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CIRCULAR MECHANICAL CLARIFIER
CENTER FEED
EQUIPMENT SPECIFICATIONS

Pollution Control Systems (PCS) is pleased to provide the following equipment specifications for your consideration.

One (1) prefabricated center feed circular mechanical clarifier, complete and ready for operation in accordance with the plans and specifications stated herein. The clarifier shall be a Model CMC-_____ prefabricated steel package as manufactured by Pollution Control Systems, Inc.

The clarifier shall be _____ feet in diameter and have a _____ side water depth, as shown on the drawing.

The system shall be factory assembled, so far as possible and include: tank, bridge, inlet pipe, adjustable sludge scrapers, drive shaft, gear drive unit, control panel, effluent trough, sludge well, scum trough and surface skimmer.

A. Contractor Responsibilities

The field contractor shall be responsible for the following:

- Furnish level foundation pad to set the system on.
- Field unloading and setting the clarifier on its foundation pad.
- Field assembly including bolting or welding when required due to shipping restrictions.
- Attach system to foundation pad by anchoring.
- Install drain plugs and fill tankage with water to prevent floatation.
- Supply and install clarifier bottom grouting. (Concrete for grouting by contractor)
- Assemble into positions, at the location shown on the plans, any equipment that has been disconnected at the factory for shipping purposes (handrails, ladders, gear drive, control panel).
- Interconnection of piping and wiring which may have been disconnected at the factory for shipping purposes.
- Tie-in of all piping, power and wiring connections to site utilities.
- Touch-up painting of any areas damaged during installation.

B. Materials of Construction

The clarifier vessel wall shall be fabricated of 1/4" structural steel grade ASTM designated carbon steel plates joined by arc welding with fillets of adequate section for the joint involved. All walls shall be continuous and watertight and shall be supported by structural reinforcing members where required. Fabrication and erection shall conform to the appropriate requirements of "AISC Specification for Buildings". Connections shall conform to the requirements of the American Welding Society's Code and shall develop the full strength of the member.

All tank piping shall be Schedule 40 painted steel, unless specified otherwise.

The clarifier will be transported to the jobsite in ____ ( ) sections. The contractor will be responsible for field assembly, including bolting or welding when required.

C. Support Bridge

The drive unit support and bridge shall consist of two structural members spanning the top of the tank including cross-supporting members, handrails and walkway. Field welding or bolting down shall anchor the 1-1/4” diameter schedule 40 pipe handrails to the structural member. The bridge walkway surface shall be fabricated with a non-skid checkered plate.

D. Surface Preparation and Coating

All vessel surfaces to be painted will be properly prepared in a workmanlike manner to obtain a smooth, clean and dry surface. All rust, dust, and mill scale, as well as other extraneous matter, will be removed from the interior surfaces by means of near white sandblast SSPC-SP10. All external surfaces will be commercial sandblasted to SSPC-SP6. All interior and exterior vessel surfaces will be painted with 8-10 mils total dry film thickness (TDFT) of a coal tar epoxy type coating.

E. Inlet Connection

The influent connection of the clarifier will be located as shown on the plans and will consist of one ____ diameter flat-faced flanged pipe connection.

A ___” diameter inlet pipe shall be provided for transfer of influent into the inlet stilling well. The inlet pipe shall be installed from the influent connection of the tank and elbowed up into the stilling well in the center of the clarifier.

F. Inlet Stilling Well

The influent well will be _____ diameter to cut down the influent velocity and prevent short circuitry. The stilling well shall be a rotating type supported off the drive torque tube and be painted the same as the main vessel.

G. Sludge Scraper Assembly

The sludge scraper assembly shall consist of two scraping arms fabricated of steel channels and a steel pipe torque tube.

The scraper arm assembly can be adjusted vertically and horizontally using the threaded rods with turnbuckles attached to the torque tube. Each scraper arm shall be fabricated from steel channels and angles and have an adjustable neoprene squeegee blade attached to allow for sufficient movement of sludge into the center sludge collector pit.

H. Clarifier Bottom

The bottom of the clarifier shall be grouted concrete that conforms to the dimensions shown on the drawings. Design and installation of concrete grout shall be the responsibility of the installing contractor.

I. Skimmer

A surface skimmer, consisting of a steel channel with neoprene blade attached, shall be provided to move the surface scum to the scum trough. The surface skimmer shall be attached to the torque tube and shall rotate with the sludge scraper assembly. A scum trough shall be fabricated of steel plate and will collect the scum from the surface skimmer and remove it by means of a ___ diameter scum discharge pipe.

J. Effluent Weir Assembly

A steel weir trough with adjustable serrated weir plates will be provided to adjust for even flow of the effluent around the entire circumference of the clarifier. The weir trough shall be welded to the clarifier wall.

The effluent connection of the clarifier system shall be located as shown on the plans and shall consist of one _____ diameter pipe flange connection.

K. Drive Unit

The drive unit consists of a vertical weatherproof motorized triple reduction speed reducer, driven by a 0.5 hp, _____, ___ phase motor. The speed reducer will include an integral torque control unit. The drive unit will be flanged coupled to the scraper torque shaft. The drive and torque unit will be designed and set for a running torque of _____ inch pounds at the torque shaft, and a torque of _____ inch pounds for motor cut-off. The torque control unit includes contacts for remote hook-up of an alarm light or bell for indication of an overload condition.

The motor to gear reducer ratio to drive the scraper arm will be at a speed not to exceed 8 feet per minute at the tip of the sludge scraper arm.

L. Control Panel

A NEMA 4X fiberglass control panel shall be provided for field mounting to the handrails adjacent to the drive unit. The control panel shall be wired for ____ volt, ___ phase, ___ cycle service and include an ON-OFF switch and overload alarm.

M. Handrails

Enamel painted handrails constructed of 1-1/4" diameter schedule 40 pipe, shall be provided for field connecting to the bridge.

N. Access Ladder (Above Grade Installations)

An access ladders will be provided on above grade installations for access to the bridge on top of the clarifier. Ladders can be provided in standard painted carbon steel or aluminum.

O. Cathodic Protection (Below Grade Installations)

Magnesium Anode Packages for cathodic protection will be provided for tanks partially or fully buried. Anodes will be buried by the field contractor and adjacent to the sides of the vessel and securely connected thereto by heavy copper wire in good electrical contact with the connector lugs on the steel vessel.

P. Guarantee

Pollution Control Systems, Inc. shall guarantee for one (1) year from the date of shipment that the vessel and all component equipment shall be free from defective materials and workmanship. The manufacturer shall furnish replacement parts for any component considered in the opinion of the manufacturer to be defective, whether of his or other manufacturer during this guarantee period.