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RIPRAP SPECIFICATION

FOR BRIDGES

WISCONSIN GUIDELINES

- Certain actives in navigable waters are exempt from needing a permit under Chapter 30. Use this checklist to determine if your project qualifies for an exemption.
  - ASNRI/PRF/PNW: The riprap may not be in an area of special natural resource interest (ASNRI) or within a public right feature (PRF).
    - FOLLOW REFERENCE LINK TO SEARCH

- Federal and State Threatened and Endangered Species: This exemption does not address threatened and endangered species. Applicants are required to comply with Wisconsin's Endangered Species Law (s. 29.604, Wis. Stats.) and the Federal Endangered Species Act.
  - FOLLOW REFERENCE LINK TO SEARCH

- REFERENCES
  - WISCONSIN dnr (wisconsin.gov)

WISCONSIN REQUIREMENTS

- Revetment Stone: Provide Revetment Stone (Riprap), where indicated on the drawings, meeting the requirements of DOT Standard Specification shall not lose more than 10% for stones crushed to 1-1/2" to 3/4"(nominal) for Class "D" revetment. Class "E" revetment shall not exceed 10% Method A. In addition, the percentage of abrasion loss when tested in accordance to AASHTO T96 shall not exceed 50. Do not use material which split in layers less than 4-inches thick, when exposed to natural weathering regardless of the above tests results.
  - Class "D" and Class "E" revetment stone shall be taken from blasted rock or broken concrete. Class "D" material shall not require additional processing. After visual inspection and prior to loading, the engineer may designate material as too fine or too coarse and may require material to be loaded from another area. Class "E" material shall be processed to the extent that most of the material 3 in. and less shall be removed.

    Revetment shall be well-graded material with a nominal top size of 250 lb.* and meeting the following additional size limitations.

    *Note: The Engineer may approve using riprap containing material larger than 250 lb. B. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Project Engineer.

Stone Weight	Minimum % Larger Than Stone Weight
90 lb	50
5 lb	90

- Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Project Engineer.

RIPRAP SPECIFICATIONS

- Unless part of a stormwater management plant; all temporary erosion and sediment control practices shall be removed upon final site stabilizations.
- Rip rap does not reach an elevation higher than 36 inches above the ordinary high-water mark or above the storm wave height.
- Rip rap, rip rap replacement, or rip rap repair may not exceed 200 linear feet of shoreline on an inland lake, flowage stream or river.
- Rip rap is clean field stone or quarry stone with a diameter of no less than 6 inches and no greater than 48 inches.
- The toe of the rip rap does not extend more than eight feet waterward of the ordinary high-water mark.
- The rip rap slope is not steeper than 1 foot horizontal to 1.25 feet vertical.
- Any grading, excavation, and land disturbances shall be confined to the minimum area necessary for the construction and may not exceed 10,000 square feet.
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RIPRAP EXECUTION

1. EXAMINATION:
   1.1. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.
2. PREPARATION:

2.1. Surface Preparation: Begin with trench excavations to the elevations shown on the Drawings. Shape and dress the slope to be protected so that the revetment surface will follow the lines and grades shown on the Drawings.
  2.1.1. To control placement, provide a grid system designating those areas shown on the Drawings to receive stone protection.
  2.1.2. The DNR Inspector will inspect the prepared base directly prior to placement of revetment.

3. APPLICATION:
3.1. Special Techniques: Spot loads and distribute them over the surface marked in grid. Do not place any material until the prepared base has been accepted by the DNR Construction Inspector.
3.2. Place stone riprap to produce a reasonably well-graded mass of stone with the minimum practicable percentage of voids and in full course thickness in one operation.
  3.2.1. Distribute the largest stones so that the entire mass conforms approximately to the gradation specified.
  3.2.2. Where necessary, allow some roughness in surface to break up wave action and decrease the velocity of the mass while keeping the mass compact with all sizes of material in proper proportions.
  3.2.3. Hand place or rearrange individual stones with mechanical equipment as necessary to secure results as specified.
3.3. Tolerances: Control distribution based on the assumed density of 100 lbs. per cubic foot and the actual weights delivered.