



**City of
Portland, Oregon
Bureau of Development Services**

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PERMANENT RULE

**RELATING TO Chapter 3.30
Bureau of Development Services**

**FOR INFORMATION CONTACT:
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TOPIC: Private Rights-of-ways (Streets, Alleys, Shared Courts, Common Greens and Pedestrian Connections)

AUTHORITY:

Under Title 3, Section 3.30.010.B and C and 3.30.040.A, the Director of the (BDS) has the authority to adopt written policies and procedures for the enforcement of Title 24 and 33, as delegated by the Planning Director.

The City's Subdivision Regulations are found in the 600's series of chapters in Title 33. Rights-of-way are created through the land use review process of Title 33. The width of the right-of-way and whether a right-of-way is public or private is also determined through the land use review process. Under Section 33.654.120, the Bureau of Development Services is given the authority to review the configuration of elements within private rights-of-way.

Under Chapter 33.710, 33.720 and 33.730, the Director of BDS has the authority to make land use recommendations and decisions, subject to certain procedural requirements.

These rules apply to the creation and construction of private rights-of-ways. The rules provide:

- Planning guidelines to achieve consistent BDS implementation of private right-of-way standards and criteria found in Title 33, within the framework of the land use procedures described in Title 33; and
- Technical standards for the construction of streets, alleys, common greens, shared courts, and pedestrian connections located in private right-of-way tracts.

CITATIONS:

Authorizing sections of City Titles 3, 24, and 33 are reprinted in Appendix D of this Rule.

Findings for Amendments and Adoption

1. Portland City Code Section 3.30.045 delegates the authority to adopt and administer rules appropriate to perform the duties of the Bureau of Development Services (BDS) set forth in Section 3.30.010 and prescribes procedures for administrative rule making.
2. The Bureau of Development Services (BDS) adopted a permanent rule applicable to the creation and construction of private rights-of-ways in 2010. BDS worked with staff from affected city bureaus to identify amendments to the existing rule. BDS notified the Development Review Advisory Committee (DRAC) of the proposed amendments at the January 20, 2022 meeting and

- published the proposed amendments on the BDS website December 17, 2021.
3. In accordance with Section 3.30.045, BDS published notice of public hearing in *The Oregonian* (December 22, 24, and 26,2021) and in *The Daily Journal of Commerce* (December 22, 24, and 27, 2021). BDS also posted notice of the hearing and made draft amendments to the administrative rule available on the BDS website. BDS notified Civic Life on December 17, 2021. No request for public hearing was made. Therefore, the public hearing was cancelled. One comment was submitted by the deadline. The comment included a request to include a “Best Practices” standard for existing improvements and allow programmatic permit approvals for private right of way operators. The rule was not amended to include that request as the existing BDS permit process can accommodate review of maintenance, repair, and replacement or other changes to existing private streets.
 4. The effective date is at least 30 days after the last date of required notices.

CONCLUSION

As provided in Portland City Code Section 33.710.090 and following the procedures in Section 3.30.045, the Director of BDS hereby adopts the amendments to the Administrative Rule.

REVISED: Rebecca Esau January 28, 2022.
Rebecca Esau, Director

EFFECTIVE: January 28, 2022

Updates the August 2, 2010 Rule

Permanent Administrative Rules

Private Rights-of-Way

**Streets, Alleys, Shared Courts,
Common Greens
and
Pedestrian Connections**

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I. General

A. Purpose and Scope

A private right-of-way tract is a tract of land created for the purpose of providing access to new lots created with a partition or subdivision, where public street access is not possible or practical. A private right-of-way can provide access for motor vehicles, bicycles, and pedestrians. A private right-of-way also often provides a route for private and public utility connections. In some circumstances a private right-of-way must also accommodate larger vehicles, such as fire trucks, delivery trucks, or garbage/recycling trucks. Private right-of-way tracts are typically owned in common by the owners of property served by the right-of-way, owners of property within a land division site, or a Homeowner's Association.

Rights-of-way are created through the land division review process described in the Portland Zoning Code (Title 33). The width of the right-of-way and whether a right-of-way is public or private is also determined through the land use review process governed by Title 33. The Zoning Code specifies that the Bureau of Development Services (BDS) will review the configuration and elements within private rights-of-way.

This rule serves two purposes.

- First, this rule includes planning elements to achieve consistent BDS implementation of the private right-of-way standards and approval criteria found in the Zoning Code.
- Second, this rule also includes technical elements that address the design and construction of streets, alleys, common greens, shared courts and pedestrian connections located in private right-of-way tracts.

Both the planning and technical elements of this rule are designed to promote public safety, by providing a consistent streetscape within private rights-of-way, and by establishing agreements to make sure these shared private improvements are maintained.

B. Authority

This rule is written under the authority of Titles 3, 24, and 33. Sections that relate to the design and construction of stormwater facilities governed by the City's Stormwater Management Manual, Public Works Permitting, public sewer connections, and other items subject to Title 17, are included for reference only.

C. Exceptions

Exceptions to the requirements of this rule may be requested as described below. Section 1 below describes the exception process for planning elements of this rule. Section 2 describes the exception process for the technical elements of this rule. Exceptions granted to these elements do not grant exceptions to other applicable requirements of the City's Zoning Code or administrative rules. Adjustments or exceptions to these other codes and rules may also be required.

1. Varying from Recommended Street Elements

A land division applicant may request right-of-way configurations that vary from the planning elements of this rule, as part of the land use review process.

- a. Requests for such exceptions must be provided in writing and included with the land use application. Requests for an exception must include the following: a description of the exception or alternate design being requested; a specific explanation describing why the exception or alternate design is requested; and an analysis of how the relevant land division standards and approval criteria in the Zoning Code will still be met. For example, a request to omit the on-street parking lane must include an explanation of why that element is not needed to "accommodate the expected users of the right-of-way", in response to the approval criteria found in the Zoning Code (see Chapter 33.654). Adjustments to the Zoning Code standards may also be required. Adjustments are land use reviews administered through the Zoning Code.
- b. There is no fee for this kind of exception request.

2. Alternative Designs and Construction Specifications

Alternate designs and construction specifications that do not meet the technical elements of this rule may also be requested.

- a. These requests are considered by the Building Code Board of Appeals, in accordance with Title 24.10.080.
- b. Requests for alternative designs or construction specifications will be approved if the proposal substantially meets the intent of these rules. Land Use review requirements of Title 33 or requests to vary from the Planning Element of this rule may not be appealed to the Building Code Board of Appeals.
- c. A building code appeal fee will be assessed. Information regarding building code appeals can be found at <http://www.portland.gov/bds>.
- d. Separate review processes for alternative design approaches and appeals to stormwater management requirements are documented in the City's Stormwater Management Manual.

3. Adoption of Code Guides

The Director of BDS may publish Code Guides to describe certain standardized technical alternatives. By establishing a Code Guide, commonly requested exceptions can be more efficiently evaluated - rather than requiring each individual request be separately approved through the formal exception process described above. The Director may accept alternative designs and materials identified in a published Code Guide without a formal exception request. Such Code Guides will be treated as an addendum to this rule.

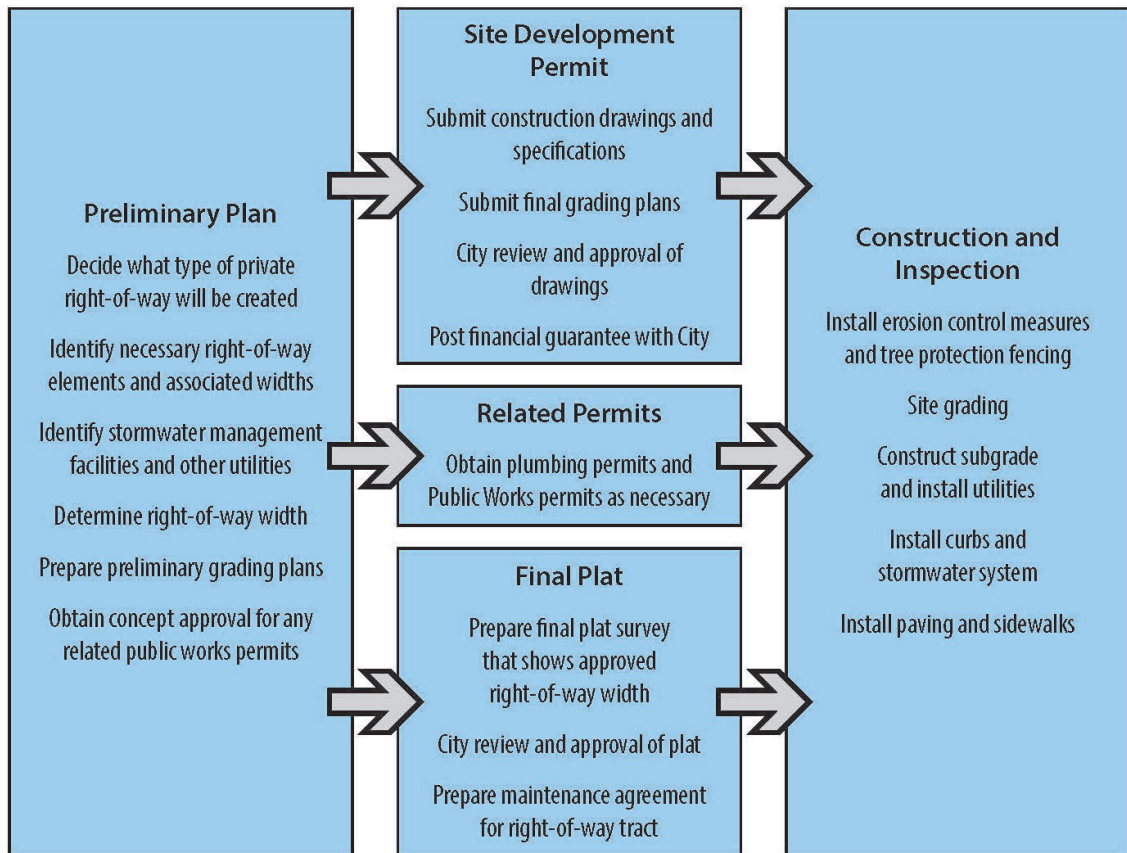
II. Review and Decision Process

A. Overview of Process

The planning and technical review of private right-of-way improvements occurs in four steps:

1. Preliminary approval for new streets, alleys, common greens, shared courts and pedestrian connections is granted through the Land Use Review process of the Zoning Code (Land Division Review);
2. Site preparation, grading and construction of right-of-way improvements require a Site Development Permit. Other permits for specific aspects of the project are required, such as plumbing permits for private water and sewer lines and public works permit for installation of public improvements such as a sanitary sewer main in the private right-of-way.
3. New streets, alleys, common greens and pedestrian connections must be designated on the final plat survey, and related legal agreements must be recorded. Typically, a performance guarantee for the improvements is required prior to approval of the final plat; and
4. Improvements must be constructed and inspected.

Figure 1 - Overview of Private Right-of-way Development Process



The planning and technical review that occurs in the application of this rule does not supersede the requirements of the City's Zoning Code or other applicable administrative rules. This rule is applied at each step, as described below:

B. Preliminary Plan Review

1. Description

Preliminary right-of-way designs are reviewed during the land division review process. This step includes identifying the necessary right-of-way elements and associated widths. The elements of the right-of-way are features that require horizontal space including, but not limited to, roadway surfaces, curbs, pedestrian walkways, stormwater facilities, tree planting strips, parking lanes, utilities, and setbacks.

The Land Use Services Division of BDS will apply the "Planning Rule" portions of Section III as a means to promote consistent implementation of the discretionary land use criteria that apply to the creation of new private rights-of-way. This rule describes default right-of-way configurations that the BDS Land Use Services staff will approve during the land use review (or recommend to another decision-making body in the case of a Type III land use review process).

The land division approval criteria of the Zoning Code regarding rights-of-way (Chapter 33.654) determine which right-of-way elements are appropriate. This criterion, by itself, is subjective, and application of it involves significant discretion. The planning rules in Section III of this rule describe how the Land Use Services Division of the Bureau of Development Services will apply that discretion. These rules are designed to determine what elements will be needed within the right-of-way. The width of the right-of-way will be the total width necessary to accommodate all of the required elements. The figures and diagrams referenced in Section III are conceptual drawings intended to illustrate how the street elements may be arranged. These drawings are not intended as final construction drawings.

The technical rules in Section III describe construction specifications for the various right-of-way elements, including dimensions and materials. This section also references a number of standard plans and diagrams. These drawings are not intended as final construction drawings. The Site Development Section of the Bureau of Development Services administers the technical standards in Section III, except III.J, Stormwater Facilities.

The Land Use Services Division of the Bureau of Development Services will specify the required right-of-way elements and the required right-of-way width in the land use decision or recommendation. This decision will be based on both the planning and technical rules in Section III.

2. Land Use Review Submittal Requirements

In addition to the submittal requirements of Chapter 33.730 of the Zoning Code for land division applications, the information listed below must be included with a land use review application that includes a private right-of-way:

- a. A preliminary private street design plan shown on a site plan and cross-section that includes the following, as relevant to the proposal:
 - (1) Elements of the right-of-way, including roadway width, surfacing, curb type and location and setbacks;
 - (2) Driveway locations and parking spaces;
 - (3) Street tree locations and any other landscaping or amenities proposed within the private right-of-way; and
 - (4) Type and location of stormwater management facility.
 - (5) Type and location of signage; e.g. street name, no parking, etc.
- b. An emergency access plan for new lots that have frontage on a private street. The plan must meet the requirements of the Portland Fire Code and Portland Fire & Rescue Code Guide: Fire & Life Safety Requirements for Fire Department Access and Water Supplies. Code and other references are available at <https://www.portlandoregon.gov/fire/48127>. The Code Guide is available at <https://www.portlandoregon.gov/fire/45622>.
- c. Where an alternative design or construction specification that does not meet the technical elements of this rule is proposed, an approved building code appeal for the proposed design must be obtained, or other approval from BES related to stormwater management.
- d. Any existing and proposed easements, including public or private utility easements, must be shown on the site plan or utility plan.
- e. If the street will contain new public utilities such as sanitary sewers, storm sewers or water mains, the City bureau that will own the new public asset(s) may have specific requirements for the land division review associated with the permitting of the utilities, e.g. a Public Works Permit.
- f. When the street proposed will not be surfaced with standard paving, such as with common greens, pedestrian connections and streets surfaced with paving blocks or other pervious surface materials, a construction management plan is required. The plan must show how construction access will be accomplished and how the street surface or other installed improvements will be protected during construction on the site. Stormwater management facilities need to be protected during and rehabilitated after construction. When appropriate, the plan must include a timeline for completing street construction relative to the completion and occupancy of housing units.
- g. A garbage and recycling collection plan that describes the requirements of the hauler and how the proposed private street complies.

C. *Permit Review*

1. Description

The street elements must be constructed in substantial conformance with the street plan approved in the preliminary plan review. Minor modifications to the approved street elements may be made during permit review provided the standards of this rule continue

to be met and the street plan remains in substantial conformance with the approved plan.

A Site Development permit from the Bureau of Development Services is required for the construction of private streets, alleys, common greens, shared courts and pedestrian connections. All private right-of-way tract improvements must meet the technical rules found in Section III, unless an alternative has been approved through the applicable appeals process described in Section I.

Generally, Site Development permit applications may be submitted after preliminary land division plan approval is granted. However, permits are not issued until a final plat application is submitted, and the final plat survey is determined to be in a complete and ready-to-approve state where no additional changes to permit drawings are required.

2. Types of Permits Required

- a. A Site Development permit is required for site preparation, clearing, tree removal, grading, and construction of private right-of-way improvements.
- b. Plumbing permits are required for construction of any private storm, sanitary sewer and water services. Plumbing permits are obtained by the contractor performing the plumbing work. Note: Separate plumbing permits are required for the development on individual lots.
- c. Electrical permits are required if street lighting is proposed. Electrical permits are obtained by the contractor performing the electrical work.
- d. Public Works permits may be required for the construction of public utilities (for example public sewer mains) located in the private right-of-way.
- e. BES sewer connection permits are required for construction of new connections from private property to the public sewer, both when the new sewer lateral connects to an existing public connection - a City branch - and when a new lateral needs to extend from the building to the public sewer.
- f. A Minor Improvement Permit from PBOT is required for the driveway connection of the private street to the public street, if it is not being permitted through a public works permit for public street frontage improvements.
- g. A Site Development permit also is also required for clearing and grading work on private property to prepare for future public street construction. Public street construction is not regulated by this rule.

3. Site Development Permit Submittal Requirements

Electronic plans and a cost estimate prepared by the project engineer must be submitted with each application for a permit issued by BDS. General submittal requirements for BDS permit applications are outlined in Title 24.10.070. Grading and street design plans must be prepared by, or under the direction of, a licensed civil engineer (not required for common greens and pedestrian connections).

Stormwater collection, conveyance and disposal systems must be designed in accordance with the State of Oregon Plumbing Specialty Code. Systems designed by a licensed engineer in accordance with the City of Portland Sewer and Drainage Facilities Design Manual may be allowed if approved by the Director of BDS. Stormwater quantity and quality control must be provided and designed in accordance with the most current edition of the City of Portland Stormwater Management Manual.

Information shown on the plans must be consistent with all conditions of approval imposed with the land use decision. The information listed below must be included on the plans or in the permit application. The Director may waive any of these items where they are not applicable (for example, street pavement sections would typically not be required if the right-of-way is to be developed as a Common Green).

- a. Vicinity map, legal description of the site, north arrow, horizontal and vertical scales and legend.
- b. Site plan showing property boundaries; street names; properties identified by lot number; location of existing structures, easements, utilities, nearby water courses, drainage patterns, and stormwater management facilities. The private right-of-way tracts must be clearly indicated as being private and distinguishable from public rights-of-way.
- c. Latest available topographic map showing the proposed clearing limits and present and proposed contours of the land at not more than two-foot intervals. Tree protection for trees to be preserved must be shown.
- d. Utility plan showing the location and details of all existing and proposed utilities including fire hydrant information.
- e. Location and details of streets, curbs, sidewalks, sidewalk ramps, driveways and other proposed improvements. Reference may be made to adopted City Standard Plans or Oregon Standard Drawings without the need to redraw or reprint them (see Appendix B). Specifications may be noted on the plans or submitted separately.
- f. Erosion control plan showing temporary and permanent erosion control measures in accordance with Title 10.

Note: A separate Oregon DEQ 1200-C permit may be required for developments that have one acre or more of ground disturbance and may discharge to surface waters or conveyance systems leading to surface waters of the state. The design team is strongly encouraged to contact Oregon DEQ (www.oregon.gov/deq) regarding the permit requirements which may apply to multiple phases of the proposed development.

- g. Structural details for retaining walls, bridges, culverts and other elements. Engineering design calculations must accompany plans.
- h. Typical street sections.
- i. Centerline stationing.

- j. Gutter line profiles.
- k. Vertical curve data (BVC, VCPI, EVC, MO, low point, etc.).
- l. Horizontal curve data (PC, PT, delta angle, length, radius).
- m. Turning radius as required by the Fire Code, if the street will serve as a fire accessway.
- n. Location of signs, including street signs and no-parking signs.
- o. Seal and signature of Registered Professional Engineer (not required for common greens and pedestrian connections).
- p. Existing and proposed utilities and easements.
- q. When the street proposed will not be surfaced with standard paving, such as with common greens, pedestrian connections and streets surfaced with paving blocks or other pervious surface materials, a construction management plan is required. The plan must show how construction access will be accomplished and how the street surface or other installed improvements will be protected during construction on the site. When appropriate, the plan must include a timeline for completing street construction relative to the completion and occupancy of housing units.
- r. Garbage and recycling collection plan per Section II.B.2.g above.
- s. A landscaping and tree preservation plan that is in conformance with the land use decision and shows how the standards are met.
- t. Engineer's cost estimate with quantities and unit costs.
- u. Stormwater report with infiltration tests and geotechnical report if required.
- v. Geotechnical engineering report, as required by the Director, that addresses development including, but not limited to, earthwork, grading, subgrade preparation, drainage and slope stability.
- w. A turning movement analysis stamped by a registered design professional demonstrating vehicle maneuvering.

Prior to Site Development permit issuance, a pre-construction meeting with the applicant, the design team, and the contractor may be required. The purpose of the meeting is to review required permits, the proposed sequence of construction, erosion and sediment control, special inspections, and other aspects of the project.

D. Final Plat Review

1. Description

The right-of-way configuration shown on the final plat must substantially conform to the configuration approved during the preliminary land use review. The final plat process is not an opportunity to re-configure the right-of-way tract. Minor changes to the right-of-way tract configuration can be made at this stage, to accommodate final engineering decisions, if the changes are consistent with the requirements of the Zoning Code (See Chapter 33.663, Final Plats). Maintenance agreements and performance guarantees for the private right-of-way are finalized during the final plat review process.

2. Submittal Requirements

Where a private right-of-way is proposed or required, the information listed below must be included within the final plat application:

- a. The boundaries of the proposed right-of-way tract must be shown on the final plat survey, with dimensions and the name of the street noted, along with any easements to the City of Portland that are required to be included in the tract.
- b. Documentation that all required permits have been submitted for all required right-of-way elements, including any required financial guarantees for the proposed improvements (see Section VII).
- c. Maintenance agreements for the private right-of-way tract (see Section VI).

E. Construction and Inspection

1. Description

All construction work for which a Bureau of Development Services permit is required is subject to inspection by the Bureau of Development Services. Certain inspections may be designated as special inspections by the Director. In such cases, the project owner or the owner's agent must employ a certified materials testing lab or the engineer of record to perform the special inspections, subject to approval of the Director.

2. Types of Inspections Required

Typical inspections include, but are not limited to; pre-construction erosion control, grading, subgrade preparation, base rock placement and compaction, utility trench backfill and compaction, plumbing inspections (performed under a separate plumbing permit) and pavement placement and compaction. At substantial completion of a project, the special inspector must certify that the work has been done in conformance with the approved plans and specifications, and clearly indicate any significant deficiencies or modifications.

3. Permit Modifications

All construction work must be performed in accordance with the plans approved by the Director. The Director may require, or the project owner or owner's agent may request, that designs be modified during construction. If modifications are required, the owner or owner's agents must submit in writing all requests for modifications to the engineer of record. The engineer of record must be responsible for tracking all modifications and

ensuring that approval of the Director is obtained. The Director may require revised plans, prepared by the engineer of record, to be submitted for permit revision.

III. Design and Construction Requirements

A. *Right-of-way Elements*

The elements of the right-of-way are features that require horizontal space, such as roadway surfaces, curbs, pedestrian walkways, stormwater facilities, tree planting areas, parking lanes, utilities and setbacks. The total right-of-way (tract) width is based on which of these right-of-way elements are deemed necessary to serve the expected users of the street, per Zoning Code approval criteria in Chapter 33.654. The planning rules below are used to determine which right-of-way elements will be required. The technical rules below are used to determine the safe design of each element, and in some cases, the resulting width, shape, or configuration of a safe design. If an alternate design for a technical element is proposed, an approved building code appeal or adopted Code Guide, or approval through the applicable appeals process described in Section I, is required. All private rights-of-way are to be designed by registered Professional Engineers licensed in the State of Oregon with the exception of common greens and pedestrian connections

B. *Types of Private Rights-of-way*

The Zoning Code (Chapter 33.654) determines when private rights-of-way can be used. With the exception of alleys and driveways, private rights-of-way are considered streets by the Zoning Code. There are five different types of private rights-of-way, described below. See Figure 2.

1. Standard Private Street

A right-of-way that provides access for motor vehicles, pedestrians and bicycle travel to abutting property. Private streets may serve up to 8 lots within a single site. New streets serving more than eight lots or with the potential to serve another site must be dedicated as public rights-of-way, and are not subject to this rule. The connection between the private and public streets will require a driveway approach to be specified on the plans.

2. Private Alley

A right-of-way that provides vehicle access to a lot or shared parking area. Generally, alleys provide secondary vehicle access; however, where vehicle access from the street is not allowed or not possible, the alley may provide primary vehicle access. The number of lots served by a private alley is not limited. Private alleys do not serve as the primary street frontage of a lot (front lot line) as required in the Zoning Code. Alleys are not designed to serve as the primary pedestrian access to a lot.

3. Common Green

A right-of-way that provides access with a paved center strip for pedestrians and bicycles to abutting property and provides a common area for use by residents. A common green may function as a community yard. Hard and soft landscape features may be included in a common green, such as ground cover, trees, shrubs, surfaced paths, patios, benches, or gazebos. Common greens do not provide motor vehicle access. The number of lots served by a common green is not limited. Common Greens do not need to be designed by a Professional Engineer.

4. Pedestrian Connection

A right-of-way that provides access for pedestrians and bicyclists and provides a through connection between two streets. Private pedestrian connections typically connect two private rights-of-way, but may connect a private street to a public street. Through connections between two public streets must be dedicated as public rights-of-way, and are not subject to this rule. Pedestrian Connections do not need to be designed by a Professional Engineer.

5. Shared Court

A courtyard-like right-of-way that provides shared vehicle, pedestrian, and bicycle access to abutting property. The access for all modes is accommodated on the same surface and not differentiated by grade separation. Like a common green, a shared court may function as a community yard. A shared court includes traffic calming measures to ensure safe co-existence of vehicles, pedestrians, and bicycles in the same space. Shared courts should be designed to prioritize use of the right-of-way by pedestrians. Hard and soft landscape features may be included in a shared court, such as trees, shrubs, patterned brick paving, or benches. Up to 16 lots may be served by a shared court.

C. *Dead End and Through Streets*

The Zoning Code regulates when private dead end streets are allowed, and when public through streets will be required. See Sections 33.654.110 and 33.654.150 of the Zoning Code.

D. *Summary of Required Right-of-Way Elements*

The rules of Section III are summarized in Figure 2 below. Appendix C provides more detailed drawings illustrating some of the most common configurations, and the corresponding right-of-way widths.

Figure 2 - Summary of Required and Allowed Street Elements

Right-of-way Element	Type of Right-of-way				
	Standard Private Street	Alley	Pedestrian Connection	Common Green	Shared Court
Vehicle Roadway	Required	Required	Not Allowed		Required
Turnarounds	May be Required (see Section III.F)		Not Applicable		May be Required (see Section III.K)
On-Street Parking	May be Required (see Section III.G)	Not Required	Not Allowed (bicycle parking allowed per III.G)		May be Required (see Section III.G)
Pedestrian Walkway/ Sidewalk	May be Required (see Section III.H)	Not Allowed	Required		Special Rules Apply (see Section III.K)
Street Trees and Landscaping	Required	Not Required	Required		
Stormwater Facility	Required (See Section III.J)				
Building Projections	May be Allowed. May require Building Code Appeal in some circumstances (see Section III.M)				
Setbacks	May be Required (see Section III.N)				
Other Structures	May be Allowed (see Section III.O)				

E. Vehicle Roadways

1. Planning Rule

- a. When a Vehicle Roadway is Required. Private streets and alleys must include a vehicle roadway. Vehicle roadways are prohibited in Common Greens and Pedestrian Connections. Special rules apply to the vehicle roadways in Shared Courts. See Section III.K of this rule. Chapter 33.654 of the Zoning Code determines the required width of private right-of-way to meet the needs of expected users of the right-of-way. See Figure 3 to determine the required roadway width within the private right-of-way.

2. Technical Rule

- a. Design Speed. Vehicle roadways in streets and alleys less than 300 feet in length must have a design speed of no more than 15 miles per hour. Vehicle roadways in streets and alleys equal to or greater than 300 feet in length must have a design speed of no more than 20 miles per hour. See exception for shared courts in Section III.K.

- b. Design Vehicle. The design vehicle for private street roadways must be the SU 30 design vehicle as defined by *A Policy on Geometric Design of Highways and Streets*, 2018, 7th Edition (American Association of State Highway and Transportation Officials). Where the street is designated as a *fire lane* or the *approved means of fire department access*, the design vehicle must be the B-40 design vehicle. See exception for shared courts in Section III.K.
- c. Street Roadway Width. The vehicle roadway width must conform to Standard A or Standard B, as described in Figure 3. Where standard curbs are provided, the roadway widths listed exclude the area occupied by the curbs. Where mountable or flush curbs are provided, the curb may be included within the width. Section III. K. of this rule provides the roadway width for Shared Courts.
- d. Alley Roadway Width. The minimum vehicle roadway width for an alley is 16 feet. Where standard curbs are provided, the roadway widths listed exclude the area occupied by the curbs. Where mountable or flush curbs are provided, the curb may be included within the width.
 - (1) A wider roadway may be required where the alley is designated as a fire lane or the approved means of fire department access; and
 - (2) A wider roadway may be required where necessary to obtain adequate turning radius.
- e. Horizontal Alignment. The horizontal alignment must be designed in accordance with AASHTO guidelines for safe stopping sight distance in combination with the design speed and the vertical alignment.
 - (1) The vehicle roadway must have an inside curve radius of at least 30 feet.
 - (2) Curb returns for interior intersections must have a radius of at least 10 feet at the face of the curb and allow sufficient room for the installation of any ramps required to meet the requirements of the American's Disability Act.
 - (3) Sweep path analysis software may also be used to establish necessary roadway (or shared court clear zone) curve radius, under the direction of a Licensed Professional Engineer.
 - (4) The centerline of the street or alley must be aligned on the centerline of the right-of-way, unless topographic or other conditions dictate.
 - (5) Access connections to the public right-of-way must be at a 90-degree angle unless otherwise approved by the Portland Bureau of Transportation.
- f. Vertical Alignment. The vertical alignment must be designed in accordance with AASHTO guidelines for safe stopping sight distance in combination with the design speed and horizontal alignment.
 - (1) Vertical curves must be designed to produce a middle ordinate of 0.20 feet or greater.
 - (2) For grade changes less than 2.5 percent, grade breaks are preferred.
- g. Grades. Grades must be designed to fit the topography, ensure proper drainage and promote traffic safety.

- (1) The maximum street grade must be 15 percent.
 - (2) The minimum street grade must be 1 percent.
 - (3) Approaches to public streets and intersections must have a platform or landing area of at least 20 feet in length for exiting vehicles. The length of the platform or landing area must be measured from the intersecting face of curb or edge of pavement. The platform must have an average grade less than 5 percent.
- h. Street Clearance. The width of the street, alley or shared court clear zone must have a vertical clear height of at least 14 feet.
 - i. Street Section. A typical street section is shown in Figure 4. Pavement cross-slope for non-porous surfaces must range between 2 percent and 6 percent. Pavement cross-slope in turnarounds must not exceed 5 percent normal to the circular travel path.
 - j. Curbs. Curbs are required and must conform to Oregon Standard Drawing RD700.
 - (1) Mountable curbs are preferred unless the gutter flow capacity would not provide sufficient flow control or an alternate curb type is required for accessibility. The height for mountable curbs is 4 inches. Standard curbs are required when on-street parking is required.
 - (2) For alleys and shared courts, valley gutters or a 6-inch wide concrete edge may be used in place of curbs, with the finish surface flush to the street pavement surface. The concrete edge must extend to the depth of the base material. Valley gutters are preferred.
 - (3) The Director may approve the modification or omission of curbs, if they would interfere with the operation of a stormwater system approved by the Bureau of Environmental Services.
 - k. Street Entrance Apron. The entrance or intersection with a public street must have a concrete apron as approved by the Portland Bureau of Transportation. Larger apron wings may be required where the private street is designated as a fire lane or the approved means of fire department access, to ensure adequate turning radius for emergency vehicles.
 - l. Driveway Aprons. Internal driveway connection aprons to private streets are required unless mountable or flush curbs are used. Driveway aprons must conform to Oregon Standard Drawing RD715, and RD740, or RD750.
 - m. Roadway Surfacing. Pavement sections must be designed in accordance with the AASHTO Guide for Design of Pavement Structures, or to specifications published by the Interlocking Concrete Pavement Institute. The design life must be at least 20 years and must be designed to support the weight of a fire truck. Pavement sections supporting commercial or industrial uses must be designed for the average daily traffic (ADT) volume determined by a professional engineer. See the supplemental requirements for porous pavement designed for stormwater infiltration. Not all roadway surfaces may be allowed when grades

exceed 10 percent.

(1) *Asphalt Concrete.* The minimum section for asphalt concrete must consist of a 1.5 inch thick Class C mix over a 1.5 inch thick Class B mix (or a 3-inch thick Class C mix), over a 6 inch thickness of 1½-inch minus crushed rock. Asphalt concrete must be compacted to a density of at least 91 percent of the Rice Proctor. Crushed rock must be compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557.

(2) *Portland Cement Concrete.* The minimum section for portland cement concrete must consist of a 6 inch thickness of portland cement concrete over a 2 inch thickness of 1½-inch minus crushed rock. Portland cement concrete must have a compressive strength of at least 4,000 pounds per square inch. Crushed rock must be compacted to a dry density of at least 90 percent of the maximum dry density determined in accordance with ASTM D1557.

(3) *Concrete Paving Blocks.* Interlocking concrete paving blocks, or sand-set concrete paving blocks may be used as roadway surfacing subject to the following standards:

- Blocks must be at least 3 1/8 inches (8cm) thick, with a minimum compressive strength of 8,000 psi.
- Must provide a minimum weight capacity prescribed by the Fire Bureau.
- A curb or concrete edge restraint must be provided surrounding the area where paving blocks are used (see Figure 5).
- Utility covers and inlets must have square concrete collars around them (see Figure 5).
- The roadway surface must not have a slope greater than 10 percent.
- Pavement cross section (including block pattern, edging, base rock, geotextile materials, and bedding sand), must be designed and specified by a Registered Professional Engineer.
- Paving blocks must be installed in strict accordance with manufacturers' specifications. Bedding sand must be obtained from a source approved by the paving block manufacturer.
- Surface tolerance from grade elevations must not deviate more than 3/8 inch under a 10-foot flexible straightedge.
- Paving block systems must be accompanied by a stormwater quantity and quality control facility that meets the requirements of the most current edition of the Stormwater Management Manual, and that is connected to an approved disposal point.

(4) *Pervious Paving Blocks and Asphalt.* Paving block systems and asphalt roadway systems may be designed to allow direct infiltration of stormwater. An open graded asphalt mix should be used. All roadway surfaces within private streets are assumed to function as impervious surfaces for purposes of stormwater management design, unless designed and approved through the Presumptive or Performance Approach as specified in the most current edition of the Stormwater Management Manual (standard detail SW-110 and SW-210). Roadway systems designed with paving blocks and pervious asphalt need to be

designed to the equivalent strength of concrete or asphalt roadway sections. The use of paving blocks requires submittal of the California Bearing Ratio, or other suitable measurement of subgrade strength and a construction management plan to ensure the permeability of the street surface will not be impacted by construction traffic.

- Where paving systems are designed to allow direct infiltration of water, BES will require infiltration testing during preliminary plan review phase, and may require infiltration testing of the subgrade before final roadway surfacing occurs.
- A high-flow overflow must be provided to an approved disposal point. Overflow stormwater drainage and disposal must be designed to handle runoff up to the 100-year event. The 100-year storm inundation area must be determined and must show that structures will be reasonably safe from flooding and that property damage and safety risks will be avoided.
- Paving systems designed to allow direct infiltration of stormwater may not be used where the estimated separation from bottom of the base rock to groundwater is less than 3 feet, or within the Columbia South Shore Wellhead Protection Area.
- The placement of public utilities under porous paving blocks or asphalt must be to the standards of Section IV, Services and Utilities.
- Pervious concrete must be installed by a contractor certified by the National Ready Mix Concrete Association's Pervious Concrete Contractor Certification Program.

(5) *Grid Concrete and Grass Paving Systems.* Grid concrete and grass paving systems (i.e. grasscrete or grasspave) may be used in dedicated parking bays. Where used, these paving systems must be designed and installed according to the specifications published by the Interlocking Concrete Pavement Institute. Use of these surfaces for other private street roadways is not allowed.

- n. Subgrade. Subgrade soils must be compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557. Fill material for subgrade must be natural granular material free of organic or other deleterious materials. Particle size must not exceed 6 inches in maximum dimension. Subgrade soils for paving blocks must be prepared per the manufactures specifications for the traffic volumes and native soil conditions expected for each site. Pervious paving systems must comply with the requirements of the Stormwater Management Manual.
- o. Guardrails. Vehicle guardrails are required where embankment slopes exceed 33 percent within a horizontal distance of 7 feet measured from the edge of the driving lane. Vehicle guardrails are required to protect fixed objects if the Director determines the guardrail is necessary to provide adequate safety. Vehicle guardrails must be constructed in accordance with Oregon Standard Drawings RD400, RD405, and RD415.
- p. Pavement Markings. Pavement markings must be designed and located in accordance with the Federal Highway Administration Manual on Uniform Traffic Control Devices.

F. Turnarounds

1. Planning Rule

- a. When a Turnaround is Required. Turnarounds are required by Chapter 33.654 of the Zoning Code in any of the following situations:
 - (1) If four or more lots within the land division site are served by or have frontage on the street right-of-way (tract);
 - (2) If the street is at least 300 feet long; or
 - (3) If the Director determines a turnaround is necessary to provide adequate maneuvering to allow vehicles to exit the private street in a forward motion or to provide adequate vehicle access with driveways meeting minimum standards.
 - (4) If the City Engineer requires a turnaround (for example, to ensure vehicles enter and exit the public right-of-way safely, in a forward motion).
 - (5) If the Fire Bureau determines a turnaround is necessary to provide adequate service.
- b. An Adjustment to the Zoning Code standards for turnarounds is required if a required turnaround is not provided.
- c. A turn-around is generally required where garbage service to each lot is desired (see Section IV).
- d. Landscaping, grasscrete or pervious paving are allowed in the center of circular cul-de-sac turnarounds, subject to BDS approval.
- e. In situations where a turnaround is not required, one may be provided. Such turnarounds must meet the requirements of this Rule.

2. Technical Rule

- a. Turnaround Size and Shape
 - (1) Turnarounds on streets more than 300 feet long must be in accordance with Figures 6, 7, or 8.
 - (2) Cul-de-sac turnarounds on streets that do not exceed 300 feet long must be in accordance with Figure 9. The minimum curb radius allowed must be 18 feet.
 - (3) Hammer head turnarounds on streets that do not exceed 300 feet long must be in accordance with Figure 10.
 - (4) For purposes of this rule, street length is measured as shown on Figure 11.
 - (5) Streets that serve lots that desire solid waste collection services must meet the turnaround standards of the Administrative Rule for Solid Waste and Recycling published by the Bureau of Planning and Sustainability.

- b. When a turnaround is not provided, the street width and driveway locations must provide adequate maneuvering for vehicles to exit the private street in a forward motion.

G. On-Street Parking

1. Planning Rule

- a. When On-Street Parking Must be Accommodated. Where a roadway is provided for vehicle access, sufficient roadway width must be provided to allow on-street parallel parking on at least one side of the roadway, consistent with Figure 3 and Figure 12. In residential zones, on-street parking must be provided at a ratio of one on street parking space per every two lots. Exceptions to this requirement may be granted in the following situations:
 - (1) On-street parking is not required on alleys, but may be provided.
 - (2) On-street parking is not required on a street that is less than 300 feet long, if only one to three lots have frontage on that street right-of-way and the lots can only be developed with a house and one accessory dwelling unit or a duplex.
 - (3) As an alternative to parallel parking, on-street parking may be provided in parking bays (see Figure 12) in the same ratio described above. The parking bay must be included within the private right-of-way tract.
 - (4) On-street parking is not required where the proposed development will be served by a shared parking lot, located in a shared parking tract. When this exception is utilized, parking must be provided in the same ratio described above.
 - (5) An exception to this planning rule may also be requested through the land use review process if a site-specific parking analysis is provided demonstrating that adequate parking will be available at a different ratio than specified above. The analysis must include information regarding expected on-street parking demand on the private street based on allowed densities, access to alternative modes of travel, availability of parking in the area, feasibility of providing parking on the lots, and how visitors and deliveries will be accommodated.
- b. Size of Parking Spaces. For purposes of determining the number of on-street parallel parking spaces that can be provided in the parking lane, one space is assumed to occupy 22.5 feet of contiguous street (curb) length. Pavement markings that identify individual spaces are generally not required in a parking lane. Where separate perpendicular parking bays or a parking tract are used, parking spaces must be sized according to the dimensional requirements for parking areas in Chapter 33.266 of the Zoning Code (standards for all other uses), and striped accordingly.
- c. Driveway Spacing. Driveways providing vehicle access to lots abutting the private right-of-way must be located to maximize on-street parking, to the greatest extent practicable. Driveway locations approved during preliminary plan review may be moved provided the applicant demonstrates that an equivalent number of required parking spaces can be maintained on the street and/or the

standards of this rule continue to be met.

- d. Bicycle Parking. Short or long term bicycle parking racks or shelters may be located within the private right-of-way tract. Bicycle parking spaces must be sized according to the dimensional requirements in Chapter 33.266 of the Zoning Code.
- e. Transportation Impacts. Adequacy of on-street parking for all land division sites will also be evaluated under the Transportation Impacts criterion, Chapter 33.641 of the Zoning Code. Notwithstanding the standards listed above, the land use review decision may specify additional on-street parking when necessary to satisfy the approval criteria found in Zoning Code Chapter 33.641.

2. Technical Rule

- a. "No Parking" Signs. Where the roadway is not wide enough to accommodate on-street parking as specified in Figure 3, one or both sides of the street must be posted "No Parking". See Figure 13, and Oregon Department of Transportation Technical Services Details DET 4235.
- b. Bicycle Parking Placement. Bicycle parking spaces may not be placed in a manner that obstructs the vehicle roadway, sidewalks, or pedestrian paths. Where bicycle parking is provided on sidewalks and pedestrian paths, at least a 3-foot-wide travel corridor must be maintained, not counting the area devoted to bicycle parking.
- c. Backing Distance into Perpendicular Spaces/Bays. Where perpendicular parking bays are provided, the street roadway must be at least 20 feet wide to provide maneuvering space to enter and exit the parking spaces. See Figure 12.

H. Pedestrian Improvements

1. Planning Rule

- a. When Pedestrian Walkways or Sidewalks are Required and Allowed.
 - (1) Private Streets. A sidewalk must be provided on at least one side of the vehicle roadway, with the following exception:
 - In a residential zone, a sidewalk is not required if only one, two or three lots have frontage on the street and the lots may only be developed with a house and one accessory dwelling unit or a duplex.
 - (2) Alleys. Sidewalks are not allowed within alley rights-of-way.
 - (3) Shared Courts. Sidewalks are not required for Shared Courts. See Section III.K for more details on the design of Shared Courts.
- b. Location of Pedestrian Improvements.
 - (1) Where they are required, sidewalks and pedestrian paths must be located within the private right-of-way tract. Title 33 allows sidewalks to be located in an easement abutting the tract, but only where a tree, rock outcropping, or other

natural feature within the right-of-way precludes placement of the sidewalk within the tract.

(2) Where a roadway for vehicle access is also provided, the sidewalk must be located on the side of the roadway that would provide service to the maximum number of lots. This may be adjusted when stormwater treatment facilities conflict with sidewalk location.

(3) Where a turnaround is provided, sidewalks must extend around the entire perimeter of the turnaround. Where all of the lots served by the street are on one side of the street, the sidewalk must extend only to a point where pedestrian access is provided to the last lot. The alternative configuration shown in Figure 14 is also acceptable.

(4) Common Greens and Pedestrian Connections have specific requirements for pedestrian improvements. See Section III.L of this rule.

- c. Public Access. A public access easement must be recorded that allows public access on all parts of the private street sidewalk or pedestrian path.

2. Technical Rule

- a. Walkway Width. The width of sidewalks and pedestrian paths must be at least 5 feet.

- b. Walkway Slope.

(1) Sidewalk and pedestrian path cross slope must not be less than 2 percent nor greater than 5 percent.

(2) Longitudinal slopes along the sidewalk or pedestrian path centerline must not exceed 18 percent.

(3) Guardrails complying with Section 1015 of the Oregon Structural Specialty Code (OSSC) must be provided where the vertical grade change at the edge of the sidewalk is more than 30 inches to the grade below within a horizontal distance of 36 inches from the edge of the sidewalk.

- c. Walkway Surfacing. The sidewalk or pedestrian path must consist of a minimum thickness of 4 inches Portland cement concrete over a minimum thickness of 2 inches of 1½-inch crushed rock on a suitably prepared subgrade.

(1) Portland cement concrete must have a minimum 28 day strength of 3000 pounds per square inch.

(2) Provide a light broom finish.

(3) Maximum contraction joint spacing must be 12 feet.

(4) Crushed rock must be compacted to a density of at least 90 percent of the maximum dry density determined in accordance with ASTM D1557.

- d. Accessibility. Sidewalks and pedestrian paths must be considered an accessible route, as defined by the OSSC, and must be constructed in accordance with Chapter 11 of the OSSC. Sidewalk ramps must be constructed in accordance with Oregon Standard Drawing RD-756 and RD 757.

(1) Sidewalks must be separated horizontally or vertically from the adjacent vehicle roadway with continuous curbing, landscape strips or other barriers approved by the Director.

- e. Stairs. Stairs must be constructed of Portland cement concrete in accordance with Oregon Standard Drawing RD120.

(1) Stairs must have a 6'-0" landing area the width of the stair at the top and bottom of the stairs. The landing must also be repeated every 12'-0" of vertical rise.

(2) Stairs must have handrails. Construction of handrails must be in accordance with the Oregon Structural Specialty Code.

I. Trees and Landscaping

1. Planning Rule

- a. When Street Trees are Required. The right-of-way, except alleys, must accommodate street trees.

(1) Shared Courts, Common Greens, and Pedestrian Connections have specific landscaping requirements and are therefore not subject to this subsection of the Rule. See Sections K and L of this rule for tree planting requirements for Shared Courts, Common Greens, and Pedestrian Connections

- b. Location and Spacing of Street Trees. Any of the configurations listed below may be used to satisfy this rule. See Figure 15.

(1) Planting Strip: Street trees may be provided in a landscaped strip, located parallel with the pedestrian path or roadway. One tree is required for every 25 feet of street length.

(2) Vegetated Stormwater Facilities: Vegetated stormwater facilities that include trees may be substituted for the street trees requirements of this rule. For example, a lowered planter strip or tree well may function as a water quality and infiltration swale, if the standards of the SWMM are met. Note: Trees may be restricted in stormwater facilities on the boundary of the land division site where impervious liners are required. One tree is required for every 25 feet of street length.

(3) Sidewalk Tree Wells: Street trees may be provided in individual planting wells, within the sidewalk or pedestrian path. One tree is required for every 25 feet of street length.

(4) Parking Lane Tree Wells: Where the street includes a vehicle roadway allowing for parallel on-street parking, street trees may be provided in individual planting wells, within the parking lane. Tree wells must be placed every 50 feet of street length (one tree well between every second 22.5-foot long parking space) When this option is used, and the street serves as a fire accessway, the Fire Bureau must specifically approve the street design and tree species to ensure adequate clearance is provided in the roadway for emergency vehicles. Trees that are planted must provide a 13.5 foot clearance for fire department access

and must not interfere with aerial apparatus access for buildings that exceed 30 feet in height.

(5) Existing Trees: Where existing trees are being preserved on the site to meet City Code requirements, and the trunk of an existing tree is within 15 feet of the private right-of-way, the tree can substitute for one street tree.

c. Exceptions to required street trees.

(1) Street trees are not required where, as part of a land use review, the applicant:

- Demonstrates that it is not feasible to provide street trees while meeting the other requirements of this rule and the minimum lot size and dimension standards of the zone;
- Agrees to plant trees in the front yard of each lot, within 5 feet of the street tract. Tree spacing must satisfy planting strip spacing requirements;
- Demonstrates the proposed tree locations will not conflict with public utility easements on the lots; and
- Executes an agreement to plant and maintain the trees in the form of a covenant or similar legal mechanism that is recorded with the final plat of the land division.

(2) The Director may reduce the number of street trees required to address conflicts with other required elements, such as driveways or utilities. A complete waiver of the street tree requirement may only be provided where the City Forester provides a written recommendation that it is not practical to provide for street trees. For example, the location of existing utilities may preclude planting in some locations.

(3) Street trees are not required in alleys.

2. **Technical Rule**

a. Tree Species. The size and species of street trees must be identified in a street tree plan submitted with the land division application, and must conform to the same specifications used by the City Forester in public streets. The City Forester's most current approved list of acceptable street trees, and tree-planting standards are incorporated by reference into this rule.

b. Planting Strip and Tree Well Dimensions. The following standards apply to planting strips and tree wells. See Figure 15.

(1) Planting Strips. Where provided, tree planting strips must be at least 4 feet wide. Where the planting strip is provided directly abutting the outer boundary of the right-of-way, abutting a front or side yard of a residential lot, the width may be reduced to 3 feet.

(2) Tree Wells.

- Tree wells within pedestrian walkways must be at least 4 feet by 6 feet. The walkway must be wide enough to allow a 3-foot-wide travel corridor, not including the tree wells.
 - Tree wells within a parking lane must be at least 5 feet by 5 feet and protected with bollards or tree guards.
- c. Groundcover Standards. Excluding pedestrian paths, sidewalks, curbs, roadway surfaces, and other structures, permanent ground cover must be established on all other exposed ground surfaces within the street right-of-way, consistent with the requirements of the Erosion Control Manual.
- d. Applications for appeals to standards for street tree species or planting strip and tree well dimensions (standards a & b above) must be accompanied by recommendations from a certified arborist and the Land Use Services Division of the Bureau of Development Services.

J. Stormwater Facilities

1. Planning Rule

- a. When Stormwater Facilities are Required. A stormwater collection, conveyance and disposal system must be designed to accommodate stormwater runoff from the impervious area within the right-of-way (tract), and other basin areas that will drain onto the impervious area. See the Stormwater Management Manual to determine the type, size and design of the facility.
- b. Location of Stormwater Facilities. All stormwater facilities serving the right-of-way must be located within the right-of-way tract.

(1) Stormwater facilities may be placed in a variety of locations within the right-of-way tract, subject to the following standards:

- Where a linear swale configuration is specified, preliminary plans must show any driveway crossings that will interrupt the linear facility.
- Where underground facilities are approved (see Stormwater Management Manual and DEQ's UIC Rules), those facilities may be placed under the roadway, provided the location does not conflict with other required utilities and services.

(2) A stormwater facility may be proposed in a separate tract or easement, outside of the right-of-way if, in addition to the right-of-way, the facility also receives and manages stormwater from more than one lot within the land division site. Chapter 33.653 of the Zoning Code governs when such a facility must be in a tract, and when it may be in an easement.

2. Technical Rule

- a. Stormwater Management Manual Applies. The technical design and construction standards for stormwater facilities are found in the most current edition of the Stormwater Management Manual (SWMM).

K. Special Standards for Shared Courts

1. Planning Rule

- a. Shared Roadway. Shared Courts must have a site-specific roadway design to accommodate both vehicles and pedestrians. For design purposes, there are two areas within the shared court right-of-way: the "Clear Zone" and the "Amenity Zone" (see Figure 16). A vertically separated or horizontally separated sidewalk or pedestrian pathway is not recommended in a shared court. Special rules apply to the roadway design, to facilitate safe shared use of the roadway (see below).
- b. Shared Court Amenities. Shared courts must be designed to serve as an outdoor space amenity for residents. To this end, shared courts must include one of the following amenities outside of the designated Clear Zone (see Figure 16). Structures within the amenity zone (such as planters, benches, gazebos, bollards and tree guards) must be specified under the direction of an architect, landscape architect or engineer. Such structures must be attractive and be constructed of durable and high quality materials. There is an outdoor area standard of the Zoning Code (see Chapter 33.654) that is required in addition to one of the following amenities.
 - (1) *Street Trees*. At least one street tree for every 500 square feet of street area.
 - (2) *Small Landscape Islands or Planters*. At least 3 landscaped islands or planters (which may also be stormwater facilities), each at least 50 square feet in area.
 - (3) *Bicycle Parking*. Grouped covered or uncovered bicycle parking providing at least 2 spaces for each dwelling unit served by the court.
 - (4) *Other Amenities*. Sculpture gardens, art installations, gazebos, ornamental water features, or play equipment may be considered to satisfy the amenity requirement, on a case by case basis.
- c. Traffic Calming Measures. The Zoning Code limits shared courts to a length of 150 feet. Shared courts that are longer than 100 feet must include one of the following (see Figure 17):
 - An arrangement of street trees, on-street parking, bicycle parking, bollards, landscaping islands, seating areas, or stormwater planters that create a chicane turn (compound reverse curve) in the Clear Zone with at least a 6 foot offset.
 - Where a wider vehicle maneuvering Clear Zone is provided, an arrangement of street trees, bollards, landscaping islands, or stormwater planters that create a narrowing "pinch-point" in the Clear Zone to 12 feet.
 - Other traffic-calming measures approved by a Professional Traffic Engineer.
- d. Parking. On-street parking may be provided in the shared court and is subject to the requirements of Section III.G. Parking spaces must be distinguished from other areas through the use of different paving materials or paving pattern (see Figure 16).

2. Technical Rule

- a. Design Speed. The design speed within a shared court is no more than 10 mph.
- b. Design Vehicle. Shared Courts must be designed to accommodate the P design vehicle (passenger car) and the Shared Court Vehicle (see table below). The P design vehicle may maneuver through the Shared Court using multiple point turns. The Shared Court Vehicle must be able to maneuver through the Shared Court using single point turns.

Shared Court Vehicle	
Length: 16 feet	Front Overhang: 3.5 feet
Width: 6.5 feet	Track: 5.3 feet
Wheel Base: 9.4 feet	Curb-to-Curb Turning Radius: 20 feet
The dimensions of the proposed shared court vehicle represent top selling midsized vehicles between in 2021.	

- c. Trees and Landscaping. Shared Courts must meet the technical street tree and landscaping standards in Section III.I.2.
- d. Roadway Improvement and Clear Zone Specifications. Where there is a conflict, these specifications supersede other parts of this administrative rule.

(1) *Roadway Width.* The minimum shared court roadway improvement width is 16 feet. Within that improved width, a "Clear Zone" must be provided for unobstructed maneuvering of vehicles and underground utility access along the length of the court.

(2) *Clear Zone Width.* Where the shared court serves fewer than 9 lots, the Clear Zone must be at least 12 feet wide. Where the shared court serves 9 or more lots, the Clear Zone must be at least 15 feet wide. The Clear Zone must be differentiated from the amenity zone through the use of different paving pattern or materials (see Figure 16). Any amenities such as benches, trees, or other similar street furniture must be located outside of this designated Clear Zone. Permanent features in the clear zone must be 0 feet in height, except for speed bumps or tables.

(3) *Amenities.* All amenities within the shared court (planters, benches, structures, etc) must be designed to maintain clear sight lines between 2 and 6 feet above grade. Trees, shrubs, and groundcover plantings must be a species with an expected growth pattern that will not place dense foliage within this zone. In addition, landscaping features near the edge of the clear zone that will be used as "backing" area by vehicles must be a maximum of 1-foot high. Tree wells, planters, grassy areas, seating areas, play areas, or dedicated gardening spaces must be protected from vehicle traffic by bollards, tree guards, curbs or other similar barriers.

(4) *Emergency Access.* If the shared court right-of-way also serves as a required emergency accessway for any of the abutting lots, the shared court design must be approved by the Fire Bureau. “No Parking” signs must be required for fire lanes on the site as needed. See Figure 13.

(5) *Horizontal Curve Alignment and Turning Radius.*

- Standard inside curve radius requirements do not apply to shared courts. The clear zone within a shared court must have an inside curve radius of at least 15 feet. Sweep path analysis software may also be used to establish necessary shared court clear zone curve radius, under the direction of a Licensed Professional Engineer.
- Where driveways intersect with the shared court, or perpendicular parking bays are provided, the roadway (or shared court clear zone) must allow for turning and backing movements as shown in Figure 16.
- The shared court design must provide for a means to turnaround and leave the courtyard head-first.
- Where necessary, garage door widths of at least 9 feet may be required to assure adequate maneuvering space will be available.

(6) *Grades.* A shared court roadway surface must not have a slope greater than 5 percent.

(7) *Vertical Clearance.* Adjacent structures that overhang the shared court roadway must have a vertical clear height of at least 14 feet above the clear zone. Other overhead features within the shared court must be at least 7 feet above the courtyard surface. Tree limbs must be at least 6 feet above ground level at the trunk of the tree.

(8) *Curbs.* Flush curbs or traditional curbs may be provided at the perimeter of the Shared Court improvement or to protect amenity areas per K.2.c.(3) above. Valley gutters are allowed when necessary and approved by the Site Development Section of BDS. The use of pervious pavers requires a concrete collar border.

(9) *Accessibility.* In conventional streets, visually impaired people use the curb for orientation. Continuous grade separations will not typically be present in shared courts, and this orientation clue must therefore be replaced by other means. The clear zone and structures/amenities within a shared court must be arranged and designed to provide a clear path that can be followed by a cane from the public street to doorways, without hazards such as overhanging trees or other projections at head height. The roadway surface material must also provide a tactile way-finding clue, to guide a pedestrian around any hazards. This tactile clue could be provided through the use of a variation in surface materials, regular spacing of street furniture, building wall edges (where the abutting buildings will have zero-setbacks), or by the use of concrete edging. See Figure 18.

(10) *Entrance Apron.* The intersection of the shared court and the abutting public street will be designed with a raised speed hump. The public street sidewalk may serve this purpose. Required overflow routes for 100-year storm events must be maintained.

(11) *Signage.* The following signs must be provided. See Figure 13:

- A "Share the Road" warning sign must be placed at the shared court entry (W16-1 and W3262).
- Street name signs are required at the entry of the shared court.
- "No Parking" signs are required as needed.

(12) *Surface Material.* Asphalt concrete may not be used as a roadway surface in shared courts. Acceptable surface materials include:

- Interlocking concrete permeable paving blocks, or sand-set concrete paving blocks (see Section III.E.2.m). Where Interlocking concrete permeable paving blocks, or sand-set concrete paving blocks are used within a shared court, the paving blocks must have a flush top edge or a bevel of less than or equal to 6 millimeters. Alternately, an accessible corridor 3 to 5-feet wide must be provided along the length of the shared court. This accessible corridor may fall within the clear zone designated for vehicle maneuvering areas, but it must not be grade-separated from the other portions of the street, or blocked by on-street parking or other street amenities (tree wells, benches, landscape islands, bollards, etc.). See Figure 18.
- Mortar-set brick or concrete paving blocks, if installed as a surface material on top of a portland cement roadway meeting the standards of this rule (see Section III.E.2.m).
- Portland cement concrete surfacing may be used in limited circumstances including:
 - For accessible pathways;
 - Where necessary to create a utility corridor acceptable to service providers. Utility corridors may not exceed 15 feet in width, must be scored to create sections no greater than 5 feet by 5 feet, and must have a distinctly different texture or color than the other surfaces in the shared court; or
 - Where specifically approved through the land use review process.

L. *Special Standards for Common Greens and Pedestrian Connections*

1. Planning Rule

- a. When a Pedestrian Path is Required. A paved pedestrian path is required in all common greens and pedestrian connections, extending to the frontage of each lot abutting the green or pedestrian connection. See Figure 19.
- b. Motor Vehicle Access. Common greens and pedestrian connections are not designed to accommodate motor vehicle access, except in emergencies. Pedestrian paths wider than 8 feet must have access controls to prevent access by automobiles. Narrowing the entrance to the path is preferred over the use of bollards. If the right-of-way is intended to provide fire department access, the access control must be approved by the Fire Bureau.

- c. Location of Pedestrian Improvements. Paths for pedestrian connections must be centered within the right-of-way to the greatest extent practicable considering the physical constraints of the site.
 - (1) Paths for pedestrian connections must take the most direct route practicable. The ending of the path must be visible from the entrance, if practicable.
 - (2) Paths for common greens may meander.

- d. Location of Stormwater Facilities. Stormwater facilities may be included within common greens. Surface facilities that are located within common greens must meet the following standards:
 - (1) Permanent pools of water (such as Wet Ponds) or unvegetated stormwater facilities (such as an exposed sand filter) may not occupy more than 30 percent of a common green tract area. The remaining area of the common green, exclusive of the area devoted to the stormwater facility, must be at least 10-foot wide;
 - (2) Stormwater facilities that require perimeter fencing may not be located in common greens.
 - (3) Vegetated infiltration swales, grassy swales, filter strips, sand filters, and other similar surface facilities may be located in a linear configuration along the edge of pedestrian connections.
 - (4) A vegetated filter strip can be located in a linear configuration along the edge of common greens. In some cases, a vegetated infiltration swales may be required if the slope of the common green exceeds 5 percent.

- e. Trees, Landscaping, and Other Amenities. To ensure that common greens and pedestrian connections can serve as an outdoor space and amenity for residents, the following additional standards apply:
 - (1) At least an eight-foot-wide strip of landscaping must be provided for the length of common green or pedestrian connection. This landscape strip may be located on one side of the pedestrian walkway, or divided between both sides (for example, 4 feet on both sides). The landscape strip must be within the common green or pedestrian connection tract. Street trees or stormwater facilities may be located within this area consistent with the standards above. Street trees must be provided at a minimum spacing of one tree per 25 feet of length of the common green or pedestrian connection tract.
 - (2) A common green must be at least 15 feet in width. See Figure 19.
 - (3) Gazebos, sculptures, art installations, ornamental water features, play equipment, benches, picnic tables, play equipment, and other similar accessory structures may be located within common greens. See Section III.O.

2. Technical Rule

- a. Walkway Specifications. The technical rules governing walkway width, slope, accessibility, surfacing, and stairs in Section III.H (Pedestrian Improvements) also apply to walkways in common greens and pedestrian connections.

- b. Emergency Access. If the pedestrian connection or common green right-of-way is intended to provide fire department access, the following standards apply:
 - (1) The walkway must have an unobstructed width of not less than 20 feet;
 - (2) The walkway must have an unobstructed vertical clearance of not less than 14 feet;
 - (3) The walkway must be surfaced with material capable of supporting fire apparatus and providing all-weather driving capability; and.
 - (4) Access control must be approved by the Fire Bureau.
 - (5) Additional requirements apply when aerial access is required by the Fire Bureau.
- c. Trees and Landscaping. Common Greens and Pedestrian Connections must meet the technical street tree and landscaping standards in Section III.I.2.

M. Building Projections and Encroachments

1. Planning Rule

- a. When Building Projections May Be Allowed. Projections such as but not limited to eaves, cornices, exterior balconies, bay windows or similar architectural appendages will be allowed to project into the private right-of-way, where the projection does not interfere with the function of the right-of-way. Adjustments to Zoning Code standards may also be required.

2. Technical Rule

- a. Building Projection Standards. Projecting elements encroaching into a private right-of-way must comply with the requirements of Section 3202 of the Structural Specialty Code, and with the Bureau of Development Services Code Guide IBC/7/#7 & IRC/AN/#3 (Building Projections into Private Streets). Projecting elements are subject to the same limitations as those described in IBC/32/#1 (Window Projections Into Public Right-of-way).
- b. Vertical Clearance. Structures that overhang the private right-of-way must have a vertical clear height of at least 14 feet.

N. Setbacks and Right-of-way Edges

1. Planning Rule

- a. When Setbacks or Special Edge Treatments are Required. The Director may require setbacks or other special edge treatments when the private street tract directly abuts the land division site boundary, another private street or driveway, or existing buildings that will remain. The purpose of this section is to:
 - (1) Avoid damage to structures and vegetation on adjacent property;
 - (2) Allow for necessary grade changes; and

(3) Avoid traffic conflicts.

- b. Existing Structures. The Director may require modifications to the building wall of an existing structure if the structure is closer than 3 feet from the new private street tract boundary or roadway edge. Special curbing or protective bollards may also be required.

2. Technical Rule

- a. Setback to Tract Boundary. Where the private street tract directly abuts the land division site boundary, a setback of at least one foot must be provided between the edge of private street improvements and the right-of-way tract boundary.
- b. Other Driveway Entrances to the Public Right-of-way. Title 17 of the Portland City Code regulates the connection of driveways to the public right-of-way. Portland Transportation may require a special entrance or intersection design, or an additional setback from the abutting roadway or driveway, as necessary to meet driveway spacing and design requirements along the public street.
- c. Grading at the Right-of-way Edge and/or Site Boundary. Where right-of-way improvements involve cuts or fills, new contours must match existing grade at the land division site boundary. Larger setbacks may be required as necessary to attain no more than a 50 percent slope between the site boundary and the improved right-of-way grade, or to accommodate retaining walls. These slopes or retaining walls must begin no closer than 1 foot from the edge of the right-of-way improvement (back of the sidewalk or roadway curb), and no closer than 1 foot from the tract boundary (see Figure 20).

O. Other Structures

1. Planning Rule

- a. Signs. Signs in private right-of-way tracts must be limited to traffic control signs, street name signs and subdivision signs. The requirements of Title 32 apply.
 - (1) Traffic control and street name signs must be located within the private right-of-way tract.
 - (2) Street name signs must be provided at each intersection of a private street with a public street and at the intersection of differently named private streets.
 - (3) Subdivision signs, where provided, must comply with Section 32.32.030.F.3 of the Sign Code.
- b. Bicycle Parking Structures. Short or long term bicycle parking racks or shelters may be located within the private right-of-way tract.
- c. Retaining Walls, Culverts, and Bridges. Any structures including but not limited to retaining walls, bridges and culverts which are integral to the structural stability, function and operation of the street may be located within the right-of-way. Where such structures are necessary, they must be located entirely within the right-of-way tract.

- d. Buildings in Shared Courts and Common Greens. Accessory structures, such as gazebos and other common use buildings, must be set back from the tract boundary, as necessary to meet any applicable Zoning Code standards. Zoning Code building coverage standards may also apply.

2. Technical Rule

- a. Oregon Structural Specialty Code Applies. All structures within the private street tract must be designed in accordance with the State of Oregon Structural Specialty Code. Vehicle loading must be based on the HS-25 truck load in accordance with the AASHTO Standard Specifications for Highway Bridges, as modified by the Oregon Department of Transportation Bridge Design Section. Timber retaining walls are prohibited.
- b. Signs/ Federal Highway Administration Manual on Uniform Traffic Control Devices. Traffic control signs must be designed and located in accordance with the Federal Highway Administration Manual on Uniform Traffic Control Devices unless otherwise approved by the Director.
 - (1) Traffic control and street name signs must be installed in accordance with the Oregon Department of Transportation Technical Services Detail DET4235.
 - (2) Street name signs must have a green legend and white background. See Figure 13.
- c. Gates Prohibited. Title 24 prohibits gates or other barriers which would restrict vehicles or pedestrians from using the private street. Barriers, such as bollards, may be used to restrict access by vehicles to common greens and pedestrian connections, which are intended for pedestrian and bicycle use only.

IV. Services and Utilities in a Private Right-of-way

A. About this Section

Public or private services and utilities serving lots abutting the private right-of-way may be located within the private right-of-way tract. The tract must be wide enough to accommodate these utilities, including any required spacing between the utilities, and any required easement widths.

The information presented in this section is applicable to lots serviced by the City of Portland (Portland Water Bureau, Bureau of Environmental Services). Other conditions may apply to lots serviced by other special utility or service districts. This section is informational in nature and cannot be appealed through the land use or Site Development permit process. For specific construction and permitting requirements, contact the appropriate City Service/Utility agency.

A typical arrangement of underground utilities within a private street tract is shown in Figure 21.

B. Sewer Service

1. Service to Each Lot

Each lot requiring public sewer service must be connected to a separate service lateral connected perpendicular to the public main sewer.

2. Main Extensions

The Bureau of Environmental Services may require public sewer main to be extended through the private right-of-way tract to provide service to the individual lots. Sewer main extensions are permitted through the City's Public Works Permitting process.

3. Easements

Public sewer main extensions in private right-of-way tracts must be in a public sewer easement that is congruent with the right-of-way tract geometry unless otherwise approved by BES. Generally, BES does not allow other utilities or non-sewer features that could interfere with the safe functioning of their sewer or impede future access for maintenance or repair without the express permission of their director. When proposed as part of a land division, other utilities and features proposed within the easement area are reviewed by BES through their concurrent reviews of the preliminary land division plan and Public Works permit and therefore don't generally require separate permission (to be determined by BES).

If a roadway surface will be paved with non-standard street material (e.g. paving blocks or pervious asphalt) within a public sewer or stormwater easement, restoration of the non-standard materials in the event the City needs to remove them to repair public utilities located under the street surface will be the responsibility of the tract owners.

C. Water Service

1. Service to Each Lot

Title 17 generally requires that each lot be connected to a separate service lateral connected to a public water main.

2. Hydrant Placement

Hydrant placement must be in accordance with [Portland Fire & Rescue Code Guide: Fire & Life Safety Requirements for Fire Department Access and Water Supplies](#) and the Portland Water Bureau [Public Works Permit Process Manual](#).

3. Individual Service Branches

Each lot must have an individual service branch from a water main, typically located in the nearest public street. The service branches must access the public water main via the private right-of-way tract. Water meters must be located in the public right-of-way within the frontage of the private right-of-way tract.

4. Main Extensions

Developments creating more than six lots not having frontage on the public right-of-way may require an extension of the public main through the private right-of-way tract. The design must be approved by the Portland Water Bureau. The owner may design and install the water system in accordance with the provisions of the Portland Water Bureau [Public Works Permit Process Manual](#). When allowed, public water main extensions in private right-of-way tracts must be in an easement. The easement typically includes the full width of the private right-of-way tract and must contain all water facilities, including

the water main extension, water meters and hydrants. Water meters in the private right-of-way tract must be located within the easement and along the frontage of the lot to be served. All separation requirements from water facilities must be maintained within the easement.

D. *Garbage and Recycling*

1. *Minimum Requirements for Curbside Service*

Private streets or alleys intended to provide access for curbside garbage and recycling collection must satisfy the latest requirements of the Administrative Rules for Solid Waste and Recycling published by the Bureau of Planning and Sustainability ([Solid Waste & Recycling | The City of Portland, Oregon \(portlandoregon.gov\)](https://www.portlandoregon.gov/development/112600.aspx)). Garbage and recycling from lots served by private streets not satisfying these requirements will have to be hauled to the nearest public street, unless special arrangements are made with the hauler.

E. *Other Utilities and Services*

Other utilities such as natural gas, telephone, electric, cable and telecommunications must be located within a private or public utility easement. Utility fixtures exposed at or above the ground surface must not be located within areas intended for pedestrian or bicycle access. The utilities must be located in a manner that will not conflict with requirements for street trees or tree preservation.

V. *Street Names and Addressing*

A. *Street Names*

Private Rights-of-way must be named to the satisfaction of the City Engineer. The Bureau of Development Services must consult with the Bureau of Transportation (Right-of-way Section) to ensure that private street names do not conflict with public street names. Common greens, pedestrian connections and alleys are generally not named.

B. *Addressing*

The Bureau of Development services will assign addresses to lots served by the private right-of-way during the final plat review process.

1. In general, lots will be addressed based on the approved private right-of-way name.
2. On the request of the Fire or Police Bureaus, lots may be addressed directly from the public street. This may be appropriate in cases where the private right-of-way does not provide the approved means of emergency access (for example, in the case of many common greens or pedestrian connections).

VI. *Maintenance Agreements*

A. *Agreement Required*

Private right-of-way tracts are not maintained by the City of Portland. Maintenance is the responsibility of the owners of the private right-of-way tract. Title 33 requires a

maintenance agreement to be recorded that commits the owner(s) to maintain all elements of the right-of-way. The maintenance agreement must be in a form satisfactory to the Director. Maintenance agreements must be recorded prior to, or concurrent with, recording of the final plat.

VII. Performance Guarantees

A. *Guarantee Required*

The Director may require a performance guarantee to ensure the completion of work required by these Rules. When requested, the performance guarantee may be deferred if the work required by these rules is completed prior to City approval of the final plat. Any required guarantee must be provided prior to final plat approval and issuance of permits for construction. The guarantee instrument must be in an amount equal to at least 125 percent of the estimated cost of performance. The applicant must provide an engineer's written estimate, identifying separately all materials, labor, and other related costs of performance. The adequacy of the amount must be subject to review and approval of the Director. The guarantee of performance must be accompanied by a performance agreement. The performance agreement must be in a form satisfactory to the Director and City Attorney. The guarantee instrument will not be returned or released until all improvements specified in the performance agreement are completed and permits for the required improvements are approved as final.

Appendix A – Figures 3 - 21

Appendix B - Standard Plans Adopted by Reference

Appendix C - Design Templates

Appendix D - Authorizing City Code

Appendix E – References