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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | November 13, 2009 | Modified ‘Related Section’ |
| 3 | March 15, 2011 | Minor changes from Legal |
| 4 | June 5, 2012 | Added References and Replacement Parts Sections |
| 5 | July 3, 2012 | Reformatted to Remove White Space |
| 6 | April 11, 2016 | Phase 1 Update(AV) |
|  |  |  |

NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

**Notice:** This Document hardcopy must be used for reference purpose only.

**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

### [Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.

### Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.

### Contractor is responsible for coordination of the Work.

### This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]

### [List Sections specifying installation of products supplied but not installed under this Section and indicate specific items.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Execution requirements for ...[item]... specified under this Section.

### [List Sections specifying products installed but not supplied under this Section and indicate specific items.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Product requirements for ...[item]... for installation under this Section.

### [List Sections specifying related requirements.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: [Optional short phrase indicating relationship].

#### Section 05500 – Metal Fabrications General

#### Section 15201 – Piping Support System

## Submittals

### Shop Drawings: Submit shop drawings before fabrication commences for each metal fabrication item, showing in large scale, fabrication details, thickness, anchors, location and finishes.

### Submit a welding procedure specification for each type of material.

### Samples: Submit two samples of each finish.

# PRODUCTS

## Materials

### Comply with Section 05500 – Metal Fabrications General.

## Finishes

### Comply with Section 05500 – Metal Fabrications General.

## Anchors and Fasteners

### Comply with Section 05500 – Metal Fabrications General.

## Fabrication - General

### Comply with Section 05500 – Metal Fabrications General.

## Fabrication - Pipe Support Steel Frames and Anchorage Assemblies

### Fabricate steel support frames and anchorage assemblies consisting of steel hollow section frames and support beams, steel support beams, steel angle supports, steel plate supports and fabricated clamps.

### Hot-dip galvanize steel supports and anchorage assemblies after fabrication.

### The frames and anchor assemblies shall be design under Section 15201 – Piping Support System. Coordinate fabrication with Section 15201 – Piping Support System.

## Fabrication - Steel Frames For Clarifier Baffle Plates

### Fabricate stainless steel frames for wooden baffle plates and secure to structure using stainless steel anchor bolts as indicated on the Drawings.

## Fabrication - Waste Water Sampling Wells.

### Provide sampling well [     ] mm diameter 304 stainless steel schedule 40 pipe with [     ] mm seepage ring cast in concrete. Locations as shown on the Contract Documents. Provide threaded caps for the sampling wells.

## Fabrication – Stainless Steel Weir Plates

### Fabricate [     ] mm thick adjustable stainless steel weir plates as indicated on the Contract Documents. Design the plates with slotted holes on [     ] mm centres.

### Fabricate a stainless steel wall sleeve to receive weirs and provide square head stainless steel bolts, nuts and washers to fasten the weir in place.

## Fabrication – Stainless Steel Frames For Clarifier Baffles

### Fabricate stainless steel weir frames and plates as indicated on the Contract Documents for the clarifiers inlet bafflers.

## Fabrication – Stainless Steel Sampling Sinks And Hoods

### Fabricate sludge sampling sinks and hoods as detailed on Contract Documents.

### Fabricate sampling sinks with the following features:

#### Fabricated from [     ] mm thick Type 304 stainless steel

#### Continuous welds for joints

#### Bowls [     ] mm diameter by [     ] mm deep with conical bottoms and [     ] mm drains

#### Anti splash guard rims

#### Flushing spray rings

#### [     ] mm flushing hose with hand gun type spray nozzle

#### Piping connections of Type 304L stainless steel quick disconnect couplings by [     ].

#### Fabricate hoods with following features:

#### Fabricated from [     ] mm aluminum sheet with aluminum angle framing

#### [     ] mm plexiglass doors, Type 304 stainless steel piano hinges and aluminum door knobs

#### Cut outs as required for piping.[     ] mm aluminum duct outlet with volume control damper.

## Miscellaneous Metal Fabrications for Equipment and Piping

### Fabricate miscellaneous metal fabrications, mechanical equipment and piping as detailed on the Contract Documents

## Man Ways (Submarine Doors)

### Provide watertight compartments/cells access man ways in the Building as indicated on the Contract Documents and as specified with the following requirements:

### Wall thimbles: One-piece construction wall thimbles as shown on the Contract Documents.

### Access covers and thimble flanges to be designed to provide a seating pressure of [     ] metres.

### Thimble flange: machine faced to a plane.

### The [     ] mm (     ") thick wall flange to be carbon steel stainless steel welded to the exterior face of the wall thimble such that at no location does the carbon steel wall flange come in contact with the stainless steel wall thimble. The wall flange to be provided at the installed, centreline of concrete wall.

### All man way material to be 316 L stainless steel with a minimum thickness of [     ] mm (     ").

### The man way to be quick opening, hidden hinged and provided with suitable lifting lugs

### The free space, man way opening to be [     ] mm (     ").

### The closure door to be ASME *[Consultant to provide ASME details and amend as appropriate]* dished ([     ] mm) to accommodate the [     ] metre liquid depth requirement.

### The closure bushing to be bronze.

### [     ] mm (     ") diameter steel handle to be provided for sealing the dished, man way door. The torque required to seal the door (watertight) to be equivalent to normal industry/operations standards/requirements.

### The outside diameter of the man way to be [     ] mm (     ").

### Gaskets to be compatible with the tank contents. The gasket material to be [     ]. The gaskets to be readily replaceable.

### Two stainless steel handles to be provided for pulling the swing, closure door closed.

### The wall thimble to extend a minimum of [     ] mm (     ") beyond the interior face of the concrete tank wall and 25 mm beyond the exterior face of the concrete wall.

### All edges to be ground to a hand wiped smooth finish.

### One spare replacement door gasket and one spare bronze closure bushing to be provided for each man way supplied and installed.

### Suppliers:

## Fasteners

### Wetted or Submerged:

#### Zone below the elevation of:

##### The top face of channel walls and cover slabs.

##### The top face of aeration basin walkways.

##### The top face of clarifier walkways.

##### The roof of the digester, including structure piping penetrations.

##### The liquid surface or within [     ] mm above top of liquid surface.

##### The top of tank wall or under the tank cover.

#### Surfaces exposed to water, wastewater, sludge, scum, supernatant, digester gas and process side streams etc.

### Provide 316 stainless steel anchors, 304 stainless steel bolts and nuts for all mechanical installations in wetted or submerged conditions.

# EXECUTION

## Installation - General

### Comply with Section 05500 – Metal Fabrications General.

## Installation – Anchors and Fasteners

### Comply with Section 05500 – Metal Fabrications General.

## Installation – Aluminum Angle And Aluminum Plate

### Apply latex mortar to aluminum angle and aluminum bent plate and secure in place with drilled-in stainless steel fasteners at [     ] mm o.c. maximum.

## Installation - Pipe Support Steel Frames and Anchorage Assemblies

### Connect support beams to existing beams with fabricated clamps except where indicated otherwise in the Contract Documents. Connect support frames and beams to existing columns and structural slab as indicated.

## Installation - Tank Access Manways and Covers

### During concrete placement, brace the manhole and manway thimbles internally to prevent deformation.

### Install bolts before concrete placement.

### Ensure that surfaces in contact with concrete are free of paint, oil and grease before concrete placement.

## Installation – Sampling Sinks and Hoods

### Mount sampling sink and hoods on sampling sinks. Seal joints.

## Installation - Man Ways (Submarine Doors)

### Brace man way thimbles internally to prevent deformation during concrete placement.

### Ensure surfaces in contact with concrete are free of oil, grease, etc., prior to pouring concrete.

### The man way to be installed level, perpendicular to the wall and at the location and elevation as shown on the drawings.

### The installed man way to be watertight.

### The man ways to be inspected and any repairs carried out by the Contractor after each compartment/cell has been filled with [primary sludge/digested biosolids Consultant to amend], to the satisfaction of the Consultant.

**END OF SECTION**