

P-4.0
SHEET 1 OF 1

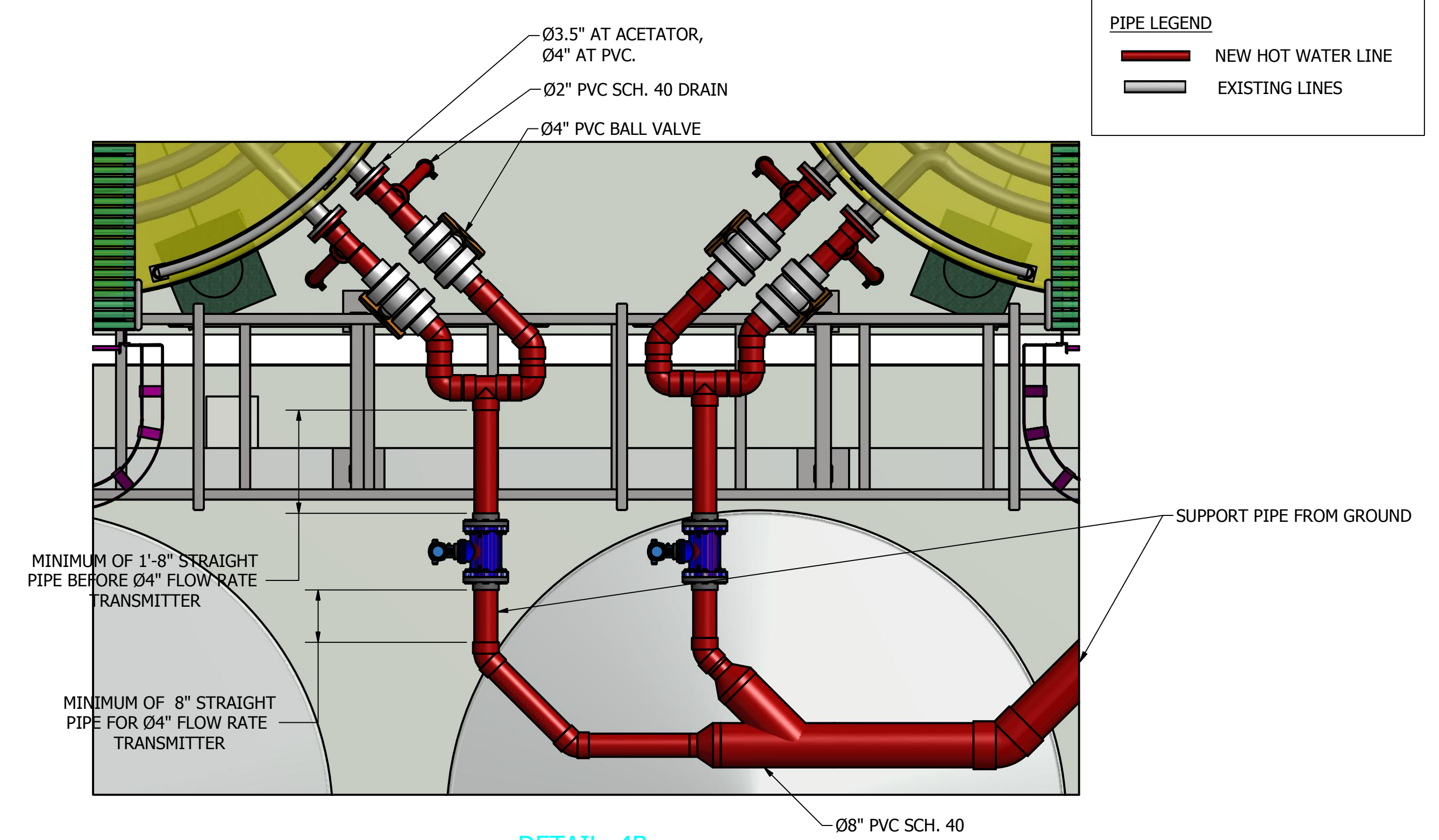
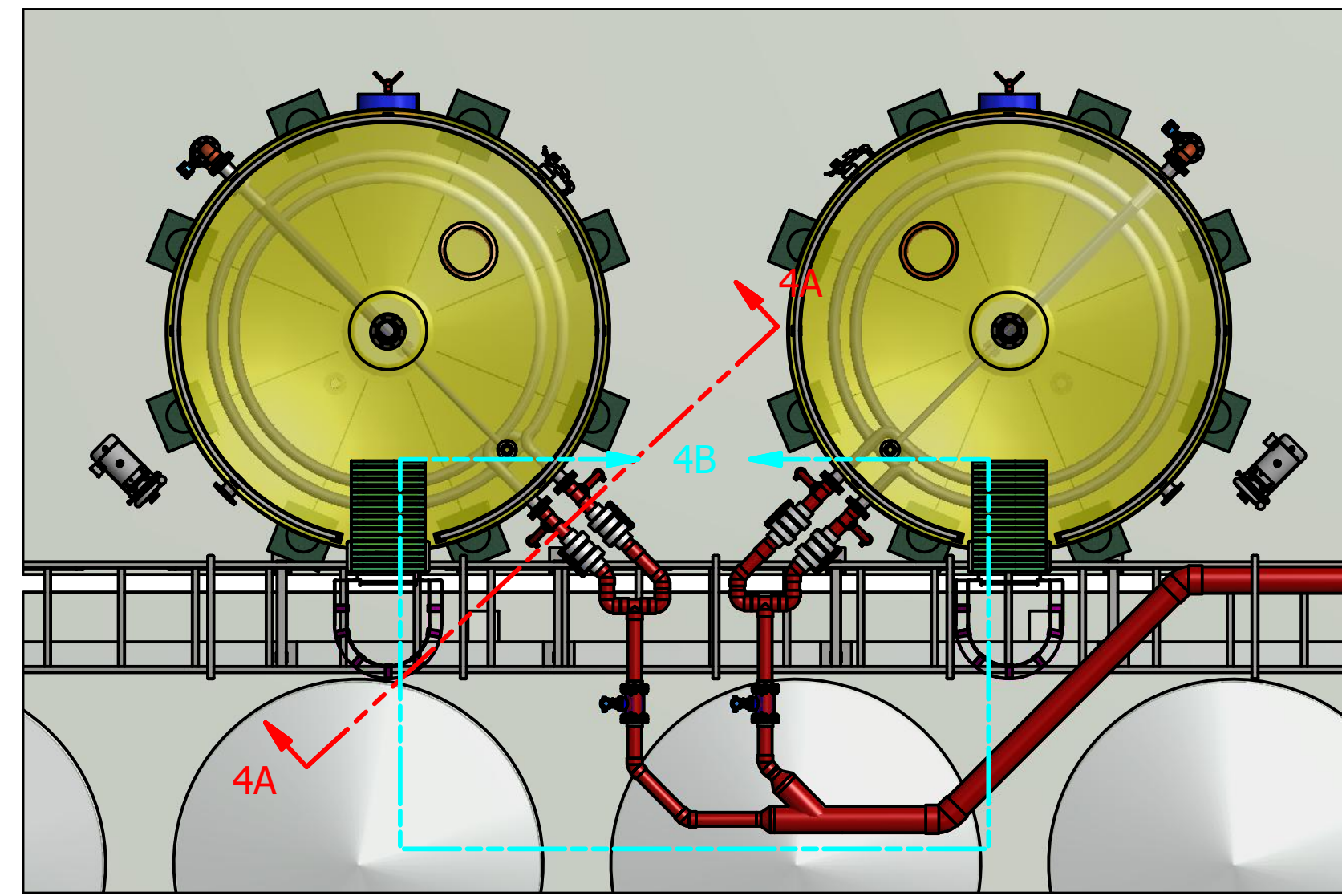
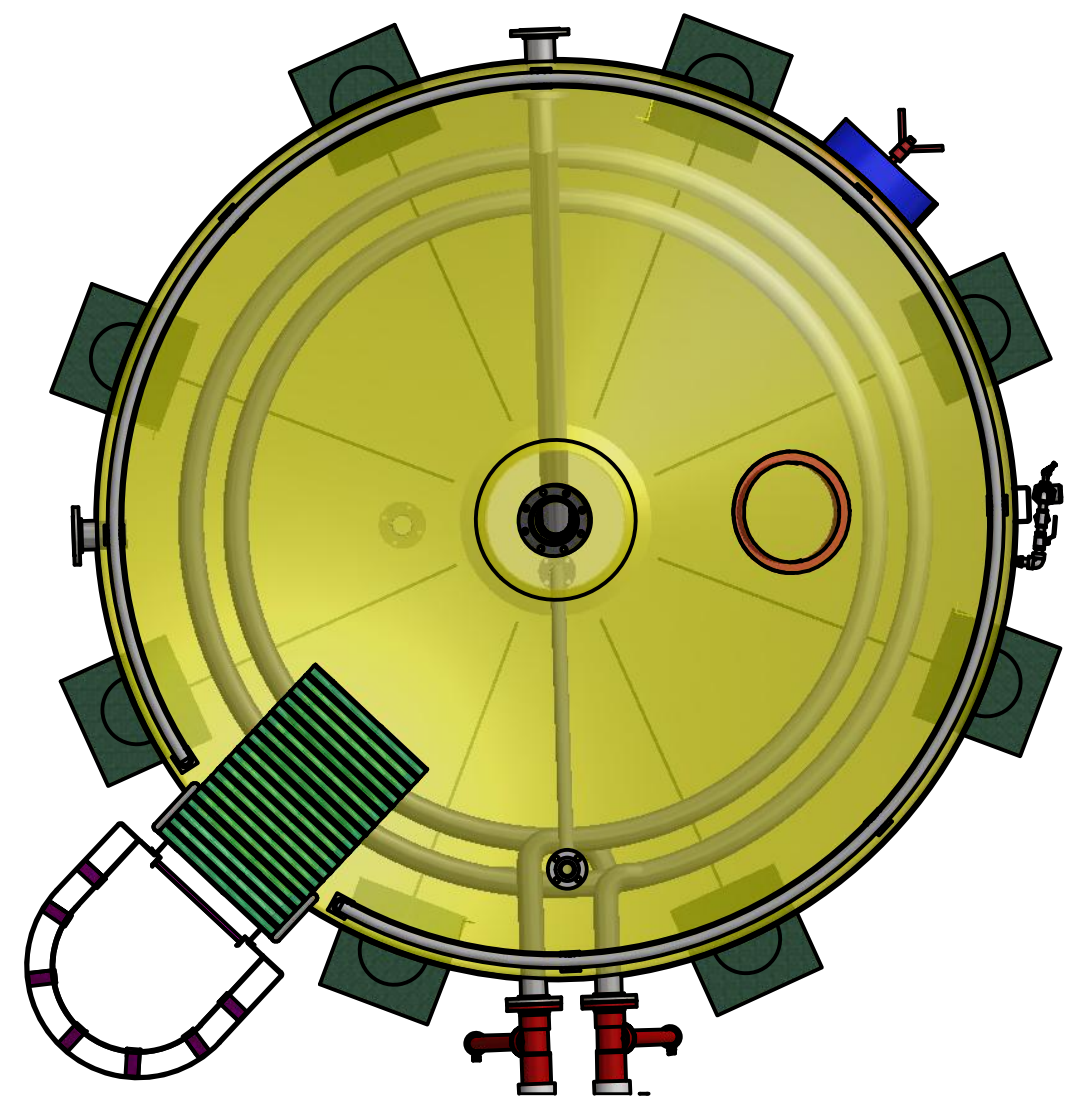
ACETATOR WATER RETURN PIPING
MIZKAN AMERICAS, INC.
10037 8TH ST., RANCHO CUCAMONGA, CA
DATE: JULY 28, 2016
SCALE: NTS
REV: -



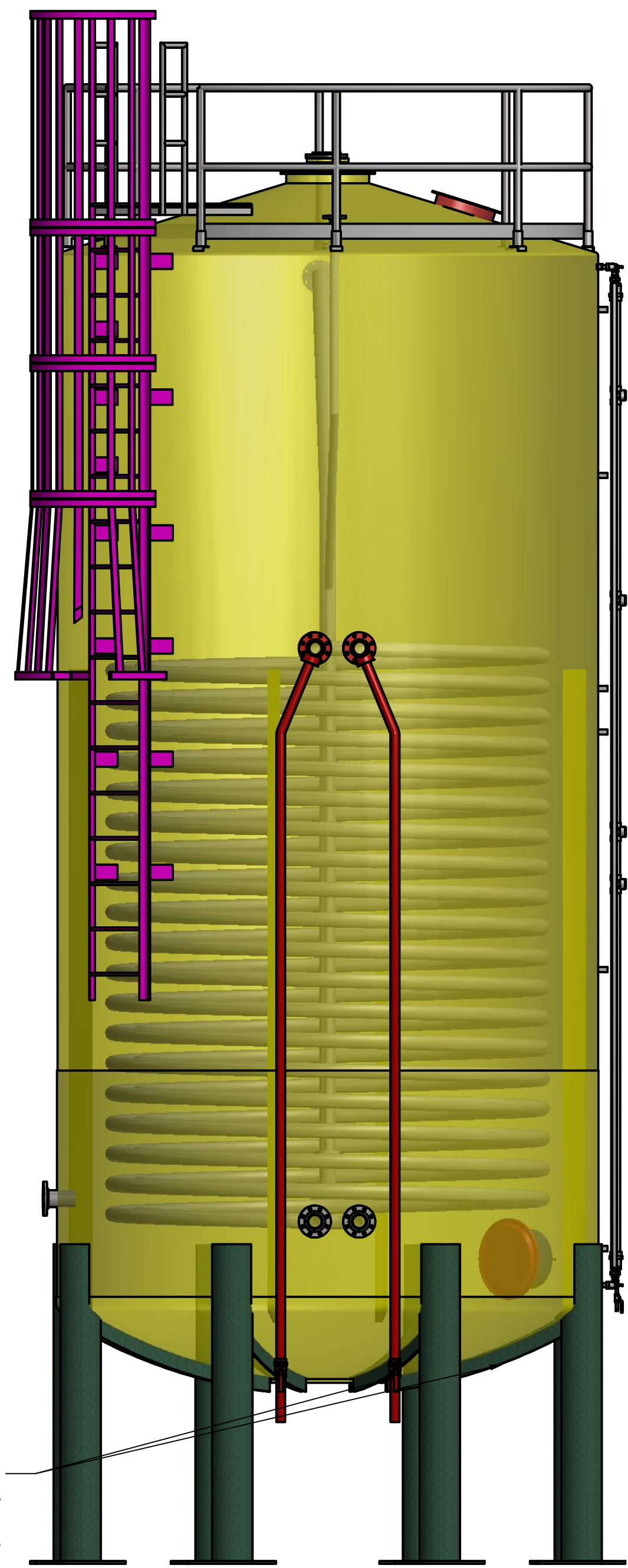
South Valley Engineering
P.O. Box 81593
Bakersfield, CA 93380
(805) 330-0998
Engineering, Design
Automation Systems
Project Management

REV	DESCRIPTION	BY	DATE	APPROV	DATE

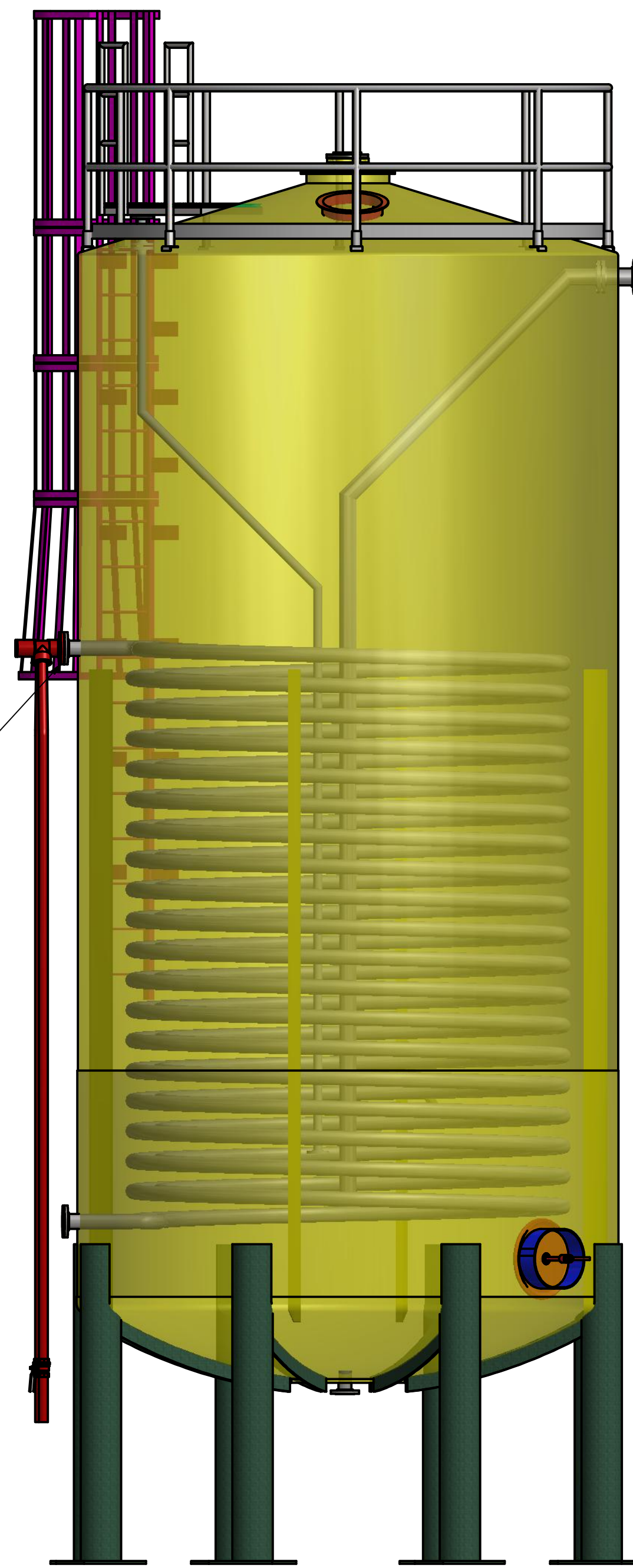
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DETAIL 4B
SCALE 1/20



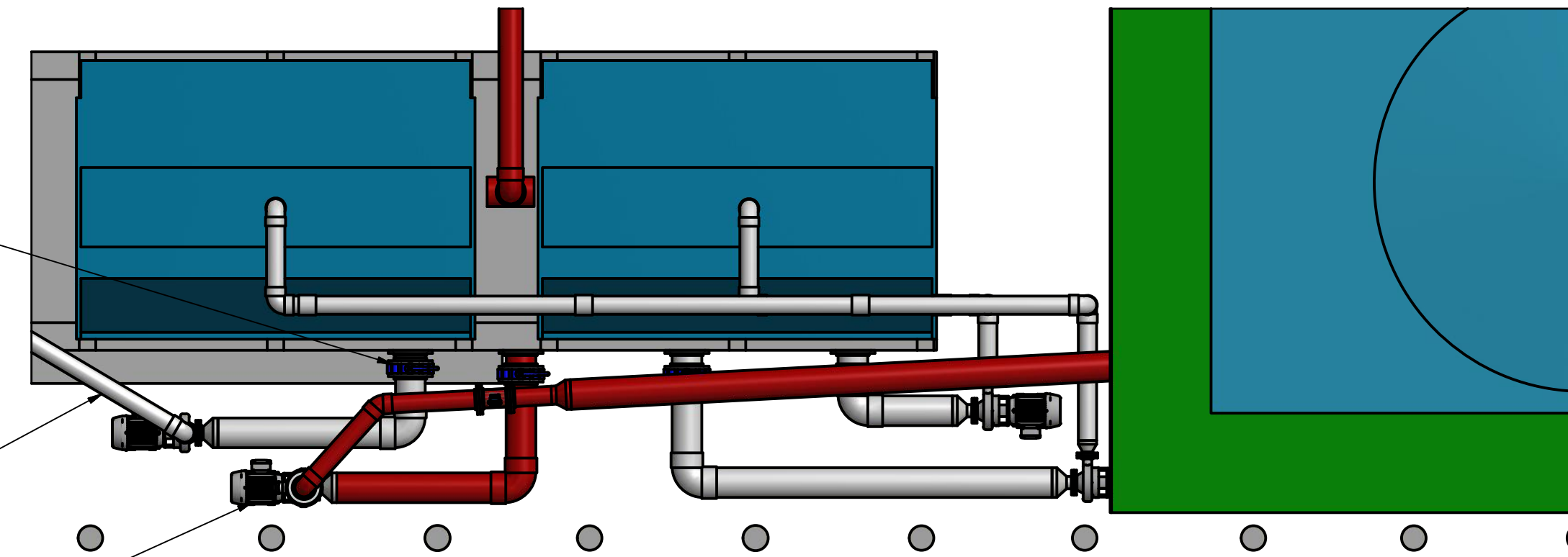
SECTION 4A-4A
SCALE 1/30



SEE P&ID SHEET 4 DETAIL 4
FOR TANK CUT OUT.

EXISTING PUMP, MOVED TO
NEW TANK CUT OUT

(NEW) PUMP TO MARLEY
COOLING TOWER



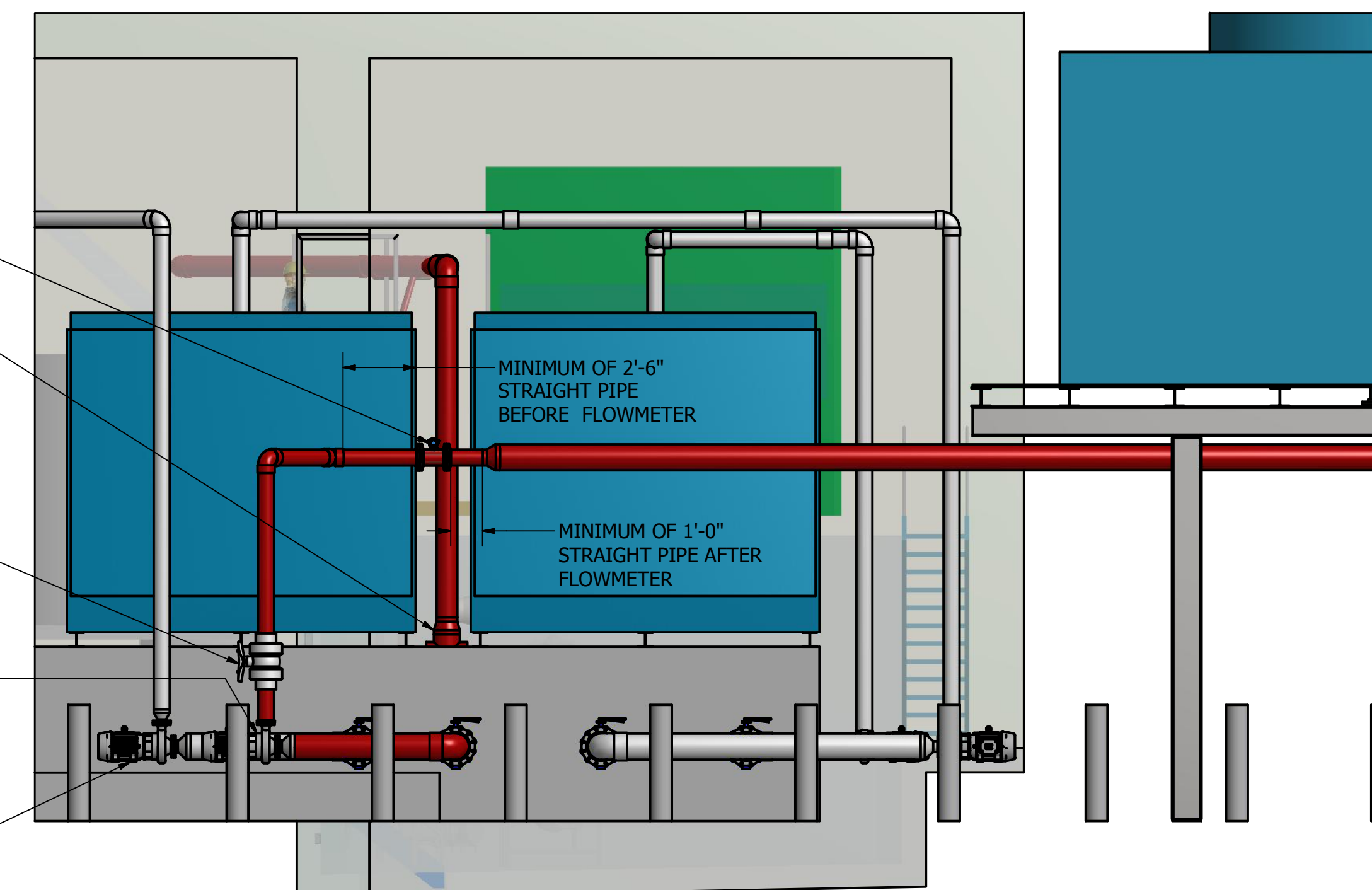
06" FLOWMETER

WATER HOT SIDE DISCHARGE,
10"Ø TEE INTO WATER TANK
FROM 08" PVC SCH. 40

06" BALL VALVE

(NEW) WATER PUMP TO
(NEW) MARLEY COOLING TOWER

(E) PUMP



PIPE LEGEND	
—	NEW HOT WATER LINE
—	EXISTING LINES

P-4-1
SHEET 1 OF 1

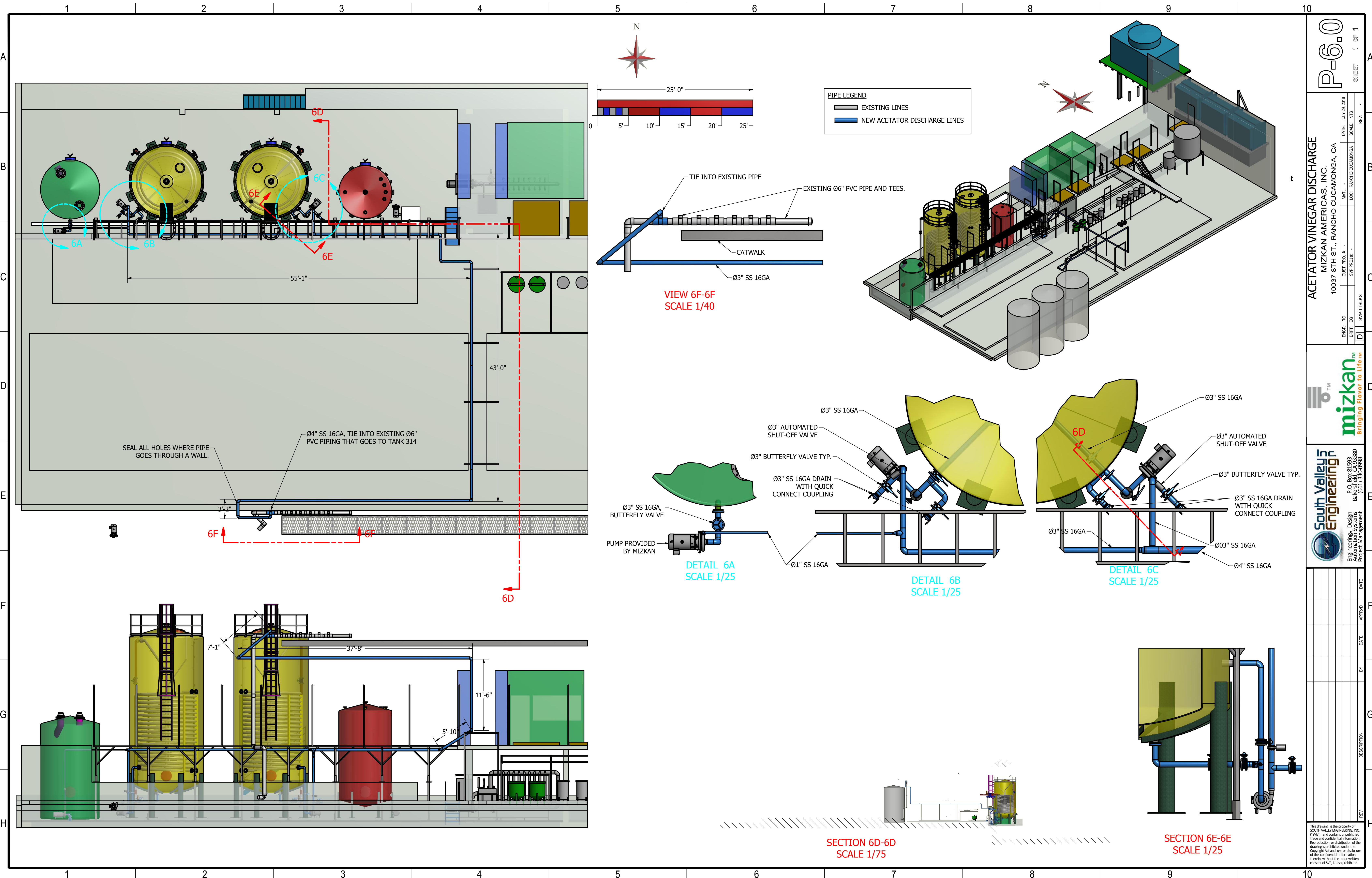
ACETATOR WATER RETURN PIPING
MIZKAN AMERICAS, INC.
10037 8TH ST., RANCHO CUCAMONGA, CA

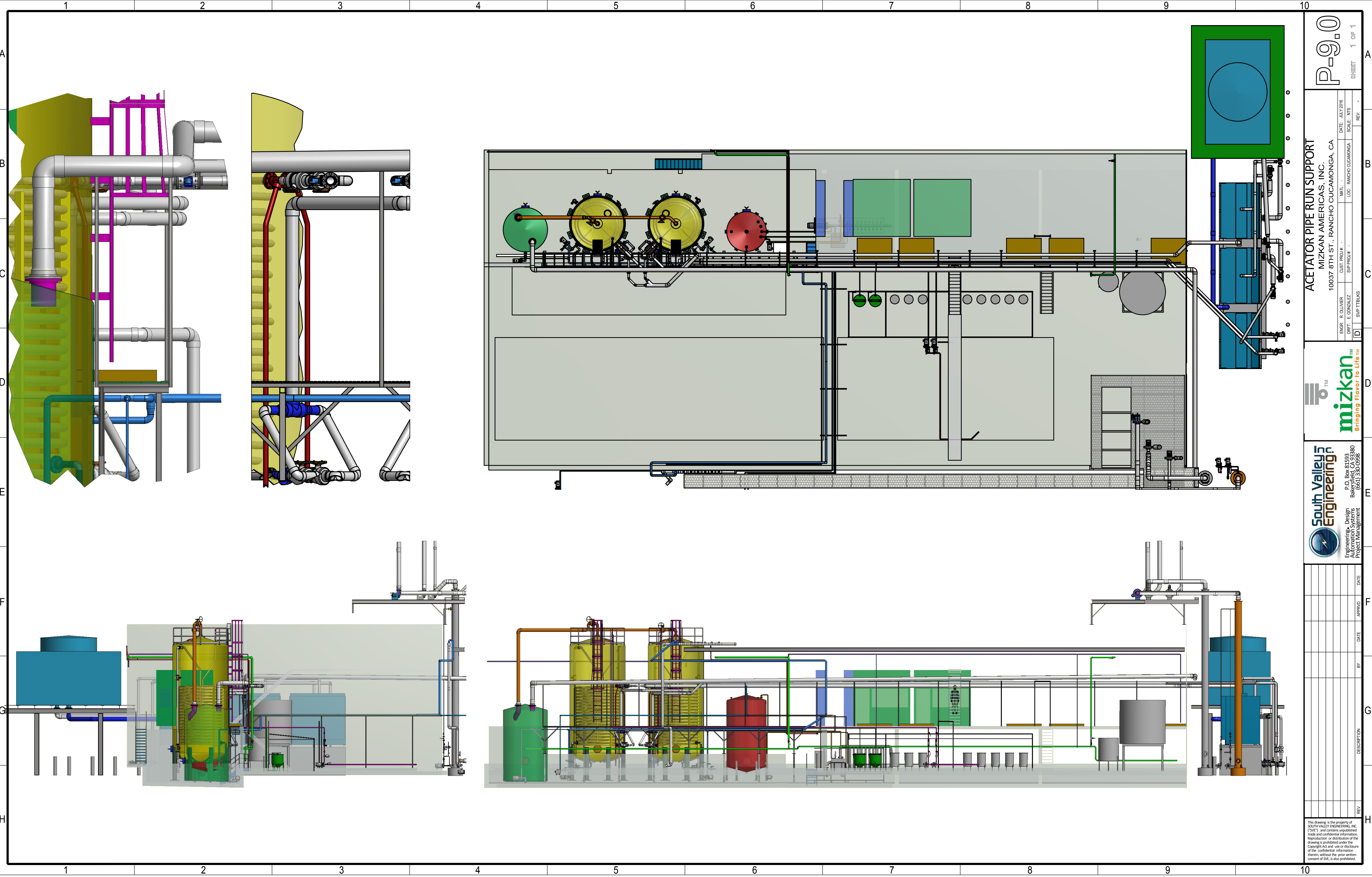
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P-9.0
SHEET 1 OF 1

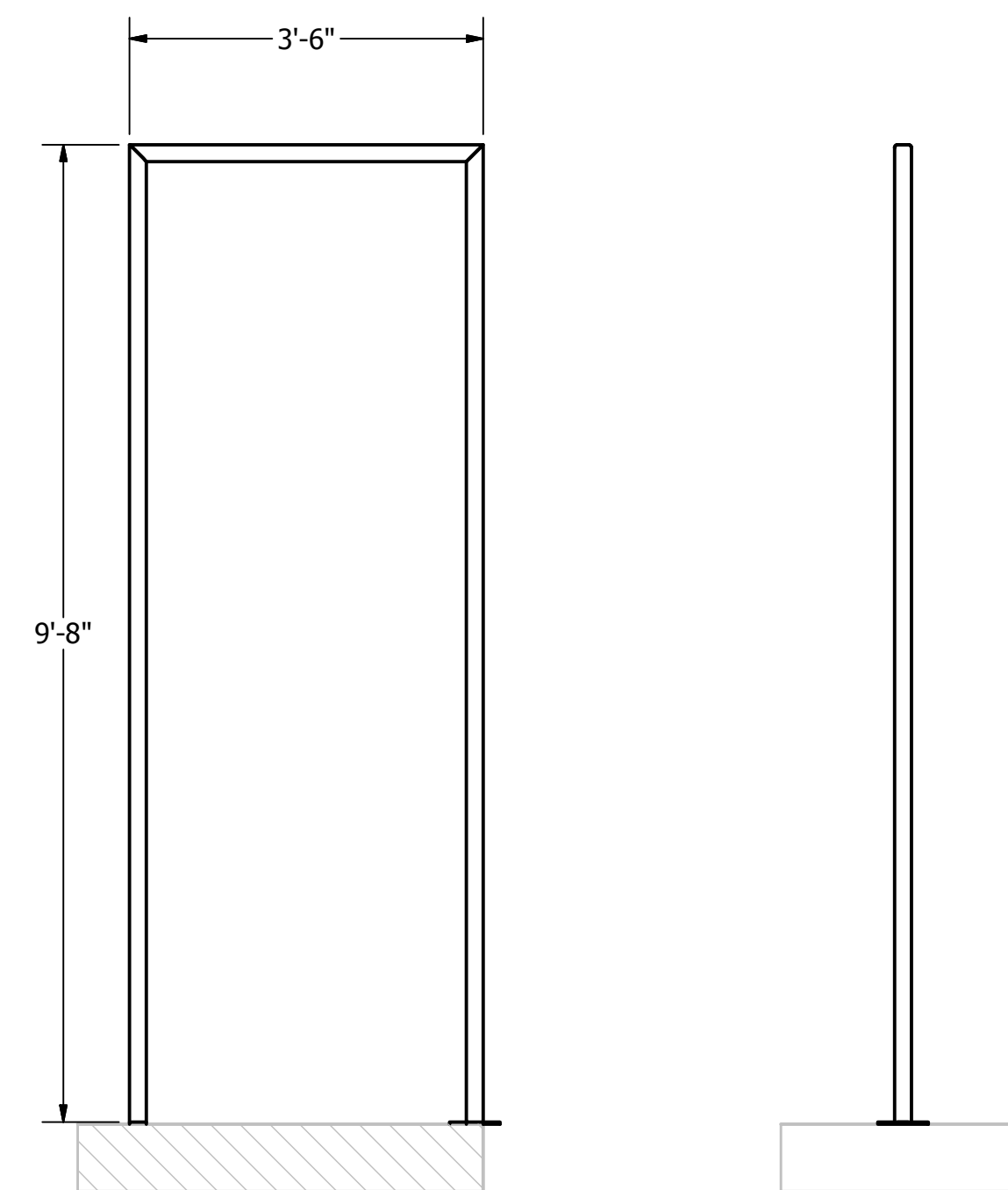
ACETATOR PIPE RUN SUPPORT
MIZKAN AMERICAS, INC.
10037 8TH ST., RANCHO CUCAMONGA, CA

ENGR: R. OLIVER
DEFT: E. GONZALEZ
CUST PROJ#: -
SVP PROJ#: -
DATE: JULY 2016
SCALE: NTS
REV: -

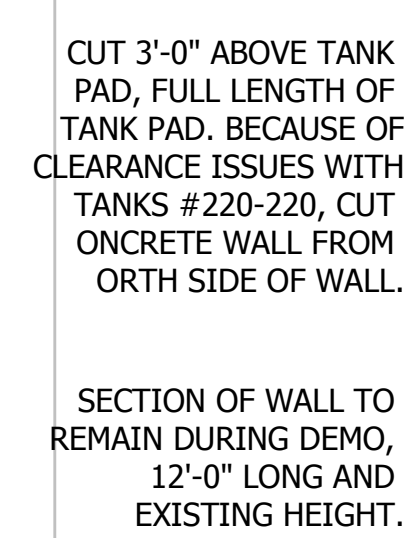
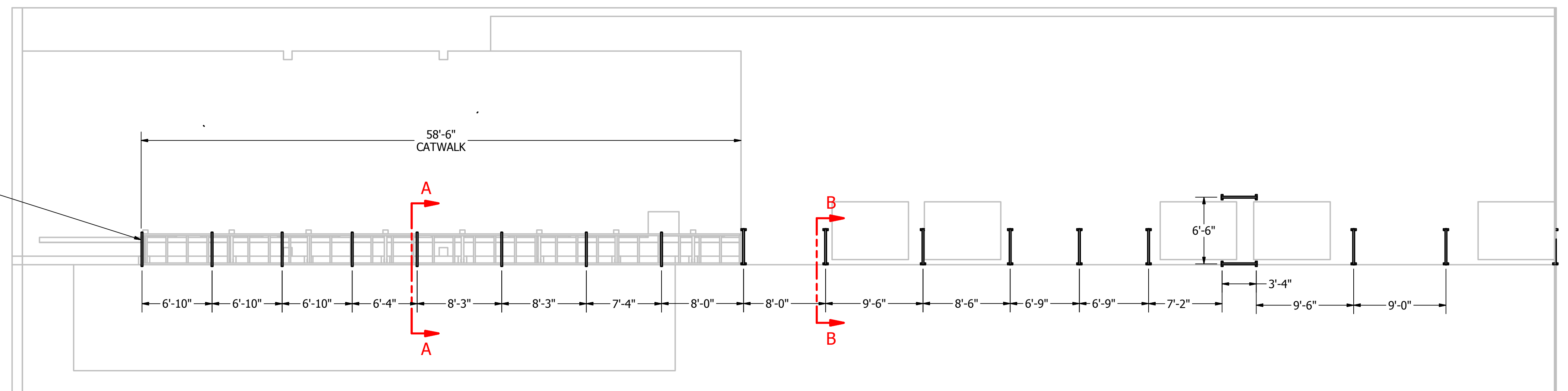
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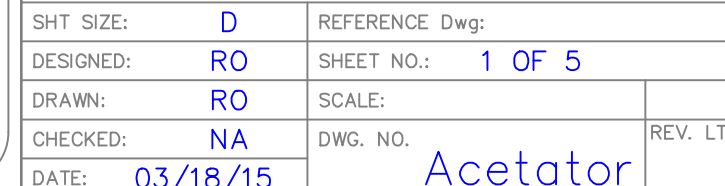
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SECTION B-B
SCALE 1/20







VALVE/FILTER SCHEDULE											
ID	DESCRIPTION	LOCATION	MAKE	MODEL	CONNECTION SIZE	PARAMETERS	NOTES			VOLTAGE/CONDUCTORS	
FDV-100	316L AUTOMATED SHUT-OFF CONTROL VALVE	KOCH FILTER	DEFNOX/VALCON	-----	1 1/2" TRI-CLAMP	-----	VALCON 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(4) RD #18-(1) GR #18		-----	
FDV-101	316L AUTOMATED SHUT-OFF CONTROL VALVE	A9 DISCHARGE PUMP M102	DEFNOX/VALCON	-----	3" TRI-CLAMP	-----	VALCON 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(4) RD #18-(1) GR #18		-----	
FDV-102	316L AUTOMATED SHUT-OFF CONTROL VALVE	A10 DISCHARGE PUMP M102	DEFNOX/VALCON	-----	3" TRI-CLAMP	-----	VALCON 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(4) RD #18-(1) GR #18		-----	
FDV-103	316L AUTOMATED SHUT-OFF CONTROL VALVE	A9 CHARGE PUMP M03	DEFNOX/VALCON	-----	1 1/2" TRI-CLAMP	-----	VALCON 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(4) RD #18-(1) GR #18		-----	
FDV-104	316L AUTOMATED SHUT-OFF CONTROL VALVE	A10 CHARGE PUMP M103	DEFNOX/VALCON	-----	1 1/2" TRI-CLAMP	-----	VALCON 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(4) RD #18-(1) GR #18		-----	
FDV-105	PVC AUTOMATED SHUT-OFF CONTROL VALVE	A9 COOLING PUMP M04	HAYWARD	-----	4" FLANGE	-----	HAYWARD 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(5) RD #18-(1) GR #18		-----	
FDV-106	PVC AUTOMATED SHUT-OFF CONTROL VALVE	A10 COOLING PUMP M104	HAYWARD	-----	4" FLANGE	-----	HAYWARD 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(5) RD #18-(1) GR #18		-----	
FDV-107	AUTOMATED SHUT-OFF SOLENOID VALVE	A9 AUTO SAMPLER	ASCO	8262H230E	1/4" FNPT	-----	120V SOLENOID, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(1) RD #18-(1) GR #18		-----	
FDV-108	AUTOMATED SHUT-OFF SOLENOID VALVE	A10 AUTO SAMPLER	ASCO	8262H230E	1/4" FNPT	-----	120V SOLENOID, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(1) RD #18-(1) GR #18		-----	
FDV-109	AUTOMATED SHUT-OFF SOLENOID VALVE	A9 ALCOHOL LINE	ASCO	E782H1330	3/8" FNPT	-----	120V SOLENOID, XPROOF, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(1) RD #18-(1) GR #18		-----	
FDV-111	AUTOMATED SHUT-OFF SOLENOID VALVE	A10 ALCOHOL LINE	ASCO	E782H1330	3/8" FNPT	-----	120V SOLENOID, XPROOF, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(1) RD #18-(1) GR #18		-----	
FDV-113	NYLON H2O SOLENOID VALVE MCMASTER	A9 NUTRIENT TANK	-----	4903K972	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(1) RD #18-(1) GR #18		-----	
FDV-114	NYLON H2O SOLENOID VALVE MCMASTER	A10 NUTRIENT TANK	-----	4903K972	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(1) RD #18-(1) GR #18		-----	
FDV-115	-----	A9 AIR INLET	-----	-----	-----	-----	FRINGS, SUPPLIED BY MIZKAN AMERICA			-----	
FDV-116	-----	A10 AIR INLET	-----	-----	-----	-----	FRINGS, SUPPLIED BY MIZKAN AMERICA			-----	
FDV-117	NEEDLE VALVE, TUBE WELD SOCKET	A9 ALCOHOL	PARKER	12W-MPN-L-R-T-SS-0C	3/4" "	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-118	NEEDLE VALVE, TUBE WELD SOCKET	A10 ALCOHOL	PARKER	12W-MPN-L-R-T-SS-0C	3/4" "	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-119	316L STAINLESS STEEL GLOBE VALVE	A9 CHARGE M03	MCMASTER	PT#4742K17	1.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-120	316L STAINLESS STEEL GLOBE VALVE	A10 CHARGE M103	MCMASTER	PT#4742K17	1.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-121	316L STAINLESS STEEL GLOBE VALVE	COLUMN 3	MCMASTER	PT#4742K15	1.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-122	316L STAINLESS STEEL GLOBE VALVE	COLUMN 3	MCMASTER	PT#4742K15	1.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-123	BRASS PRESSURE REGULATOR 0-40 PSI	COLUMN 3	MCMASTER	PT#4676H53	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-124	BRASS BACK FLOW PREVENTER/STRAINER	COLUMN 3	MCMASTER	PT#4525K42	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
FDV-125	316L AUTOMATED SHUT-OFF CONTROL VALVE	R3 FILTER FEED TANK	DEFNOX/VALCON	-----	1 1/2" TRI-CLAMP	-----	VALCON 120V ACTUATOR, SUPPLIED BY MIZKAN AMERICA	(1) WT #18-(4) RD #18-(1) GR #18		-----	
CV-100	316L STAINLESS STEEL CHECK VALVE	COLUMN 3	MCMASTER	PT#4663K66	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-101	316L STAINLESS STEEL CHECK VALVE	COLUMN 3	MCMASTER	PT#4663K66	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-102	316L STAINLESS STEEL CHECK VALVE	A9 NUTRIENT TANK	-----	-----	1.5" TR-CLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-103	316L STAINLESS STEEL CHECK VALVE	A10 NUTRIENT TANK	-----	-----	1.5" TR-CLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-104	316L STAINLESS STEEL CHECK VALVE	P1	MCMASTER	PT#4629K65	2" TRI-CLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-105	316L STAINLESS STEEL CHECK VALVE	M13	MCMASTER	PT#4629K61	2" TRI-CLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-106	316L STAINLESS STEEL CHECK VALVE	P3	MCMASTER	PT#4629K61	2" TRI-CLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-108	NUPRO 0-50 PSI CHECK VALVE	A9 ALCOHOL LINE	NUPRO	SS-8CPA2-EP-3	1/2" MNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
CV-109	NUPRO 30 PSI CHECK VALVE	A10 ALCOHOL LINE	NUPRO	SS-8CPA2-EP-3	1/2" MNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
PCV-100	ZERO AIR TANK REGULATOR	HARRIS	HP-722-0-125-590-D	OGA FITTING	-----	-----	0-125 PSIG, SUPPLIED BY MIZKAN AMERICA			-----	
HW-100	STAINLESS STEEL 3-WAY BALL VALVE FULL L PORT	COLUMN 3	GRANDER/MILWAUKEE	1JCL2	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-101	STAINLESS STEEL 3-WAY BALL VALVE FULL L PORT	COLUMN 3	GRANDER/MILWAUKEE	1JCL2	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-102	FIRE SAFE VALVE ALCOHOL FILL	A-1 ALCOHOL TANK	PROTECTOSEAL	F3002F3	2"x 3" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-103	FIRE SAFE VALVE ALCOHOL DISCHARGE	A-1 ALCOHOL TANK	PROTECTOSEAL	F3002F3	2"x 3" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-104	FIRE SAFE VALVE ALCOHOL FILL	A-2 ALCOHOL TANK	PROTECTOSEAL	F3002F3	2"x 3" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-105	FIRE SAFE VALVE ALCOHOL DISCHARGE	A-2 ALCOHOL TANK	PROTECTOSEAL	F3002F3	2"x 3" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-106	A9 COOLING WATER BASIN VALVE, 8" LUG	COLD WATER BASIN	NIPCO	NL05720L	8" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-107	A9 COOLING WATER BASIN VALVE, 8" LUG	COLD WATER BASIN	NIPCO	NL05720L	8" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-108	COOLING TOWER SUPPLY SERVICE VALVE, 10" LUG	HOT WATER BASIN	NIPCO	NL05720M	10" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-109	STAINLESS STEEL BALL VALVE, 5"	TANK F100	MCMASTER	4632K28	.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-110	DEFNOX SS BUTTERFLY VALVE, 2"	P3 PUMP	-----	-----	2" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-111	DEFNOX SS BUTTERFLY VALVE, 2"	P3 PUMP	-----	-----	2" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-112	DEFNOX SS BUTTERFLY VALVE, 2"	TANK F100	-----	-----	2" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-113	DEFNOX SS BUTTERFLY VALVE, 1"	M13	-----	-----	1" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-114	DEFNOX SS BUTTERFLY VALVE, 1.5"	M03	-----	-----	1.5" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-115	DEFNOX SS BUTTERFLY VALVE, 1.5"	M03	-----	-----	1.5" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-116	DEFNOX SS BUTTERFLY VALVE, 1.5"	M103	-----	-----	1.5" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-117	DEFNOX SS BUTTERFLY VALVE, 1.5"	M103	-----	-----	1.5" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-118	DEFNOX SS BUTTERFLY VALVE, 3"	P1	-----	-----	3" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-119	DEFNOX SS BUTTERFLY VALVE, 2"	P1	-----	-----	2" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-120	STAINLESS STEEL BALL VALVE	TANK R3	MCMASTER	4632K28	.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-121	DEFNOX SS BUTTERFLY VALVE	TANK R3	-----	-----	2" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-122	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A9 COOLING	ALSCO	0015-040-S 4	4" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-123	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A9 COOLING	ALSCO	0015-040-S 4	4" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-124	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A9 COOLING	ALSCO	0015-020-S 2	2" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-125	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A9 COOLING	ALSCO	0015-020-S 2	2" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-126	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A9 COOLING	ALSCO	0015-040-S 4	4" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-127	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A9 COOLING	ALSCO	0015-040-S 4	4" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	
HW-128	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A9 COOLING	ALSCO	0015-020-S 2	2" SOCKET	-----	SUPPLIED BY MIZKAN AMERICA			-----	



VALVE/FILTER SCHEDULE										
ID	DESCRIPTION	LOCATION	MAKE	MODEL	CONNECT ON SIZE	PARAMETERS	NOTES	VOLTAGE/CONDUCTORS		
HW-129	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A9 COOLING	ALSCO	0015-020-S 2	2" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-130	STAINLESS STEEL BALL VALVE, .25"	A9 MANUAL SAMPLE	MCMASTER	4649K18	.5" FNPT					
HW-131	STAINLESS STEEL BALL VALVE, .25"	A9 SIGHTGLASS	MCMASTER	4649K18	.5" FNPT					
HW-132	STAINLESS STEEL BALL VALVE, .75"	A9 SIGHTGLASS	MCMASTER	4649K22	.75" FNPT					
HW-133	DEFNOX SS BUTTERFLY VALVE, 3"	A9 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-134	DEFNOX SS BUTTERFLY VALVE, 3"	A9 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-135	DEFNOX SS BUTTERFLY VALVE, 3"	A9 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-136	DEFNOX SS BUTTERFLY VALVE, 3"	A9 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-137	HAYWARD PVC TRUE UNION BALL VALVE, 6"	A9 VENT	ALSCO	0026-060-S 6	6" SOCKET		SUPPLIED BY MIZKAN AMERICA			
HW-138	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A10 COOLING	ALSCO	0015-040-S 4	4" SOCKET		SUPPLIED BY MIZKAN AMERICA			
HW-139	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A10 COOLING	ALSCO	0015-040-S 4	4" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-140	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A10 COOLING	ALSCO	0015-020-S 2	2" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-141	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A10 COOLING	ALSCO	0015-020-S 2	2" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-142	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A10 COOLING	ALSCO	0015-040-S 4	4" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-143	HAYWARD PVC TRUE UNION BALL VALVE, 4"	A10 COOLING	ALSCO	0015-040-S 4	4" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-144	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A10 COOLING	ALSCO	0015-020-S 2	2" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-145	HAYWARD PVC TRUE UNION BALL VALVE, 2"	A10 COOLING	ALSCO	0015-020-S 2	2" SOCKET		SUPPLIED BY MIZKAN AMERICA	-----		
HW-146	STAINLESS STEEL BALL VALVE, .25"	A10 MANUAL SAMPLE	MCMASTER	4649K18	.25" FNPT					
HW-147	STAINLESS STEEL BALL VALVE, .25"	A10 SIGHTGLASS	MCMASTER	4649K18	.25" FNPT					
HW-148	STAINLESS STEEL BALL VALVE, .75"	A10 SIGHTGLASS	MCMASTER	4649K22	.75" FNPT					
HW-149	DEFNOX SS BUTTERFLY VALVE, 3"	A10 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-150	DEFNOX SS BUTTERFLY VALVE, 3"	A10 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-151	DEFNOX SS BUTTERFLY VALVE, 3"	A10 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-152	DEFNOX SS BUTTERFLY VALVE, 3"	A10 DISCHARGE			3" TRICLAMP		SUPPLIED BY MIZKAN AMERICA			
HW-153	HAYWARD PVC TRUE UNION BALL VALVE, 6"	A10 VENT	ALSCO	0026-060-S 6	6" SOCKET		SUPPLIED BY MIZKAN AMERICA			
HW-154	SS BALL VALVE WITH YOR-LOK FITTING	A9 ALCOHOL	MCMASTER	457K24	.75" COMPRESS ION	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-155	SS BALL VALVE WITH YOR-LOK FITTING	A10 ALCOHOL	MCMASTER	457K24	.75" COMPRESS ION	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-156	BRASS BALL VALVE, 25" AIR SAFETY EXHAUST	PICK HEATER	MCMASTER	4879K21	.25" FNPT		SUPPLIED BY MIZKAN AMERICA	-----		
HW-157	DEFNOX SS BUTTERFLY VALVE, 1.5"	KOCH FILTER 1			1.5" TRICLAMP		SUPPLIED BY MIZKAN AMERICA	-----		
HW-158	HIGH PRESSURE BRONZE STEAM VALVE	PICK HEATER	MCMASTER	4485K37	1.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-159	BRASS BALL VALVE, .50"	PICK HEATER	MCMASTER	4786K23	.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-160	BRASS BALL VALVE, 1.5"	PICK HEATER	MCMASTER	4829K17	1.5" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-161	DEFNOX SS BUTTERFLY VALVE, 1.5"	KOCH V18 FILTER			1.5" TRICLAMP		SUPPLIED BY MIZKAN AMERICA	-----		
HW-162	BRASS BALL VALVE, .75" AIR SAFETY EXHAUST	KOCH V18 FILTER	MCMASTER	4828K83	.75" FNPT		SUPPLIED BY MIZKAN AMERICA	-----		
HW-163	BRASS BALL VALVE, 1"	COLUMN 3 H20	MCMASTER	4786K25	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-164	DEFNOX SS BUTTERFLY VALVE, 2.5"	COLUMN 3			2.5" TRICLAMP		SUPPLIED BY MIZKAN AMERICA	-----		
HW-165	DEFNOX SS BUTTERFLY VALVE, 2"	COLUMN 3			2" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-168	DEFNOX SS BUTTERFLY VALVE, 1.5"	A9 NUTRIENT TANK			1.5" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-167	STAINLESS STEEL BALL VALVE, .75"	A9 NUTRIENT TANK	MCMASTER	4649K22	.75" FNPT		SUPPLIED BY MIZKAN AMERICA	-----		
HW-166	DEFNOX SS BUTTERFLY VALVE, 1.5"	A10 NUTRIENT TANK			1.5" TRICLAMP	-----	SUPPLIED BY MIZKAN AMERICA	-----		
HW-169	STAINLESS STEEL BALL VALVE, .75"	A10 NUTRIENT TANK	MCMASTER	4649K22	.75" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	-----		
EPV-100	EMERGENCY PRESSURE VENT 316L 9" WC	A-1 ALCOHOL TANK	PROTECTOSEAL	F7810H	10" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA	-----		
EPV-101	EMERGENCY PRESSURE VENT 316L 9" WC	A-2 ALCOHOL TANK	PROTECTOSEAL	F7810H	10" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA	-----		
DA-100	DETONATION ARRESTOR	A-1 ALCOHOL TANK	PROTECTOSEAL	F25002	2" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA	-----		
DA-101	DETONATION ARRESTOR	A-2 ALCOHOL TANK	PROTECTOSEAL	F25002	2" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA	-----		
PCV-100	PIPE AWAY CONSERVATION VENT .7502 PRESSURE, .7502 VACUUM	A-1 ALCOHOL TANK	PROTECTOSEAL	F1854202	2" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA	-----		
PCV-101	PIPE AWAY CONSERVATION VENT .7502 PRESSURE, .7502 VACUUM	A-2 ALCOHOL TANK	PROTECTOSEAL	F1854202	2" FLANGE	-----	SUPPLIED BY MIZKAN AMERICA	-----		
F-1	FILTER	SCRUBBER COLUMN 1 CP	GRANGER	48481/48813	1" FNPT	-----	SUPPLIED BY MIZKAN AMERICA	-----		
F-2	KOCH V18 CP WATER FILTER	-----	-----	-----	-----	-----	SUPPLIED BY MIZKAN AMERICA	-----		
F-3	KOCH CP WATER FILTER	-----	-----	-----	-----	-----	SUPPLIED BY MIZKAN AMERICA	-----		

ID	DESCRIPTION	LOCATION	MAKE	MODEL	CONNECTION SIZE	PARAMETERS	NOTES	VOLTAGE
FI-100	ROTAMETER 1-10GPM	SCRUBBER COLUMN H2O	KING	7205-0161-2-1-W	1" NFPT		STAINLESS 316L FITTING MATERIAL, SUPPLIED BY MIZKAN AMERICA	----
FI-101	ROTAMETER 1-10GPM	SCRUBBER COLUMN CIP	KING	7205-0161-2-1-W	1" NFPT		STAINLESS 316L FITTING MATERIAL, SUPPLIED BY MIZKAN AMERICA	----
FI-102	ROTAMETER 5-50GPM	A9 CHARGE 45 GPM	KING	7205-0021-2-1-W	1.5" NFPT		STAINLESS 316L FITTING MATERIAL, SUPPLIED BY MIZKAN AMERICA	----
FI-103	ROTAMETER 5-50GPM	A10 CHARGE 45 GPM	KING	7205-0211-2-1-W	1.5" NFPT		STAINLESS 316L FITTING MATERIAL, SUPPLIED BY MIZKAN AMERICA	----
FI-104	A9 AIR FLOW ROTAMETER 200-500m3	A9 TANK	FRINGS				METRIC FLANGES, SUPPLIED BY MIZKAN AMERICA	----
FI-105	A10 AIR FLOW ROTAMETER 200-500m3	A10 TANK	FRINGS				METRIC FLANGES, SUPPLIED BY MIZKAN AMERICA	----
FI-106	A9 ALCOHOL FLOW METER	ALCOHOL SUPPLY	KING	(44W) 4-SSL-02	.5" FNPT		SUPPLIED BY MIZKAN AMERICA	----
FI-107	A10 ALCOHOL FLOW METER	ALCOHOL SUPPLY	KING	(44W) 4-SSL-02	.5" FNPT		SUPPLIED BY MIZKAN AMERICA	----
FT-200	FLOW RATE TRANSMITTER	A9 COOLING WATER RETURN	ENDRESS-HAUSER	PROMAG SOP1H	1" NFPT		SUPPLIED BY MIZKAN AMERICA	(2) 2 COND. BELDON 24VDC
FT-201	FLOW RATE TRANSMITTER	A10 COOLING WATER RETURN	ENDRESS-HAUSER	PROMAG SOP1H	1" NFPT		SUPPLIED BY MIZKAN AMERICA	(2) 2 COND. BELDON 24VDC
FT-202	FLOW RATE TRANSMITTER	COOLING TOWER SUPPLY	ENDRESS-HAUSER				SUPPLIED BY MIZKAN AMERICA	(2) 2 COND. BELDON 24VDC
FT-203	FLOW RATE TRANSMITTER	A9 TANK	HOFFER				SUPPLIED BY MIZKAN AMERICA	1(120V) (1) 2 COND. BELDON 24VDC
FT-204	FLOW RATE TRANSMITTER	A10 TANK	HOFFER				SUPPLIED BY MIZKAN AMERICA	1(120V) (1) 2 COND. BELDON 24VDC
FT-205	FLOW RATE TRANSMITTER	A9 TANK AIR INLET	ENDRESS-HAUSER				SUPPLIED BY MIZKAN AMERICA	
FT-206	FLOW RATE TRANSMITTER	A10 TANK AIR INLET	ENDRESS-HAUSER				SUPPLIED BY MIZKAN AMERICA	
AC-200	ACETOMAT CONTROLLER	A9 TANK	FRINGS	ACETOMAT NI			SUPPLIED BY MIZKAN AMERICA	1(120V) (1) 2 COND. BELDON 24VDC
AC-201	ACETOMAT CONTROLLER	A10 TANK	FRINGS	ACETOMAT NI			SUPPLIED BY MIZKAN AMERICA	1(120V) (1) 2 COND. BELDON 24VDC
LT-100	PRESSURE TRANSMITTER 0-100 PSI	CONSTANT PRESSURE PUMP	WKA	EW-68062-11	1/4" MNPT	0 PSI=4mA=100 PSI=20mA, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-101	PRESSURE TRANSMITTER 0-15 PSI	SCRUBBER COLUMN 3 INLET	ENDRESS HAUSER	PWCS1-AA11SD10CERKU	1/2" MNPT		SUPPLIED BY MIZKAN AMERICA	
LT-102	PRESSURE TRANSMITTER 0-15 PSI	SCRUBBER COLUMN 3 OUTLET	ENDRESS HAUSER	PWCS1-AA11SD10CERKU	1/2" MNPT		SUPPLIED BY MIZKAN AMERICA	
LT-103	PRESSURE TRANSMITTER 0-15 PSI	A9 LOWER SIGHT GLASS	ALLEN BRADLEY	836E-TD1CC4-04/8890-R 4AC-2	1/4" MNPT		SUPPLIED BY MIZKAN AMERICA	(1) 4 COND. BELDON 24VDC
LT-104	PRESSURE TRANSMITTER 0-15 PSI	A9 UPPER SIGHT GLASS	ALLEN BRADLEY	836E-TD1CC4-04/8890-R 4AC-2	1/4" MNPT		SUPPLIED BY MIZKAN AMERICA	(1) 4 COND. BELDON 24VDC
LT-105	PRESSURE TRANSMITTER 0-15 PSI	A10 LOWER SIGHT GLASS	ALLEN BRADLEY	836E-TD1CC4-04/8890-R 4AC-2	1/4" MNPT		SUPPLIED BY MIZKAN AMERICA	(1) 4 COND. BELDON 24VDC
LT-106	PRESSURE TRANSMITTER 0-15 PSI	A10 UPPER SIGHT GLASS	ALLEN BRADLEY	836E-TD1CC4-04/8890-R 4AC-2	1/4" MNPT		SUPPLIED BY MIZKAN AMERICA	(1) 4 COND. BELDON 24VDC
LT-107	PRESSURE TRANSMITTER 0-10 PSI	TANK R3 LEVEL	WKA	EW-68083-32	1/4" MNPT	0 GALLONS=4mA=10,977 GALLONS=20mA, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-108	PRESSURE TRANSMITTER 0-10 PSI	TANK F100 LEVEL	WKA	EW-68083-32	1/4" MNPT	0 GALLONS=4mA=12,230 GALLONS=20mA, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-109	PRESSURE TRANSMITTER 0-15 PSI	TANK 314 LEVEL	WKA	EW-68062-05	1/4" MNPT	0 gallons=4mA=28,883.4=20mA, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-110	PRESSURE TRANSMITTER 0-15 PSI	TANK 201 LEVEL	WKA	EW-68062-05	1/4" MNPT	0 gallons=4mA=82,946.71=20mA, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-111	PRESSURE TRANSMITTER 0-100 PSI	TANK 312 LEVEL	WKA	EW-68062-05	1/4" MNPT	0 gallons=4mA=28,883.4=20mA, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-112	PRESSURE TRANSMITTER 0-100 PSI	ZERO AIR	WKA	EW-68062-11	1/4" MNPT		SUPPLIED BY MIZKAN AMERICA	(1) 2 COND. BELDON 24VDC
LT-113	ALCOHOL LEVEL TRANSMITTER	A1 TANK	ENDRESS HAUSER	FMRS1-73FD/ 0	3" FLANGE	INCLUDE SUN SHADE, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LT-114	ALCOHOL LEVEL TRANSMITTER	A2 TANK	ENDRESS HAUSER	FMRS1-73FD/ 0	3" FLANGE	INCLUDE SUN SHADE, SUPPLIED BY MIZKAN AMERICA		(1) 2 COND. BELDON 24VDC
LS-200	LEVEL TRANSMITTER HIGH, 11,100 GALLONS	A9 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-201	LEVEL TRANSMITTER HIGH BACKUP, 11,700 GALLONS	A9 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-202	LEVEL TRANSMITTER AIR VALVE CONTROL, 9000 GALLONS	A9 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-203	LEVEL TRANSMITTER LOW BACKUP, 4,700 GALLONS	A9 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-204	LEVEL TRANSMITTER LOW, 5,200 GALLONS	A9 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-205	LEVEL TRANSMITTER HIGH, 11,100 GALLONS	A10 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-206	LEVEL TRANSMITTER HIGH BACKUP, 11,700 GALLONS	A10 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-207	LEVEL TRANSMITTER AIR VALVE CONTROL, 9,000 GALLONS	A10 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-208	LEVEL TRANSMITTER LOW BACKUP, 4,700 GALLONS	A10 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LS-209	LEVEL TRANSMITTER LOW, 5,200 GALLONS	A10 SIGHTGLASS	OMRON	E2K-C25M1	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 R COND. 120V
LP-200	LEVEL PROBES, COMMON, TANK FULL	A9 NUTRIENT TANK	LUMINITE	ZDC7T-2-12-36-3/210	2" TRI-CLAMP		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 10V
LP-201	LEVEL PROBES, COMMON, TANK FULL	A10 NUTRIENT TANK	LUMINITE	ZDC7T-2-12-36-3/210	2" TRI-CLAMP		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 10V
LP-202	LEVEL PROBES, COMMON, LOW ALARM, PUMP OFF	COLUMN 3	LUMINITE	PHSA3BT3-12,18,24-10	2" MNPT		SUPPLIED BY MIZKAN AMERICA	(3) #18 BL COND. 10V
LP-203	LEVEL PROBES, HIGH ALARM, PUMP ON	COLUMN 3	LUMINITE	PHSA2BT2-12,24-10	2" MNPT		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 10V
ES-100	ALCOHOL EMERGENCY DISCONNECT	ALCOHOL CONTAINMENT	-----	-----	-----		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 120V
ES-100	REMOTE ESTOP STATION	ALCOHOL CONTAINMENT	-----	-----	-----		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 24V
ES-101	REMOTE ESTOP STATION	ALCOHOL CONTAINMENT	-----	-----	-----		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 24V
TI-100	TEMPERATURE TRANSMITTER SS 20"	COLD WATER BASIN	FOXBORO	PR-13PB8-020	1/2" MNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-101	TEMPERATURE TRANSMITTER 4" SPRING LOADED/WELL	A9 COOLING WATER RETURN	DIGI-SENSE	EW-93800-79/ EW-90434-00	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-102	TEMPERATURE TRANSMITTER 4" SPRING LOADED/WELL	A9 COOLING WATER SUPPLY	DIGI-SENSE	EW-93800-79/ EW-90434-00	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-103	TEMPERATURE TRANSMITTER 12" DIRECT IMMERSION	A9 PROCESS	DIGI-SENSE	EW-93800-81	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-104	TEMPERATURE TRANSMITTER 12" DIRECT IMMERSION	A9 ACETOMAT	DIGI-SENSE	EW-93800-81	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-105	TEMPERATURE TRANSMITTER	A9 AERATOR UPPER	-----	-----	-----		FRINGS, SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-106	TEMPERATURE TRANSMITTER	A9 AERATOR LOWER	-----	-----	-----		FRINGS, SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-107	TEMPERATURE TRANSMITTER 4" SPRING LOADED/WELL	A10 COOLING WATER RETURN	DIGI-SENSE	EW-93800-79/ EW-90434-00	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-108	TEMPERATURE TRANSMITTER 4" SPRING LOADED/WELL	A10 COOLING WATER SUPPLY	DIGI-SENSE	EW-93800-79/ EW-90434-00	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-109	TEMPERATURE TRANSMITTER 12" DIRECT IMMERSION	A10 PROCESS	DIGI-SENSE	EW-93800-81	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-110	TEMPERATURE TRANSMITTER 12" DIRECT IMMERSION	A10 ACETOMAT	DIGI-SENSE	EW-93800-81	1/2" TNPT		SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-111	TEMPERATURE TRANSMITTER	A9 AERATOR UPPER	-----	-----	-----		FRINGS, SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
TI-112	TEMPERATURE TRANSMITTER	A9 AERATOR LOWER	-----	-----	-----		FRINGS, SUPPLIED BY MIZKAN AMERICA	(1) 3 COND. BELDON
PI-100	PRESSURE INDICATOR MONMASTER	M12 PUMP	MCMASTER	179RT11	1/4" MNPT		SUPPLIED BY MIZKAN AMERICA	----
HTR-100	PICK STEAM INJECTION HEATER	BOILER ROOM	PICK		1 1/2" NPT LIQUID 2" NPT STEAM		SUPPLIED BY MIZKAN AMERICA	----
VS-100	VIBRATION SWITCH	COOLING TOWER	----	----	----		SUPPLIED BY MIZKAN AMERICA	(2) #18 BL COND. 24V

ID	DESCRIPTION	MAKE	MODEL	CAPACITY	HEIGHT	DIAMETER	MATERIAL OF CONSTRUCTION	NOTES
SCRUBBER 3	A9/A10 SCRUBBER	BRANCH ENVIRONMENTAL CORP.	18T30H		38"-3"	1'-6"	FIBERGLASS	1500 LB OPERATING WEIGHT, POLYPROPYLENE PACKING, 610 CFM GAS INLET CAPACITY, 5.5 GPM WATER INLET RATE, SUPPLIED BY MIZKAN AMERICA
F100	FOAM TANK	JBF		8,000 GAL	16'-8"	8'-5"	STAINLESS	15,500 LB EMPTY, SUPPLIED BY MIZKAN AMERICA
R3	FILTER FEED TANK	JBF		5,700 GAL	18'-7"	8'-6"	STAINLESS	2,900 LB EMPTY, 50,000 LBS FULL, SUPPLIED BY MIZKAN AMERICA
A9	ACETATOR TANK	JBF		18,000 GAL	34'-2"	11'-11" D	STAINLESS	18,975 LBS EMPTY, SUPPLIED BY MIZKAN AMERICA
A10	ACETATOR TANK	JBF		18,000 GAL	34'-2"	11'-11" D	STAINLESS	18,975 LBS EMPTY, SUPPLIED BY MIZKAN AMERICA
N9	A9 NUTRIENT TANK	JBF		80 GAL	3'-7.75"	2'-6"	STAINLESS	270 LBS EMPTY, SUPPLIED BY MIZKAN AMERICA
N10	A10 NUTRIENT TANK	JBF		80 GAL	3'-7.75"	2'-6"	STAINLESS	270 LBS EMPTY, SUPPLIED BY MIZKAN AMERICA
VF18	KOCH MEMBRANE FILTER	KOCH	VF-18		-----	-----	-----	SHIPPING WEIGHT 2,500 LBS SUPPLIED BY MIZKAN AMERICA
TOWER 3	WATER COOLING TOWER	HARLEY	NC84020M		-----	-----	-----	
GENERATOR 2	450KW 480V GENERATOR	CUMMINGS	450CPEJ		-----	-----	-----	SHIPPING WEIGHT 15319 LBS, 32,271 LBS OPERATING WEIGHT

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STANDARDS AND TOLERANCES NOT SPECIFIED			
DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE			
.X ± .1	FINISH SURFACE:	500 Rms	
.XX ± .02	FINISH SURFACE:	250 Rms	
.XXX ± .005	FINISH SURFACE:	125 Rms	
FRACTIONAL: ± 1/32"	 HARDNESS TEST LOCATION		
ANGULAR: ± .5°			
FILLET RADII: .015"R			
CORNER BREAK: .010"			
REMOVE ALL BURRS			
	THIRD ANGLE PROJECTION		
			



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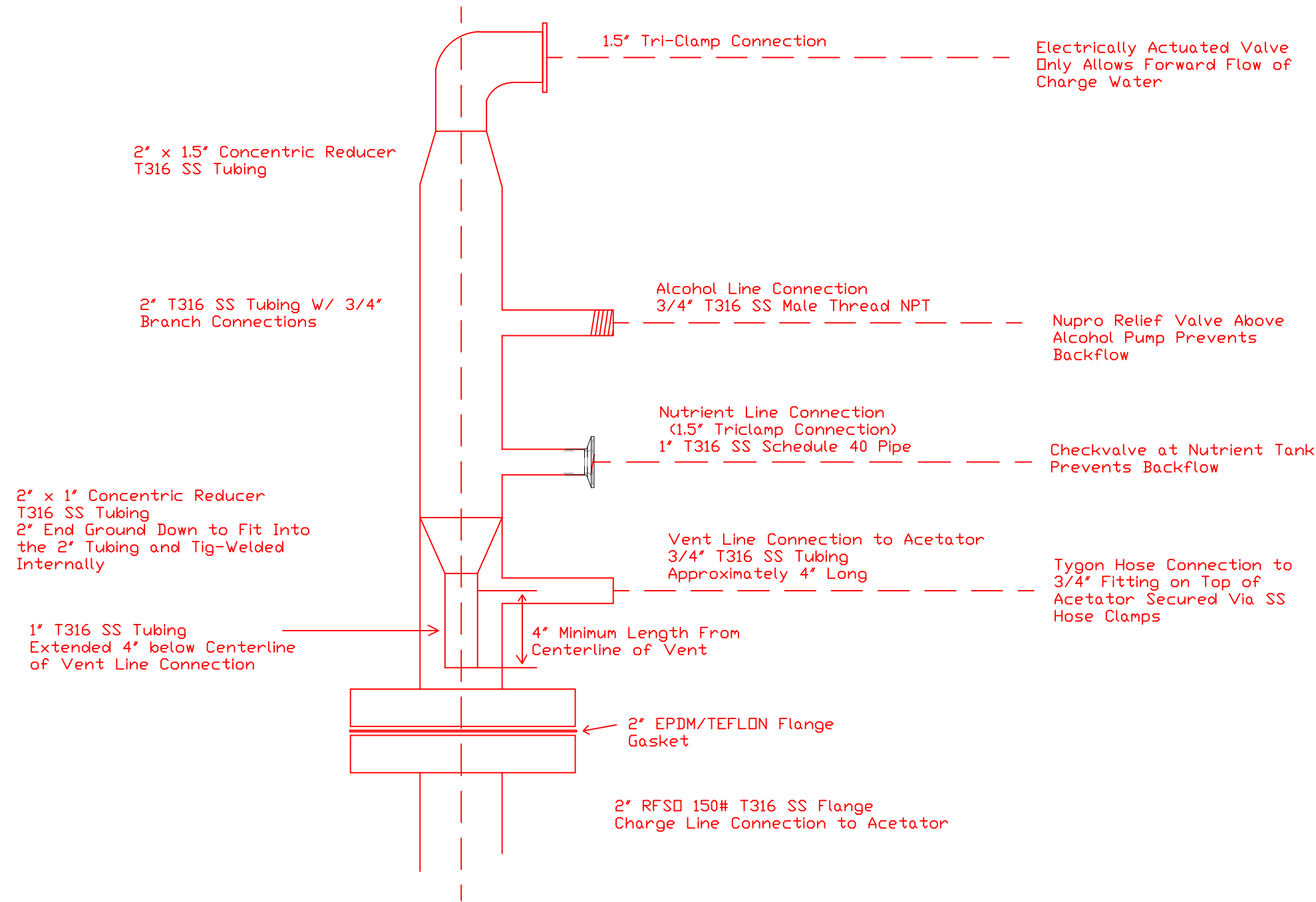
1661 Feehanville Drive, Suite 300
Mt. Prospect, IL 60056
(847)-590-0059 Office

TITLE: ACETATOR 9/10
RANCHO CUCAMONGA, CA

SHT SIZE: D	REFERENCE Dwg:	
DESIGNED: RO	SHEET NO.: 3 OF 5	
DRAWN: RO	SCALE:	
CHECKED: NA	DWG. NO.	
DATE: 03/18/15	Acetator	

REV.	DATE	NATURE OF REVISION	REV. BY.
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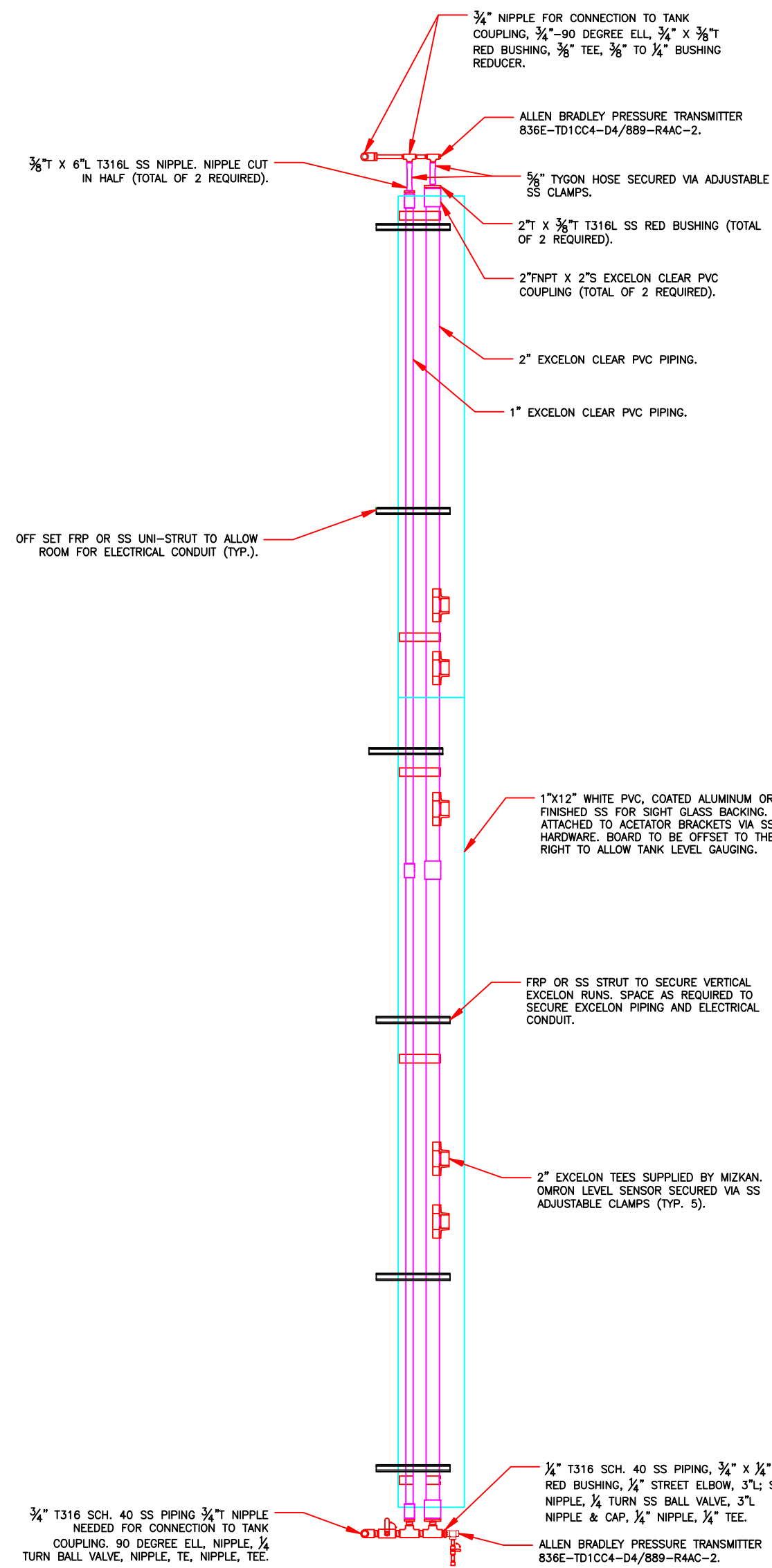
Acetator Aspirator
Charge Line



1 ASPIRATOR INSTALLATION DETAIL
SCALE: NONE

DETAIL NOTES

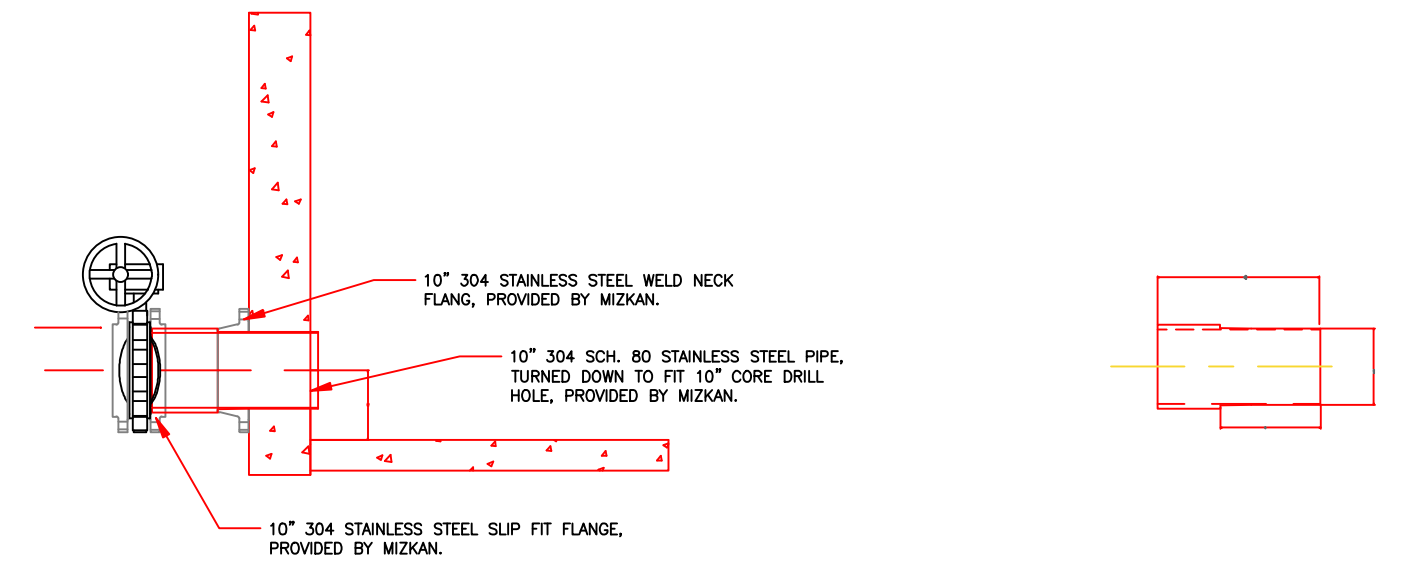
1. STAINLESS STEEL PIPING TO T316L 16 GA STAINLESS STEEL.
2. MIZKAN WILL PROVIDE, CONTRACTOR TO INSTALL.



2 SIGHT GLASS INSTALLATION DETAIL
SCALE: NONE

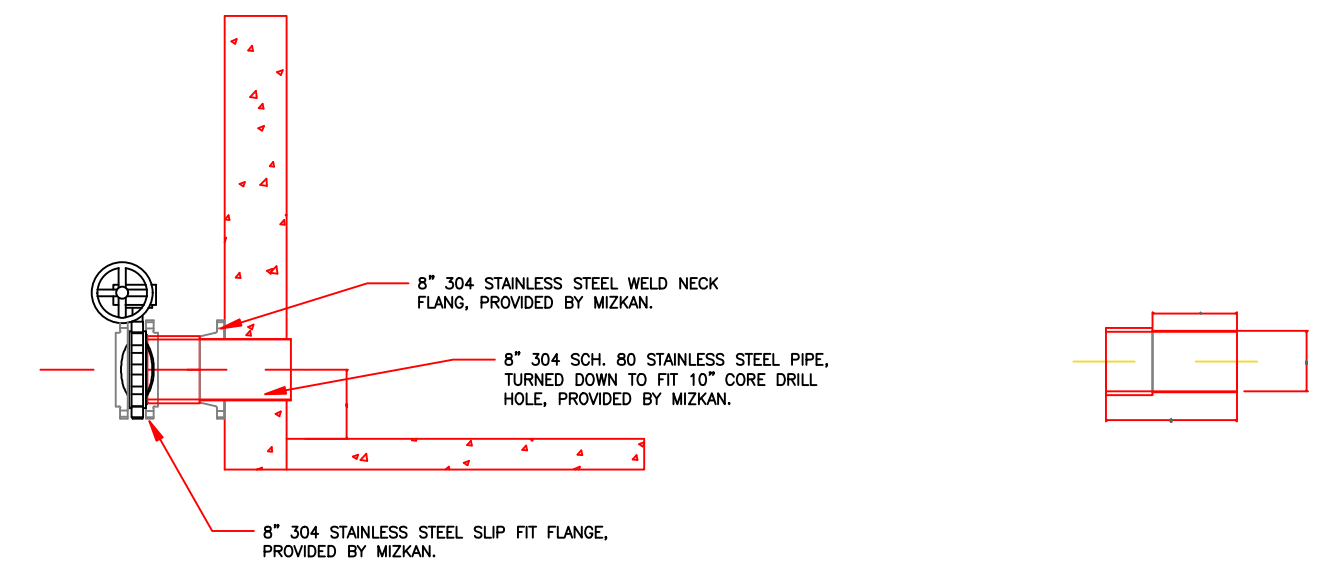
DETAIL NOTES

1. STAINLESS STEEL PIPING TO T316L SCH. 40 STAINLESS STEEL.
2. STAINLESS NIPPLE REQUIRED TO CONNECTION TO TANK COUPLING. NIPPLE LENGTH
TO BE SUFFICIENT TO ALLOW CLEARANCES OF GAUGE BOARD, FRP STRUT AND
EXCELOX PIPING.
3. LOWER BALL VALVES CAN BE REDUCED PORT TYPE.
4. USE NIPPLES OF SUFFICIENT LENGTH TO MINIMIZE HORIZONTAL RUN OF LOWER
PIPING TO MAXIMIZE SPACE FOR LEVEL INDICATION OR BOARD.
5. ONE S X S COUPLING OF EACH SIZE REQUIRED FOR CONNECTION OF EXCELOX
PIPING.
6. CONTRACTOR SHALL SUPPLY AND INSTALL ALL MATERIALS FOR ACETATOR SIGHT
GLASS CONSTRUCTION.
7. MIZKAN TO CALIBRATE TANK, PROVIDE AND INSTALL ALL LEVEL MARKINGS



3 COOLING TOWER SUPPLY INSTALLATION DETAIL
SCALE: NONE

1. STAINLESS STEEL PIPING TO 1304 SCH. 80 STAINLESS STEEL.
2. MIZKAN WILL PROVIDE PIPE AND MOUNTING FLANGES UP TO VALVE, CONTRACTOR TO PROVIDE
ALL GASKETING, HARDWARE AND TO INSTALL.
3. ANCHORS TO BE 304 STAINLESS STEEL, EPOXY SET TYPE.



4 COOLING PUMP SUPPLY INSTALLATION DETAIL
SCALE: NONE

1. STAINLESS STEEL PIPING TO 1304 SCH. 80 STAINLESS STEEL.
2. MIZKAN WILL PROVIDE PIPE AND MOUNTING FLANGES UP TO VALVE, CONTRACTOR TO PROVIDE
ALL GASKETING, HARDWARE AND TO INSTALL.
3. ANCHORS TO BE 304 STAINLESS STEEL, EPOXY SET TYPE.

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STANDARDS AND TOLERANCES NOT SPECIFIED DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE			
.X ± .1	FINISH SURFACE, 500 Rms		
.XX ± .02	FINISH SURFACE, 250 Rms		
.XXX ± .005	FINISH SURFACE, 125 Rms		
FRACTIONAL ± 1/32"	HARDNESS TEST		
ANGULAR: ± .5°	LOCATION		
FILLET RADII: .015"R	THIRD ANGLE PROJECTION		
CORNER BREAK: .010"			
REMOVE ALL BURRS			

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TITLE: ACETATOR 9/10
RANCHO CUCAMONGA, CA

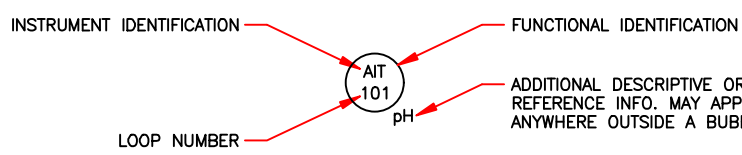
SHT SIZE: D	REFERENCE Dwg:	
DESIGNED: RO	SHEET NO.: 4 OF 5	
DRAWN: RO	SCALE:	
CHECKED: NA	DWG. NO.	REV. LTR.
DATE: 03/18/15	Acetator	

REV.	DATE	NATURE OF REVISION	REV. BY.
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INSTRUMENT FUNCTION SYMBOLS

DEVICE LOCATION	FIELD MOUNTED	PRIMARY LOCATION (NORMALLY ACCESSIBLE OPERATOR'S PANEL)	PRIMARY LOCATION (NORMALLY ACCESSIBLE OPERATOR'S PANEL)	AUXILIARY LOCATION (REMOTE PANEL) (E.G., PUMP PANEL)	AUXILIARY LOCATION (NORMALLY ACCESSIBLE OPERATOR'S PANEL)
DISCRETE INSTRUMENT	XXX XXX	XXX XXX	XXX XXX	XXX XXX	XXX XXX
SHARED DISPLAY/SHARED CONTROL	XXX XXX	XXX XXX	XXX XXX	XXX XXX	XXX XXX
COMPUTER FUNCTION	XXX XXX	XXX XXX	XXX XXX	XXX XXX	XXX XXX
PROGRAMMABLE LOGIC CONTROL	XXX XXX	XXX XXX	XXX XXX	XXX XXX	XXX XXX
PILOT (STATUS) LIGHT	XXX XXX	XXX XXX	XXX XXX	XXX XXX	XXX XXX

INSTRUMENT FUNCTION SYMBOL KEY



MISCELLANEOUS SYMBOLS AND ABBREVIATIONS

A/B	DEVICE SELECT	UCP	UNIT CONTROL PANEL
C	COLUMN (FRACTIONAL DISTILLATION)	U.O.N.	UNLESS OTHERWISE NOTED
CFD	CUBIC FEET PER DAY	UPS	UNINTERRUPTED POWER SUPPLY
CFM	CUBIC FEET PER HOUR	V	VESSEL
CFM	CUBIC FEET PER MINUTE	VMB	VALVE MANIFOLD BOX
COM	COMMON (PORT ON 3-WAY VALVE)	W.C.	WATER COLUMN (INCHES)
DN	DOWN	(Y)	YELLOW (PILOT LIGHT)
E	EXCHANGER (HEAT)	#	DIAMETER
(E)/EXIST.	EXISTING (PIPING OR EQUIPMENT)	1/O	ON/OFF (MODE SELECT)
EFC	CLOSED WHEN ELECTRICAL FAILURE	1/2/ALT	NO.1/NO.2/ALTERNATE (SELECTOR SWITCH)
EFO	OPEN WHEN ELECTRICAL FAILURE	1	SHEET NOTE
ES	ELECTRICAL SUPPLY	1	PROCESS LINE IDENTIFICATION NO.
F	FILTER (AIR OR IN-LINE)	1	COMPLEX LOGIC/SOFTWARE (WITH REFERENCE)
FC	FAIL CLOSED	30	NFPA 704 CHEMICAL HAZARD LABEL
FE	FIRE EXTINGUISHER		
FE	FAIL OPEN		
F/R	FORWARD/REVERSE		
F/S	FAST-SLOW		
(G)	GREEN (PILOT LIGHT)		
GAL	GALLONS		
GPD	GALLONS PER DAY		
GPH	GALLONS PER HOUR		
GPM	GALLONS PER MINUTE		
H/O/A	HAND/OFF/AUTO (MODE SELECT)		
I/A	CURRENT ISOLATOR		
ID	INSIDE DIAMETER		
HHg	INCHES MERCURY (VACUUM)		
K	COMPRESSOR		
LBS.	POUNDS		
L/R	LOWER/RAISE		
L/R	LOWER/AUTO/RAISE		
LES	LOWER EXPOSURE LIMIT		
LOS	LOCK OUT STOP		
LPM	LITERS PER MINUTE		
M	MECHANICAL EQUIPMENT		
MCP	MAIN CONTROL PANEL		
MP	METERING PUMP		
MX	MIXER		
mmHg	MILLIMETERS MERCURY (VACUUM)		
μ	MICRON (FILTER SIZE)		
(N)	NEW (PIPING OR EQUIPMENT)		
NO	NORMALLY CLOSED		
NO	NORMALLY OPEN		
O/C	OPEN/CLOSE		
O/A/C	OPEN/AUTO/CLOSE		
O/A	OVERLOAD		
OD	OUTSIDE DIAMETER		
P	PUMP		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
P.O.C.	POINT OF CONNECTION		
PSIG	POUNDS PER SQUARE INCH GAUGE		
(R)	RED (PILOT LIGHT)		
S	SUMP		
S/D	SHUT/DOWN		
SCFM	STANDARD CUBIC FEET PER MINUTE		
SEL	SELECTOR		
SLS	SUCTION GATE		
SLPM	STANDARD LITERS PER MINUTE		
STG	STOP GATE		
S/S	START/STOP		
T	TANK		

PROCESS EQUIPMENT, FITTINGS AND VALVE SYMBOLS

FITTINGS AND VALVES		PUMPS		MISCELLANEOUS MECHANICAL ITEMS	
	GATE VALVE		CENTRIFUGAL PUMP		MOTOR/DRIVER
	BALL VALVE (OPEN)		VACUUM PUMP ROTARY VANE		BLOWER/EXHAUST FAN
	BALL VALVE (CLOSED)		DOUBLE DIAPHRAGM PUMP		MIXER
	3-WAY BALL VALVE		SINGLE DIAPHRAGM PUMP		HEAT EXCHANGER
	BUTTERFLY VALVE		SUBMERSIBLE CENTRIFUGAL PUMP		FILTER
	CHECK VALVE		VERTICAL TURBINE PUMP		PRESSURE GAUGE
	DIAPHRAGM VALVE		CHEMICAL METERING PUMP		DIFFERENTIAL PRESSURE GAUGE (MAGNETIC)
	ANGLE VALVE		PERISTALTIC PUMP		TEMPERATURE GAUGE
	GLOBE VALVE		PROGRESSIVE CAVITY PUMP		PULSATION DAMPENER
	PLUG VALVE		POSITIVE DISPLACEMENT PUMP (GEAR PUMP)		STEAM TRAP
	SOLENOID VALVE (2-WAY)		POSITIVE DISPLACEMENT PUMP (LOBE PUMP)		SPRAY NOZZLE
	SOLENOID VALVE (3-WAY)		RESTRICTIVE FLOW ORIFICE (RFO)		FLAME ARRESTOR
	PNEUMATIC DIAPHRAGM CONTROL VALVE		DAMPER		MECHANICAL LOUVER
	BELLOWS VALVE WITH PURGE PORTS		EXPANSION JOINT		ACTUATOR
	PRESSURE REGULATING VALVE		DIAPHRAGM OR UNSPECIFIED ACTUATOR		CYLINDER OR PISTON ACTUATOR
	BACK-PRESSURE REGULATING VALVE		SOLENOID		MANUAL/HAND ACTUATOR
	FIRE SAFETY VALVE WITH FUSIBLE LINK		ELECTRO-HYDRAULIC ACTUATOR		ROTARY MOTOR ACTUATOR
	PRESSURE SAFETY (RELIEF) VALVE		FUSIBLE LINK WITH SPRING ACTUATOR		
	PRESSURE/VACUUM SAFETY (RELIEF) VALVE				
	FLOAT-OPERATED LEVEL CONTROL VALVE				
	Y-STRAINER				
	BASKET STRAINER				
	RUPTURE DISC				
	DIAPHRAGM SEAL/ISOLATOR				
	END CAP OR SCREEN				
	QUICK CONNECT COUPLING				
	REDUCER				
	UNION				
	BLIND FLANGE				
	FLANGED CONNECTION				
	SANITARY FITTING OR VACUUM CONNECTION				

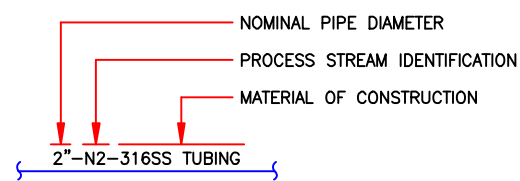
INSTRUMENT LINE SYMBOLS

	PROCESS LINE OR MECHANICAL CONNECTION		UNDERGROUND PROCESS LINE
	ELECTRICAL SIGNAL LINE (DIGITAL OR ANALOG)		FLEXIBLE TUBING OR HOSE
	PNEUMATIC LINE		HEAT TRACING
	HYDRAULIC LINE		INSULATION
	CAPILLARY TUBE		ELBOW UP
	INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)		ELBOW DOWN
	ELECTROMAGNETIC OR SONIC SIGNAL		SECONDARY CONTAINMENT PIPE
	REMOVED PROCESS LINE		NO CONNECTION
	PROCESS LINE CONTINUED ON SHEET INDICATED		POINT OF CONNECTION

INSTRUMENT IDENTIFICATION LETTERS

LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		SENSOR (PRIM. ELEMENT)		
F	FLOW RATE	FRACTION (RATIO)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE OR TORQUE			WELL	
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

PROCESS LINE ABBREVIATIONS



ACV	APPLE CIDER VINEGAR	IWW	INDUSTRIAL WASTE WATER
AL	ALUMINUM	LN2	LIQUID NITROGEN (CRYOGENIC)
AW	ACID WASTE	N2	NITROGEN
AWNS	ACID WASTE NEUTRALIZATION SYSTEM	NMP	N-METHYLPYRROLIDONE
CD	CONDENSATE DRAIN	O2	OXYGEN
CDA	CLEAN DRY AIR	OVV	ORGANIC CIDER VINEGAR
CP	CLEAN IN PLACE	PCWR	PROCESS COOLING WATER RETURN
CO2	CARBON DIOXIDE	PCWS	PROCESS COOLING WATER SUPPLY
CPVC	CHLORINATED POLYVINYL CHLORIDE	PE	POLYETHYLENE
CS	CARBON STEEL	PEX	CROSS LINKED POLYETHYLENE
CW	COPPER	PF	PERFLUOROPOLYIMIDE (TEFLON)
CWR	COOLING WATER RETURN	PF2	PROCESS NITROGEN
CWS	COOLING WATER SUPPLY	PP	POLYPROPYLENE
DWR	DEIONIZED WATER RETURN	PTE	POLYTETRAFLUOROETHYLENE (TEFLON)
DWS	DEIONIZED WATER SUPPLY	PUL	POLYURETHANE
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	PVC	POLYVINYL CHLORIDE
EXH	EXHAUST (DUCT)	PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
F2	FLUORINE	RE	RECYCLED
FEP	FLUORINATED ETHYLENE PROPYLENE	REC	RECOVERED
FFW	FORCED PROCESS WATER	RLF	RELIEF (PRESSURE SAFETY)
FRP	FIBERGLASS REINFORCED PLASTIC	SCH	PIPE SCHEDULE (E.G., SCH. 40, SCH. 80)
G	GAS (NATURAL)	SS	SANITARY STEEL OR STAINLESS STEEL (E.G., 304 SS, 316 SS, 316L SS)
GALV.	GALVANIZED (PIPE)	SW	STORM WATER
HAST.	HASTELLOY-C (PIPE)	TTE	TETRAFLUOROETHYLENE (TEFLON)
HDPE	HIGH DENSITY POLYETHYLENE	UN2	UTILITY (HOUSE) NITROGEN
H2	HYDROGEN	UPWR	ULTRA PURE WATER RETURN
H2O	WATER	UPWS	ULTRA PURE WATER SUPPLY
HPN2	HIGH PURITY NITROGEN	VAC	VACUUM
		WDV	WHITE DISTILLED VINEGAR

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STANDARDS AND TOLERANCES NOT SPECIFIED	
DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE	
X ± 1	FINISH SURFACE: 500 Rms
XX ± 0.02	FINISH SURFACE: 250 Rms
XXX ± 0.005	FINISH SURFACE: 125 Rms
FRACTIONAL: ± 1/32"	HARDNESS TEST LOCATION
ANGULAR: ± 5°	THIRD ANGLE PROJECTION
FILLET RADIUS: 0.15"	
CORNER BREAK: 0.01"	
REMOVE ALL BURRS	



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(847)-590-0059 Office

TITLE: ACETATOR 9/10
RANCHO CUCAMONGA, CA

SHT SIZE: D	REFERENCE Dwg:	
DESIGNED: RO	SHEET NO.: 2 OF 5	
DRAWN: RO	SCALE:	
CHECKED: NA	DWG. NO.	Acetator
DATE: 03/18/15		

REV.	DATE	NATURE OF REVISION	REV. BY.
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