TRN-8.06 - Interim Rule Private Rights-of-Ways - Streets, Alleys, Shared Courts, Common Greens, and Pedestrian Connections

Administrative Rules Adopted by Bureaus Pursuant to Rule Making Authority (ARB)

Policy category: Right-of-Way & Access

Policy number: TRN-8.06

Authority

Under Title 3, Section 3.30.010.B 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 Chapters 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.

---

1. 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 that are 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.

History

Effective November 1, 2002 and filed for inclusion in PPD September 29, 2004.
Amended by Director of Bureau of Development Services and filed for inclusion in PPD August 2, 2010.
Amended by Director of Bureau of Development Services and filed for inclusion in PPD August 3, 2021.

Related documents

- TRN-8.06 Text of Administrative Rule (332.83 Kb)
- TRN-8.06 Appendix A (8.76 Mb)
- TRN-8.06 Appendix B (14.58 Mb)
- TRN-8.06 Appendix C (21.55 Mb)
- TRN-8.06 Appendix D (76.92 Kb)
- TRN-8.06 - Appendix E (71.58 Kb)

City of
Portland, Oregon
Bureau of Development Services

1900 SW 4th Avenue, Suite 5000
Portland, Oregon 97201
503-823-7300
Fax 503-823-6983
TTY 503-823-6868
www.portlandonline.com/bds

PERMANENT RULE

RELATING TO Chapter 3.30
Bureau of Development Services

FOR INFORMATION CONTACT:
Rebecca Esau (503) 823-6966

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

AUTHORITY:

Under Title 3, Section 3.30.010.B and 3.30.040.A, the Director of the (BDS) has the authority to adopt written policies and procedures for the enforcement of Title 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 Chapters 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.

REVISED: ***[Paul L. Scarlett]*** July 19, 2010.
Paul L. Scarlett, Director

EFFECTIVE: August 2, 2010

Updates the November 1, 2002 Rule

Permanent Administrative Rules

Private Rights-of-Way

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

Table of Contents

Figures

Appendices

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, 17, 24, and 33. Design of stormwater facilities for private streets is governed by the City's Stormwater Management Manual.

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.portlandonline.com/bds.

d. A separate review process is available for appeals to the 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

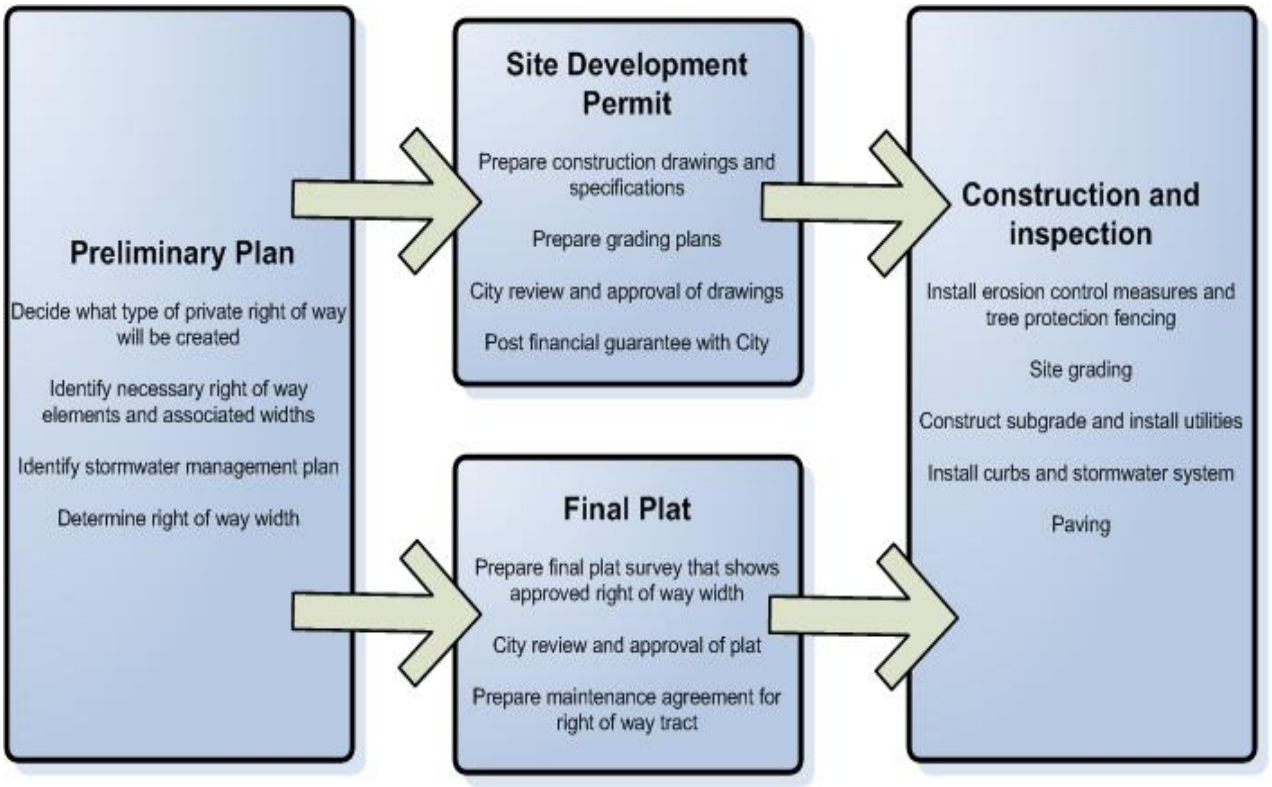
A. Overview of Process

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.
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.

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:

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



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, 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.

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.

b. Where new lots are being created that will front on a common green, shared court, or pedestrian connection, an emergency vehicle access plan for those lots, meeting the requirements of the Portland Fire Code, Portland Fire Design Manual, and Portland Fire Code Applications Guide. See the code on the Fire and Rescue website at http://www.portlandonline.com/fire/index.cfm?c=48127 and the manual and guide at http://www.portlandonline.com/fire/index.cfm?c=45622.

c. When a proposed stormwater facility is classified by the Oregon Department of Environmental Quality (DEQ) as an underground injection control structure (e.g., drywells, sumps, trench drains, or other facilities that are intended to discharge fluids below the ground surface), the applicant must provide documentation that DEQ considers the facility to be rule authorized. In some instances the DEQ may issue a permit for a UIC instead of rule authorization; this is determined on a site-specific basis. Rule authorization applications should be submitted to DEQ as early as possible in the process to ensure timely approval. Documentation ensures feasibility for rule authorization and must be included in the land use review application submittal. See the Stormwater Management Manual for general rule authorization criteria or the DEQ UIC website at http://www.deq.state.or.us/wq/uic/uic.htm for full guidelines and applications.

d. 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.

e. Any existing and proposed easements, including public or private utility easements, must be shown on the site plan or utility plan.

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.

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 court 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 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.

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 also be required for the construction of public utilities (for example public sewer mains) located in the private right-of-way.

e. Site Development permit applications are also required for clearing and grading on private property when necessary to prepare for construction of a future public street. Public street construction is not regulated by this rule.

3. Permit Submittal Requirements

Four sets of plans and a cost estimate prepared by the project engineer must be submitted with each permit application. General submittal requirements for 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.

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. Seal and signature of Registered Professional Engineer (not required for common greens and pedestrian connections).

n. Stormwater report with infiltration tests and geotechnical report if required.

o. Turning radius as required by the Fire Code, if the street will serve as a fire accessway.

p. Location of signs, including street signs and no-parking signs.

q. Existing and proposed utilities and easements.

r. 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.

s. Geotechnical engineering report, as required by the Director, that addresses development including, but not limited to, earthwork, grading, subgrade preparation, drainage and slope stability.

t. Engineer's cost estimate with quantities and unit costs.

u. A landscaping and tree preservation plan that is in conformance with the land use decision and shows how the standards are met.

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.

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 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 (tied to 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 insuring 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, 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 is required. All private rights-of-way are to be designed by registered Professional Engineers licensed in the State of Oregon.

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. The City of Portland does not design private rights-of-way. All private rights-of-way must be designed by a registered professional engineer licensed in the state of Oregon. 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 secondary access for motor vehicles 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, which may be a dead end or may provide a through connection between two dead end streets, often through a long block. Direct 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 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 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, 2001 (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, Standard B or Standard C, 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). 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 street frontage for all of the proposed lots, or to provide adequate vehicle access. In making this determination, the Director will consider the zoning designation of the site, the expected number of dwellings on each lot, site conditions; the classification of adjacent public streets, and any traffic studies provided by the applicant or other interested parties.

(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.

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. On-street parking must be provided at a ratio of one on street parking space per every two lots in single-dwelling zones. The number of on-street parking spaces in multi-dwelling zones must be determined on a case-by-case basis. 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 single-dwelling lots have frontage on that street right-of-way.

(3) Only one on-street parking space (or bay) is required where the land division site is located within 500 feet of Frequent-Service Transit, as defined in the Zoning Code.

(4) 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.

(5) 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.

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 to three dwellings are served by or have frontage on the street.

(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 509 of the Oregon Structural Specialty Code (OSSC) must be provided where the vertical drop at the edge of the sidewalk is 30 inches or greater.

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 RD760.

(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 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.

(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.

(3) Sidewalk Tree Wells: Street trees may be provided in individual planting wells, within the sidewalk or pedestrian path.

(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. When this option is used, the Fire Bureau must specifically approve the street design and tree species to ensure adequate clearance is provided in the roadway for emergency vehicles if the street will serve as a fire accessway. Trees that are planted must provide a 13.5 ft 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 agrees to plant trees in the front yard of each lot, within 5 feet of the street tract. The agreement must take the form of a covenant or similar legal mechanism that is recorded with the final plat of the land division.

(2) The Director may also waive the street tree requirement 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.

(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. Within the planting strip, one tree is required for every 30 feet of street length (see Figure 15).

(2) Tree Wells.

- Tree wells within pedestrian walkways must be at least 4 feet by 4 feet. The walkway must be wide enough to allow a 3-foot-wide travel corridor, not including the tree wells. One tree is required every 30 feet of street length.
- Tree wells within a parking lane must be at least 5 feet by 5 feet, placed every 50 feet of street length (one tree well between every second 22.5-foot long parking space), and protected with bollards or tree guards (see Figure 15).

c. Groundcover Standards. Excluding pedestrian paths, sidewalks, curbs, roadway surfaces, and other structures, permanent vegetative 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 the Land Use Services Division of the Bureau of Development Services and the Urban Forestry Division of the Bureau of Parks and Recreation.

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. The Presumptive Approach is required for sizing vegetated stormwater facilities in the public right-of-way and private streets. This approach requires the assistance of a licensed engineer or qualified design professional. Types of vegetated surface facilities available under the Presumptive Approach include swales, planters and basins. If the applicant's plans cannot meet the requirements of the Presumptive Approach and they submit plans that vary from the specified design requirements, then the Performance Approach may be required. Grassy swales, sand filters and ponds are examples of facilities that would need to be designed under the Performance Approach. 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). Infiltration testing and a stormwater report will be required to determine how the Stormwater Management Manual applies to each site.

b. Underground Stormwater Facilities. Where underground stormwater facilities are required (see Stormwater Management Manual), facilities approved for use under impervious surfaces may be placed under the roadway, provided the location does not conflict with other required utilities and services. Note: facilities that are intended to discharge fluids below the ground surface are considered to

be a UIC by DEQ and require rule authorization. See the Stormwater Management Manual for general rule authorization criteria or DEQ UIC website at http://www.deq.state.or.us/wq/uic/uic.htm for full guidelines and applications.

c. Drainage Controls. 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.

d. Appeals. Requests to deviate from the requirements of the Stormwater Management Manual will be addressed through the special circumstances/appeals process in the City's 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 10 mph.

b. Design Vehicle. The design vehicle for shared court roadways must be a P design vehicle (passenger car).

c. 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-feet 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. Common Greens and Pedestrian Connections must meet the street tree and landscaping standards in Section III.I. 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.

(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.

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 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 (Bureau of Water Works, 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 Figures 21 and 22.

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. For attached housing, up to five lots may share a connection to the public sewer through a properly sized common sewer manhole located within the private right-of-way.

2. Main Extensions

The Bureau of Environmental Services may require the sewer main to be extended through the private right-of-way tract to provide service to the individual lots.

3. Easements

Public sewer main extensions in private right-of-way tracts must be in a public sewer easement. The standard sewer easement is a minimum of 15 feet wide, and is exclusive. Other utilities may not be located within the easement without permission from the Bureau of Environmental Services.

If pervious paving blocks or asphalt are used for a roadway surface within a public easement, and public utilities located under the street surface require repair, the restoration of the previous paving blocks or asphalt roadway surface is 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 the Portland Fire Code Applications Guide and the Bureau of Water Works Developer's 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 require an extension of the public main through the private right-of-way tract. The owner may design and install the water system in accordance with the provisions of the Bureau of Water Works Developer's 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.

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 (http://www.portlandonline.com/bps/index.cfm?c=41472&). 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 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 - 22

Appendix B - Standard Plans Adopted by Reference

Appendix C - Design Templates

Appendix D - Authorizing City Code

Appendix E – References

City of Portland, Oregon
Bureau of Development Services
Land Use Services

1900 SW 4th Avenue, Suite 5000
Portland, Oregon 97201
503-823-7300
Fax 503-823-5630
TTY 503-823-6868
www.portlandonline.com/bds

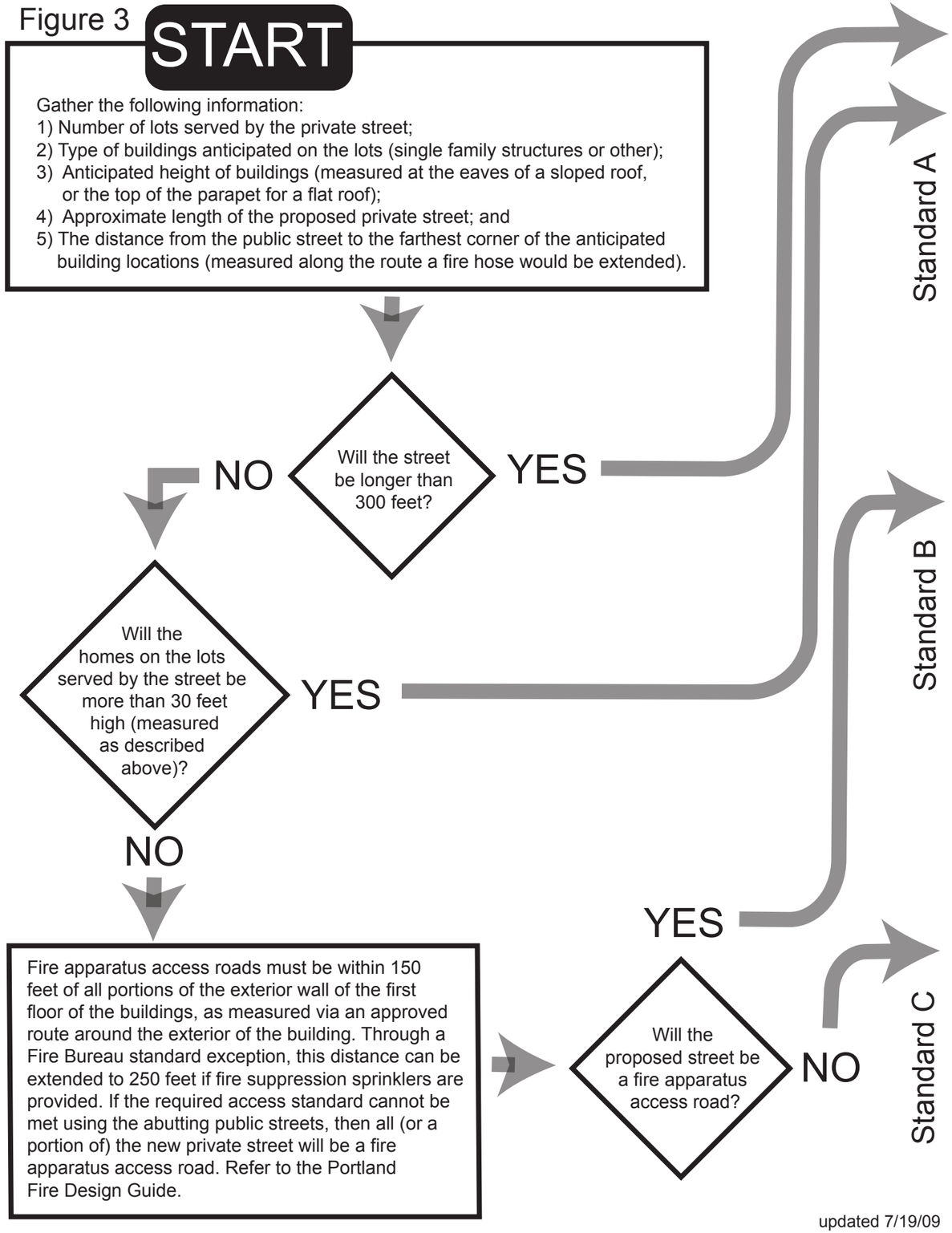
PERMANENT RULE

Private Rights-of-Way - Streets, Alleys, Shared Courts, Common Greens and Pedestrian Connections

Appendix A - Figures

Note: The figures contained in this appendix are intended to provide examples of how private rights-of-way could be designed. The figures are not prescriptive. The design of private rights-of-way will vary with the conditions of each site and must also conform to other applicable City regulations.

Figure 3



updated 7/19/09

A

These minimum vehicle roadway widths apply to streets longer than 300 feet long, and/or streets that serve buildings anticipated to be over 30 feet high (measured at the eaves of a sloped roof, or the top of the parapet for a flat roof).

number of lots served by the street (including the front corner lot)	type of development served by the street	
	single family lots (attached or detached homes)	other lots (multifamily, commercial, industrial)
1 to 3 lots	20 or 26 feet per Portland Fire Design Guide, with no on-street parking	26 or 33* feet per Portland Fire Design Guide, with on-street parking on one side
4 or more lots	26 or 33* feet per Portland Fire Design Guide, with on-street parking on one side	26 or 33* feet per Portland Fire Design Guide, with on-street parking on one side

*Where the street is more than 500 feet long the minimum vehicle roadway width is 26 feet, with no on-street parking. A reduction to 20 feet may be allowed in environmentally sensitive areas, or on step slopes, subject to Fire Bureau approval. Parking may be provided in parking bays as shown in Figure 12. Where buildings will be over 30 feet high, parking may be prohibited on both sides of the street in the immediate vicinity of the building, to provide aerial apparatus access. Where buildings over 30 feet are anticipated, a specific access and parking plan must be provided. Where parking is prohibited on both sides, the width may be reduced to 26 feet.

B

These minimum vehicle roadway widths apply to streets up to 300 feet long that will be Fire Apparatus Access Roads, but where the buildings are not anticipated to be over 30 feet high (measured at the eaves of a sloped roof, or the top of the parapet for a flat roof).

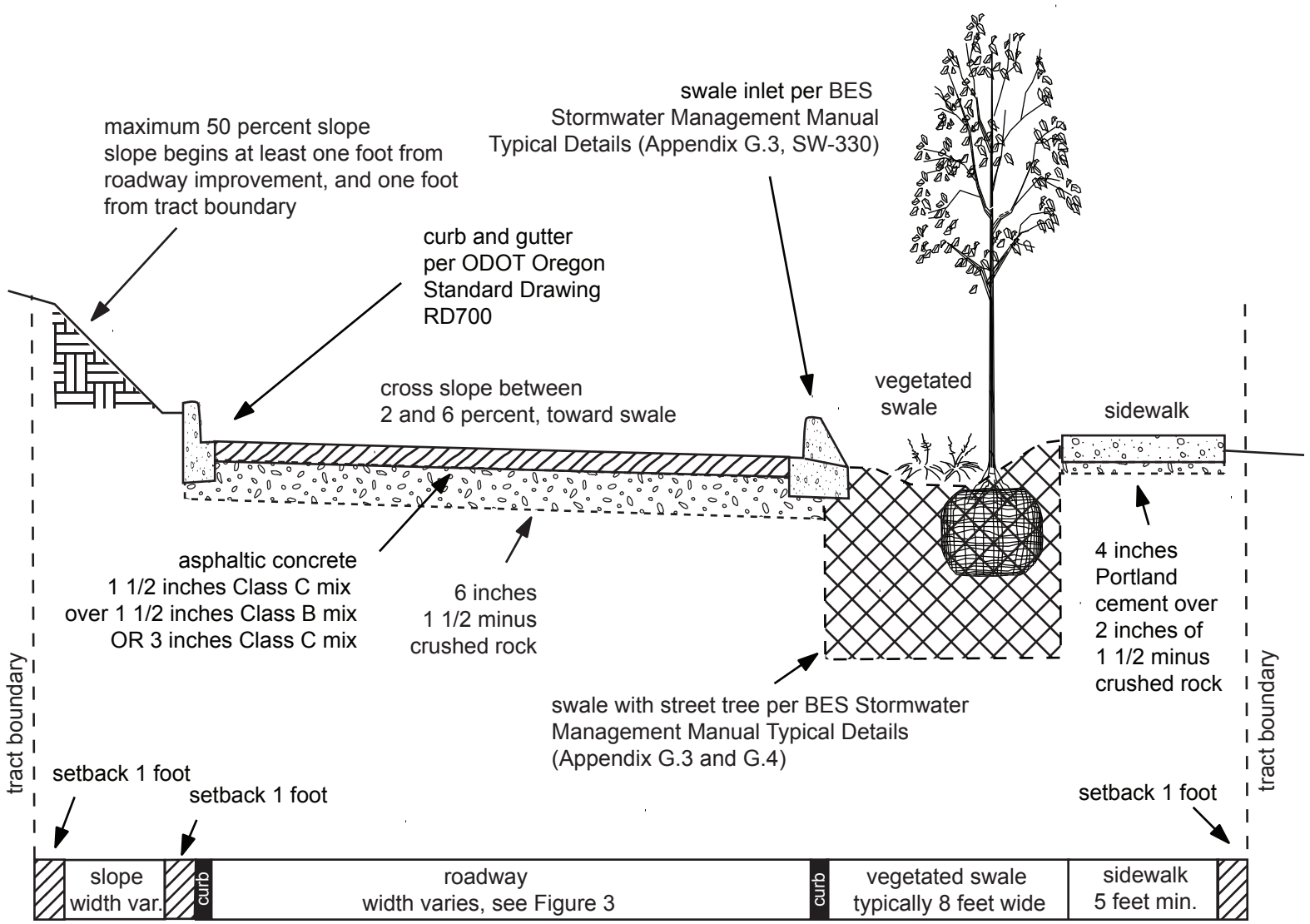
number of lots served by the street (including the front corner lot)	type of development served by the street	
	single family lots (attached or detached homes)	other lots (multifamily, commercial, industrial)
1 to 3 lots	20 feet, with no on-street parking	28 feet, with on-street parking on one side
4 or more lots	28 feet, with on-street parking on one side	28 feet, with on-street parking on one side

C

These minimum vehicle roadway widths apply to streets up to 300 feet long that will not be a Fire Apparatus Access Road, and if the buildings are also not anticipated to be over 30 feet high (measured at the eaves of a sloped roof, or the top of the parapet for a flat roof).

number of lots served by the street (including the front corner lot)	type of development served by the street	
	single family lots (attached or detached homes)	other lots (multifamily, commercial, industrial)
1 to 3 lots	16 feet, with no on-street parking	24 feet, with on-street parking on one side
4 or more lots	24 feet, with on-street parking on one side	28 feet, with on-street parking on one side

Typical Private Street Section



total tract width varies as necessary to accommodate required right-of-way elements - see Table 1

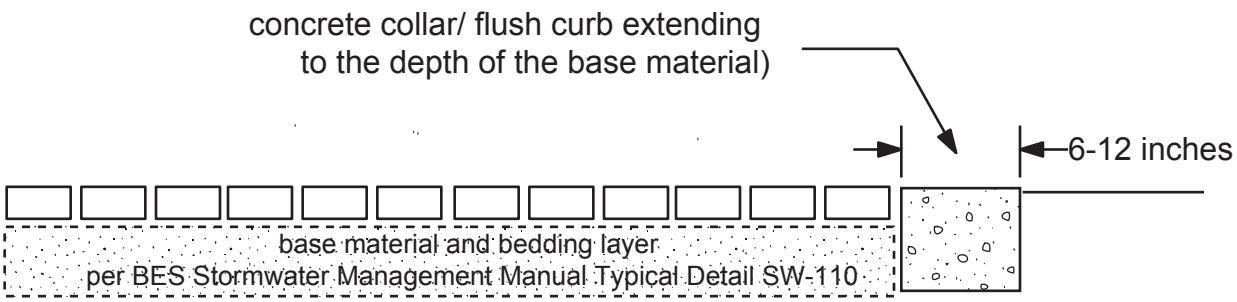
Notes:

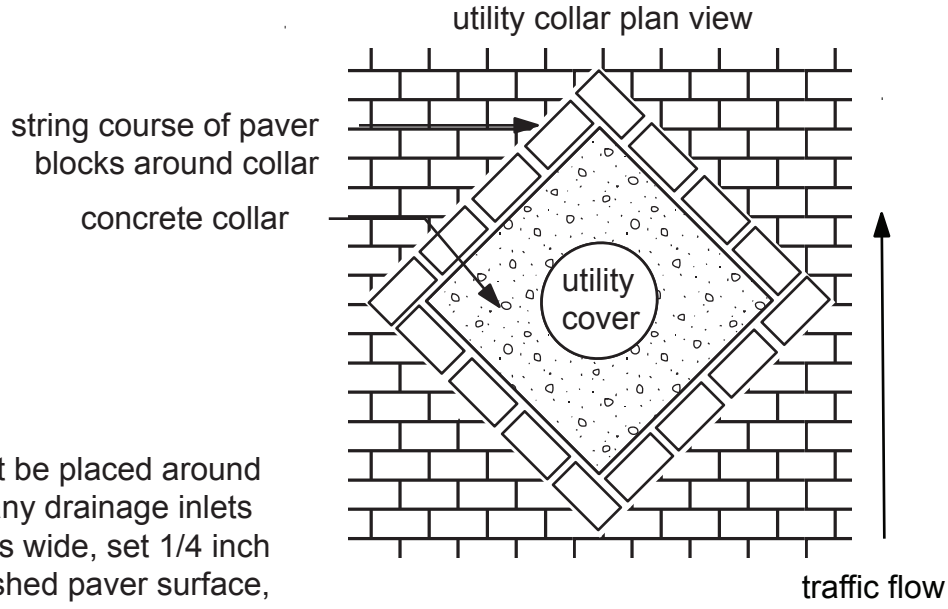
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching backfilled with 3/4 minus crushed rock compacted to at least 90% of the max. dry density determined by ASTM D1557
3) Soils shall be compacted to at least 90 percent of the max. dry density determined by ASTM D1557
4) See BES Stormwater Management Manual for specific stormwater management requirements (this drawing does not reflect all possible site conditions or design options).

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 4

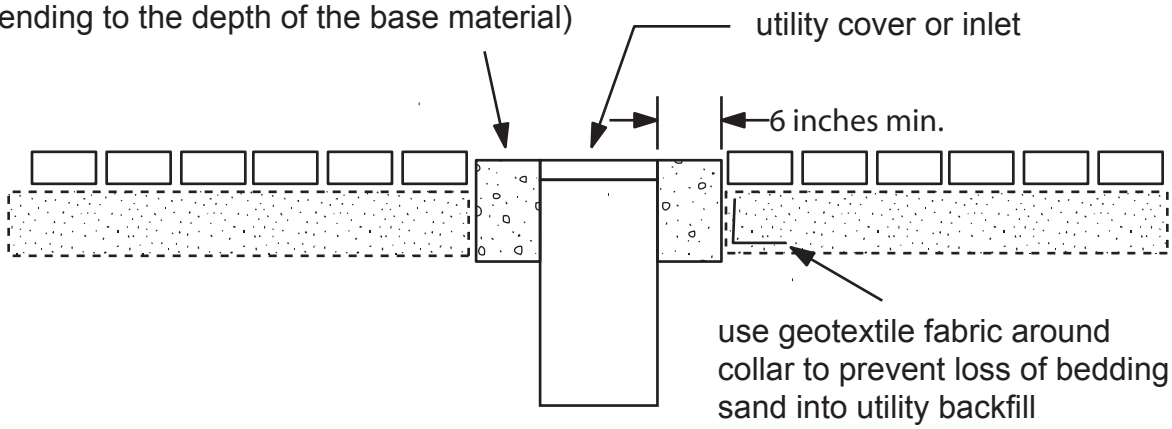
updated 1/4/09

Curbing and Edge Restraint for Concrete Paving Block Roadway Surface





a square concrete collar must be placed around utility covers and any drainage inlets (minimum 6 inches wide, set 1/4 inch below top of finished paver surface, extending to the depth of the base material)



Notes:

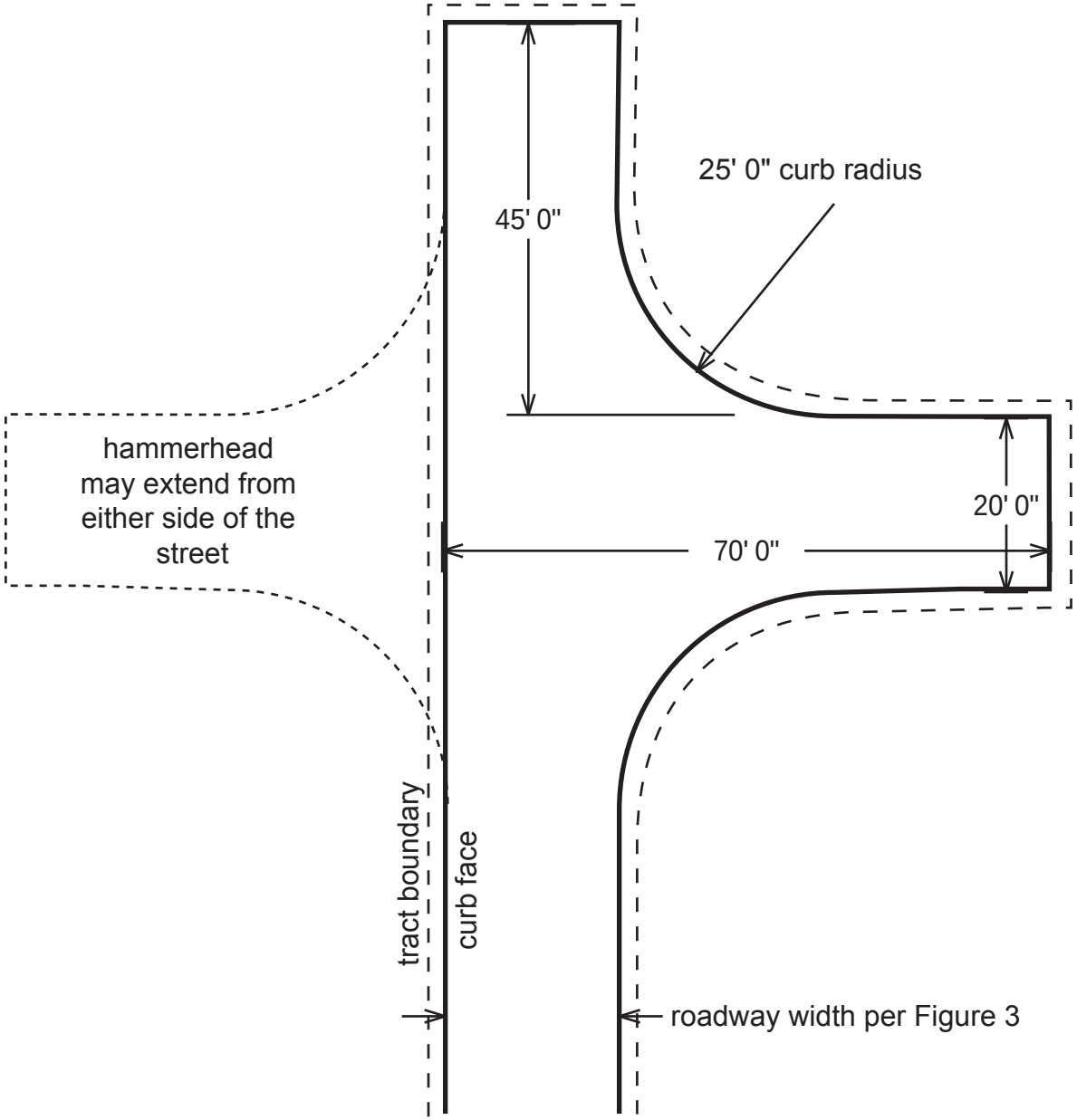
1) See Chapter 2 of the BES Stormwater Management Manual for stormwater management requirments, and facility design specifications.

City of Portland, Bureau of Development Services
Private Street Administrative Rule

Figure 5

updated 1/4/09

Hammerhead Turnaround
for Private Streets More Than 300 Feet Long

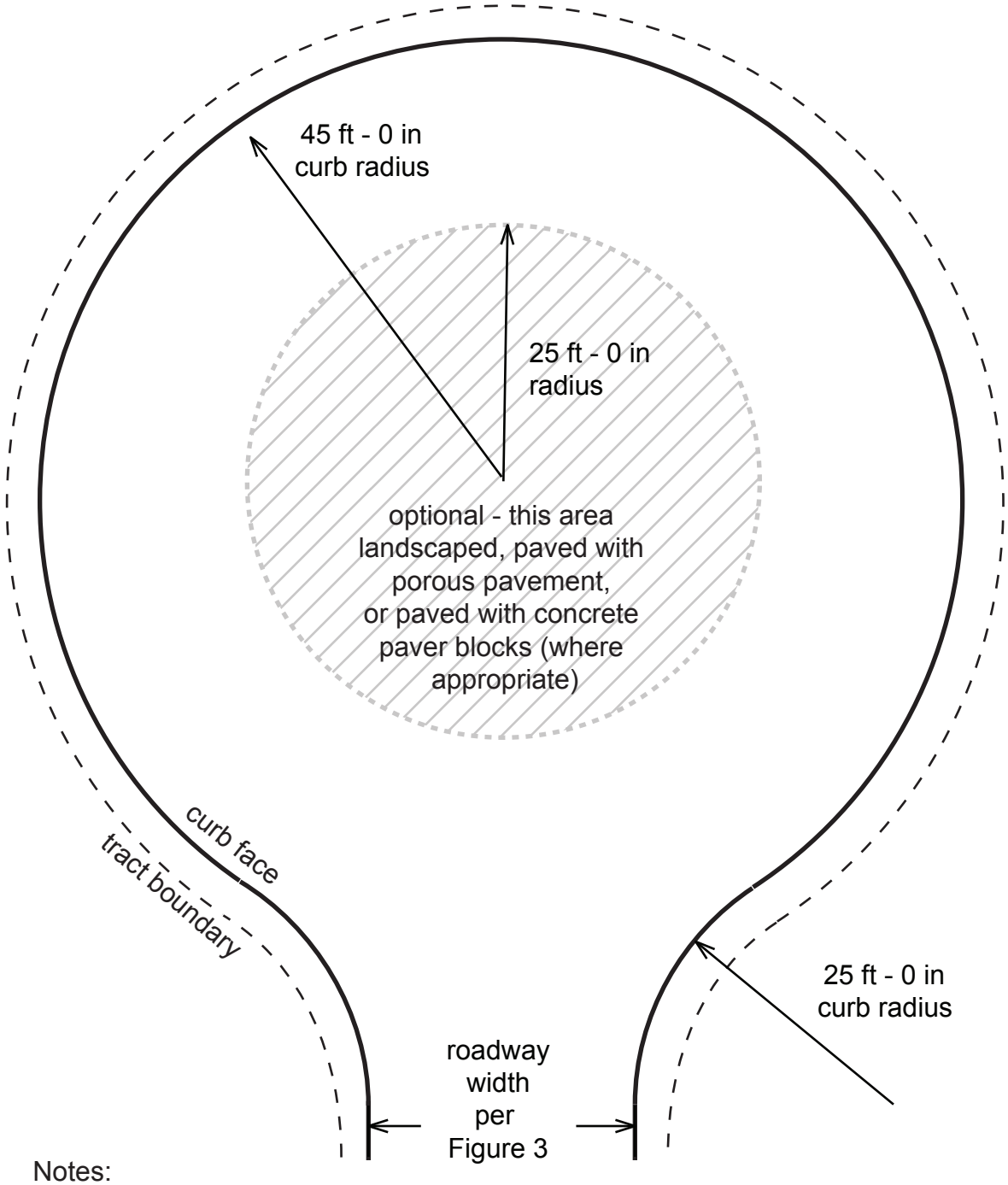


Notes:
1) Dimensions shown are from curb face to curb face. The total size of the street tract will vary, to accommodate setbacks, sidewalks, street trees, stormwater facilities, and any other required right-of-way elements.

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 6

updated 12/26/08

Circular Cul-de-Sac Turnaround for Private Streets More Than 300 Feet Long



Notes:

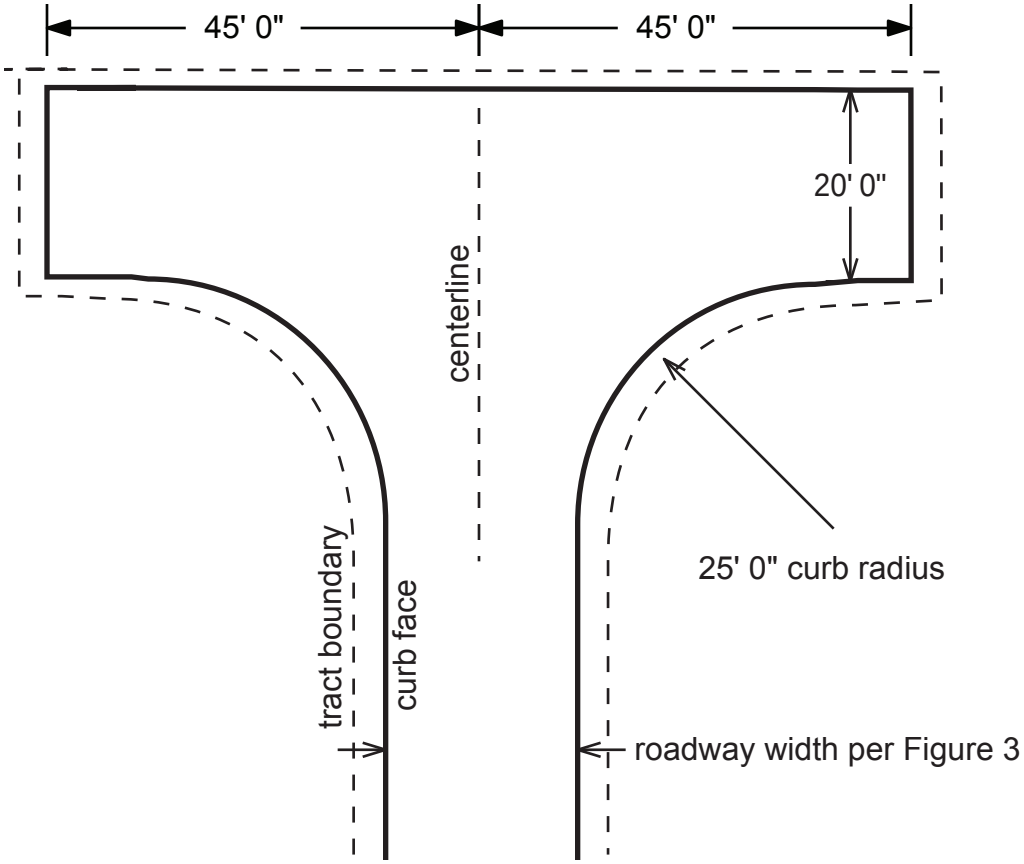
1) Dimensions shown are from curb face to curb face. The total size of the street tract will vary, to accommodate setbacks, sidewalks, street trees, stormwater facilities, and any other required right-of-way elements.

City of Portland, Bureau of Development Services
Private Street Administrative Rule

Figure 7

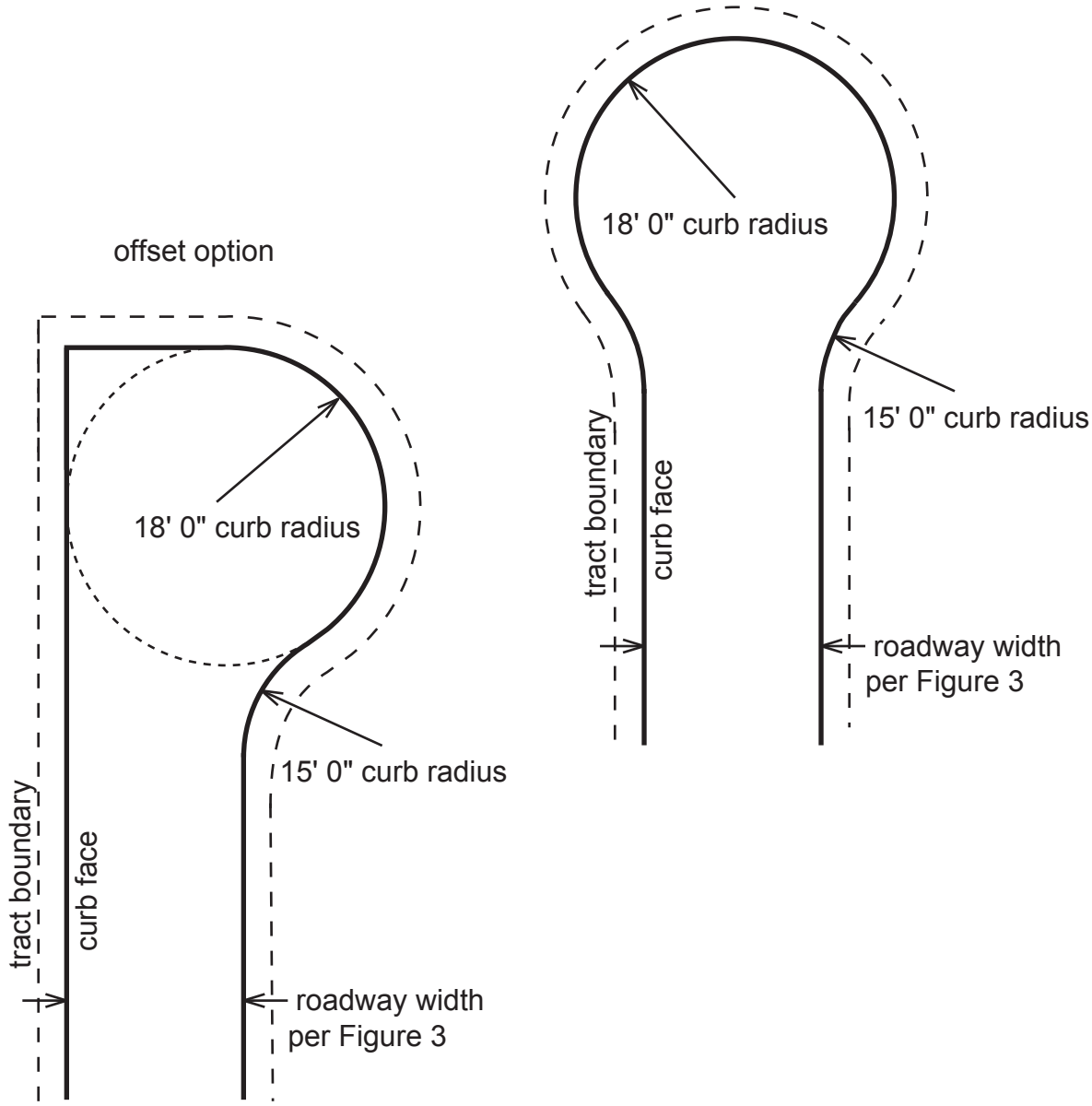
updated 12/26/08

Hammerhead Turnaround for Private Streets More Than 300 Feet Long ("T" Alternative)



Notes:
1) Dimensions shown are from curb face to curb face. The total size of the street tract will vary, to accommodate setbacks, sidewalks, street trees, stormwater facilities, and any other required right-of-way elements.

Circular Cul-de-Sac Turnaround
for Private Streets that Do Not Exceed 300 Feet Long

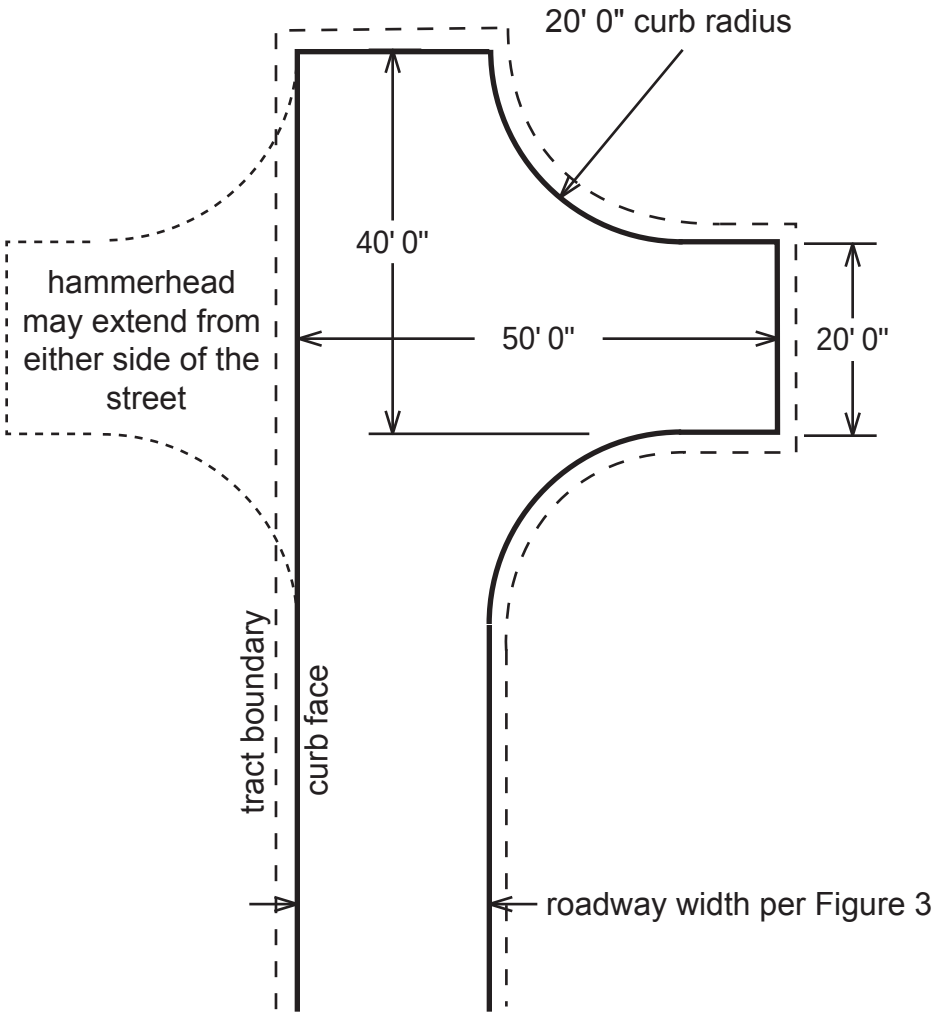


Notes:
1) Dimensions shown are from curb face to curb face. The total size of the street tract will vary, to accommodate setbacks, sidewalks, street trees, stormwater facilities, and any other required right-of-way elements.

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 9

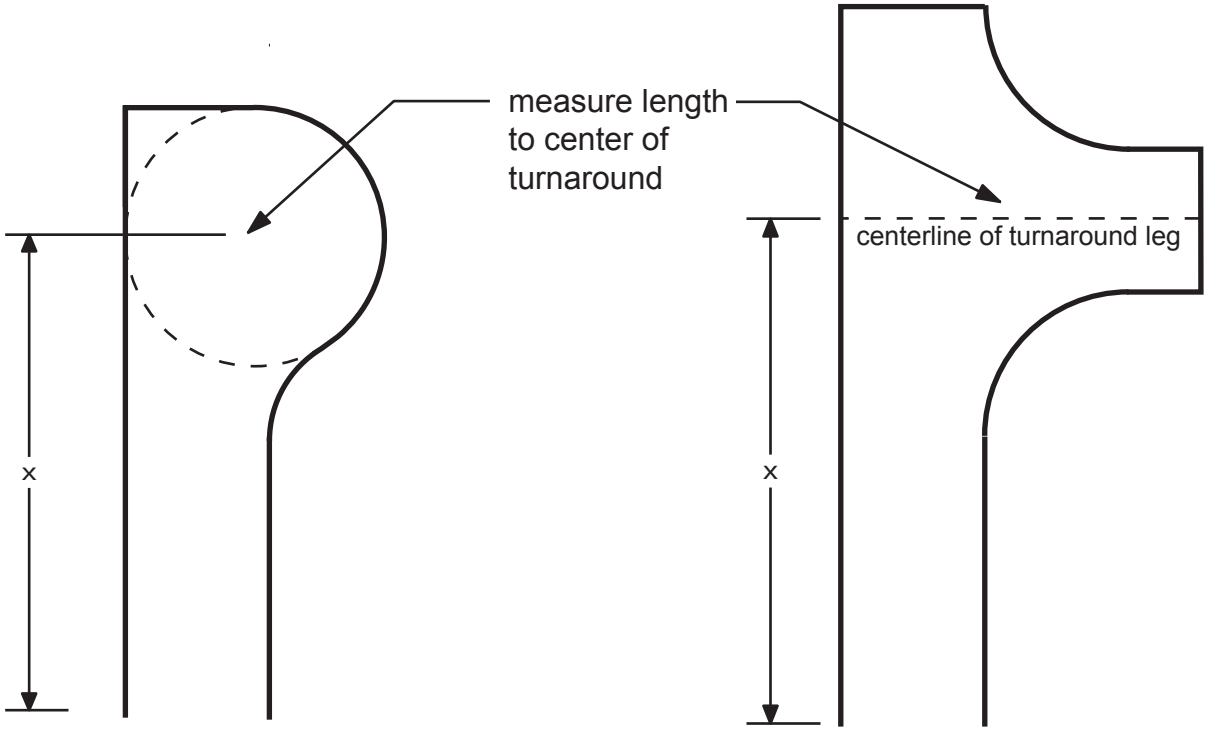
updated 10/10/08

Hammerhead Turnaround
for Private Streets that Do Not Exceed 300 Feet Long



Notes:
1) Dimensions shown are from curb face to curb face. The total size of the street tract will vary, to accommodate setbacks, sidewalks, street trees, stormwater facilities, and any other required right-of-way elements.

Dead End Streets
(Measuring Length)



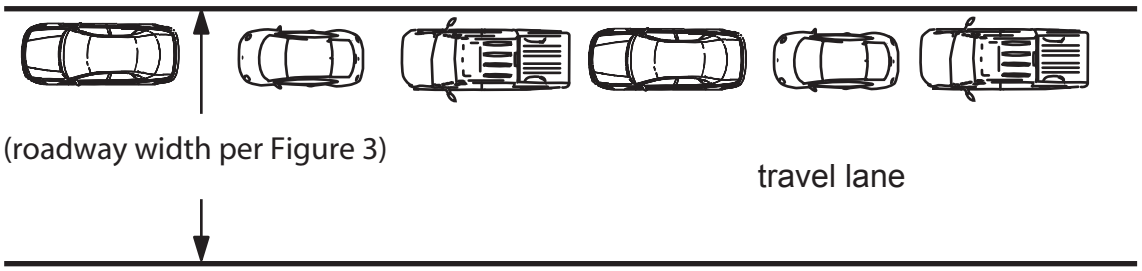
Notes:
1) Where there is no turnaround, street length is measured to the end of pavement.

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 11

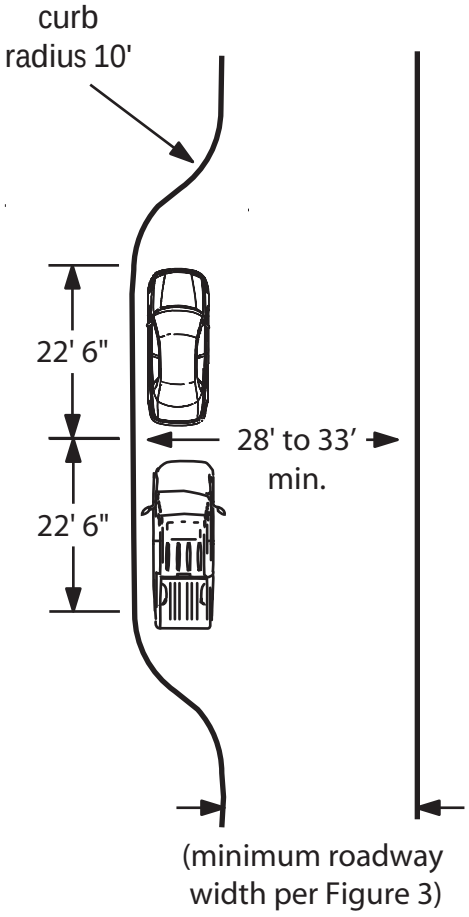
updated 10/17/08

Allowed On-Street Parking Configurations

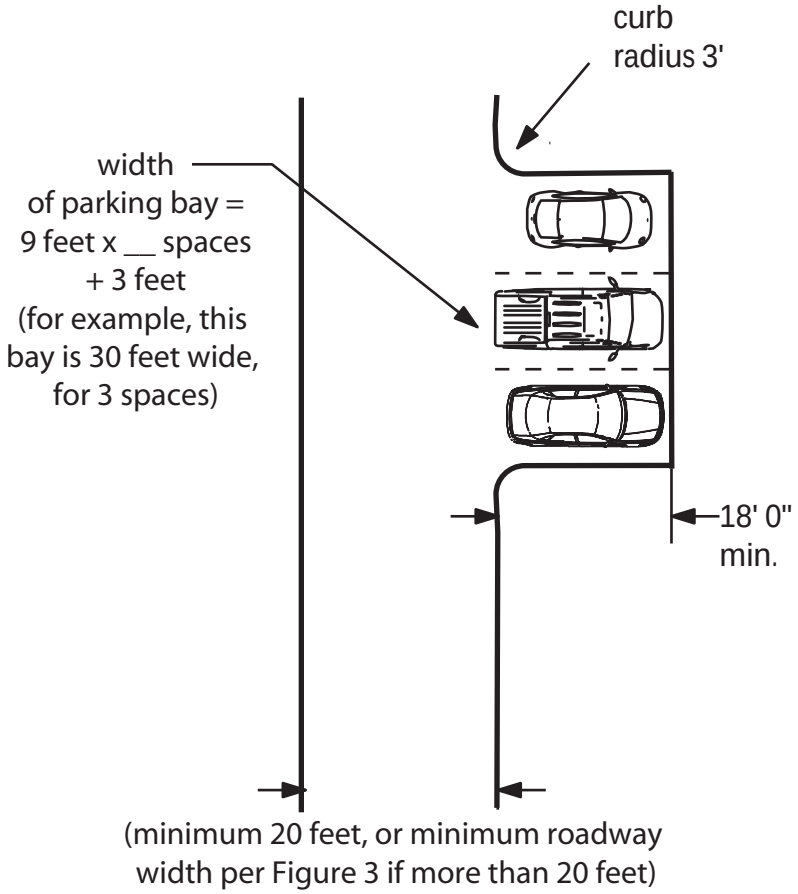
parking lane option



parallel parking bay option



perpendicular parking bay option



City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 12

updated 7/19/09

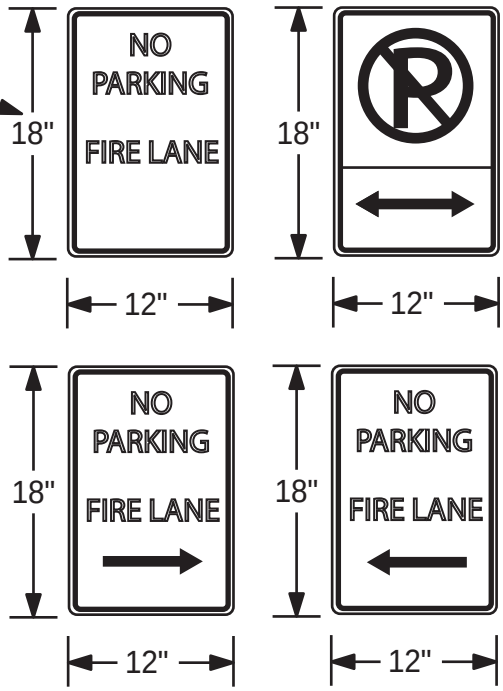
Private Street Signs

street name sign

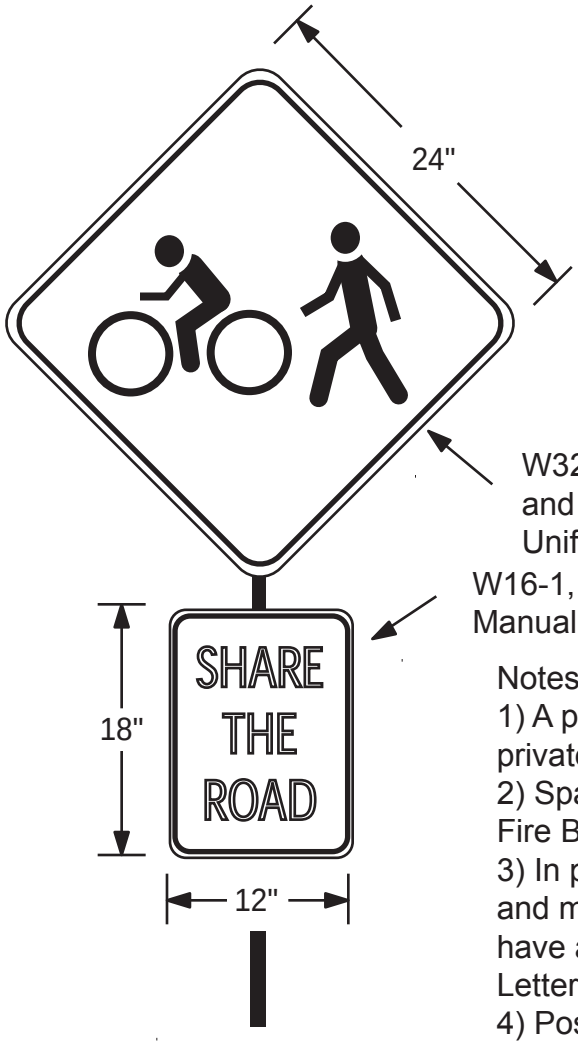
retro-reflective weather resistant material, with green lettering at least 4 inches high on a white background

no parking signs

red lettering on a white reflective background see OFC D103.6



shared court sign



W3262, diamond-shaped with a black legend and border on a yellow background (see Manual on Uniform Traffic Control Devices).

W16-1, black lettering on a yellow background (see Manual on Uniform Traffic Control Devices).

Notes:

1) A private street name sign shall be posted at the private street entrance.

2) Spacing for no parking signs as approved by the Fire Bureau.

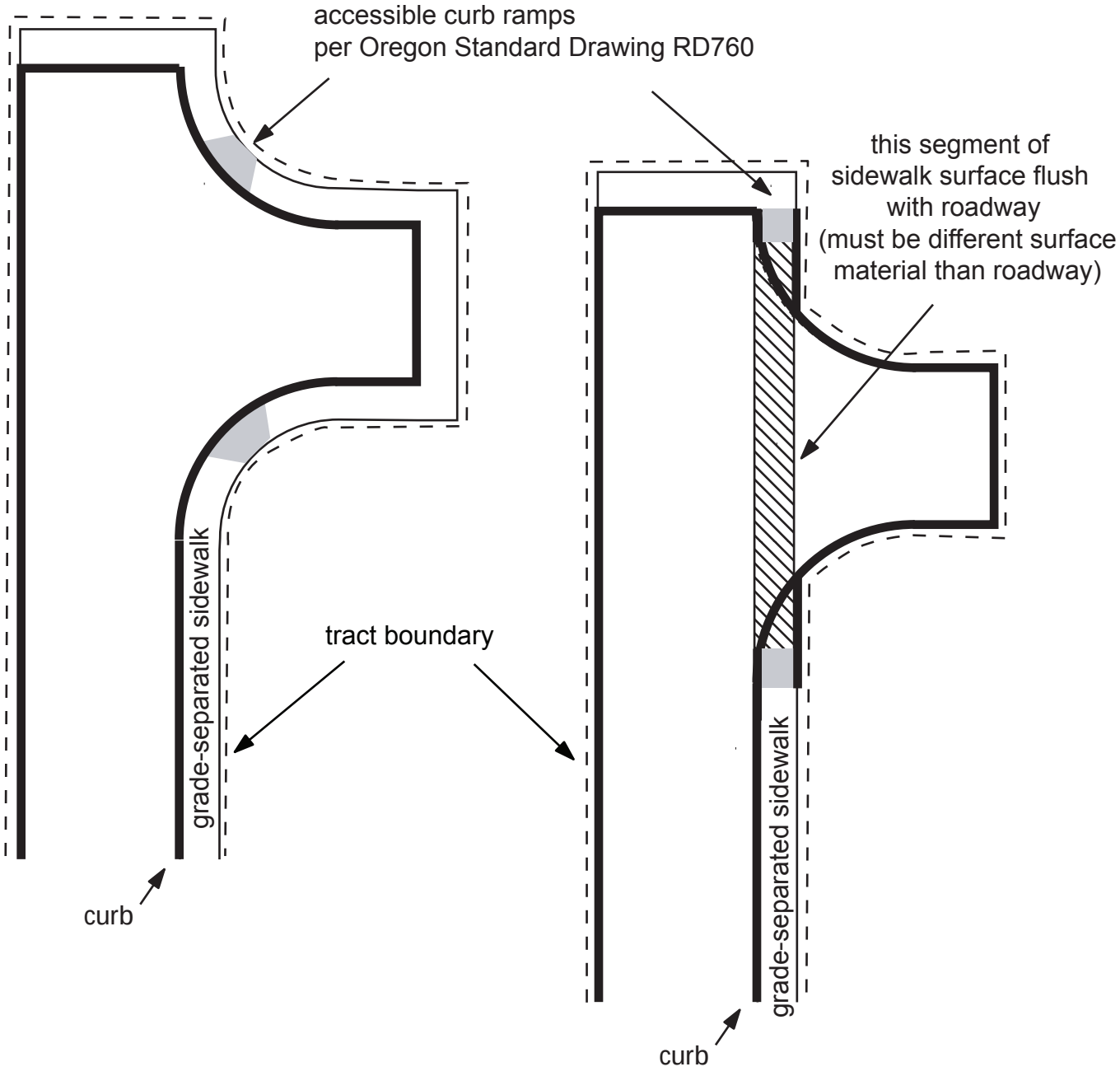
3) In place of no parking signs, curbs may be painted red and marked “NO PARKING FIRE LANE”. Lettering shall have a stroke of not less than 1 inch wide by 6 inches high. Lettering shall be white on red background (OFC 503.3).

4) Post signs W3262 and W16-1 at entance to shared court.

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 13

updated 6/26/10

Sidewalk Location Options for Hammerhead Turnarounds



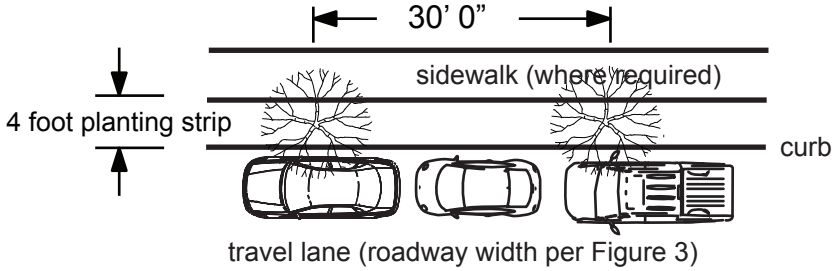
City of Portland, Bureau of Development Services
Private Street Administrative Rule

Figure 14

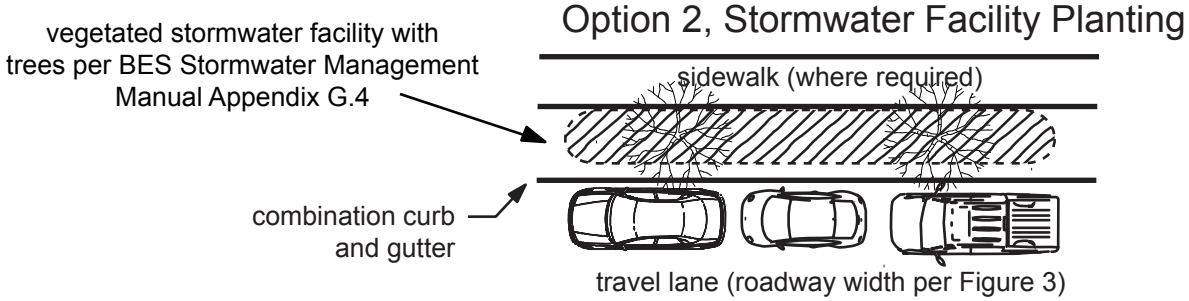
updated 12/26/08

Street Tree Configuration Options

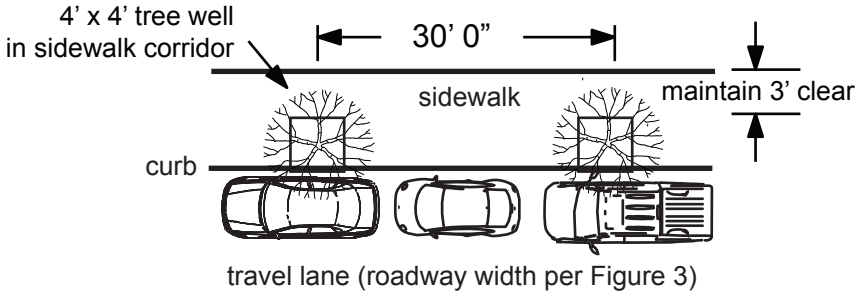
Option 1, Tree Planting Strip



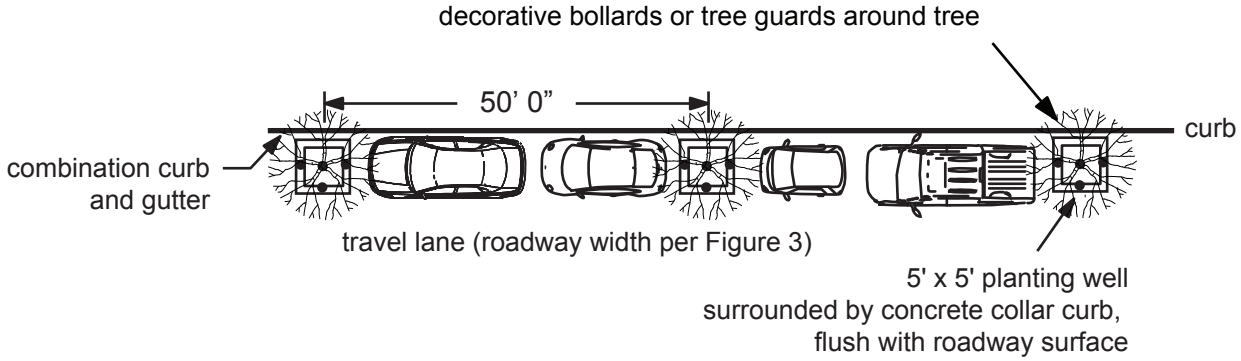
Option 2, Stormwater Facility Planting



Option 3, Sidewalk Tree Wells



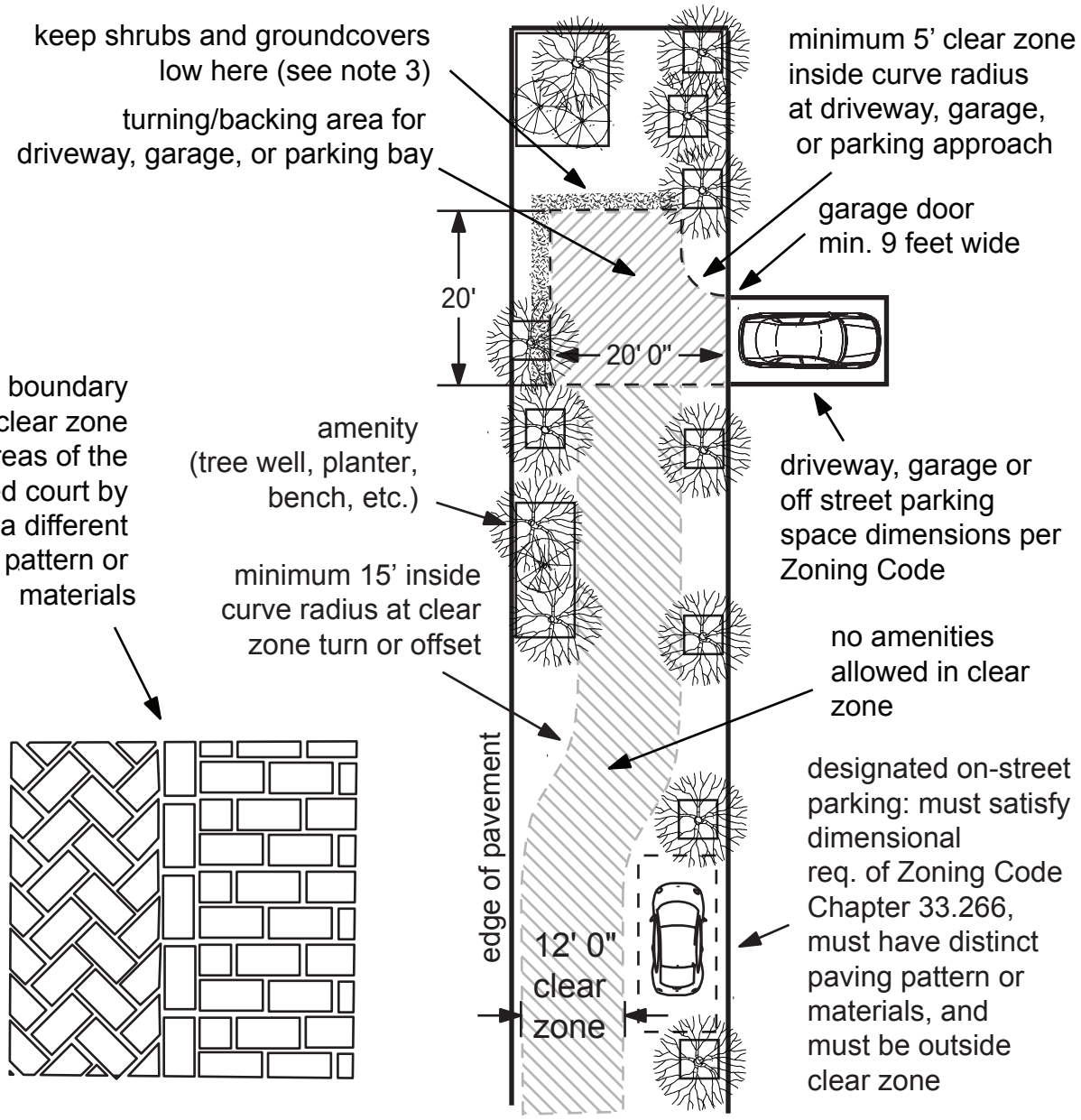
Option 4, Parking Lane Tree Wells



Note: Trees that are planted must provide a 13' 6" clearance for fire department access and must not interfere with aerial apparatus access for buildings that exceed 30 feet in height.

Shared Court Clear Zone

(indicated on this drawing by diagonal lines)

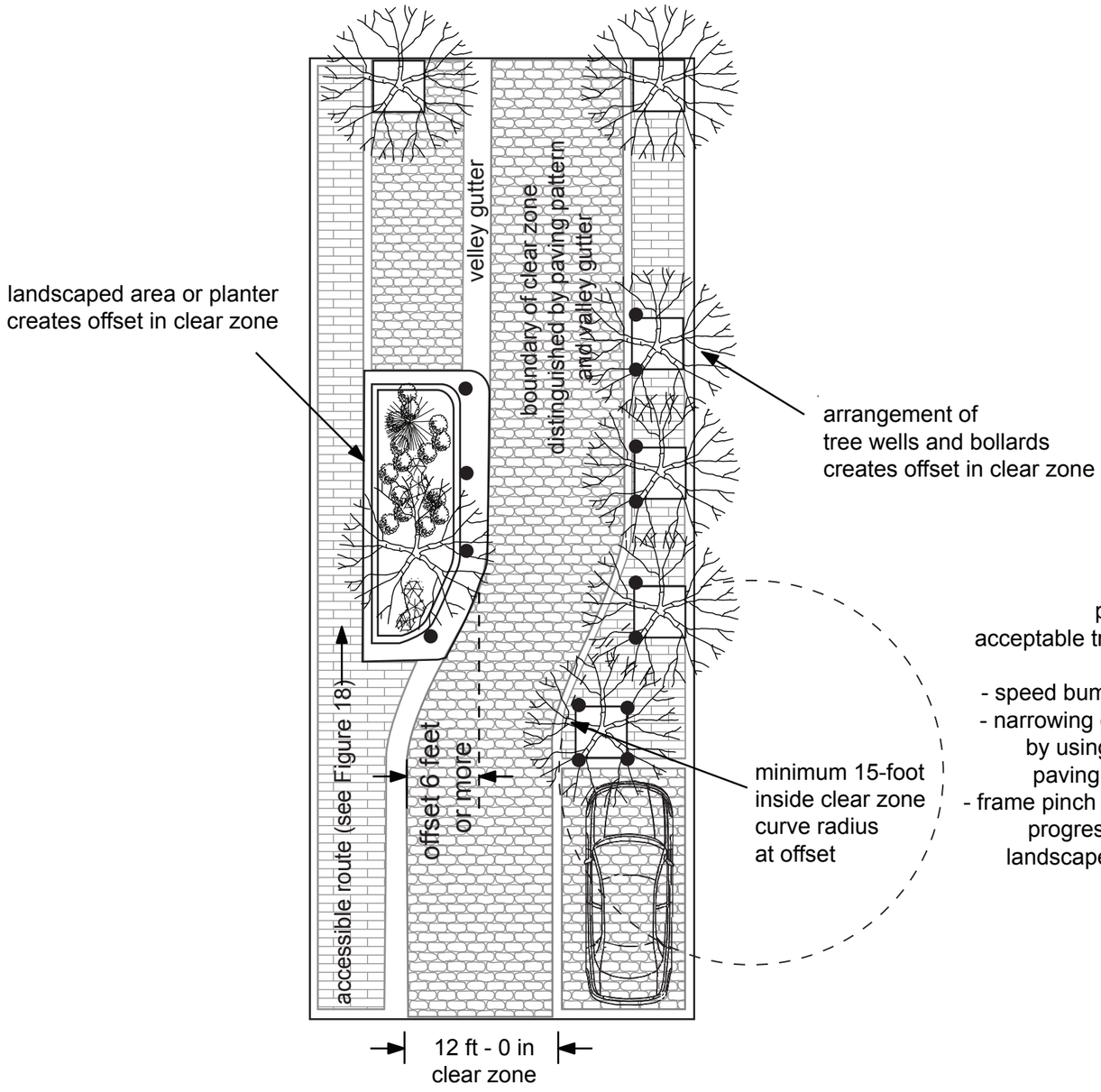


Notes:

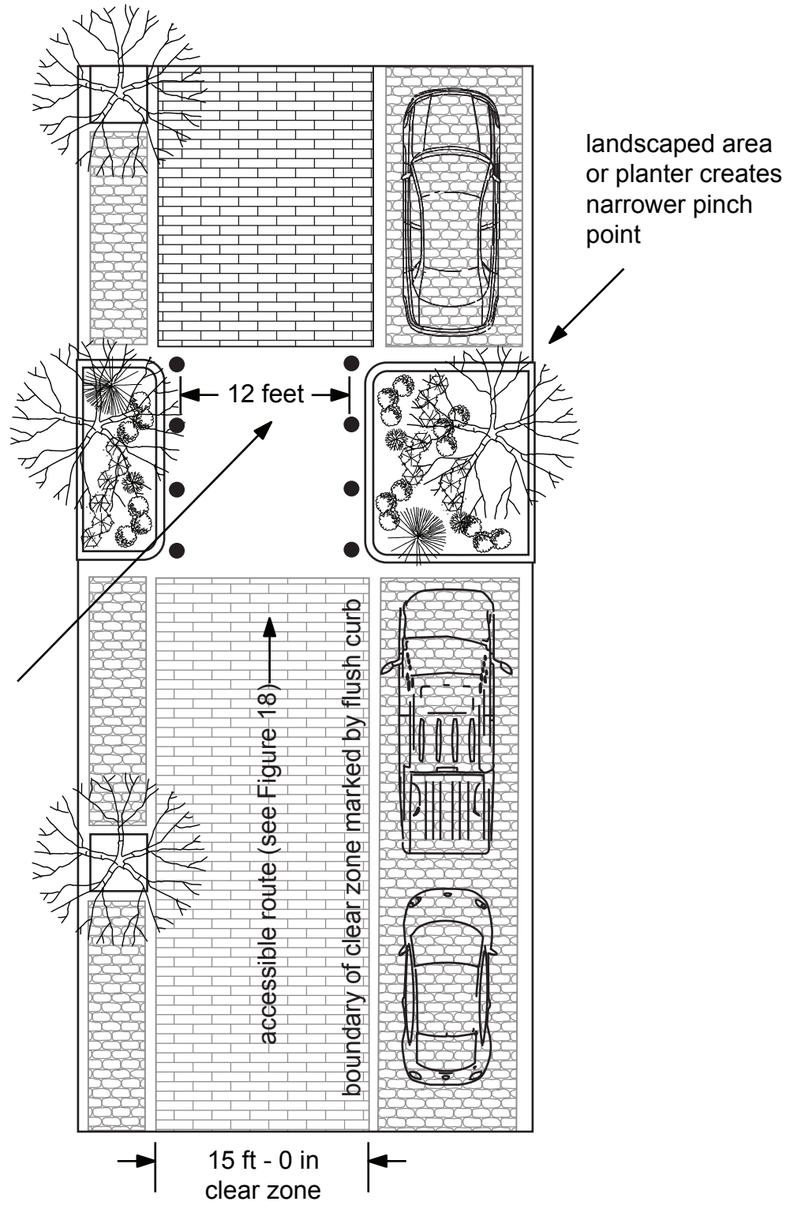
1) Planters, benches, and other similar amenities shall be designed to retain clear sight lines between 2 feet and 6 feet above grade, both within and outside the clear zone.
2) Trees, shrubs and groundcover planting within the tract shall be a species with an expected growth pattern that will not place dense foliage between 2 feet and 6 feet above grade.
3) Shrubs and groundcover planting shall be less than 1 foot tall in any area within 2 feet of a clear zone that may be used as a vehicle backing area, in order to avoid a bumper hitting.
4) Underground utilities are typically located within the clear zone. Utility requirements may dictate that the clear zone be wider than 12 feet.

Traffic Calming Measures for Shared Courts Over 100 Feet Long

Chicane Offset Option (example)



Pinch Point Option (example)

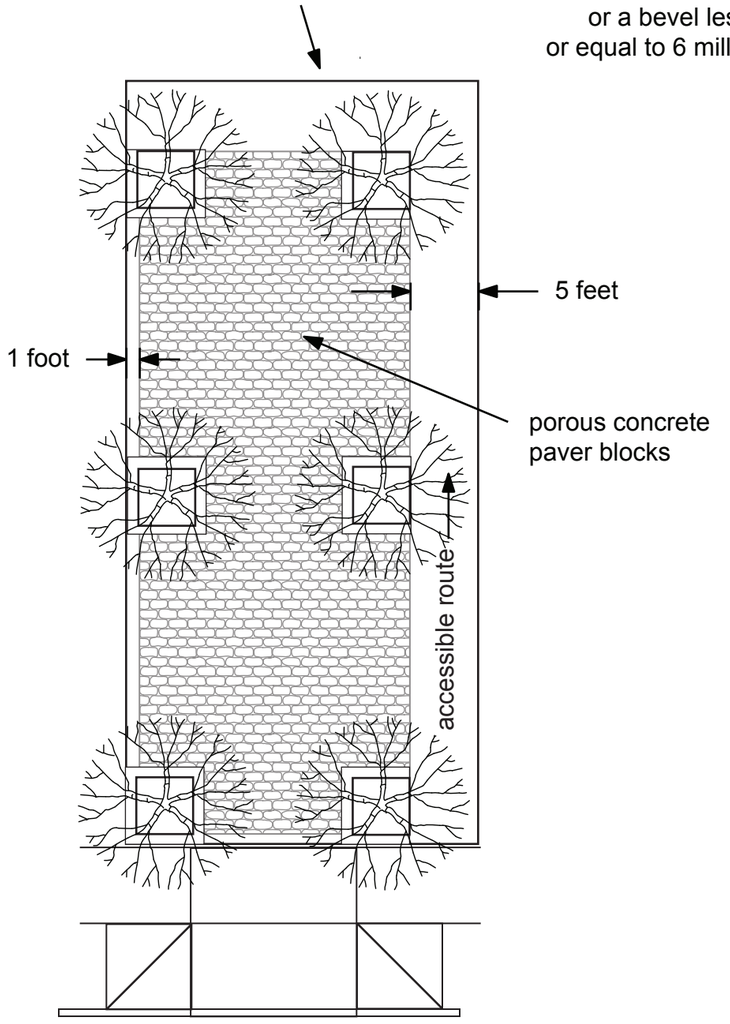


updated 7/3/09

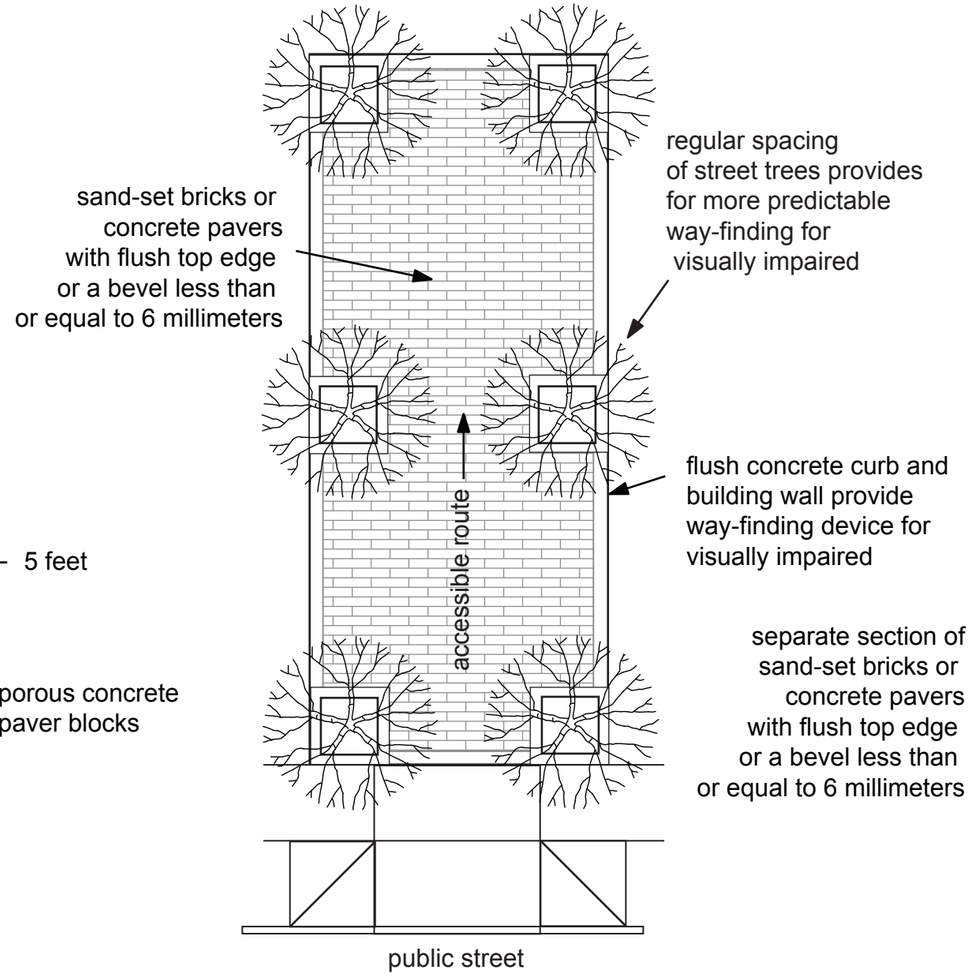
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 17

Shared Court Accessibility Options

use concrete path within court (not grade separated)

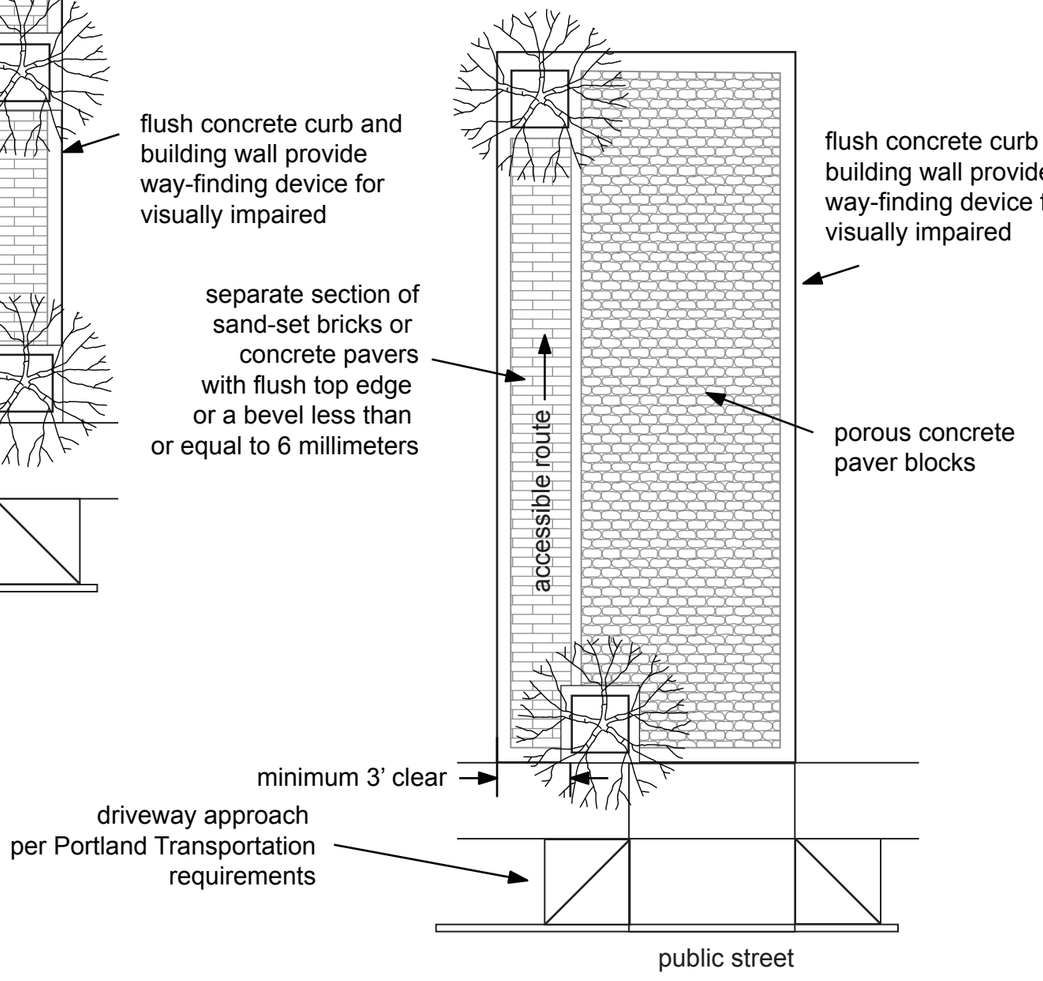


use accessible pavers



Note: Tree limbs shall be at least 6 fet above the street surface at the trunk of the tree.

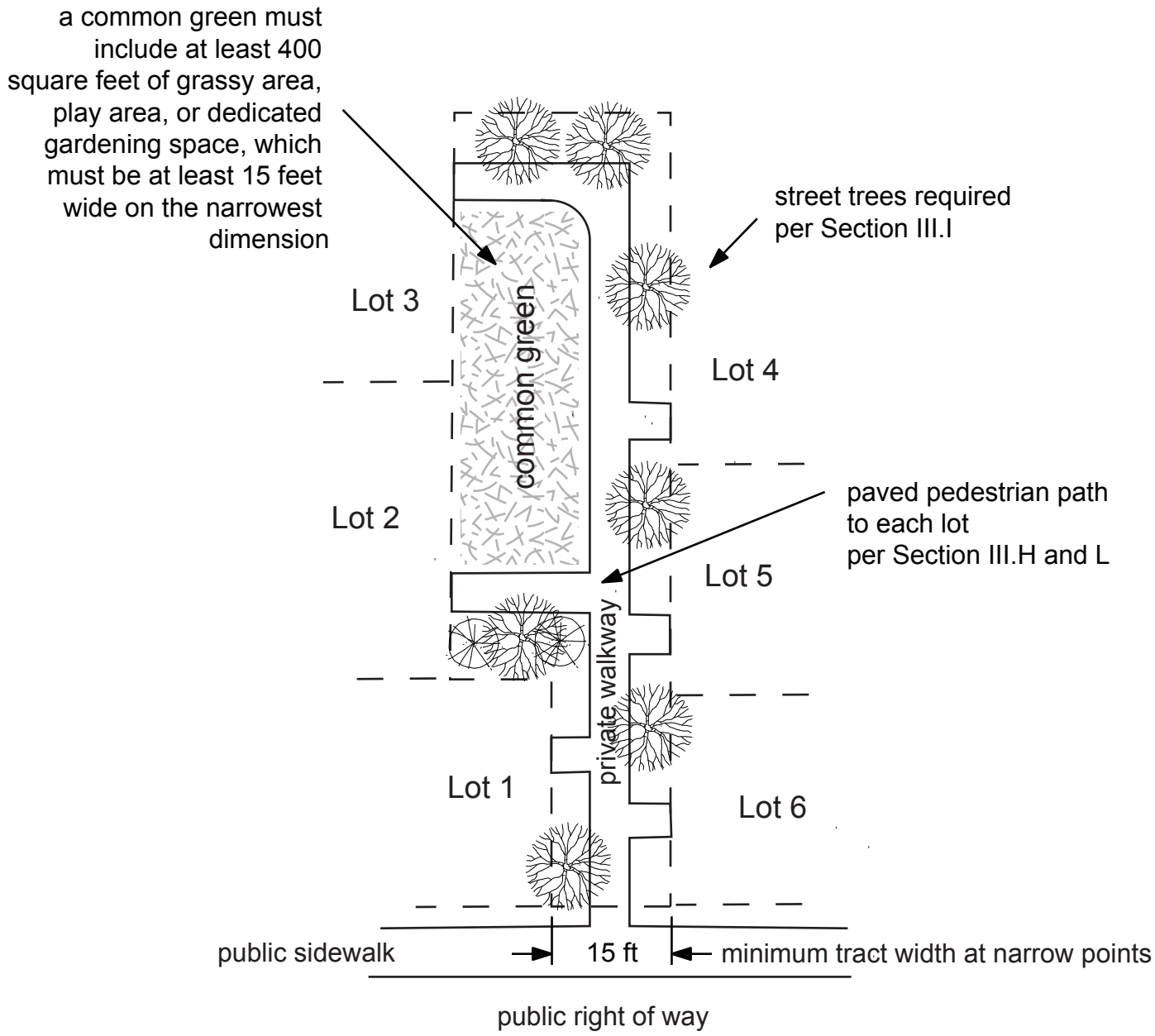
use multiple pavement sections



updated 7/3/09

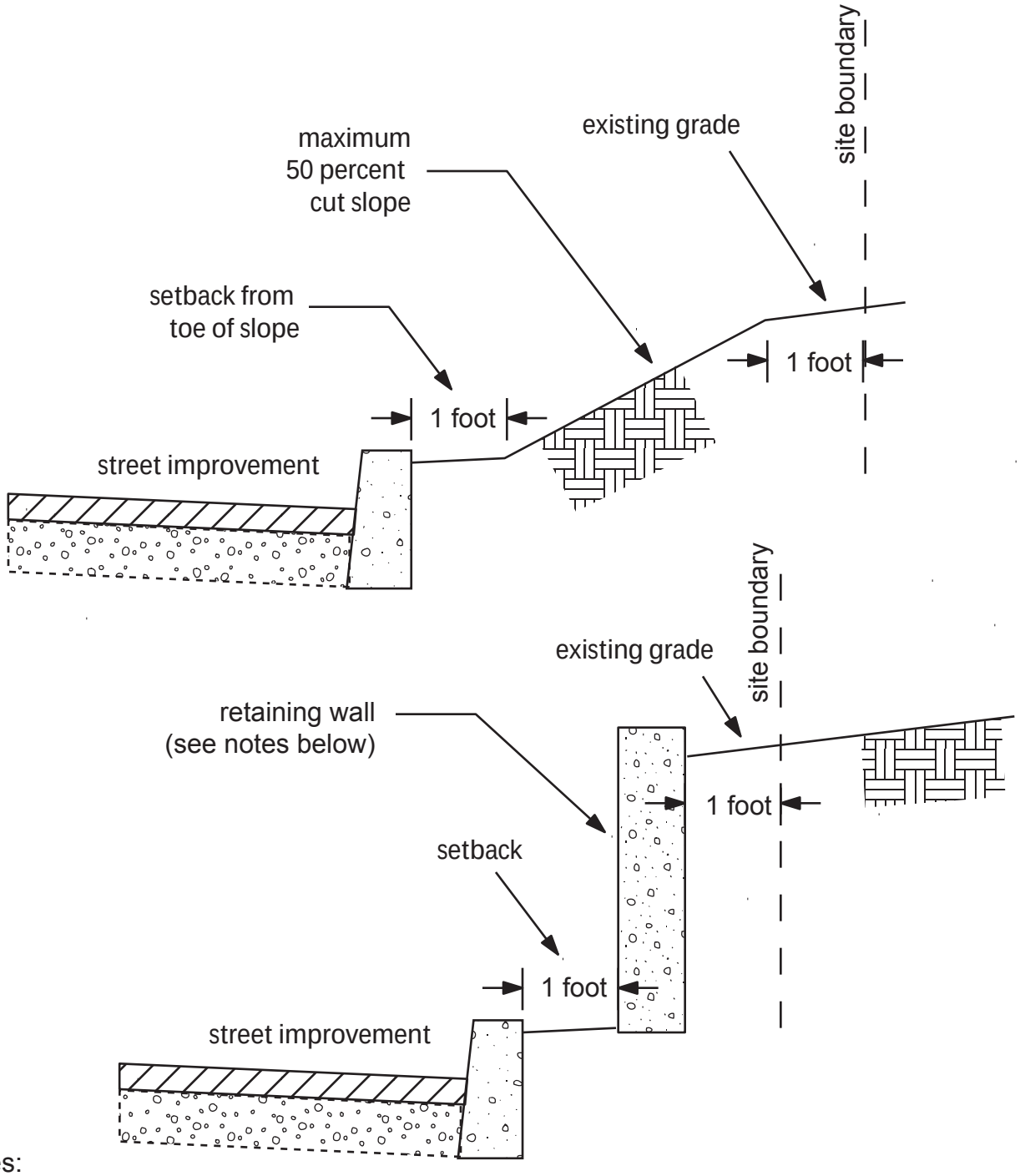
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 18

Common Green and Pedestrian Connection Improvements



Notes:
1) Gazebos, sculptures, art installations, ornamental water features, play equipment, benches, picnic tables, and other similar structures may be located within common greens. See Section III.O.
2) Stormwater facilities may be located within common greens or pedestrian connections. See Section III.L for specific standards.

Grading at Right of Way Edge



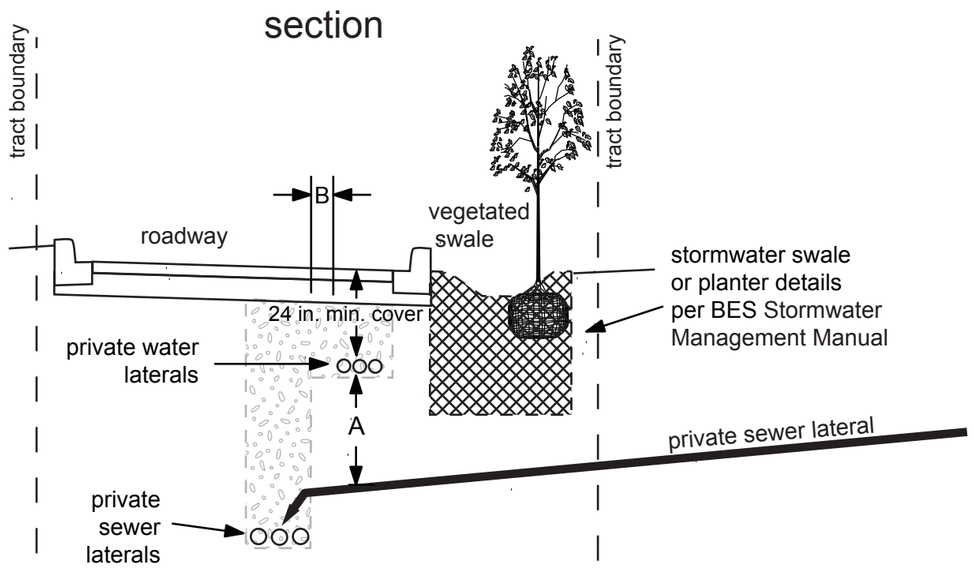
Notes:

1) Engineering calculations are required for walls over 4 feet high. Engineering calculations may also be required for walls that are structurally integral to the street, where the site is steeply sloped, and for surcharged soils.

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 20

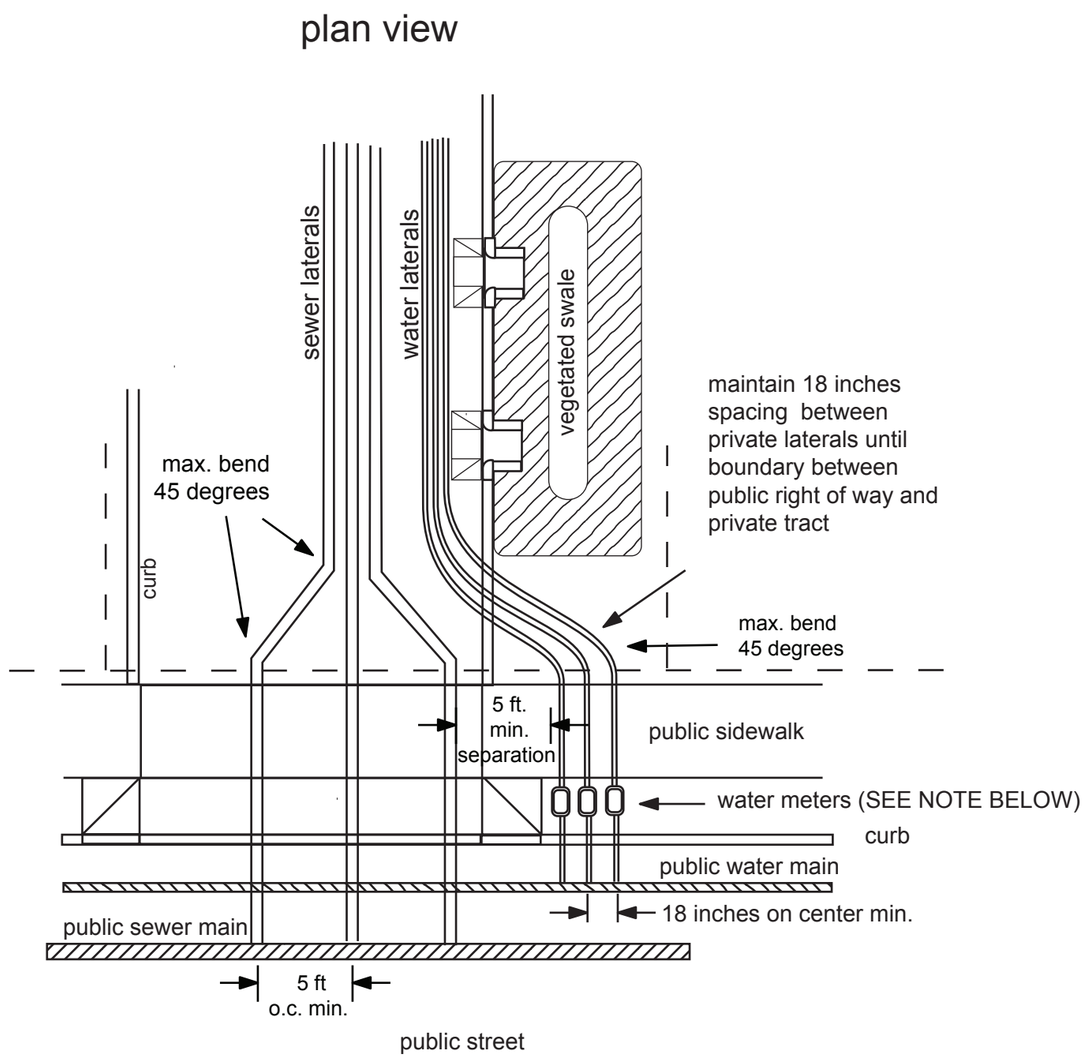
updated 12/26/08

Typical Private Street Utility Configuration (3 Lots)



Utility Separation

Utility	private water lateral	private sewer lateral
private water lateral	maintain 18 inch spacing (on center) for water meters and private laterals within the public right of way laterals may be bundled in one trench within private tract	private water lateral must be 24 inches above private sewer lateral (dimension A) minimum 12 inches horizontal separation between private water and sewer laterals (dimension B)
private sewer lateral	private water lateral must be 24 inches above private sewer lateral (dimension A) minimum 12 inches horizontal separation between private water and sewer laterals (dimension B)	maintain 5 foot spacing (on center) for private sewer lateral taps into the public sewer main laterals may be bundled in one trench within private tract



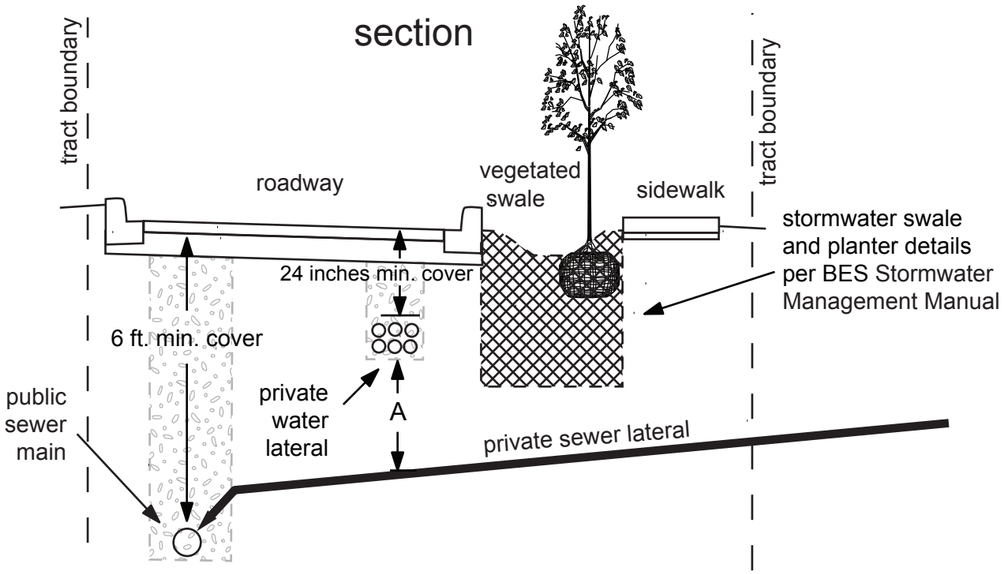
Notes:

1) This drawing is intended to provide general guidance only. It is not drawn to scale. For specific standards, refer to the most current edition of the BES Sewer Design Manual, the Water Bureau Developer's Manual, and the Oregon State Plumbing Code.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to 90% of the maximum dry density determined by ASTM D1557.
3) Sewer and water laterals should be routed to individual lots without crossing through stormwater swale or planters. Swales and planters should be set back from driveway locations by several feet to allow installation utility laterals.
4) Water meters must be located in the public right of way. For lots that have no public street frontage, meters must be in front of the private tract frontage. See BES Stormwater Management Manual Appendix G.3 for information about meter placement if there is a stormwater infiltration facility in the public street right of way.

updated 11/4/09

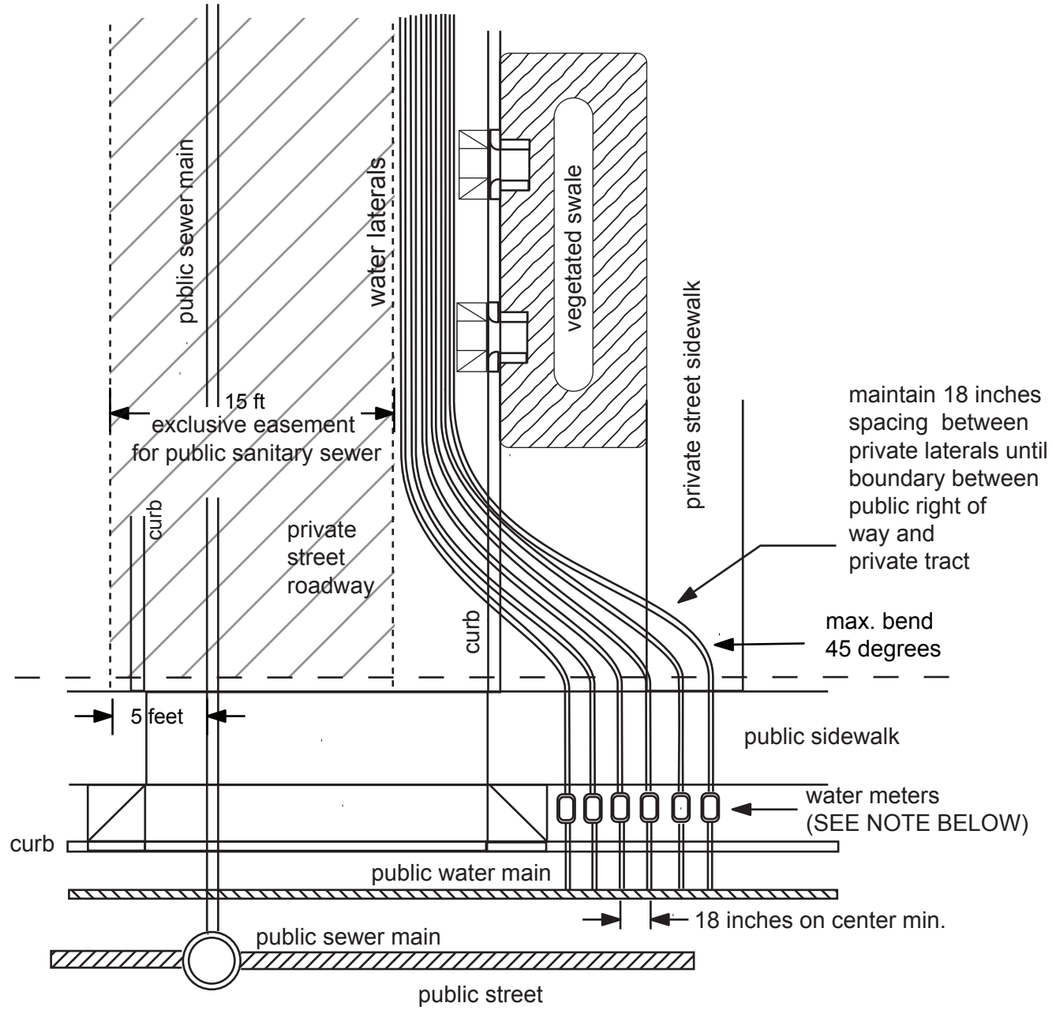
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 21

Typical Private Street Utility Configuration (6 Lots)



Utility Separation

Utility	private water lateral	private sewer lateral
private water lateral	maintain 18 inch spacing (on center) for water meters and private laterals within the public right of way laterals may be bundled in one trench within private tract	private water lateral must be 24 inches above private sewer lateral (dimension A) minimum 12 inches horizontal separation between private water and sewer laterals (dimension B)
private sewer lateral	private water lateral must be 24 inches above private sewer lateral (dimension A) minimum 12 inches horizontal separation between private water and sewer laterals (dimension B)	maintain 5 foot spacing (on center) for private sewer lateral taps into the public sewer main laterals may be bundled in one trench within private tract



Notes:

1) This drawing is intended to provide general guidance only. For specific standards, refer to the most current edition of the BES Sewer Design Manual, the Water Bureau Developer's Manual, and Oregon State Plumbing Code.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to 90% of the maximum dry density determined by ASTM D1557.
3) Public sewer easements are for the exclusive use of public sewers. The Chief Engineer (BES)must approve any other utility placed within the easement area.
4) Sewer and water laterals should be routed to individual lots without crossing through stormwater swale or planters. Swales and planters should be set back from driveway locations by several feet to allow installation of laterals.
5) Water meters must be located in the public right of way. For lots that have no public street frontage, meters must be in front of the private tract frontage. See BES Stormwater Management Manual Appendix G.3 for information about meter placement if there is a stormwater infiltration facility in the public street right of way.

updated 1/4/09

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Figure 22

City of Portland, Oregon
Bureau of Development Services
Land Use Services

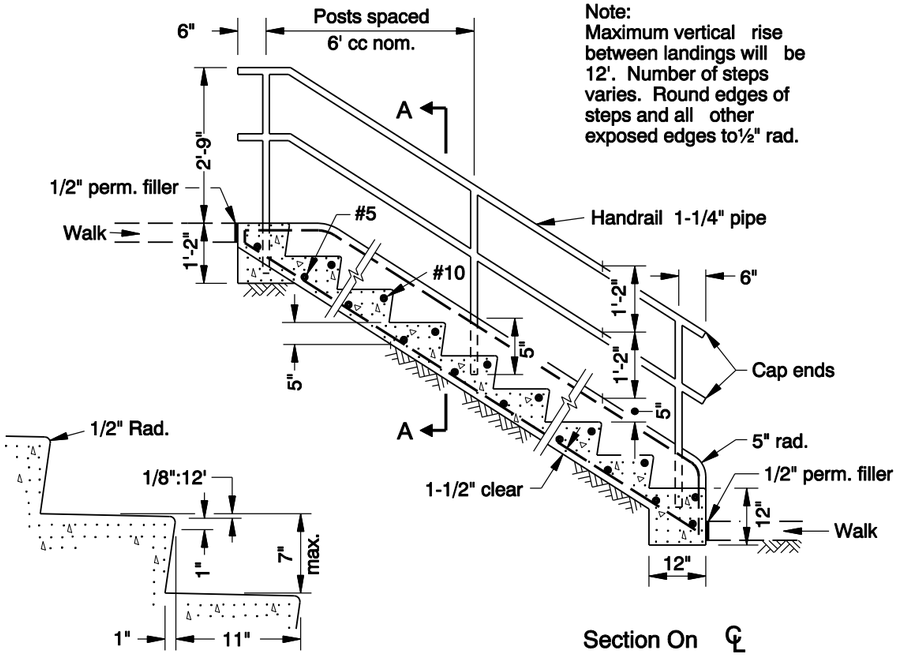
1900 SW 4th Avenue, Suite 5000
Portland, Oregon 97201
503-823-7300
Fax 503-823-5630
TTY 503-823-6868
www.portlandonline.com/bds

PERMANENT RULE

Private Rights-of-Way - Streets, Alleys, Shared Courts, Common Greens and Pedestrian Connections

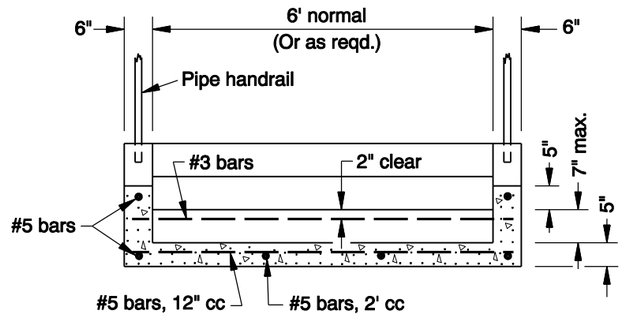
Appendix B – Referenced Oregon Standard Drawings and Details

Drawing #	Drawing Name
RD120	Concrete Stairs
RD 400	Guardrail and Metal Median Barrier
RD 405	Guardrail and Metal Median Barrier Parts
RD 415	Guardrail and Metal Median Barrier Parts
RD 700	Curbs
RD 720	Sidewalks
RD 715	Approaches and Non-Sidewalk Driveways
RD 725	Separated Sidewalk Driveways or Alleys (Options A, B & C) ODOT Highways
RD 735	Curb Line Sidewalk Driveways or Alleys (Options F & G) ODOT Highways
RD 740	Separated Sidewalk Driveways or Alleys (Options H, I & J) ODOT Highways
RD 750	Curb Line Sidewalk Driveways or Alleys (Options M & N) Local Jurisdictions
RD 760	Sidewalk Ramp Placement
TM 200	Sign Placement
Det 4235	Pipe Sign Support Detail
Det 1710	Bollards



Details Of Treads

Section On ℄



SECTION A-A

Note:
Maximum vertical rise between landings will be 12'. Number of steps varies. Round edges of steps and all other exposed edges to½" rad.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CONCRETE STAIRWAY

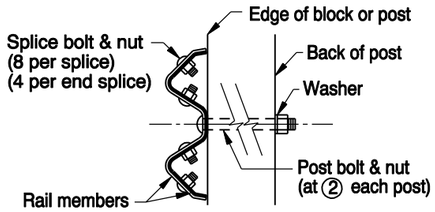
2002

REVISIONS	
DATE	DESCRIPTION

12-JAN-2007

rd400.dgn

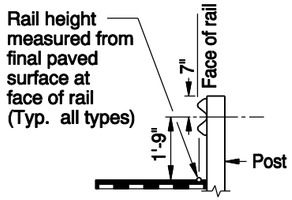
FITTINGS



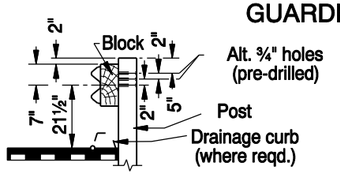
1. When required by the plans, post bolts to extend beyond the tightened nuts within limits of ¼" to ½".
2. When steel posts are used see "POSTS" for modified bolt detail, Std. Drg. RD415.
3. All post bolt threads to be set after assembly for wrench removal only.

GUARDRAIL

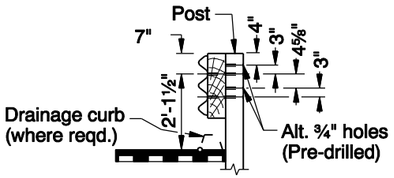
NOTE:
Final paved surfacing to extend to face of post.



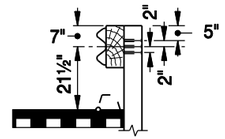
TYPE 1
(Use restricted to non-roadway applications)



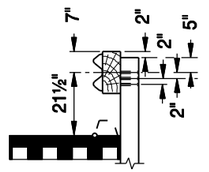
INITIAL INSTALLATION



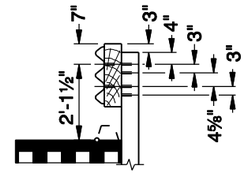
INITIAL INSTALLATION



ALTERNATE
INITIAL INSTALLATION
OR FUTURE ADJUSTMENT
TYPES 2A & 3
(See General Note 3)
(For Type 3 use double thickness (2) rail elements)



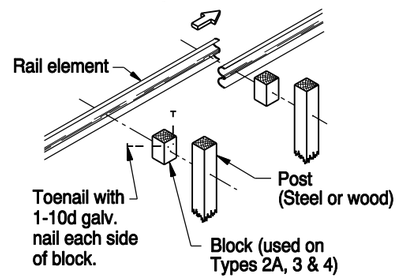
FUTURE ADJUSTMENT



RAIL AFTER OVERLAY
(Adjust as shown)

TYPE 4

ASSEMBLY DETAILS



RELATION OF PARTS

TABLE OF POST SPACING

TYPE	1	2A	3	4
SPACING	12'-6"	6'-3"	3'-1½"	6'-3"

METAL MEDIAN BARRIER

NOTE:
Median barrier post spacing 6'-3".
See end construction for variations.

SECTION
(See "Guardrail" details and General Note 3)

⅝" bolt threaded each end at each post (2b)

① Post bolts to extend beyond the tightened nuts within limits of ¼" to ½".

② When barrier separates to double post mounting:
a) use ⅝" dia. button or alternate bolt with washer and hex nut.
b) use ⅝" dia. carriage bolt with washer and nut.

CHANNEL RAIL AND SPLICE PLATE
(METAL MEDIAN BARRIER)

NOTES:

- Channel rail elements and splice plates to be of steel conforming to ASTM A36 and to be galvanized after fabrication in accordance with AASHTO M111.
- Nuts, bolts and other hardware for channel rail assembly shall conform to ODOT Standard Specifications sub-section 2820.30.
- Clearance to be 1⅛" at rail splice for bridge expansion joints.

ASSEMBLY DETAILS

RELATION OF PARTS

METAL MEDIAN BARRIER/SHOULDER GUARDRAIL INSTALLATION AT BRIDGE DECK EXPANSION JOINT

PLAN

CORRUGATED RAIL

CHANNEL RAIL AND SPLICE PLATE

NOTES:
① Place 2 - 1/32" polytetrafluoroethylene (TFE) sheets between corrugated rail members. The sheets shall be 12½"x1'-7".

② Adjust nuts to provide a sliding fit and set threads to prevent loosening.

GENERAL NOTES FOR ALL DETAILS:

1. For details of parts, see Std. Drgs. RD405, RD410 & RD415.
2. For details of guardrail installation, see Std. Drgs. RD420, RD425, RD430, RD435 & RD440.
3. Use "Alternate Initial Installation", at bridge ends (See Std. Drg. RD440), adjacent to P.C.C. pvmt., for temporary guardrail, to match existing guardrail, for Type 1 rail or as directed.

CALC. BOOK NO. _ _ _ _ _ _ _ _ _ _ _ _

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 and should not be used without consulting a Registered Professional Engineer.

BASELINE REPORT DATE _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

GUARDRAIL AND METAL MEDIAN BARRIER

2002

DATE	REVISION DESCRIPTION
01-20-05	REVISED NOTES
11-14-06	REVISED NOTES
01-2007	REVISED NOTES

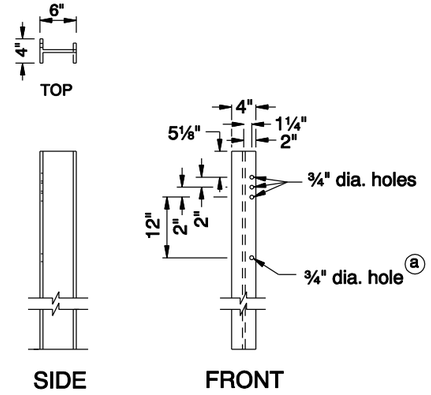
RD400

Effective Date: May 1, 2007 - October 31, 2007

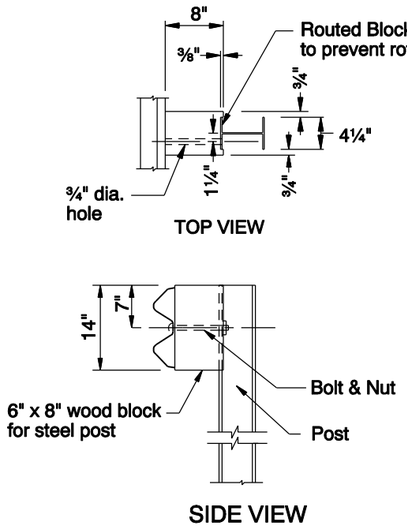
RD400

POSTS

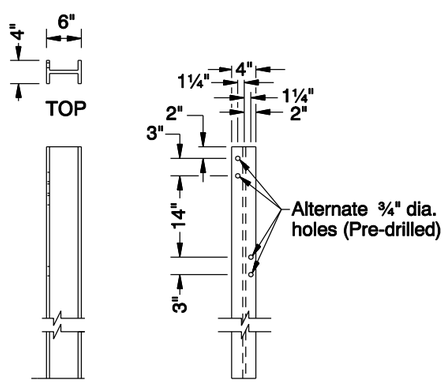
STEEL



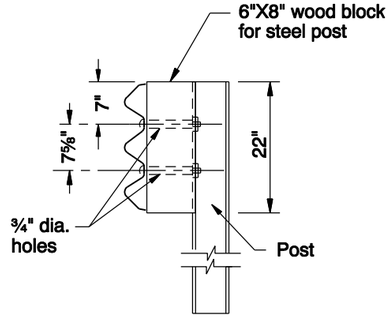
TYPE 2A, 3 OR METAL MEDIAN BARRIER



TYPE 2A, 3 OR METAL MEDIAN BARRIER
WOOD BLOCK FOR STEEL POST



TYPE 4 OR TYPE 4 (TRANSITION) POST



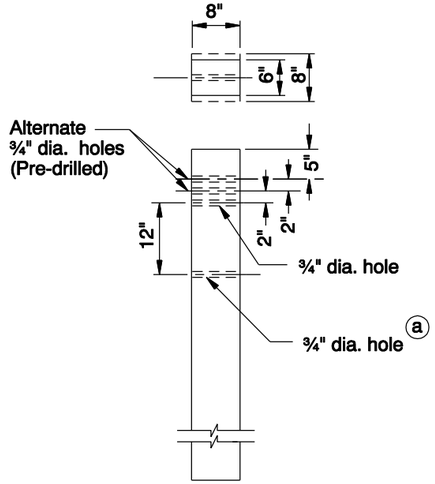
TYPE 4 OR TYPE 4 (TRANSITION) BLOCK
(Routing not required)

GUARDRAIL POST TABLE				
GUARDRAIL TYPE	POST SIZE		POST LENGTH	
	WOOD	STEEL *	WOOD	STEEL
1	6" x 8" or 8" x 8"	—	6'-0"	—
2A	6" x 8" or 8" x 8"	W6 x 8.5	6'-0"	6'-6"
3	8" x 8"	W6 x 8.5	6'-0"	6'-6"
Metal Median Barrier	8" x 8"	W6 x 8.5	6' 6"	6'-6"
4	6" x 8" or 8" x 8"	W6 x 8.5	7'-0"	7'-0"
4 (Transition)	8" x 8"	W6 x 8.5	6'-0"	6'-9"

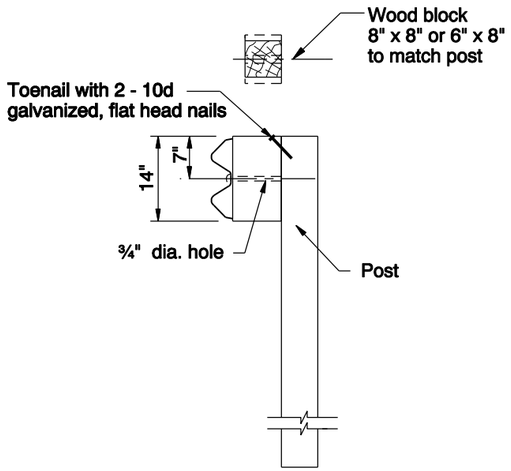
* W6 x 9 is an acceptable alternative for W6 x 8.5

ⓐ Lowest hole(s) required only where channel rail is to be installed. Drill 12" below top¾" hole(s) used.

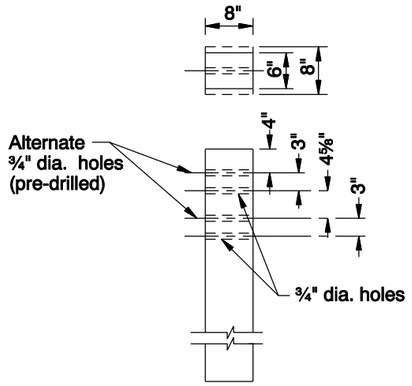
WOOD



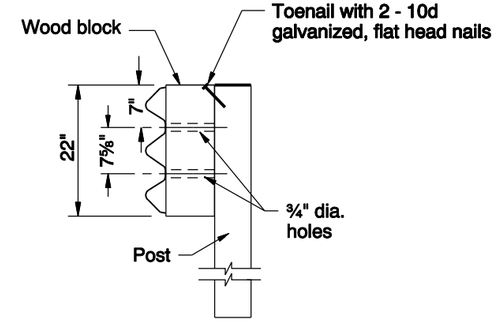
TYPE 1, 2A, 3 OR
METAL MEDIAN BARRIER



TYPE 2A, 3 OR
METAL MEDIAN BARRIER



TYPE 4 OR TYPE 4 (TRANSITION)
POST



TYPE 4 OR TYPE 4 (TRANSITION) BLOCK

GENERAL NOTES FOR ALL DETAILS:

1. See Std. Drg. RD400 for alternate hole useage requirements.
2. For assembly, installation, and appurtenance details, see Std. Drgs. RD400, RD410, RD415, RD420, RD425, RD430, RD435, RD440.
3. See Bridge Drgs. for bridge transition guardrail post & block requirements. Multiple holes are not required in bridge transition rail posts.
4. Posts and blocks to be pre-drilled.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

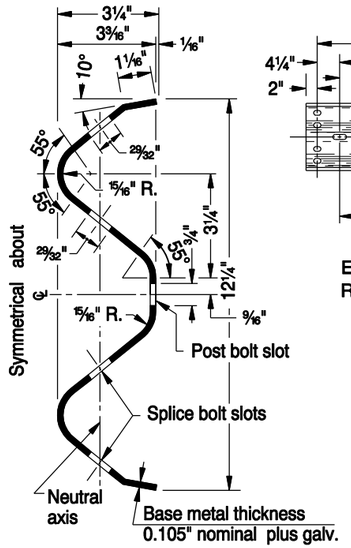
GUARDRAIL AND METAL MEDIAN BARRIER PARTS

2002

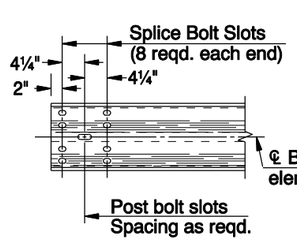
REVISIONS	
DATE	DESCRIPTION
02-04	REVISED NOTES
01-20-05	ADDED DETAILS AND NOTES
08-05	ADDED NOTES
07-2006	REVISED DETAILS AND NOTES

rd415.dgn 30-JUN-2006

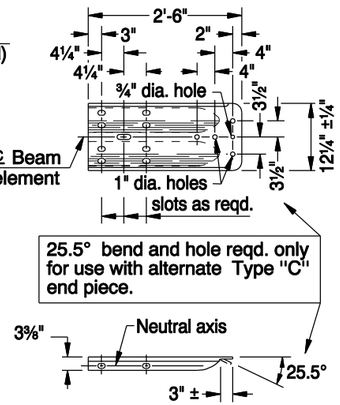
RAIL MEMBERS



SECTION THRU RAIL ELEMENT



ELEVATION OF RAIL ELEMENT

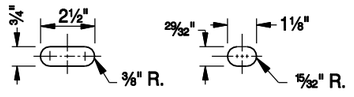


Base metal thickness 0.135"
Nominal plus Galv.

TERMINAL CONNECTOR

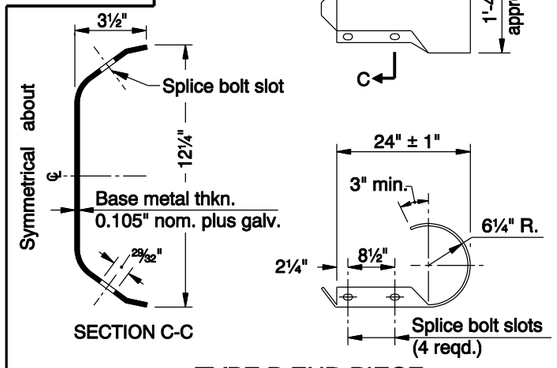
NOTES:

1. For guardrail installed on radii of 150' or less (5' min. radius) use rail elements pre-curved to industry standard. Install "Radius Identification Plate" (See Detail right).
2. Effective length of rail sections shall be 12'-6".



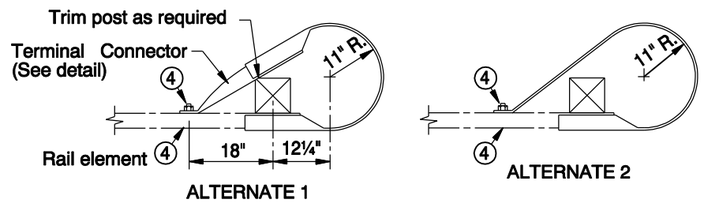
POST BOLT SLOT

SPLICE BOLT SLOT



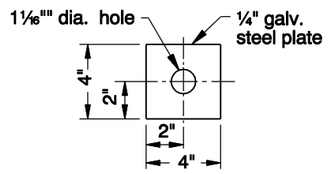
SECTION C-C

TYPE B END PIECE

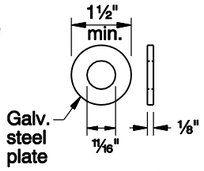


TYPE C END PIECE
(For details not shown, see Type B End Piece)

APPURTENANCES

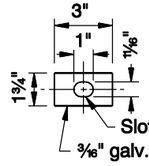


SNOW LOAD (OPTIONAL)
(In area of heavy snow, as directed by the engineer)



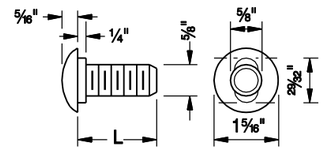
PLAIN ③

USE ON BACK OF POST



RECTANGULAR

USE ON RAIL ELEMENT FACE ON TYPE C END PIECE ④

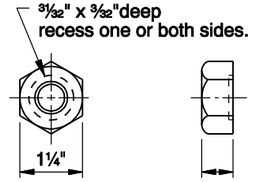


ALTERNATIVE No. 1

ALTERNATIVE No. 2

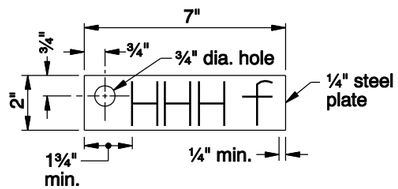
WASHERS

L (in.)	Thread Length
1¼	Full length
2	1½" min.
9½	2" min.
18	3½" min.
25	3" min.

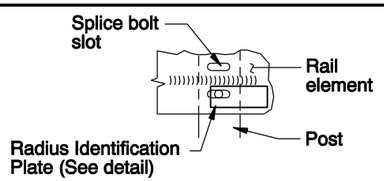


POST OR SPLICE BOLT AND NUT

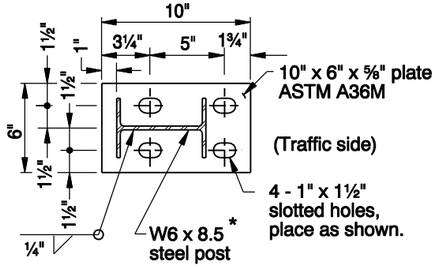
Dimensions to manufacturer's and AASHTO M180 tolerances



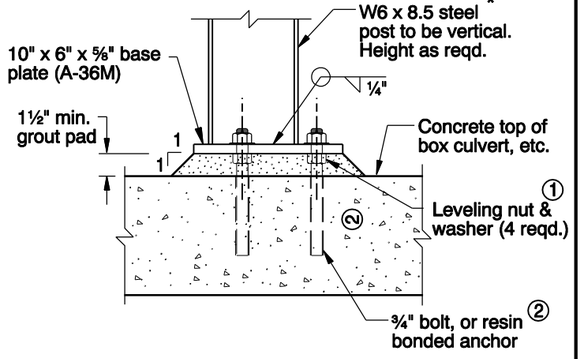
RADIUS IDENTIFICATION PLATE
(See General Note 4)



RADIUS IDENTIFICATION PLATE MOUNTING DETAIL
(See General Note 5)



* W6 x 9 is an acceptable alternative for W6 x 8.5



BASE PLATE DETAILS

(For additional details, See Std. Drg. BR266)

(Use when depth of cover is less than normal for post installation.)

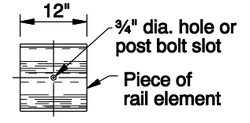
NOTES:

① Furnished & installed by structure contractor when shown on structure plans.

② 5½" min. penetration into concrete slabs other than bridge decks. Cast in place or core and install using approved resin bonding system.

③ Not required if "Snow Load" washer option is used.

④ Use rectangular washer under bolt head and nut on Type C End Piece as shown.



BACK-UP PLATE FOR STEEL POST INSTALLATIONS

On Steel Post installations, place 12" long, 12 gauge Back-up Plate between rail element and any post where there is no splice of rail elements.

GENERAL NOTES FOR ALL DETAILS:

1. For assembly and installation details, see Std. Drgs. RD400, RD405, RD420, RD425, RD430, RD435 & RD440.
2. For details of guardrail connections to structural handrails, see special details or Standard Drawings as called for on plans.
3. All indicated welds shall attain the full strength of the section welded.
4. Radius dimensions, in feet to the nearest 0.5 foot, shall be placed on the plate with a raised weld bead replacing the letters "HHH", shown on the Radius Identification Plate detail. Digits shall be 1½" min. height and ¾" max. width. Plate shall be galvanized after placement of digits.
5. The guardrail radius identification plate is to be mounted on the back side of the rail element with the lowest splice bolt nearest the P.C. of the guardrail radius.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

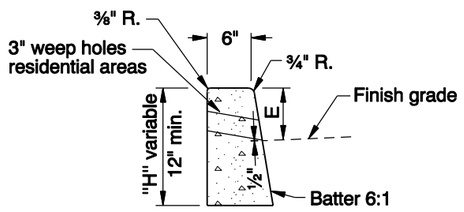
GUARDRAIL AND METAL MEDIAN BARRIER PARTS

2002

REVISIONS	
DATE	DESCRIPTION
03-03	REVISED DRAWING.
01-20-05	REVISED NOTES.
06-05	REVISED RADIUS IDENTIFICATION PLATE NOTES.
07-2006	REVISED DETAILS AND NOTES

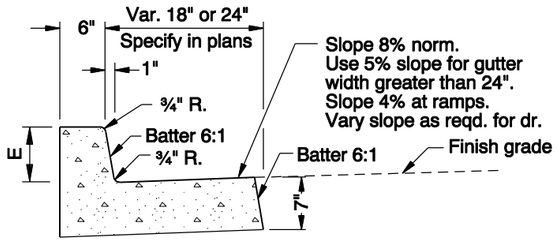
RD415

Effective Date: May 1, 2007 - October 31, 2007

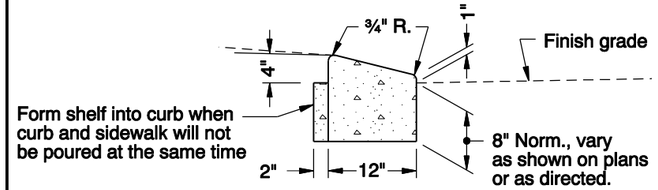


STANDARD CURB

O.D.O.T. Standard "H"=16"



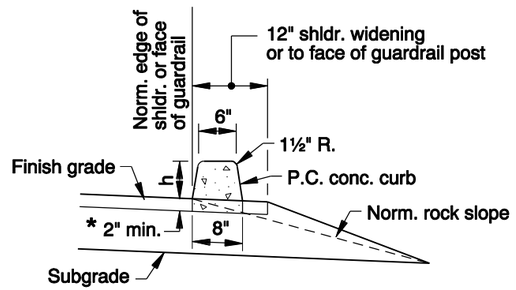
CURB AND GUTTER



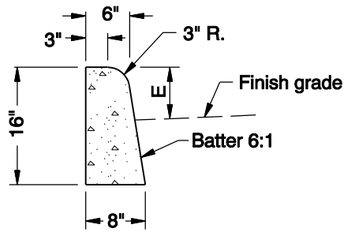
LOW PROFILE

MOUNTABLE CURB

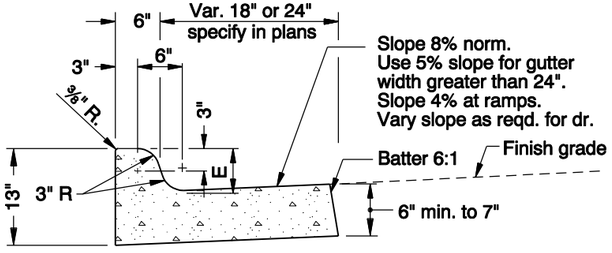
DRAINAGE CURBS



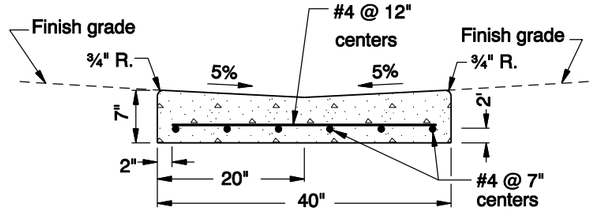
P.C. CONCRETE



MOUNTABLE CURB



MOUNTABLE CURB AND GUTTER

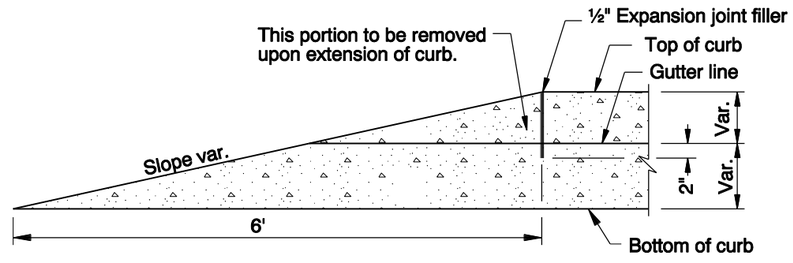


VALLEY GUTTER

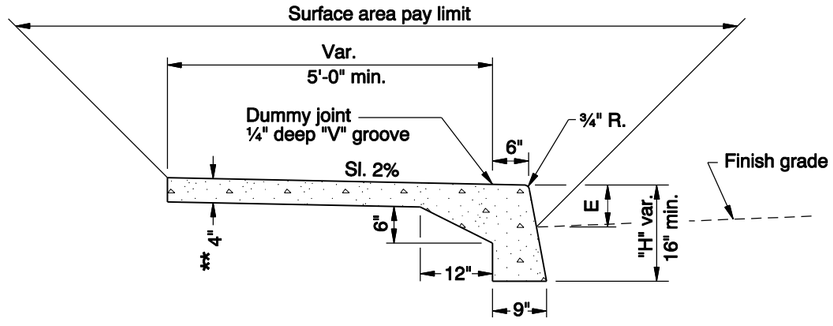
* The 2" min. curb depth below finish grade is reqd. only when the curb is placed in open-graded A.C. Pvmt.

When bonding to dense graded A.C. Pvmt. apply epoxy cement between surfaces.

h = 6" normal
4" when run of curb or any part thereof is placed under guardrail

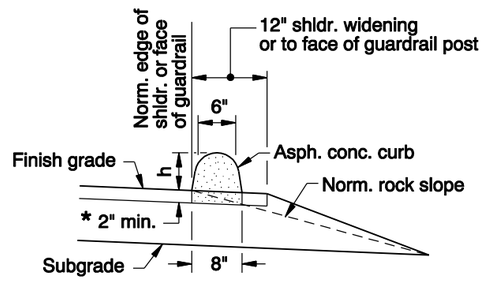


CURB ENDING DETAIL



MONOLITHIC CURB & SIDEWALK

** As specified in plans. Min. 4". If sidewalk is intended as portion of a dwy. or mountable curb is used min. thkn. 6".



ASPHALT CONCRETE

GENERAL NOTES FOR ALL DETAILS:

1. Curb exposure "E" = 6" to 9". Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveway. For monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing.
3. Const. contraction joints at 15' maximum spacing, and at ends of each inlet and ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" Is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 2% normal unless otherwise shown or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.

CALC. BOOK NO. _____

BASELINE REPORT DATE _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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 and should not be used without consulting a Registered Professional Engineer.

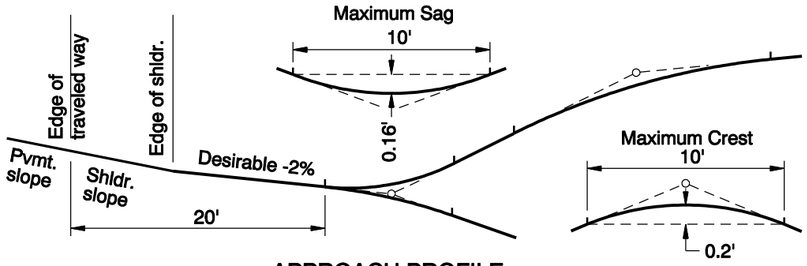
OREGON STANDARD DRAWINGS

CURBS

2002

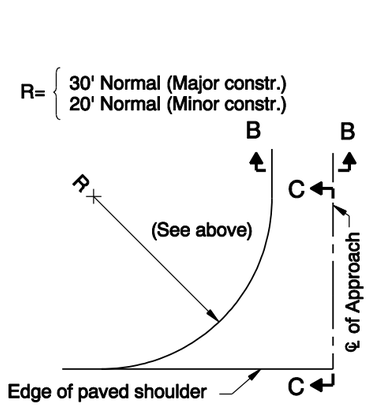
DATE	REVISION DESCRIPTION
06-05	REVISED NOTES
01-06	REVISED DETAILS AND NOTES
07-2006	REVISED DETAILS AND NOTES
01-2007	ADDED & REVISED NOTES

Effective Date: May 1, 2007 - October 31, 2007

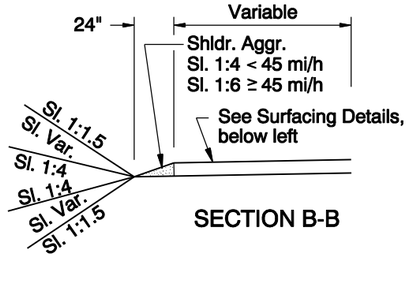


APPROACH PROFILE

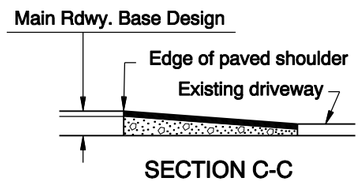
NOTE:
When grades on approaches meet without vertical curves the maximum algebraic difference on crests should be 8% and on sags 12%. Grades steeper than 15% should not be used without prior approval of the engineer of record. Any driveways with slopes exceeding 12% shall be paved.



HALF PLAN



SECTION B-B

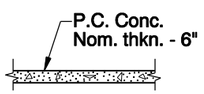


SECTION C-C

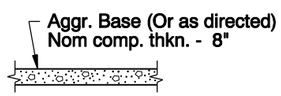
NOTE:
Normal paving limits to extend 20' from the edge of pavement or to the right of way line, whichever is less. Approach surfacing and width to then match existing approach.

30' for public road connections.

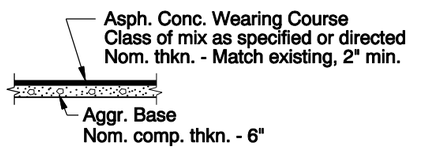
APPROACH



P.C. CONCRETE SURFACING



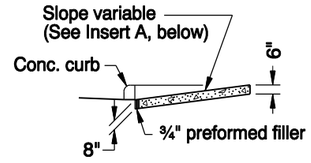
GRAVEL SURFACING



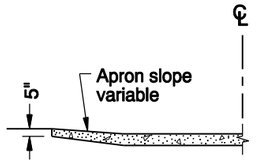
ASPHALT CONCRETE SURFACING

APPROACH AND DRIVEWAY CONNECTION SURFACING DETAILS

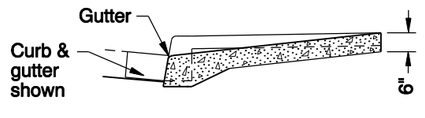
TYPE A
PORTLAND CEMENT CONCRETE



SECTION D-D

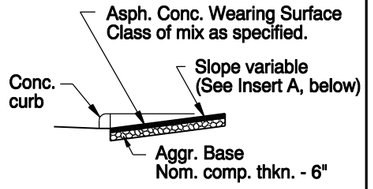


SECTION E-E

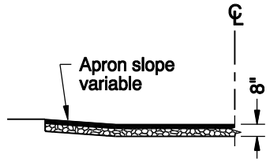


SECTION A-A
MONOLITHIC DRIVEWAYS

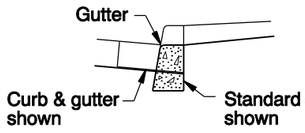
TYPE A-1
ASPHALT CONCRETE



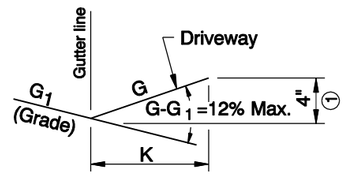
SECTION D-D



SECTION E-E

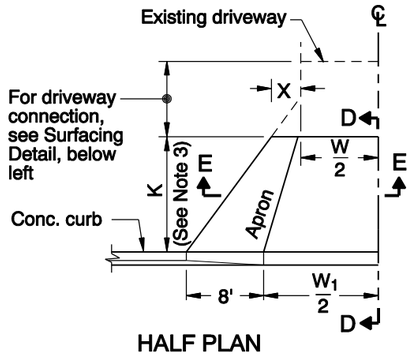


SECTION A-A
FOR DRIVEWAYS

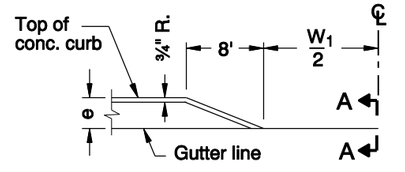


INSERT A

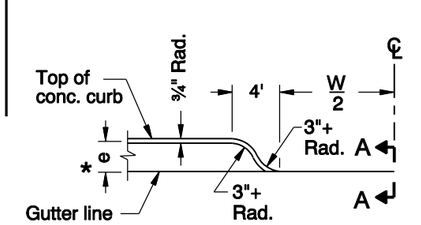
① Minimum allowable for drainage control on negatively sloped driveways.



HALF PLAN



HALF ELEVATION



HALF ELEVATION
(ALTERNATE APRON SLOPE)
(See General Note 5)

* Curb exposure "e" = 7" normal.
Vary as shown on plans or as directed.

NON-SIDEWALK DRIVEWAYS
NOTE: See "Table A" for dimensions not shown.

TABLE A

W (ft)	X (ft)	K (ft) 5	6	8	10
		W1 (ft)			
12	3	15	15	15	15
14		17	17	17	17
16		19	19	19	19
18		21	21	21	21
20		23	23	23	23
22	4	27	28	29	30
24		29	30	31	32
26		31	32	33	34
28		33	34	35	36
30		35	36	37	38
32	5	41	42	44	46
34		43	44	46	48
36		45	46	48	50

Where a travel lane is constructed adjacent to the curb line, use 16' W min. for residence and 30' W min. for light commercial, add 5' to W_1 for both. Do not add the 5' to W_1 when 4' min. shldr. or bikeway is included in the typical.

GENERAL NOTES FOR ALL DETAILS:
1. Driveway details shown on this drawing are to be used on roadways where there are no existing or planned sidewalks in driveway vicinity. For driveways located in a sidewalk see Std. Drgs. RD720, RD725 and/or RD730, RD735, RD740, RD745, RD750.
2. Width of driveway (W) as shown on plans or as directed.
3. K is the distance from back of curb to back of driveway (10' max.).
4. Where existing driveway is in good condition, construct only as much as required for satisfactory connection with new work.
5. "Alternate Apron Slope" used only where plans designate. Alternate Apron Slope may also be used at local jurisdiction's request when approved by the Project Manager.
6. Increase thickness of asphalt concrete and stone base where shown on plans.
7. For curb details, see Std. Drg. RD700.
8. For expansion and contraction joint requirements, see applicable curb and sidewalk standard drawings.

CALC. BOOK NO. _____

BASELINE REPORT DATE _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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 and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

APPROACHES AND NON-SIDEWALK DRIVEWAYS

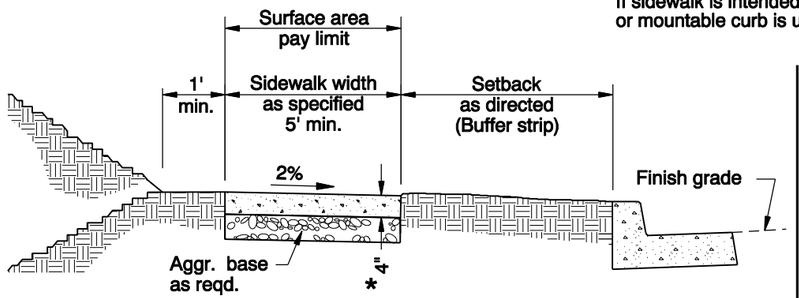
2002

DATE	REVISION DESCRIPTION
4-04	REVISED NOTE
01-06	REVISED DETAILS AND NOTES
07-2006	REVISED DETAILS AND NOTES
01-2007	ADDED NOTES & DIMENSIONS

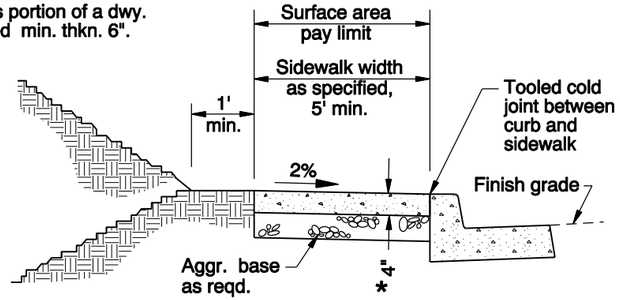
rd715.dgn 12-JAN-2007

RD715

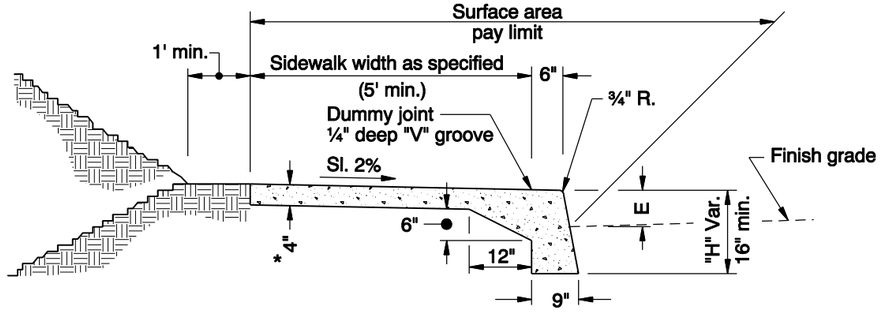
* As specified in plans. Min. 4".
If sidewalk is intended as portion of a dwy.
or mountable curb is used min. thkn. 6".



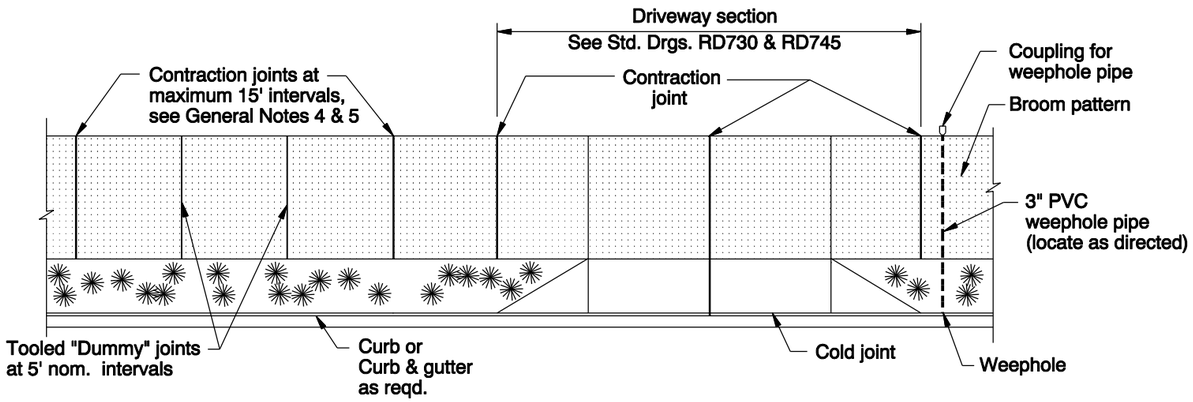
TYPICAL SETBACK SIDEWALK CROSS SECTION



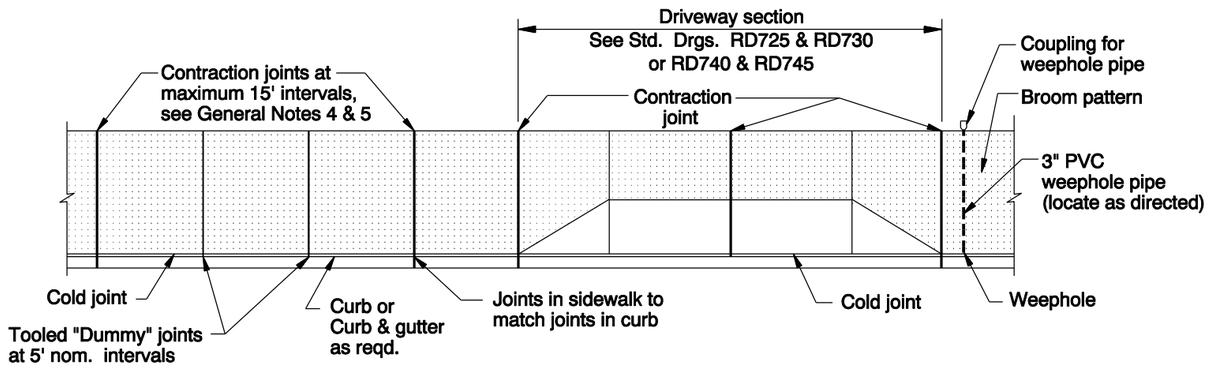
TYPICAL CURB SIDEWALK CROSS SECTION



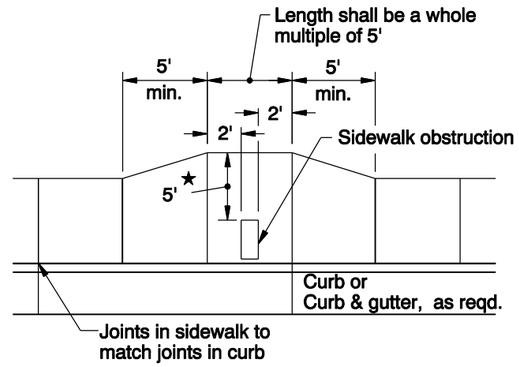
TYPICAL MONOLITHIC CURB & SIDEWALK
E = curb exposure, see General Note 6



TYPICAL PLAN VIEW - SETBACK SIDEWALK

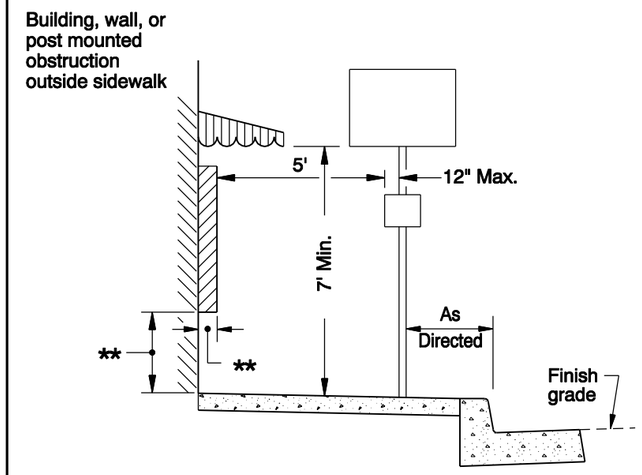


TYPICAL PLAN VIEW - CURB SIDEWALK



REQUIRED SIDEWALK WIDENING
AROUND OBSTRUCTIONS

★ When site constraints prohibit a 5' passage, the Engineer may direct this to be reduced, but no less than 3'.



CLEAR CIRCULATION PATH

** Objects with base below 2' 4" may protrude any distance as long as the 5' circulation path is maintained. When an object with a base higher than 2' 4" protrudes further than 4" provide a curb below protrusion to delineate edge.

GENERAL NOTES FOR ALL DETAILS:

1. Include additional paved or unpaved 2' clearance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weephole pipes in sidewalks in locations as directed by the engineer. Place contraction joint over top of pipe.
4. Const. expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveway.
   For monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing.
5. Const. contraction joints at 15' maximum spacing, and at ends of each driveway and ramp.
6. Curb exposure "E"=6" to 9". Vary as shown on plans or as directed. O.D.O.T. standard "E"=7".
7. For curb details, see Std. Drg. RD700.

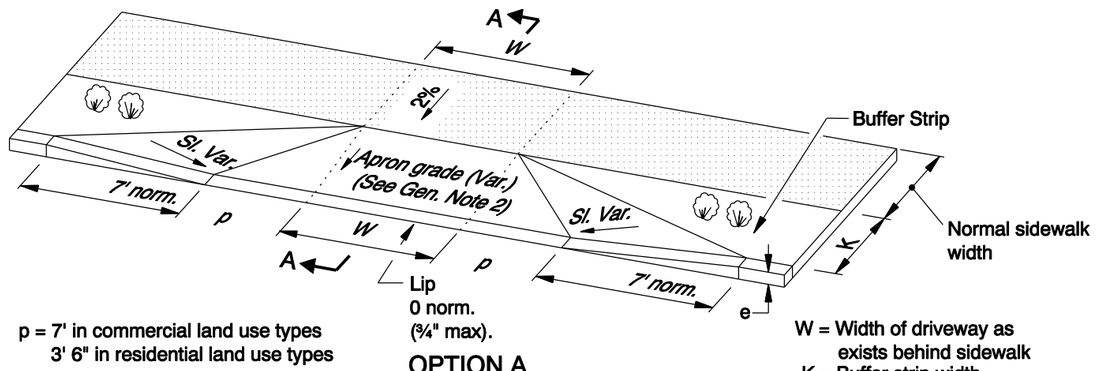
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SIDEWALKS

2002

REVISIONS	
DATE	DESCRIPTION
01-20-05	ADDED SURFACE AREA PAY LIMIT AND REVISED NOTES
07-2006	REVISED DETAILS AND NOTES



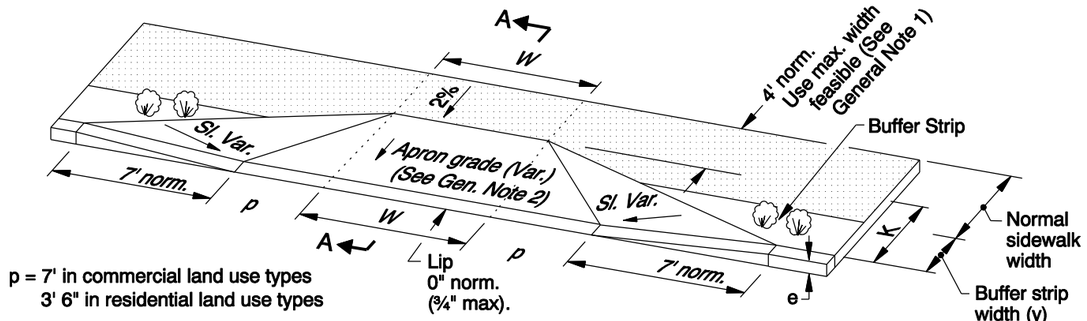
p = 7' in commercial land use types
3' 6" in residential land use types

W = Width of driveway as exists behind sidewalk
K = Buffer strip width

Apron grade = $\frac{e - Lip}{K}$ (See General Note 6)

OPTION A
TYPICAL SEPARATED SIDEWALK DRIVEWAY

(Use one of the Options below if slope requirements shown in Section A-A & General Note 2 can not be met)



p = 7' in commercial land use types
3' 6" in residential land use types

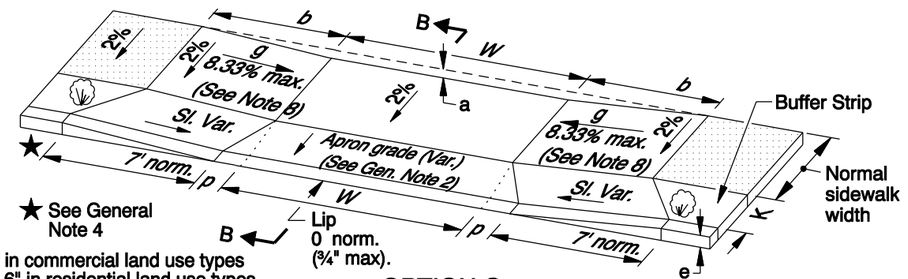
Lip
0" norm.
(¾" max).

OPTION B
DRIVEWAY ENCROACHES INTO SIDEWALK

W = Width of driveway as exists behind sidewalk

$K = \frac{(e - Lip) - .02y}{\text{Apron grade} - .02}$

(See Section A-A & General Notes 2 & 6)

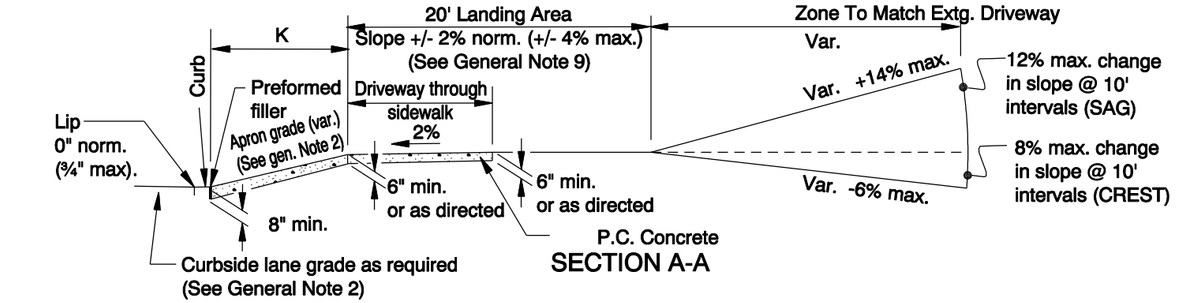


p = 7' in commercial land use types
3' 6" in residential land use types

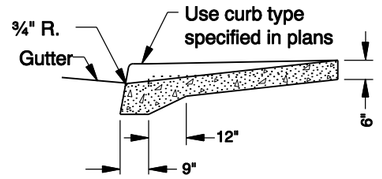
OPTION C
LOWERED SIDEWALK

(See General Note 6)

W = Width of driveway as exists behind sidewalk
K = Buffer strip width
a = e - Lip - (K)(Apron grade)
b = a/g



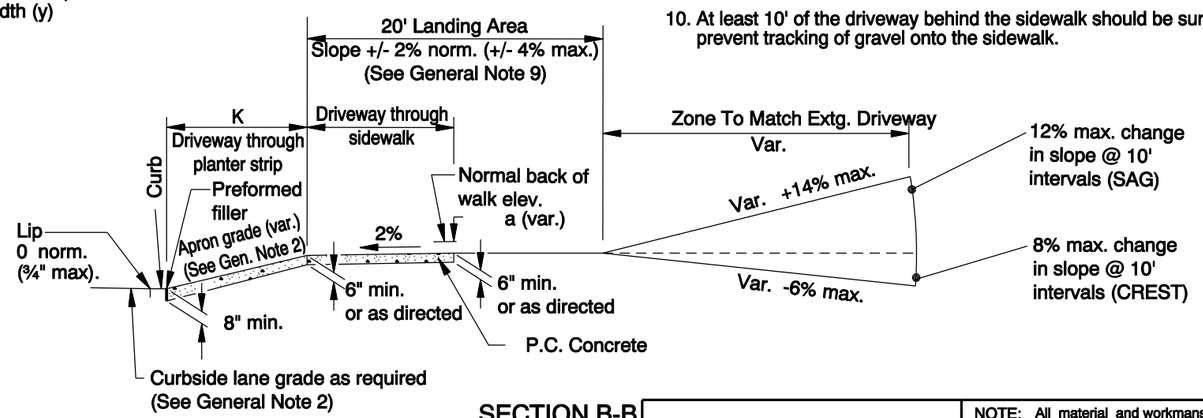
SECTION A-A



FOR DRIVEWAYS
WITH MONOLITHIC CURB & SIDEWALK
(For details not shown, see Drg. No. RD700 & Section A-A or Section B-B, as appropriate)

GENERAL NOTES:

1. 4' norm. sidewalk width with slope of 2% is required through driveways. 3' 6" width is acceptable where full sidewalk width is less than 6'.
2. Grade break at gutter line ("s") = 8% max. in sag and crest. Curbside lane grade is measured from edge of gutter pan.
3. Where existing driveway is in good condition, and meets slope requirements construct only as much as required for satisfactory connection with new work.
4. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
5. Equations may be calculated using either feet or inches Use same unit throughout equation.
6. Equations assume front edge of walk and top of curb are at same elevation.
7. Tooled joints are required at all driveway slope break lines.
8. Longitudinal slopes shown are relative to the roadway grade.
9. Landing area slope will not exceed 2% in the sidewalk area.
10. At least 10' of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.



SECTION B-B

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

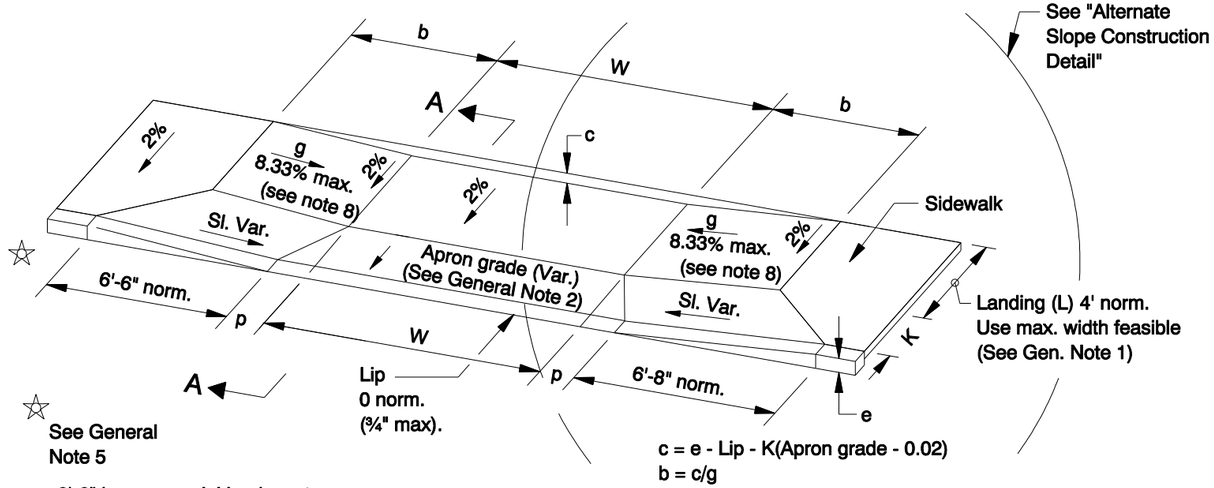
OREGON STANDARD DRAWINGS

SEPARATED SIDEWALK DRIVEWAYS
OR ALLEYS (OPTIONS A, B & C)
ODOT HIGHWAYS
2002

REVISIONS	
DATE	DESCRIPTION
6-03	REVISE DETAILS
1-04	ADDED DISCLAIMER STATEMENT

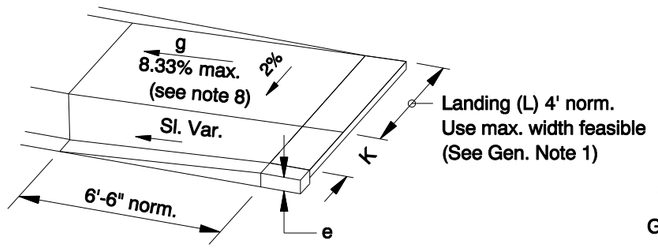
erd725.dgn 1-23-04

RD725

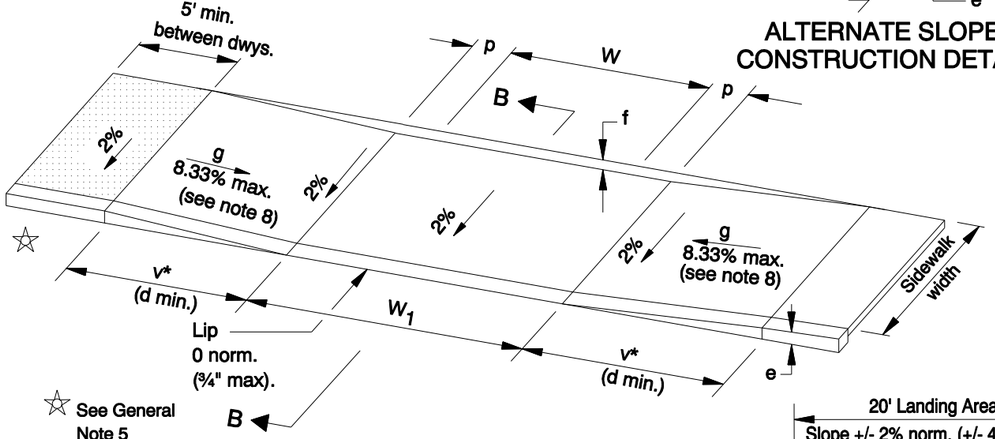


p = 6'-6" in commercial land use types
3'-3" in residential land use types

OPTION F
PARTIALLY LOWERED SIDEWALK



ALTERNATE SLOPE CONSTRUCTION DETAIL

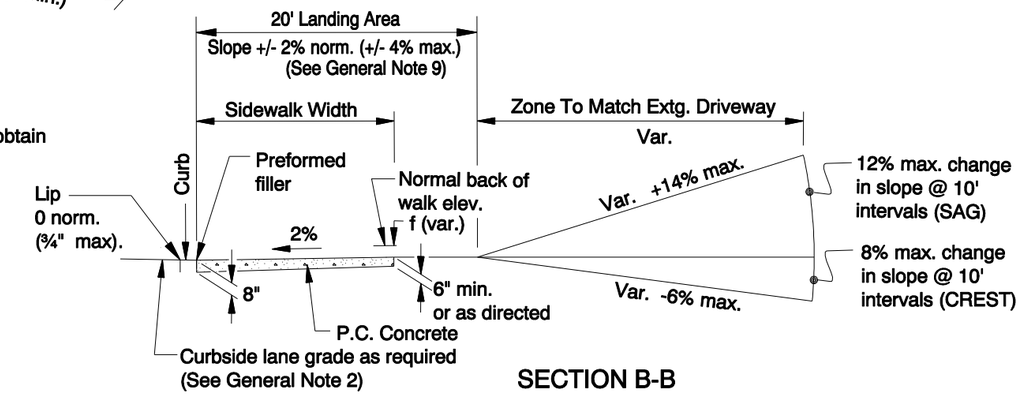


p = 6'-6" in commercial land use types
3'-3" in residential land use types

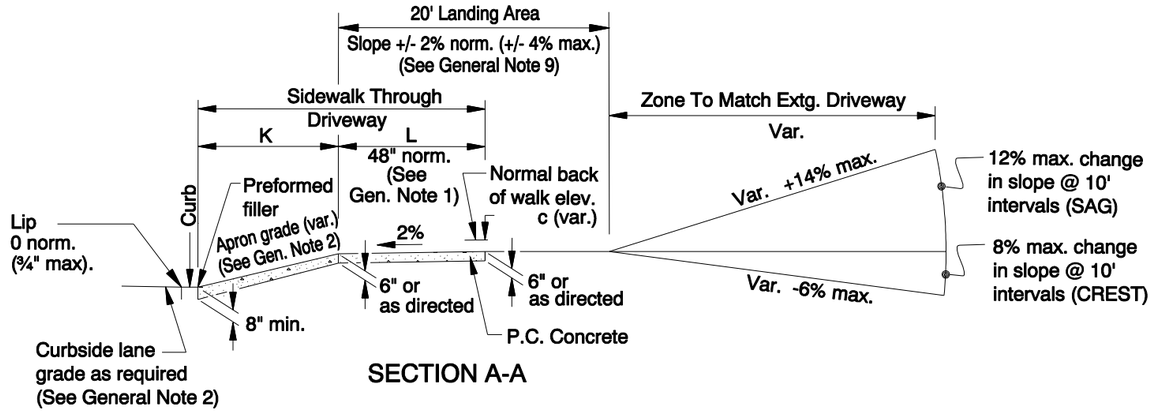
f = e - Lip
d = f/g

* May be lengthened to obtain flatter slopes on hills.

OPTION G
FULLY LOWERED SIDEWALK



SECTION B-B

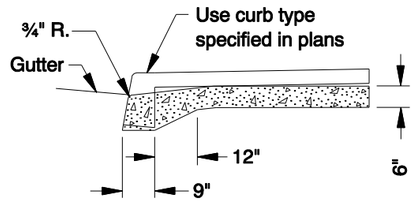


SECTION A-A

NOTES:

See Std. Drg. RD725 for Options C & D.
See Std. Drg. RD730 for Options E, F & G

Dimensions b, c, d & f are nominal. Construct driveways to meet required slopes.



FOR DRIVEWAYS
WITH MONOLITHIC CURB & SIDEWALK
(For details not shown, see Drg. No. RD700 & Section A-A or B-B, as appropriate.)

GENERAL NOTES:

1. 4' norm. width with slope of 2% is required through ddriveways. 40" width is acceptable where full sidewalk width is less than 66"
2. Grade break at gutter line ("s") = 8% max. in sag and crest. Curbside lane grade is measured from edge of gutter pan.
3. Width of driveway (W_1) as shown on plans or as directed. Width of driveway (W) as exists behind sidewalk
4. Where existing driveway is in good condition and meets slope requirements, construct only as much as required for satisfactory connection with new work.
5. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
6. Equations may be calculated using either feet or inches. Use same unit throughout equation.
7. Tooled joints are required at all driveway slope break lines.
8. Longitudinal slopes shown are relative to the roadway grade.
9. Landing area slope will not exceed 2% in the sidewalk area.
10. At least 10' of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

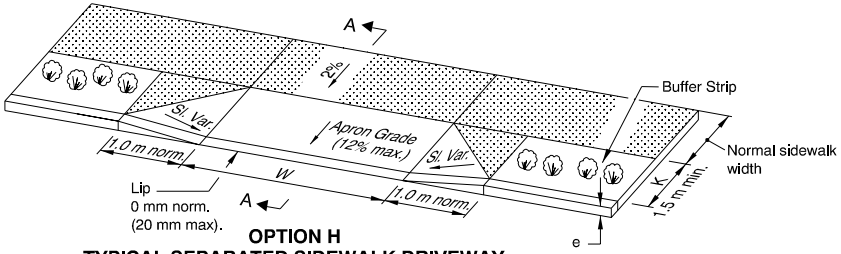
CURB LINE SIDEWALK DRIVEWAYS
OR ALLEYS (OPTIONS F & G)
ODOT HIGHWAYS

2002

REVISIONS	
DATE	DESCRIPTION
6-03	REVISE NOTES

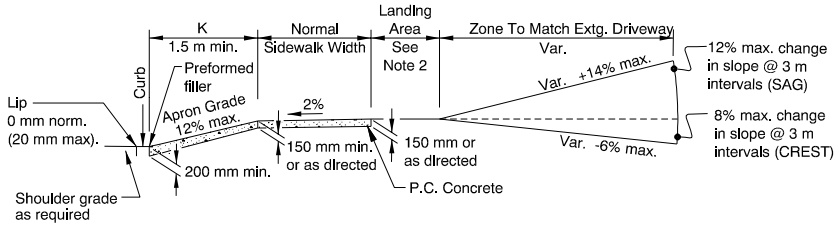
erd735.dgn 6-10-03

RD735

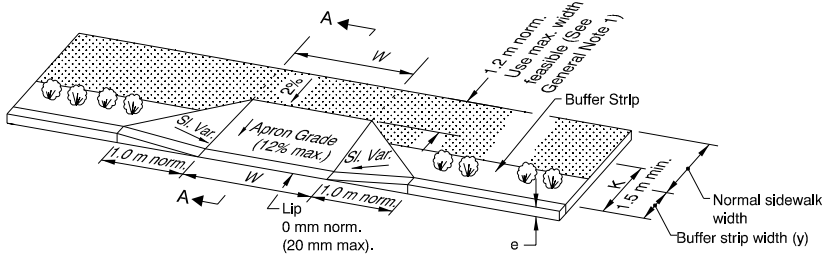


OPTION H
TYPICAL SEPARATED SIDEWALK DRIVEWAY
(Use Options M or N below if slope requirements shown in Section A-A and General note 2 can't be met)

K = Planter strip width as shown on plans



SECTION A-A

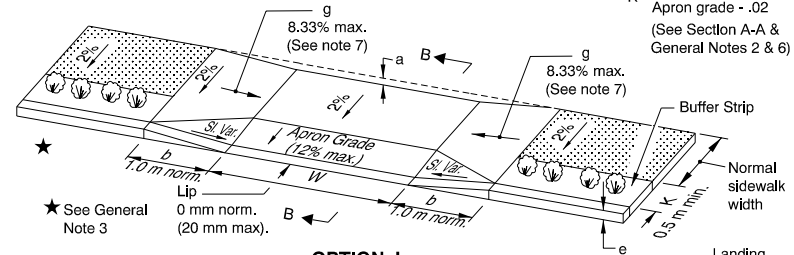


OPTION I
DRIVEWAY ENCROACHES INTO SIDEWALK

W = Width of driveway as exists behind sidewalk

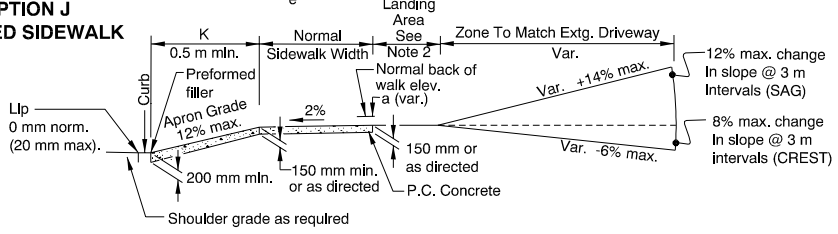
$$K = \frac{(e - Lip) - .02y}{\text{Apron grade} - .02}$$

(See Section A-A & General Notes 2 & 6)

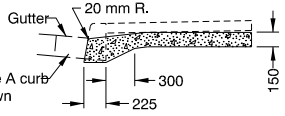


OPTION J
LOWERED SIDEWALK

K = Planter strip width as shown on plans
a = e - Llp - K(Apron Grade - 0.02)
b = a/g



SECTION B-B



FOR DRIVEWAYS
WITH MONOLITHIC CURB & SIDEWALK
(For details not shown, see Drg. No. RD700 & Section A-A or B-B, as appropriate.)

NOTE:
This drawing is to be used by local agencies to assist them in the design of driveways on their facilities.

NOTE:

Dimensions a & b are nominal. Construct driveways to meet required slopes.

GENERAL NOTES:

1. 1.2 m sidewalk width with slope of 2% is required through driveways. 1.0 m min. width is acceptable where full sidewalk width is less than 1.7 m
2. Width of driveway (W) and length of landing area shall be as shown on plans or as directed.
3. Where existing driveway is in good condition and meets slope requirements, construct only as much as required for satisfactory connection with new work.
4. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
5. Equations may be calculated using either meters or millimeters. Use same unit throughout equation.
6. Tooled joints are required at all driveway slope break lines.
7. Longitudinal slopes shown are relative to the running slope of the sidewalk.
8. Any dimensions except those of General Note 1 may be amended by local agencies for their use.
9. At least 3.0 m of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.

- All dimensions are in mm unless otherwise noted.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SEPARATED SIDEWALK DRIVEWAYS OR ALLEYS (OPTIONS H, I & J)

LOCAL JURISDICTIONS

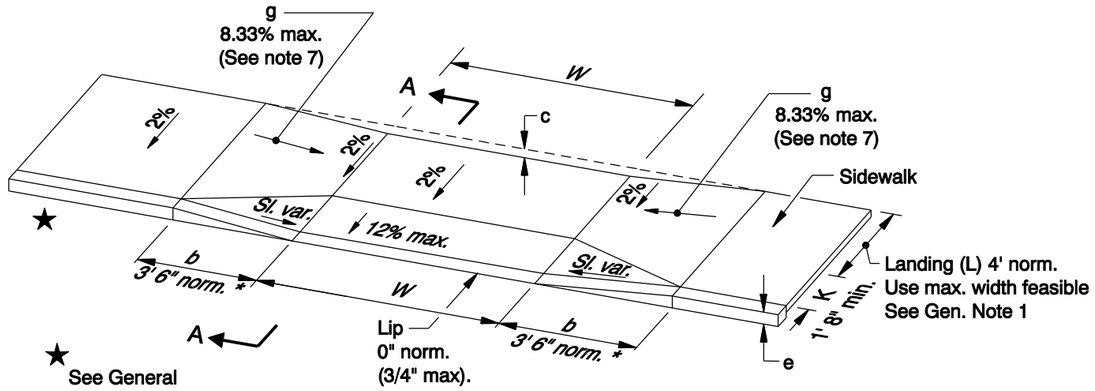
2002

REVISIONS

DATE	DESCRIPTION

RD740

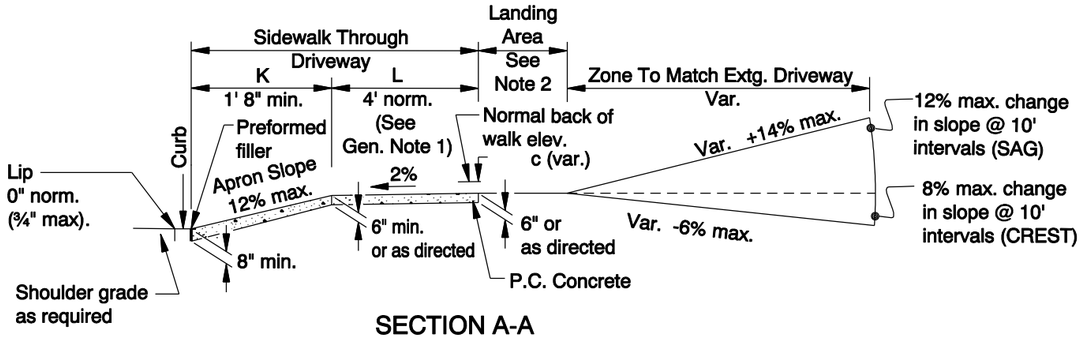
RD740



c = e - Lip - K(Apron grade - 0.02)
b = c/g

* May be lengthened to obtain flatter slopes on hills.

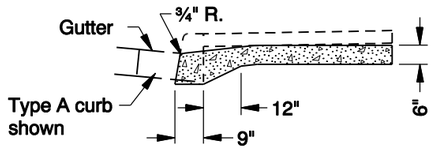
OPTION M
PARTIALLY LOWERED SIDEWALK



SECTION A-A

NOTE:

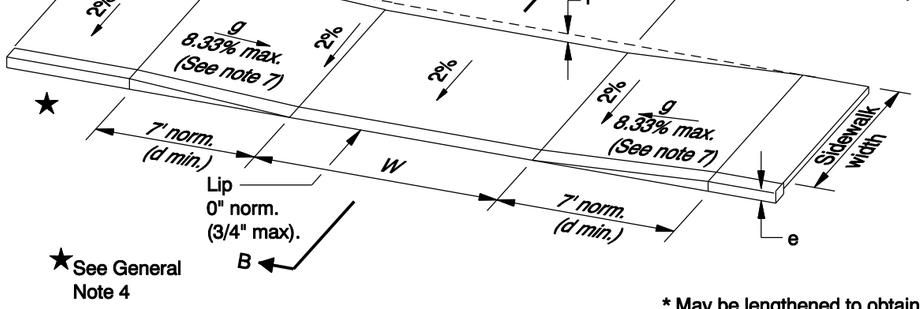
Dimensions b, c, d & f are nominal. Construct driveways to meet required slopes.



FOR DRIVEWAYS
WITH MONOLITHIC CURB & SIDEWALK
(For details not shown, see Drg. No. RD700 & Section A-A or B-B, as appropriate.)

GENERAL NOTES:

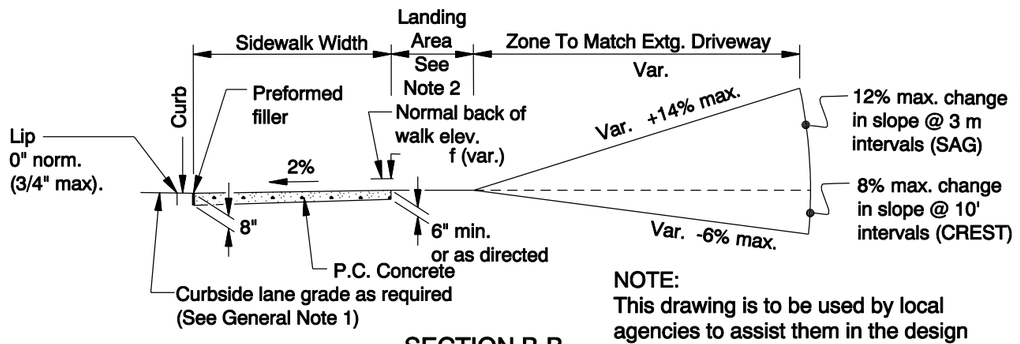
1. 4' norm. width with slope of 2% is required through driveways. 3' 6" min. width is acceptable where full sidewalk width is less than 6'
2. Width of driveway (W) and length of landing area shall be as shown on plans or as directed.
3. Where existing driveway is in good condition and meets slope requirements, construct only as much as required for satis-factory connection with new work.
4. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
5. Equations may be calculated using either feet or inches Use same unit throughout equation.
6. Tooled joints are required at all driveway slope break lines.
7. Longitudinal slopes shown are relative to the running slope of the sidewalk.
8. Any dimensions except those of General Note 1 may be amended by local agencies for their use.
9. At least 10' of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.



f = e - Lip
d = f/g

* May be lengthened to obtain flatter slopes on hills.

OPTION N
FULLY LOWERED SIDEWALK



SECTION B-B

NOTE:
This drawing is to be used by local agencies to assist them in the design of driveways on their facilities.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CURB LINE SIDEWALK DRIVEWAYS
OR ALLEYS (OPTIONS M & N)
LOCAL JURISDICTIONS

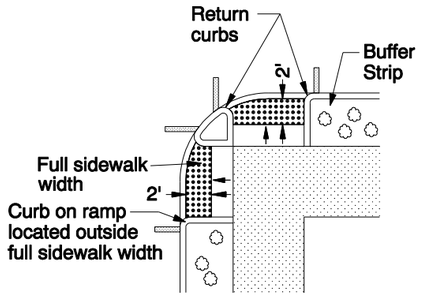
2002

REVISIONS	
DATE	DESCRIPTION

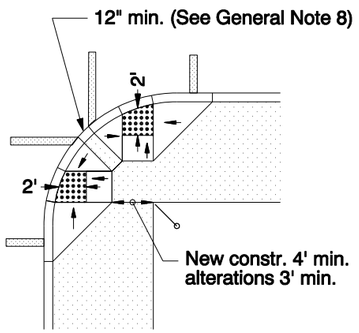
erd750.dgn 1-13-03

RD750

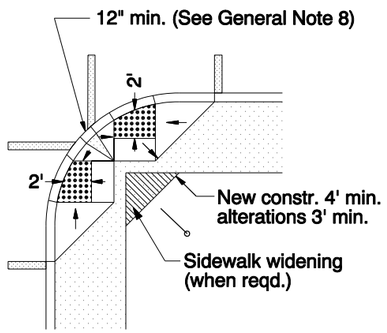
Effective Date: May 1, 2007 - October 31, 2007



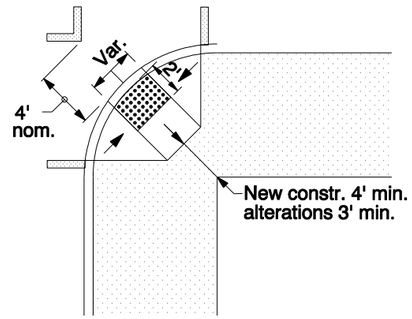
OPTION A
RAMPS WITH BUFFER STRIP



OPTION B
PERPENDICULAR RAMPS

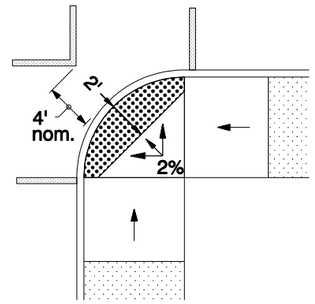


OPTION C
PERPENDICULAR RAMPS



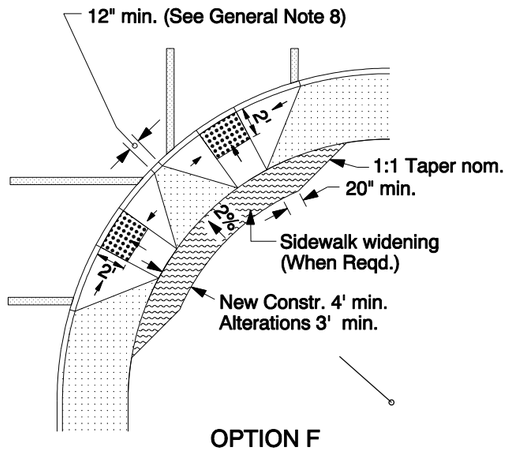
OPTION D
SINGLE DIAGONAL RAMP

Use in alterations only and when site constraints prohibit installing two ramps

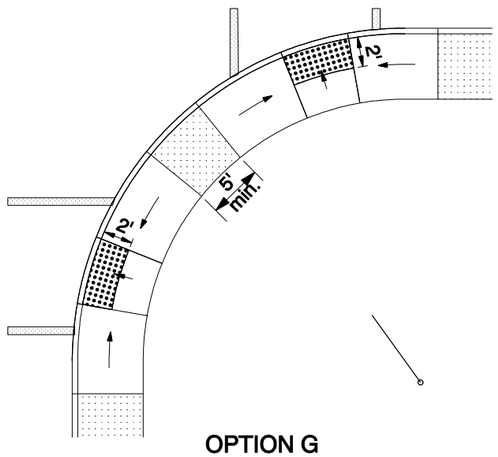


OPTION E
SINGLE PARALLEL RAMP

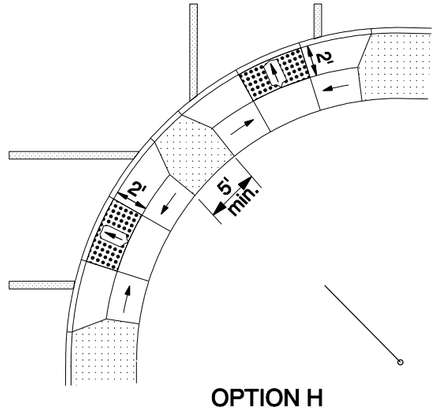
Use in alterations only and when site constraints prohibit installing two ramps



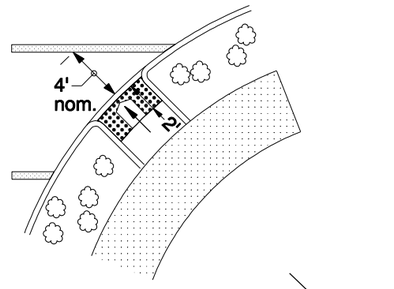
OPTION F
PERPENDICULAR RAMPS



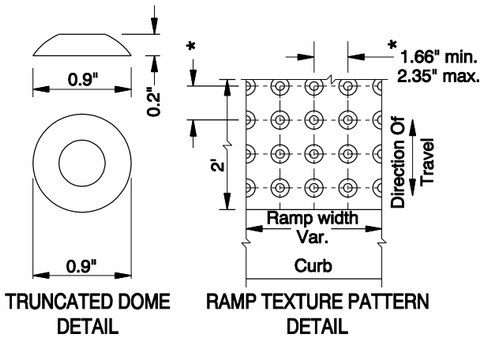
OPTION G
PARALLEL RAMPS



OPTION H
COMBINATION RAMPS



OPTION I
RAMP WITH
BUFFER STRIP



TRUNCATED DOME DETAIL

RAMP TEXTURE PATTERN DETAIL

Marked or intended crossing location

See RD755 for additional requirements and details not shown.

GENERAL NOTES FOR ALL DETAILS:

1. Place truncated dome detectable warning texture in the lower 2' of throat of ramp only. Arrange domes using square in-line pattern only as shown in detail right. Color of texture to be safety yellow. For construction of sidewalk ramps outside of public right-of-way, check with State Building Codes for requirements regarding texturing of flares.
2. Sidewalk curb ramp slopes shown are relative to the true level horizon (zero bubble)
3. In alterations curb ramp slope(s) may be 10% for a max. rise of 6" or 12.5% for a max. rise of¾". Curb ramps, in alterations, need not exceed 6' in length.
4. Side flares, if used in Option A and I, that are not part of the path of travel may be of any slope.
5. Do not slope landing more than 2% in any direction.
6. Ramps for paths intersecting a roadway should be full width of path. When a ramp is used to provide bicycle access from a roadway to a sidewalk, the ramp should be 8' wide, with no texturing.
7. Sidewalk ramp details are based on ORS 447.310 and the PROWAAC Final Report.
8. When 2 curb ramps are immediately adjacent, as in Options A, B, C and F, the curb exposure (e) between the adjacent side flares may range between 3" and full design exposure.
9. For the purpose of this drawing, a curb ramp is considered "perpendicular" if the angle between the longitudianal axis of the ramp and a line tangent to the curb at the ramp center is 75° or greater.

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 and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

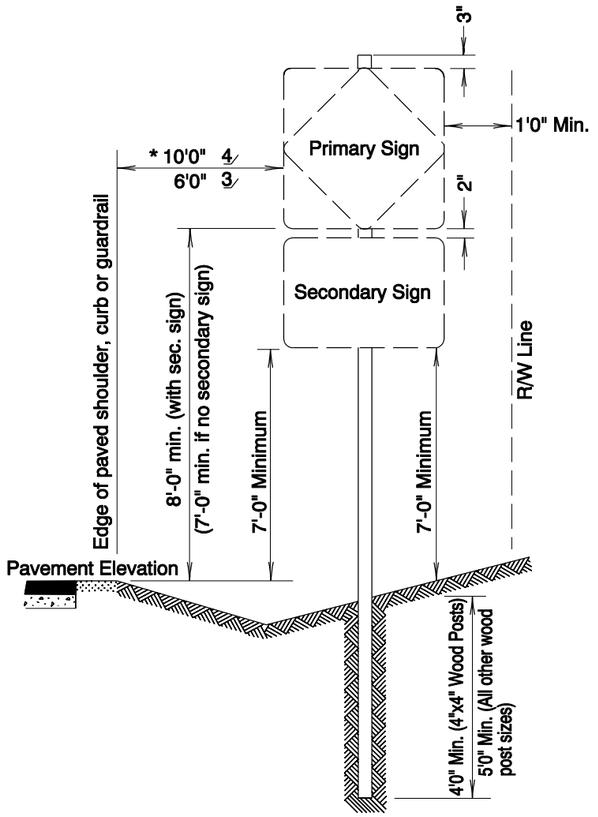
SIDEWALK RAMP PLACEMENT

2002

REVISIONS	
DATE	DESCRIPTION
10-02	REVISE DETAIL
06-03	REVISE DETAIL
04-04	UPDATE DETAIL
01-20-05	REVISED AND ADDED NOTES

ERD760.dgn 01-20-05

RD760

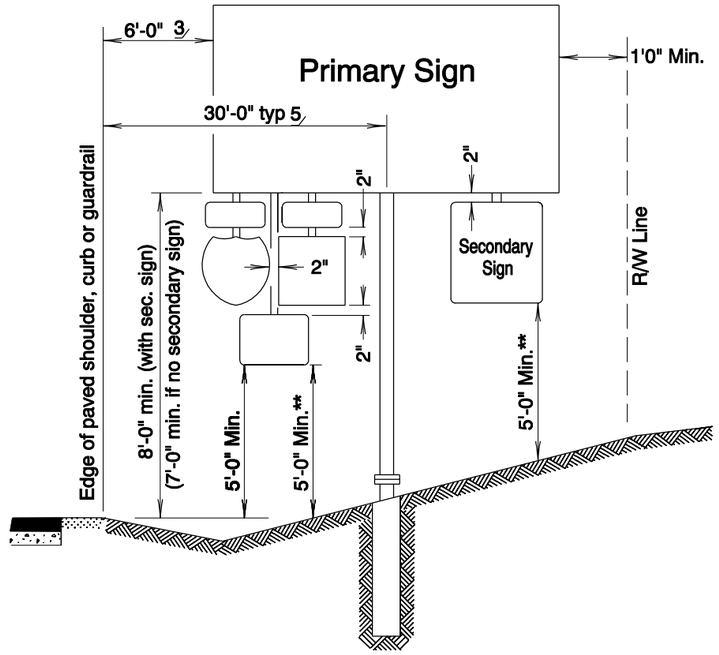


General Installation Notes:

1. Signing details shown on this sheet are intended to convey "typical" conditions only. Individual locations may require installation different from those shown.
   For guidance regarding unique installations or exceptions call the Project Sign Designer or Region Traffic Section.
2. Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance and breakaway performance. See Dwg. No. TM635 for more information.
3. **In order to develop the maximum moment resistance of the 4" x 6" and the 6" x 8" wood post, the longer post dimension should be at right angles to the sign face. If signs are installed on more than one side of the post, the longer post dimension should be at right angle to the side with the largest area of sign face.**

Vertical Clearance Notes:

1. In rural areas the secondary sign may be installed at 5'-0" minimum provided the sign is located outside the clear zone and away from pedestrian conflicts.
2. Where any sign is located over a bike route, the minimum mounting height is 8'-0" from ground line.

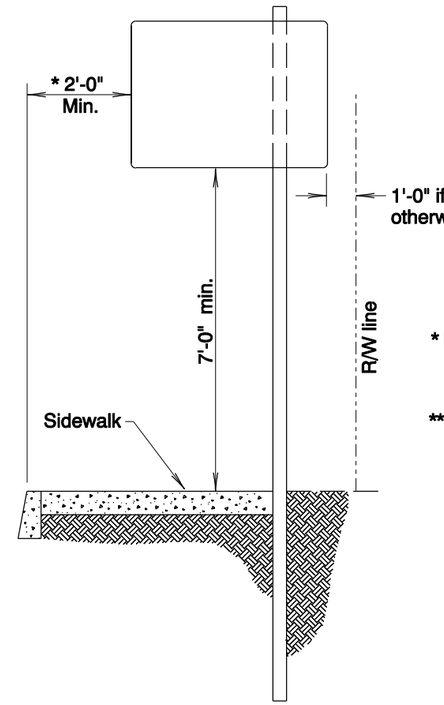


STANDARD LATERAL SIGN CLEARANCES
TO BE USED IF NO CLEARANCE IS INDICATED IN POST DATA

TYPE SIGN	BEHIND BARRIER	NOT BEHIND BARRIER
Route Signs	6'-0" 3/	10'-0" 4/
Control Signs	6'-0" 3/	10'-0" 4/
Guide Signs 1/	6'-0" 3/	30'-0" 5/
Guide Signs 2/	6'-0" 3/	20'-0" 5/

1/ Signs on main highway.
2/ Signs at ramp terminal.
3/ Distance from edge of sign to face of barrier.
4/ Distance from edge of sign to curb or edge of paved shoulder.
5/ Distance from center of nearest post to edge of travel lane.

Note: Disregard clearance if sign would extend beyond right of way.



RESTRICTED R/W INSTALLATION

* In areas with limited right-of-way, a minimum lateral offset of 2 ft. may be used. A 1 ft. minimum offset from face of curb may be used in urban areas where sidewalk width is limited or existing poles are close to curb.

** 5'-0" applies only when the sign is located outside the clear zone

CALC. BOOK NO. _____ BASELINE REPORT DATE _____

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

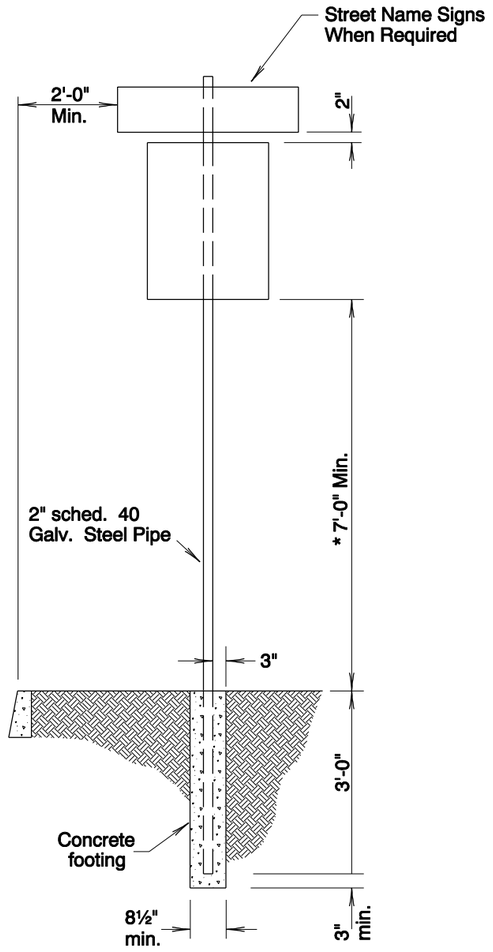
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

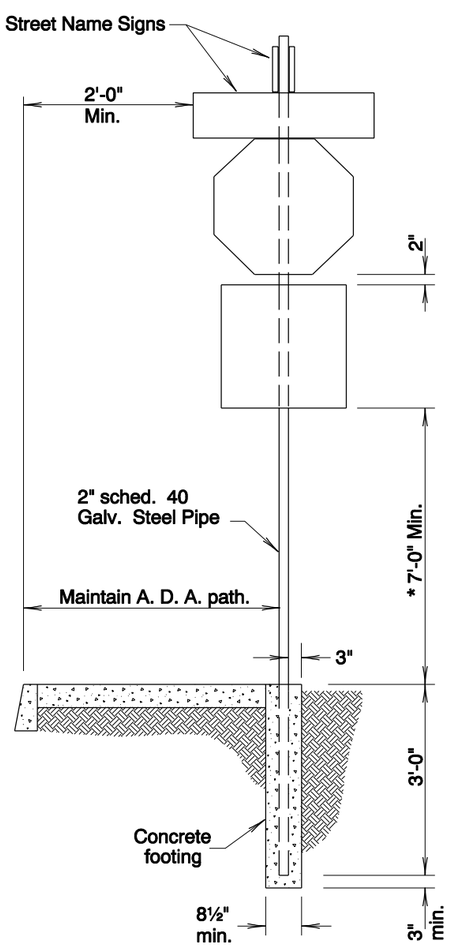
SIGN INSTALLATION DETAILS

DATE	REVISION DESCRIPTION
12-2003	Reorganized dwgs. TM200 thru TM203; Updated reference to TM635
7-2005	Revise notes and dimensions
1-2007	Redefine 5' minimum vertical clearance; clarify rural note

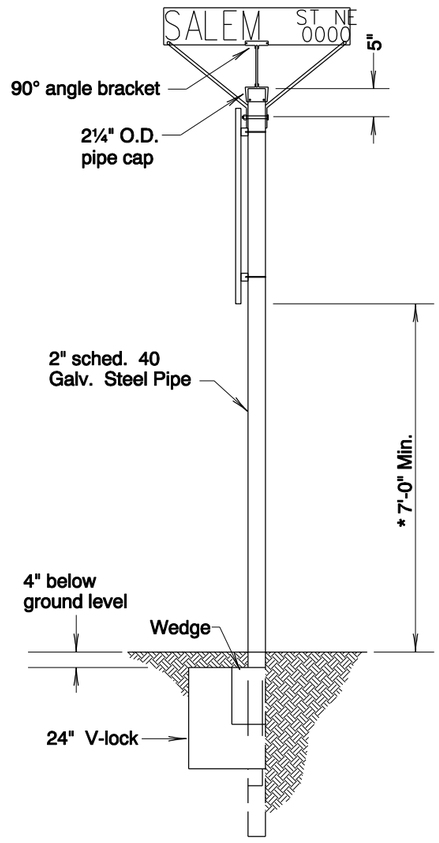
Effective Date: May 1, 2007 - October 31, 2007



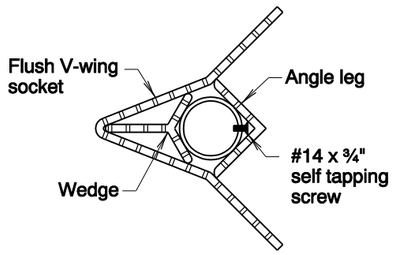
PIPE SIGN SUPPORT DETAIL
ONE SIGN



PIPE SIGN SUPPORT DETAIL
TWO OR MORE SIGNS



PIPE SIGN SUPPORT DETAIL
WITH POST MOUNTING SOCKET



POST MOUNTING
SOCKET

GENERAL NOTES

1. Hot dip galvanize after fabrication Standard 2" welded steel pipe conform to the ASTM 'Specifications for Welded Steel Pipe' A120 and A123 for galvanizing.
2. All pipe shall be capped as approved by engineer when street name signs are not required.
3. These pipe supports are not breakaway and are to be used only in urban areas behind a vertical curb.

* 7'-0" is minimum height to bottom of lower sign in urban areas. 8'-0" is minimum height when signs are placed above a bike path

DETAILS FOR PLACEMENT

NOT FOR USE ON STATE HIGHWAY SYSTEM

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES
DETAILS

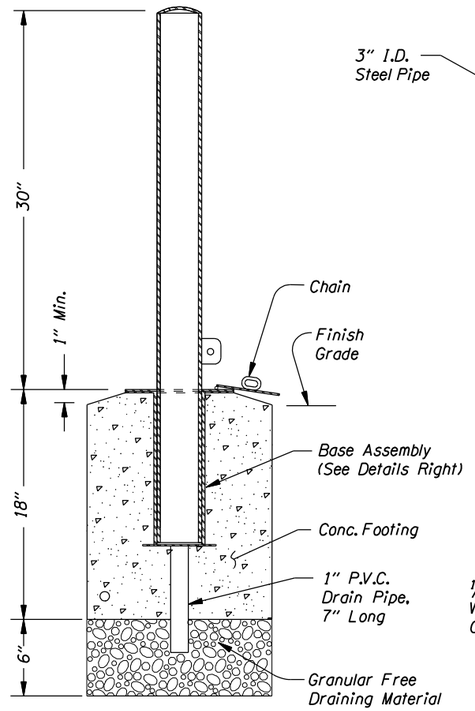
PIPE SIGN SUPPORT DETAIL

DETAIL NO.
DET4235

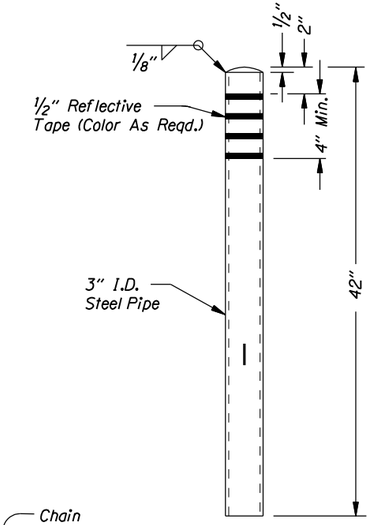
DET4235

det1710.dgn 23-AUG-2006

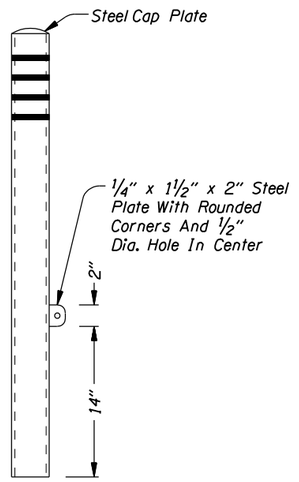
REMOVABLE



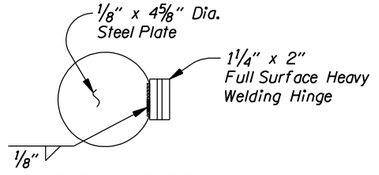
SECTION A-A



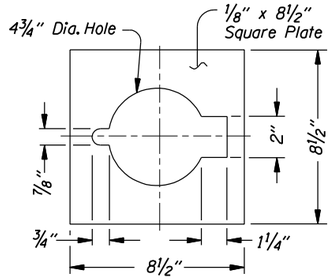
FRONT VIEW



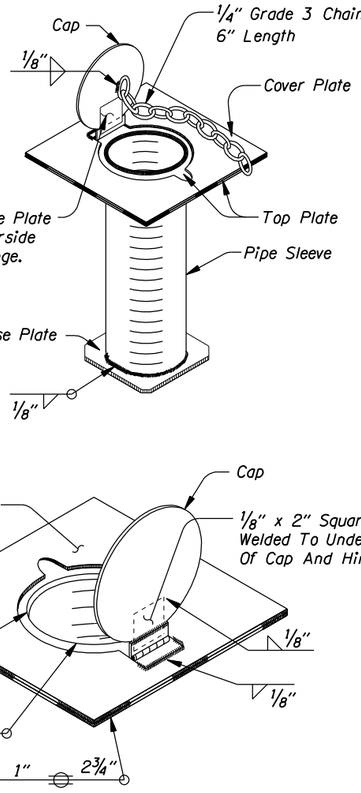
SIDE VIEW

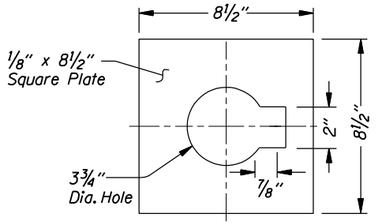


CAP & HINGE

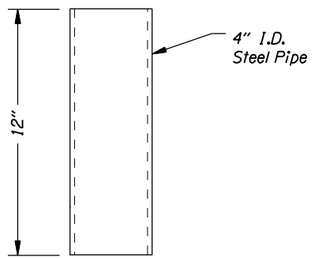


COVER PLATE

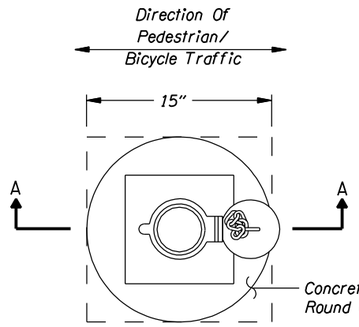




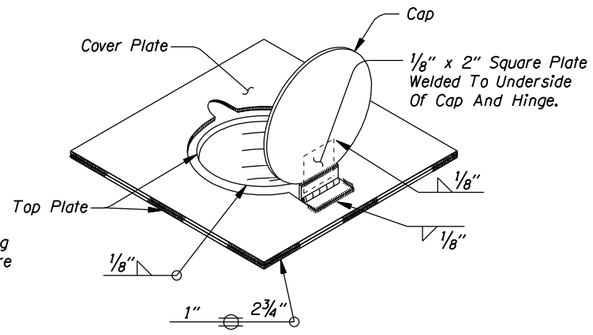
TOP PLATE

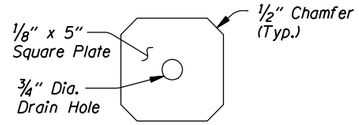


PIPE SLEEVE



PLAN

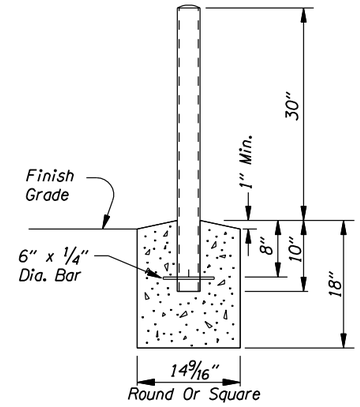




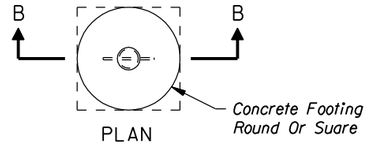
BASE PLATE

BASE ASSEMBLY

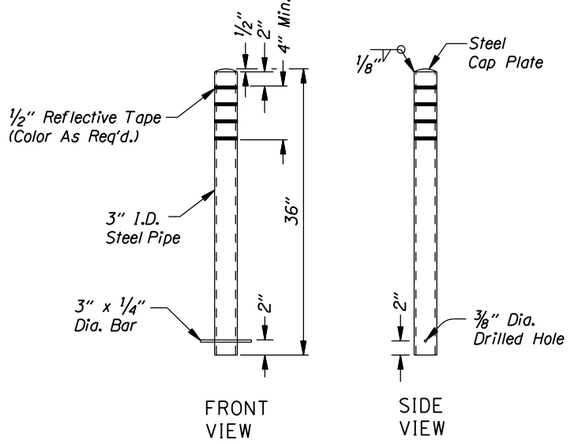
NON-REMOVABLE



SECTION B-B



PLAN



FRONT VIEW

SIDE VIEW

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES
DETAILS

BOLLARDS

DETAIL NO. DET1710

DET1710

City of Portland, Oregon
Bureau of Development Services
Land Use Services

1900 SW 4th Avenue, Suite 5000
Portland, Oregon 97201
503-823-7300
Fax 503-823-5630
TTY 503-823-6868
www.portlandonline.com/bds

PERMANENT RULE

Private Rights-of-Way - Streets, Alleys, Shared Courts, Common Greens and Pedestrian Connections

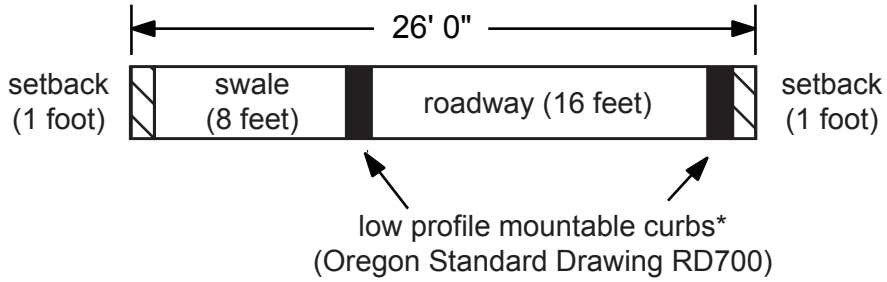
Appendix C – Design Templates

Note: The figures contained in this appendix are intended to provide examples of how private rights-of-way could be designed. The figures are not prescriptive. The design of private rights-of-way will vary with the conditions of each site and must also conform to other applicable City regulations.

Summary of Recommended Right of Way Tract Widths
Standard Street Templates

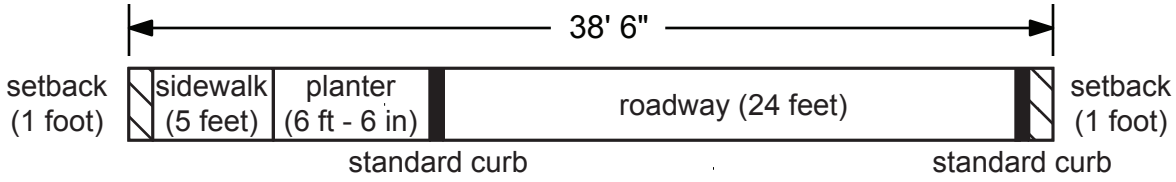
1

when to use this template as a guide...
- ▶the private street is serving only 2 or 3 lots intended for single dwelling homes (detached or attached); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of a public street



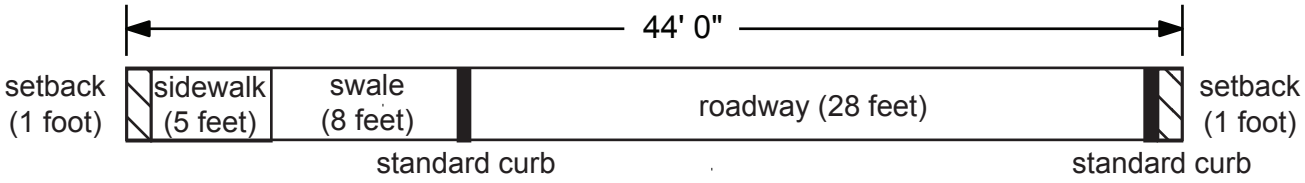
2

when to use this template as a guide...
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of a public street (250 feet if fire suppression sprinklers are provided); and
- ▶the private street is serving 4 or more lots



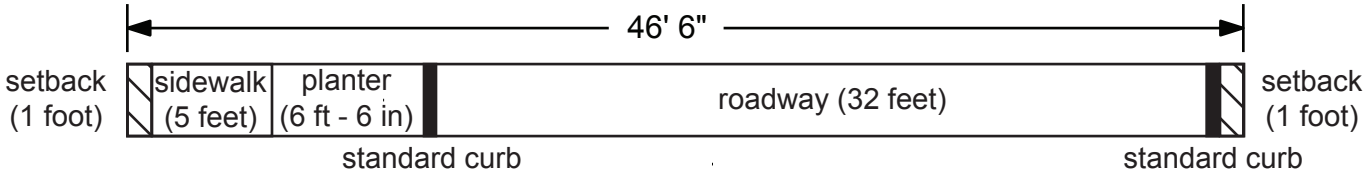
3

when to use this template as a guide...
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from a public street; and
- ▶the private street is serving 4 or more lots



4

when to use this template as a guide...
- ▶some dwellings are more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from a public street; and
- ▶the private street is serving 4 or more lots



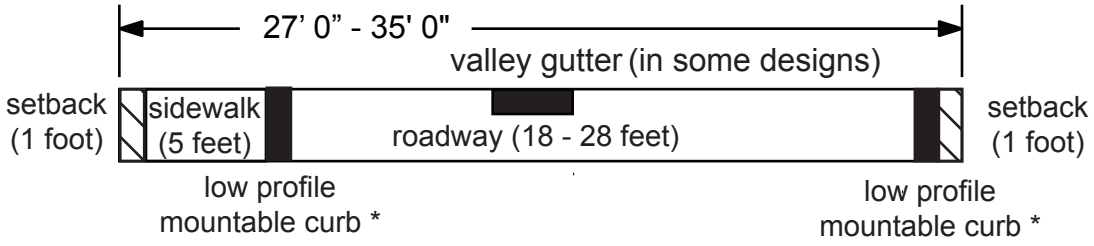
*Low profile mountable curbs are included within the recommended roadway width. Standard curbs are not.

Summary of Recommended Right of Way Tract Widths

Constrained Site Street Templates

5

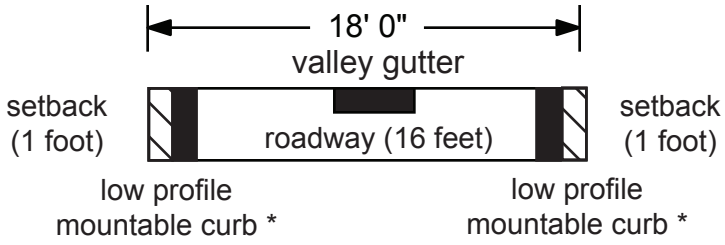
when to use this template as a guide...
- ▶the site has constraints (narrow site, steep slopes, environmental resources); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from the public street; and
- ▶the street is serving 4 or more lots



Alley Template

6

when to use this template as a guide...
- ▶development with secondary vehicle access is desirable or required; and
- ▶the alley is not serving as a Fire Apparatus Access Road.
- ▶the alley is serving one-way or two way traffic.
- ▶often used with rowhouse development to preserve on-street parking, or in conjunction with a common green.



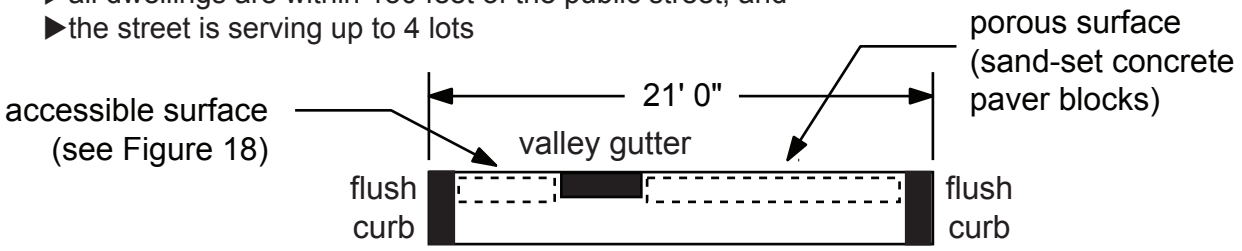
*Low profile mountable curbs are included within the recommended roadway width. Standard curbs are not.

Summary of Recommended Right of Way Tract Widths

Shared Court Templates

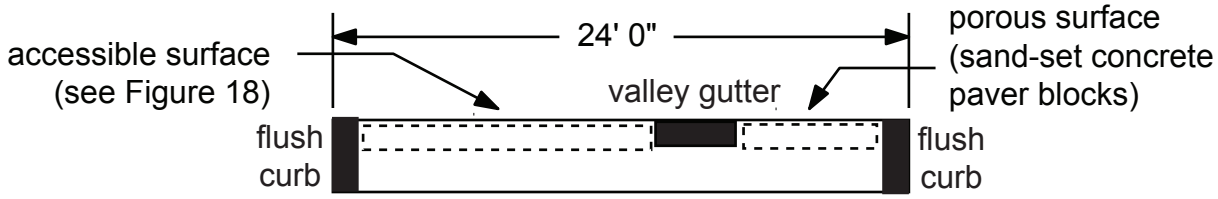
7

when to use this template as a guide...
- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site is a small infill site; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶the street is serving up to 4 lots



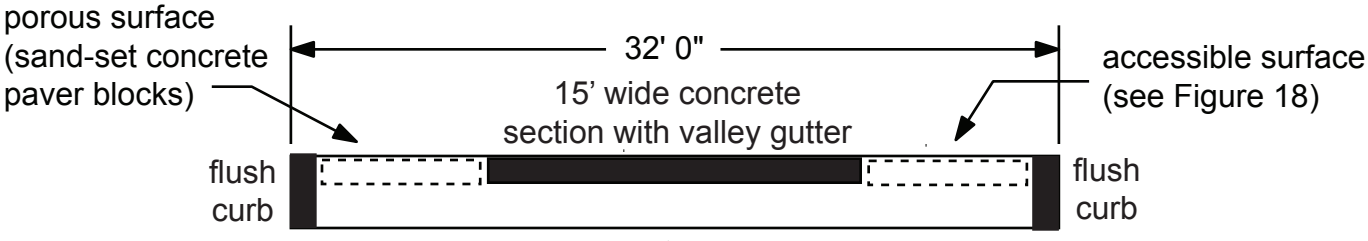
8

when to use this template as a guide...
- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site is a small infill site; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶the street is serving 5 to 7 lots



9

when to use this template as a guide...
- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site has a depth of more than 100 feet; and
- ▶some dwellings will be more than 30 feet high (measured at the gutter line); and
- ▶some dwellings will be more than 150 feet from the public street; and
- ▶the street is serving 8 to 12 lots



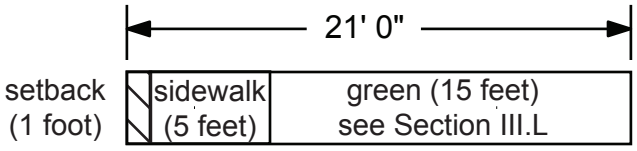
*Flush curbs are included within the recommended roadway width. Standard curbs are not.

Summary of Recommended Right of Way Tract Widths

Common Green
and Pedestrian Connection Templates

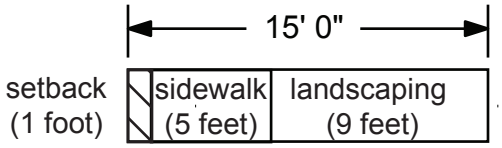
10

when to use this template as a guide...
- ▶development will be oriented around a common green; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶any off-street parking requirements will be met via an alley or shared parking area



11

when to use this template as a guide...
- ▶development will be oriented along a private pedestrian walkway; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶any off-street parking requirements will be met via an alley or shared parking area

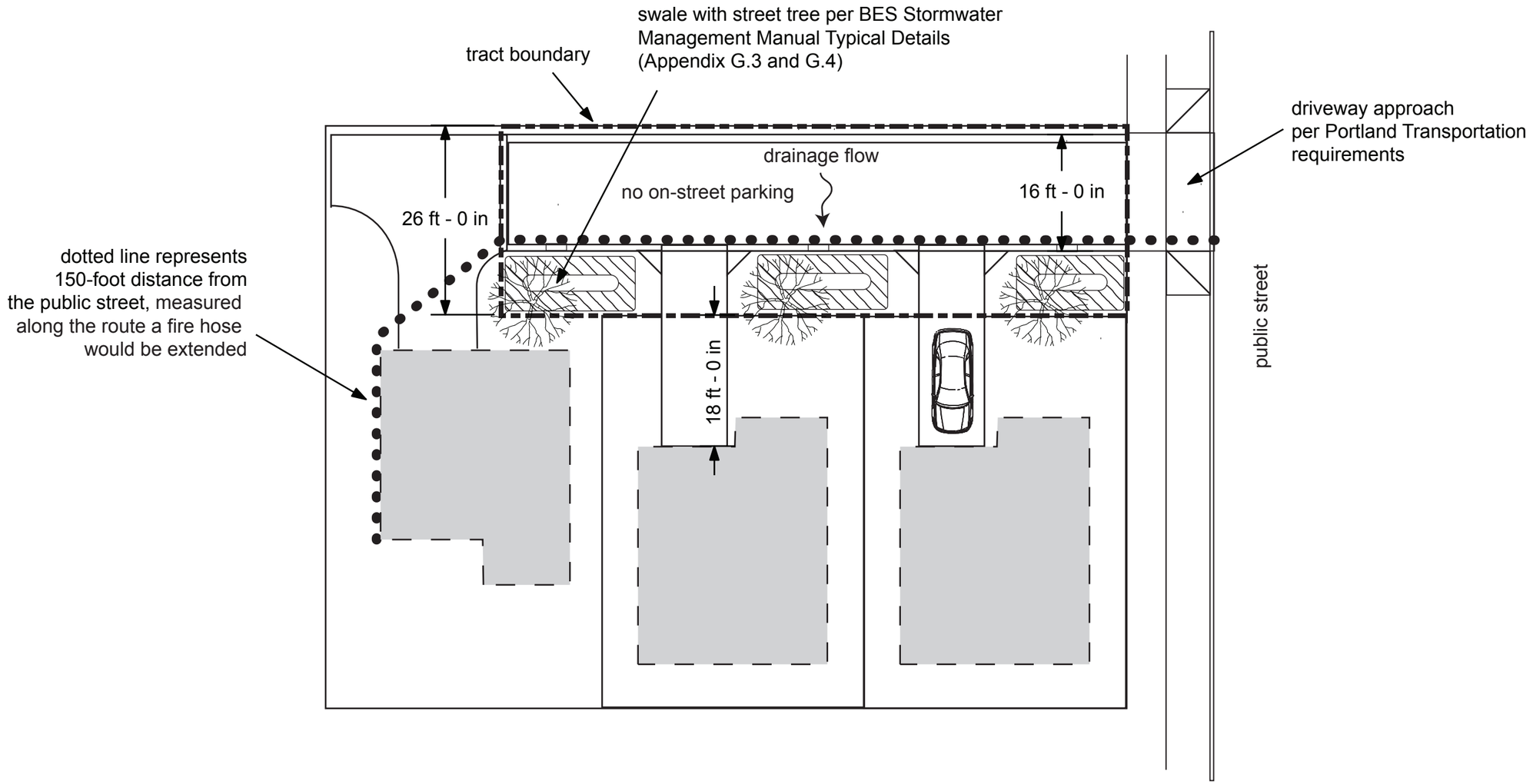


1

26-foot Tract

when to use this template as a guide...

- ▶the private street is serving only 2 or 3 lots intended for single dwelling homes (detached or attached); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of a public street



NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule

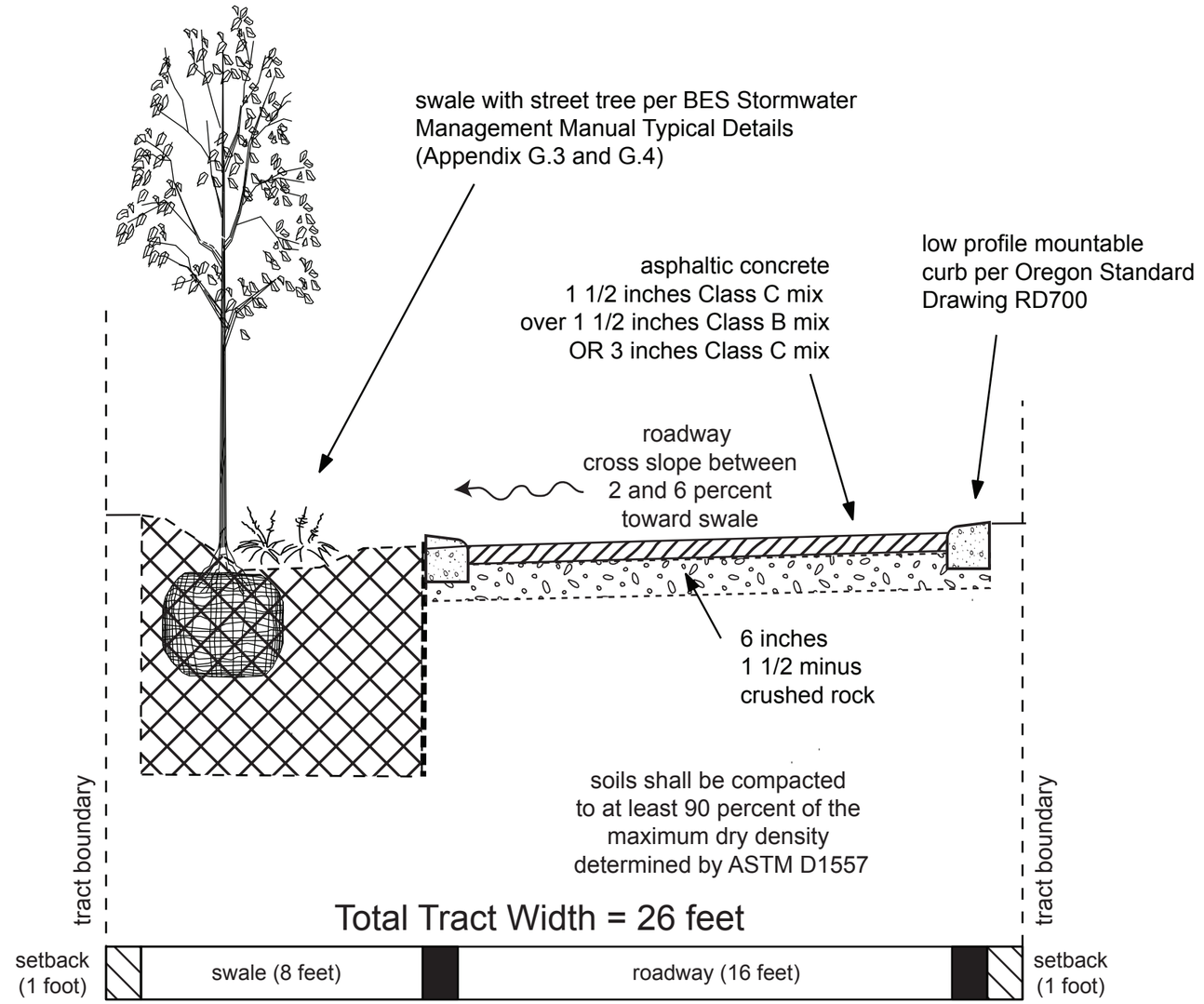
Template 1 Plan View

1

26-foot Tract

when to use this template as a guide...

▶the private street is serving only 2 or 3 lots intended for single dwelling homes (detached or attached); and
▶all dwellings are no more than 30 feet high (measured at the gutter line); and
▶all dwellings are within 150 feet of a public street



Notes:
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/26/08

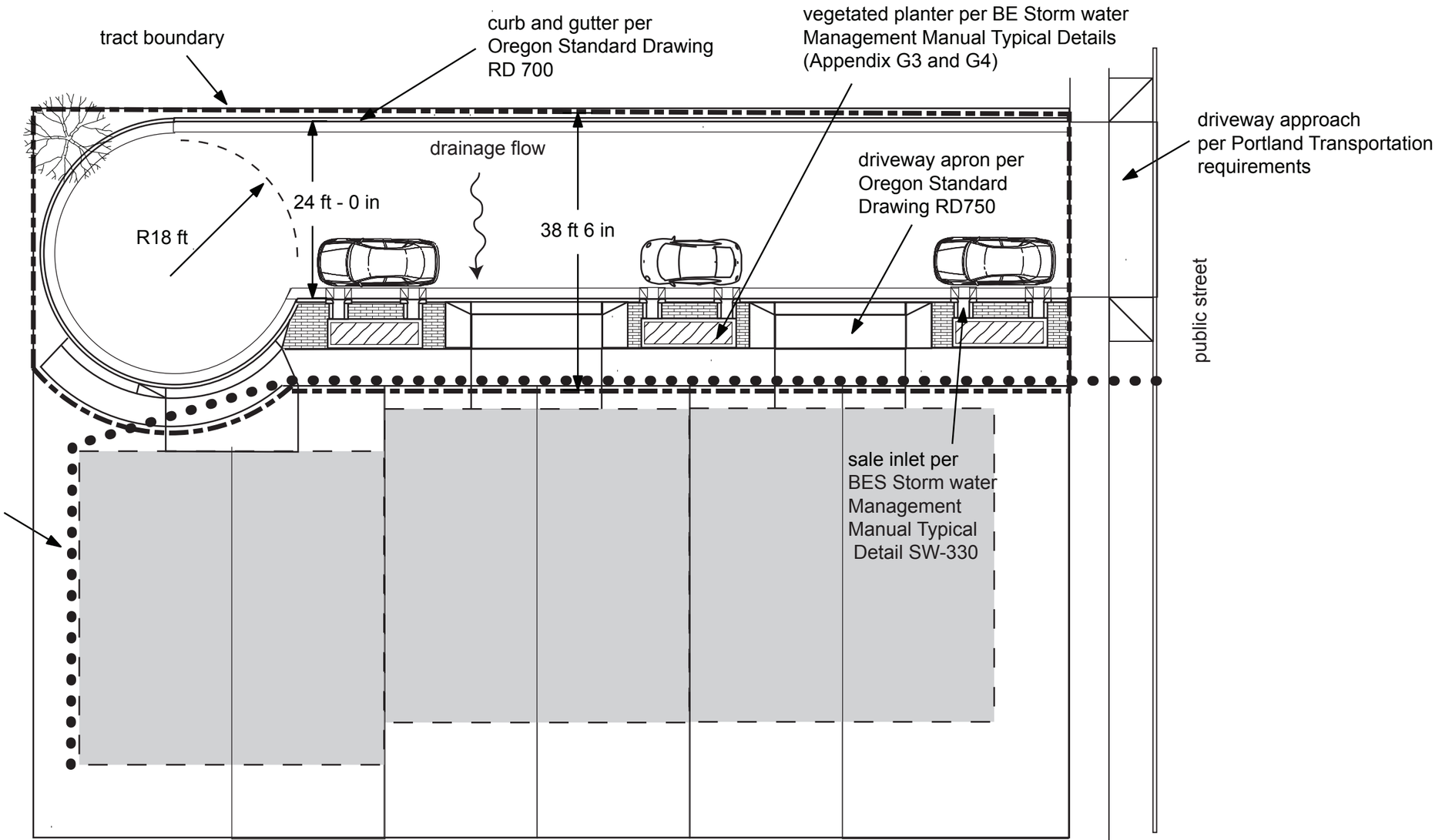
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 1 Section

2

38-foot 6 inch Tract

when to use this template as a guide...

- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of a public street (250 feet if fire suppression sprinklers are provided); and
- ▶the private street is serving 4 or more lots



Notes:

1) In this example, fire suppression sprinklers are provided.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule

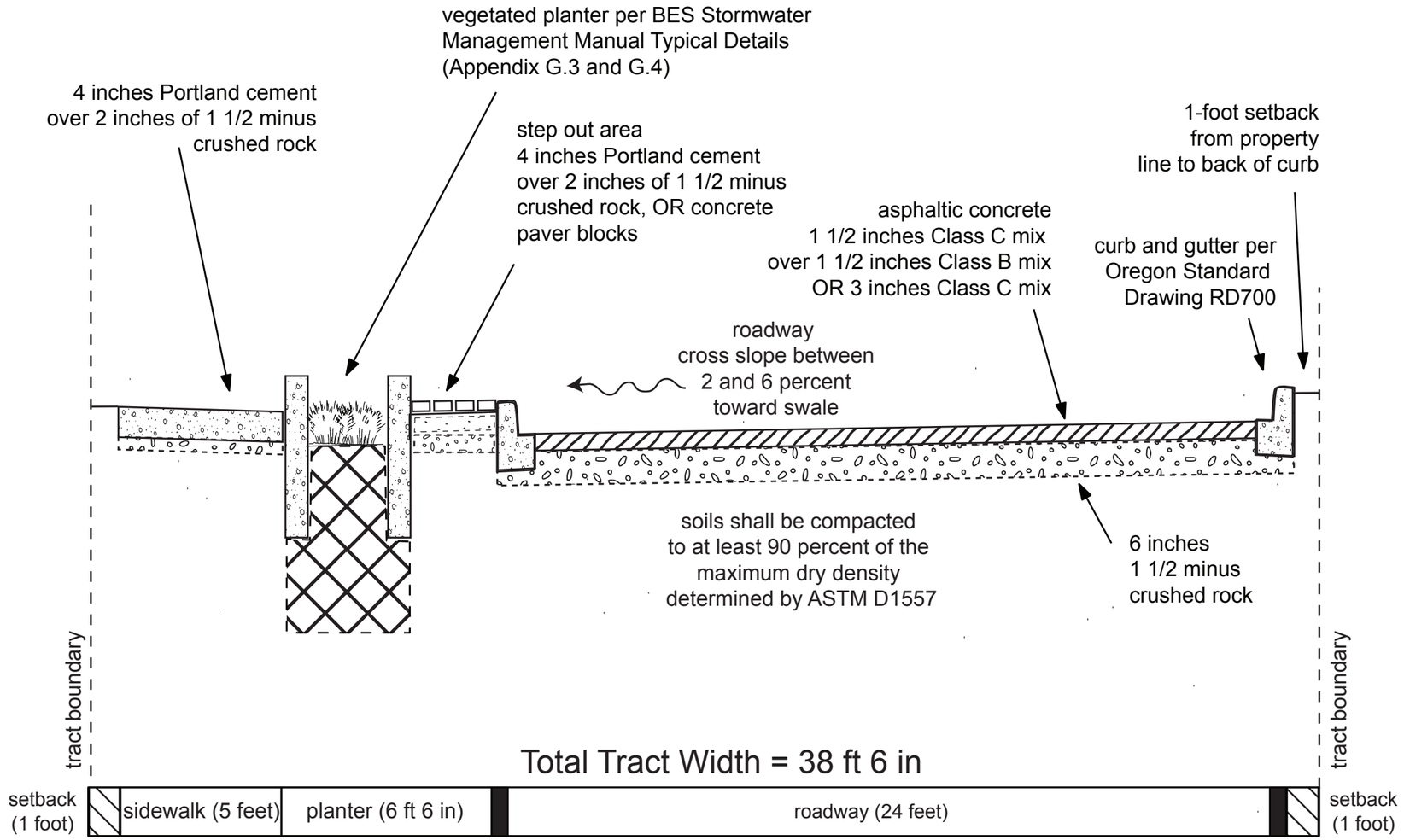
Template 2 Plan View

2

38-foot 6 inch Tract

when to use this template as a guide...

▶all dwellings are no more than 30 feet high (measured at the gutter line); and
▶all dwellings are within 150 feet of a public street (250 feet if fire suppression sprinklers are provided); and
▶the private street is serving 4 or more lots



Notes:
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

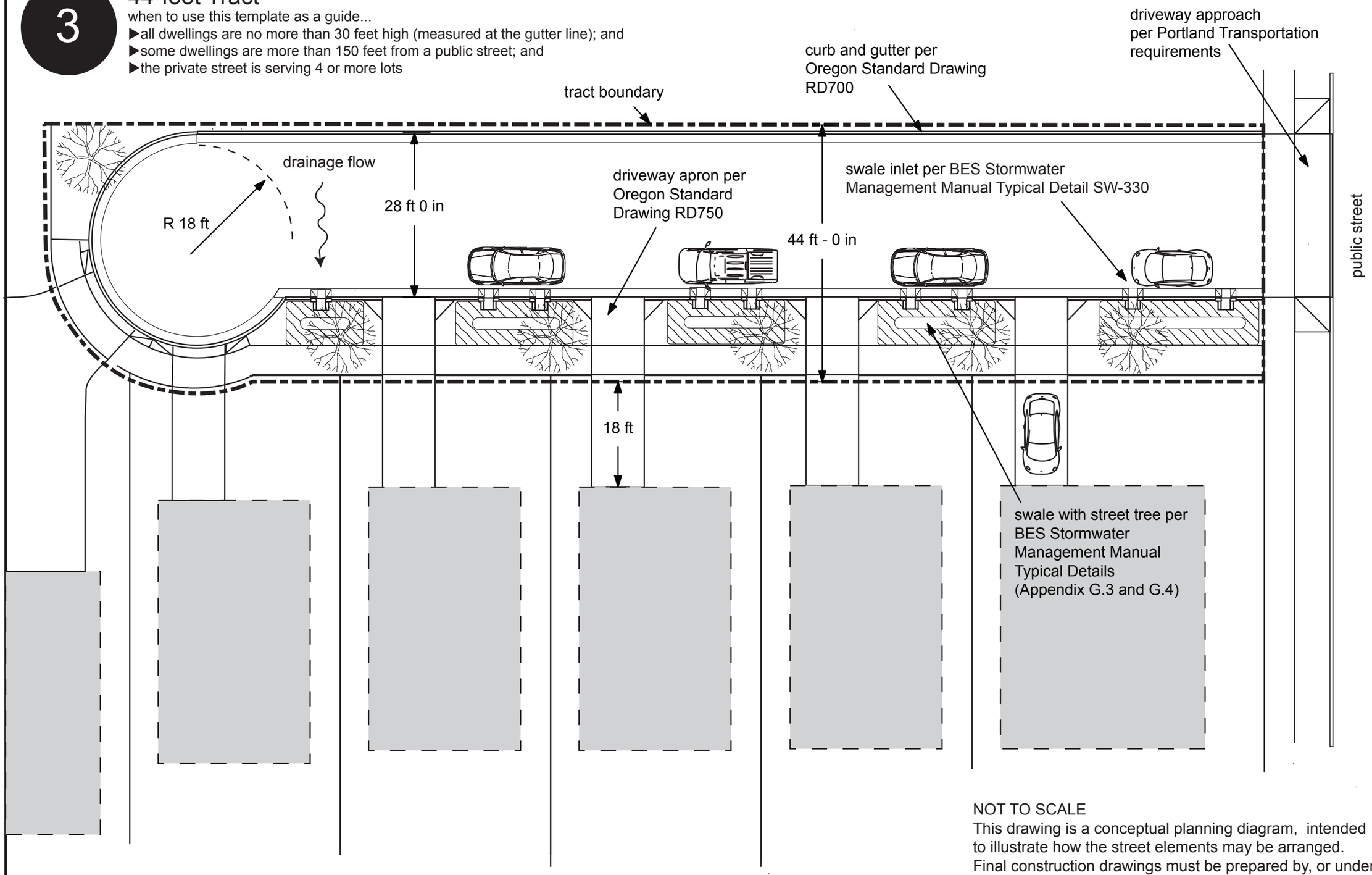
updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 2 Section

3 44-foot Tract

when to use this template as a guide...

- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from a public street; and
- ▶the private street is serving 4 or more lots



NOT TO SCALE

This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/28/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule

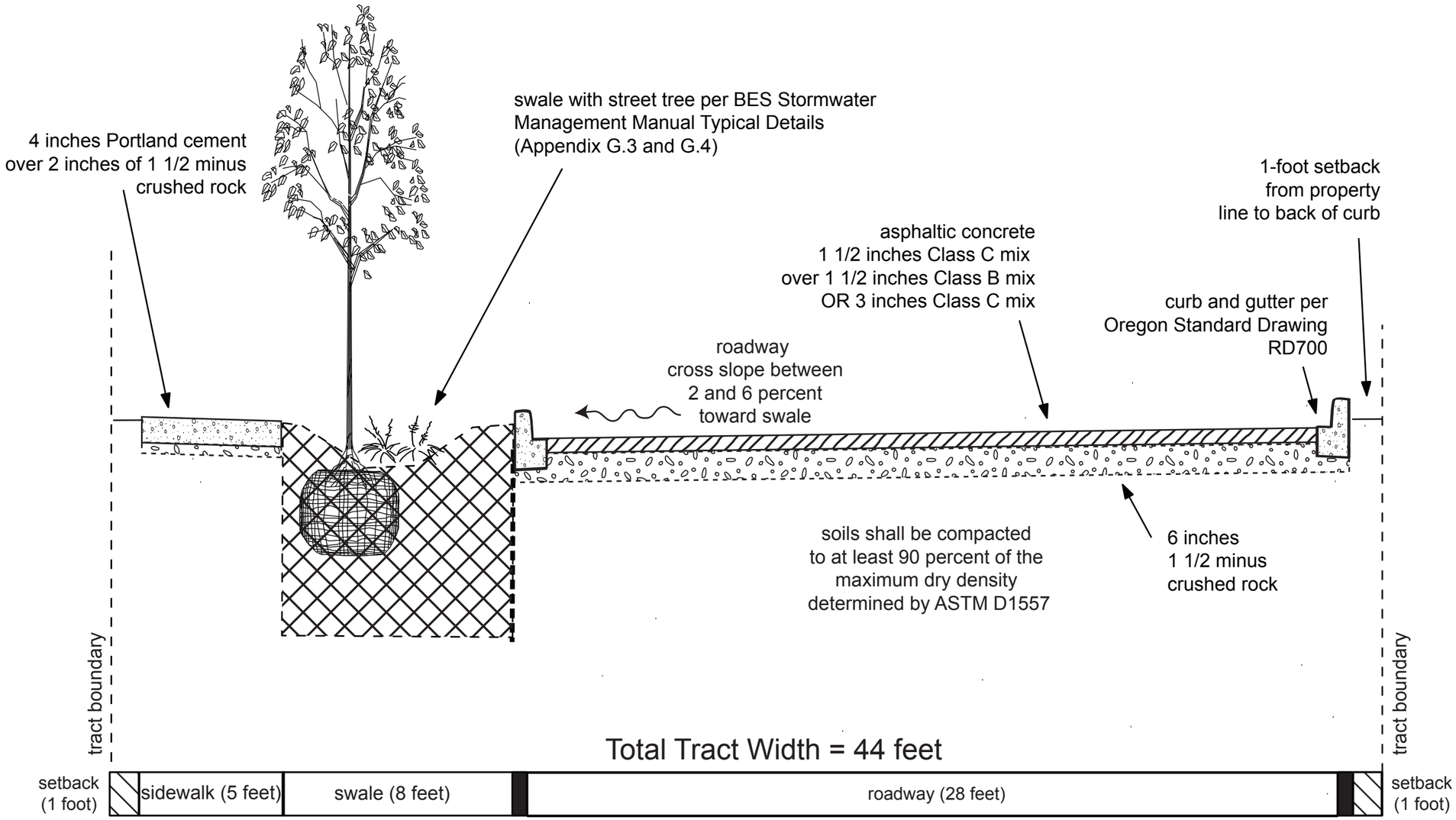
Template 3 Plan View

3

44-foot Tract

when to use this template as a guide...

- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from a public street; and
- ▶the private street is serving 4 or more lots



Notes:
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

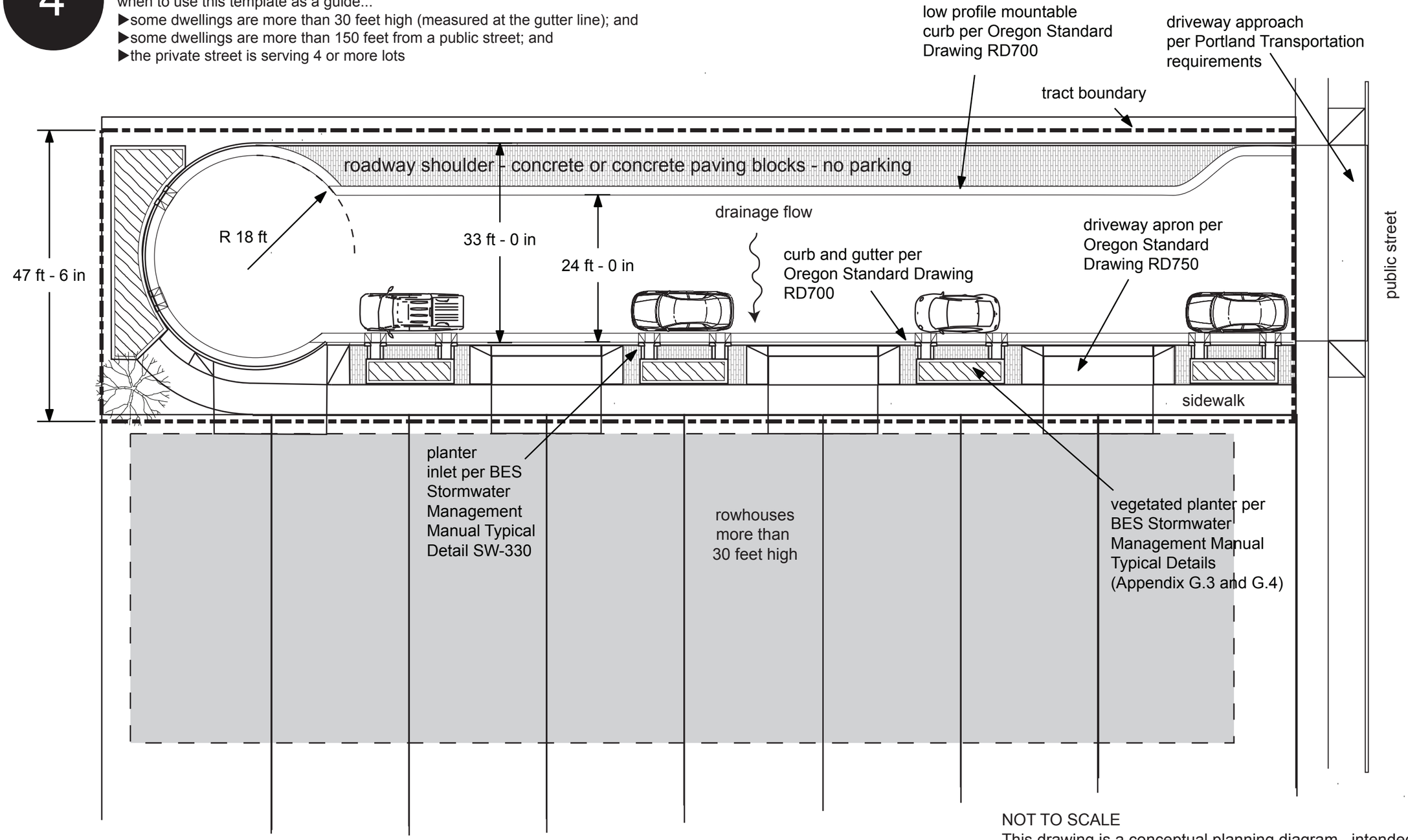
updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 3 Section

4 47 ft 6 in Tract

when to use this template as a guide...

- ▶some dwellings are more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from a public street; and
- ▶the private street is serving 4 or more lots



NOT TO SCALE

This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/28/08

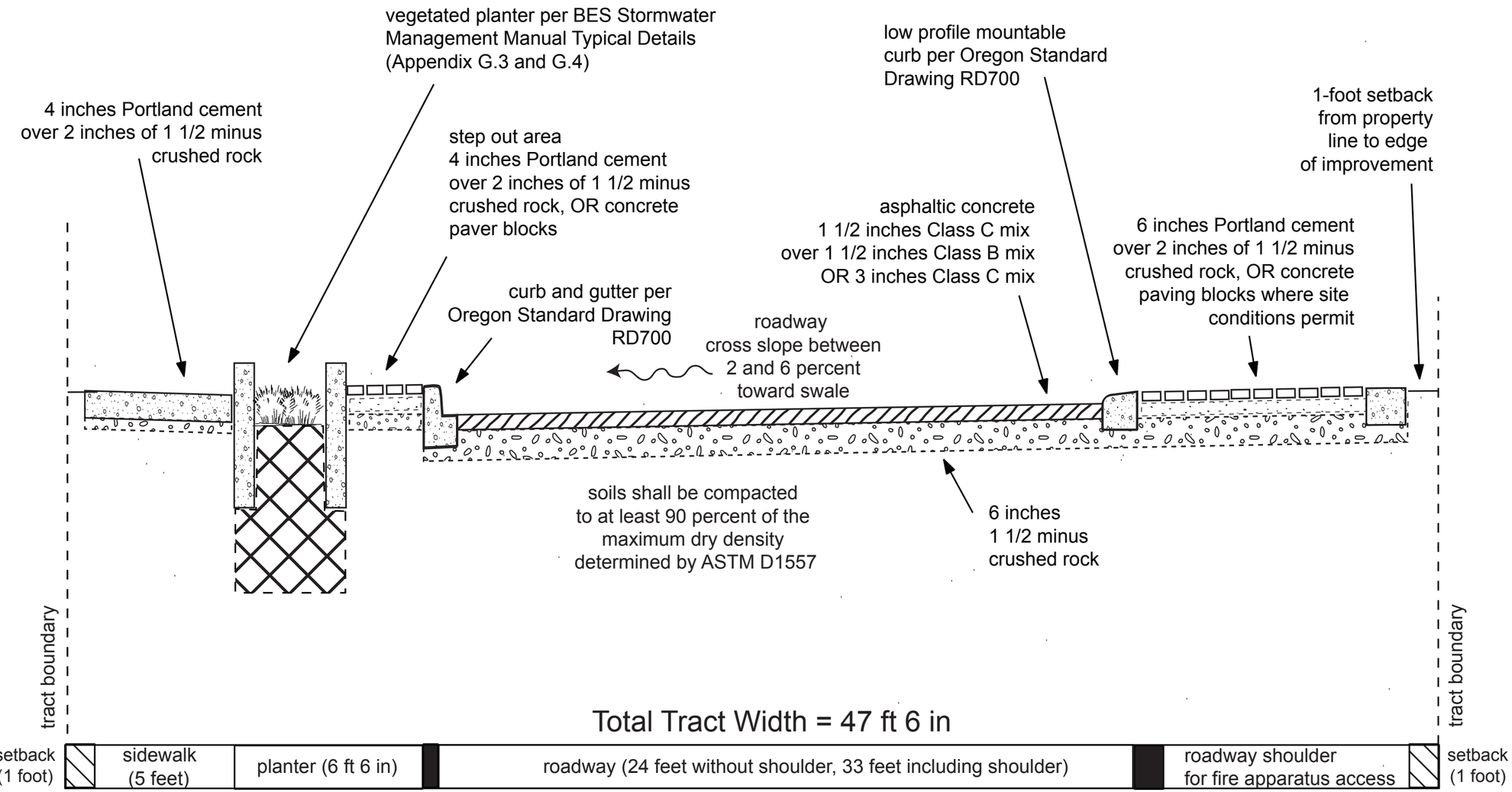
City of Portland, Bureau of Development Services
Private Street Administrative Rule

Template 4 Plan View

4

47 ft 6 in Tract

when to use this template as a guide...
- ▶some dwellings are more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from a public street; and
- ▶the private street is serving 4 or more lots



Notes:
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.
3) This example shows a 24 foot roadway that has been extended to a 33-foot wide fire apparatus access road by adding a shoulder extension. Normal traffic would use the narrower 24-foot roadway. No signs, street trees, or other obstructions may be located within this shoulder. No parking signs must be placed within the setback on the shoulder side of the roadway.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

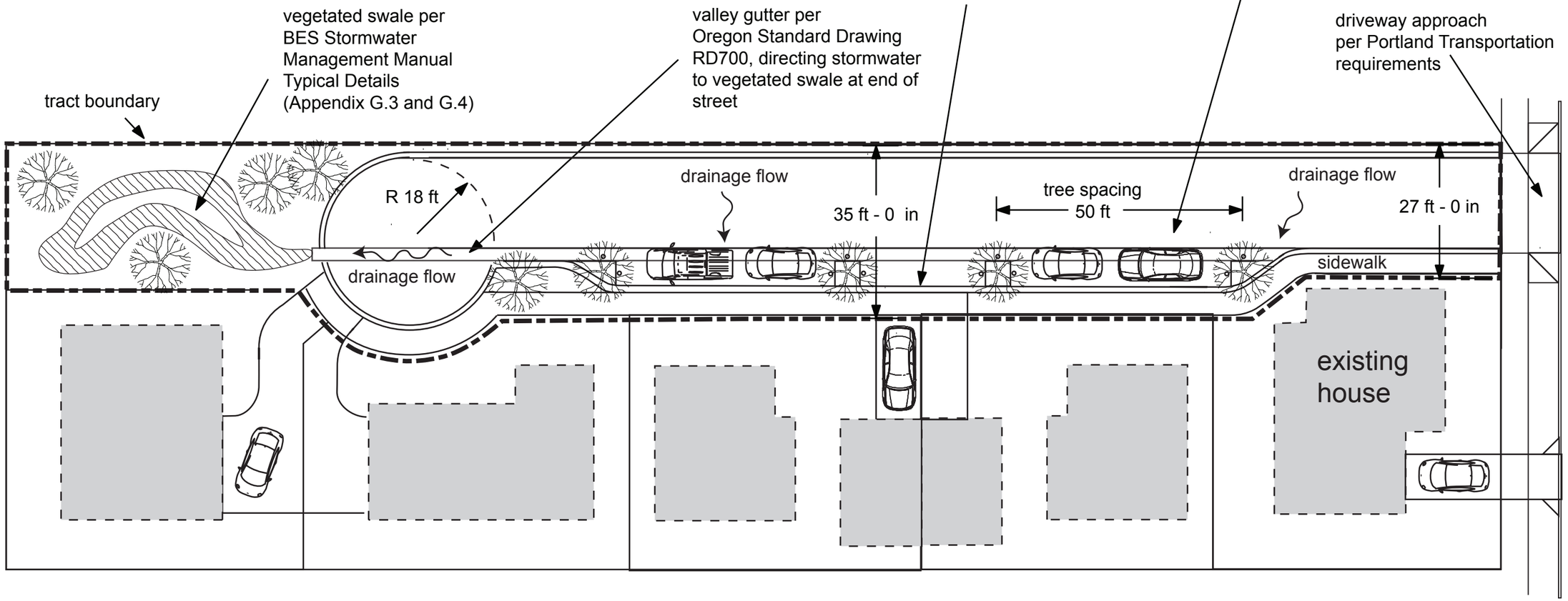
updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 4 Section

5 27-foot to 35-foot Tract

when to use this template as a guide...

- ▶the site has constraints (narrow site, steep slopes, environmental resources); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from the public street; and
- ▶the street is serving 4 or more lots



Notes:

1) The roadway width is 28 feet where on-street parking is provided, and 20 feet where on-street parking is not provided.
2) Valley gutter directs stormwater drainage to swale at end of street, which is within the street tract.
3) Street trees are provided in the parking lane, and protected with bollards (see Figure 15).

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 7/10/09

City of Portland, Bureau of Development Services
Private Street Administrative Rule

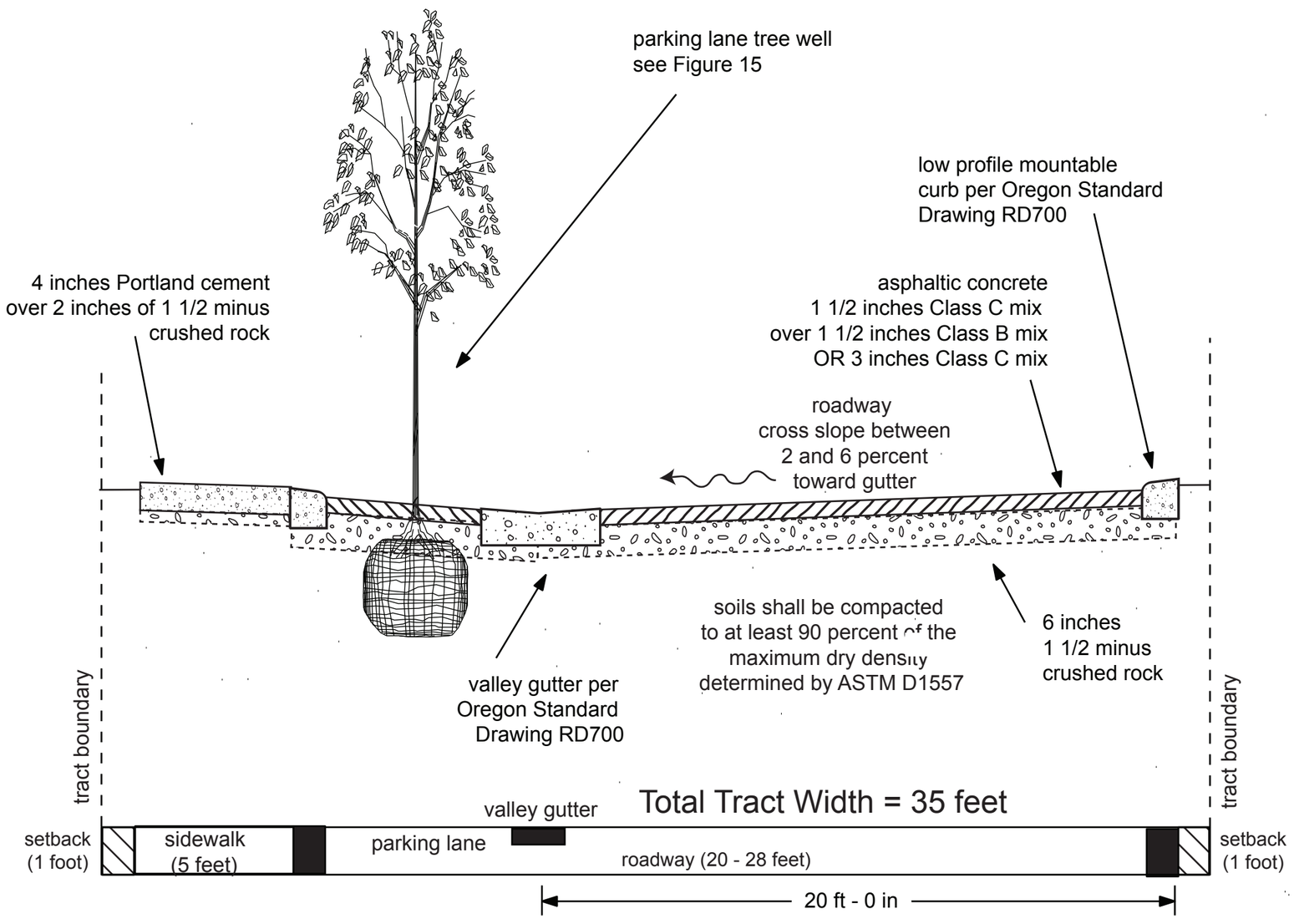
Template 5 Plan View

5

27-foot to 35-foot Tract

when to use this template as a guide...

- ▶the site has constraints (narrow site, steep slopes, environmental resources); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from the public street; and
- ▶the street is serving 4 or more lots



Notes:

1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.
3) The roadway width is 28 feet where on-street parking is provided, and 20 feet where on-street parking is not provided.

NOT TO SCALE

This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 7/19/09

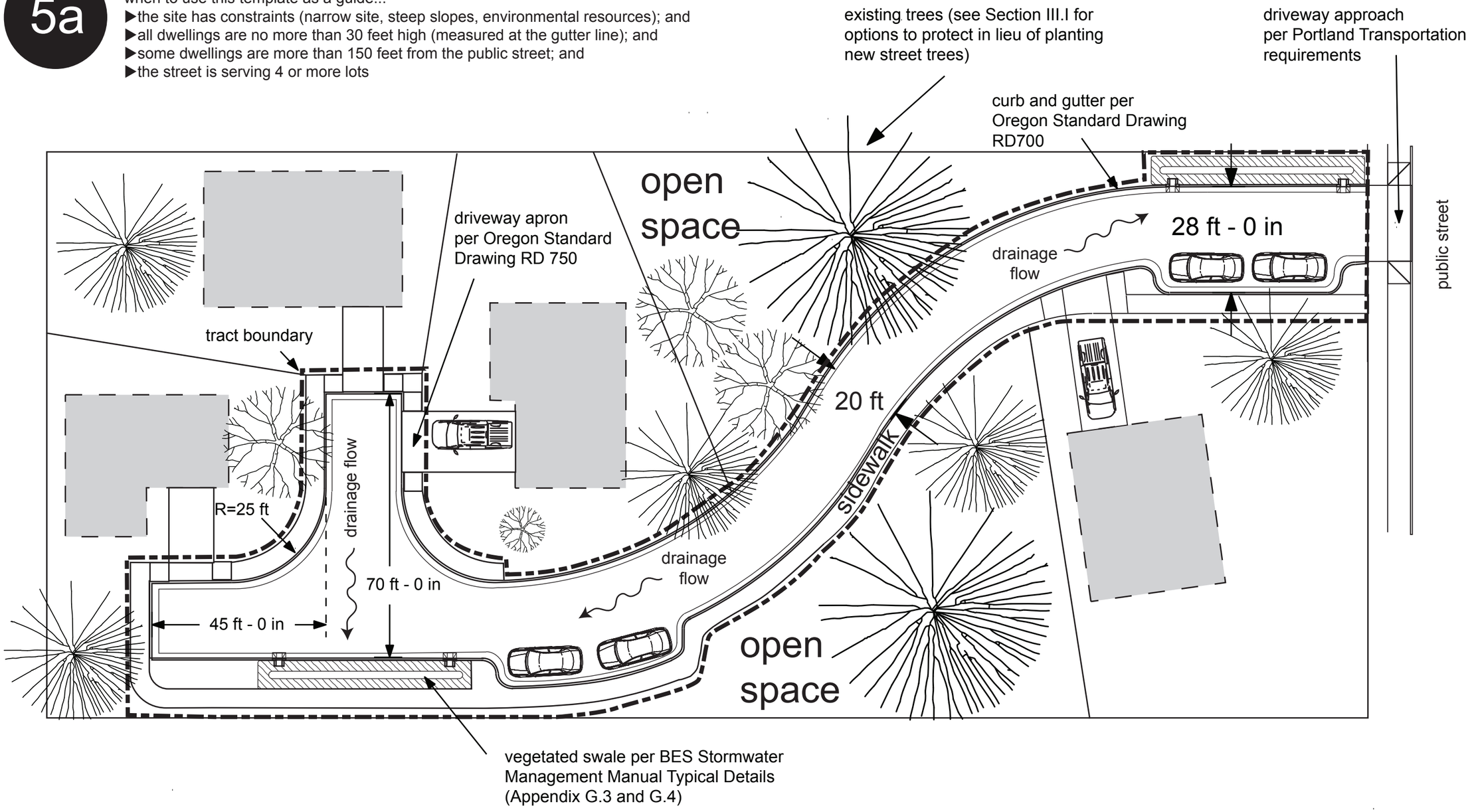
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 5 Section

5a

27-foot to 35-foot Tract

when to use this template as a guide...

- ▶the site has constraints (narrow site, steep slopes, environmental resources); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from the public street; and
- ▶the street is serving 4 or more lots



Notes:

1) This example shows a street that is longer than 300 feet, with the turnaround sized to meet Fire Apparatus Access Road requirements.
2) In this example, the roadway is 20 feet, and widens to 28 feet for occasional parking bays.
3) Street trees are not provided in this example, because there are existing trees that will be retained in the abutting yards (see Section III.I)

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/26/08

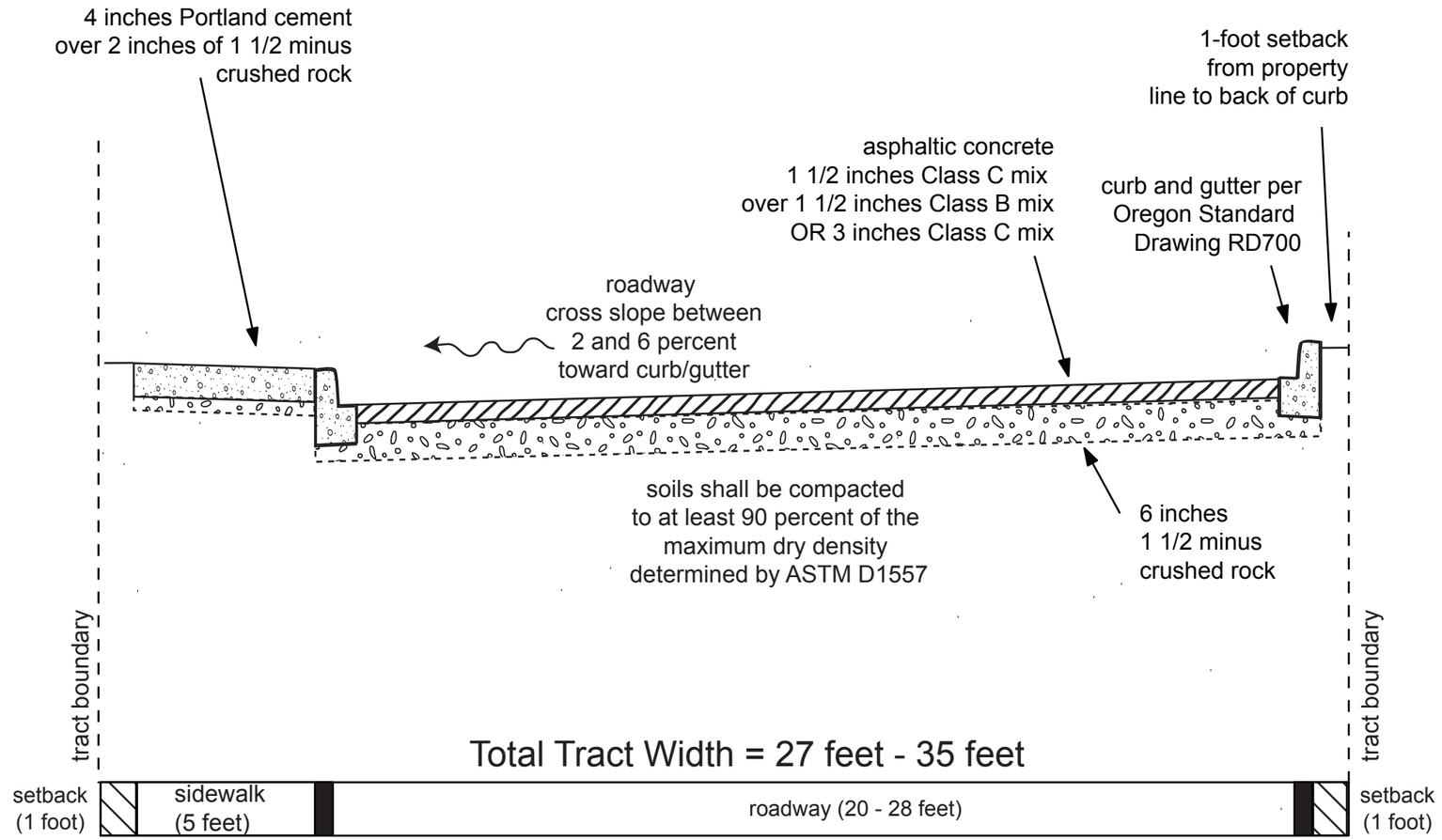
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 5a Plan View

5a

27-foot to 35-foot Tract

when to use this template as a guide...

- ▶the site has constraints (narrow site, steep slopes, environmental resources); and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶some dwellings are more than 150 feet from the public street; and
- ▶the street is serving 4 or more lots



Notes:
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.
3) In this example, the roadway is 20 feet, and widens to 28 feet for occasional parking bays.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/28/08

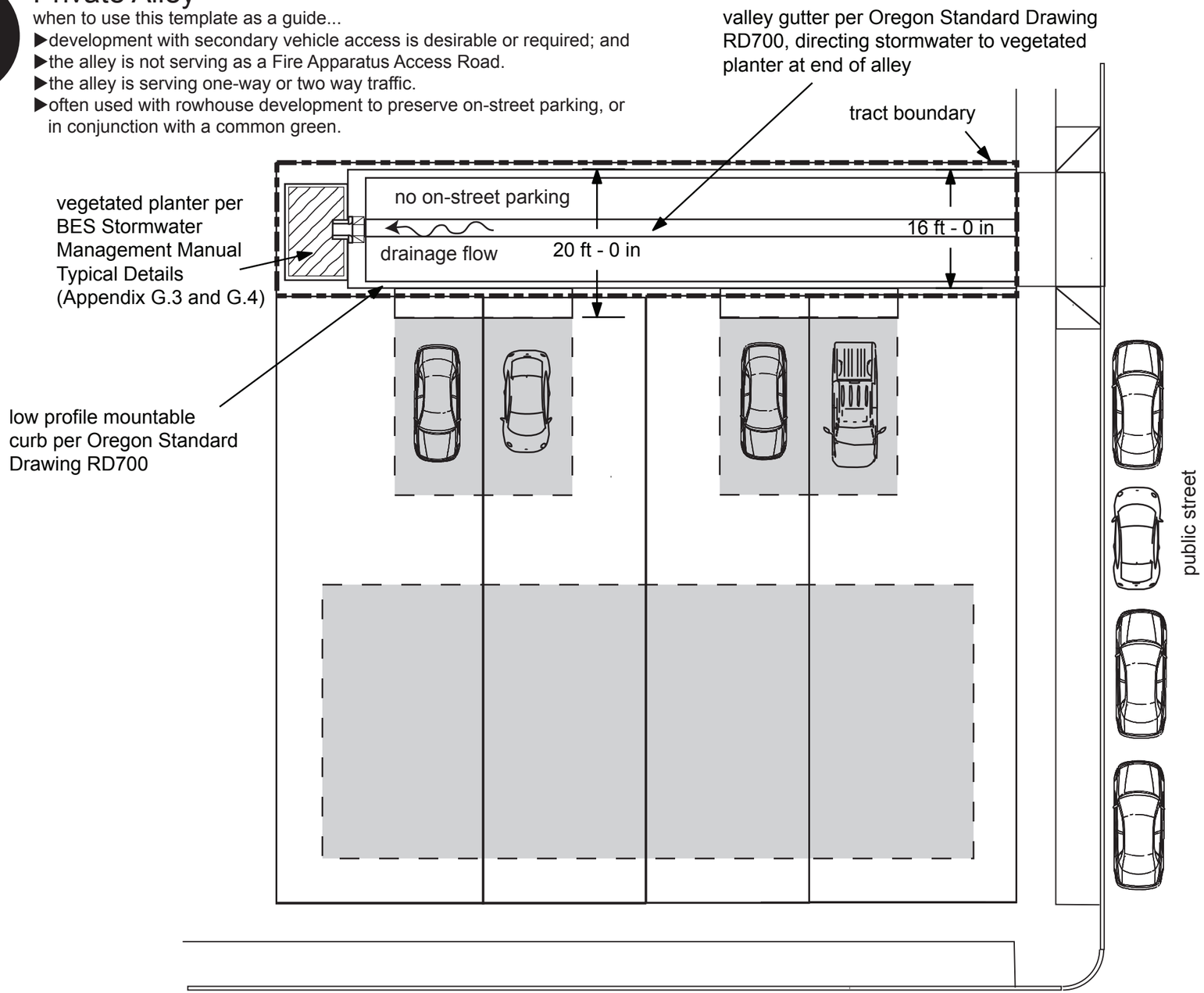
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 5a Section

6

Private Alley

when to use this template as a guide...

- ▶development with secondary vehicle access is desirable or required; and
- ▶the alley is not serving as a Fire Apparatus Access Road.
- ▶the alley is serving one-way or two way traffic.
- ▶often used with rowhouse development to preserve on-street parking, or in conjunction with a common green.



Notes:

1) In this example, the alley drains away from the public street. A high flow overflow must be provided from the planter to an approved disposal point. The overflow must be designed to handle runoff from the 100-year event. In this example, if soils are suitable, the overflow might be provided via a drywell located under the alley.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule

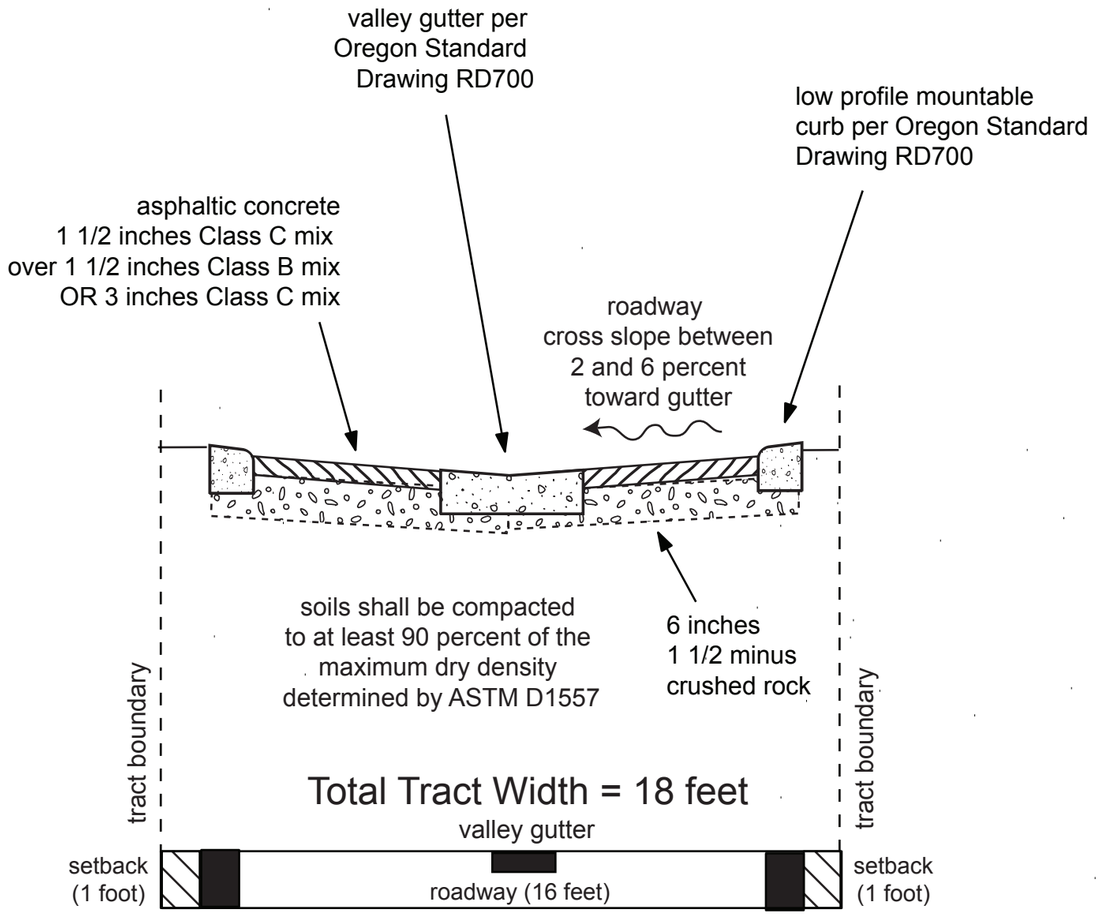
Template 6 Plan View

6

Private Alley

when to use this template as a guide...

- ▶development with secondary vehicle access is desirable or required; and
- ▶the alley is not serving as a Fire Apparatus Access Road.
- ▶the alley is serving one-way or two way traffic.
- ▶often used with rowhouse development to preserve on-street parking, or in conjunction with a common green.



Notes:
1) Longitudinal slope shall be between 1% and 15%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/28/08

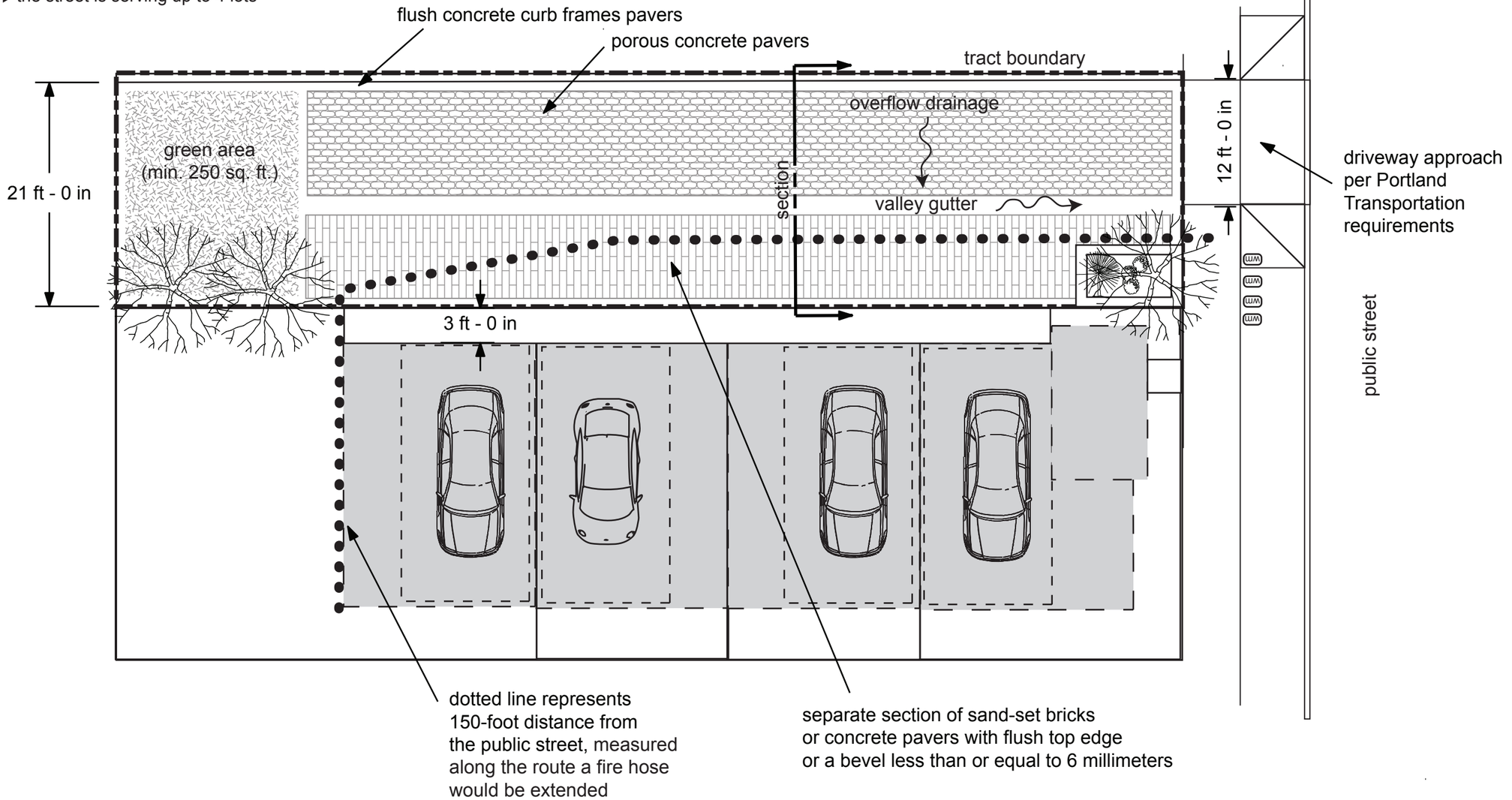
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 6 Section

7

21-foot Shared Court Tract

when to use this template as a guide...

- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site is a small infill site; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶the street is serving up to 4 lots



Notes:

1) Longitudinal slope shall be between 1% and 5%.
2) The use of porous concrete paving blocks is one of several paving options, and is dependant on soils on the site having an adequate infiltration rate. See Chapter 2 of the BES Stormwater Management Manual for stormwater management requirements, and facility design specifications.
3). See Section K.2.c (12) for a description of allowed paving surfaces.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated6/26/10

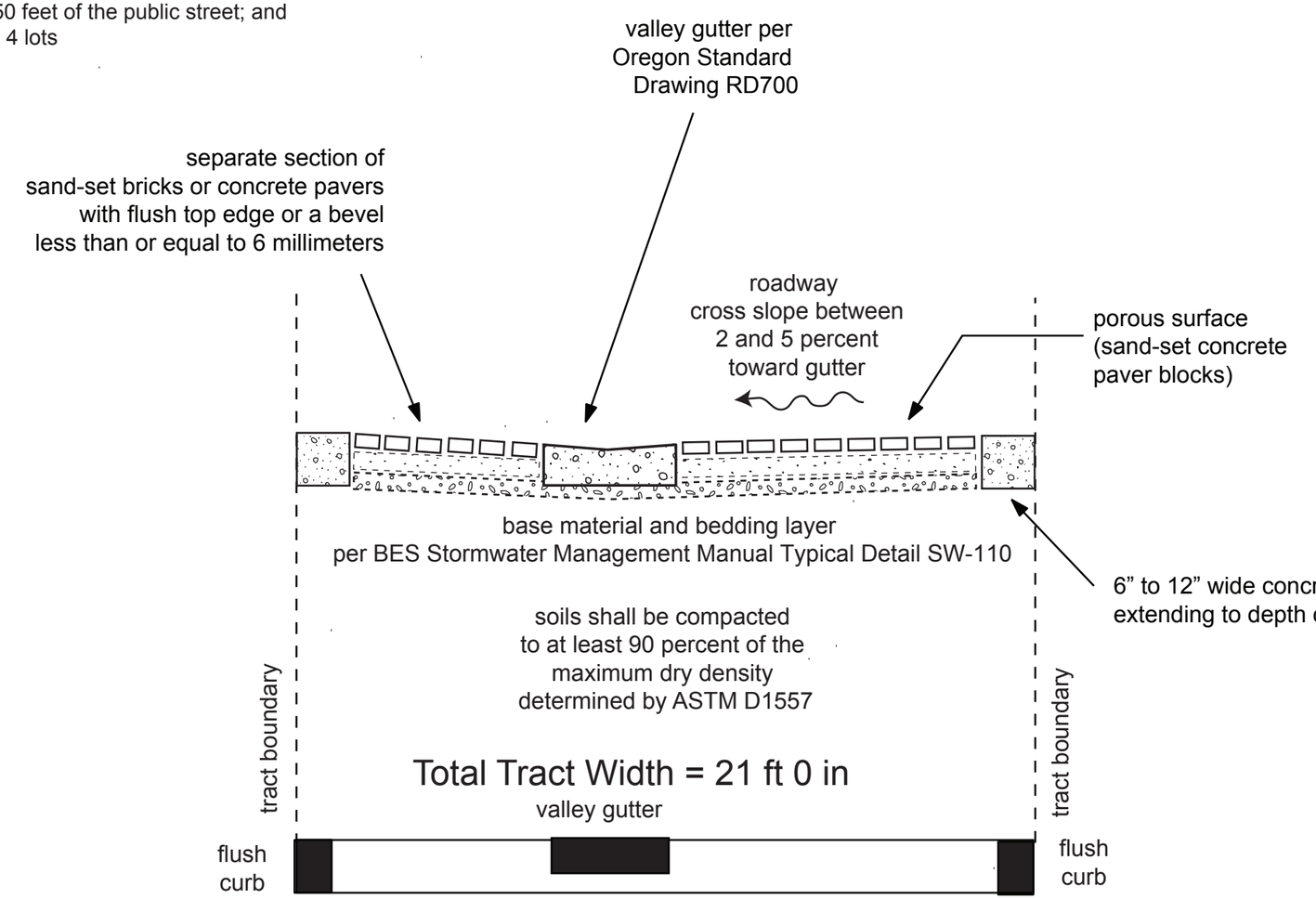
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 7 Plan View

7

21-foot Shared Court Tract

when to use this template as a guide...

- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site is a small infill site; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶the street is serving up to 4 lots



Notes:

1) Longitudinal slope shall be between 1% and 5%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.
3) The use of porous concrete paving blocks is one of several paving options, and is dependant on soils on the site having an adequate infiltration rate. See Chapter 2 of the BES Stormwater Management Manual for stormwater management requirements, and facility design specifications.
4) See Section K.2.c (12) for a description of allowed paving surfaces.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 7/3/09

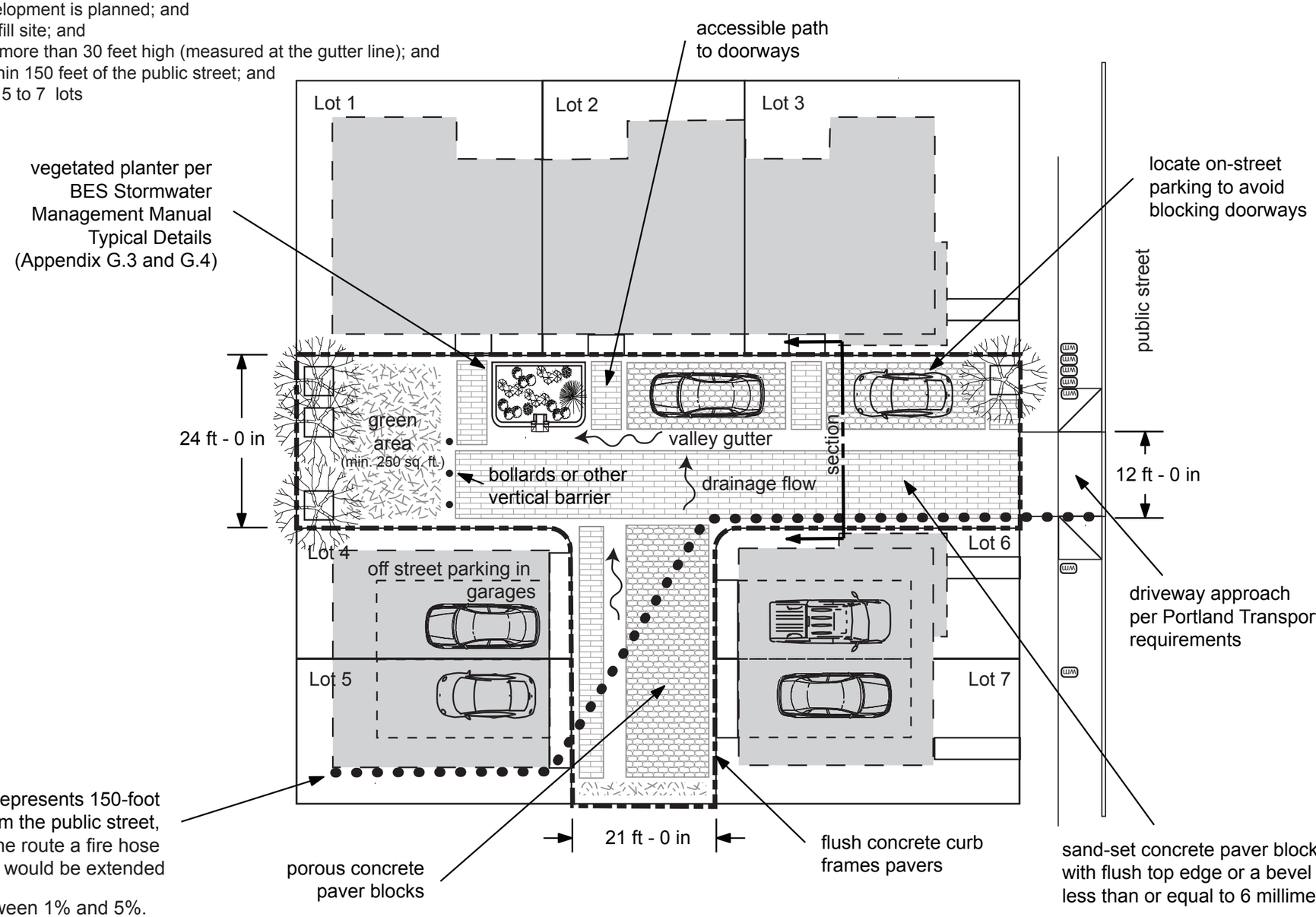
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 7 Section

8

24-foot Shared Court Tract

when to use this template as a guide...

- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site is a small infill site; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶the street is serving 5 to 7 lots



Notes:

1) Longitudinal slope shall be between 1% and 5%.
2) The use of porous concrete paving blocks is one of several paving options, and is dependant on soils on the site having an adequate infiltration rate. See Chapter 2 of the BES Stormwater Management Manual for stormwater management requirements, and facility design specifications.
3) No off-street parking is shown on Lots 1 though 3, but several spaces are located in the shared tract. See Zoning Code Chapter 33.266 to determine when this is allowed.
4) See Section K.2.c (12) for a description of allowed paving surfaces.

NOT TO SCALE

This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 6/26/10

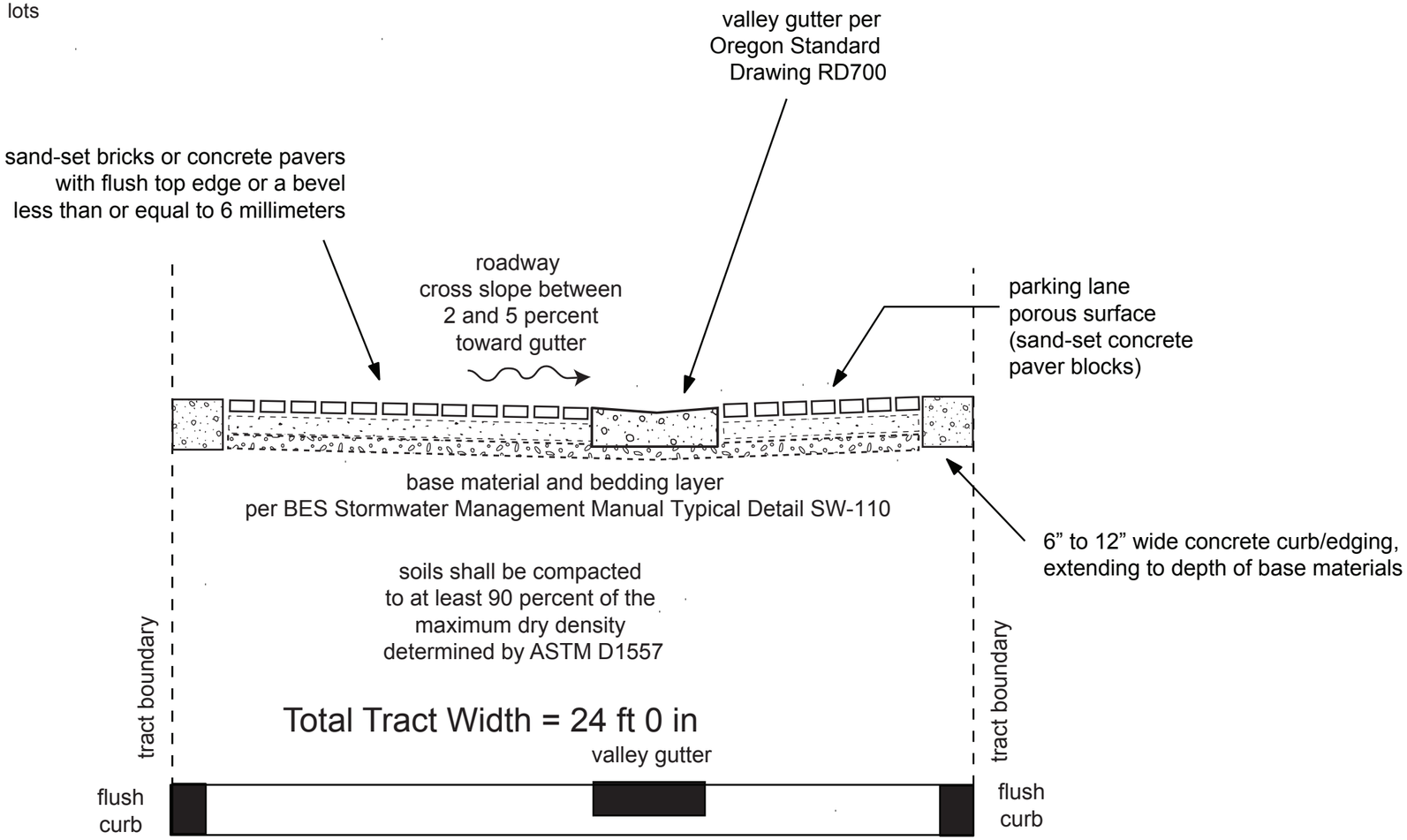
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 8 Plan View

8

24-foot Shared Court Tract

when to use this template as a guide...

▶the site has multifamily or commercial zoning; and
▶courtyard-style development is planned; and
▶the site is a small infill site; and
▶all dwellings are no more than 30 feet high (measured at the gutter line); and
▶all dwellings are within 150 feet of the public street; and
▶the street is serving 5 to 7 lots



Notes:

1) Longitudinal slope shall be between 1% and 5%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.
3) The use of porous concrete paving blocks is one of several paving options, and is dependant on soils on the site having an adequate infiltration rate. See Chapter 2 of the BES Stormwater Management Manual for stormwater management requirements, and facility design specifications.
4) See Section K.2.c (12) for a description of allowed paving surfaces.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 7/3/09

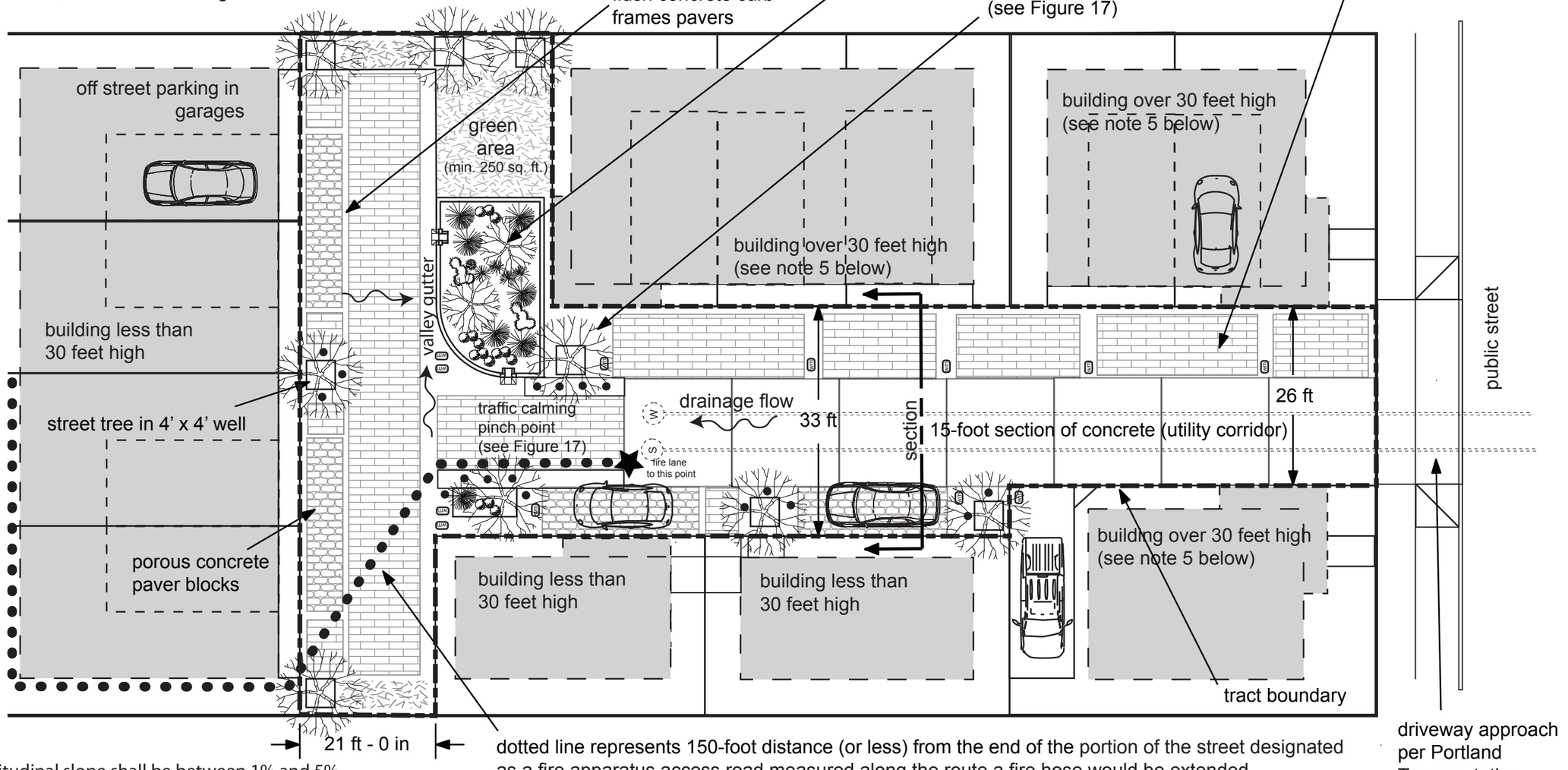
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 8 Section

9

33-foot Shared Court Tract

when to use this template as a guide...

- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site has a depth of more than 100 feet; and
- ▶some dwellings will be more than 30 feet high (measured at the gutter line); and
- ▶some dwellings will be more than 150 feet from the public street; and
- ▶the street is serving 8 to 12 lots



Notes:

1) Longitudinal slope shall be between 1% and 5%.
2) The use of porous concrete paving blocks is one of several paving options, and is dependant on soils on the site having an adequate infiltration rate. See Chapter 2 of the BES Stormwater Management Manual for stormwater requirements, and facility design specifications.
3) No off-street parking is shown on several lots, but spaces are located in the shared tract. See Zoning Code Chapter 33.266.
4) See Section K.2.c (12) for a description of allowed paving surfaces.
5) Additional requirements may apply to buildings over 30 feet high. Exceptions from the Fire Code can be applied or a Fire Code Appeal can be granted. Automatic exceptions are granted if: the building has a flat roof and an approved automatic sprinkler system, there is no combustible concealed attic space, all stairways are in a minimum 3 hour fire resistive enclosure, and extend to the top floor, and there is a hatch or other roof access structure is provided directly to the roof. Roof hatches shall be a minimum 16 square feet with a minimum opening dimensions of 2 feet.

NOT TO SCALE

This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 6/26/10

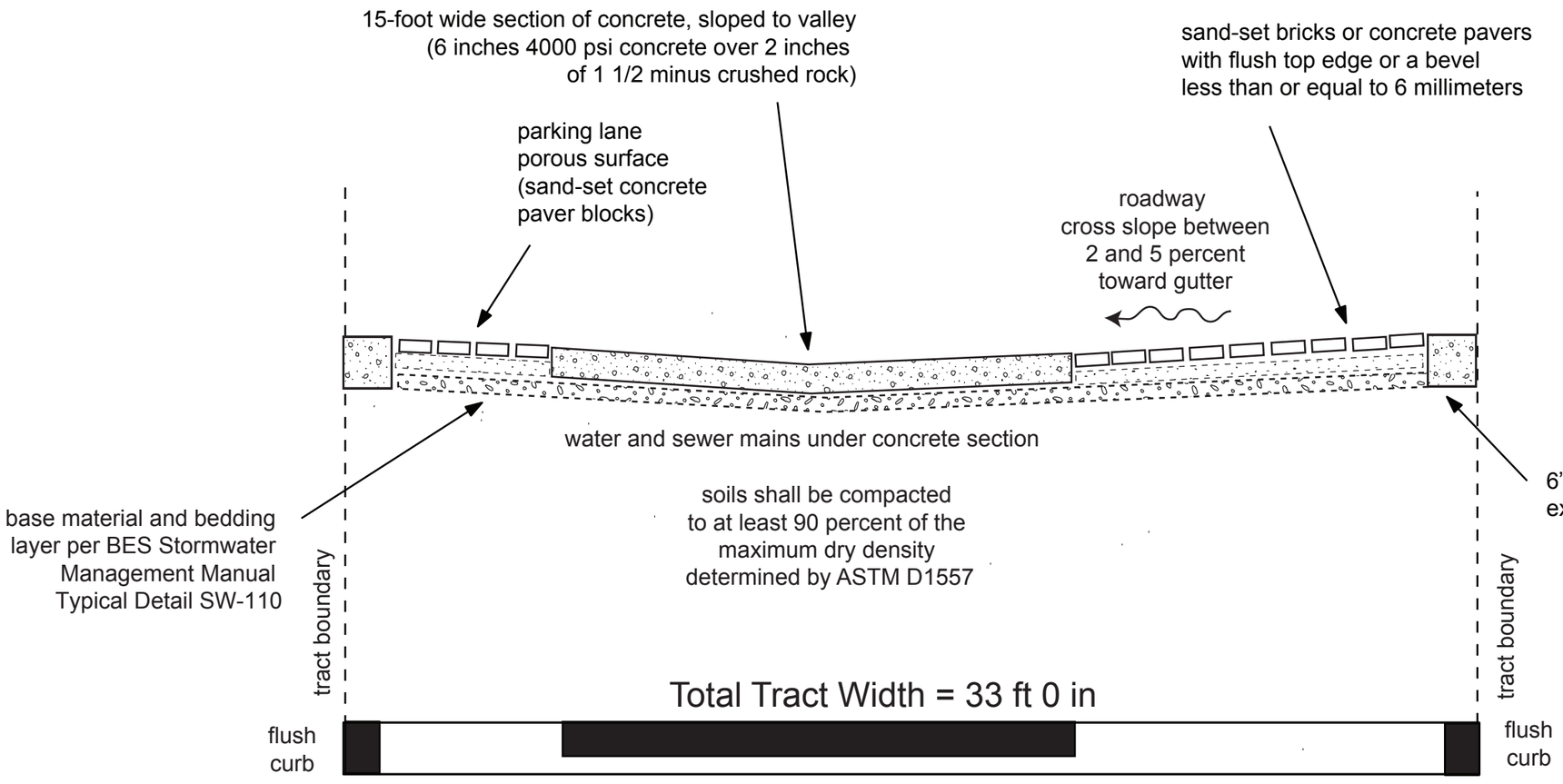
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 9 Plan View

9

33-foot Shared Court Tract

when to use this template as a guide...

- ▶the site has multifamily or commercial zoning; and
- ▶courtyard-style development is planned; and
- ▶the site has a depth of more than 100 feet; and
- ▶some dwellings will be more than 30 feet high (measured at the gutter line); and
- ▶some dwellings will be more than 150 feet from the public street; and
- ▶the street is serving 8 to 12 lots



Notes:

1) Longitudinal slope shall be between 1% and 5%.
2) Utility trenching is to be backfilled with 3/4 minus crushed rock compacted to at least 90% of the maximum dry density determined by ASTM D1557.
3) The use of porous concrete paving blocks is one of several paving options, and is dependant on soils on the site having an adequate infiltration rate. See Chapter 2 of the BES Stormwater Management Manual for stormwater requirements, and facility design specifications.
4) See Section K.2.c (12) for a description of allowed paving surfaces.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

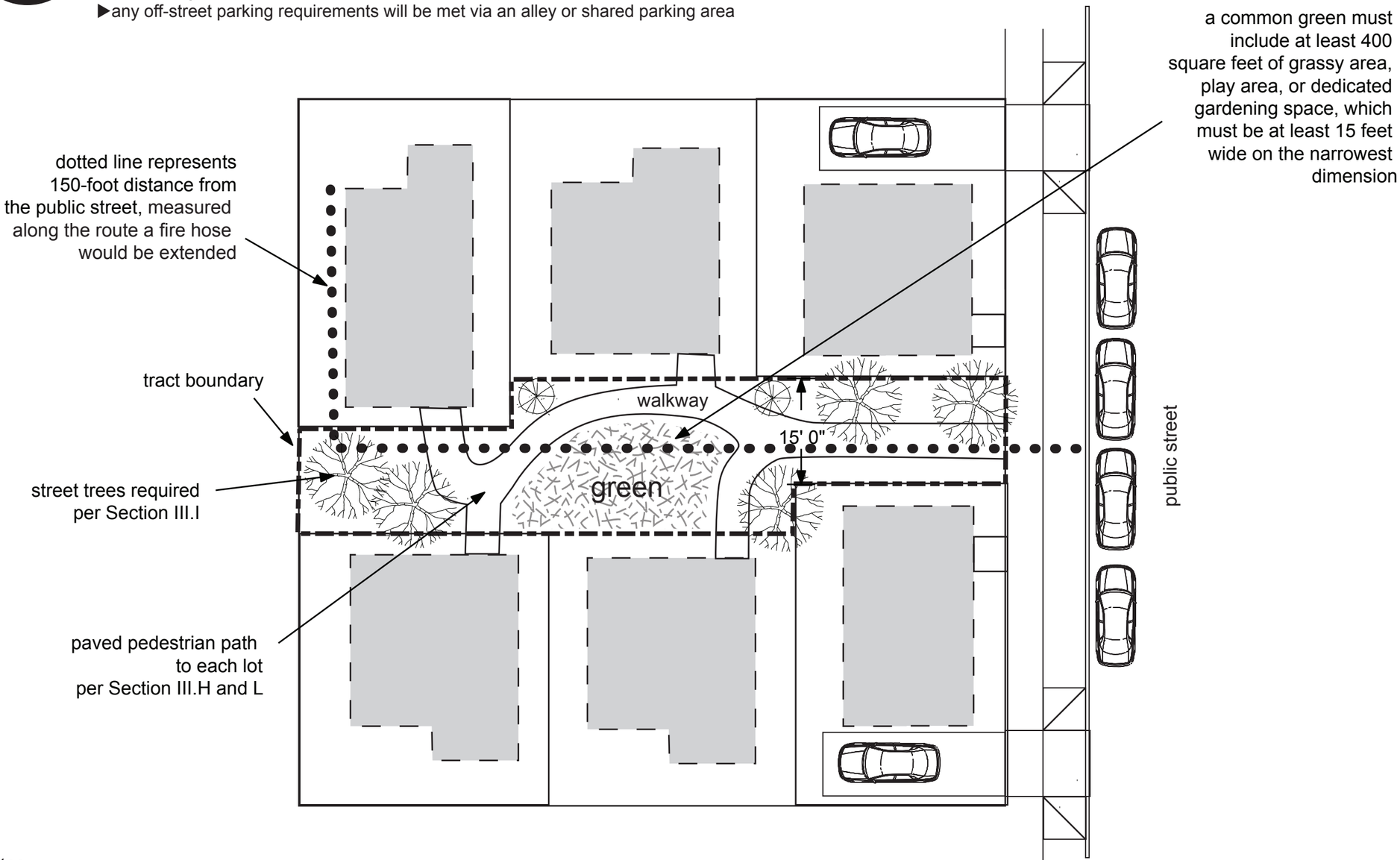
updated 7/3/09

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 9 Section

10 Common Green

when to use this template as a guide...

- ▶development will be oriented around a common green; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶any off-street parking requirements will be met via an alley or shared parking area



Notes:

1) Gazebos, sculptures, art installations, ornamental water features, play equipment, benches, picnic tables, and other similar structures may be located within common greens. See Section III.O.
2) Stormwater facilities may be located within common greens or pedestrian connections. See Section III.L for specific standards.
3) In this example, the site is within 500 feet of a frequent-service transit line, and therefore off-street parking is not required.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 7/19/09

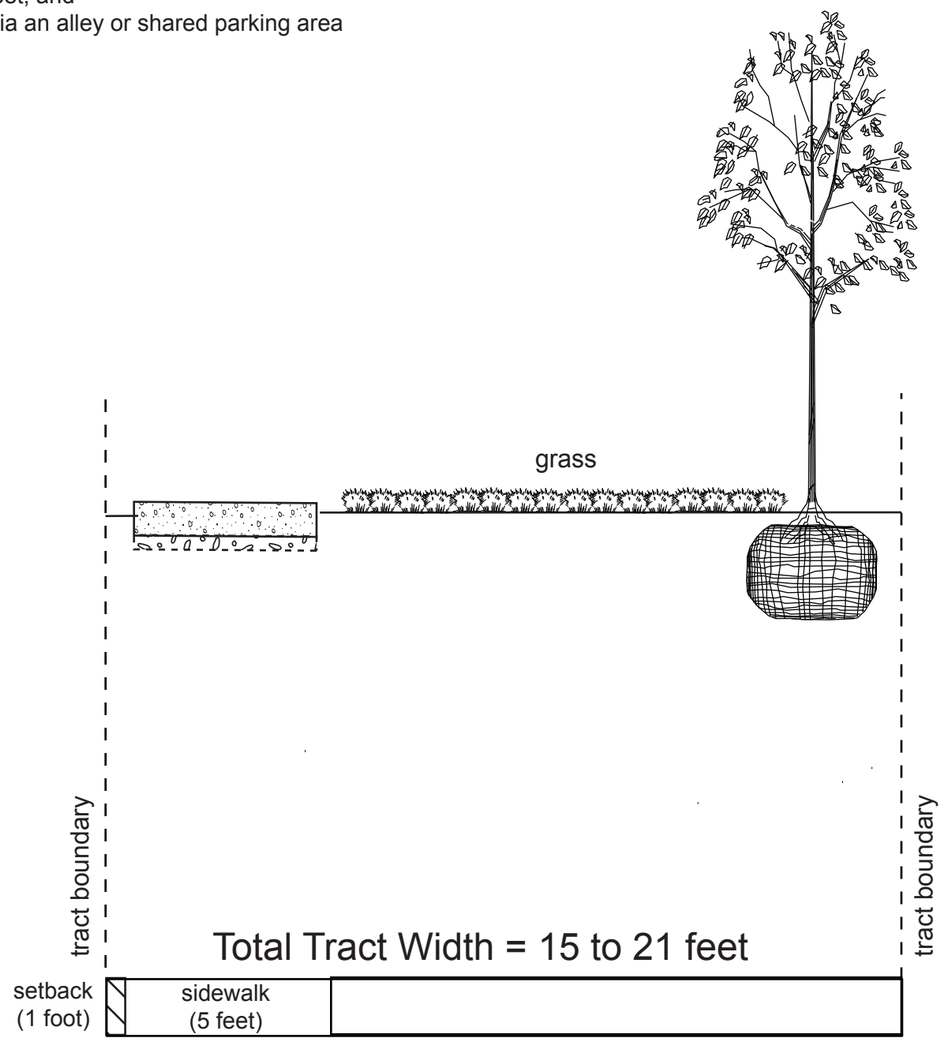
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 10 Plan View

10

Common Green

when to use this template as a guide...

- ▶development will be oriented around a common green; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶any off-street parking requirements will be met via an alley or shared parking area



NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

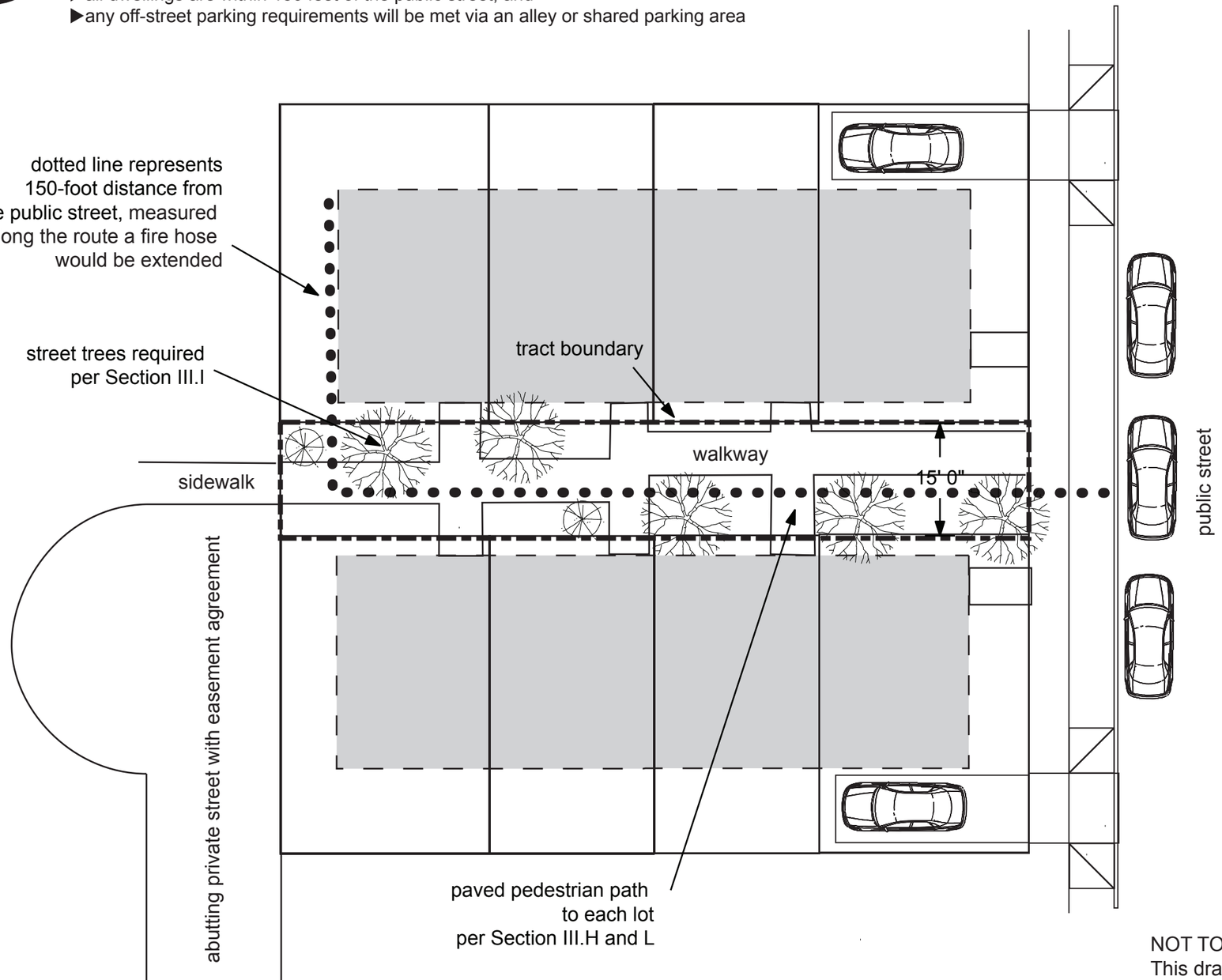
updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 10 Section

11 Pedestrian Connection

when to use this template as a guide...

- ▶development will be oriented along a private pedestrian connection/walkway; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶any off-street parking requirements will be met via an alley or shared parking area



Notes:

1) Stormwater facilities may be located within common greens or pedestrian connections. See Section III.L for specific standards.
2) In this example, the site is within 500 feet of a frequent-service transit line, and therefore off-street parking is not required.

NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 7/19/09

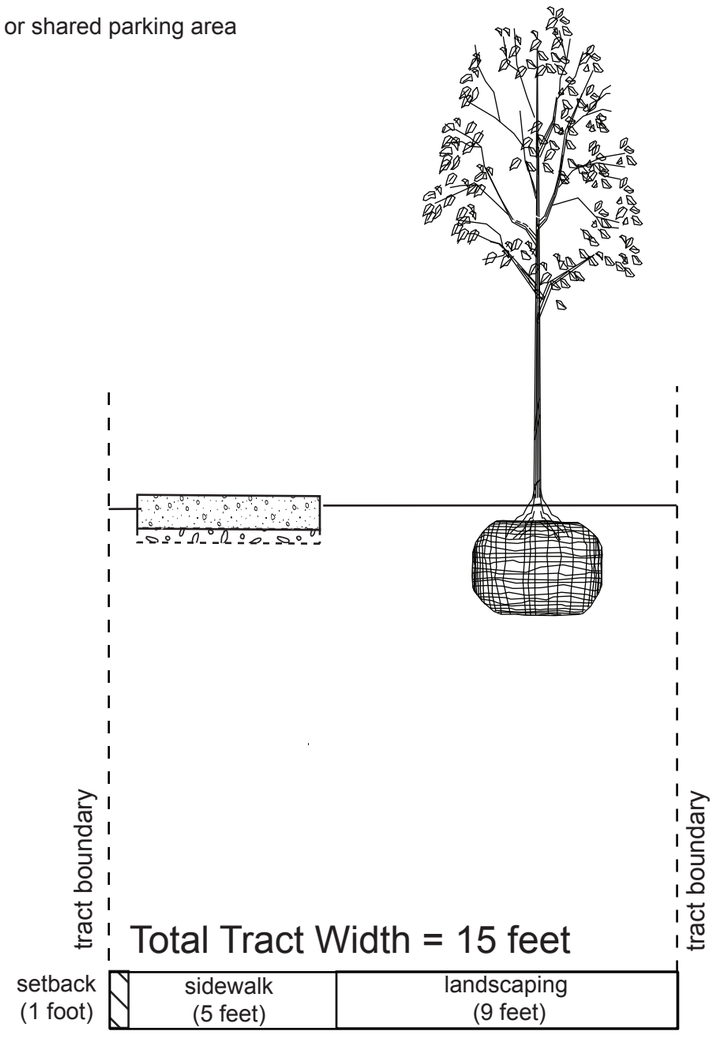
City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 11 Plan View

11

Pedestrian Connection

when to use this template as a guide...

- ▶development will be oriented along a private pedestrian walkway; and
- ▶all dwellings are no more than 30 feet high (measured at the gutter line); and
- ▶all dwellings are within 150 feet of the public street; and
- ▶any off-street parking requirements will be met via an alley or shared parking area



NOT TO SCALE
This drawing is a conceptual planning diagram, intended to illustrate how the street elements may be arranged. Final construction drawings must be prepared by, or under the direction of, a licensed civil engineer.

updated 12/26/08

City of Portland, Bureau of Development Services
Private Street Administrative Rule
Template 11 Section

City of Portland, Oregon
Bureau of Development Services
Land Use Services

1900 SW 4th Avenue, Suite 5000
Portland, Oregon 97201
503-823-7300
Fax 503-823-5630
TTY 503-823-6868
www.portlandonline.com/bds

PERMANENT RULE

Private Rights-of-Way - Streets, Alleys, Shared Courts, Common Greens and Pedestrian Connections

Appendix D – Authorizing City Code

AUTHORITY:

TITLE 3

3.30.010 Duties of the Bureau of Development Services.
(Amended by Ordinance Nos. 176955, 180330, 182671 and 182962, effective July 31, 2009.) The Bureau of Development Services shall be responsible for:

B. The application and enforcement of the provisions of Planning and Zoning Regulations, Title 33 as delegated by the Director of the Bureau of Planning and Sustainability.

3.30.040 Establishment of Enforcement Priorities and Remedies.
(Amended by Ordinance Nos. 175327, 176955 and 183793, effective May 19, 2010.) In order to carry out the duties as set forth in Section 3.30.010, the Director of the Bureau of Development Services may:

A. Adopt written policies and procedures for the enforcement of applicable Code provisions and laws. Establish enforcement fees or priorities for non-compliance. Establish enforcement priorities based on the number of budgeted enforcement personnel, public safety and welfare factors, and any priorities established by the City Council.

TITLE 24

24.10.030 Scope.
(Amended by Ordinance Nos. 163237, 163908, 165678 and 176783, effective August 30, 2002.) The provisions of this Title shall apply to the construction, alteration, moving, demolition, repair, and use of any building, structure or land, and to any land clearing or grading within the City. Exceptions are work in the public right-of-way as approved by the City Engineer; publicly constructed sanitary and storm sewer systems and facilities approved by the BES Chief Engineer; and public utility towers and poles, mechanical equipment not specifically regulated in this Code.

24.10.050 Organization.
(Amended by Ordinance No. 176955, effective October 9, 2002.)

A. Bureau of Development Services. The Bureau of Development Services shall be under the jurisdiction of the Director designated by the appointing authority.

B. Director to enforce Title. General. The Director is hereby authorized and directed to enforce all provisions of this Title. For such purpose he shall have the powers of a law enforcement officer.

24.10.070 Application for Permits.
(Amended by Ordinance. Nos. 162100, 163908, 165678, 169905, 171773, 174880, 176783, 176955 and 180330, effective August 18, 2006.)

A. Permits required. No person, firm, or corporation shall erect, construct, enlarge, alter, repair, move, improve, remove, convert, change occupancy group of, or demolish any building or structure, or to do any clearing or grading, or cause any of the same to be done without first obtaining a building permit, or where appropriate a minor structural label as outlined in Section 24.10.095. Building permits and fees for work on private property are waived whenever the work appears on plans and specifications, approved by the City Engineer or BES Chief Engineer. This work shall be limited to the construction of streets, public sewers, public stormwater management facilities, driveways, retaining walls, fences, walkways, parking pads, steps, and tree, shrub, and brush removal.

24.10.080 Board of Appeals.
(Amended by Ordinance Nos. 174719 and 176955, effective October 9, 2002.)

A. In order to determine the suitability of alternate materials and methods of construction and to provide for reasonable interpretation of the provisions of this Title, there has been created a Board of Appeal, consisting of three members appointed by the Mayor. The Board members must be qualified by experience and training to make decisions on matters pertaining to building construction. All persons shall be appointed for a term of 3 years. At least one member of the Board shall be a competent builder who has engaged in the building business in the City for at least two years immediately preceding his appointment, and at least one member of the Board shall be a competent architect who has practiced his profession for at least 3 years. The Director shall be an ex officio member and shall act as Secretary of the Board.

F. Appeals to Board. Any person who may have been ordered by the Bureau of Development Services to incur an expense for the alteration, repair, or construction of any building or any person whose application for a permit may have been refused by the Bureau of Development Services may appeal to the Board of Appeal by serving written notice upon the Bureau of Development Services. The notice or a certified copy thereof, shall be transmitted at once to the Board of Appeal. After service of notice upon the persons interested, a hearing shall be held; and the Board may, by a majority vote, affirm, annul, or modify the action of the Bureau of Development Services; provided, however, in any matter relating to or involving fire prevention, fire safety measures, or building construction requirements for safety, any modification of a strict application of this Title shall be made only on condition that substantially equivalent degree of safety is provided generally conforming to national standards concerning fire prevention, fire safety measures, and building construction requirements for safety. The decision of the Board shall have full force and effect. A certified copy of the decision shall be delivered to the appellant.

G. Powers of the Board of Appeal. Where unquestionably and clearly, practical difficulties, unnecessary hardship or consequences, inconsistent with the general purposes of this Title may result from the literal interpretation and enforcement thereof, the Board of Appeals may grant adjustment of variances in a specific case with such conditions and safeguards as it may determine, in harmony with the general purpose, intent, and spirit of this Title, so that the public safety and welfare shall be secured and substantial justice shall be done, upon unanimous vote of the Board. If interpretation of the provisions of this Title is required, decisions thereon may be determined by a majority vote of the Board. Any person aggrieved by the final decision of the Appeals Board as to the application of any provision of this Specialty Code may, within 30 days after the date of the decision, appeal to the appropriate State Specialty Advisory Board. The appellant shall submit the appeal fee with his request for appeal. The decision of the Appeals Board shall be subject to review and final determination by the appropriate State Specialty Advisory Board authorized pursuant to OAR Chapter 8.4, as to technical and scientific determinations related to the application of this Title. All required fees are stated in the Fee Schedule adopted by City Council. Fees will be updated annually or on an as needed basis. The approved Fee Schedule will be available at the Development Services Center.

TITLE 33

CHAPTER 33.641
TRANSPORTATION IMPACTS

(Added by: Ord. Nos. 175965 and 176333, effective 7/1/02; Ord. No. 177028, effective 12/14/02. Amended by: Ord. No. 182429, effective 1/16/09.)

33.641.020 Approval Criterion

The transportation system must be capable of safely supporting the proposed development in addition to the existing uses in the area. Evaluation factors include: street capacity and level-of-service; vehicle access and loading; on-street parking impacts; the availability of transit service and facilities and connections to transit; impacts on the immediate and adjacent neighborhoods; and safety for all modes.

33.641.030 Mitigation

The applicant may meet the criterion in Section 33.641.020, above, by including mitigation measures as part of the land division proposal. Mitigation measures must be acceptable to the City Engineer and may include providing transportation demand management measures, an access management plan, constructing streets, alleys, or bicycle, pedestrian, or transit facilities on or off the site or other capital improvement projects such as traffic calming devices.

CHAPTER 33.654
RIGHTS-OF-WAY

(Added by: Ord. Nos. 175965 and 176333, effective 7/1/02. Amended by: Ord. No. 177028, effective 12/14/02; Ord. No. 178657, effective 9/3/04 Ord. No. 179845, effective 1/20/06; Ord. No. 179980, effective 4/22/06; Ord. No. 182429, effective 1/16/09; Ord No. 183598, effective 4/24/10)

33.654.120 Design of Rights-of-Way

C. Local street approval criteria and standards.

1. Approval criterion for width of the right-of-way. The width of the local street right-of-way must be sufficient to accommodate expected users, taking into consideration the characteristics of the site and vicinity, such as the existing street and pedestrian system improvements, existing structures, and natural features.

2. Standard for configuration of elements within the right-of-way. For public streets, the Office of Transportation has approved the configuration of elements within the street right-of-way. For private streets, the Bureau of Development Services has approved the Configuration of elements within the street right-of-way.

D. Common green approval criteria and standards.

1. Right-of-way.
a. Approval criteria.
(1) The size of the common green right-of-way must be sufficient to accommodate expected users and uses. The size must take into consideration the characteristics of the site and vicinity, such as the pedestrian system, structures, natural features, and the community activities that may occur within the common green.

b. Standards for configuration of elements within the right-of-way.
(1) For common greens, the Bureau of Development Services has approved the configuration of elements within the street right-of-way.

E. Pedestrian connections.
1. Approval criterion for width of the right-of-way. The width of the pedestrian connection right-of-way must be sufficient to accommodate expected users and provide a safe environment, taking into consideration the characteristics of the site and vicinity, such as the existing street and pedestrian system improvements, existing structures, natural features, and total length of the pedestrian connection. As much as is possible, the users should be able to stand at one end of the connection and see the other end.
2. Standard for configuration of elements within the right-of-way. For public pedestrian connections, the Office of Transportation has approved the configuration of elements within the pedestrian connection right-of-way. For private pedestrian connections, the Bureau of Development Services has approved the configuration of elements within the pedestrian connection right-of-way.

F. Alleys.
1. Approval criterion for width of the right-of-way. The width of the alley right-of-way must be sufficient to accommodate expected users, taking into consideration the characteristics of the site and vicinity such as existing street and pedestrian system improvements, existing structures, and natural features.
2. Standard for configuration of elements within the right-of-way. For public alleys, the Office of Transportation has approved the configuration of elements within the alley right-of-way. For private alleys, the Bureau of Development Services has approved the configuration of elements within the alley right-of-way.

G. Shared court approval criteria and standards.
1. Right-of-way.
a. Approval criterion for width of the right-of-way. The size of the shared court right-of-way must be sufficient to accommodate expected users and uses. The size must take into consideration the characteristics of the site and vicinity, such as the pedestrian system,

structures, traffic safety, natural features, and the community activities that may occur within the shared court.

c. Standards for configuration of elements within the right-of-way.

(1) The Bureau of Development Services has approved the configuration of elements within the street right-of-way, including a specific paving treatment and traffic calming measures;

CHAPTER 33.700
ADMINISTRATION AND ENFORCEMENT

(Amended by: Ord. No. 163697, effective 1/1/91; Ord. No. 166702, effective 7/30/93; Ord. No. 167386, effective 2/23/94; Ord. 169535, effective 1/8/96; Ord. No. 169917, effective 3/27/96; Ord. No. 171219, effective 7/1/97; Ord. No. 174263, effective 5/14/00; Ord. No. 175837, effective 9/7/01; Ord. Nos. 175965 and 176333, effective 7/1/02; Ord. No. 176469, effective 7/1/02; Ord. No. 177368, effective 5/17/03; Ord. No. 177422, effective 6/7/03; Ord. No. 178509, effective 7/16/04; Ord. No. 178657, effective 9/3/04; Ord. No. 180619, effective 12/22/06; Ord. No. 181357, effective 11/9/07; Ord No. 183518, effective 03/05/10; Ord. No. 183598, effective 4/24/10)

33.700.005 Building Permit Required

All new development, changes to existing development, and changes in the type or number of uses requires a building permit. In addition, other land use reviews may also be required, depending upon the location, the use proposed, the site development proposed, or materials to be used on the site.

33.700.030 Violations and Enforcement

C. Responsibility for enforcement. The regulations of this Title, land use decisions, and conditions of land use approvals may be enforced in one or more of the following ways:

1. By the Director of BDS pursuant to Chapter 3.30 and Title 22 of the City Code; or
2. By the Director of BDS pursuant to 33.700.040 below.

CHAPTER 33.710
REVIEW BODIES

(Amended by: Ord. No. 166921, effective 10/1/93; Ord. No. 169987, effective 7/1/96; Ord. No. 171718, effective 11/29/97; Ord. No. 174263, effective 4/15/00; Ord. No. 175164, effective 12/14/00.)

33.710.090 Director of the Bureau of Development Services

The Director of BDS directs and manages the staff of BDS. The Director of BDS provides staff services to the commissions, committees, and boards as specified in this chapter. The Director of BDS is responsible for the decisions and recommendations required of the Director of BDS by this Title. The Director of BDS is in charge of implementing this Title. The Director of BDS may delegate review and decision-making authority to BDS staff.

City of Portland, Oregon
Bureau of Development Services
Land Use Services

1900 SW 4th Avenue, Suite 5000
Portland, Oregon 97201
503-823-7300
Fax 503-823-5630
TTY 503-823-6868
www.portlandonline.com/bds

PERMANENT RULE

Private Rights-of-Way - Streets, Alleys, Shared Courts, Common Greens and Pedestrian Connections

Appendix E - References

A Policy on Geometric Design of Highways and Streets, 2001. American Association of State Highway and Transportation Officials.

Appleyard, Bruce and Cox, Lindsey. At Home in the Zone: Creating Livable Streets in the U.S. *Planning.* October, 2006, 30-35.

Application Guide for Interlocking Concrete Pavements. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 10. November 2000. 1-6.

Architecture Week. "Streets for People Too." Retrieved January 20, 2006. Building. www.architectureweek.com/2004/0505/building_1-2

AASHTO Guide for Design of Pavement Structures, 1986. American Association of State Highway and Transportation Officials.

AASHTO Roadside Design Guide, 1989. American Association of State Highway and Transportation Officials.

Baker, Linda. "*Why don't we do it in the road?"* 2004. Retrieved January 20, 2006. www.salon.com/tech/feature/2004/05/20/traffic_design

Ben-Joseph, Eran. 1995. Changing the Residential Street Scene. *Journal of the American Planning Association* 61, 4: 504-515.

City of Portland Municipal Code, Title 3.

City of Portland Municipal Code, Title 10.

City of Portland Municipal Code, Title 24.

City of Portland Municipal Code, Title 33.

Cao, Su Ling, Poduska, Daryl, and Zollinger, Dan G. 1998. Drainage Design and Performance Guidelines for Uni Eco-Stone Permeable Pavement. *Uni-Group U.S.A.* 1-22.

Concrete Grid Pavements. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 8. March 2004. 1-16.

Developer's Manual 2010. City of Portland, Bureau of Water Works.

Edge Restraints for Interlocking Concrete Pavements. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 3. November 2000. 1-6

Garrick, Norman W. Care to Share? *Roads & Bridges*. August, 2005, 42: 9. Retrieved January 20, 2006. www.roadsbridges.com/rb/index.cfm?fuseaction=showArticle&articleID=6270

Guide Specification for the Construction of Interlocking Concrete Pavement. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 9. November 2004. 1-6.

Guide to the Design Construction and Maintenance of Concrete Block Permeable Pavements. *Interpave, The Precast Concrete Paving and Kerb Association,* May 2005. 1-27.

Guttenberg, Albert Z. The Woonerf – A Social Invention in Urban Structure. *ITE Journal.* October, 1981, 17-21.

Hamilton-Baillie, Ben. 2000. Home Zones – Reconciling People, Places and Transport. United Kingdom, July – August. 1-28.

Institute of Highway Incorporated Engineers. 2002. *Excerpts from Home Zone Design Guidelines.* United Kingdom, June. 7-91.

Interlocking Concrete Pavement. 2005. (May) 12, 2: 14-20.

James, William. *Green Roads: Research Into Permeable Pavers.* March/April 2002.

Kulash, Walter M, ULI-the Urban Land Institute, National Association of Home Builders, American Society of Civil Engineers, and Institute of Transportation Engineers. *Residential Streets,* Third Edition. Washington , D.C.: the ULI-Urban Land Institute, 2001.

Lyall, Sarah. 2005. *The Saturday Profile: A Path to Road Safety with No Signposts.* Drachten, The Netherlands, January.

Manual on Uniform Traffic Control Devices, 2009. U.S. Department of Transportation, Federal Highway Administration.

Permeable Pavements Basics. *Interpave, The Precast Concrete Paving and Kerb Association,* December 2005. 2-3.

Oregon Plumbing Specialty Code, 2008. State of Oregon.

Oregon Structural Specialty Code, 2010. State of Oregon.

Reinstatement of Interlocking Concrete Pavements. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 6. March 2004. 1-6.

Repair of Utility Cuts Using Interlocking Concrete Pavers. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 7. August 2001. 1-6.

Rollings, Raymond S., Ph.D., P.E. and Rollings, Marian P., Ph.D., P.E. 1993. Design Considerations for the Uni Eco-Stone Concrete Paver. *Uni-Group U.S.A.* March. 1-24

Sewer and Drainage Facilities Design Manual, 2007. City of Portland, Bureau of Environmental

Services.

Slip and Skid Resistance of Interlocking Concrete Pavements. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 13. March 2004. 1-8.

Stacishin-Moura, Elizabeta. 2004. Shared Streets Can Provide Open Space, Too. *The Berger Partnership,* April. Retrieved April 25, 2006. www.djc.com/news/en/11156157

Standard Construction Specifications, 2007. City of Portland, Department of Public Works.

Stormwater Management Manual, 2008. City of Portland, Bureau of Environmental Services.

Structural Design of Interlocking Concrete Pavement for Roads and Parking Lots. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 4. March 2001. 1-8.

Sustainable Paving. *Interpave, The Precast Concrete Paving and Kerb Association,* December 2004.

Tech Spec 15 – A Guide for the Construction of Mechanically Installed Interlocking Concrete Pavements. *Interlocking Concrete Pavement Institute ICPI Tech Spec* No. 15. 2003. 1-12.