Scale: 1" = 30'

TITLE OF STANDARD PLAN

BLOCKFACE LAYOUT BROADHEADED TREES

NO.	REVISIONS	DATE	BY

APPROVED

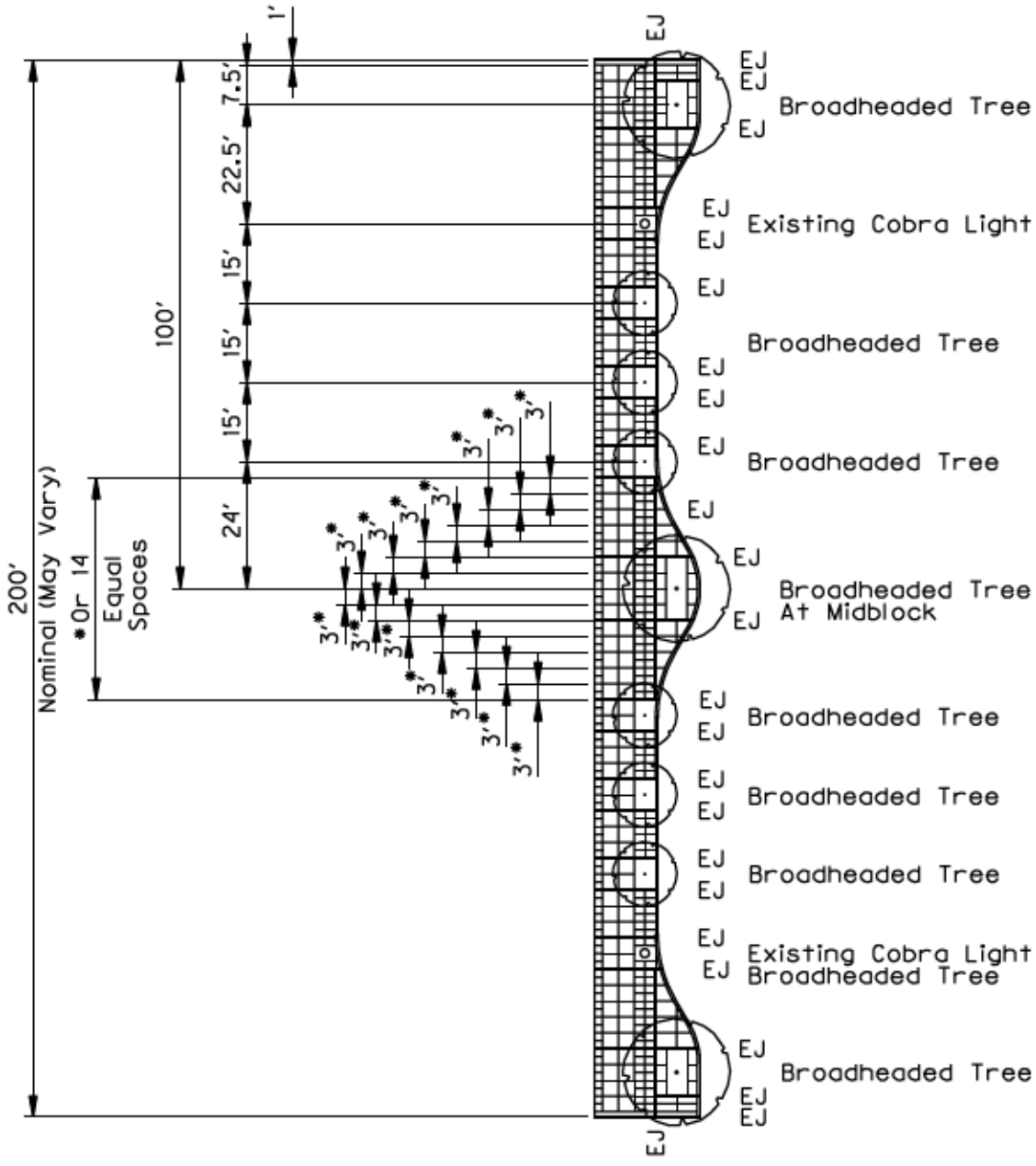
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–2

Plot Date: 06/23/03 Filename: Ui\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-02.dgn



Scale: 1" = 30'

TITLE OF STANDARD PLAN

BLOCKFACE LAYOUT MIXED LAYER TREES

NO.	REVISIONS	DATE	BY

APPROVED

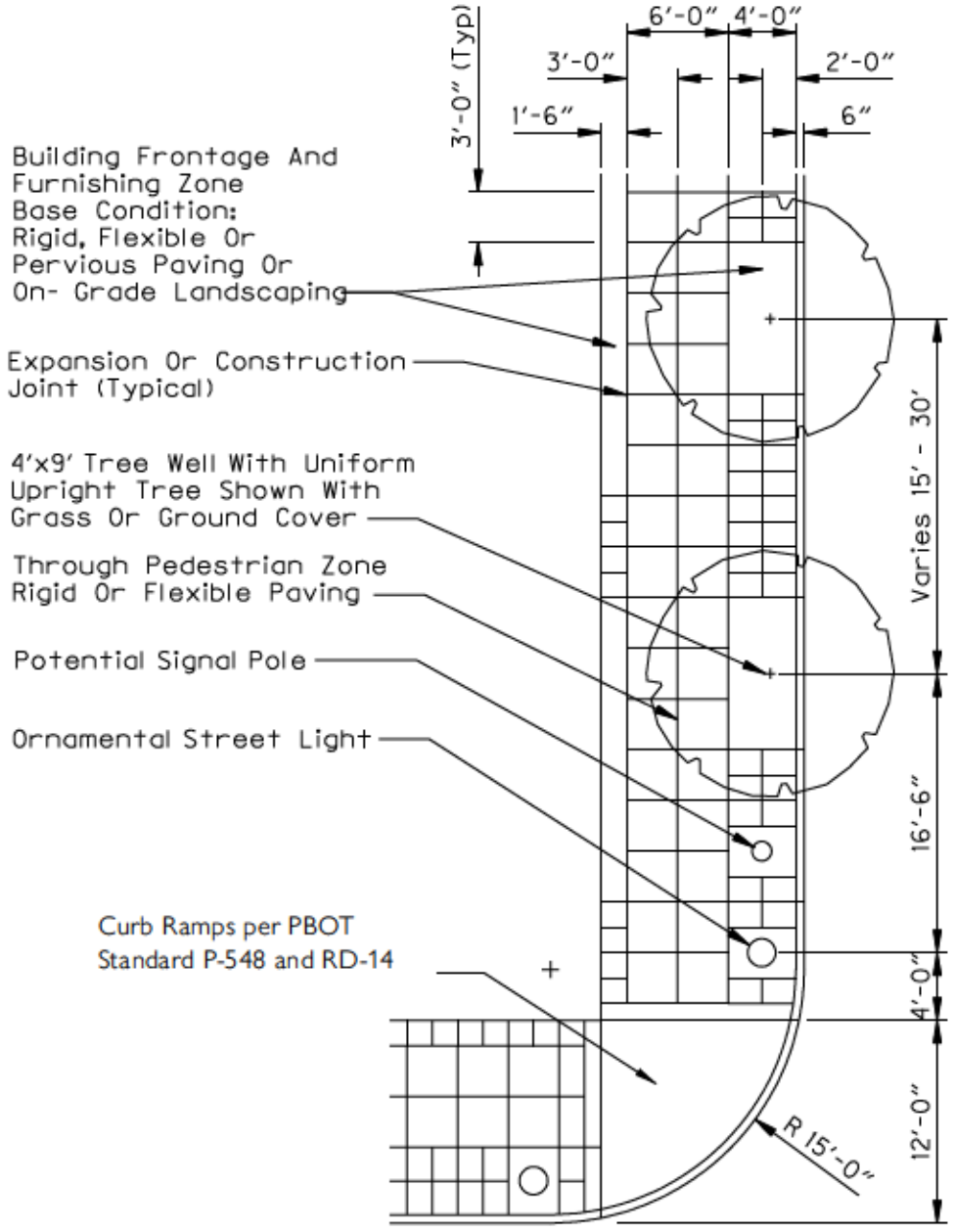
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-3

Plot Date: 06/23/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-03.dgn



Partial Plan

Scale: 1" = 10'

TITLE OF STANDARD PLAN

12' SIDEWALK BASE CONDITION

NO.	REVISIONS	DATE	BY

APPROVED

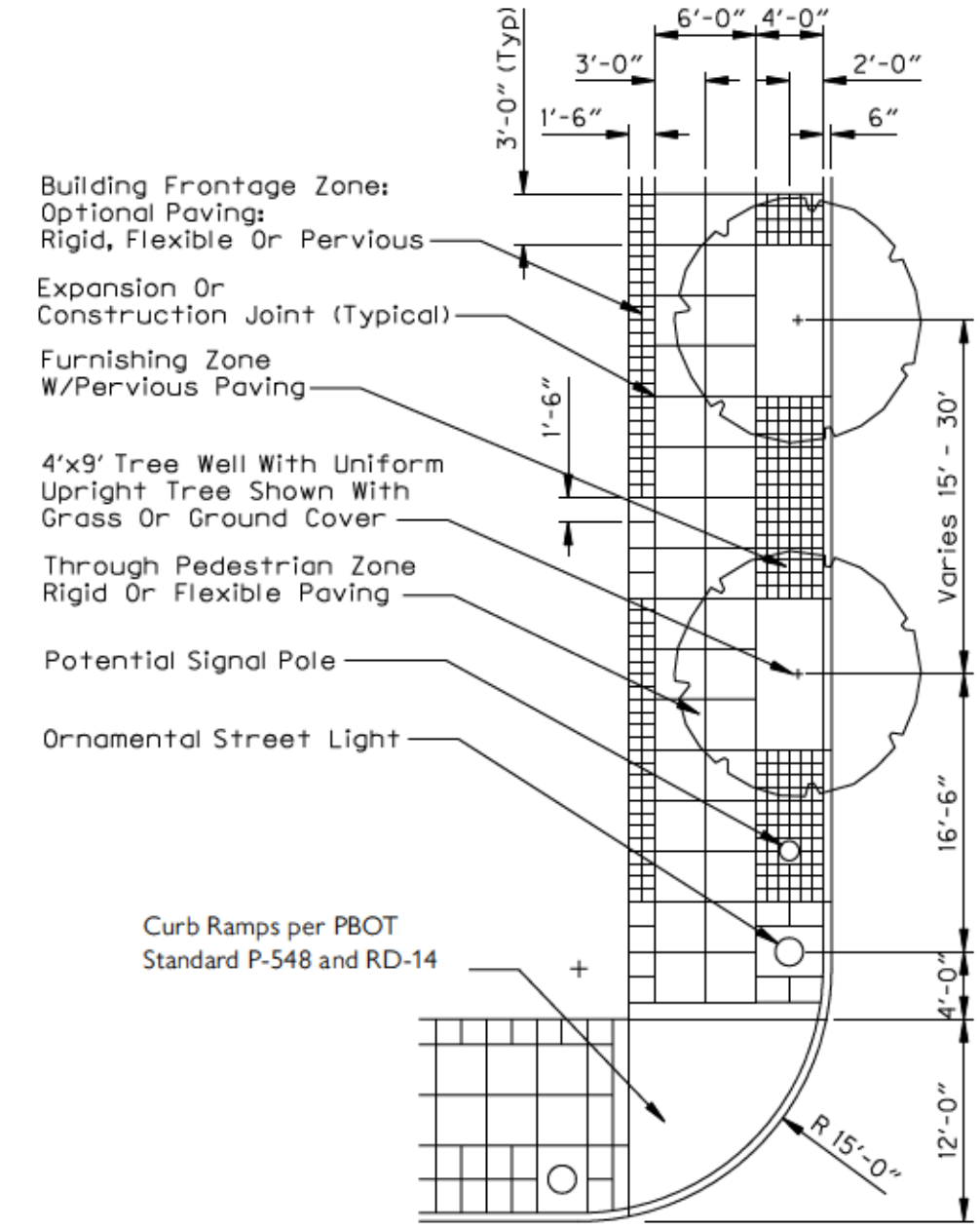
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-6

Plot Date: 07/29/03 Filename: Us\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-06.dgn



Partial Plan

Scale: 1" = 10'

TITLE OF STANDARD PLAN

12' SIDEWALK COMBINATION PAVING

NO.	REVISIONS	DATE	BY

APPROVED

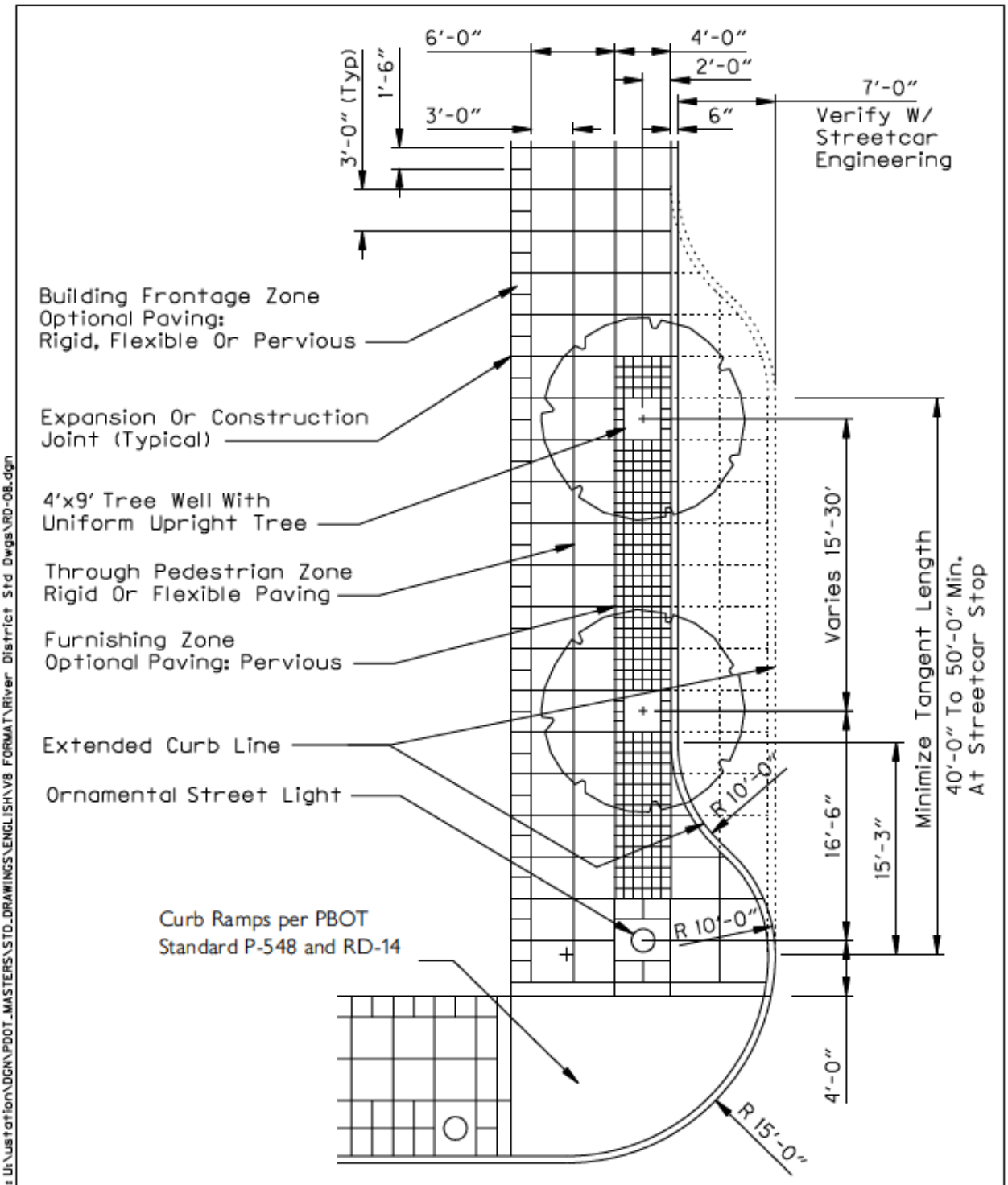
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–7

Plot Date: 07/29/03 Filename: Ls\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-07.dgn



Scale: 1" = 10'

Partial Plan

TITLE OF STANDARD PLAN

12' SIDEWALK EXTENDED CURB

NO.	REVISIONS	DATE	BY

APPROVED

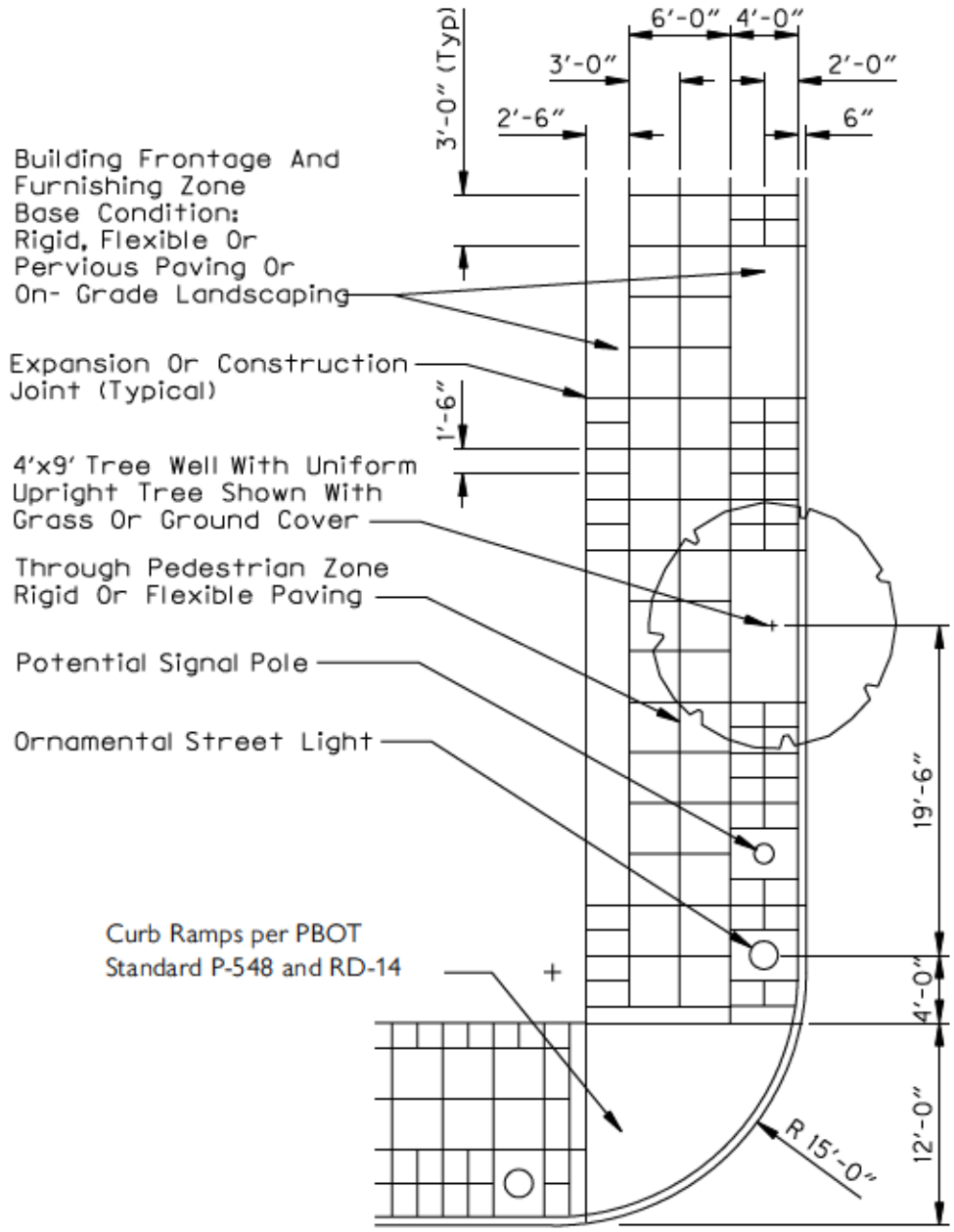
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-8

Plot Date: 08/04/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-08.dgn



Partial Plan

Scale: 1" = 10'

TITLE OF STANDARD PLAN

13' SIDEWALK BASE CONDITION

NO.	REVISIONS	DATE	BY

APPROVED

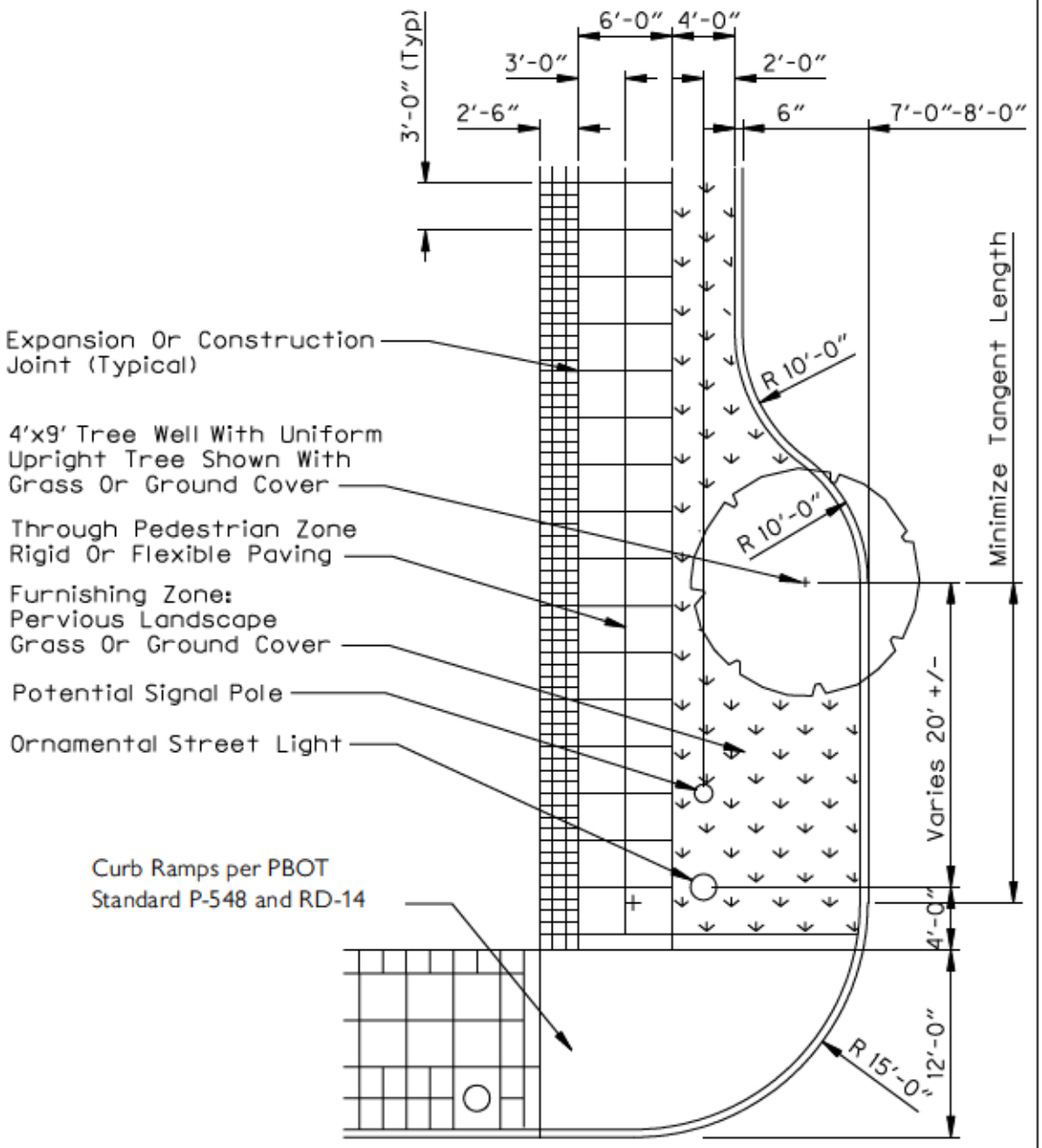
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-9

Plot Date: 07/29/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-09.dgn



Partial Plan

Scale: 1" = 10'

TITLE OF STANDARD PLAN

13' SIDEWALK EXTENDED CURB

NO.	REVISIONS	DATE	BY

APPROVED

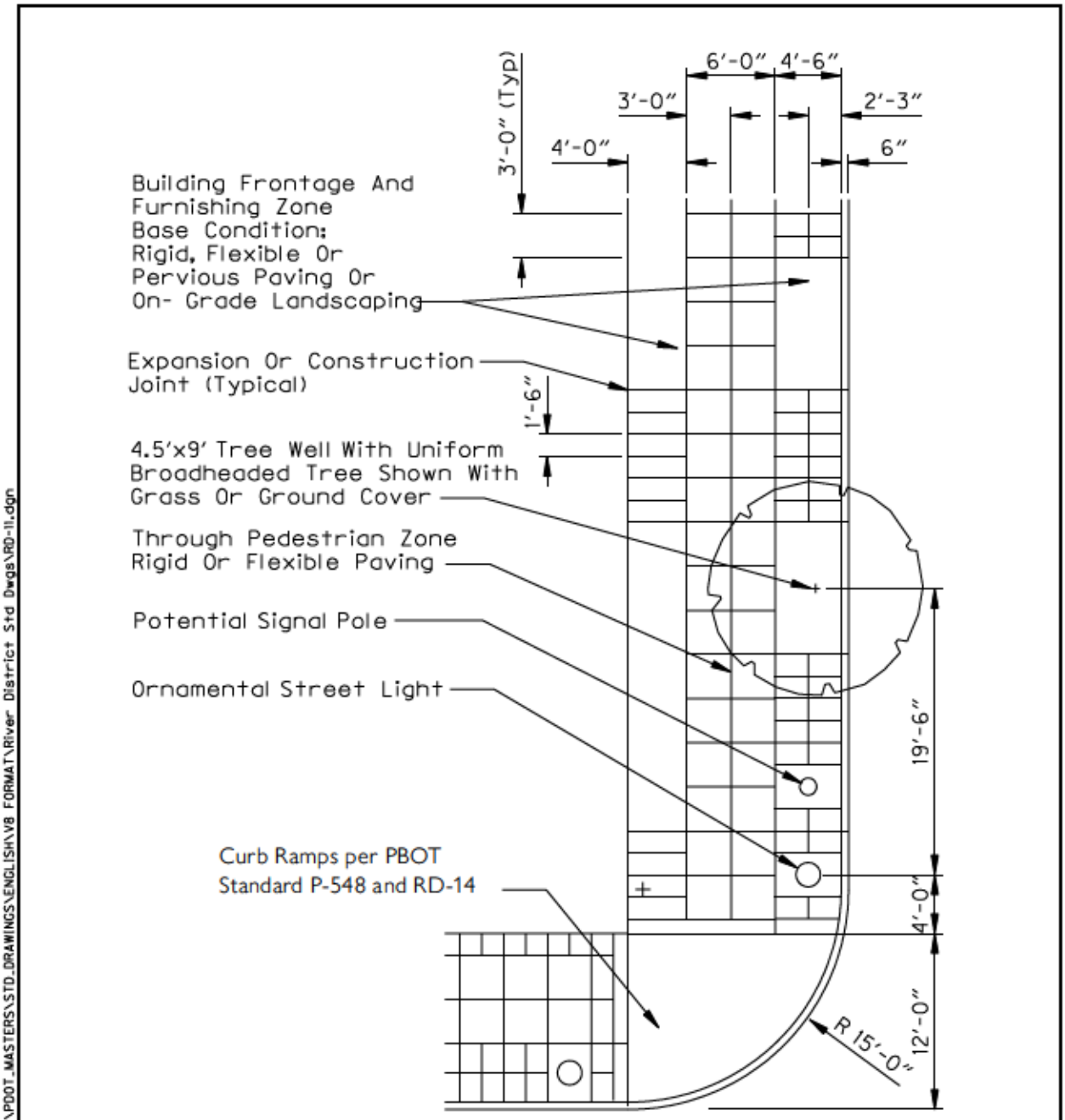
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–10

Plot Date: 08/04/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-10.dgn



Partial Plan

Scale: 1" = 10'

TITLE OF STANDARD PLAN

15' SIDEWALK BASE CONDITION

NO.	REVISIONS	DATE	BY

APPROVED

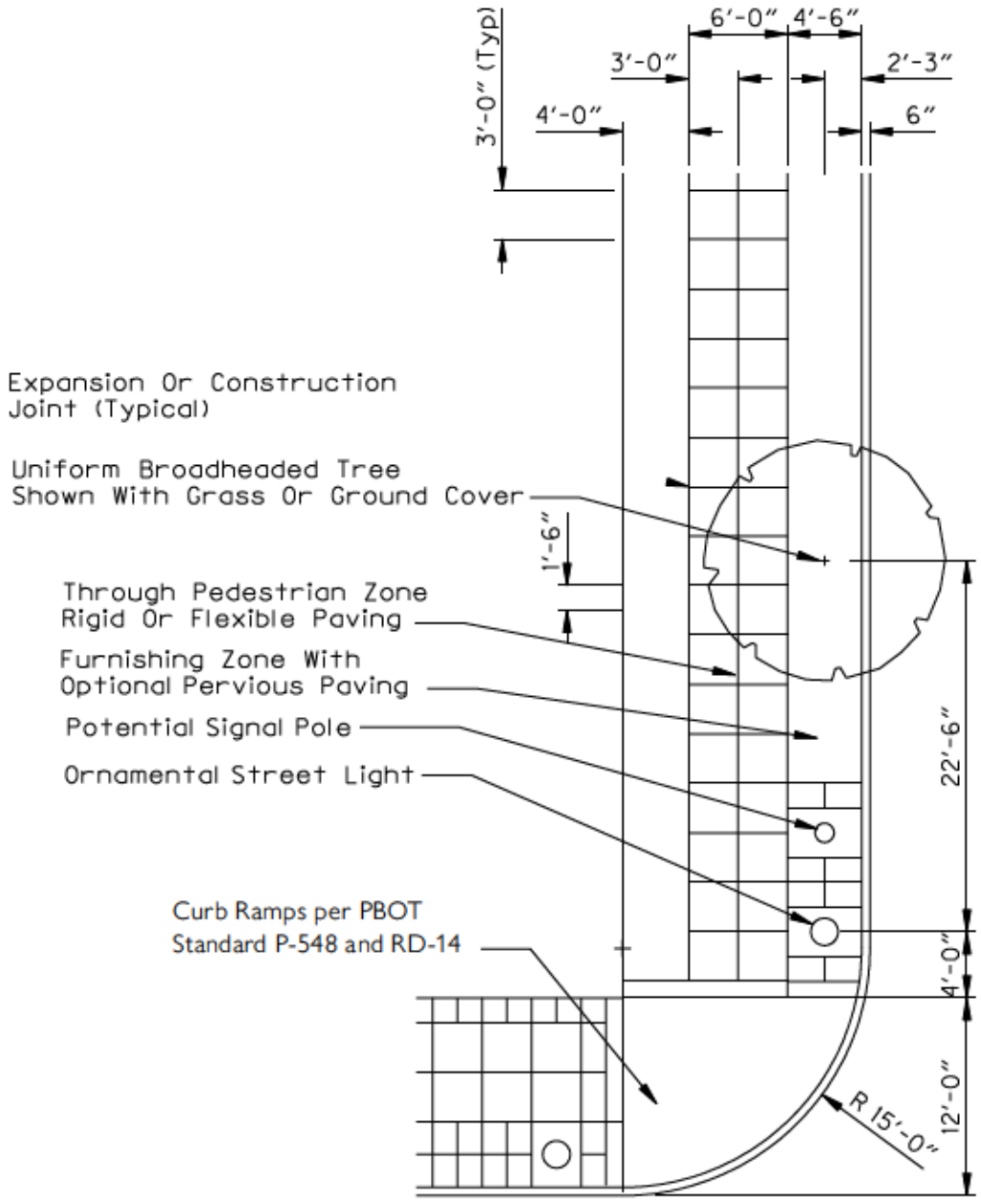
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–11

Plot Date: 07/29/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-11.dgn



Partial Plan

Scale: 1" = 10'

TITLE OF STANDARD PLAN

15' SIDEWALK PERVIOUS PAVING

NO.	REVISIONS	DATE	BY

APPROVED

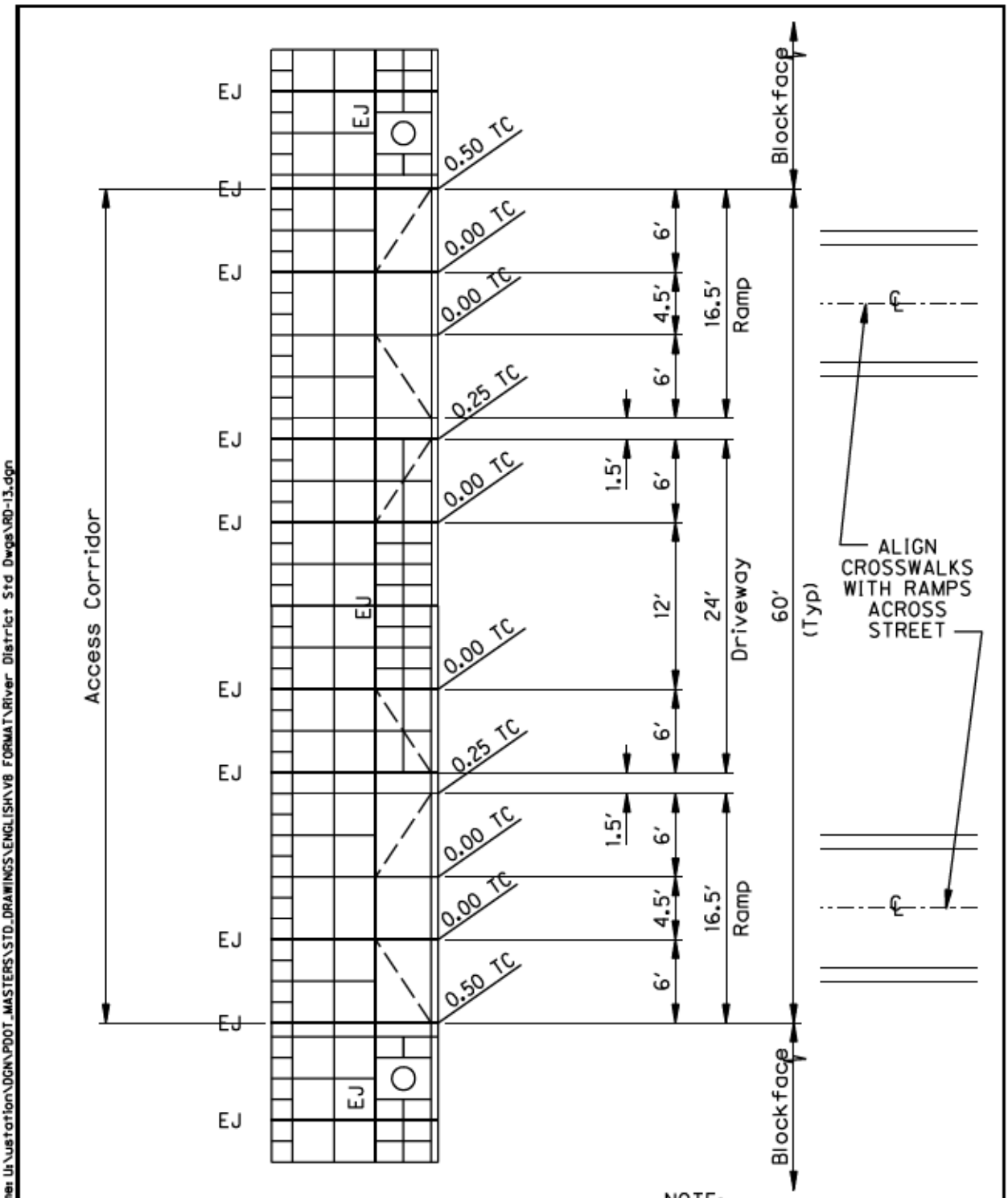
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–12

Plot Date: 07/29/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-12.dgn



Plot Dates: 07/29/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-13.dgn

TITLE OF STANDARD PLAN

DRIVEWAYS & CROSSWALKS @ AN ACCESS CORRIDOR

NO.	REVISIONS	DATE	BY

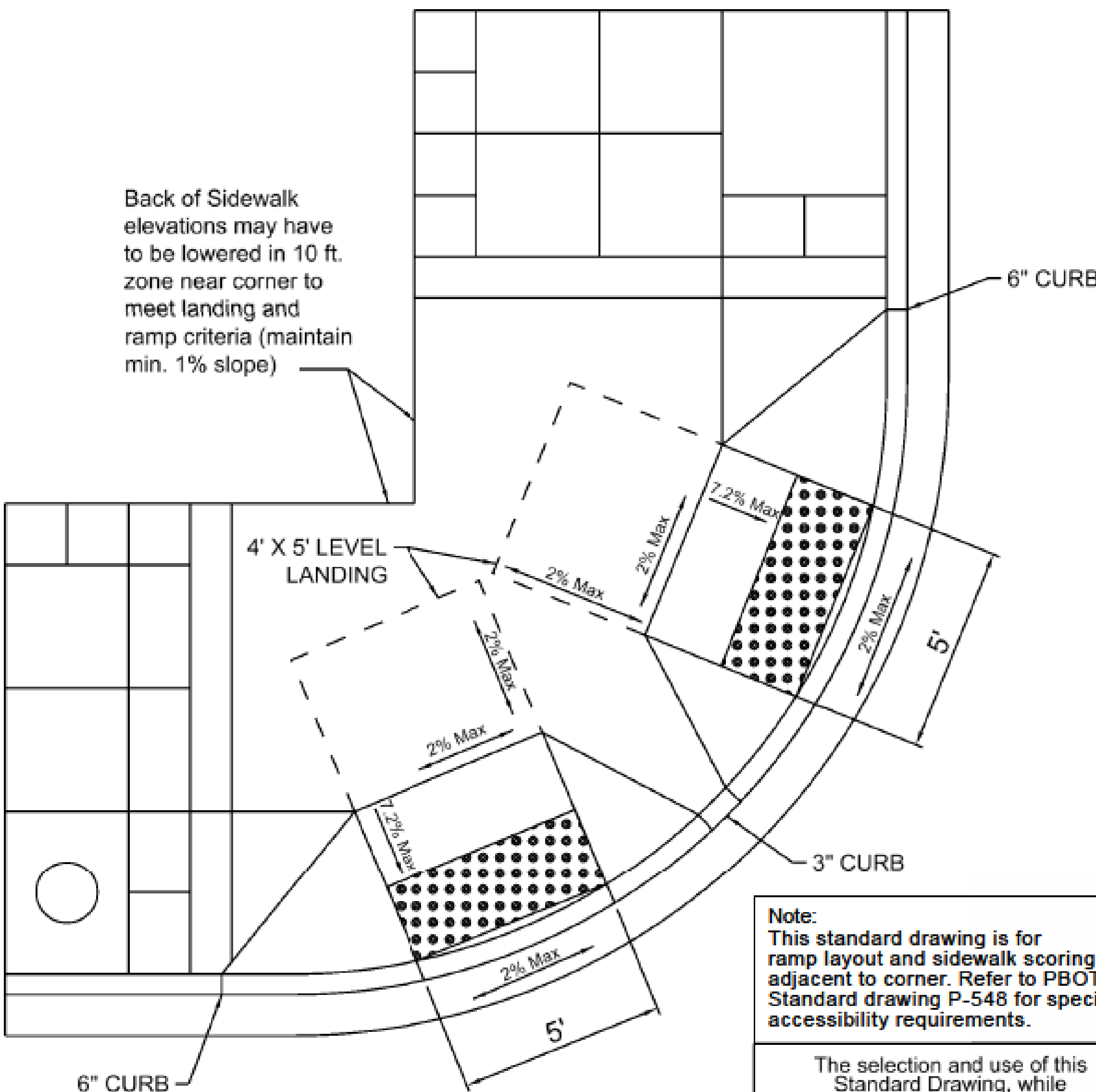
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–13



Note:
This standard drawing is for ramp layout and sidewalk scoring adjacent to corner. Refer to PBOT Standard drawing P-548 for specific accessibility requirements.

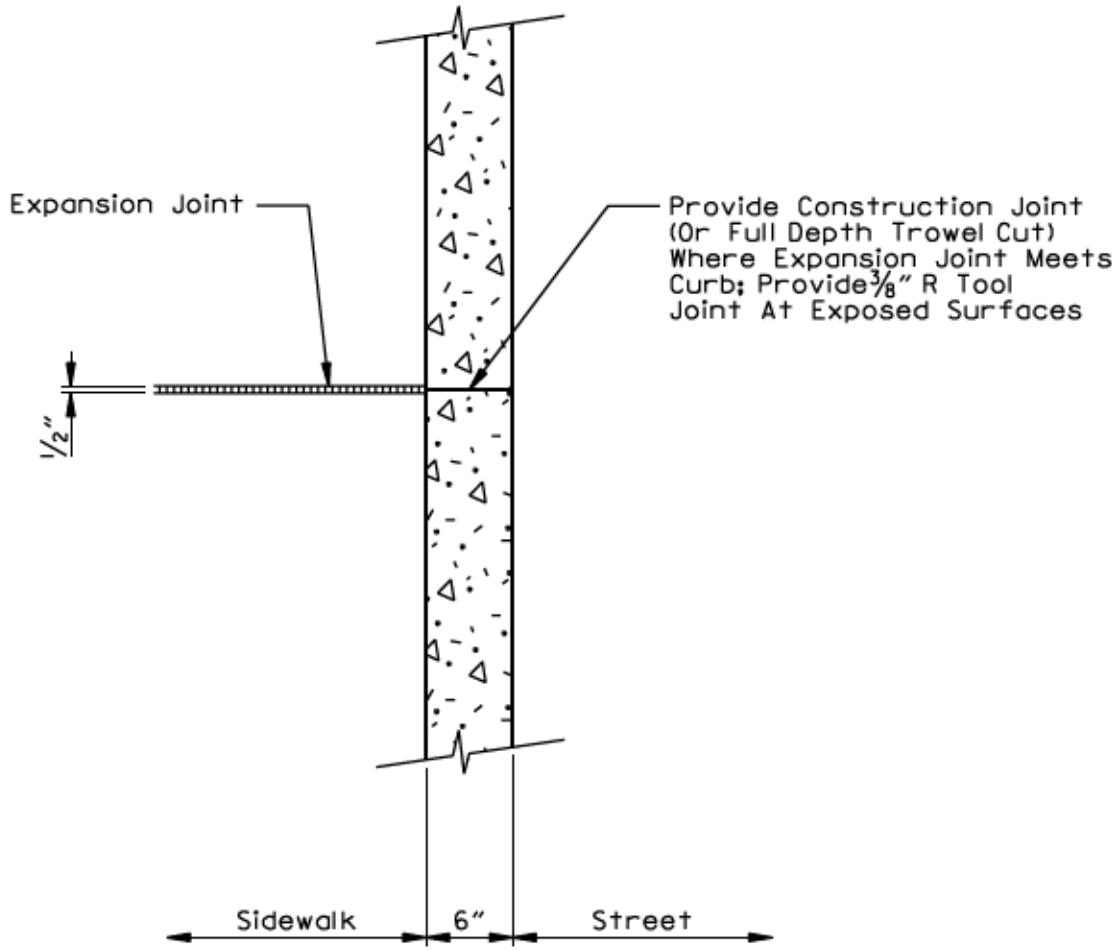
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

CURB RAMP TYPICAL CONDITION

NO.	REVISIONS	DATE	BY	APPROVED	STANDARD PLAN NO.
1	UPDATED RAMPS TO MEET ADA		AKR		RD–14
				CITY ENGINEER DATE	
				CITY OF PORTLAND, OREGON	

Plot Date: 11/22/2011 Filename: S:_II_Design\TR0141000I - NW Pettygrove Green Street\CAD\PRESENTATION DRAWINGS\Pettygrove Improve.dgn



Plan

Scale: 1" = 1'

TITLE OF STANDARD PLAN

CONSTRUCTION JOINT AT CURB TYPICAL CONDITION

NO.	REVISIONS	DATE	BY

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

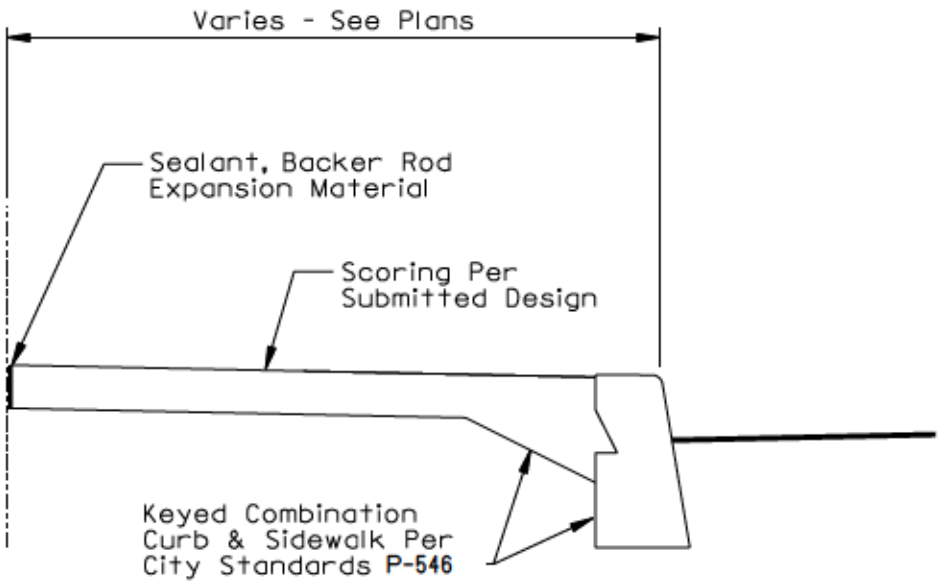
STANDARD PLAN NO.

RD–15

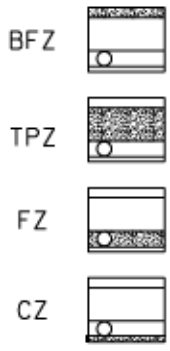
Plot Dates: 07/29/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-15.dgn

3.1.2 SIDEWALK PAVEMENT TREATMENTS: RIGID

RD-16: Rigid Paving: C.I.P Concrete
RD-17: Rigid Paving: Mortor-set Paver



Section



Sidewalk Zones

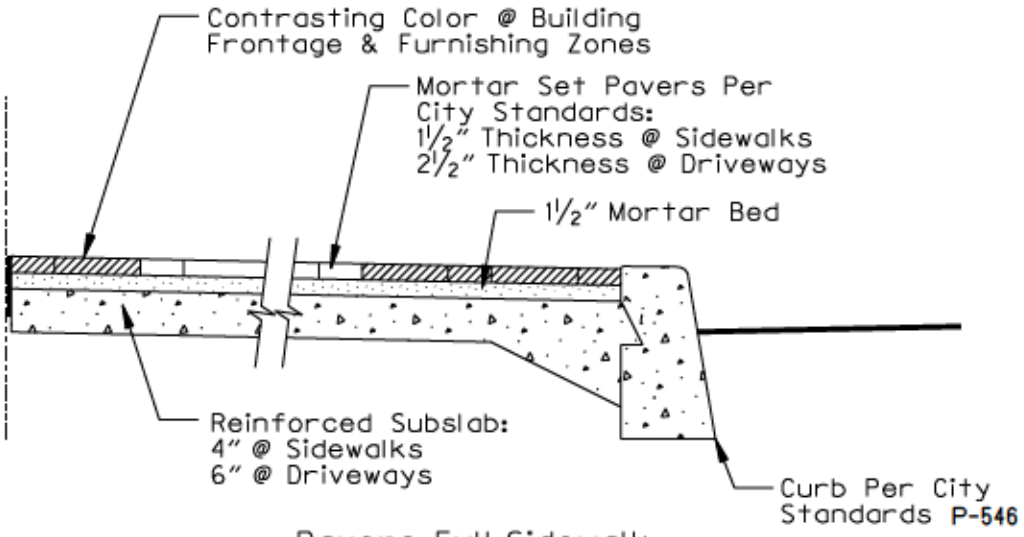
Scale: 3/4"= 1'-0"

TITLE OF STANDARD PLAN

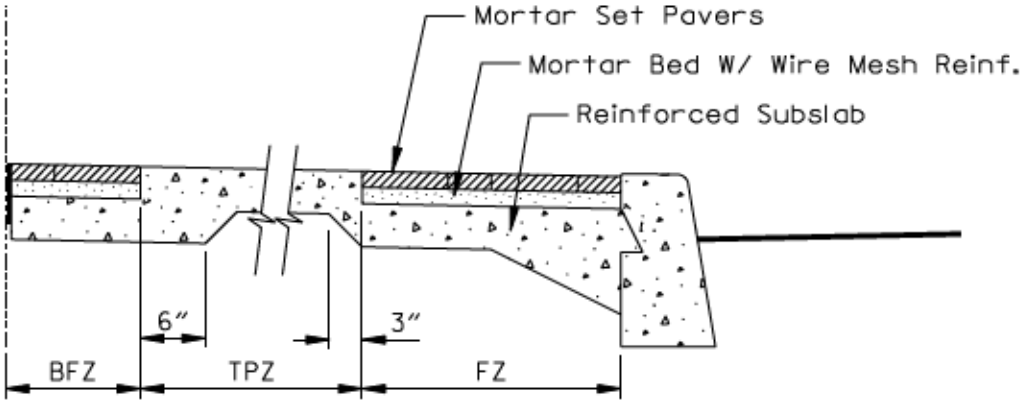
RIGID PAVING: CAST–IN–PLACE CONCRETE

NO.	REVISIONS	DATE	BY	APPROVED	STANDARD PLAN NO.
				CITY ENGINEER DATE	RD–16
				CITY OF PORTLAND, OREGON	

Plot Date: 07/29/03 Filename: Us\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-16.dgn

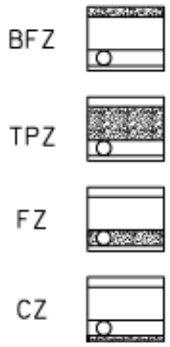


Pavers-Full Sidewalk



Pavers-Feature Strips

SECTIONS



Sidewalk Zones

Note:
A Single Paver Type, Pattern And Color Shall Be used Per 200' Blockface Minimum.

Scale: ¾"= 1'-0"

TITLE OF STANDARD PLAN

RIGID PAVING: MORTAR-SET PAVER

NO.	REVISIONS	DATE	BY

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

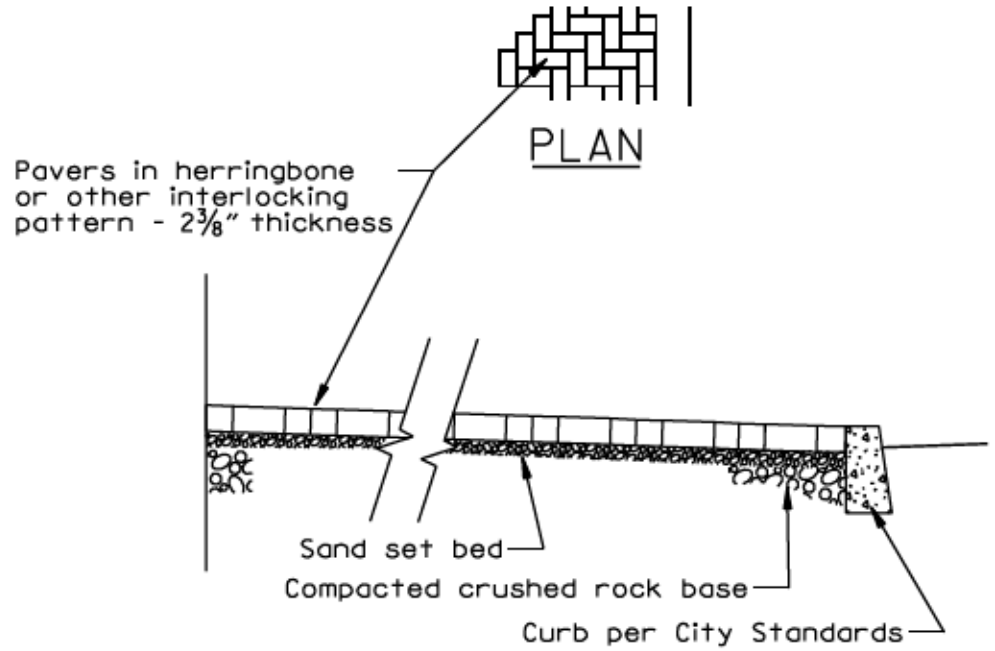
STANDARD PLAN NO.

RD-17

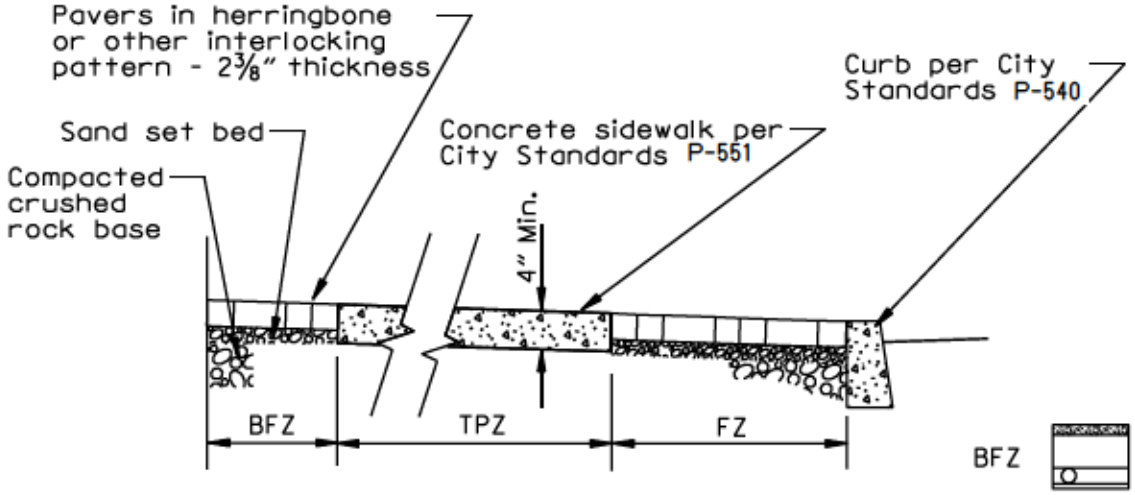
Plot Date: 07/29/03 Filename: Us\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-17.dgn

3.1.3 SIDEWALK PAVEMENT TREATMENTS: FEXIBLE

RD-18: Flexible Paving: Sand-set Interlocking Paver



PAVERS - FULL SIDEWALK



PAVERS - FEATURE STRIPS

SECTIONS

Note: See also City Standard P-572
Note: If a color other than Natural Grey is used, it must be used for a 200' blockface minimum

TITLE OF STANDARD PLAN

FLEXIBLE PAVING SAND-SET INTERLOCKING PAVER

NO.	REVISIONS	DATE	BY

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

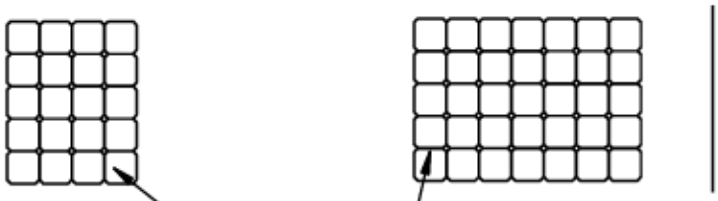
STANDARD PLAN NO.

RD-18

Plot Date: 07/29/03 Filename: L:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-18.dgn

3.1.4 SIDEWALK PAVEMENT TREATMENTS: PERVIOUS

RD-19: Pervious Paving: Open-joint Interlocking Paver
RD-20: Continuous Landscape Strip



PLAN

Open joint concrete interlocking paver - fill open joint w/1/2" minus granular

Curb per City Standards P-540

Compacted crushed rock base

Sand set bed

4" Min.

BFZ TPZ FZ

PAVERS - FEATURE STRIPS

Compacted crushed rock base

SECTION

BFZ

FZ

SIDEWALK ZONES

Note: See also City Standard P-572
Note: If a color other than Natural Grey is used, it must be used for a 200' blockface minimum

Plot Date: 07/29/03 Filename: u:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-19.dgn

TITLE OF STANDARD PLAN

PERVIOUS PAVING: OPEN JOINT INTERLOCKING PAVER

NO.	REVISIONS	DATE	BY

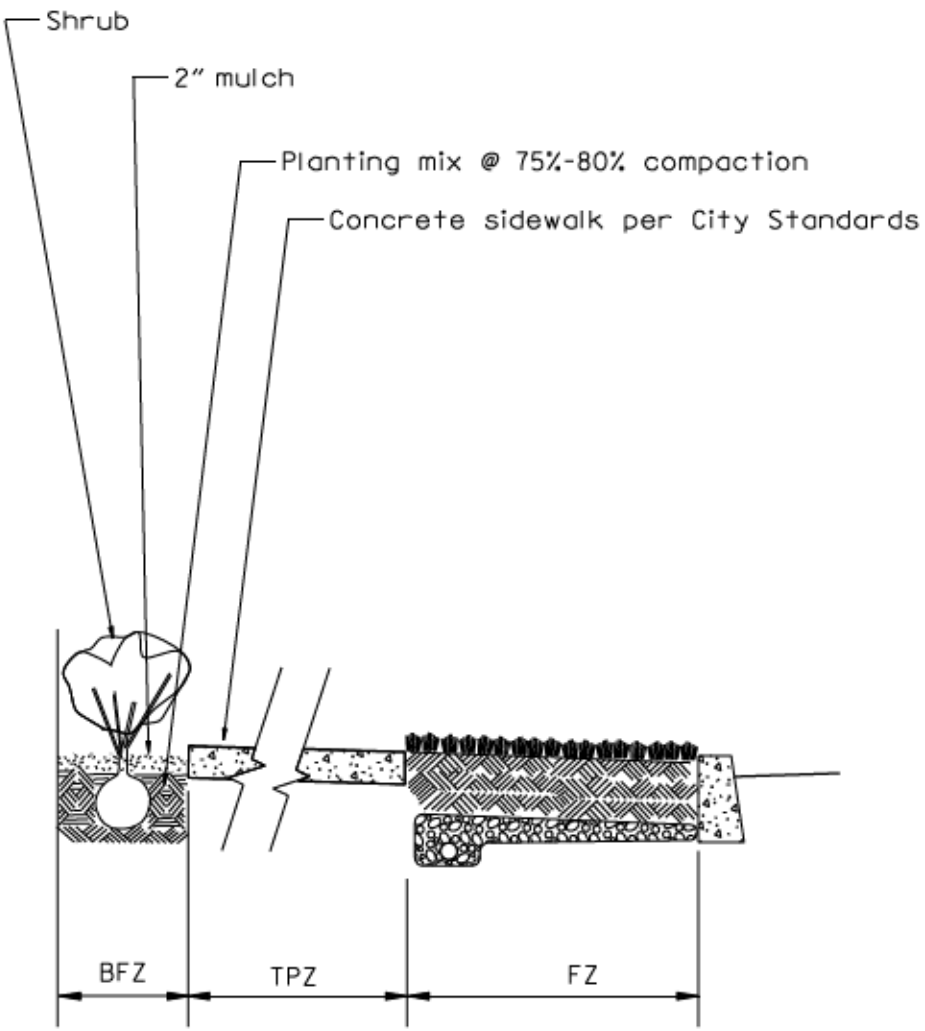
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-19



SECTION

SIDEWALK ZONES

Note: See also City Standard P-572
Note: If a color other than Natural Grey is used, it must be used for a 200' blockface minimum

TITLE OF STANDARD PLAN

PERVIOUS CONTINUOUS LANDSCAPE STRIP

NO.	REVISIONS	DATE	BY

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–20

Plot Date: 07/29/03 Filename: L:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-20.dgn

3.2 STREET PAVEMENTS, CIP CONCRETE OR ASPHALTIC CONCRETE PAVING:

see existing City Standards; Streetcar Paving-to be determined in design engineering

3.3 ELEVATED ROADWAY STRUCTURES:

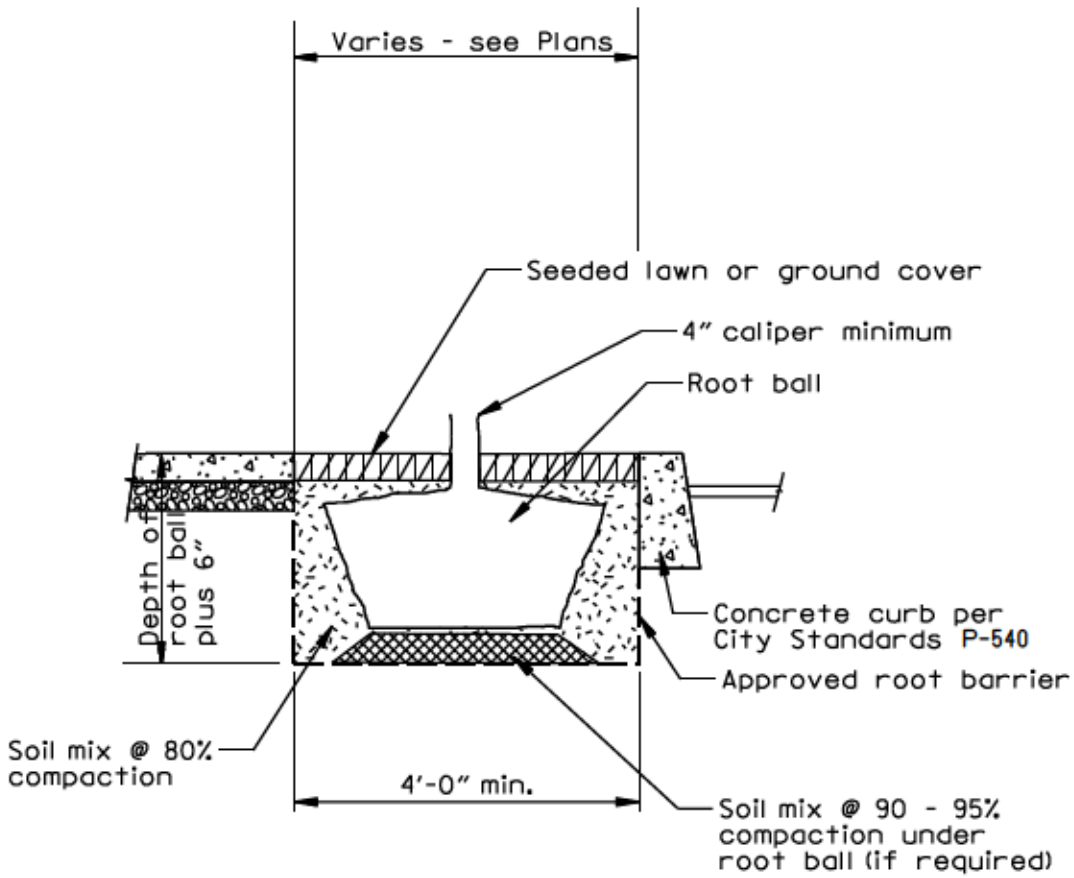
to be determined in design engineering

3.4 STREET LIGHTING:

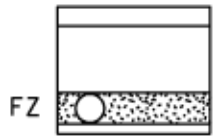
fixture standards, foundations, specifications, etc. - see existing City Standards

3.5 LANDSCAPE:

RD-21: Street Tree Well



SECTION AT TREE WELL



SIDEWALK ZONES

Note:
All street tree installation to comply with PBOT Standard P-581

Scale: 1/2" = 1'

TITLE OF STANDARD PLAN

STREET TREE WELL TYPICAL

NO.	REVISIONS	DATE	BY

APPROVED

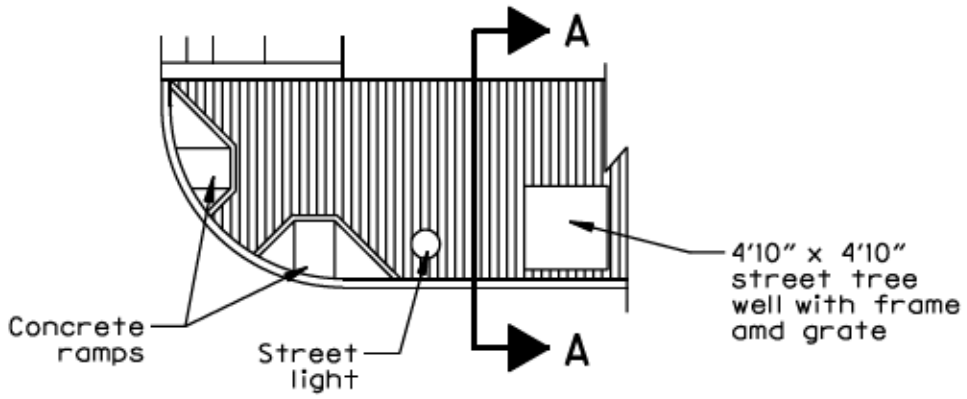
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

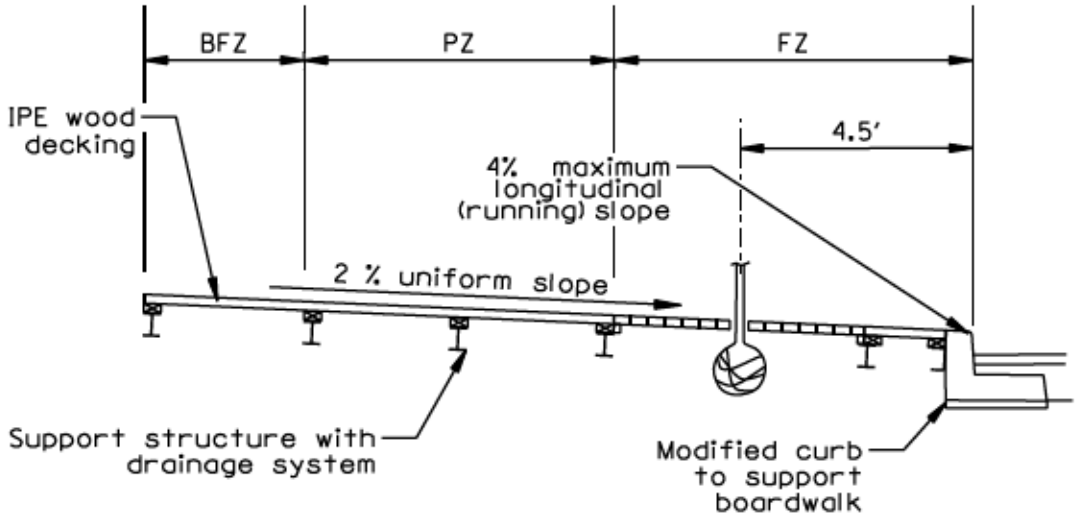
STANDARD PLAN NO.

RD–21

Plot Date: 07/30/03 Filename: U:\ustation\DGN\PDOT_MASTERS\STD_DRAWINGS\ENGLISH\V8 FORMAT\River District Std Dwgs\RD-21.dgn



Plan View



Section A-A

Note:
Boardwalk support structure to be designed for individual site application by a structural engineer and approved by the City Engineer. Design live load 250 PSF.

TITLE OF STANDARD PLAN

IPE WOOD SIDEWALK (BOARDWALK)

NO.	REVISIONS	DATE	BY

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

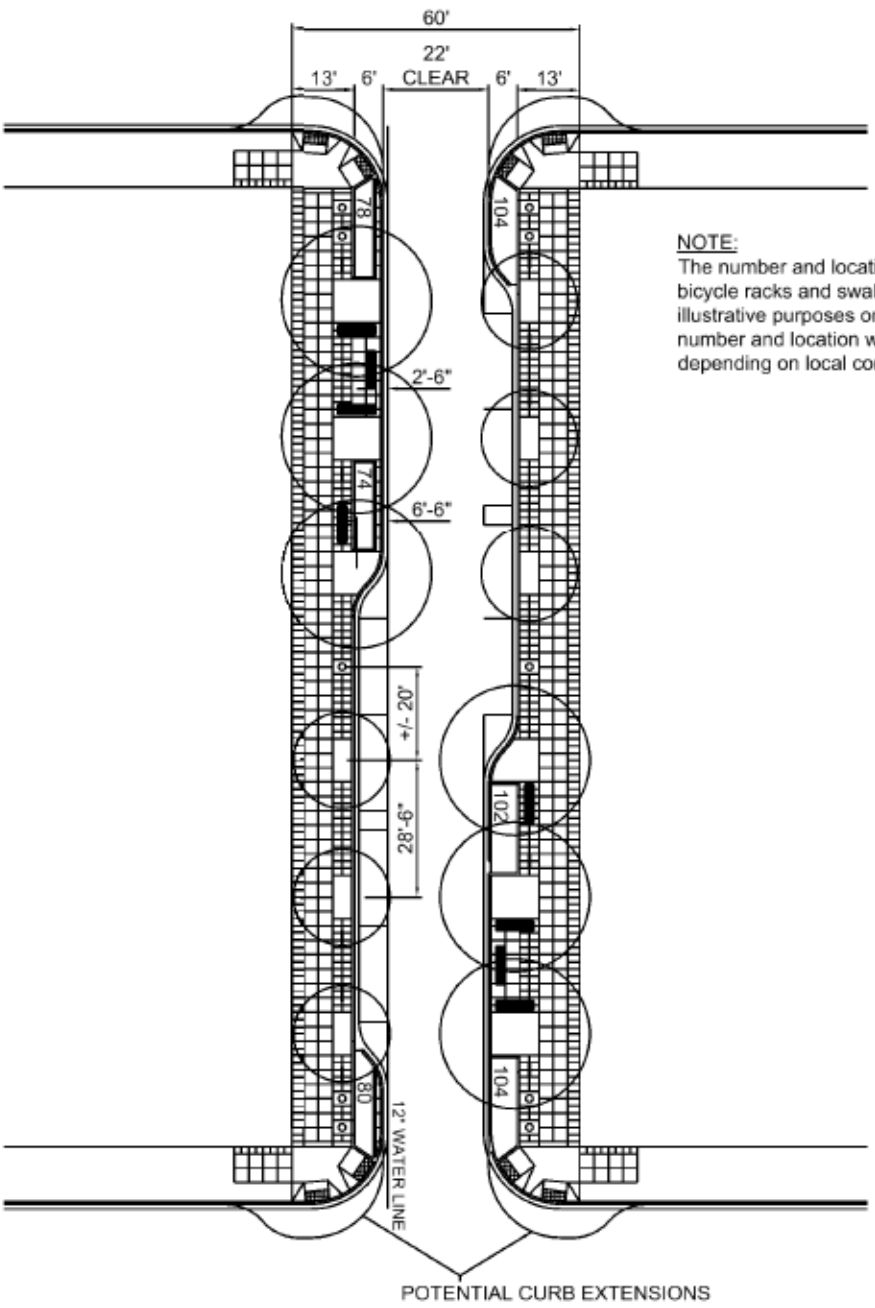
RD–22

Plot Date: 11/18/2003 Filename: Us\ustation\DGN\Standard Plans (V8i)\Plan Divisions\River District Std Dwgs\RD-22.dgn

3.6 SPECIAL FUNCTION STREETS

Street design standards for additional special or unique streets in the district

RD-25A: Pettygrove Street Option A
RD-25B: Pettygrove Street Option B
RD-25C: Pettygrove Street Option C
RD-26: 20' Sidewalk Base Condition
RD-27: 20' Sidewalk Pervious Paving
RD-28: 20' Sidewalk Extended
RD-29A : Cross Sections - NW Johnson St
RD-29B: Cross Sections - NW Johnson St
RD-30A: NW Johnson Street - Level Surface Street Detail
RD-30B: NW Johnson Street - Level Surface Street Detail
RD-31: Cross Sections - NW Park Ave
RD-32: NW Park Ave - Level Surface Street Detail



NOTE:
The number and location of benches, bicycle racks and swales shown is for illustrative purposes only. Actual number and location will vary depending on local conditions.

Four (4) motor vehicle parking spaces per block face, mix of larger canopy trees and broad headed trees

LEGEND
- BENCH (2-4 PER BLOCK FACE)
- STAPLE BICYCLE RACK (2-5 PER BLOCK FACE)
- STREET TREE (6 PER BLOCK FACE)
- STREET LIGHT (3 PER BLOCK FACE)
- SF STORMWATER FACILITY (+/- 250 SF PER BLOCK FACE)

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

PETTYGROVE STREET: OPTION A

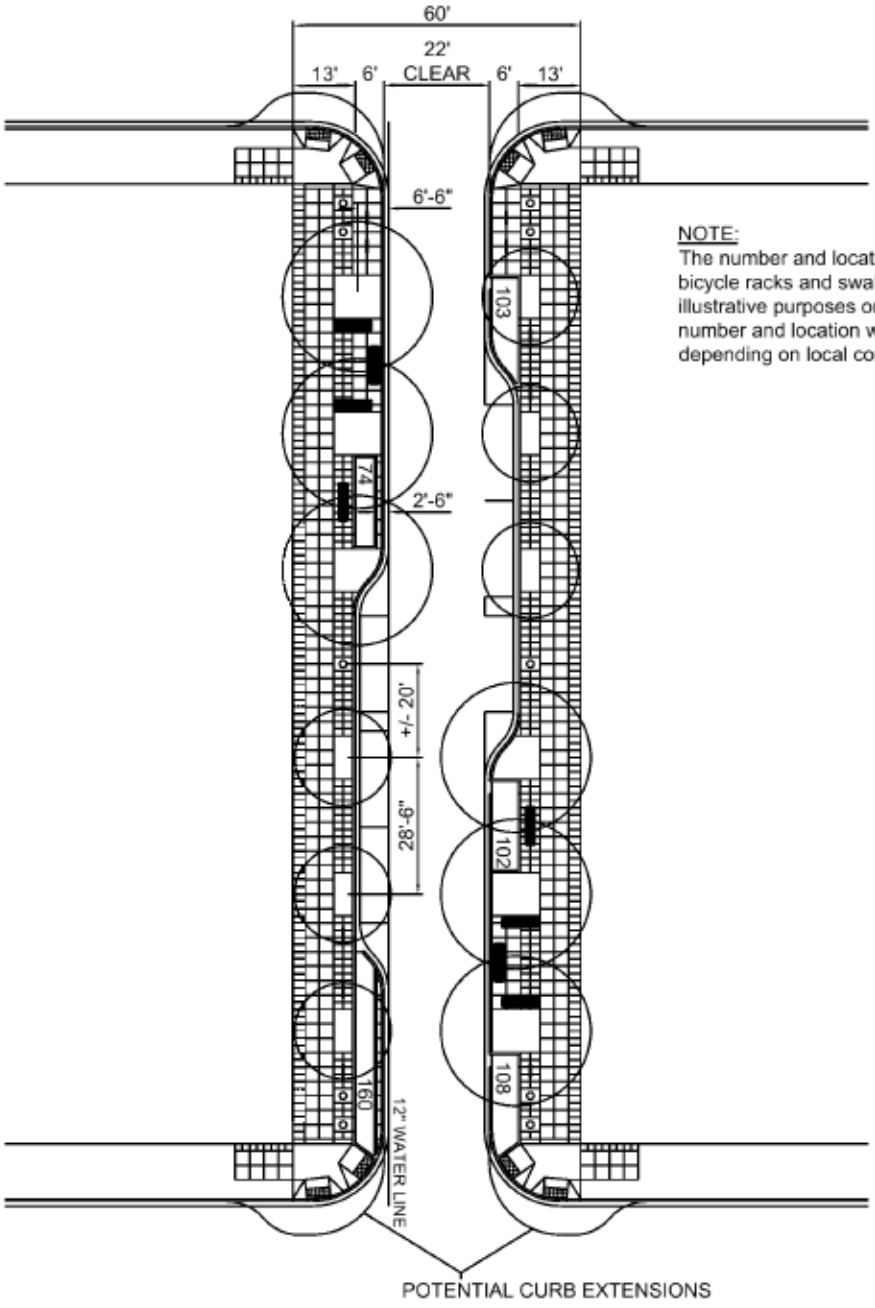
NO.	REVISIONS	DATE	BY
			AKR

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.
RD–25Ā



NOTE:
The number and location of benches, bicycle racks and swales shown is for illustrative purposes only. Actual number and location will vary depending on local conditions.

Three (3) motor vehicle parking spaces per block face, mix of larger canopy trees and broad headed trees

LEGEND
- BENCH (2-4 PER BLOCK FACE)
- STAPLE BICYCLE RACK (2-5 PER BLOCK FACE)
- STREET TREE (6 PER BLOCK FACE)
- STREET LIGHT (3 PER BLOCK FACE)
- SF STORMWATER FACILITY (+/- 250 SF PER BLOCK FACE)

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PETTYGROVE STREET: OPTION B

NO.	REVISIONS	DATE	BY
			AKR

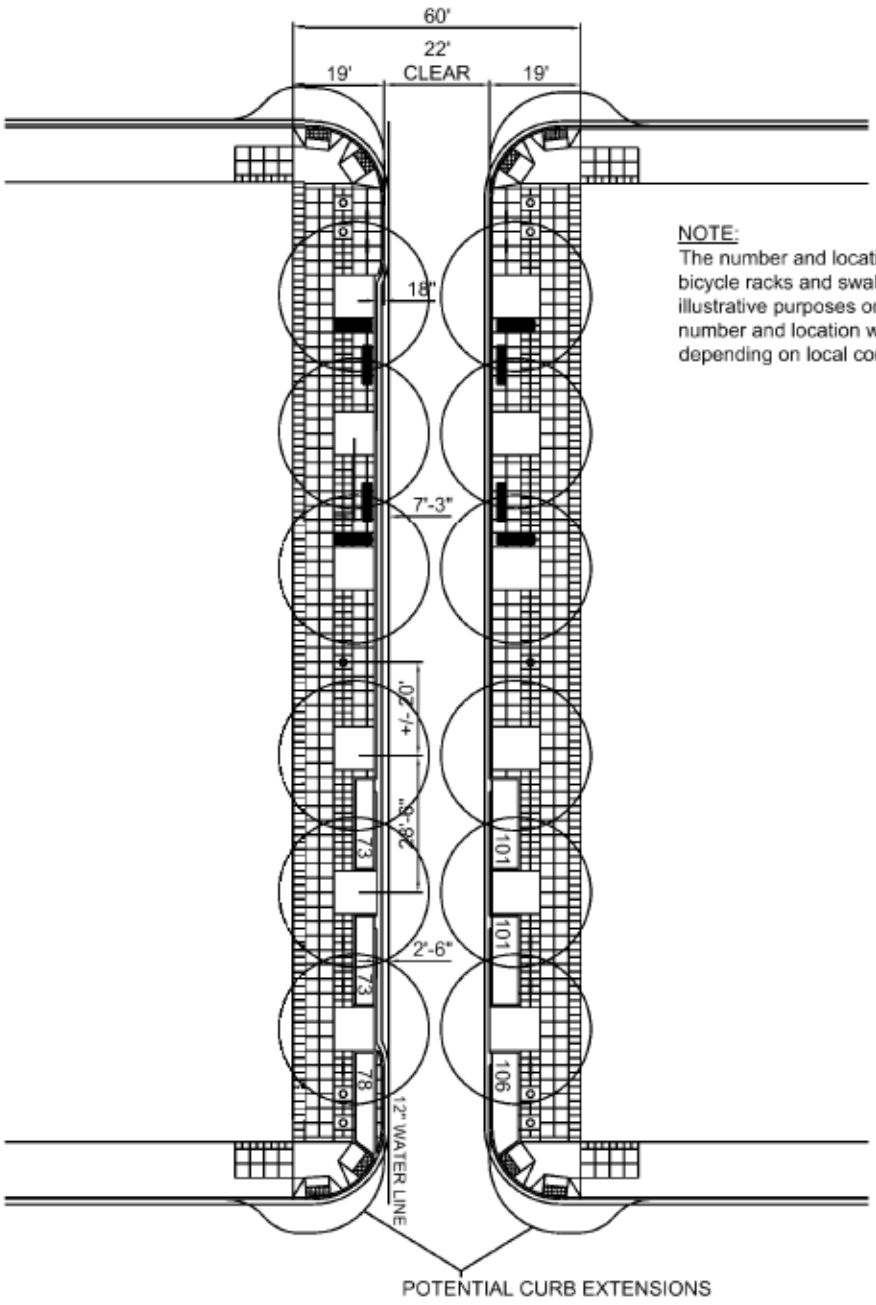
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD–25B



NOTE:
The number and location of benches, bicycle racks and swales shown is for illustrative purposes only. Actual number and location will vary depending on local conditions.

NO MOTOR VEHICLE PARKING SPACES, LARGER CANOPY TREES

LEGEND
- BENCH (2-4 PER BLOCK FACE)
- STAPLE BICYCLE RACK (2-5 PER BLOCK FACE)
- STREET TREE (6 PER BLOCK FACE)
- STREET LIGHT (3 PER BLOCK FACE)
- SF STORMWATER FACILITY (+/- 250 SF PER BLOCK FACE)

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PETTYGROVE STREET: OPTION C

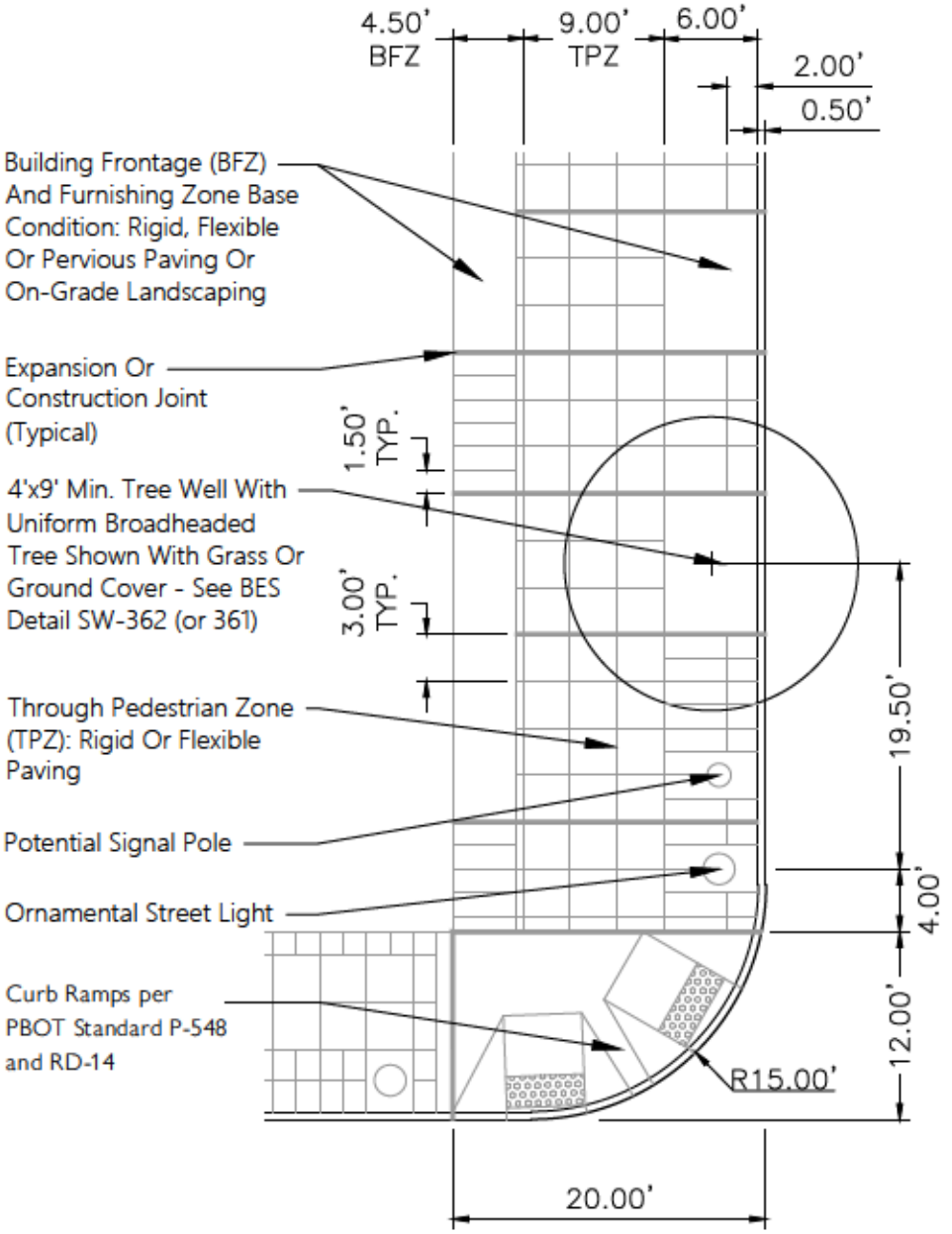
NO.	REVISIONS	DATE	BY
			AKR

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.
RD–25C



Partial Plan

Scale: 1" = 10'

THIS IS A PRELIMINARY CONCEPT. FIELD VERIFICATION, SITE CONDITION ASSESSMENTS, ENGINEERING ANALYSIS AND DESIGN ARE NECESSARY PRIOR TO IMPLEMENTING ANY OF THE RECOMMENDATIONS CONTAINED HEREIN.

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All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications

20' SIDEWALK BASE CONDITION

#	REVISIONS	DATE	BY

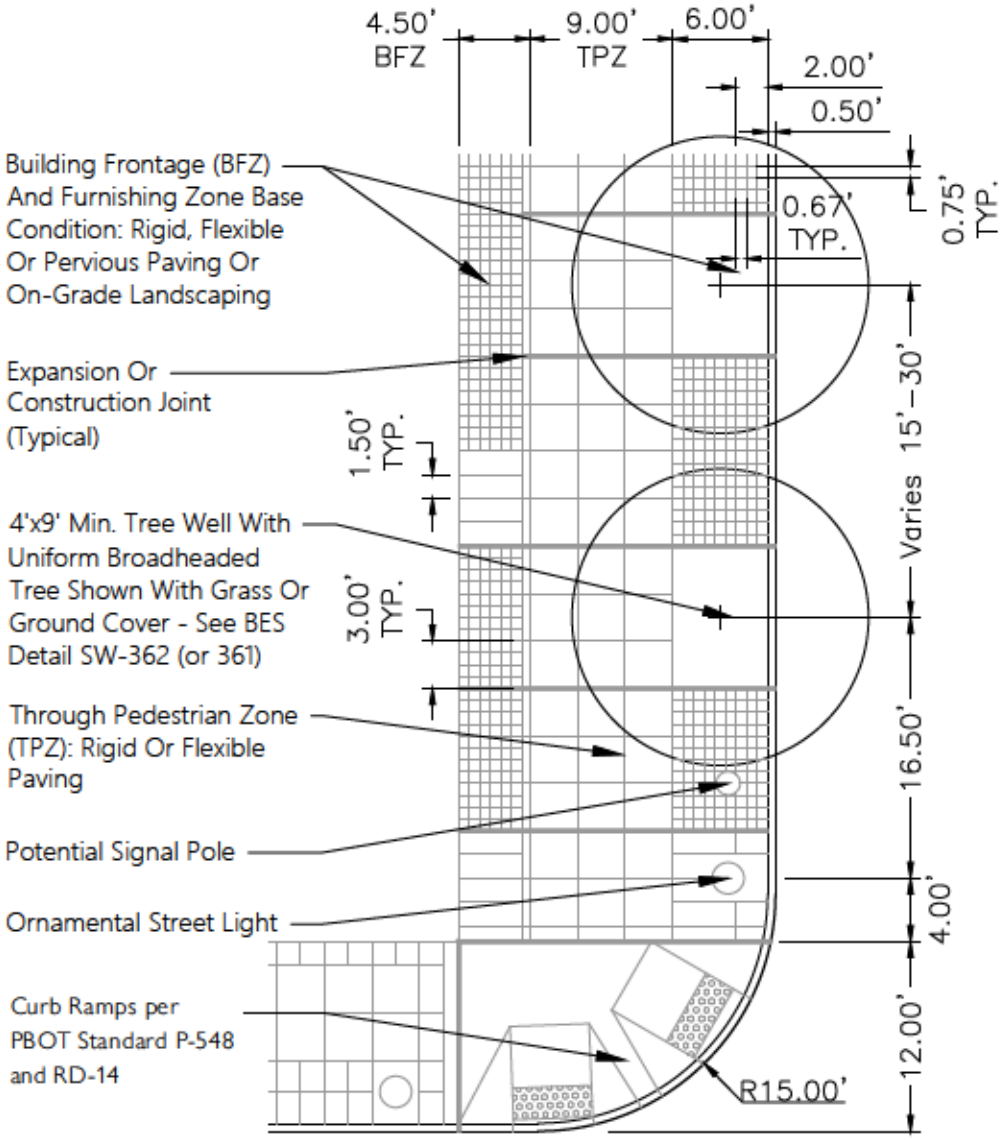
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-26



Partial Plan

Scale: 1" = 10'

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20' SIDEWALK PERVIOUS PAVING

#	REVISIONS	DATE	BY

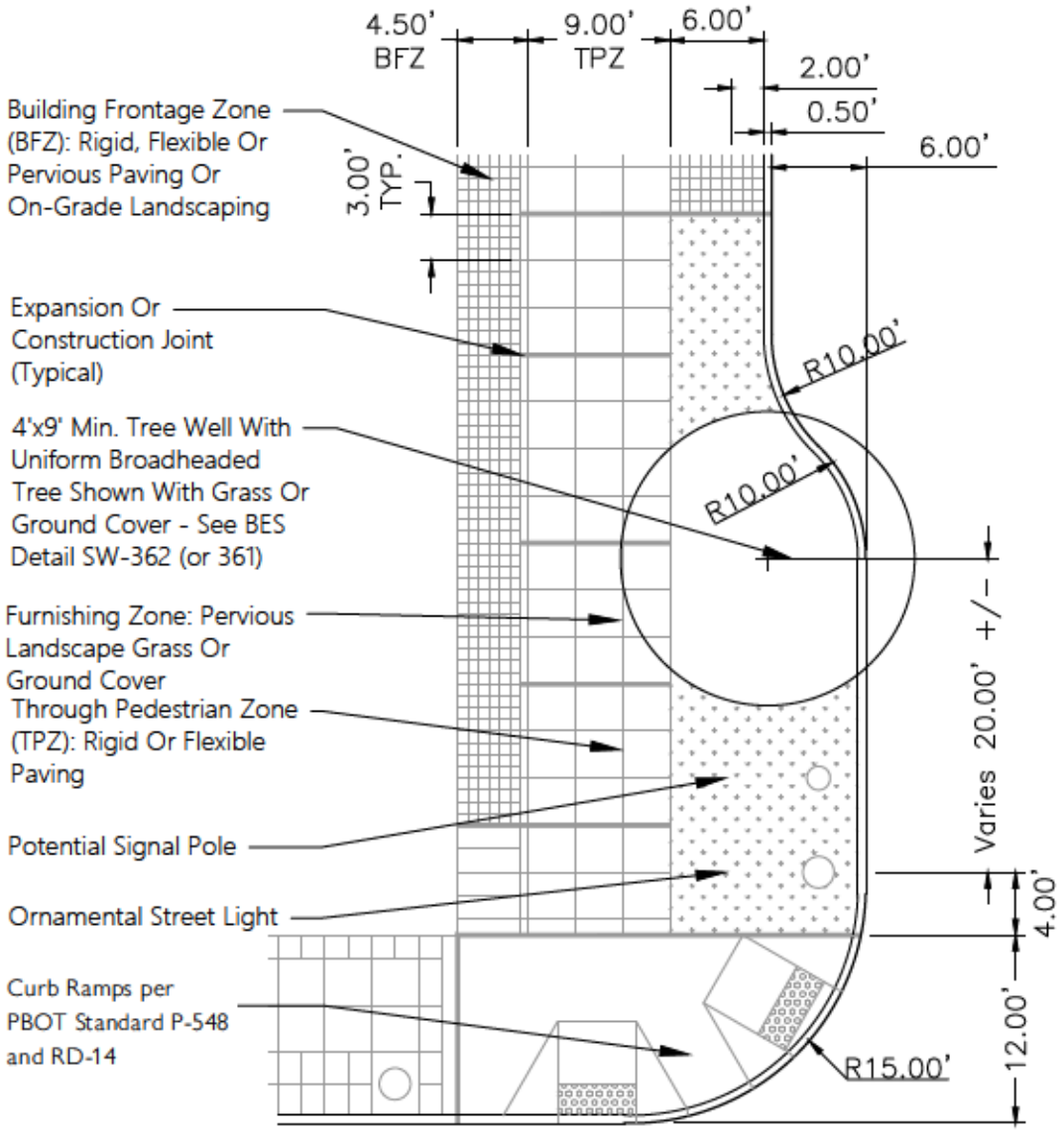
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-27



Partial Plan

Scale: 1" = 10'

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20' SIDEWALK EXTENDED

#	REVISIONS	DATE	BY

APPROVED

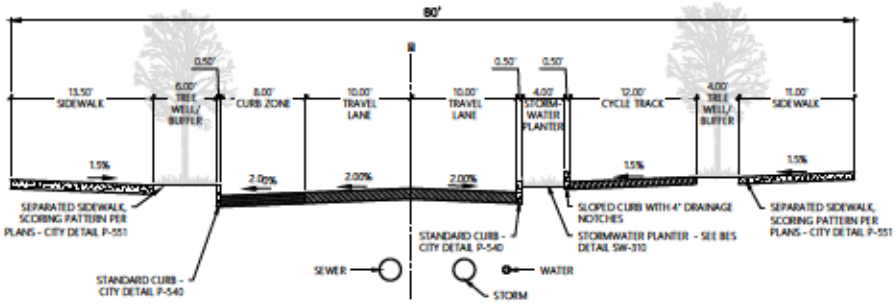
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

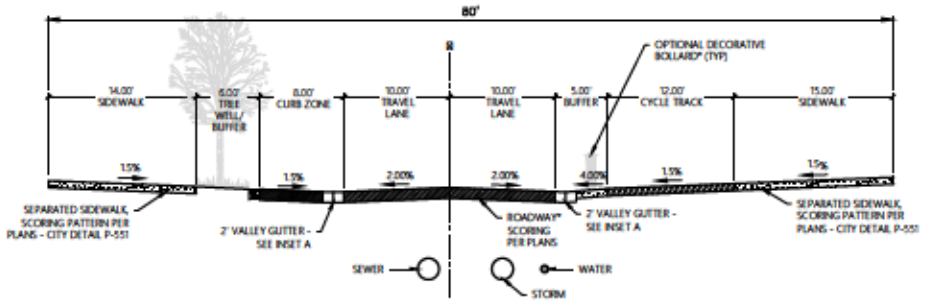
STANDARD PLAN NO.

RD-28

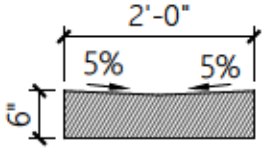
TYPICAL SECTIONS WITH CURB ZONE



OPTION A *SIDEWALK LEVEL TWO-WAY BIKE LANE*



OPTION B SIDEWALK LEVEL TWO-WAY BIKE LANE WITH LEVEL SURFACE ROADWAY



INSET A - CONCRETE VALLEY GUTTER

*Construction materials (including decorative bollards) to be selected as part of detailed design phase in a public works project. Material and product selection subject to approval by the City Engineer.

THIS IS A PRELIMINARY CONCEPT. FIELD VERIFICATION, SITE CONDITION ASSESSMENTS, ENGINEERING ANALYSIS AND DESIGN ARE NECESSARY PRIOR TO IMPLEMENTING ANY OF THE RECOMMENDATIONS CONTAINED HEREIN.

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CROSS SECTIONS - NW JOHNSON STREET

#	REVISIONS	DATE	BY

APPROVED

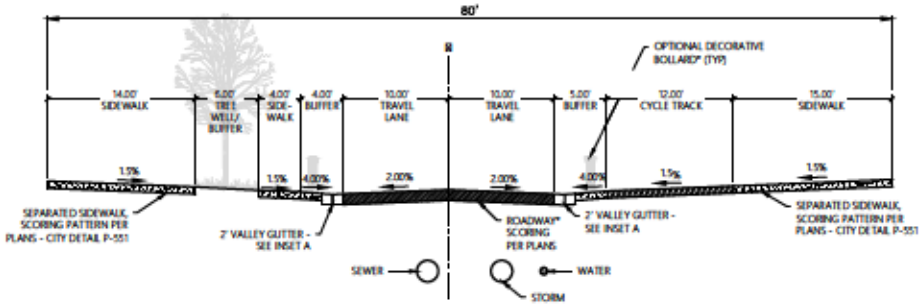
CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

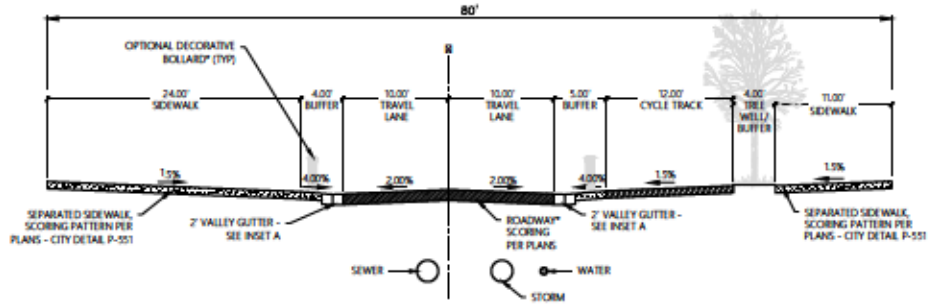
STANDARD PLAN NO.

RD-29A

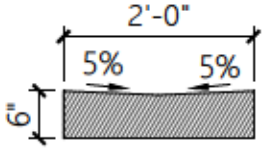
TYPICAL SECTIONS WITHOUT CURB ZONE



OPTION C SIDEWALK LEVEL TWO-WAY BIKE LANE WITH LEVEL SURFACE ROADWAY - TREES ON NORTH



OPTION D SIDEWALK LEVEL TWO-WAY BIKE LANE WITH LEVEL SURFACE ROADWAY - TREES ON SOUTH



INSET A - CONCRETE VALLEY GUTTER

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CROSS SECTIONS - NW JOHNSON STREET

#	REVISIONS	DATE	BY

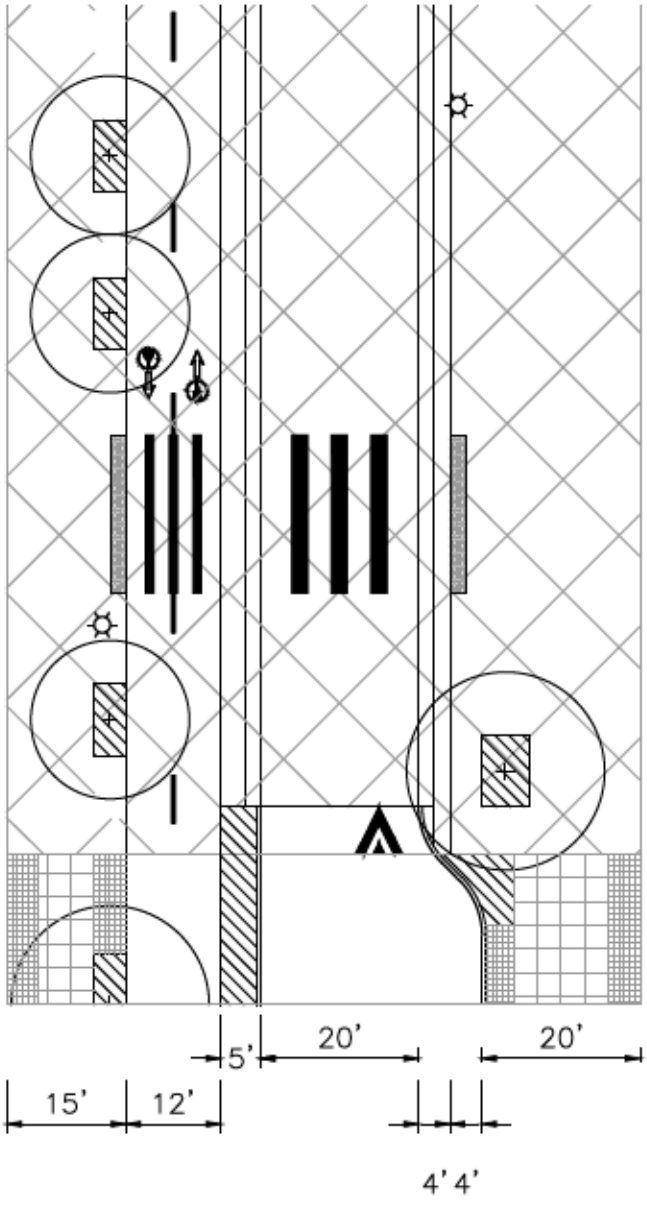
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-29B



Scale: 1" = 20'

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NW JOHNSON STREET - CURBLESS STREET DETAIL

#	REVISIONS	DATE	BY

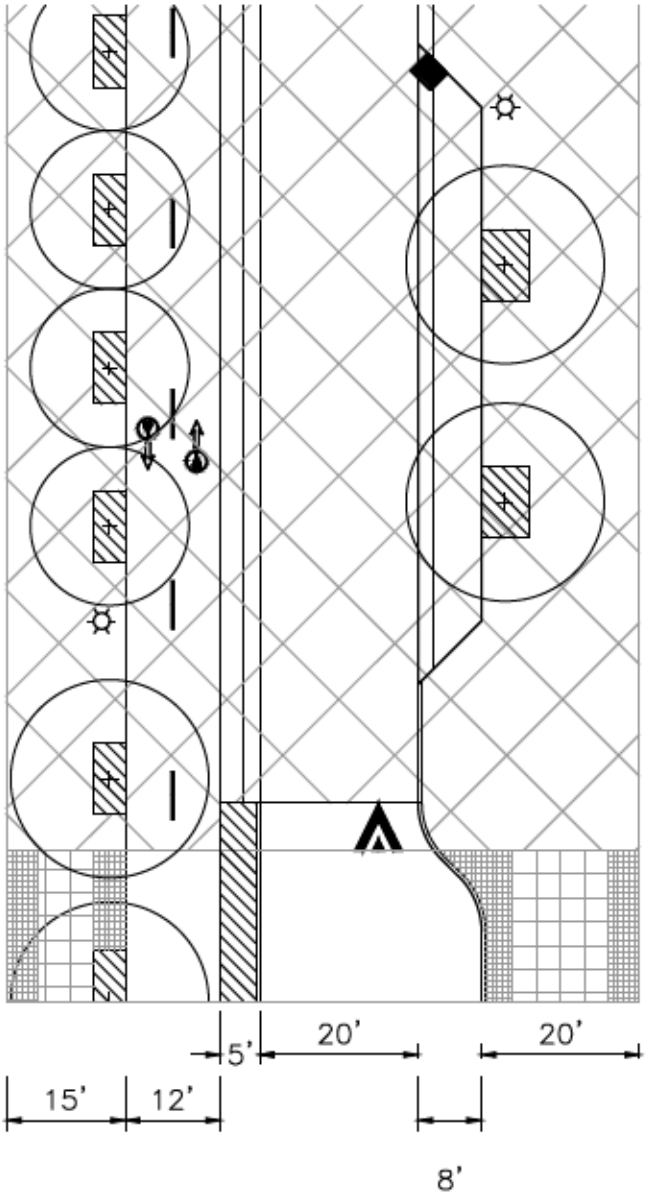
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-30A



Scale: 1" = 20'

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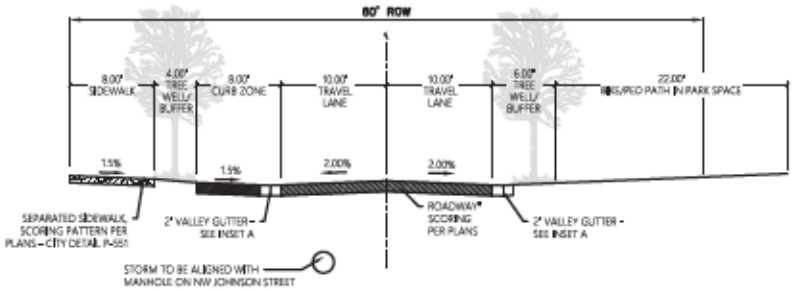
NW JOHNSON STREET - CURBLESS STREET DETAIL

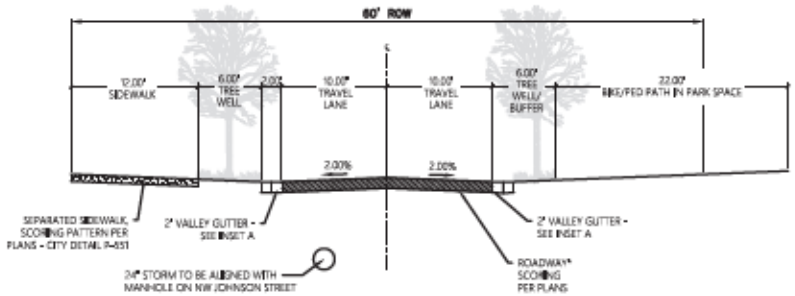
#	REVISIONS	DATE	BY	APPROVED	STANDARD PLAN NO.
				CITY ENGINEER DATE	RD-30B
				CITY OF PORTLAND, OREGON	

TYPICAL SECTION

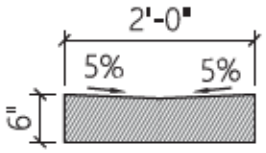
*Construction materials (including decorative bollards) to be selected as part of detailed design phase in a public works project. Material and product selection subject to approval by the City Engineer.



LEVEL SURFACE ROADWAY WITH PARKING AND SIDE PATH



LEVEL SURFACE ROADWAY WITH EXTENDED SIDEWALK AND SIDE PATH



INSET A - CONCRETE VALLEY GUTTER

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CROSS SECTIONS - NW PARK AVENUE

#	REVISIONS	DATE	BY

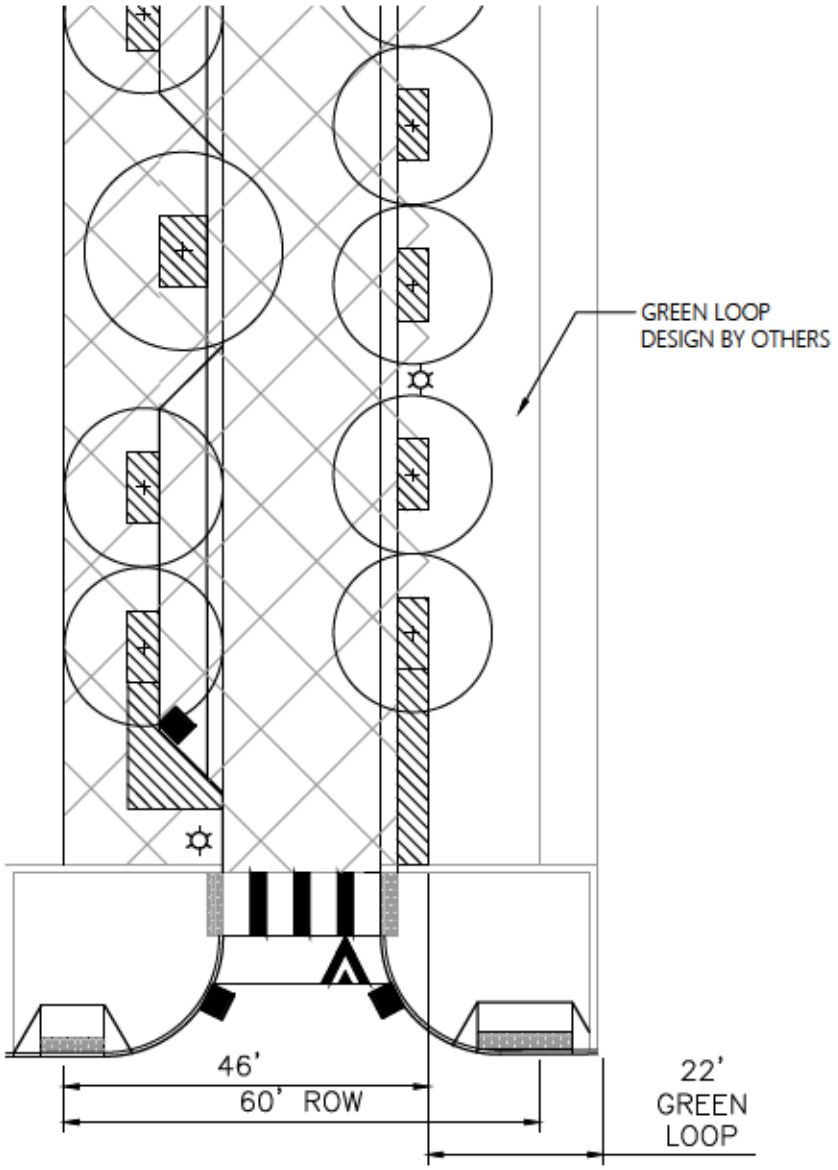
APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-31



Scale: 1" = 20'

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NW PARK AVENUE - CURBLESS STREET DETAIL

#	REVISIONS	DATE	BY

APPROVED

CITY ENGINEER DATE

CITY OF PORTLAND, OREGON

STANDARD PLAN NO.

RD-32