SECTION 462436 - MODULAR GRINDING, SCREENING, AND COMPACTING EQUIPMENT

Note that this section has only been edited for NYSOGS standardization and has not been technically edited. The designer shall make all technical edits specific to the project for this section.

Instrumentation system components are specified in Division 40 - Process Interconnections.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes: Grinding, screening, and compacting equipment.
          2. Related Requirements:

List other Sections directly related to or affecting Work of this Section. Include Sections specifying information expected to be found in this Section as well as Sections required to describe complete system or assembly requirements.

Section 055000 - Metal Fabrications: Fasteners, brackets, and other miscellaneous metal fabrications.

Section 400506 - Couplings, Adapters, and Specials for Process Piping: Common piping fittings and appurtenances.

Section 400563 - Ball Valves: Spray system valves.

Section 400593 - Common Motor Requirements for Process Equipment: Electric motors and accessories normally supplied as part of equipment assemblies.

* + - 1. DEFINITIONS

Limit list of definitions to terms unique to this Section and not provided elsewhere.

* + - * 1. Grinder: A device that reduces the size of solid materials carried in wastewater.
      1. REFERENCE STANDARDS

List reference standards included within text of this Section, with designations, numbers, and complete document titles.

* + - * 1. ASTM International:

ASTM A536 - Standard Specification for Ductile Iron Castings.

ASTM A693 - Standard Specification for Precipitation-Hardening Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.

* + - 1. PREINSTALLATION MEETINGS
         1. Convene minimum [**one week**] [**<\_\_\_\_\_\_\_\_> weeks**] prior to commencing Work of this Section.
      2. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 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. Product Data: Submit manufacturer information describing materials of construction, fabrication, and protective coatings.
        5. Shop Drawings:

Indicate system materials and component equipment.

Indicate connections and other installation details.

* + - * 1. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

Include separate Paragraphs for additional certifications.

* + - * 1. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
        2. Source Quality-Control Submittals: Indicate results of [**shop**] [**factory**] tests and inspections.
        3. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
        4. Manufacturer Reports: Certify that equipment has been installed according to manufacturer instructions.
        5. Qualifications Statements:

Coordinate following Subparagraphs with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer and installer.

Submit manufacturer's approval of installer.

* + - 1. CLOSEOUT SUBMITTALS
         1. Project Record Documents: Record actual locations of equipment.
      2. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

In following Paragraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

* + - * 1. Perform Work according to <**\_\_\_\_\_\_\_\_**> standards.

Include following Paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain <**\_\_\_\_\_\_\_\_**> [**copy**] [**copies**] of each standard affecting Work of this Section on Site.
      1. QUALIFICATIONS

Coordinate following Paragraphs with requirements specified in SUBMITTALS Article.

* + - * 1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience.
        2. Installer: Company specializing in performing Work of this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience [**and approved by manufacturer**].
      1. DELIVERY, STORAGE, AND HANDLING
         1. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
         2. Store equipment according to manufacturer instructions.
         3. Protection:

Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.

Provide additional protection according to manufacturer instructions.

* + - 1. EXISTING CONDITIONS
         1. Field Measurements:

Verify field measurements prior to fabrication.

Indicate field measurements on Shop Drawings.

* + - 1. WARRANTY

This Article extends warranty period beyond one year. Extended warranties may increase construction costs and Director’s Representative enforcement responsibilities. Specify warranties with caution.

* + - * 1. Furnish [**five**] <**\_\_\_\_\_\_\_\_**>-year manufacturer's warranty for modular grinding, screening, and compacting equipment.

1. PRODUCTS
   * + 1. <**\_\_\_\_\_\_\_\_**>
          1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=12831&mf=04&src=wd):

Designer to provide two manufacturers and approved equivalent for all listed products.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Subparagraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

Furnish materials according to <**\_\_\_\_\_\_\_\_**> standards.

Insert descriptive Specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - 1. PERFORMANCE AND DESIGN CRITERIA
         1. Flow Rates:

Minimum: <**\_\_\_\_\_\_\_\_**> MGD

Average Daily: <**\_\_\_\_\_\_\_\_**> MGD

Maximum: <**\_\_\_\_\_\_\_\_**> MGD

* + - * 1. Maximum Head Loss: <**\_\_\_\_\_\_\_\_**> inches of water at maximum flow rate.
      1. GRINDER
         1. Description:

Type: [**Inline**] [**Channel**].

Design:

Shaft: [**Single**] [**Dual**].

Power: Low speed, high torque.

Operation: [**Gear motor**] [**Hydraulic drive**].

Seal Flush: [**Required**] [**Not required**].

Peak Shaft Torque: <**\_\_\_\_\_\_\_\_**> lbf-in./hp.

* + - * 1. Frame:

Description: [**Grinder support base**] [**, subchannel**] [**, overflow bar racks**] [**, and**] <**\_\_\_\_\_\_\_\_**>.

Mounting: [**Channel walls**] [**As indicated on Drawings**] <**\_\_\_\_\_\_\_\_**>.

* + - * 1. Cutting Elements:

Material: [**Alloy steel**] <**\_\_\_\_\_\_\_\_**>.

Size: <**\_\_\_\_\_\_\_\_**> inches

Hardness: [**45 to 65**] [**<\_\_\_\_\_\_\_\_> to <\_\_\_\_\_\_\_\_>**] Rockwell C.

* + - * 1. Materials:

Frame: [**Type 304 stainless steel**] [**Type <\_\_\_\_\_\_\_\_> stainless steel**] <**\_\_\_\_\_\_\_\_**>.

Shafting: [**Alloy steel**] <**\_\_\_\_\_\_\_\_**>.

Housings: [**Ductile iron, ASTM A536**] <**\_\_\_\_\_\_\_\_**>.

Seal Faces: [**Tungsten carbide**] <**\_\_\_\_\_\_\_\_**>.

Elastomers: [**Buna-N**] <**\_\_\_\_\_\_\_\_**>.

* + - 1. SCREEN
         1. Type: [**Perforated**] [**Slotted**] plate <**\_\_\_\_\_\_\_\_**>.
         2. Material: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel.
         3. [**Perforation**] [**Slot**] Size: [**5/64**] [**1/8**] [**1/4**] <**\_\_\_\_\_\_\_\_**> inch
      2. CONVEYOR/COMPACTOR
         1. Screen Trough:

Type: [**Perforated**] [**Slotted**] <**\_\_\_\_\_\_\_\_**>.

Material: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel.

Perforation Size: [**5/64**] [**1/8**] [**1/4**] <**\_\_\_\_\_\_\_\_**> inch

* + - * 1. Spray System:

Mounting: [**On screen trough flanges**] [**As indicated on Drawings**] <**\_\_\_\_\_\_\_\_**>.

Spray Wash:

Inlet: 1 inch NPT

Nozzles: Adjustable.

Ball Valves: As specified in Section 400563 - Ball Valves.

* + - * 1. Transport Trough:

Material: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel.

Inspection Covers: Furnish removable covers for sections longer than [**40**] <**\_\_\_\_\_\_\_\_**> inches

Wear Bars: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel[**; ASTM A693**].

* + - * 1. Discharge Segment:

Material: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel.

Inspection Covers: Provide removable covers for sections longer than [**40**] <**\_\_\_\_\_\_\_\_**> inches

Wear Bars: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel[**; ASTM A693**].

* + - * 1. Conveyor:

Type: [**Auger**] [**Screw**].

Materials:

Casings: Type [**304**] <**\_\_\_\_\_\_\_\_**> stainless steel.

Screw: [**Alloy steel**] <**\_\_\_\_\_\_\_\_**>.

Auger brush: Replaceable, with nylon bristles.

Mounting: Adjustable and rotatable pivot support.

* + - 1. OPERATION
         1. Electrical Characteristics:

[**<\_\_\_\_\_\_\_\_> hp**] [**<\_\_\_\_\_\_\_\_> RLA**].

Voltage: <**\_\_\_\_\_\_\_\_**> V, [**single**] [**three**] phase, 60 Hz.

Maximum [**Fuse Size**] [**Circuit-Breaker Size**] [**Overcurrent Protection**]: <**\_\_\_\_\_\_\_\_**> A.

Minimum Circuit Ampacity: <**\_\_\_\_\_\_\_\_**>.

Minimum Power Factor: <**\_\_\_\_\_\_\_\_**> percent at rated load.

* + - * 1. Motors:

As specified in Section 400593 - Common Motor Requirements for Process Equipment.

Type: Constant speed, [**totally enclosed**] [**totally enclosed, fan cooled (TEFC)**] [**explosion-proof, fan-cooled (XPFC)**] [**exclusive electric, immersible (XPNV)**].

* + - * 1. Control Panel:

Factory mounted.

NEMA 250 Type [**4X**] [**7**] <**\_\_\_\_\_\_\_\_**>.

Material: [**Fiberglass**] [**Sheet steel**] <**\_\_\_\_\_\_\_\_**>.

Single-point power connection and grounding lug.

* + - * 1. Controls:

Type: [**PLC**] <**\_\_\_\_\_\_\_\_**>.

Jamming Protection:

Automatic load sensing and reversing.

Automatic drive motor reversal with time delay.

Alarms:

Audible and visual.

<**\_\_\_\_\_\_\_\_**>.

* + - * 1. Disconnect Switch: Factory mounted [**in control panel**] [**on equipment**].
      1. ACCESSORIES
         1. Discharge bagger.
         2. Fasteners and Supports: As specified in Section 055000 - Metal Fabrications.
         3. Hydraulic [**actuator**] [**drive**] [**power pack**].
         4. Motor Shaft Extension: [**6**] <**\_\_\_\_\_\_\_\_**>-inch increments.
         5. <**\_\_\_\_\_\_\_\_**>.
      2. SOURCE QUALITY CONTROL
         1. Provide shop inspection and testing of completed assembly.

Include one or both of following Paragraphs to require Director’s Representative's inspection or witnessing of test at factory.

* + - * 1. Director’s Inspection:

Make completed equipment available for inspection at manufacturer's factory prior to packaging for shipment.

Notify Director’s Representative at least [**seven**] <**\_\_\_\_\_\_\_\_**> days before inspection is allowed.

* + - * 1. Director’s Witnessing:

Allow witnessing of factory inspections and test at manufacturer's test facility.

Notify Director’s Representative at least [**seven**] <**\_\_\_\_\_\_\_\_**> days before inspections and tests are scheduled.

Include following Paragraph if reliance on manufacturer's approved quality-control program is sufficient for Project requirements.

* + - * 1. Certificate of Compliance:

If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.

Specified shop tests are not required for Work performed by approved manufacturer.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verify that designated areas, clearances, structural requirements, piping, utility connections, and electronic signals are ready to receive equipment.
       2. INSTALLATION
          1. According to manufacturer instructions.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Paragraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

* + - * 1. Installation Standards: Install Work according to <**\_\_\_\_\_\_\_\_**> standards.
      1. FIELD QUALITY CONTROL
         1. Test for proper alignment.
         2. Start up, inspect, and operate equipment in presence of Director’s Representative.
         3. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than <**\_\_\_\_\_\_\_\_**> [**days**] [**hours**] on Site for installation, inspection, startup, field testing, and instructing Director’s Representative's personnel in operation and maintenance of equipment.
         4. Equipment Acceptance:

Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.

Make final adjustments to equipment under direction of manufacturer's representative.

* + - * 1. Furnish installation certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.
      1. DEMONSTRATION
         1. Demonstrate equipment startup, shutdown, routine maintenance, alarm condition responses, and emergency repair procedures to Director’s Representative.

END OF SECTION 462436