

Categorical Permission Alteration Description – 22. Trails, Roads and Ramps

The categorical permission covers the installation, modification, and replacement of trails, roads, access ramps, and associated signage, lighting, etc., within the federal project easement. In preparation for construction of roads or trails, the levee crown should not be excavated beyond minimal stripping. The stripped crown should be proof rolled to check for imperfections before placing aggregate for the trail or road subbase. If excessive rutting occurs, that part of the trail must be removed and replaced with suitable material from an appropriate borrow location. To facilitate construction, all vegetation must be removed from the levee crown to a width two feet beyond the intended trail/road width. The total area of construction for ramps must not exceed 5 acres in size and the total length of trails/roads must not exceed 2 miles.

Generally roads and trails are topped with asphalt, but other surfaces may be acceptable. For roads or trails on the levee crown, the structural section must consist of a minimum of six inches of aggregate base beneath two inches of asphalt concrete pavement, or equivalent. The crown must have a minimum 2% transverse slope to drain surface water away from the levee crown. Water must not be allowed to pond at or near the levee.

Roads, trails, and ramps should resist levee loading or heave and be cost-effective to maintain. They should be appropriate for all intended uses by bicyclists, pedestrians, people in wheelchairs, maintenance, flood-fighting vehicles, etc. They must be able to withstand the weight of the heaviest piece of operation, maintenance or flood-fighting equipment expected to be used on the levee.

Pavement must not cover or conceal any structures necessary for operation or maintenance of the federal project (e.g., survey monuments, valves, relief wells). If covering these components is unavoidable, approved casings must be used to allow access.

Ramps that extend from the levee toe to the levee crown should be keyed into the existing levee to create a continuous well-integrated soil mass. Ramps must be designed to drain water away from the levee embankment. All areas that are keyed in should match the slope of the embankment and consist of approved material compacted to 95% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D698 (USACE preferred method), or alternately, 90% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D1557. Loose-lift thickness should be limited to 6 inches for all work on the levee.

Categorical Permission Alteration Checklist – 22. Trails, Roads and Ramps

Please note, the following checklist is intended for planning purposes only and reflects information that USACE reviewers will look for when considering a Section 408 request for trails, roads and ramps under the Categorical Permission. To be reviewed under the Categorical Permission, the proposed project must adhere to all requirements of the Categorical Permission, including the full alteration description (see previous page). The plans and narrative project description should reflect this information.

Installation Modification Replacement

If excessive rutting occurs, that part of the trail will be removed and replaced with suitable material from an appropriate borrow location: Yes NA

All vegetation will be removed from the levee crown to a width two feet beyond the intended trail/road width: Yes NA

Maximum total area of construction for ramps is 5 acres: Yes NA

Maximum total length of trails/roads is 2 miles: Yes NA

Any trails/roads/ramps on the levee crown? Yes No

If yes, the structural section of the road or trail will consist of a minimum of six inches of aggregate base beneath two inches of asphalt concrete pavement, or equivalent:

If yes, the levee crown will have a minimum 2% transverse slope:

If yes, the alteration is designed such that water will not pond at or near the levee:

If yes, ramps must be designed to drain away from the levee embankment:

If yes, the alteration will be able to withstand the weight of the heaviest piece of operation, maintenance or flood-fighting equipment expected to be used on the levee:

Pavement will not cover or conceal any structures necessary for operation or maintenance of the federal project or, if covering these components is unavoidable, approved casings will be used to allow access: Yes NA

Any work occurring ≥ 12 inches into the levee slope? Yes No

Will ≥ 8 inches of material be added to the levee crown? Yes No

Hydraulic blockage calculation $\geq 1\%$? Yes No

Hydraulic model used for hydraulic analysis? Yes No