

The **NORCHEM Model A*1100 ASA** emulsification unit is designed to meter and emulsify ASA (alkenyl succinic anhydride) with an emulsifying polymer or modified grafted liquid starch at emulsion flowrates up to 20 gpm (1200 GPH) @ 1-5% concentration and up to 30 GPH (2000 ml/min) of neat ASA. The **A*1100** is modular in design consisting of a turbine hydraulic assembly, neat ASA and polymer / liquid starch metering modules, control panel and Powder Coat or SS base.

MODEL A*1100 SYSTEM SPECIFICATIONS:

FRAME:	BASE:	42" W X 42" L X 64" H
	CONSTRUCTION:	POWDER COATED MILD STEEL
PANEL:	ENCLOSURE:	NEMA 4X
TURBINE MODULE:	PUMP:	STAINLESS STEEL, 300 PSI OPERATING PRESSURE
	DRIVE:	10 HP AC FREQUENCY
	MOTOR:	460/3/60, 10 HP, 12.5 AMP, 0-4800 RPM, TENV, WASHDOWN DUTY
	SEAL:	PROPRIETARY FLOW THRU ENCAPSULATED CARBIDE/GRAPHITE
ASA/STARCH:	PUMP:	ROTARY GEAR, STAINLESS STEEL, CHEMICAL SERVICE
	DRIVE:	AC FREQUENCY
	MOTOR:	460/3/60, 0.5 HP, 1.2 AMP, 0-1000 RPM, TEFC, WASHDOWN DUTY
	CAPACITY:	0-2000 ML/MIN @ 80 PSI
SOLUTION OUTPUT:	PRIMARY FLOW:	0.25 – 2.0 GPM (15-120 GPH)
	SECONDARY FLOW:	1 – 20 GPM (60-1200 GPH)
	FLOWMETERS:	ABB MAGNETIC FLOW TUBES
	DISPLAYS:	DIGITAL
CONCENTRATION:	SOLUTION:	PRIMARY: 5 - 50%, VOLUME ON VOLUME
		SECONDARY: 0.2 TO 5.0%, VOLUME ON VOLUME
CONTROLS:	PLC:	ALLEN-BRADLEY MICROLOGIX 1500
	WATER:	LOW WATER FLOW ALARM AND FAILSAFE, MANUAL RESET
	LIQUID LEVEL:	CONDUCTIVITY-TYPE, 4 STAINLESS STEEL PROBE ASSEMBLY
UTILITIES:	ELECTRICAL:	460 VAC, 3 PHASE, 60 HERTZ, 30 AMP
	WATER:	30 GPM @ 50 PSI, COOL, CLEAN SOURCE

ENGINEERING SPECIFICATIONS:

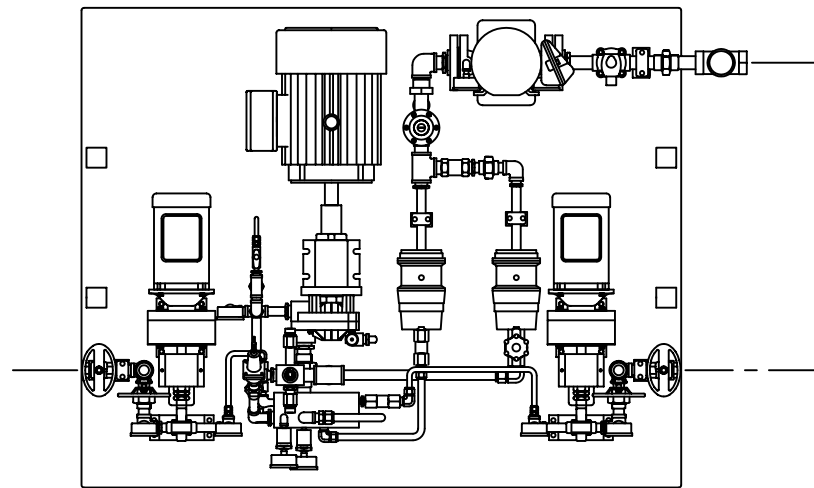
The NORCHEM Model A*1100 ASA emulsification unit is designed to meter and emulsify ASA and polymer or grafted liquid starch to create a stable emulsion with proper particle size and distribution for good sizing reactivity. The Model A*1100 features a dual element polymer/starch pre-conditioning injection system and internal auto flow functions to preserve emulsion formation and performance. The emulsifier system consists of a variable speed single stage frame mounted stainless turbine with a low pressure stainless manifold emulsifier block, AC variable speed ASA and Polymer/Starch injection pumps with analog following capabilities, Allen-Bradley PLC for DCS integration, primary and secondary water flow dilution headers. Additional instrumentation includes low water flow alarms and Norchem's EQM **E**mulsion **Q**uality **M**onitor real time laser monitor

NORCHEM**INC.****RIDGEPOINT TECH CENTER 8910 W. 192ND STREET MOKENA. IL 60448 708 478-4777**

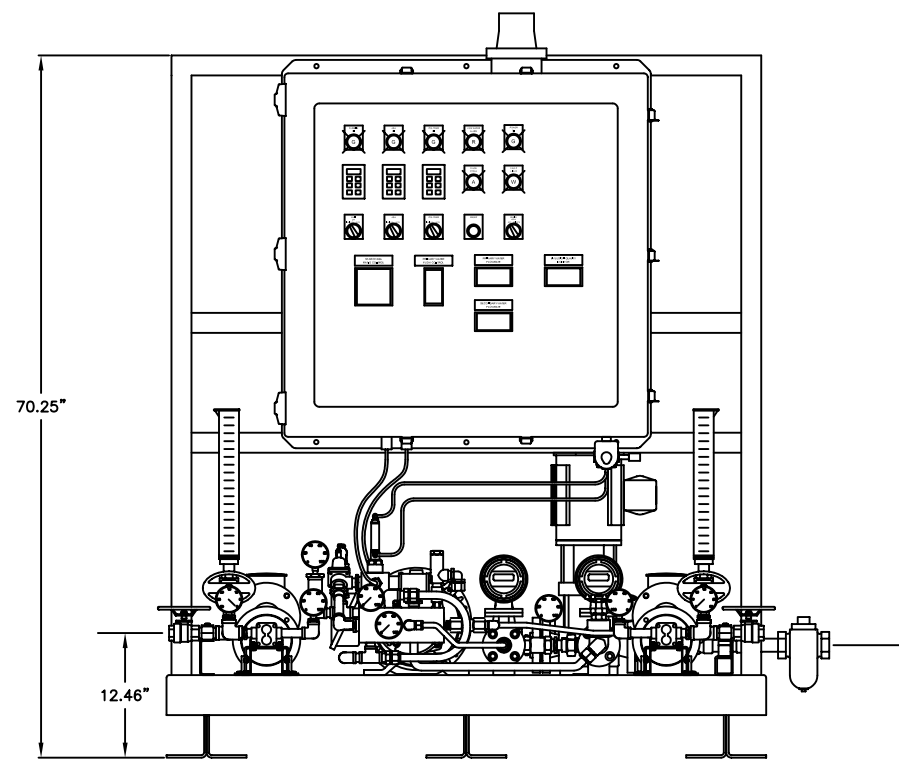
**PLAN &
ELEVATION**

A*1100_SPEC_D

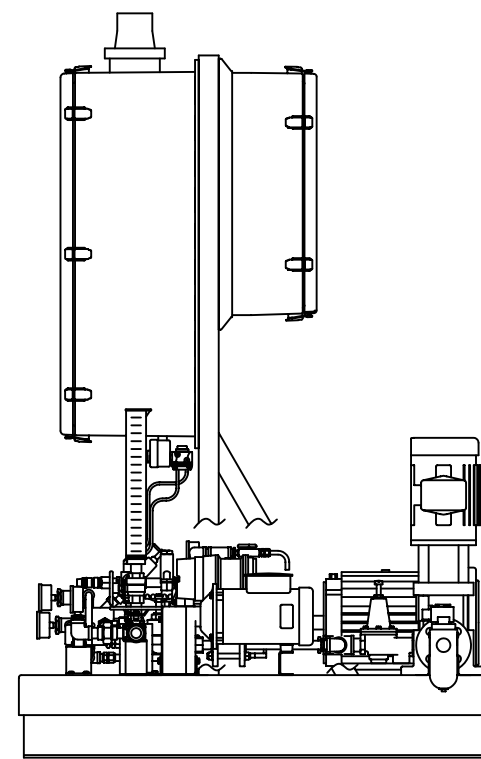
ASA EMULSIFICATION SYSTEMS



PLAN VIEW

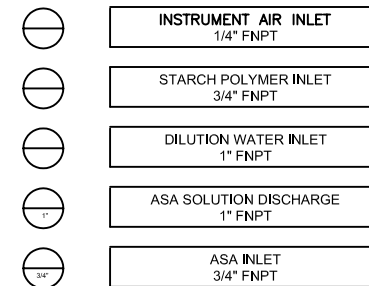


FRONT ELEVATION



RIGHT SIDE ELEVATION

NOZZLE CONNECTIONS



ELECTRICAL CONDUITS NOT SHOWN

ALL DIMENSIONS +/- 1/2"
CHANGES IN LAYOUT OR DIMENSIONING MAY
VARY DUE TO MODIFICATIONS AND/OR
DESIGN UPGRADE

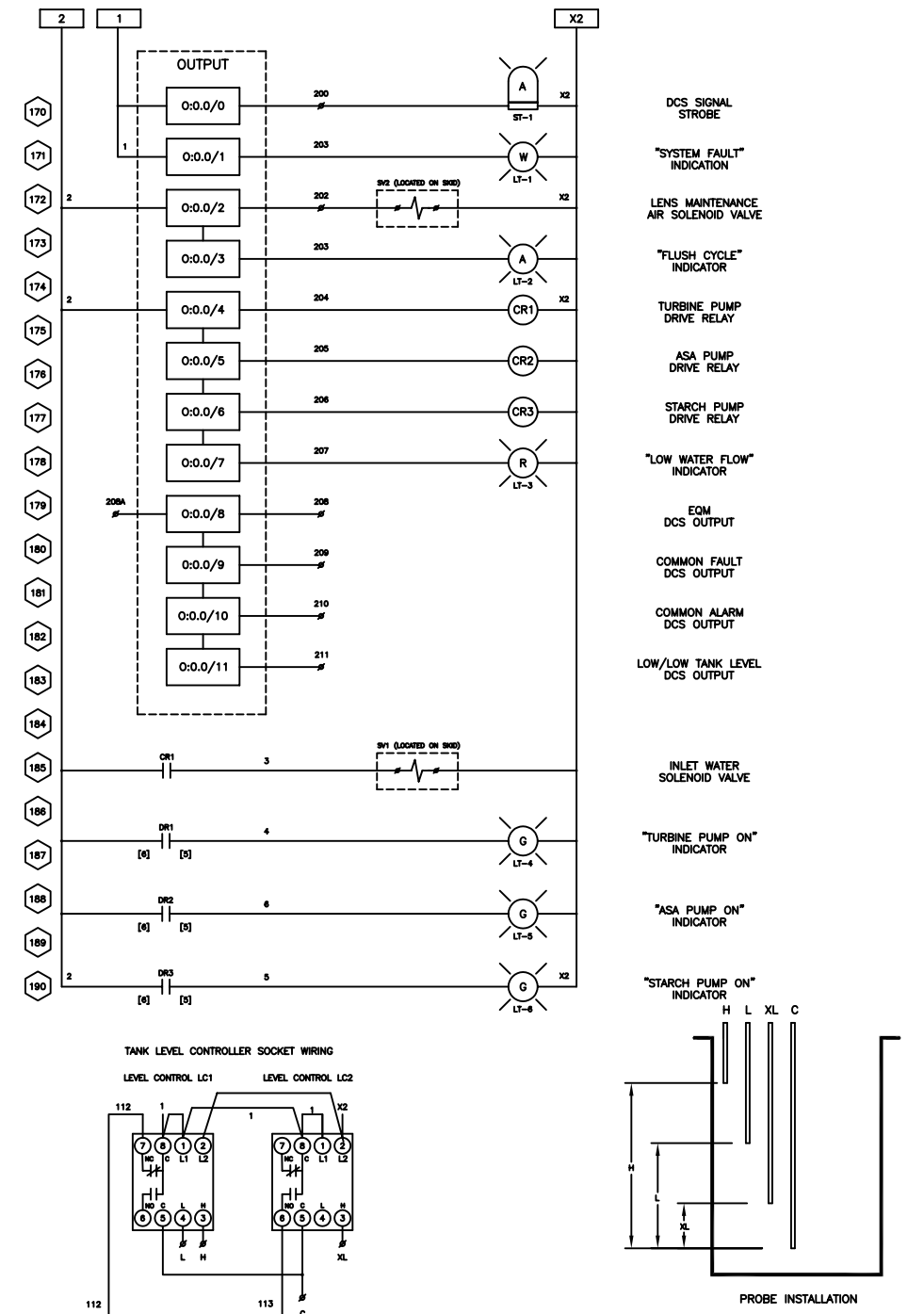
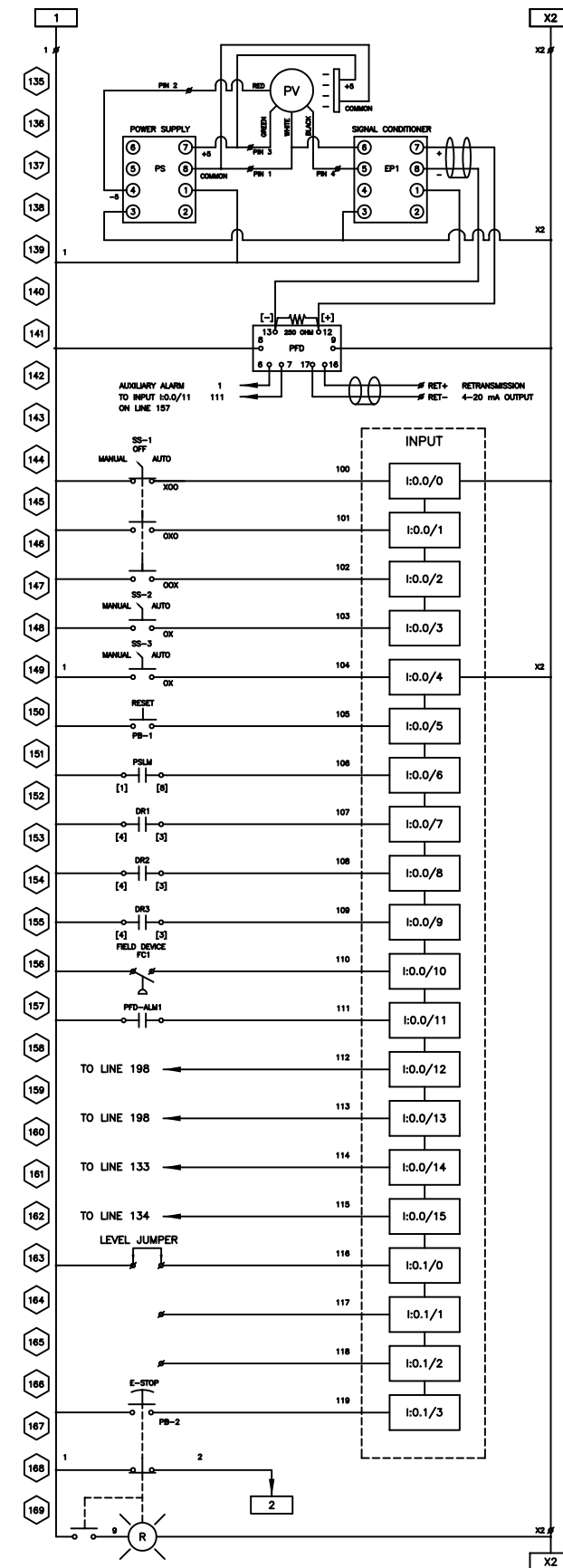
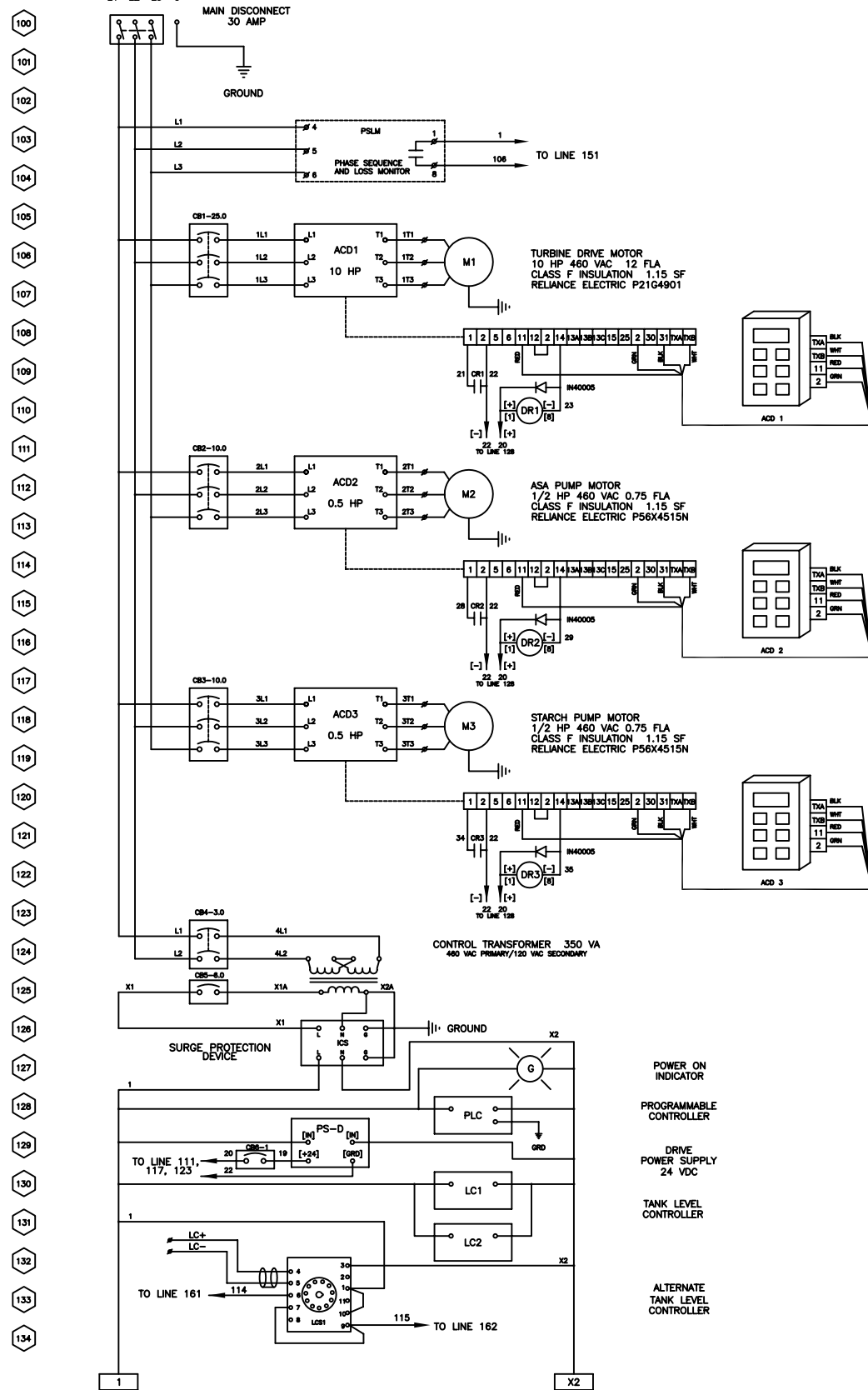
WEIGHT: 1100 LBS.

ASA EMULSIFICATION SYSTEM COMPONENT REFERENCE DETAILS		
ITEM	DESCRIPTION	PART NUMBER
1	STARCH INJECTION PUMP .38 GPM @ 450 RPM	
2	ASA INJECTION PUMP .50 GPM @ 3:1	
3	TURBINE PUMP .75 GPM @ 270 PSI	
4	INLET WATER BOOSTER PUMP	GRUNDFOS
5	STARCH INJECTION PUMP DRIVE MOTOR 3/4 HP @ 460 VAC	
6	POLYMER INJECTION PUMP DRIVE MOTOR 1.0 HP @ 460 VAC	G.E. MODEL E497
7	TURBINE PUMP MOTOR 10.0 HP @ 460 VAC	RELIANCE
8	NEAT STARCH SUPPLY VALVE	XV-750-SS 3/4"
9	NEAT ASA SUPPLY VALVE	XV-750-SS 3/4"
10	TURBINE PUMP PRESSURE RELIEF VALVE SET @ 270 PSI	
11	STARCH INJECTION CHECK VALVE 10 PSI	AL-3009-SD
12	INLET WATER SELENOID VALVE NEMA 4/7	
13	SECONDARY DILUTION BACKFLOW CHECK VALVE	
14	INLET WATER PRESSURE REDUCING VALVE	WATTS
15	ASA INJECTION CHECK VALVE	AC-3009
16	NEAT ASA / STARCH SUCTION GAUGE 30" VAC	AL-3007
17	NEAT ASA / STARCH INJECTION PRESSURE GAUGE 0-100 PSI	AL-3004
18	TURBINE PRESSURE GAUGE ISOLATED 0-100 PSI	
19	RECYCLE PRESSURE GAUGE ISOLATED 100 PSI	
20	MIXING PRESSURE REGULATOR	AL-3017
21	RECYCLE PRESSURE REGULATOR	AL-3017
22	SECONDARY DILUTION FLOW CONTROL REGULATOR	EATON
23	MAGNETIC FLOW METER PRIMARY	ABB
24	SECONDARY DILUTION WATER MAGNETIC FLOWMETER	ABB
25	EQM SENSOR ASSEMBLY	
26	EQM SENSOR LENS MAINTENANCE ASSEMBLY	ASC-4W0010
27	EQM SENSOR LENS MAINTENANCE AIR SOLENOID VALVE NEMA 4/7 ENCL.	ASC-4W0010C
28	ASA / STARCH CALIBRATION COLUMNS 2000 mL	NC-2000C
29	PREMIX MANIFOLD	NCI ASA-BLK
30	CONTROL PANEL NEMA 4X	
31	SAFETY DISCONNECT 600 VAC	ALLEN-BRADLEY
32	OPERATOR CONTROLS NEMA 4	NORCHEM
33	STAINLESS STEEL SUPPORT BASE 304L	NORCHEM
34	INLET WATER BASKET STRAINER	KECKLEY

**NORCHEM
INC.**

INCOMING POWER
480 VAC/3 PH/60 HZ
L1 L2 L3 G

NORCHEM INDUSTRIES
PRODUCT ENGINEERING
A*1100 ASA EMULSIFICATION SYSTEM
ELECTRICAL SCHEMATIC



		NORCHEM INC. 8910 W. 192nd STREET MOKENA, ILLINOIS 60448	
		A FOR INFORMATION SYM. REVISIONS CUSTOMER NORCHEM INC. MOKENA, IL 60448	12-03-03 DATE
DESCRIPTION NORCHEM A*1100 ASA EMULSIFIER SYSTEM ELECTRICAL SCHEMATIC		CONTRACT NUMBER -	
DWL GB CHKD GB APP'D RWD CAUTION: A_1100_SPEC_E		PROJECT NUMBER TYPICAL DRAWING NUMBER NCI-060898-3A REV A	

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SCALE NONE