

Section No.	Section Title	Section Description
DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS		
000000	Procurement and Contracting Requirements	Outline Only: Single Document to specify procurement and Contract requirements. Includes topics covered in Division 00 Documents.
001116	Invitation to Bid	Private notice for selected bidders.
002113	Instructions to Bidders	Generic bid submission procedural requirements.
002113.11	Instructions to Bidders - AIA	Bid submission procedural requirements incorporating and supplementing AIA A701 used with AIA Contract forms. NOTE: SpecText files do not contain referenced AIA documents.
002113.12	Instructions to Bidders - EJCDC	Bid submission procedural requirements with EJCDC Contract forms. NOTE: SpecText files do not contain referenced EJCDC documents.
003100	Available Project Information	List and descriptions of geotechnical, topographic survey, existing conditions survey, and other reports.
004113	Bid Form - Stipulated Sum (Single-Prime Contract)	Generic lump-sum price Bid Form used with AIA, EJCDC, or other Contract forms. NOTE: SpecText files do not contain referenced AIA and EJCDC documents.
004143	Bid Form - Unit Price (Single-Prime Contract)	Generic unit price Bid Form used with AIA, EJCDC, or other Contract forms. NOTE: SpecText files do not contain referenced AIA and EJCDC documents.
004300	Procurement Form Supplements	Forms to be submitted with Bid for Contractor qualifications, Subcontractor list, pricing schedules, and other information.
005213.11	Agreement Form - AIA Stipulated Sum (Single-Prime Contract)	Incorporates AIA form as Contract agreement. NOTE: SpecText files do not contain referenced AIA documents.
005213.12	Agreement Form - EJCDC Stipulated Sum (Single-Prime Contract)	Incorporates EJCDC form as Contract agreement. NOTE: SpecText files do not contain referenced EJCDC documents.
005223.11	Agreement Form - AIA Construction Management (Single-Prime Contract)	Incorporates AIA construction management form as Contract agreement. NOTE: SpecText files do not contain referenced AIA documents.
007213.11	General Conditions - AIA Stipulated Sum (Single-Prime Contract)	Incorporates AIA form as General Conditions. NOTE: SpecText files do not contain referenced AIA documents.
007213.12	General Conditions - EJCDC Stipulated Sum (Single-Prime Contract)	Incorporates EJCDC form as General Conditions. NOTE: SpecText files do not contain referenced EJCDC documents.
007223.11	General Conditions - AIA Construction Management (Single-Prime Contract)	Incorporates AIA construction management form as General Conditions. NOTE: SpecText files do not contain referenced AIA documents.
007313	Supplementary Conditions - AIA	Supplements to AIA standard general conditions. NOTE: SpecText files do not contain referenced AIA documents.
007314	Supplementary Conditions - EJCDC	Supplements to EJCDC standard general conditions. NOTE: SpecText files do not contain referenced EJCDC documents.
007315	Supplementary Conditions - AIA (Construction Management)	Supplements to AIA standard construction management general conditions. NOTE: SpecText files do not contain referenced AIA documents.
009113	Addenda	Form for preparing addenda.
DIVISION 01 - GENERAL REQUIREMENTS		
010000	General Requirements	Outline Only: Single section to specify general requirements. Includes topics covered in other Division 01 Sections.

Section No.	Section Title	Section Description
011000	Summary	Basic Contract description, work by Owner or others, Owner-furnished products, use of Site, future work, work sequence, Owner occupancy, permits, and specification conventions.
012000	Price and Payment Procedures	Allowances, schedule of values, applications for payment, change procedures, defect assessment, unit prices, and alternates.
012500	Substitution Procedures	Product and installer substitution procedures.
013000	Administrative Requirements	Coordination, meetings, electrical characteristics, alterations, and special procedures.
013216	Construction Progress Schedule	Critical path method (CPM) schedules, bar chart schedules, submittals, review and evaluation, updating, and distribution.
013300	Submittal Procedures	Administrative and procedural requirements, product list and data, CAD files, Shop Drawings, samples, design data, reports, certificates, instructions, photographs, and reviews.
013546	Indoor Air Quality Procedures	Construction indoor air quality management plan, HVAC air filters, building flush-out, and indoor air quality testing.
014000	Quality Requirements	Quality control, tolerances, references, labeling, mockups, testing and inspection, and manufacturer's field services.
015000	Temporary Facilities and Controls	Temporary utilities, construction facilities, and controls.
016000	Product Requirements	Product description, delivery, storage, handling, and product options.
017000	Execution and Closeout Requirements	Field engineering, startup, closeout, testing, adjusting, balancing, o&m, demonstrations and instructions, record documents, spare parts, warranties and bonds, examination, preparation, cutting & patching, and cleaning.
017419	Construction Waste Management and Disposal	Construction waste management plan, recycling, and adaptively reusing construction waste.
018113	Sustainable Design Requirements	Project goals, product requirements, and documentation to support LEED certification.
019100	Commissioning	Administrative and procedural requirements for commissioning selected systems.
DIVISION 03 - CONCRETE		
033000	Cast-in-Place Concrete	Cast-in-place or in situ concrete for structural building frames, slabs on fill or grade, and other concrete components associated with building.
036000	Grouting	Portland-cement grout, rapid-curing epoxy grout, and non-shrink cementitious grout.
DIVISION 05 - METALS		
055000	Metal Fabrications	Shop fabricated metal items of steel and aluminum.
055300	Metal Gratings	Metal and FRP bar gratings and floor plates for pedestrian or light vehicle loads.
DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES		
068000	Composite Fabrications	Shop fabricated custom fiber reinforced epoxy or polyester resin components.
DIVISION 07 - THERMAL AND MOISTURE PROTECTION		

Section No.	Section Title	Section Description
079000	Joint Protection	Gun-grade and pourable sealants, compressible foam sealers, and gaskets for sealing static joints, dynamic joints, and joints between differing materials and components.
DIVISION 09 - FINISHES		
099000	Painting and Coating	Preparing, priming, painting, staining, and applying finishes to scheduled surfaces, including mechanical, electrical, and equipment finishing.
099600	High-Performance Coatings	Fluid-applied coatings intended for applications requiring improved scrubability and durability, increased chemical resistance, or increased corrosion protection.
099635	Chemical-Resistant Coatings	Coating to surfaces requiring protection from process chemicals.
DIVISION 10 - SPECIALTIES		
101400	Signage	Plastic plaque-style door and wall signs with engraved, raised, individually mounted, silk-screened, or sand-blasted characters.
DIVISION 11 - EQUIPMENT		
115300	Laboratory Equipment	General requirements to precede a detailed laboratory equipment schedule, including laboratory equipment, connections to utilities, service fittings, and outlets.
DIVISION 26 - ELECTRICAL		
260553	Identification for Electrical Systems	Identification methods for electrical equipment and components.
260583	Wiring Connections	Wiring connections to equipment included in other sections.
262923	Variable-Frequency Motor Controllers	Three-phase variable frequency motor controllers of the pulse-width-modulated design, for fan and pump motors.
DIVISION 40 - PROCESS INTERCONNECTIONS		
400506	Couplings, Adapters, and Specials for Process Piping	Pipe penetrations, restrained joints, flexible connections, expansion joints and loops, and sleeve-type couplings.
400507	Hangers and Supports for Process Piping	Hangers, supports, anchors, guides, and equipment bases for process piping systems.
400512	Brass Process Pipe	Brass piping and tubing normally encountered in plant process piping systems, including common fittings.
400517	Copper Process Pipe and Tubing	Copper piping and tubing normally encountered in plant process piping systems, including common fittings.
400519	Ductile Iron Process Pipe	Ductile-iron piping normally encountered in plant process piping systems, including ductile-iron, malleable-iron, and cast-iron fittings and joints.
400523	Stainless Steel Process Pipe and Tubing	Stainless steel piping normally encountered in plant process piping systems, including common fittings and joints.
400524	Steel Process Pipe	Steel pipe materials used for plant process piping systems, including common fittings and joints; cement-mortar-lined steel pipe and fittings; plastic-lined steel pipe and fittings; glass-lined steel pipe and fittings; and rubber-lined steel pipe.
400531	Thermoplastic Process Pipe	Plastic piping normally encountered in plant process piping systems, including common fittings and joints.

Section No.	Section Title	Section Description
400536	Fiberglass-Reinforced Plastic Process Pipe	Fiberglass reinforced plastic (FRP) pipe materiaFiberglass-reinforced plastic (FRP) piping normally encountered in plant process piping systems, including common fittings and joints.
400539.13	Concrete Pressure Water Pipe	Concrete pipe materials and appurtenances normally encountered with pressurized-water piping in a water-treatment plant.
400539.23	Concrete Gravity and Drainage Process Pipe	Pipe materials and appurtenances normally encountered with gravity process and drainage piping in a water- and wastewater-treatment plant.
400551	Common Requirements for Process Valves	Basic materials and methods related to valves commonly used for process systems, including operators, actuators, handwheels, chainwheels, extension stems, floor stands, end connections, and other accessories.
400553	Identification for Process Piping	Labeling and identification methods for water and wastewater process equipment and accessories, including nameplates, tags, stencils, labels, and lockout devices.
400557	Actuators for Process Valves and Gates	Manual, pneumatic, and electric motor actuators.
400559.21	Aluminum Slide Gates	Self-contained and non-self-contained aluminum slide gates for water and wastewater treatment facilities.
400559.23	Stainless Steel Slide Gates	Self-contained and non-self-contained stainless steel slide gates for water and wastewater treatment facilities.
400559.26	Fiberglass-Reinforced Plastic Slide Gates	Self-contained and non-self-contained fiberglass-reinforced plastic (FRP) slide gates for water and wastewater treatment facilities.
400559.33	Cast Iron Slide Gates	Self-contained and non-self-contained cast-iron slide gates for water and wastewater treatment facilities.
400561	Gate Valves	Resilient-seated, solid-wedge, general-duty, and plastic gate valves for use in water- and wastewater-treatment plants.
400561.43	Knife Gate Valves	Knife gate valves for use in water and wastewater treatment plants.
400562	Plug Valves	Eccentric plug valves for use in water- and wastewater-treatment plants.
400563	Ball Valves	Rubber-seated and plastic ball valves for use in water and wastewater treatment plants.
400564	Butterfly Valves	Rubber-seated and plastic butterfly valves for use in water- and wastewater-treatment plants.
400565.11	Angle Valves	Angle valves for throttling service in water- and wastewater-treatment plants.
400565.13	Cone Valves	Cone valves for throttling service or pump discharge control.
400565.16	Globe Valves	Globe valves for use in water and wastewater treatment plants.
400565.23	Swing Check Valves	Swing check valves 3 inches (76 mm) and larger, for use in water and wastewater treatment plants.
400565.26	Tilting Disc Check Valves	Tilting (or slanting) disc check valves 2 inches (50 mm) through 60 inches (1 500 mm), for use in water and wastewater treatment plants.
400565.29	Double-Disk Check Valves	Double-disc swing check valves 2 inches (50 mm) through 52 inches (1 300 mm), for use in water and wastewater treatment plants.
400567	Specialized Pressure and Flow-Control Valves	Pressure-reducing valves (PRV) and pressure-sustaining valves for use in water and wastewater treatment plants.
400567.13	Reduced-Pressure Zone Backflow Preventers for Process Service	Reduced-pressure zone backflow preventers and accessories.
400567.16	Double Check Valve Assembly Backflow Preventers for Process Service	Double check valve assembly backflow preventers and accessories.

Section No.	Section Title	Section Description
400567.23	Pressure Vacuum Breaker Backflow Preventers	Pressure vacuum breaker backflow preventers.
400567.26	Atmospheric Vacuum Breaker Backflow Preventers	Atmospheric vacuum breaker backflow preventers.
400567.29	Hose Connection Vacuum Breaker Backflow Preventers	Hose connection vacuum breaker backflow preventers and accessories.
400567.36	Pressure-Regulating Valves	Pressure-reducing and pressure-sustaining valves and accessories.
400567.39	Pressure-Relief Valves	Hydrostatic pressure-relief valves in pressurized and gravity tanks for water and wastewater treatment facilities.
400571.23	Mud Valves	Mud valves for use in water and wastewater treatment plants.
400571.33	Telescoping Valves	Telescoping valves for use in water and wastewater treatment plants.
400574.13	Diaphragm Valves	Metallic and plastic diaphragm valves for use in water and wastewater treatment plants.
400574.23	Pinch Valves	Pinch valves for use in water and wastewater treatment plants.
400578.21	Air Release Valves for Wastewater Service	Air release valves for process wastewater service.
400578.29	Combination Air Valves for Wastewater Service	Combination air valves for use in piping systems in wastewater treatment facilities.
400582	Solenoid Valves for Process Service	Solenoid valves for use in water and wastewater treatment plants for non-instrumentation applications.
400589.13	Basket Strainers for Process Service	Basket-type strainers and accessories.
400593	Common Motor Requirements for Process Equipment	Electric motors and accessories normally supplied as part of equipment assemblies.
400596	Vibration and Seismic Controls for Process Equipment	Inertia bases and vibration isolation equipment used for vibration isolation and seismic control, for equipment specified for water- and wastewater treatment plants.
401113	Low-Pressure Steam Process Piping	Pipe materials, fittings, and valves for aboveground steam piping systems.
401116	Intermediate-Pressure Steam Process Piping	Pipe materials, fittings, and valves for aboveground steam piping systems.
401119	High-Pressure Steam Process Piping	Pipe materials, fittings, and valves for aboveground steam piping systems.
401123	Condensate Process Piping for Process Applications	Pipe materials and fittings for aboveground steam condensate piping systems.
401813	Low-Vacuum Systems Process Piping	Aboveground process piping systems for low-vacuum applications in a water or wastewater treatment plant.
402319	Non-Potable Plant Water Process Piping	Process piping systems transporting plant (non-potable) water in a water- or wastewater-treatment plant.
402329	Recirculated Water Process Piping	Requirements for plant process piping systems transporting recirculated water in a water- or wastewater-treatment plant, including pipes, tubes, and valves.
402340	Sanitary Wastewater Process Piping	Process piping systems transporting wastewater in a wastewater-treatment plant.
402341	Grit Process Piping	Requirements for plant process piping systems transporting grit in a wastewater treatment plant, including ductile-iron pipe and fittings, plastic-lined steel pipe and fittings, valves, and pipe hangers and supports.
402343	Scum and Floatables Process Piping	Requirements for plant process piping systems transporting scum, floatables, or froth spray in a wastewater treatment plant, including PVC pipe and fittings, glass-lined steel pipe and fittings, valves, and pipe hangers and supports.
402344	Primary Sludge Process Piping	Requirements for plant process piping systems transporting primary (raw) sludge in a wastewater treatment plant, including ductile-iron pipe and fittings, glass-lined steel pipe and fittings, valves, and pipe hangers and supports.

Section No.	Section Title	Section Description
402346	Waste Sludge Process Piping	Requirements for plant process piping systems transporting waste sludge in a wastewater treatment plant, including ductile-iron pipe and fittings, valves, and pipe hangers and supports.
402414	Liquid Chlorine and Sodium Hypochlorite Piping	Process piping and tubing for chlorine solution and sodium hypochlorite solution in a water- or wastewater-treatment plant.
402419	Slurries Process Piping	Plant process piping systems transporting slurries in a water or wastewater treatment plant.
402423	Thixotropic Liquid Piping	Requirements for process piping systems transporting sludge (or other thixotropic substances) in a water-treatment plant or a wastewater-treatment plant.
402510	Liquid Acids Piping	Plant process piping systems transporting acids and acidic solutions in a water or wastewater treatment plant.
402550	Liquid Bases Piping	Plant process piping systems transporting bases and basic solutions in a water or wastewater treatment plant.
402600	Liquid Polymer Piping	Process piping systems transporting polymer in a water- or wastewater-treatment plant.
404113.13	Process Piping Electrical Resistance Heat Tracing	Electric heat-tracing systems for freeze protection of process piping, fittings, valves, and accessories, including self-regulating cables and heat-tracing controls.
404113.26	Process Piping Thermal Fluids Heat Tracing	Ethylene or propylene glycol heat-tracing systems for freeze protection of process piping, fittings, and valves.
404123.26	Process Equipment Thermal Fluids Heat Tracing	Glycol heat-tracing systems for freeze protection of process equipment.
404213	Process Piping Insulation	Insulation applied to process piping systems.
404223	Process Equipment Insulation	Insulation applied to process equipment, including equipment insulation, jacketing, and accessories.
404642	Cathodic Process Corrosion Protection	Passive cathodic protection for buried metallic process piping, buried metal structures, and buried metal tanks using sacrificial galvanic anodes.
406343	Programmable Logic Controllers	Programmable controllers for either stand-alone or networked applications.
406700	Control System Equipment Panels and Racks	Pump control panel and accessories for a duplex wastewater lift station.
407113	Magnetic Flow Meters	Magnetic flow meters, including transmitters, indicators, recorders, and integrators.
407123.13	Venturi Flow Meters	Venturi flow meters, including transmitters, indicators, recorders, and integrators.
407123.23	Orifice Plate Flow Meters	Orifice plate flow meters, including transmitters, indicators, recorders, and integrators.
407133	Propeller Flow Meters	Propeller flow meters, including transmitters, indicators, recorders, and integrators.
407143	Variable Area Flow Meters	Rotameters.
407166	Transit Time Flow Meters	Ultrasonic flow meters, including transmitters, indicators, recorders, and integrators.
407169	Open Channel Flow Meters	Weirs and Parshall flumes, including transmitters, indicators, recorders, and integrators.
407179	Flow Switches	Primary process flow switches.
407213	Ultrasonic Level Meters (Continuous and Point Type)	Ultrasonic level measurement devices and transmitters for use in water and wastewater treatment facilities.
407223	Radar Level Meters	Radar level measurement devices and transmitters for use in water and wastewater treatment facilities.
407233	Capacitance Type Level Meters (Continuous and Point Type)	Capacitance-type level measurement devices and transmitters for use in water and wastewater treatment facilities.

Section No.	Section Title	Section Description
407243	Pressure and Differential Pressure Type Level Meters	Hydrostatic level measurement devices and transmitters for use in water and wastewater treatment facilities.
407276	Level Switches	Primary process level switches of the displacement and mercury types.
407313	Pressure and Differential Pressure Gauges	Process pressure gages of the differential, compound, and digital types.
407326	Gauge-Pressure Transmitters	Gage-pressure transmitters for use in water and wastewater treatment facilities.
407336	Pressure and Differential Pressure Switches	Primary process pressure and differential pressure switches.
407363	Diaphragm Seals	Diaphragm seals for isolation of pressure gages or other devices.
407413	Resistance Temperature Devices	Thin-film resistance temperature detectors (RTDs) and thermowells, transmitters, indicators and recorders.
407416	Thermocouples	Thermocouples for use as temperature detectors, and thermowells, transmitters, indicators and recorders.
407513	pH/ORP Analyzers	pH/ORP sensors, analyzers, transmitters, and displays for use in a water or wastewater treatment plant. Testers and field, laboratory, and portable analyzers are included.
407556	Suspended Solids/Sludge Density Analyzers	Continuous and portable devices for measurement of suspended solids and sludge density in a wastewater treatment plant.

DIVISION 43 - PROCESS GAS AND LIQUID HANDLING, PURIFICATION AND STORAGE EQUIPMENT

430510	Common Work Results for Gas Handling Equipment	Basic materials and methods for fans, blowers, and compressors.
430520	Common Work Results for Liquid Handling Equipment	Basic materials and methods for process pumps.
430540	Common Work Results for Gas and Liquid Storage	Common materials and construction requirements for gas and liquid storage tanks.
431111	Direct Drive Single Stage Centrifugal Blowers	Centrifugal blowers and drives.
431119	Centrifugal Fans	Centrifugal fans and drives.
431123	Axial Blowers	Axial blowers, drives, and accessories.
431126	Axial Fans	Axial fans, drives, and accessories.
431133	Rotary Lobe Blowers	Rotary lobe blowers and drives.
431211	Centrifugal Compressors	Low-pressure centrifugal air compressors and components for compressed-air systems in plant or process applications, including pipe and pipe fittings, valves, piping accessories, aftercoolers, air dryers, air receivers, and pressure-reducing stations.
431216	Axial-Flow Compressors	Axial-flow air compressors and components for compressed-air systems used in plant or process applications, including pipe and pipe fittings, valves, piping accessories, aftercooler, air dryers, air receiver, and pressure-reducing stations.
431233	Single-Acting Reciprocating Compressors	Single-acting centrifugal air compressors for minor-duty compressed-air systems in plant or process applications, including air receiver and accessories.
431234	Double-Acting Reciprocating Compressors	Double-acting centrifugal air compressors for minor-duty compressed-air systems in plant or process applications, including air receiver and accessories.
431251	Rotary Screw Compressors	Rotary-screw air compressors and components for compressed-air systems used in plant or process applications, including pipe and pipe fittings, valves, piping accessories, aftercooler, air dryers, air receiver, and pressure-reducing stations.
432313.27	Overhung Close-Coupled Horizontal Centrifugal Pumps	Horizontal end-suction, non-clog, and recessed-impeller centrifugal pumps for use in water and wastewater treatment plants.

Section No.	Section Title	Section Description
432321.13	Between-Bearings Impeller, One- and Two-Stage Axially Split Centrifugal Pumps	Axially split centrifugal pumps for use in water and wastewater treatment plants.
432331.23	Overhung Close-Coupled Vertical End Suction Pumps	Vertical non-clog centrifugal pumps for use in water and wastewater treatment plants.
432356	Gear Pumps	Positive-displacement, external gear pumps with electric motors, used to transfer chemicals and other liquids.
432357	Progressing Cavity Pumps	Progressing cavity pumps for transporting thickened solutions such as sludge at water and wastewater treatment plants.
432358	Lobe Pumps	Positive-displacement lobe liquid pumps with electric motors, as used to transfer chemicals and other liquids.
432359	Screw Pumps	Screw centrifugal pumps for use in water and wastewater treatment plants.
432376.21	Power Horizontal Single-Acting Plunger Simplex Reciprocating Pumps	Plunger pumps for transporting thickened solutions such as sludge at water and wastewater treatment plants.
432513	Overhung Close-Coupled Submersible Centrifugal Pumps	Submersible sludge pumps and accessories for pumping return-activated sludge and waste-activated sludge from sumps in domestic wastewater-treatment plants.
434111	Bolted Steel Tanks	Factory-coated bolted-steel tanks for liquid storage.
434113	Welded Steel Tanks	Welded steel tanks for liquid storage.
434145	Fiberglass Reinforced Plastic Tanks	Fiberglass-reinforced plastic tanks for chemical storage.
434221	Welded Steel Pressure Tanks	Welded steel pressure tanks for storage of liquids under low and moderate pressures.

DIVISION 44 - POLLUTION AND WASTE CONTROL EQUIPMENT

443121	Odor Control Biofilters	Active and passive biofilters and components for odor control.
443133	Odor Control Bioscrubbing Equipment	Wet scrubbers of the packed tower design for odor control at a wastewater treatment plant.

DIVISION 46 - WATER AND WASTEWATER EQUIPMENT

460753	Packaged Wastewater Treatment Equipment	Packaged wastewater treatment equipment based on a plant using the extended aeration process, capacity range 3,000 to 150,000 gal. per day (11 to 568 cu. m per day).
462113	Chain-and-Rake Bar Screens	Channel-mounted, mechanically cleaned, chain-and-rake type bar screens for collection and removal of coarse solids from wastewater.
462133	Rotary Drum Screens	Rotary drum screens for use in a wastewater-treatment plant.
462156	Wedge Wire Screens	Wedge-wire screens for liquid/solid separation, straining and filtering, water collection and distribution, and surface water intakes.
462171	Trash Raking Equipment	Grab-style trash raking equipment and accessories.
462173	Screenings Washing and Compacting Equipment	Wastewater screenings washer/compactors and accessories.
462179	Screenings Storage Containers	Dewatering containers for the collection, storage, dewatering, and transport of wastewater screenings.
462313	Chain-and-Bucket Grit Removal Equipment	Chain-and-bucket grit removal equipment and accessories.
462316	Chain-and-Flight Grit Removal Equipment	Chain-and-flight ("chain-and-scraper") grit removal equipment and accessories.
462323	Vortex Grit Removal Equipment	Vortex grit removal equipment and accessories.
462327	Cyclone Degritters	Cyclone degritter (hydrocyclone) equipment and grit slurry feed pump.

Section No.	Section Title	Section Description
462333	Aerated Grit Removal Equipment	Aerated grit removal equipment, including airlift pump and screw conveyor.
462363	Grit Classifying and Washing Equipment	Grit classifiers, washers, and accessories.
462366	Grit Storage Containers	Dewatering containers for the collection, storage, dewatering, and transport of wastewater grit.
462413	Macerators	Macerators for use in a wastewater treatment plant.
462416	Comminutors	Comminutors for use in a wastewater-treatment plant, including rotating-drum type, rotating-disc type, conical type, and oscillating type.
462423	Inline Grinders	Inline grinders for use in a wastewater-treatment plant.
462433	Open-Channel Grinders	Inline grinders for use in a wastewater-treatment plant.
462436	Modular Grinding, Screening, and Compacting Equipment	Modular equipment that combines an open-channel grinder with a conveyor that moves reduced-size solids through screening, washing, and compacting processes.
462513	Coalescing Oil-Water Separators	Underground, coalescing-type, fiberglass oil-water separators of capacity from 600 gal. to 30,000 gal. (2 300 L to 113 500 L).
462516	API Oil-Water Separators	Oil-water separators, designed under API standards, to separate gross amounts of oil and suspended solids from wastewater effluents.
462523	Grease Traps	Grease traps (also referred to as "grease interceptors").
462543	Tipping Trough Scum Skimming and Removal Equipment	Tipping (rotating) trough scum skimmers for use in primary and secondary clarifiers at wastewater treatment plants.
463111	Chlorine Gas Feed Equipment	Vacuum-regulated; solution or gas feed; automatic or manual switchover; programmable, fully automatic, semi-automatic, or manual chlorination controls.
463116	Ammonia Gas Feed Equipment	Vacuum-regulated feed equipment, using ammonia gas in high-pressure cylinders.
463143	Carbon Dioxide Gas Feed Equipment	Vacuum-regulated feed equipment, using carbon dioxide in high-pressure cylinders.
463153	Ozone Generating and Feed Equipment	Ozone generating and feed equipment for disinfection at a water or wastewater treatment plant.
463156	Liquid Oxygen Storage and Feed Equipment	Liquid oxygen tanks, atmospheric vaporizers, and accessories for field applications.
463159	Cleaning Requirements for Oxygen Equipment	Guidelines for cleaning of liquid oxygen tanks and high-pressure gaseous oxygen containers.
463183	Gas Chemical Feed Accessories and Safety Equipment	Control panels, personal protective equipment, emergency showers and eye and face washers, warning signs, self-contained breathing apparatus, and emergency retrieval equipment.
463313	Sodium Hypochlorite Generating Equipment	Self-contained sodium hypochlorite generators and accessories.
463333	Polymer Blending and Feed Equipment	Self-contained units to supply blended liquid polymer to supply process equipment. Included are blending unit and feed system, booster and metering pumps, skid-mounted supports, valves and piping, flow meters, and control panel.
463341	Liquid Chemical Feed System Coordination and Integration	Descriptions and integration of control schemes for integration of liquid chemical feed systems as specified in other Sections, including special submittals and data sheets; control panels; and installation requirements.
463342	Diaphragm-Type Metering Pumps	Electronically controlled, solenoid-actuated-diaphragm-type chemical feed pumps and accessories.
463344	Peristaltic Metering Pumps	Peristaltic feed pumps for feeding various chemical solutions.
463346	Progressing Cavity Metering Pumps	Progressing-cavity-type chemical feed pumps and accessories.
463348	Lobe Metering Pumps	Lobe-type chemical feed pumps and accessories.

Section No.	Section Title	Section Description
463353	Drum Pumps	Positive-displacement drum pumps with electric or air motors, used to transfer chemicals and other liquids from drums and barrels.
463373	Liquid Chemical Diffusers	Diffusers and injectors for discharging liquid chemicals into an open channel or into a pipe.
463383	Liquid Chemical Feed Accessories and Safety Equipment	Basic materials and equipment for liquid chemical feed equipment, including control panels; personal protective equipment; emergency showers; emergency eye and face washers; emergency combination showers with eye and face washers; and equipment supports.
463613	Storage Silos	Bolted or field-welded steel storage silos for the bulk storage of dry chemicals to be used in water and wastewater treatment processes.
463623	Dry Chemical Weighing Equipment	Scales for the weighing of bulk dry chemicals for use in water and wastewater treatment processes.
463633	Volumetric Feed Equipment	Equipment for volumetrically feeding dry chemicals to be used in water and wastewater treatment processes.
463636	Gravimetric Feed Equipment	Equipment for feeding dry chemicals by gravity that will be used in water and wastewater treatment processes.
463643	Lime Slaking Equipment	Lime slaking equipment for conversion of calcium oxide to calcium hydroxide for use in neutralization and pH control at a water or wastewater treatment plant.
463653	Chemical Tablet Feeding Equipment	Chemical tablet feeding equipment for chlorination and dechlorination systems used in water and wastewater treatment plants.
463683	Dry Chemical Feed Accessories and Safety Equipment	Basic materials and equipment for dry chemical feed equipment, including control panels; personal protective equipment; emergency showers; emergency eye and face washers; emergency combination showers with eye and face washers; and equipment supports.
464111	Rapid Mixers	Rapid mixers for mixing chemicals in the process flow stream.
464117	Inline Static Mixers	Inline static mixers for mixing chemicals in the process flow stream.
464121	Jet Mixer Equipment	Jet mixers for mixing chemicals within a tank.
464123	Submersible Mixers	Propeller-type submersible mixers for mixing tank contents.
464126	Floating Mechanical Mixers	Floating-type mechanical mixers and accessories for wastewater treatment facility aeration chambers, ponds, or lagoons.
464127	Paddle Mixers	Paddle mixers for use as dry chemical mixers, sludge neutralization, and conditioning of powders and ash.
464146	Portable Tank Mixers	Portable mixers and accessories for mixing of liquids in field applications.
464311	Chain-and-Flight Clarifier Equipment	Chain-and-flight ("chain-and-scrapers") clarifier equipment and accessories.
464314	Traveling Bridge Clarifier Equipment	Traveling bridge clarifier equipment and accessories, including clarifier mechanism, sludge collector assembly, effluent trough and weir assembly, weirs and baffles, and scum removal system.
464321	Circular Clarifier Equipment	Peripheral- or center-feed circular clarifier equipment, including access platform, troughs and weirs, weirs and baffles, and influent channel and feedwell.
464363	Dissolved Air Flotation Equipment for Water and Wastewater Treatment	Dissolved air flotation (DAF) equipment and accessories for water treatment facilities.
464373	Tube Settlers	Tube-type settlers and accessories for water or wastewater treatment facilities.
464376	Inclined Plate Settlers	Inclined-plate-type settlers and accessories for water or wastewater treatment facilities.
465111	Fixed Mechanical Aerators	Mechanical surface aerators permanently attached within a tank or basin.

Section No.	Section Title	Section Description
465113	Floating Mechanical Aerators	Mechanical surface aerators harnessed or moored and floating in a basin or lagoon.
465117	Jet Aeration Equipment	Jet aerators for use in a water or wastewater treatment plant to transfer oxygen to a liquid or sludge by injecting process liquid and air through one or more nozzles (venturis).
465121	Coarse Bubble Diffusers	Coarse-bubble, ceramic, aeration diffusers for use in water and wastewater treatment plants.
465123	Swing-Type Channel Aeration Equipment	Retrievable channel aeration equipment and lifting mechanisms for use in water and wastewater treatment plants.
465131	Flexible Membrane Tube Diffusers	Membrane tube diffusers (also called "candle aerators") for use in water and wastewater treatment plants.
465133	Flexible Membrane Disc Diffusers	Membrane disc diffusers for use in water and wastewater treatment plants.
465136	Ceramic Disc Fine Bubble Diffusers	Ceramic disc-type, fine-bubble diffusers for use in water and wastewater treatment plants, including supporting grid.
465146	Membrane Diffusers	Membrane aeration diffusers for use in water and wastewater treatment plants.
465323	Trickling Filter Rotary Distributor Equipment	Trickling filter rotary distributor arms and accessories for wastewater treatment facilities. Equipment distributes sewage over the filter bed by rotating only from the reaction thrust of sewage flowing through jets or nozzles in the distributor arms.
465324	Trickling Filter Media	Trickling filter media for wastewater treatment facilities. Both stone and plastic media are included.
465341	Intermittent Sand Filters for Wastewater Treatment	Intermittent sand filters, including media, piping, and accessories.
465349	Membrane Biological Reactors	Internal membrane biological reactors serving as a solids separation process.
466133	Microfiltration and Ultrafiltration Membrane Equipment	Components for microfiltration and ultrafiltration systems.
466141	Disc Cloth Filters	Disc cloth filters and accessories for use in wastewater treatment facilities.
466143	Rotary Drum Cloth Filters	Cloth filters and accessories for rotary drum vacuum filters used in wastewater treatment facilities.
466146	Automatic Backwash Cloth Filter Equipment	Automatic backwash cloth filters and accessories for water or wastewater filtration. Canister-type filter units are included, as well as larger filters that incorporate a modular set of cloth disks on a rotating assembly.
466153	Cartridge Filters	Cartridge filters and accessories for water or wastewater filtration.
466163	Bag Filters	Bag filters and accessories for water or wastewater filtration.
466173	Automatic Straining Equipment	Automatic self-cleaning straining equipment for continuous debris removal from piping systems that require uninterrupted flow.
466323	Reverse-Osmosis and Nanofiltration Membrane Equipment	Components for nanofiltration and reverse-osmosis systems.
466613	Closed-Vessel Low-Pressure/Low-Intensity Ultraviolet Treatment Equipment	Closed-vessel, low-pressure, low-intensity ultraviolet treatment equipment, including lamp assemblies, controls, and accessories.
466616	Closed-Vessel Low-Pressure/High-Intensity Ultraviolet Treatment Equipment	Closed-vessel, low-pressure, high-intensity ultraviolet treatment equipment, including lamp assemblies, controls, and accessories.
466623	Closed-Vessel Medium-Pressure Ultraviolet Treatment Equipment	Closed-vessel, medium-pressure ultraviolet treatment equipment, including lamp assemblies, controls, and accessories.
466653	Open-Channel Low-Pressure/Low-Intensity Ultraviolet Treatment Equipment	Open-channel, low-pressure, low-intensity ultraviolet treatment equipment, including lamp assemblies, controls, and accessories.

Section No.	Section Title	Section Description
466656	Open-Channel Low-Pressure/High-Intensity Ultraviolet Treatment Equipment	Open-channel, low-pressure, high-intensity ultraviolet treatment equipment, including lamp assemblies, controls, and accessories.
466663	Open-Channel Medium-Pressure Ultraviolet Treatment Equipment	Open-channel, medium-pressure ultraviolet treatment equipment, including lamp assemblies, controls, and accessories.
467113	Circular Gravity Thickeners	Circular gravity-thickener equipment and accessories, including thickener drive mechanism, walkway, scraper arms and solids collectors, and influent well.
467116	Gravity Belt Thickeners	Gravity belt thickeners used to reduce the volume of sludge by producing a concentrate for subsequent dewatering, treatment, or transport.
467133	Rotary Drum Thickening Equipment	Rotary drum thickeners used for thickening sludge in wastewater treatment facilities.
467146	Thickening Screw Press	Thickening screw presses and components for processing wastewater residuals.
467621	Belt Filter Presses	Belt filter presses and accessories.
467623	Plate-and-Frame Filter Presses	Plate-and-frame type filter presses with appurtenances and accessories.

MasterFormat® is produced jointly by The Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC). U.S. copyright is held by CSI and Canadian copyright by CSC. All Rights Reserved. For more information on MasterFormat visit www.MasterFormat.com