

412. GRASSED WATERWAY

DESIGN AND CHECK DATA REQUIREMENT

The following items must be documented for the Grassed Waterway. The following items shall be included:

Survey Record in Engineering Field book

1. Slope of each design reach (hand level survey permitted when slope is steeper than 2 per cent).
2. Cross section (minimum one per reach at most restrictive station or location).
3. Length of each reach and total length.
4. Plan view, if part of a system.

Design Record

1. PA One-Call compliance.
2. Peak discharge calculations.
3. Velocity and/or effective stress calculations using appropriate "n" value.
4. Design for each reach including width and depth; note soils, vegetations and E&S provisions.
5. Lime, fertilizer, and seeding requirements.
6. If part of a system, hydraulic and structural design of side inlets, drop structures, and energy dissipators.
7. Operation and Maintenance Plan.

Construction Record

1. Measurements to show length, width and depth of completed waterway (paced length acceptable when not for payment).
2. Slope or grade of waterway.
3. If required, stone sizes and/or geosynthetics used, and other related structures. Source of stone, geosynthetics, or other specified materials.

4. Seeding, sodding, or establishment of vegetation.

5. Subgrade preparation.

6. For Natural Waterways:

- a. Statement that the waterway has vegetation and is stable.
- b. Width, depth, and length measurement.
- c. If, in the opinion of the technician providing assistance, there is a need to specify a wider waterway, it shall be noted in the plan. If there is a need to enlarge or construct a grassed waterway, the criteria in the standard shall apply.

7. Items of Performance That Can Be Certified by the Cooperator

- a. Disposal of stumps, logs, brush, and other debris resulting from site preparation.
- b. Seeding, sodding, or establishment of vegetation.