13.0 TRAILS

13.1 Trail Specifications:

The following is a summary of design requirements and specifications for construction of Trails in the City of Highland:

1. Trail Clearance:

   10' overhead clearance of tree branches and bushes, with brush, weeds, debris and rocks removed from the trail tread.

   Adequate sight distance shall be maintained at all intersections and drive approaches as determined by the City Engineer.

   In instances where topography, right-of-way configuration, grading or existing vegetation prevent the full-width construction of the trails as listed above, the Community Development Department may grant relief and reduce the requirements.

2. Trail Width:

   Multi-use – 12’ (10’ minimum)
   Multi-use with Class 1 Bikeway – 12’ minimum

3. Vertical Grade:

   0-5% optimum
   10% maximum for distances over 500 feet.
   15% maximum for distances limited to 500 feet or less.
   20% maximum permitted only in extreme cases and for short distances under 100 feet, and only on cases where no vehicle is to be expected.

4. Cross Section:

   2-4% optimum.
   6% maximum in approved locations only.

5. Drainage:

   Avoid erosion by proper grading and the use of diversionary devices such as water bars, berms or other diversionary devices. Location of drainage devices are to be reviewed and approved by the City Engineer.

6. Side Slopes Cut and Fill:

   2:1 maximum.

7. Surfacing:

   Surfacing shall be 4" concrete, 3" asphalt concrete, 4" decomposed granite, or native soil.

   Native soil or decomposed granite used for trail tread shall be treated in accordance with one of the following specifications, or an alternative specification as approved by the City Engineer.

   Polymer Additive – Trail surfacing material shall be a diluted copolymer emulsion solution incorporated into the top four (4) inches of trail surface as recommended by the supplier. Trail construction shall include, but not be limited to the following.

   d. Scarify the surface and remove rocks greater than 2 inches in size.
   e. Mix solution, one part polymer to 20 parts water.
   f. Apply solution and reverse till three times to saturate the four-inch disturbed layer.
   g. Rake and level the tilled mixture.
   h. Compact the leveled bedding with a five-ton vibratory roller to a relative compaction of 95 percent.
   i. Maintain free of traffic until cured (five to seven days at summer temperatures) before compaction testing.

   Removal and/or import of soil required for suitable mixing, cohesion, and compaction shall be the responsibility of the contractor.

   Provide a warranty of compacted trail surfacing for a period of one year.

Organic Binder – Trail surfacing shall be three (3) inches of stabilized decomposed granite over a compacted and smooth subgrade, free of rocks and debris. Decomposed granite shall comply with the requirements of Section 200-2.7 of the Standard Specifications with 100 percent passing a 1/2-inch sieve. Stabilizing organic binder shall have a minimum swell value of 32 ml/gm and shall be incorporated with granite fines by use of a pug mill mixer at a ratio of 12 pounds of stabilizer per ton of granite fines. Mixed material shall be spread and compacted to a relative compaction of 95 percent. Material shall be pre-wet and evenly spread over the subgrade and tested for compaction three to four days after completion.

Provide a warranty of compacted trail surfacing for a period of one year.

8. Flood and Drainage Channel Crossings:

   Where trail must cross existing or proposed drainage channels, the continuity of the trail shall be maintained by the construction of an appropriate crossing such as bridges, ramp ways, culverts, etc. Natural streambed crossings should be left as natural as possible.

9. Trail Entrance:

   Trail entrances shall be designed to provide for equestrian, pedestrian/hiking/biking use and shall discourage motor vehicle and motorcycle access. Trails shall provide one or more means of access for service vehicles. Access locations are subject to approval by the Community Development Department. Refer to standard drawings for barriers and signs.

10. Street Crossings:

    Crossings shall be at grade with appropriate street striping and signing. For equestrian, textured pavement is required to prevent slipping, such as "medium broom" finish concrete. All barricades must be recessed 15 feet back from the street entrance.

11. Concrete Aprons:

    For drive approaches at trail entrances or at drainage crossings, concrete aprons shall be a transverse "medium broom" finish. (See Standard Drawing Nos. 501 and 502)

12. Trail Fencing:

    All fences will follow the grade of the trail tread, and all posts shall be leveled and in line with one another. When the fence goes over the hills or down ravines, use a rolling up-and down appearance. Where fencing is required on both sides of the trail, the fences will run parallel and leveled crosswise. All fencing shall be constructed on the easement line where possible. (See Standard Drawing Nos. 504 and 505)

    All fence posts shall be cemented with 60 pounds of dry cement; no cement shall be visible upon completion of the trail. Upon cutting of the lodge pole fencing, the cut areas shall be resealed.

    Fencing material may include PVC, Cedar Lodge Pole, Cable, Wire or Wrought Iron, or as required by Environmental Mitigation Monitoring Reporting Program. The City's Planning Commission shall have approval authority for the fencing material.

13. Off-Road Vehicle (ORV) Barriers:

    ORV barriers shall be constructed whenever there is a break in a fence line that would allow vehicle access. (See Standard Drawing Nos. 506 – 509)

14. Signs:

    Trail identification signs will be placed every half mile and be constructed to trail design standards on community trails. Trail identification signs shall be placed on existing street sign poles wherever possible.

    Hazard signs shall be constructed to trail design standards and will be placed wherever there is a potential safety hazard to users or their animals, for example, a steep embankment or a 20 percent plus trail grade.

    Trail Donor signs may be mounted on the fencing material or on separate sign poles. Usage of existing sign posts is recommended.