

## CHAPTER 2

### 201 ROADS

#### 201.1 General

This section is to assist the designer in determining what is needed for the design of roads in public rights-of-way. For these standards, the terms used are:

- Restricted Residential (Owner maintained)
- Limited Residential
- Residential
- Local Collector
- Collector
- Arterial

#### 201.2 Road Data Summary Table

	Restricted Residential	Restricted Residential ½ Street**	Limited Residential	Residential	Local Collector	Collector	Arterial
Design Speed	25 MPH	25 MPH	25 MPH	25 MPH	40 MPH	50 MPH	55 MPH
Minimum Right-of-Way Width***	25 Feet	25 Feet	50 Feet	50 Feet	60 Feet	60 Feet	60 Feet
Paved Lane Width	13 Feet*	11 Feet	11 Feet	11 Feet	12 Feet	12 Feet	12 Feet
Paved Shoulder Width	0 Feet	3 Feet	1 Foot	3 Feet	5 Feet	6 Feet	8 Feet
Minimum Structure Width	20 Feet	25 Feet	28 Feet	32 Feet	38 Feet	40 Feet	44 Feet
Minimum Curve Radius	175 Feet	175 Feet	175 Feet	175 Feet	475 Feet	715 Feet	950 Feet
Stopping Site Distance	175 Feet	175 Feet	175 Feet	175 Feet	275 Feet	400 Feet	450 Feet
Maximum Grade	18%	15%	15%	15%	12%	10%	8%
Vertical Clearance	17 Feet	17 Feet	17 Feet	17 Feet	17 Feet	17 Feet	17 Feet
Load Design (Structure)	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44
Minimum 'K' Valve Crest	12	12	12	12	44	84	114
Minimum 'K' Valve Sag	26	26	26	26	64	96	115

- \* Turnouts shall be provided intervisible or eight hundred (800) feet, constructed fifty (50) feet in length plus twenty-five (25) foot tapers on each end.
- \*\* Future road standards above a residential standard will require the development to the greater standard.
- \*\*\* A different ROW width may be required because of the topography of a site.

### 201.3 Materials

Subgrade - Unless a more restrictive standard is set by a geotechnical evaluation, the subgrade shall be compacted to ninety-five (95) percent of an AASHTO T-99 standard (ASTM D-698). After the subgrade has been compacted, a proof roll with a fully loaded dump truck shall be performed, and witnessed by the engineer of record and a Josephine County Public Works inspector. Any soft spots shall be over excavated and recompacted (no excavation in clay soil shall be back-filled with rock without provisions for drainage).

Culverts - Concrete, aluminized steel, or asphaltic coated corrugated metal pipe. All road cross culverts shall be a minimum of 18 inches in diameter.

Crushed Aggregate Base - Crushed aggregate base shall meet the requirements of ODOT's Standard Specifications for Highway Construction and shall be compacted to ninety-five (95) percent of an AASHTO T-99 standard (ASTM D-698).

Shale (sub-base and ditch lining) - Shale shall be from a source approved by the County and shall be visually inspected for the use by both the engineer of record and a Josephine County Public Works inspector.

Asphaltic Concrete - Asphaltic concrete shall meet the requirements of ODOT's Standard Specifications for Highway Construction and shall be compacted to ninety-two (92) percent of an OSHD TM-306B standard. All joints shall be ground or saw cut and shall be sand sealed.

All overlays and trench patches shall either be placed within the window set by the season and temperature limitations listed in the current ODOT Standard Specifications for Highway Construction Manual. If outside the paving window the design engineer shall meet with the contractor and the inspector on site three (3) days prior to paving to evaluate the following conditions:

- The proposed lift of asphalt is at least three (3) inches thick.
- At the time asphalt arrives on site, the ground in the area of paving must not have standing water.
- At the time asphalt arrives on site, the ground temperature in the area of paving must meet or exceed forty-five (45) degrees Fahrenheit.
- The asphalt mix temperature during transportation, placement, and rolling shall meet ODOT standards.

At the site meeting, the County or the design engineer may place site-specific conditions. It will be the responsibility of the design engineer to verify that all conditions are met prior to paving.

Portland Cement Concrete - Any proposed Portland Cement pavement will need to follow all procedures in the ODOT's Standard Specifications for Highway Construction including special inspection on site, and at the batch plant.

Portland Cement concrete shall be 4,000 psi in twenty-eight (28) days for pavement, and 3,300 psi in twenty-eight (28) days for curbs and sidewalks, and minor structures other than bridges or reinforced concrete box culverts.

- Air entrainment - 4.0 to 7.0% AASHTO T-152 standard
- Fly ash - Max 20% by weight of cement plus fly ash
- Concrete temperature at placement - Fifty (50) degrees Fahrenheit minimum, and ninety (90) degrees Fahrenheit maximum
- Slump - Five (5) inch maximum

For 4,000 psi concrete, the minimum Portland Cement content (pounds per cubic yard) is five hundred seventy (570) and the maximum water-cement ratio (pounds per pound) is 0.48.

Asphalt Treated Base (ATB) - Any proposed Asphalt Treated Base will need to follow all procedures in the ODOT's Standard Specifications for Highway Construction.

Controlled Low Strength Material (CLSM) or Controlled Density Fill (CDF) - The use of CDF as trench backfill is an approved method of backfill, which the engineer may require or allow in lieu of aggregate or native materials, as specified elsewhere in this document.

Prior to paving, the CDF may be required to be tested per ASTM PS 31 by an independent laborator

## **202 TRENCH BACKFILL**

Trench backfill shall be either crushed aggregate compacted to ninety-five (95) percent of an AASHTO T-99 standard (ASTM D-698) or CDF. See standard drawing series 107 and 110.

## **203 UPGRADING A RESTRICTED RESIDENTIAL ROAD TO A LIMITED RESIDENTIAL ROAD**

- A. The existing culverts, ditches, structural section, and any other feature to be brought into the County maintenance system shall be compared to the current standards (material, size, thickness, etc), and if less, the plan shall include a method for bringing the road to county standards.

- B. Maintenance within the right-of-way shall be completed to current standards prior to acceptance of the road into the Josephine County maintenance system. This includes, but is not limited to, cleaning, upgrading, and repairing ditches, culverts, signs, shoulders, and trimming of brush.
- C. Re-surfacing of the existing section shall be with a minimum of one (1) inch of C mix overlay (minimum of two (2) inches of C mix over existing chip seal).

**204 STRIPING AND SIGNING**

- A. Applicant shall coordinate signs and striping with the appropriate authority.
- B. All signing shall be in conformance with ODOT and MUTCD standards.
- C. For roads to be brought into county maintenance, applicant to coordinate with county for installation of signs and striping, and be responsible for the cost of such work.

**205 LARGE CUTS AND FILLS**

Cuts and/or fills over four (4) feet in height shall be designed and inspected by a professional as defined by ORS 672.

**205.1 Large Fills**

Fills over four (4) feet in height shall be armored with shale or other material as approved by the County Engineer.

Fills over ten (10) feet in height (measured from the top of pavement to the invert elevation of the flowline of the channel) shall have their cross culverts sized to pass the twenty-five (25) year storm (with a minimum diameter of twenty-four (24) inches).

All fills over four (4) feet in height shall require the engineer to evaluate the need for guardrails per the “AASHTO Roadside Design Guide.”

Fill widening of subgrade (each side of road):

<u>Fill Height</u>	<u>Amount</u>
0-5 feet	0 feet
5-10 feet	1 foot
10-15 feet	2 feet
15-20 feet	3 feet
21 feet or over	4 feet

## **206 ACCESS TO COUNTY AND PUBLIC ROADS**

All developments shall have legal access to county or public roads. Access onto any county road shall be permitted only upon issuance of an access permit upon demonstration of compliance with the provisions of the County road standards and AASHTO standards.

### **206.1 Access Standards**

**One Lane vs. Two Lanes** - A two-lane approach will be required when three (3) or more dwellings share a common approach, and also enter on any arterial, collector, or local collector road, or a through residential street. A one-lane approach will be adequate on a dead-end residential street regardless of the number of lots served.

**Pavement Requirements** - When a two-lane approach is required, it shall be paved. Paving may also be required on one-lane approaches at the discretion of the County Engineer if: soil type or topography will cause erosion or “tracking” onto the public road; driveways in the immediate area are predominately paved; or where necessary to protect the integrity of the public road. All driveways in the Urban Growth Area will be paved consistent with the Development Code for the City of Grants Pass.