Regional Categorical Permission Alteration Description – 12. Fiber Optic and Dry Utility Pipes

The Regional Categorical Permission covers the installation, modification, and replacement of dry utility pipes, such as fiber optic cables, subject to certain terms and conditions including periodic inspections to ensure USACE requirements are met. The total area of disturbance must not exceed 5 acres. Utility pipes should be designed to prevent (1) flotation from uplift; (2) scour and erosion (3) damage from debris on the waterside, particularly during flood flows; (4) leakage; (5) seepage along proposed pipes; (6) corrosion; and (7) damage from vehicular loads.

All new fiber optic, electrical, and other dry utility pipes installed by open trench methods must go up and over the levee DWSE.

Pipe installation through the levee should be as close to right angles to the levee centerline as practicable.

All pipes and related structures that cross the levee foundation at a depth less than or equal to two times the height of the levee should be analyzed for uplift; pipes crossing the levee surface must be designed to counteract buoyant forces at the DWSE.

Pipe location and orientation must be clearly marked in the field so they can be easily identified for flood-fighting crews or maintenance (e.g., electrical pipes).

No plastic pipes (e.g., high-density polyethylene [HDPE] or polyvinyl chloride [PVC]) are allowed in the levee embankment or its foundation unless they are embedded in concrete.

Backfill under and around the proposed pipe (to 1 foot) must be controlled low-strength material (CLSM). Pipes that pass above the DWSE must have 2 feet of cover (low permeability or CLSM) to prevent damage by vehicles and equipment. Cover material on the levee crown must be placed at a 10-to-1, horizontal-to-vertical ratio in the upstream/downstream direction of the levee. Pipes on the sides of the levee should be covered with a minimum of 1 foot of low permeability material, compacted in 4–6-inch lifts or CLSM to protect them from debris during high water (waterside) or to keep them from interfering with or being damaged by operations or maintenance of the levee (landside). Fill must be free of deleterious materials and construction debris and placed in 4–6-inch-thick loose lifts and compacted to not less than 95 percent of the maximum density at moistures between 2 percent less (-2%) and 3 percent more (+3%) than optimum moisture content obtained from ASTM D698, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort* (the USACE preferred method) or, alternately, 90 percent of the maximum density at moistures between 2 percent less (-2%) and 3 percent more (+3%) than the optimum moisture content obtained from ASTM D1557, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort*. At the discretion of the non-federal sponsor and levee maintaining agency, pipes on the levee slopes may be left exposed.

Only suitable material must be used as levee fill materials. Fill must be free of roots and other organic matter, contaminated hazardous and toxic material, debris, frozen materials, and trash.

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Satisfactory fill material must have a plasticity index between 8 and 25, a liquid limit less than 45, a minimum fines content of 20 percent, and 100 percent passing the 3-inch sieve.

Pipes located within or beneath a levee must have watertight joints that can accommodate movement.

If a chemical or electrochemical reaction is expected, the pipe and pipe couplings must be protected.

The preferred method for abandoning pipes that pass through or over a levee is complete removal. If removal is not feasible, the pipes and other structures may be filled with a cement-bentonite-based grout or flowable fill. The grout needs to be sufficiently fluid so it can be pumped to completely fill the pipe, leaving no voids.

Regional Categorical Permission Alteration Checklist – 12. Fiber Optic and Dry Utility Pipes

Note: The following checklist is intended for planning purposes only, and includes information that USACE reviewers look for when considering a Section 408 request for fiber optic and dry utility pipes under the Regional Categorical Permission. To be reviewed under the Regional Categorical Permission, the proposed project must adhere to all requirements of the Regional Categorical Permission, including the full alteration description (see previous page). The plans and narrative project description should reflect this information.

1.	☐ New Installation ☐ Replacement ☐ Modification ☐ Authorize Existing
2.	Maximum total area of disturbance is 5 acres: ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
3.	New dry utility pipes installed by open trench methods go up and over the DWSE: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
4.	Pipes crossing the levee surface are designed to counteract buoyant forces at the DWSE: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
5.	Plans show that pipe location and orientation will be clearly marked in the field: ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
6.	Plastic pipes within the levee embankment or its foundation are embedded in concrete: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
7.	Pipes passing over the DWSE will have a minimum of 2 feet of cover (low permeability or CLSM): Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
8.	Cover material on the levee crown will be placed at a 10-to-1, horizontal-to-vertical ratio in the upstream/downstream direction of the levee: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]

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9.	Fill will be placed in 4-6-inch-thick loose lifts, compacted to at least 95% of maximum density as determined by ASTM D698 or to at least 90% of maximum density as determined by ASTM D1557, and between -2 and +3% of optimum moisture content: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
10.	Only suitable material will be used as levee fill. Fill will be free of roots and other organic matter, contaminated hazardous and toxic material, debris, frozen materials, and trash: Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
11.	Satisfactory fill material will have a plasticity index between 8 and 25, have a liquid limit less than 45, a minimum fines content of 20%, and 100% passing the 3-inch sieve: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
12.	Pipes located within or beneath a levee will have watertight joints that can accommodate movement: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
13.	If a chemical or electrochemical reaction is expected, the pipe and pipe couplings will be protected: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]

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Comment

RCP Eligibility Review

Yes	No	Add'l. Info Requested		
☐	☐	☐	Environmental Reviewer: _____	Date: Click date
☐	☐	☐	Engineering Reviewer: _____	Date: Click date