

Nebraska Transportation Enhancement Bicycle Trail Design Requirements

1. The design speed should be 20 mph for grades less than or equal to 4%. For downgrades steeper than 4%, consider using a design speed of 30 mph.
2. The minimum “k” to use on crest and sag vertical curves is 20.0.
3. The minimum radius for horizontal curves using the 20 mph design speed is 100 feet. For the 30 mph design speed, the minimum radius is 225 feet.
4. Three documents that should be used to design the trail are the Americans with Disabilities Act Accessibility Guidelines (ADAAG), AASHTO Guide for the Development of Bicycle Facilities, and Designing Sidewalks and Trails for Access Part II of II: Best Practices Design Guide. The designs are checked to make sure they conform to these three documents.
5. The following items need to appear in or with the plans:
 - a. A vicinity map of where the project begins and ends. Show beginning and ending stations.
 - b. A sheet with a summary of quantities and general notes. Make use of the current NDOR Standard Specifications and standard pay items.
 - c. A sheet showing typical cross-sections with stationing for which the typical section is applicable. Grading cross-sections are required at 100-foot minimum intervals, although 50-foot intervals are preferred in hilly terrain. In flat terrain, the Project Coordinator may waive the 100-foot minimum. Typical details such as joints, curb cuts meeting the ADA requirements, MUTCD signage, etc. should be shown.
 - d. Removal sheets showing:
 - 1) All large tree removals.
 - 2) Any utility relocations.
 - 3) All miscellaneous removals and relocations.
 - 4) Removals and quantity of removals should be clearly shown in tabular form.
 - e. Plan and profile sheets showing:
 - 1) Project centerline with stationing.
 - 2) Right-of-Way and property lines.
 - 3) Limits of Construction.
 - 4) Construction items and quantity of construction items should be clearly shown in tabular form on the plan view.
 - 5) Horizontal geometrics information, including horizontal curve data.
 - 6) Existing gradeline and proposed gradeline with vertical curve data.
 - 7) Any drainage structures that are required.
 - 8) Placement and station locations for any MUTCD signs that are required.
6. A cost estimate should be included with each submittal of the plans.
7. At the final PS&E submittal, each plan sheet must be sealed, signed and dated by an Engineer, Landscape Architect or Architect registered in the State of Nebraska (projects with bridges must be stamped by an Engineer).
8. As mentioned above, the use of the current NDOR Standard Specifications is highly recommended. This makes the preparation of specifications for the project much simpler.
9. Abutments for any prefabricated pedestrian bridges need to be designed by the engineer providing preliminary engineering services.