

## **TRN-8.06 - Private Rights of Ways (Streets, Alleys, Common Greens and Pedestrian Connections)**

### **PRIVATE RIGHTS OF WAYS (STREETS, ALLEYS, COMMON GREENS AND PEDESTRIAN CONNECTIONS)**

*Administrative Rule Adopted by Bureau of Development Services*

ARB-TRN-8.06

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Relating to Chapter 3.30 - Bureau of Development Services

For Information Contact (503) 823-3448

Effective November 1, 2002

**TOPIC:** Private Rights of Ways (Streets, Alleys, Common Greens and Pedestrian Connections)

#### **AUTHORITY:**

(BDS) the authority for application and enforcement of the provisions of Planning and Zoning Regulations, Title 33 and Subdivision Regulations Title 34 as delegated by the Director of Planning. Under Section 3.30.040 A, the Director of the (BDS) has the authority to adopt written policies and procedures for the enforcement of applicable Code provisions and laws. Rights-of-way are created through the land use review process of Title 33. Whether a right-of-way is public or private is also determined through the land use review process. These rules apply to the construction and creation of private rights-of-ways.

#### **CITATION:**

#### **3.30.010 Duties of the Bureau of Development Services.**

The Bureau of Development Services shall be responsible for:

**B.** The application and enforcement of the provisions of Planning and Zoning Regulations, Title 33 and Subdivision Regulations, Title 34, as delegated by the Director of Planning.

#### **3.30.040 Establishment of Enforcement Priorities and Remedies.**

(Amended by Ordinance No. 175327, effective February 14, 2001.) 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 and establish enforcement priorities based on the number of budgeted enforcement personnel, public safety and welfare factors, and any priorities established by the City Council.

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## **PERMANENT ADMINISTRATIVE RULES**

## **I. General**

### **A. Purpose and Scope**

The purpose of these Rules is to provide technical standards for streets, alleys, common greens and pedestrian connections located in private right-of-way tracts. A private right-of-way tract is a tract of land 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 use review process of Title 33. Whether a right-of-way is public or private is also determined through the land use review process.

### **B. Authority**

These Rules are written under the authority of Titles 3 and 24.

### **C. Appeals**

The requirements of these Rules may be appealed to the Building Code Board of Appeals in accordance with Title 24.10.080. Appellants must demonstrate that their proposal substantially meets the intent of these Rules. Land use review requirements of Title 33 may not be appealed to the Building Code Board of Appeals.

## **II. References**

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

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

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

**D.** City of Portland Municipal Code, Title 3.

**E.** City of Portland Municipal Code, Title 10.

**F.** City of Portland Municipal Code, Title 24

**G.** City of Portland Municipal Code, Title 33.

**H.** Developer's Manual, 2000. City of Portland, Bureau of Water Works.

**I.** Manual on Uniform Traffic Control Devices, 2000. U.S. Department of Transportation, Federal Highway Administration.

**J.** Oregon Plumbing Specialty Code, 2000. State of Oregon.

**K.** Oregon Structural Specialty Code, 1998. State of Oregon.

**L.** Sewer Design Manual, 1991. City of Portland, Bureau of Environmental Services.

**M.** Standard Construction Specifications, 1987. City of Portland, Department of Public Works.

**N.** Stormwater Management Manual, 2000. City of Portland, Bureau of Environmental Services.

### **III. Land Use and Permit Process Summary**

#### **A. Land Use Review**

Streets, alleys, common greens and pedestrian connections are created through the Land Use Review process of Title 33. City staff participates in these reviews to determine how the development will affect traffic, parking, and use of streets and rights-of-way, among other things. The Portland Office of Transportation (PDOT) identifies public improvements needed to support the development. In certain circumstances, private improvements located in private right-of-way tracts may be created. Private improvements located in a private right-of-way tract are owned in common by the owners of property served by the improvements, owners of property within the land division site or a Homeownerâ€™s Association.

The land use review will establish the location and dimensions of both public and private rights-of-way. An important factor considered in establishing the location and dimensions of the right-of-way is the required elements of the right-of-way. The elements of the right-of-way are features which require horizontal space including, but not limited to, streets, curbs, sidewalks and setbacks. For private rights-of-way, the Bureau of Development Services (BDS) must approve the elements of the right-of-way. These rules provide technical standards for the elements of private right-of-tracts and correspondingly provide guidance for determining the width of right-of-way required to accommodate the elements of the right-of-way.

#### **B. Site Development Permit**

Construction of streets, alleys, common greens and pedestrian connections in private right-of-way tracts require permits from BDS. Permit applications for construction of the private right-of-way tract elements are typically submitted as part of a permit application for the overall site development of a land division site. Permit applications may be submitted concurrently with the land use review application. However, permits are not issued until the final plat is determined to be in an approvable state.

#### **C. Plat Review**

The plat is not approved until permit applications for construction of the elements of the private right-of-way tracts have been reviewed and approved for substantial compliance with these Rules and a performance guarantee has been provided. Permit applications for construction of buildings serviced by the private right-of-way tract are not approved until construction of the elements of the private rightof- way tract is substantially

complete.

## **IV. Permits and Inspections**

### **A. Permits Required**

A Site Development permit is required for the construction of streets, alleys, common greens and pedestrian connections located in private right-of-way tracts. In addition, plumbing permits are required for construction of private storm, sewer and water services. Plumbing permits are obtained by the contractor performing the plumbing work.

### **B. Plans Required**

Four sets of plans must be submitted with each permit application. Grading and street design plans must be prepared by, or under the direction of, a licensed civil engineer.

### **C. Information Required**

General submittal requirements for permit applications are outlined in Title 24.10.070. Information shown on the plans must be consistent with all conditions of the land use review. The information listed below must be included on the plans or in the permit application:

- 1.** Vicinity map, legal description of the site, north arrow, horizontal and vertical scales and legend.
- 2.** Site plan showing property boundaries; street names; properties identified by lot number; location of existing structures, easements, utilities, nearby water courses and drainage patterns. The private right-of-way tracts shall be clearly indicated as being private and distinguishable from the public rights-of-way.
- 3.** Latest available topographic map showing the proposed clearing limits, and present and proposed contours of the land at not more than two-foot intervals.
- 4.** Utility plan showing the location and details of all existing and proposed utilities.
- 5.** Location and details of streets, curbs, sidewalks, sidewalk ramps, driveways and other proposed improvements. Reference may be made to City Standard Plans without the need to redraw them. Specifications may be noted on the plans or submitted separately.
- 6.** Erosion control plan showing temporary and permanent erosion control measures in accordance with Title 10.
- 7.** Structural details for retaining walls, bridges, culverts and other elements. Engineering design calculations must accompany plans.
- 8.** Typical street sections.

9. Centerline stationing.
10. Gutter line profiles.
11. Vertical curve data (BVC, VCPI, EVC, MO, low point, etc.).
12. Horizontal curve data (PC,PT delta angle, length, radius).
13. Seal and signature of Registered Professional Engineer.

## **D. Inspection**

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

Typical inspections include, but are not limited to; grading, subgrade preparation, base rock placement and compaction, utility trench backfill and compaction, plumbing inspections and asphalt concrete mix 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.

## **E. Conformance With Approved Plans**

All construction work shall 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 shall submit in writing all requests for modifications to the engineer of record. The engineer of record shall be responsible for tracking all modifications and insuring that approval of the Director is obtained. The Director may require as-built plans, prepared by the engineer of record, to be submitted for permit revision.

## **V. Maintenance Agreements**

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 shall be in a form satisfactory to the Director. Maintenance agreements shall be recorded prior to, or concurrent with, recording of the final plat.

## **VI. Performance Guarantees**

The Director may require a performance guarantee to ensure the completion of work required by these Rules. The guarantee must be provided prior to final plat approval and issuance of permits for construction. The guarantee instrument shall be in an amount equal to at least 125

percent of the estimated cost of performance. The applicant shall provide a written estimate, identifying separately all materials, labor, and other related costs of performance. The adequacy of the amount shall be subject to review and approval of the Director. The guarantee of performance shall 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.

## **VII. Design and Construction Requirements**

### **A. General**

#### **1. Right-of-way Elements and Right-of-Way Width**

- a.** The location and dimensions of the right-of-way are established through the land use review process. The technical standards for private right-of-way tract elements are established herein. The dimensions of the right-of-way must be sufficient to accommodate expected users, taking into consideration the characteristics of the site and vicinity, such as existing improvements, structures and features.
- b.** All right-of-way elements must be located within the right-of-way.
- c.** Typical configurations of right-of-way elements and recommended right-of-way widths are presented in Table 1.

#### **2. Street Names and Addressing**

- a.** Streets shall be named.
- b.** Name requirements for common greens and alleys shall be determined on a case by case basis. Typically, either the common green or alley must be named; whichever provides the clearest addressing for fire response.
- c.** Names shall be reviewed and approved by the City Engineer.
- d.** Buildings shall be addressed in accordance with the Uniform Addressing System of Title 24.75.

#### **3. Access to Public Right-of-Way**

- a.** Access connections to the public right-of-way must be approved by the Portland Office of Transportation.
- b.** Access connections shall be at a 90 degree angle to the public right-of-way unless otherwise approved by the Portland Office of Transportation.

#### **4. Materials**

Unless indicated otherwise, materials shall conform to the City of Portland Standard Construction Specifications.

## **5. Service Utilities**

### **a. Stormwater**

- i.** Stormwater quantity and quality control shall be designed in accordance with the Bureau of Environmental Services Stormwater Management Manual.
- ii.** Stormwater collection, conveyance and disposal systems shall be designed in accordance with the State of Oregon Plumbing Specialty Code. Systems designed by a licensed engineer in accordance with the Bureau of Environment Services Sewer Design Manual may be allowed if approved by the Director.
- iii.** The stormwater collection, conveyance and disposal system shall be designed to accommodate stormwater runoff from the impervious area and other basin areas which will drain onto the impervious area.
- iv.** Stormwater facilities servicing the right-of-way shall be located within the right-of-way to the maximum extent practicable.

### **b. Sanitary Sewer**

- i.** Each lot requiring public sewer service must be connected to a separate service lateral connected perpendicular to the public main sewer.
- ii.** 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.
- iii.** 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.

### **c. Water Supply**

The information presented in this section is applicable to lots serviced by the City of Portland, Bureau of Water Works. Other conditions may apply to lots serviced by other water utilities.

- i.** Each lot requiring public water service must be connected to a

separate service lateral connected to a public water main.

## ii. Public Water Main Extensions

â€¢ 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.

â€¢ An easement is required. 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.

â€¢ Water meters in the private right-of-way tract shall be located within the easement and along the frontage of the lot to be served.

â€¢ The owner may design and install the water system in accordance with the provisions of the Bureau of Water Works Developerâ€™s Manual.

## iii. Individual Service Branches

â€¢ If a public main extension is not required, each lot must have an individual service branch from a water main located in the nearest public street.

â€¢ The service branches must access the public water main via the private right-of-way tract.

â€¢ Water meters shall be located in the public right-of-way within the frontage of the private right-of-way tract.

## d. Hydrant Placement

Hydrant placement shall be in accordance with the Bureau of Fire B-1 Policy Manual and the Bureau of Water Works Developerâ€™s Manual.

## 6. Other Utilities

a. Other utilities such as natural gas, telephone, electric, cable and telecommunications shall be located within or near the right-of-way to the maximum extent practicable.

b. Other utilities shall be located within a private utility easement.

c. Utility fixtures exposed at or above the ground surface shall not be located within pedestrian access easements.

## B. Streets and Alleys



## **1. Design Speed**

Streets and alleys less than 300 feet in length shall have a design speed of 15 miles per hour. Streets and alleys equal to or greater than 300 feet in length shall have a design speed of 20 miles per hour.

## **2. Design Vehicle**

The design vehicle shall be the B-40 design vehicle as defined by A Policy on Geometric Design of Highways and Streets, 1990 (American Association of State Highway and Transportation Officials).

## **3. Horizontal Alignment**

- a.** The horizontal alignment shall be designed in accordance with AASHTO guidelines for safe stopping site distance in combination with the design speed and the vertical alignment.
- b.** The inside radius of the street or alley shall be at least 100 feet.
- c.** The centerline of the street or alley shall be aligned on the centerline of the right-of-way, unless topographic or other conditions dictate.
- d.** Curb returns for interior intersections shall have a radius of at least 30 feet at the face of the curb.

## **4. Vertical Alignment**

- a.** The vertical alignment shall be designed in accordance with AASHTO guidelines for safe stopping site distance in combination with the design speed and horizontal alignment.
- b.** Vertical curves shall be designed to produce a middle ordinate of 0.20 feet or greater. For grade changes less than 2.5 percent, grade breaks are preferred.

## **5. Grades**

- a.** Grades shall be designed to fit the topography, ensure proper drainage and promote traffic safety.
- b.** The maximum street grade shall be 15 percent.
- c.** The minimum street grade shall be 1 percent.
- d.** Approaches to public streets and intersections shall have a platform or landing area of at least 20 feet in length for exiting vehicles. The length of the platform or landing area shall be measured from the intersecting face of curb or edge of pavement. The platform shall have an average grade

less than 5 percent.

## **6. Street Clearance**

The width of the street or alley shall have a vertical clear height of at least 14 feet.

## **7. Street Section**

A typical street section is shown in Figure 1.

- a.** Pavement cross-slope shall range between 2 percent and 6 percent.
- b.** Pavement cross-slope in turnarounds shall not exceed 8 percent normal to the circular travel path.
- c.** Sidewalk cross-slope shall be 2 percent.
- d.** Cut and fill backslopes shall range between 2 percent and 50 percent.
- e.** A berm at least 3 feet in width is required behind curbs where there is no sidewalk.
- f.** A berm at least 1 foot in width is required behind sidewalks.
- g.** Berm cross-slope shall not exceed 2 percent.

## **8. Curbs**

- a.** Curbs are required and shall conform to Standard Plan No. 3-130, Standard Plan No. 3-132 or Standard Plan No. 3-133.
- b.** Mountable curbs are preferred unless the gutter flow capacity would not provide sufficient flow control or an alternate curb type is required for accessibility.
- c.** 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.

## **9. Sidewalks**

- a.** Sidewalks are required on at least one side of the street if the street has potential to serve 4 or more dwelling units or the street is 300 feet in length or longer.
- b.** The sidewalk shall be located on the side of the street which would provide service to the maximum number of lots.

- c.** The width of sidewalks shall be at least 5 feet.
- d.** Sidewalks shall be separated horizontally and vertically from the adjacent street with continuous curbing, landscape strips or other barriers approved by the Director.
- e.** Sidewalks shall be constructed in accordance with Standard Plan No. 3-125.
- f.** Sidewalks must be located within the private right-of-way tract.
- g.** A public access easement shall be recorded that allows public access on all parts of the sidewalk.
- h.** Sidewalks shall extend around the entire perimeter of the turnaround, unless otherwise approved by the Director.
- i.** Guardrails complying with Section 509 of the Oregon Structural Specialty Code (OSSC) shall be provided where the vertical drop at the edge of the sidewalk is 30 inches or greater.
- j.** Sidewalks shall be considered an accessible route, as defined by the OSSC, and must be constructed in accordance with Chapter 11 of the OSSC.

## **10. Pavement Section**

- a.** Pavement sections shall be designed in accordance with the AASHTO Guide for Design of Pavement Structures or other design procedure approved by the Director.
- b.** The design life shall be at least 20 years.
- c.** Pavement sections supporting commercial or industrial uses shall be designed for the average daily traffic (ADT) volume determined by a professional engineer.
- d.** Asphalt Concrete
  - i.** The minimum section for asphalt concrete shall consist of a 1.5 inch thickness of Class C mix over a 1.5 inch thickness of Class B mix over a 6 inch thickness of 1½-inch minus crushed rock.
  - ii.** Asphalt concrete shall be compacted to a density of at least 91 percent of the Rice Proctor.
  - iii.** Crushed rock shall be compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557.
- e.** Portland Cement Concrete

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

## **11. Subgrade**

- a.** Subgrade soils shall be compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557.
- b.** Fill material for subgrade shall be natural granular material free of organic or other deleterious materials. Particle size shall not exceed 6 inches in maximum dimension.
- c.** The Director may require a geotechnical engineering report to be submitted that addresses development including, but not limited to, earthwork, grading, subgrade preparation, drainage and slope stability.

## **12. Turnarounds**

- a.** Whether a turnaround is required is determined through the land use review process. Typically, turnarounds are required on deadend streets in the following situations:
  - i.** The street will serve 4 or more lots;
  - ii.** The street is at least 300 feet long; or
  - iii.** The Director determines a turnaround is necessary to provide adequate service.
- b.** Turnarounds on streets at least 300 feet long shall be in accordance with Standard Plan No. 3-154 or 3-156.
- c.** Cul-de-sac turnarounds on streets less than 300 feet long shall be in accordance with Standard Plan No. 3-154, except the curb radius shall be determined on a case-by-case basis. The minimum curb radius allowed shall be 18 feet.
- d.** Hammer head turnarounds on streets less than 300 feet long shall be in accordance with Figure 2.

### **13. Temporary Turnarounds**

- a.** Temporary turnarounds are required if the Bureau of Fire determines a temporary turnaround is necessary to provide adequate service where a street temporarily terminates within a land division.
- b.** Temporary turnarounds shall be a hammer head type in accordance with the Portland Bureau of Fire B-1 Policy Manual.
- c.** Elements of temporary turnarounds that are outside the right-of-way necessary to accommodate the existing street and future street extension elements may be located in an easement, if approved by the Bureau of Fire.

### **14. Intersections**

The entrance or intersection with a public street shall have a concrete apron in accordance with Standard Plan No. 3-109, 3-107, 3-107B, 3-107C or as otherwise approved by the Portland Office of Transportation.

### **15. Driveways**

- a.** Driveway connections shall be designed to avoid sight distance problems and conflicts with other street appurtenances.
- b.** Driveway connection aprons are required unless mountable curbs are used. Aprons shall conform to Standard Plan No. 3-138 and Standard Plan No. 3-105A, 3-105B or 3-105C.
- c.** Driveway grades shall be 10 percent or less.

### **16. Structures**

- a.** Structures including but not limited to retaining walls, bridges and culverts which are integral to the function and operation of the street shall be located within the right-of-way.
- b.** Structures shall be designed in accordance with the State of Oregon Structural Specialty Code.
- c.** Vehicle loading shall 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.
- d.** Timber retaining walls are prohibited.

### **17. Vehicle Guardrails**

- a.** 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.

**b.** Vehicle guardrails are required to protect fixed objects if the Director determines the guardrail is necessary to provide adequate safety.

**c.** Vehicle guardrails shall be constructed in accordance with Standard Plan No. 3-20, Standard Plan No. 3-21 and Standard Plan No. 3-22.

## **18. Street Parking**

**a.** Street parking is allowed when sufficient street width is provided in accordance with Table 1, or as approved by the Director.

**b.** Where street parking is not intended, the street shall be posted "No Parking."

## **19. Signs**

**a.** Signs in private right-of-way tracts shall be limited to traffic control signs, street name signs and subdivision signs.

**b.** Traffic control signs shall be designed and located in accordance with the Federal Highway Administration Manual on Uniform Traffic Control Devices unless otherwise approved by the Director.

**c.** Traffic control and street name signs shall be installed in accordance with Standard Plan Nos. 3-48 and 3-49A

**d.** Traffic control and street name signs shall be located within the private right-of-way tract.

**e.** Street name signs shall be provided at each intersection of a private street with a public street and at the intersection of differently named private streets.

**f.** Street name signs shall have a green legend and white background.

**g.** Subdivision signs, where provided, shall comply with Section 32.32.030. F.3 of the Sign Code.

## **20. Pavement Markings**

Pavement markings shall be designed and located in accordance with the Federal Highway Administration Manual on Uniform Traffic Control Devices.

## **21. Street Trees**

Street trees will be required as determined by the City Forester.

## **22. Survey Monuments**

Survey monuments for streets shall be preserved and protected during and after construction. Survey monuments placed in the street shall be placed in a Class AA monument box in accordance with Standard Plan No. 3-36.

## **23. Requirements for Curbside Garbage and Recycling Collection**

Streets intended to provide access for curbside garbage and recycling collection must satisfy the requirements below. Garbage and recycling from lots served by streets not satisfying these requirements may have to be hauled to the nearest public street.

- a.** The street or alley must be paved to a width of at least 12 feet, exclusive of any areas where parking is permitted.
- b.** The street or alley shall be constructed with a minimum thickness of three inches of asphalt over a minimum thickness of eight inches of crushed base aggregate.
- c.** The street or alley shall have a turnaround with a 60-foot diameter cul-de-sac, hammerhead or other feature which provides adequate turnaround space for standard collection vehicles.
- d.** The street or alley must have 14 feet of vertical clearance.
- e.** Access may not be limited by a gate.
- f.** The street or alley must be named and the residence must have its address on the named street or alley.

## **C. Common Greens and Pedestrian Connections**

### **1. Paths**

- a.** Common greens and pedestrian connections shall have a pedestrian path.
- b.** Paths for pedestrian connections shall be centered within the right-of-way to the greatest extent practicable considering the physical constraints of the site.
- c.** A public access easement shall be recorded that allows public access on all parts of the path.

### **2. Vehicle Access and Clearance**

- a.** Automobile access is prohibited. Paths wider than 8 feet shall have access controls to prevent access by automobiles. Narrowing the entrance to the path is preferred over the use of bollards.
- b.** If the right-of-way is intended to provide fire department access, the access control must be approved by the Fire Bureau.
- c.** If the right-of-way is intended to provide fire department access, the right-of-way shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 14 feet.

### **3. Horizontal Alignment**

- a.** Paths for pedestrian connections shall take the most direct route practicable. The ending of the path shall be visible from the entrance, if practicable.
- b.** Paths for common greens may meander.

### **4. Slope**

- a.** Path cross slope shall not be less than 2 percent nor greater than 5 percent.
- b.** Longitudinal slopes along the path centerline shall not exceed 18 percent.

### **5. Surfacing**

- a.** The path shall 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.
- b.** Portland cement concrete shall have a minimum 28 day strength of 3000 pounds per square inch.
- c.** Crushed rock shall be compacted to a density of at least 90 percent of the maximum dry density determined in accordance with ASTM D1557.
- d.** If the right-of-way is intended for fire department access, a minimum width of 20 feet shall be surfaced with material capable of supporting the fire apparatus and providing all-weather driving capability.
- e.** Alternate surfacing materials, including but not limited to pervious grid paving blocks, are allowed if approved of the Director.

### **6. Stairs**

- a.** Stairs shall be constructed of portland cement concrete in accordance



with Standard Plan No. 3-171 or 3-172.

**b.** Stairs shall have a 60" landing area the width of the stair at the top and bottom of the stairs. The landing shall also be repeated every 120" of vertical rise.

**c.** Stairs shall have handrails. Construction of handrails shall be in accordance with the Oregon Structural Specialty Code.

## **7. Accessibility**

**a.** If the path is intended to be part of an accessible route, as defined by the State of Oregon Structural Specialty Code (OSSC), it must be constructed in accordance with Chapter 11 of the OSSC.

**b.** Considerations for accessibility include, but are limited to, surfacing, slope, detectable warnings, separation from adjacent roadways, tread and risers for stairs and handrails.

## **8. Landscaping**

**a.** Landscaping is required and shall meet or exceed the requirements for Type L1, General Landscaping in accordance with Title 33.248.020.A.

Figure 1 - [Typical Private Street Section](#) (PDF document, 266kb)

Figure 2 - [Hammer Head Turnaround for Private Streets less than 300 feet long](#) (PDF document, 226kb)

Table 1 - [Recommended Private Right-of-Way Tract Widths](#) (PDF document, 55kb)

Appendix A - [Referenced Standard Plans](#) (PDF document, 23,514kb)

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## **HISTORY**

Effective November 1, 2002.

Filed for inclusion in PPD September 29, 2004.