

## APPENDIX F

### DETENTION ACCESS STANDARDS

Access roads are for maintenance purposes. The following criteria are considered to be the minimum required by Water Environment Services. Other permitting jurisdictions may have more restrictive requirements.

SLOPE	WIDTH		SURFACE MATERIAL	ACCESS 80,000 LB.	STRUCTURAL
	EASMT.	GRVL.	MINIMUM		
< 8%	15	12	GRAVEL		8" GRAVEL FILTER FABRIC
	TRACT	PVMT.			
>8% < 12%	15	12	GRAVEL	W/TURNAROUND	8" GRAVEL FILTER FABRIC
>8% < 12%	15	12	2" A.C.	W/O TURNAROUND	8" GRAVEL FILTER FABRIC
>12% <15%	20	15	2" A.C.	W/TURNAROUND W/ LANDING	8" GRAVEL FILTER FABRIC
<b>CONTACT DISTRICT</b>					
>15% <20%	20	15	3" A. C. TWO LIFTS	W/TURNAROUND W/ LANDING	8" GRAVEL FILTER FABRIC

#### General Requirements

A Profile of the access road is required.

Maximum grade: 15-percent with a maximum 3-percent cross-slope. *Special permission is required for grades over 15-percent.*

Minimum width of surface: 12-feet on straight runs and 15-feet on curves.

Curves will be designed with a minimum 40-foot interior radius.

Access will extend to within 10-feet of all Pollution control structures unless otherwise approved by Water Environment Services.

#### Tracts

All access roads shall be placed in a Tract unless prior permission is received from the District. The applicant shall provide additional protection for the access roads, including fencing, signs and access when an Easement is granted.

#### Design

1. Horizontal curves
  - a) Minimum Radius for (inside) = 40-feet
  
2. Vertical Curves
  - a) Crest maximum K = 4

- b) Sag maximum  $K = 6$ 
  - (i.) Where  $K = L/A$ 
    - L= algebraic difference in grades percent
    - A= length of vertical curve (feet)

3. Landing

- a) Maximum slope = 4%
- b) Minimum length 40 feet

4. Turnaround (See C350 Clackamas County Department of Transportation)

- a) Maximum cross slope = 4%
- b) Revised dimensions for C350
  - (i.) Substitute 30-feet for 45-foot dimension.
  - (ii.) Substitute 45-feet for 65-foot dimension
- c) Minimum width of road 12- feet
- d) Minimum Radius for (inside) = 30-feet

Typical Surface

- 1. Three (3) inches of class "B" asphaltic concrete in two lifts; two (2) inches of  $\frac{3}{4}$ "-0" compacted crushed rock; over six (6) inches of  $1\frac{1}{2}$ "-0" compacted crushed rock; over subgrade compacted to 95-percent AASHTO T-99.
  - or
- 2. The design engineer may submit a certified road design capable of supporting a 30-ton maintenance vehicle in all weather conditions.

Driveway Access

All access roads shall have a standard driveway with 6" of concrete over 2" of gravel. The plan will include design of strengthened sidewalk sections (6-inches of Concrete minimum) where maintenance vehicles will cross. (See D600 Clackamas County Department of Transportation)

Pond Access

The final plan will have to show how maintenance equipment will safely access the pond. At least one side of the detention pond is required to have an access suitable for maintenance equipment (backhoe etc.). We require direct access to the pond of 15-feet wide and slopes of 4:1 or flatter.