

## SULPHIDE PRECIPITATION FLOCCULATION TANKS

### EXECUTIVE SUMMARY

The flocculation mixing tank system is comprised of a two-chamber stainless steel tank, equipped with two agitators to ensure proper mixing of a slurry with a flocculant before discharging into a thickener. The feed is first introduced into the smaller compartment, combined with a flocculant, and then overflows into the flocculation chamber.

The flocculation mixing tank was originally intended to be incorporated into a solid-liquid separation circuit to recover precipitated mixed-sulphides from an ammonium sulphate solution discharged from a hydrogen sulphide reaction tank.

The design conditions of the flocculation mixing system are atmospheric pressure at 203°F (1.0 bar at 95°C) and it is constructed from SA240-316L stainless steel. The overall dimensions of the mixing tank are 63 inches long by 44 inches wide by 72.5 inches tall with a 0.25 inch wall thickness (except for the roof which is 0.19 inch).

The first, smaller chamber is equipped with hydrofoil style agitator designed to operate at 250 rpm to provide proper mixing of the slurry and flocculant. The second, larger compartment is equipped with a rake style agitator designed to operate at 9 rpm to promote the formation of large flocculated solids.

**Two identical mixing tanks were constructed.**

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### PARTS LIST

TWO IDENTICAL FLOCCULANT MIX TANK SYSTEMS ARE AVAILABLE

Major equipment in each package includes:

- Two chamber flocculation mix tank;
- Mixing agitator assembly;
  - ½ HP motor, gearbox, coupling, mechanical seal and VFD
  - Hydrofoil agitator design
- Rake agitator assembly;
  - ¾ HP motor, gearbox, coupling, mechanical seal and VFD
  
- Flocculation mix tank is fully assembled; and
- Detailed list of miscellaneous parts available upon request.

Components not included in either the package:

- Instrumentation;
- External connecting piping;
- Electrical cabling; and
- Valves and fittings.

**PHOTOGRAPHS**



Figure 1. Photograph of the two fully assembled flocculation mix tanks

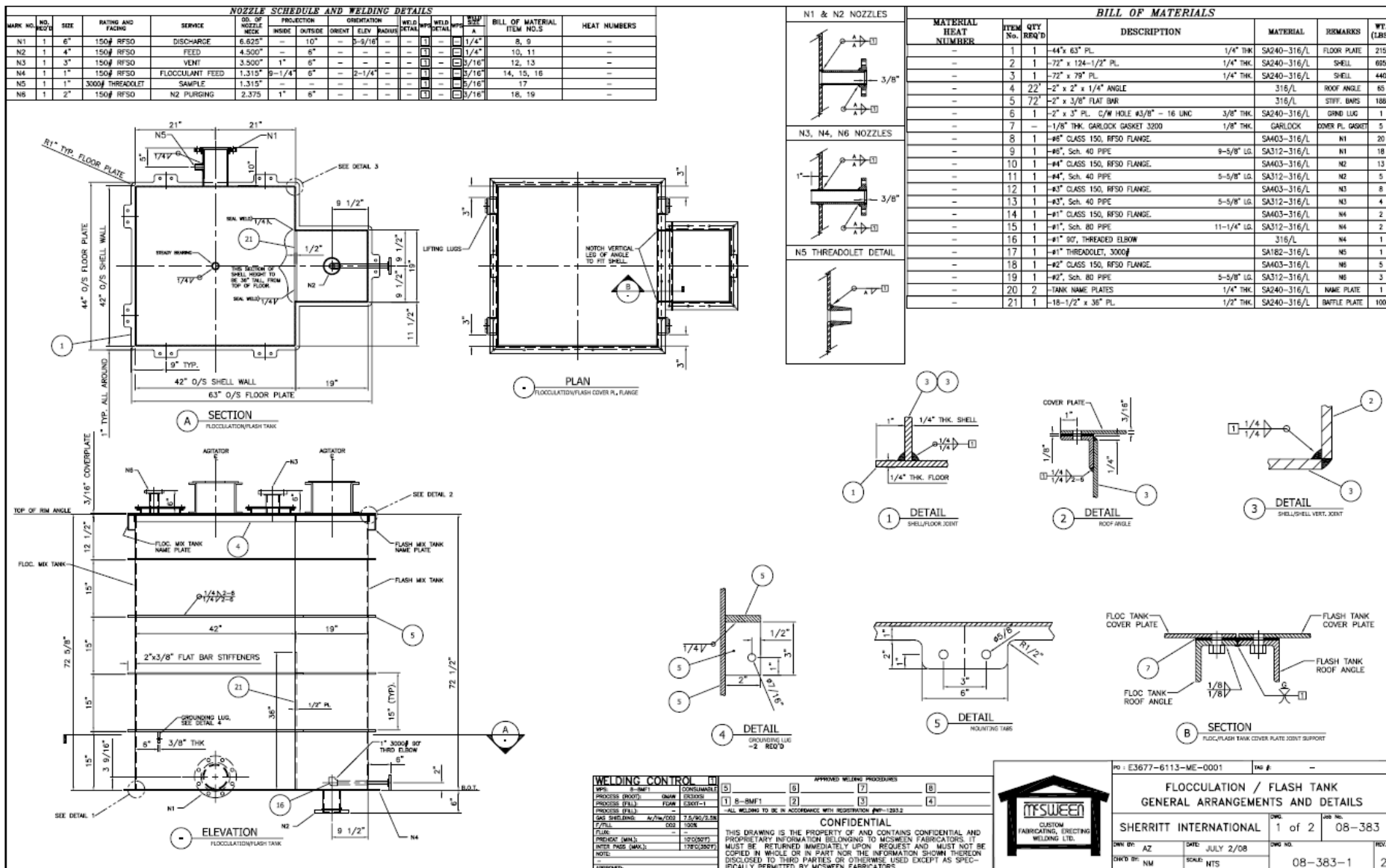


Figure 2. Photograph of the two fully assembled flocculation mix tanks



Figure 3. Photograph of the top of the flocculation mix tank, highlighting the installed agitator gearboxes and motors (covered in plastic)

MECHANICAL DRAWINGS



WELDING CONTROL			
SPK	CONSUMER	APPROVED WELDING PROCEDURES	
PROCESS (WELD)	UNAW	EX-1	
PROCESS (FLAM)	EX-1		
PROCESS (FILL)	EX-1		
DATE SUBMITTED	4/24/2008	2/25/09/2/28	
DATE	000	1008	
FLUX	-	-	
PREPARE (MKS)	07020071		
ENTER DATE (MKS)	1780328271		
NOTE:			
APPROVAL:			

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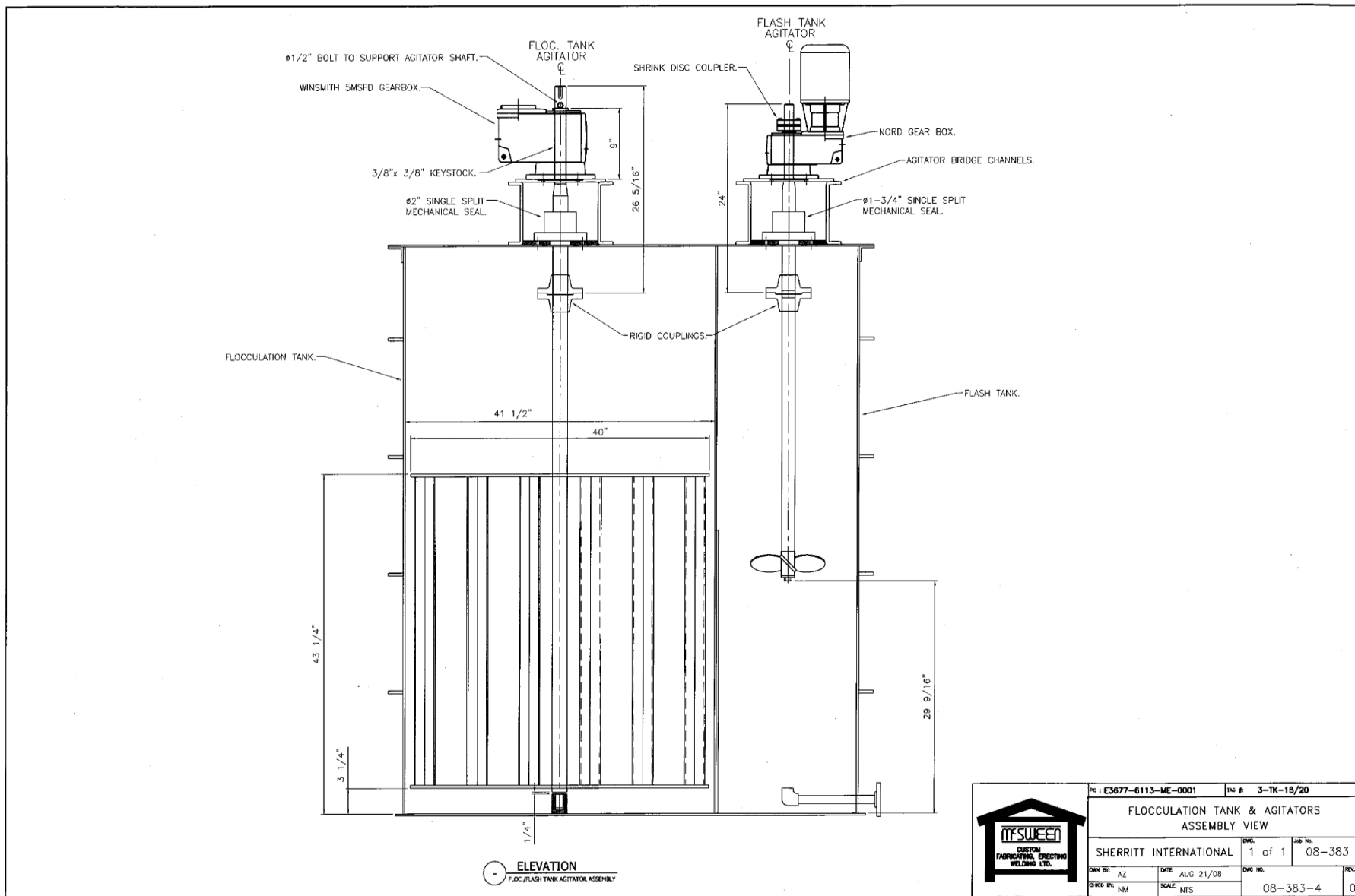
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NO: E3677-6113-ME-0001	FIG #:	-
<b>FLOCCULATION / FLASH TANK GENERAL ARRANGEMENTS AND DETAILS</b>		
SHERRITT INTERNATIONAL		JOB NO: 08-383
OWN BY: AZ	DATE: JULY 2/08	DWG NO: 1 of 2
DWG BY: NM	SCALE: NTS	REV: 08-383-1 2

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MECHANICAL DRAWINGS



NO: E3677-6113-ME-0001		TAG # 3-TK-18/20	
FLOCCULATION TANK & AGITATORS ASSEMBLY VIEW			
SHERRITT INTERNATIONAL		DRG. 1 of 1	JOB NO. 08-383
DRW BY: AZ	DATE: AUG 21/08	DRG. NO.	REV.
CHKD BY: NEM	SCALE: NTS	08-383-4	0