SECTION 444201 - MECHANICAL BAR SCREENS AND GRINDERS

Edit section title as required.

1. GENERAL
   * + 1. RELATED WORK
          1. Painting: Section 099702.
          2. Wiring for Motors and Motor Controllers: Section 260523.
          3. Motors and Motor Controllers: Section 260221.
       2. QUALITY ASSURANCE
          1. Acceptable Manufacturers:

The manufacturer furnishing the equipment shall be experienced in the design and construction of such equipment shall have furnished collectors which have been in successful operation for a period of not less than five years.

* + - 1. SUBMITTALS

Edit paragraphs below for screens and/or grinder.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
        2. Manufacturer’s installation instructions shall be provided along with product data.
        3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
        4. Shop drawings of screen cleaner, grinder and appurtenances.
        5. A complete set of extra cutters and screens shall be supplied for each grinder installed, at no extra cost.
      1. PAYMENT

Delete below if not environmental engineering project.

* + - * 1. Payment for the Work of this section will be made at the lump sum contract price.
        2. Painting as specified under Section 099613 – Painting Wastewater Treatment Plants 099702 will be included in this section.

1. PRODUCT

Delete article below if no screens.

* + - 1. BAR SCREENS
         1. Mechanical bar screens shall be as manufactured by Rex Chainbelt Inc., Jeffery Mfg. Co., Link Belt Co.

Edit paragraph below as required.

* + - * 1. The combined unit is for removing screenings from sewage, conveying them to a hopper or pan at the end of the screen, lushing them into the grinder and discharging the comminuted screening into the sewage.
        2. Rake chains shall descend on the downstream side and may ascent on either side and shall be included at the approximate angle of 15 degrees.
        3. The dimensions and form of the channels, in which screens are to be installed, will be as shown on the drawings. The cross sectional area of channels and clear openings shall not be diminished. Elements of the screen shall have the following minimum values:
        4. Rake chains shall descend on the downstream side and may ascent on either side and shall be included at the approximate angle of 15 degrees.
        5. The dimensions and form of the channels, in which screens are to be installed, will be as shown on the drawings. The cross sectional area of channels and clear openings shall not be diminished. Elements of the screen shall have the following minimum values:

Cleaning racks -– spaced not more than 8 feet apart.

Dead plates -– not less than 1/4¼ inch thick.

Chain -– ultimate strength of at least 30,000 pounds.

Chain pitch -– not less than 6 inches.

Head sprocket -– not less than 16inches diameter.

Driven sprocket -– not less than 20inches diameter.

Steel frame and chain guides -– not less than 3/8inch thick.

Head housing -– hard temper aluminum not less than 3/16inch thick.

Head take up shall be spring loaded.

* + - * 1. All exposed chains, gears and other moving parts shall be protected by steel guards. Screen bars shall be 1045 steel, at least 2 inches x 3/8 inch stock with a 3/4 inch clear opening between bars, unless otherwise shown
        2. All exposed chains, gears and other moving parts shall be protected by steel guards. Screen bars shall be 1045 steel, at least 2 inches x 3/8 inch stock with a 3/4 inch clear opening between bars, unless otherwise shown.

Delete article below if no grinders.

* + - 1. GRINDERS
         1. Grinders, shall be of the cutter type. Grinders shall be water tight and shall be fed from m hoppers. A water flushing line, with valve, shall be provided. Grinders furnished shall be capable of grinding large size rags.
         2. Grinders shall be as manufactured by Rex Chambelt Inc., Gruendler Crusher and Pulverizer Co. or Jeffery Manufacturing Co.
      2. MOTORS
         1. Gear motors for screen cleaners shall be of the size shown on the drawings.

Edit paragraph below based on screens and/or grinders.

* + - * 1. Motors for grinders shall be of splash proof or totally enclosed fan cooled of not less than the H.P. and RPM, shown on the drawings for direct connection to the grinder through a flexible coupling.
        2. Motors and Motor Controllers, paid for under this item shall meet the requirements of Section 260221.
      1. CONTROLS

Edit paragraphs below based on screens and/or grinders.

* + - * 1. Motors for screen cleaners shall be provided with magnetic motor controllers meeting the requirements of Section 260221, having hand-off-automatic selector switch, time switch, necessary protective limit switches and emergency float switch.
        2. Time switch for automatic intermittent operation shall be motor driven and adjustable. The time switch shall have double dials, one for 23 hour adjustments at intervals of 1 hour, the other dial for duration adjustments of from 2 to 55 minutes, similar to No. 42277 as manufactured by Tork Time Controls, Inc.
        3. Motors for grinders shall be manually operated.
      1. PAINTING
         1. Shop and field coating paints shall be as specified in Section 099702.

1. EXECUTION
   * + 1. INSTALLATION
          1. Install equipment as shown and in accordance with manufacturer’s recommendations.
       2. TEST
          1. Operate the equipment for 48 consecutive hours after installation complete with all l appurtenances properly adjusted and with sewage flowing through the channels. Correct any defects which develop during the test, in the equipment furnished under this item, by the Contractor at their own expense, and the test begun again. Count time of operation prior to the development of a defect shall not be in the specified 48 hours.

END OF SECTION 444201