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RIPRAP (OAKDALE 2511)

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Stone Riprap
 - 2. Filter Material
- B. Related Sections:
 - 1. MnDOT 2503 – Pipe Sewers
 - 2. MnDOT 2501 – Pipe Culverts
- C. Method of Measurement:
 - 1. Riprap:
 - a. Measure by volume in cubic yards based on staked surface dimensions and specified thickness.
 - b. Measure each type and class separately.
 - 2. Filter Materials:
 - a. Geotextile Filter:
 - 1) Measure by area in square yards based on staked surface dimensions with no allowance for overlap or seams.
 - 2) Measure each type separately.
- D. Basis of Payment:
 - 1. Bid Price Includes:
 - a. Excavation
 - b. Foundation Preparation
 - 2. Payment for riprap shall be at the Contract Unit Price as listed on the Bid Form. All associated Work items shall be considered incidental.

1.02 REFERENCES

- A. MnDOT 2511 – Riprap

PART 2 PRODUCTS

2.01 MATERIALS

- A. All materials shall be in accordance with the respective MnDOT Specifications as follows:
 - 1. Riprap Materials: MnDOT 3601

2.02 ACCESSORIES

- A. All accessories shall be in accordance with the respective MnDOT Specifications as follows:
 - 1. Geotextile Filter (Type III or IV) – MnDOT 3733
 - a. Provide Type III under the following:
 - 1) Class I and Class II Field Stone
 - 2) Class I Quarry Stone

PART 3 EXECUTION

3.01 FOUNDATION PREPARATION

- A. Excavate and shape foundation areas to the location and cross section staked by the Engineer.
- B. Compact all loose foundation material prior to filter material placement.
- C. Provide smooth surface, free of stones, sticks, and other debris.

3.02 FILTER MATERIAL

- A. Geotextile Filter:
 - 1. Place multiple fabric widths with the longest dimension parallel to the direction of water flow.
 - 2. Splice multiple fabric widths by mechanical seaming or minimum 18-inch overlap. (36-inch under water).
 - 3. Overlap joints in shingle arrangement.
 - 4. Bury upgrade edges of fabric to prevent under mining.
 - 5. Anchor fabric to prevent movement during riprap placement.
 - 6. Do not operate equipment on fabric.

3.03 RIPRAP STONE

- A. Placement:
 - 1. Begin placement at the lowest elevation and work upgrade.
 - 2. Do not drop stones from greater than 1 foot height.
- B. Random and Quarry-run Riprap:
 - 1. Position stones to provide uniform size distribution and minimize void space.
 - 2. Level surface to provide uniform thickness and appearance.
- C. Hand-placed or Grouted Riprap:
 - 1. Embed all stones in the foundation material.
 - 2. Minimize space between stones.
 - 3. Stagger joints up the slope.
 - 4. Define edges of riprap area using selected stones set to line and grade.
 - 5. Seat smaller stones between the larger stones to produce a uniform surface.

3.04 THICKNESS REQUIREMENTS

- A. All areas – minimum 80 percent of specified thickness.

B. Average – minimum 95 percent of specified thickness.

END OF SECTION