

PIPING AND INSTRUMENTATION DIAGRAM

PROJECT NO: L42228

LOCATION: CHADORMALU (ARDAKAN)





PLANT TYPE: DRGA 5500

CUSTOMER: CPG ENGINEERING AND
COMMERCIAL SERVICES GMBH

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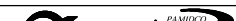

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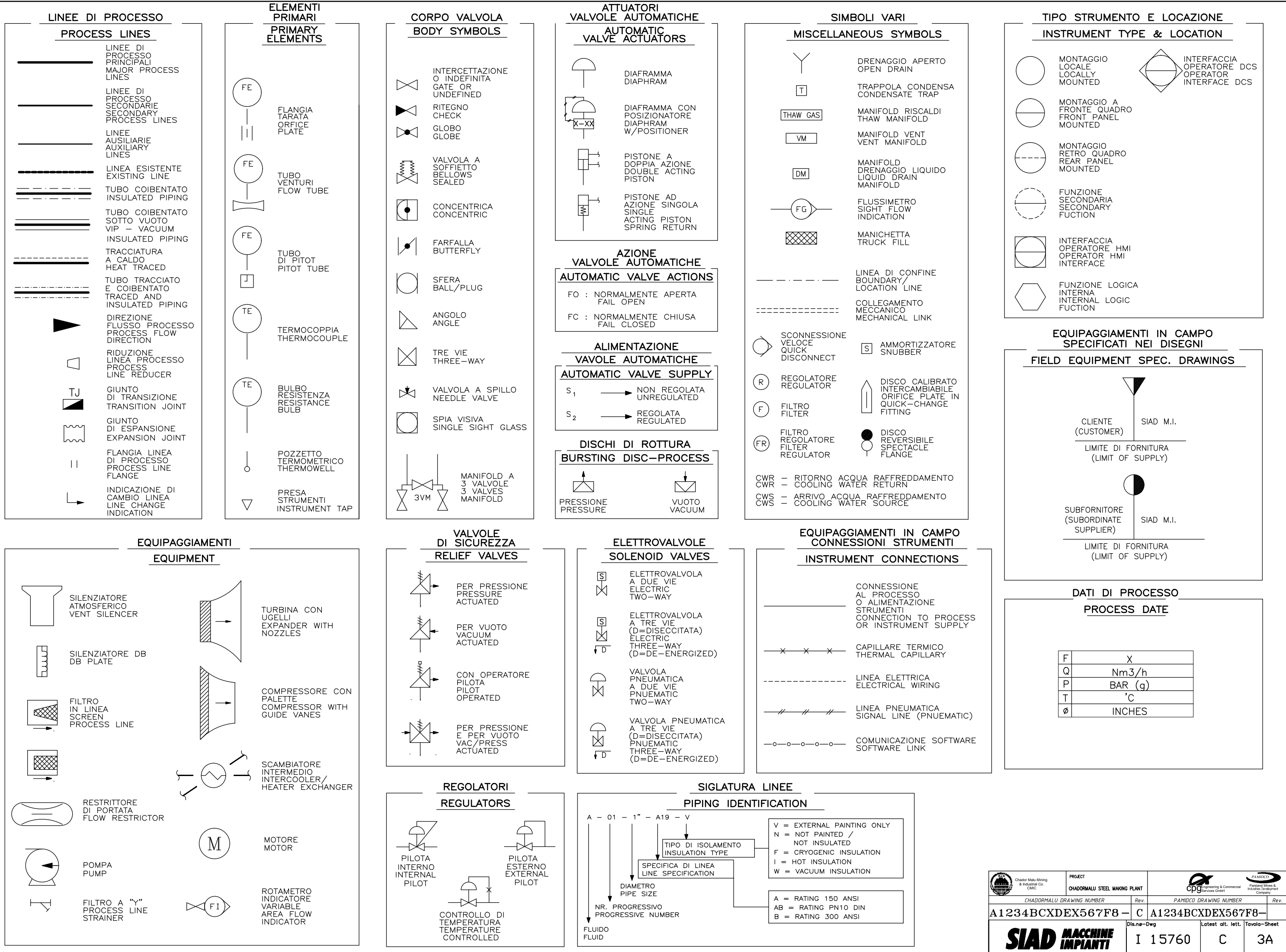
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POS. ITEM	UN. MIS. MEAS. UNIT	QUANT. QUANTITY	DESCRIZIONE PART DESCRIPTION	DISEGNO/CODICE DRAWING/PART NO.	MATERIALE MATERIAL	PESO Kg. WEIGHT Kg.	UNITARIO TOTALE
			PROJECT CHADORMALU STEEL MAKING PLANT				
CHADORMALU DRAWING NUMBER				Rev.	PAMIDCO DRAWING NUMBER		Rev.
A1234BCXDEX567F8 —				E	A1234BCXDEX567F8—		
Title					Job	Latest alt. lett.	
PIPING & INSTRUMENTATION DIAGRAM PLANT TYPE: DRGA 5500 CUSTOMER: CPG ENGINEERING AND COMMERCIAL SERVICES GMBH LOCATION: CHADORMALU (ARDAKAN)					L42228	E	
					Scale	Replaces	
				Dwg	Sheet		
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LEGENDA CODICE VALVOLA - VALVE LEGEND CODE			
PRIMA LETTERA / FUNZIONE FIRST LETTER / FUNCTION		NUMERO SIGLA TAG NUMBER	ULTIME LETTERE / FLUIDO LAST LETTERS / FLUID
VALVOLA MANUALE MANUAL VALVE	VALVOLA AUTOMATICA AUTOMATIC VALVE	VALVOLA MANUALE O AUTOMATICA MANUAL OR AUTOMATIC VALVE	SOLO VALVOLA MANUALE ONLY MANUAL VALVE
A B BYPASS C CONTROLLO - CONTROL D DRENAGGIO - DRAIN E F G H PRESA DIFFERENZIALE POSITIVA HIGH PRESSURE DIFFERENTIAL TAP I J SPIA VISIVA - SIGHT GLASS K FILTRO - FILTER L PRESA DIFFERENZIALE NEGATIVA LOW PRESSURE DIFFERENTIAL TAP M N O P PRESA DI PRESSIONE - PRESSURE TAP Q R SICUREZZA - RELIEF S ANALISI - SAMPLE T RISCALDO - THAW U V MESSA ALL'ARIA - VENT W X INTERCETTAZIONE - SHUTOFF Y NON RITORNO - CHECK VALVE Z	VEDERE LEGENDA CODICE STRUMENTI LETTERE DI IDENTIFICAZIONE SEE INSTRUMENT LEGEND CODE IDENTIFICATION LETTERS	VEDERE LEGENDA CODICE STRUMENTI NUMERI DI IDENTIFICAZIONE AREA SEE INSTRUMENT LEGEND CODE AREA IDENTIFICATION NUMBERS	VEDERE LEGENDA CODICE FLUIDI SEE FLUID LEGEND CODE

LEGENDA CODICE FLUIDO - FLUID LEGEND CODE			
SIGLA ITEM	FLUIDO - FLUID	SIGLA ITEM	FLUIDO - FLUID
	OLII - OILS		GAS E LIQUIDI PROCESSO PROCESS GAS AND LIQUID
GO DO LO	GASOLIO - GAS OIL OLIO DIATERMICO - DIATERMIC OIL OLIO LUBRIFICANTE - LUBE OIL	D NH3 Q H CO K NO FF FL CH GY M BO SG DR V P GV HC	ACETILENE - ACETYLENE AMMONIACA - AMMONIA ETILENE - ETHYLENE IDROGENO - HYDROGEN OSSIDO DI CARBONIO - CARBON OXIDE ANIDRIDE CARBONICA - CARBON DIOXIDE PROTOSSIDO DI AZOTO - NITROGEN OXIDE SCHIUMA ANTINCENDIO - FIRE FOAM LIQUIDO SCHIUMOSO - FOAMING LIQUID PRODOTTO CHIMICO (GEN.) - CHEMICAL (GEN.) GLICOLE - GLYCOL METANO - METHANE BLOW DOWN - BLOW DOWN FANGHI - SLUDGES DRENAGGI - DRAINS SCARICO ALL'ATMOSFERA - ATMOSPHERE DISCHARGED PROPANO/PROPYLENE - PROPANE/PROPYLENE MISCELA DI GAS - GASES MIXTURE IDROCARBURI - HYDROCARBONS
	ARIA E GAS DI USO GENERALE AIR AND GAS GENERAL USE		
G IG NG PG FG GF TG RG GR LR A CA UA	GAS (GENERALE) - GAS (GENERAL) GAS STRUMENTI - INSTRUMENT GAS GAS NATURALE - NATURAL GAS GAS DI PURGA - PURGE GAS GAS COMBUSTIBILE - FUEL GAS GAS FLUORURATI - FLUORURATE GAS GAS DISGELD - THAW GAS GAS RIGENERAZIONE - REGENERATION GAS GAS REFRIGERANTI - REFRIGERATING GAS LIQUIDO REFRIGERANTE - REFRIGERATING LIQUID ARIA (GENERALE) - AIR (GENERAL) ARIA COMPRESSA - COMPRESSED AIR ARIA SERVIZI - UTILITES AIR		
	ACQUA - WATER		GAS E LIQUIDI CRIOGENICI CRYOGENIC GAS AND LIQUID
W CW DW FW HW SW TW UW BW IW	ACQUA (GENERALE) - WATER (GENERAL) ACQUA DI RAFFREDDAMENTO - COOLING WATER ACQUA POTABILE - DRINKING WATER ACQUA ANTINCENDIO - FIRE FIGHTING WATER ACQUA CALDA - HOT WATER ACQUA SALATA - SALT WATER ACQUA TRATTATA - TREATED WATER ACQUA SERVIZI - UTILITIES WATER ACQUA ALIMENTO CALDAIE - BOILER FEED WATER ACQUA INDUSTRIALE - SERVICE WATER	LIN N WN R RR RP RL HPN HPD HPR LA KL E X LOX GOX KG LC	AZOTO LIQUIDO - LIQUID NITROGEN AZOTO - NITROGEN AZOTO IMPURO - WASTE NITROGEN ARGON - ARGON ARGON IMPURO - WASTE ARGON ARGON PURO - PURE ARGON ARGON LIQUIDO - LIQUID ARGON AZOTO ALTA PRESSIONE - HIGH PRESSURE NITROGEN OSSIGENO ALTA PRESSIONE - HIGH PRESSURE OXYGEN ARGON ALTA PRESSIONE - HIGH PRESSURE ARGON ARIA LIQUIDA - LIQUID AIR LIQUIDO RICCO - KETTLE ELIO - HELIUM OSSIGENO - OXYGEN OSSIGENO LIQUIDO - LIQUID OXYGEN OSSIGENO GAS - GAS OXYGEN GAS RICCO - ENRICHED GAS LIQUIDO CRIOGENICO - CRYOGENIC LIQUID
S KS HS WS LS KC HC WC LC CD	VAPORE (GEN.) - STEAM (GEN.) VAPORE AD ALTISS. PR. - VERY HIGH PR. STEAM VAPORE AD ALTA PRESS. - HIGH PRESSURE STEAM VAPORE A MEDIA PRESS. - MEAN PRESSURE STEAM VAPORE A BASSA PRESS. - LOW PRESSURE STEAM CONDENSA VAP. ALTISS. PR. -VERY HIGH PR. STEAM COND. CONDENSA VAPORE ALTA PRES. -HIGH PR. STEAM COND. CONDENSA VAP. MEDIA PRES. -MEAN PR. STEAM COND. CONDENSA VAPORE BASSA PR. -LOW PR. STEAM COND. SCARICO CONDENSA - CONDENSATE DISCHARGE		





LEGENDA CODICE STRUMENTO - INSTRUMENT LEGEND CODE							
	LETTERE DI IDENTIFICAZIONE - IDENTIFICATION LETTERS					NUMERI DI IDENTIFICAZIONE AREA - AREA IDENTIFICATION NUMBERS	
	PRIMA LETTERA - FIRST LETTER		LETTERE SUCCESSIVE - SUCCEEDING LETTERS			NUMERO - NUMBER	AREA - AREA
	VARIABILE MISURATA MEASURED VARIABLE	LETTERA DI MODIFICA MODIFIER	FUNZIONE PASSIVA PASSIVE FUNCTION	FUNZIONE USCITA OUTPUT FUNCTION	LETTERA DI MODIFICA MODIFIER	1 - 40	ANALIZZATORI - ANALYZERS
						41 - 49	NON USATI - NOT USED
A	ANALISI ANALYSIS		ALLARME ALARM			50 - 74	COMPRESSORE OSSIGENO E CIRCUITO OLIO OXYGEN COMPRESSOR AND LUBE SYSTEM
B	AVVISO FIAMMA FLAME DETECTOR					75 - 99	COMPRESSORE AZOTO E CIRCUITO OLIO NITROGEN COMPRESSOR AND LUBE SYSTEM
C	CONDUTTIVITA' CONDUCTIVITY			REGOLAZIONE CONTROL		100 - 199	SCAMBIATORE PRINCIPALE - MAIN EXCHANGER
D	DENSITA' DENSITY	DIFFERENZIALE DIFFERENTIAL				200 - 299	TURBINA COLONNA - COLUMN TURBINE
E	TENSIONE (F. E. M.) VOLTAGE (E. M. F.)		ELEMENTO PRIMARIO PRIMARY ELEMENT			300 - 499	COLONNA INFERIORE E SUPERIORE, COLONNA ARGON CRUDO E PURO LOWER & UPPER COLUMN, CRUDE & REFINED ARGON
F	PORTATA FLOW RATE	RAPPORTO RATIO				500 - 599	FILTRO ARIA, COMPRESSORE ARIA, CHILLER E PREPURIFICATORE AIR FILTER, AIR COMPRESSOR, CHILLER AND PREPURIFIER
G	SPESSORE GAUGING		VETRO GLASS			600 - 699	OSSIGENO PRODOTTO, SCARICO E COLLETTORE ASPIRAZIONE OXYGEN MAKE, VENT & SUCTION HEADER
H	COMANDO MANUALE HAND CONTROL				ALTO HIGH	700 - 709	AZOTO PRODOTTO, SCARICO E COLLETTORE ASPIRAZIONE NITROGEN MAKE, VENT & SUCTION HEADER
I	CORRENTE (ELETTR.) CURRENT (ELECT.)		INDICAZIONE INDICATE			710 - 729	AZOTO PRODOTTO ALTA PRESSIONE HIGH PRESSURE NITROGEN MAKE
J	POTENZA POWER	SCAN SCAN				730 - 739	COMPRESSORE DI ALIMENTAZIONE - FEED COMPRESSOR
K	TEMPO TIME			STAZIONE CONTROLLO CONTROL STATION		740 - 749	COMPRESSORE DI RICIRCOLO - RECYCLE COMPRESSOR
L	LIVELLO LEVEL		SEGNALAZ. LUMIN. LIGHT		BASSO LOW	750 - 759	TURBINA AZOTO CALDA - WARM TURBINE
M	UMIDITA' MOISTURE				MEDIO O INTERM. MIDDLE OR INTERM.	750 - 769	TURBINA AZOTO FREDDA - COLD TURBINE
N	PNEUMATICO PNEUMATIC		PNEUMATICO PNEUMATIC	PNEUMATICO PNEUMATIC	PNEUMATICO PNEUMATIC	770 - 779	SISTEMA DI RIGENERAZIONE CON AZOTO IMPURO WASTE NITROGEN REGENERATION SYSTEM
O			DRIFIZIO DRIFICE			780 - 799	AZOTO DI TENUTA, FLUSSAGGIO E DI AVVIAMENTO NITROGEN PURGE & NITROGEN RUN-IN
P	PRESSIONE O VUOTO PRESSURE OR VACUUM		PRESA POINT			800 - 899	CIRCUITO ACQUA, ACQUA POTABILE, ANTINCENDIO, ECC.. WATER COOLING, POTABLE, FIRE, ECT..
Q	QUANTITA' O EVENTO QUANTITY OR EVENT	INTEGR. O TOTALIZ. INTEGRATE O TOTALIZE				900 - 999	DEPURAZIONE ARGON, IDROGENO, DISSOCIATORE AMMONIACA, DEODO ARGON, WARM END, AMMONIA, HYDROGEN, DEODO
R	RADIOATTIVITA' RADIOACTIVITY		REGISTRAZIONE RECORD			1000 - 1099	MISCELAZIONE TRATTAMENTO ACQUA MISCELLANEOUS WATER TREATMENT
S	VELOCITA' O FREQ. SPEED OR FREQUENCY	SICUREZZA SAFETY		INTERRUTTORE SWITCH		1100 - 1499	NON USATI - NOT USED
T	TEMPERATURA TEMPERATURE			TRASMETTITORE TRANSMITTER		1500 - 1599	LINEA VAPORE - STEAM SYSTEM
U	MULTIVARIABILE MULTIVARIABLE		MULTIFUNZIONE MULTIFUNCTION	MULTIFUNZIONE MULTIFUNCTION	MULTIFUNZIONE MULTIFUNCTION	1600 - 1699	STOCCAGGIO OSSIGENO LIQUIDO, DISTRIBUZIONE OXYGEN LIQUID STORAGE, DIOX DISTRIBUTION
V	VIBRAZIONE VIBRATION			VALVOLA VALVE		1700 - 1799	STOCCAGGIO AZOTO LIQUIDO, DISTRIBUZIONE NITROGEN LIQUID STORAGE, DIOX DISTRIBUTION
W	PESO O FORZA WEIGHT OR FORCE		POZZETTO WELL			1800 - 1899	DRENAGGIO ACQUA, RITORNI, SCARICHI FOGNA, ECC.. WATER DRAINS, RETURNS, SEWERS, ETC..
X	NON CLASSIFICATA UNCLASSIFIED		NON CLASSIFICATA UNCLASSIFIED	NON CLASSIFICATA UNCLASSIFIED	NON CLASSIFICATA UNCLASSIFIED	1900 - 1999	STOCCAGGIO ARGON LIQUIDO, DISTRIBUZIONE ARGON LIQUID STORAGE, DIOX DISTRIBUTION
Y				RELE' O FUNZIONE RELAY OR COMPUTE			
Z	POSIZIONE POSITION			ELEMENTO FINALE NON CLASSIFICATO UNCLASSIFIED FINAL CONTROL ELEMENT			

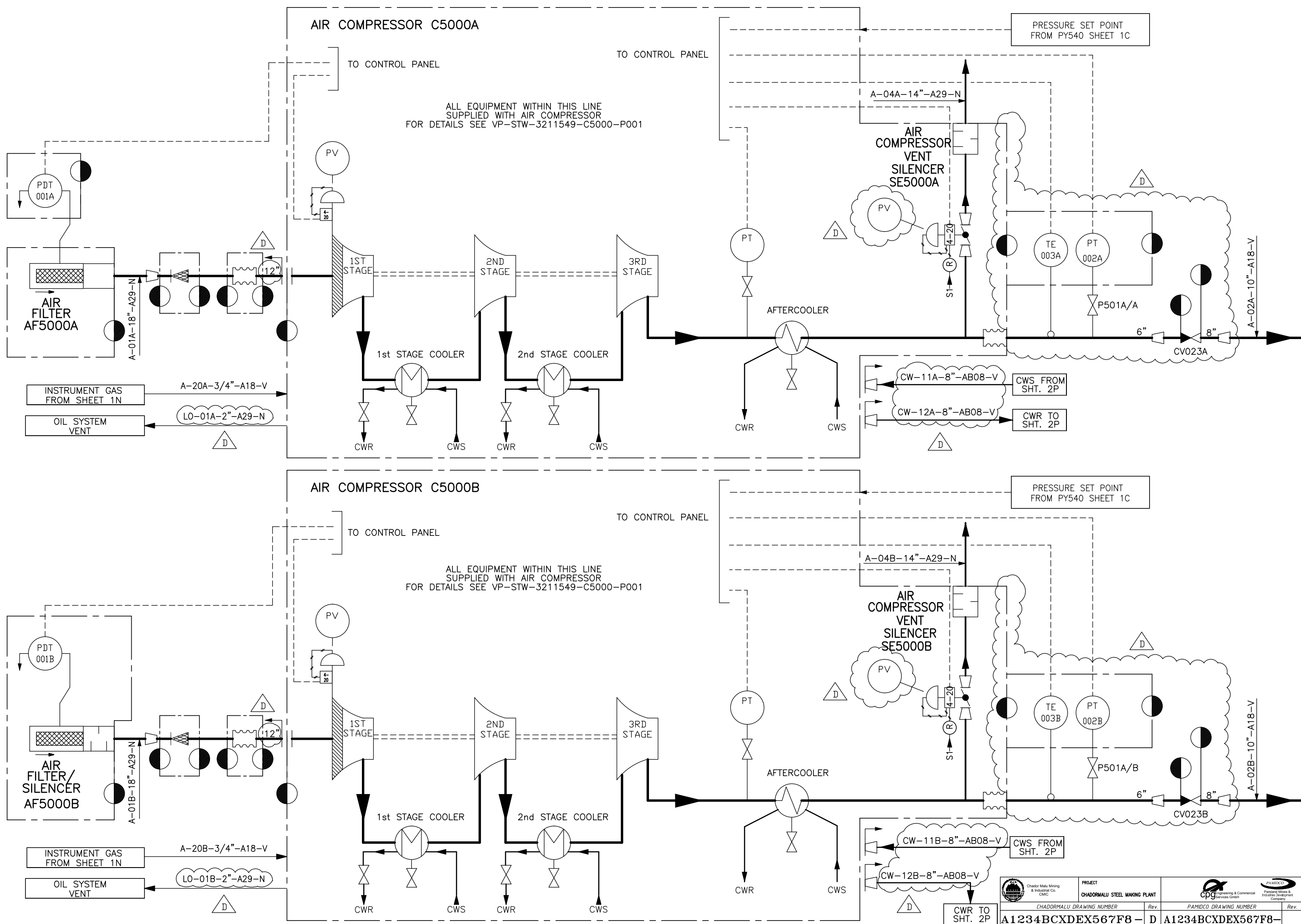
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		CHADORMALU STEEL MAKING PLANT			
		CHADORMALU DRAWING NUMBER	Rev.	PAMICO DRAWING NUMBER	Rev.
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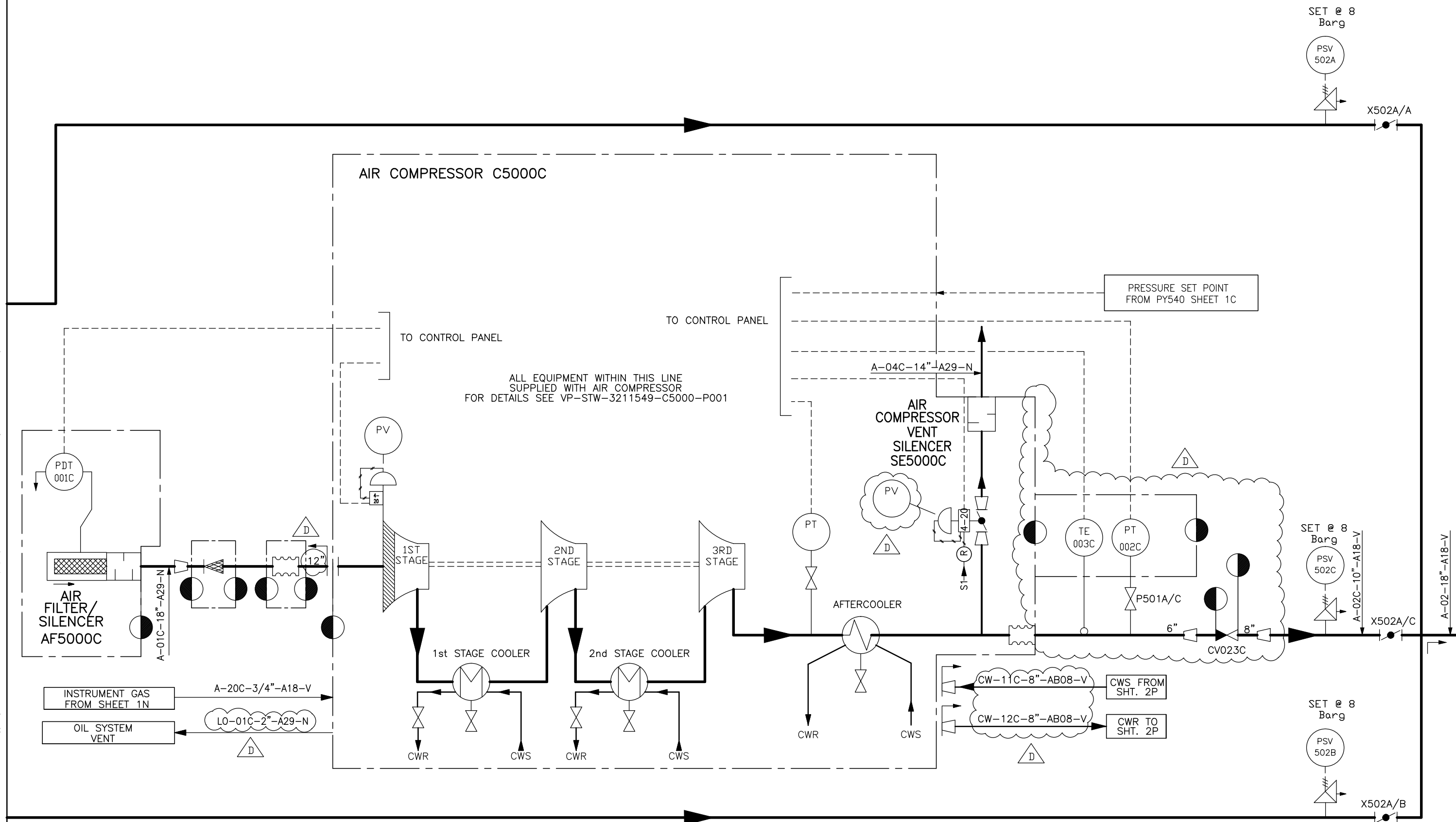
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A	A	TUTTI ALL.	EMESSO – ISSUE	08.10 2012	SANSEVERINO	CAGLIONI																					
B	B	4A	MODIFICATO – MODIFIED																								
	B	1B–1	MODIFICATO – MODIFIED																								
	B	2B	MODIFICATO – MODIFIED																								
	B	1D	MODIFICATO – MODIFIED																								
	B	2D	MODIFICATO – MODIFIED																								
	B	2D–1	MODIFICATO – MODIFIED																								
	B	3D	MODIFICATO – MODIFIED																								
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	B	2P–1	MODIFICATO – MODIFIED																								
B	2P–2	MODIFICATO – MODIFIED		30.10 2012	GELPI	CAGLIONI																					
C	C	TUTTI ALL.	MODIFICATO – MODIFIED	15.03 2013	GELPI	CAGLIONI																					
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	PROJECT CHADORMALU STEEL MAKING PLANT		
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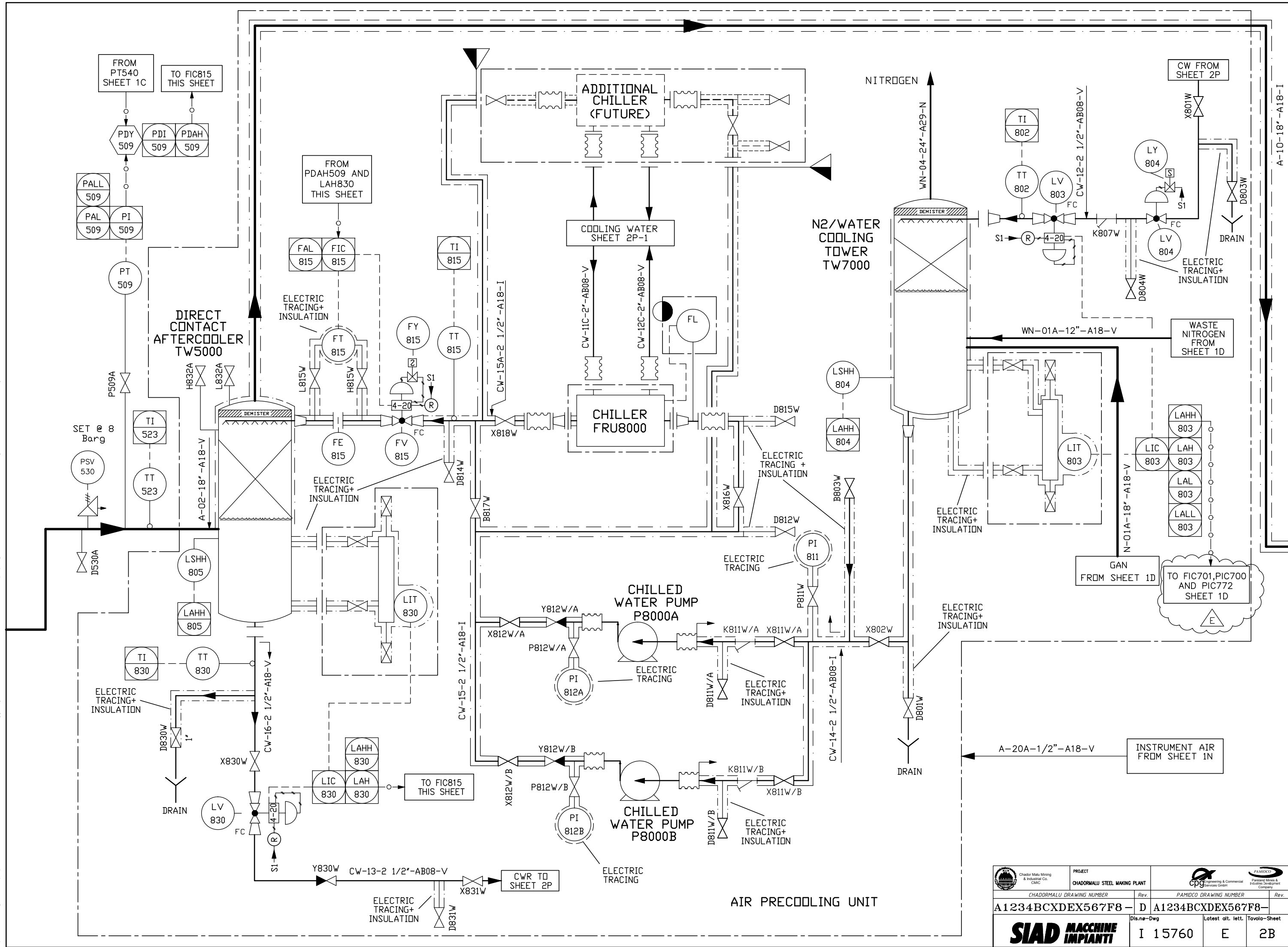




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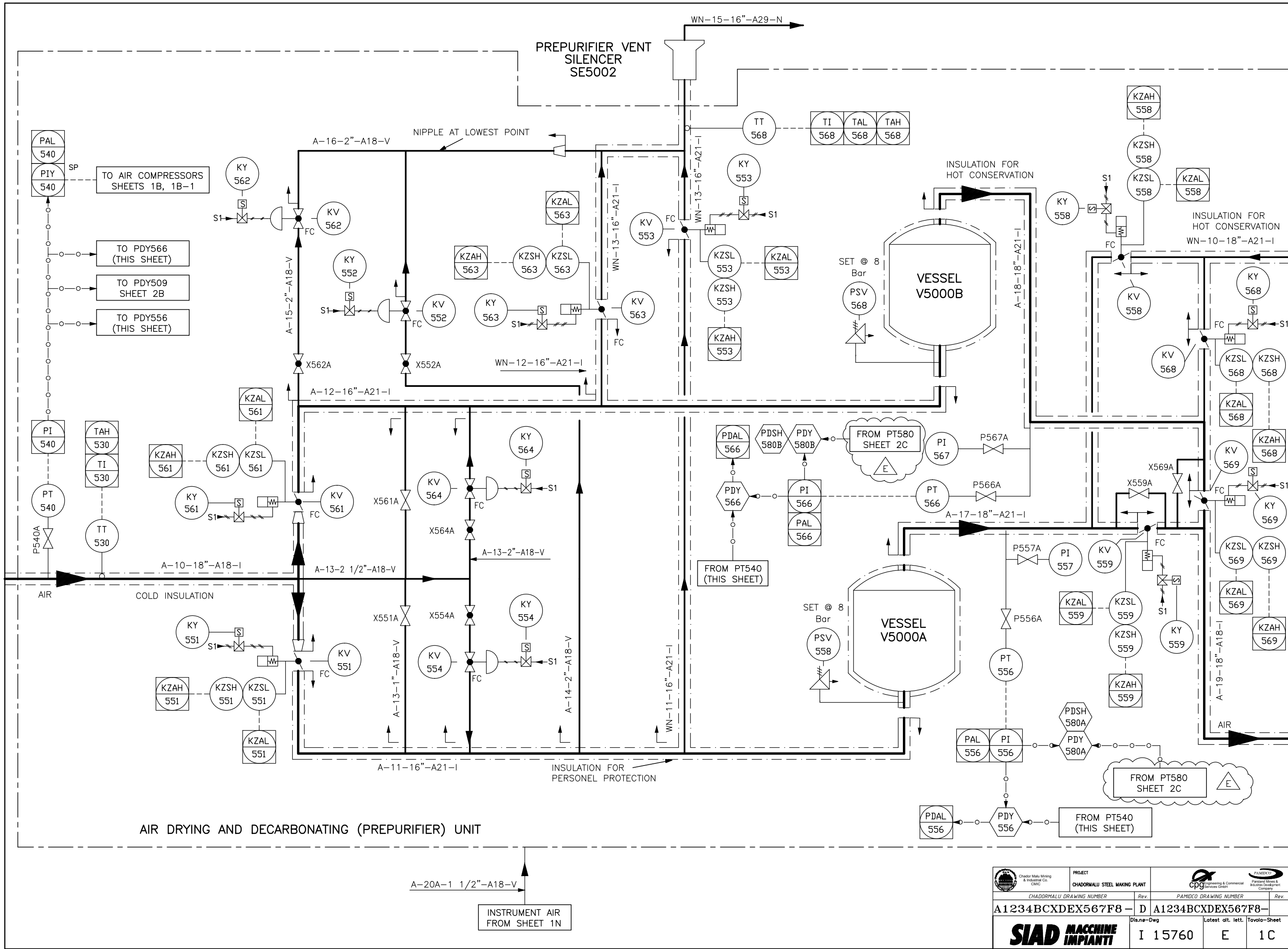
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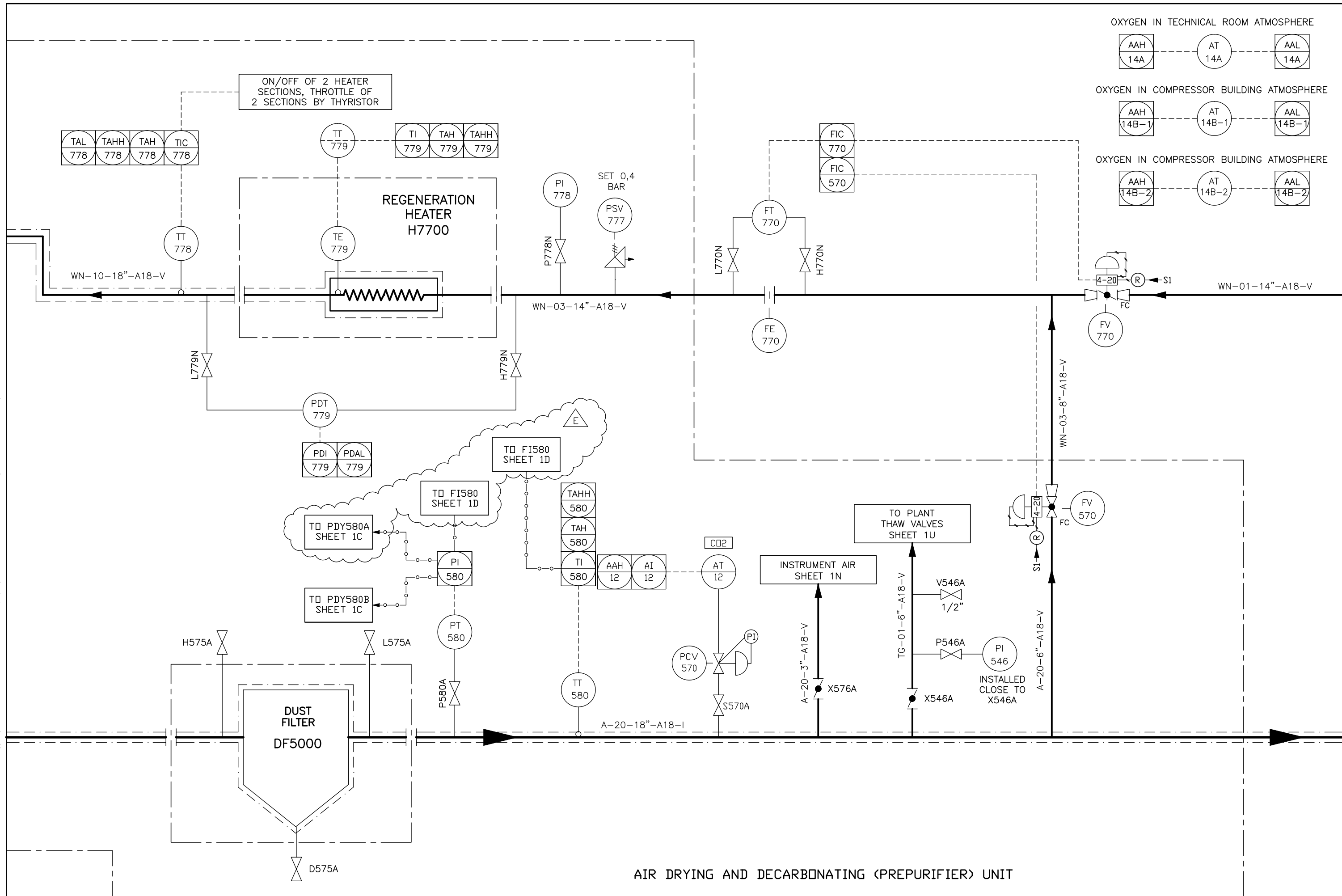
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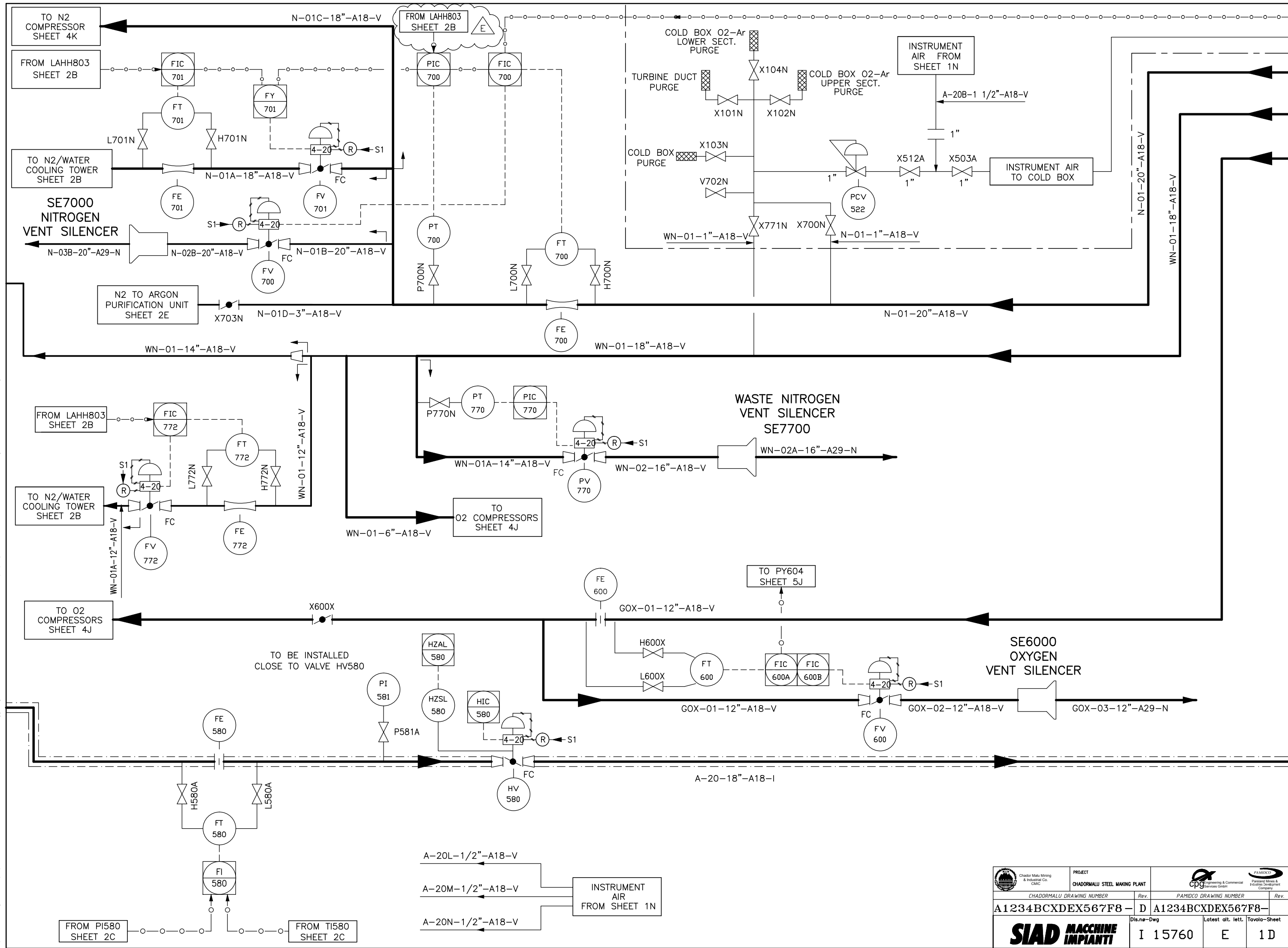


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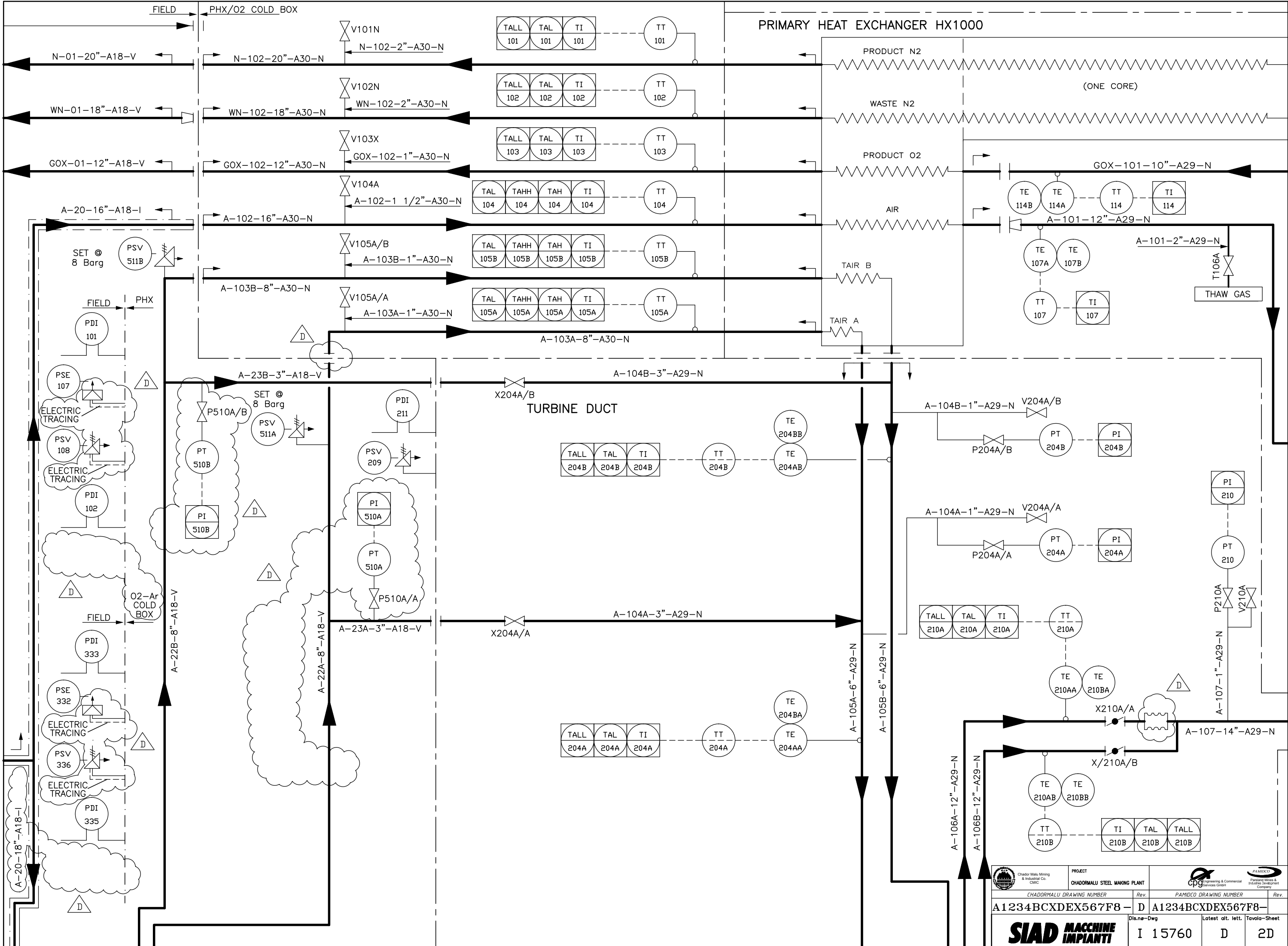
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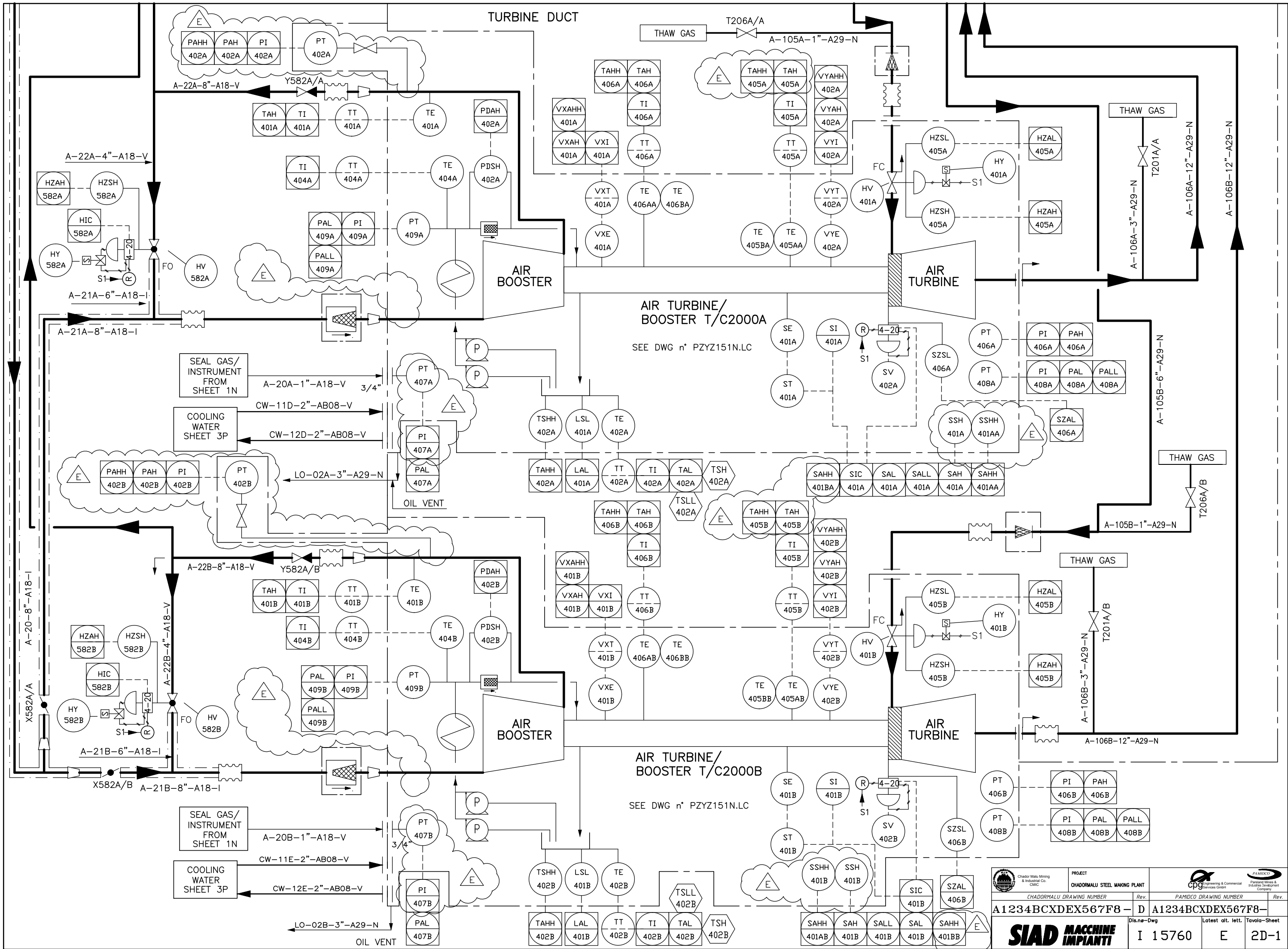
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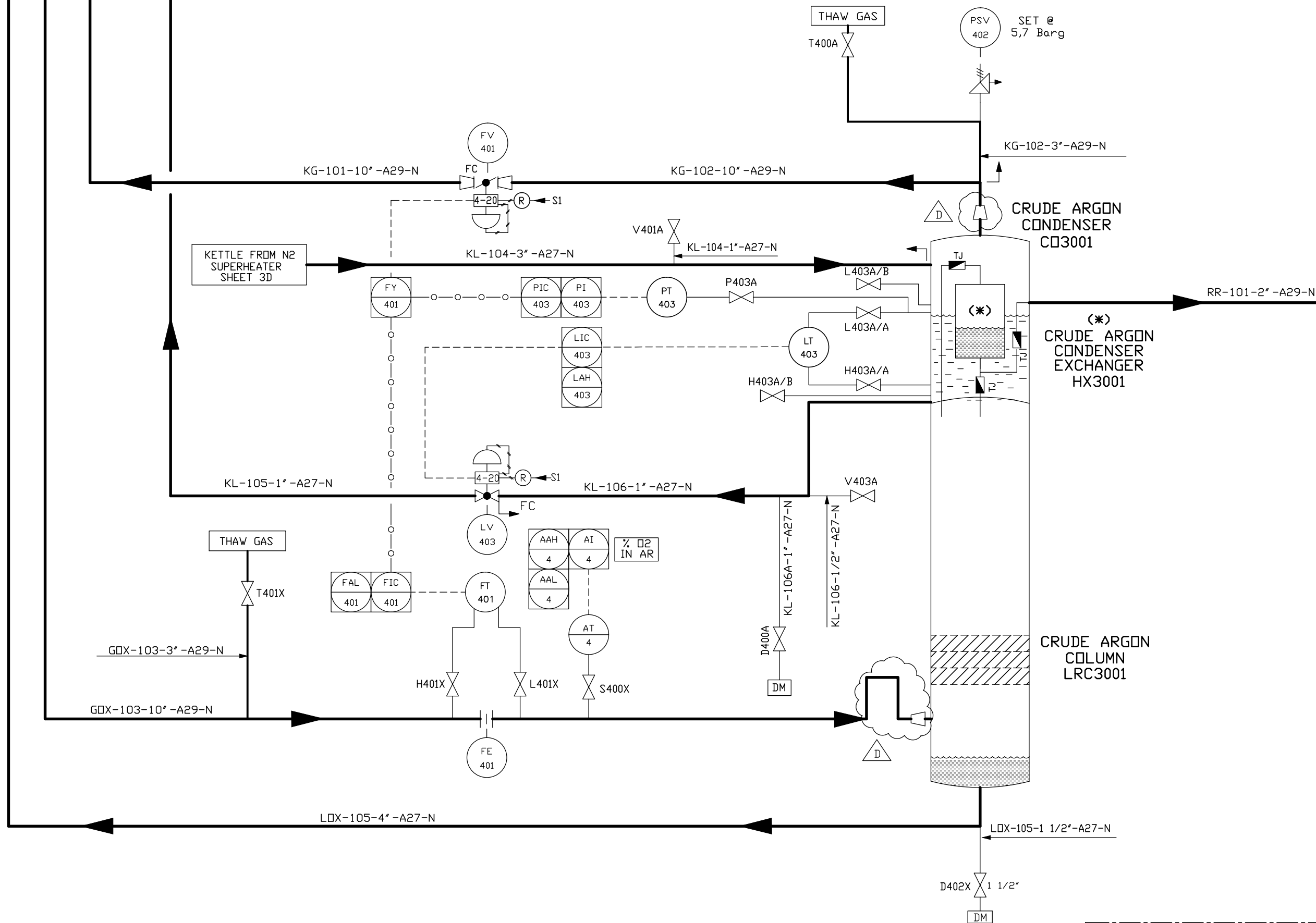
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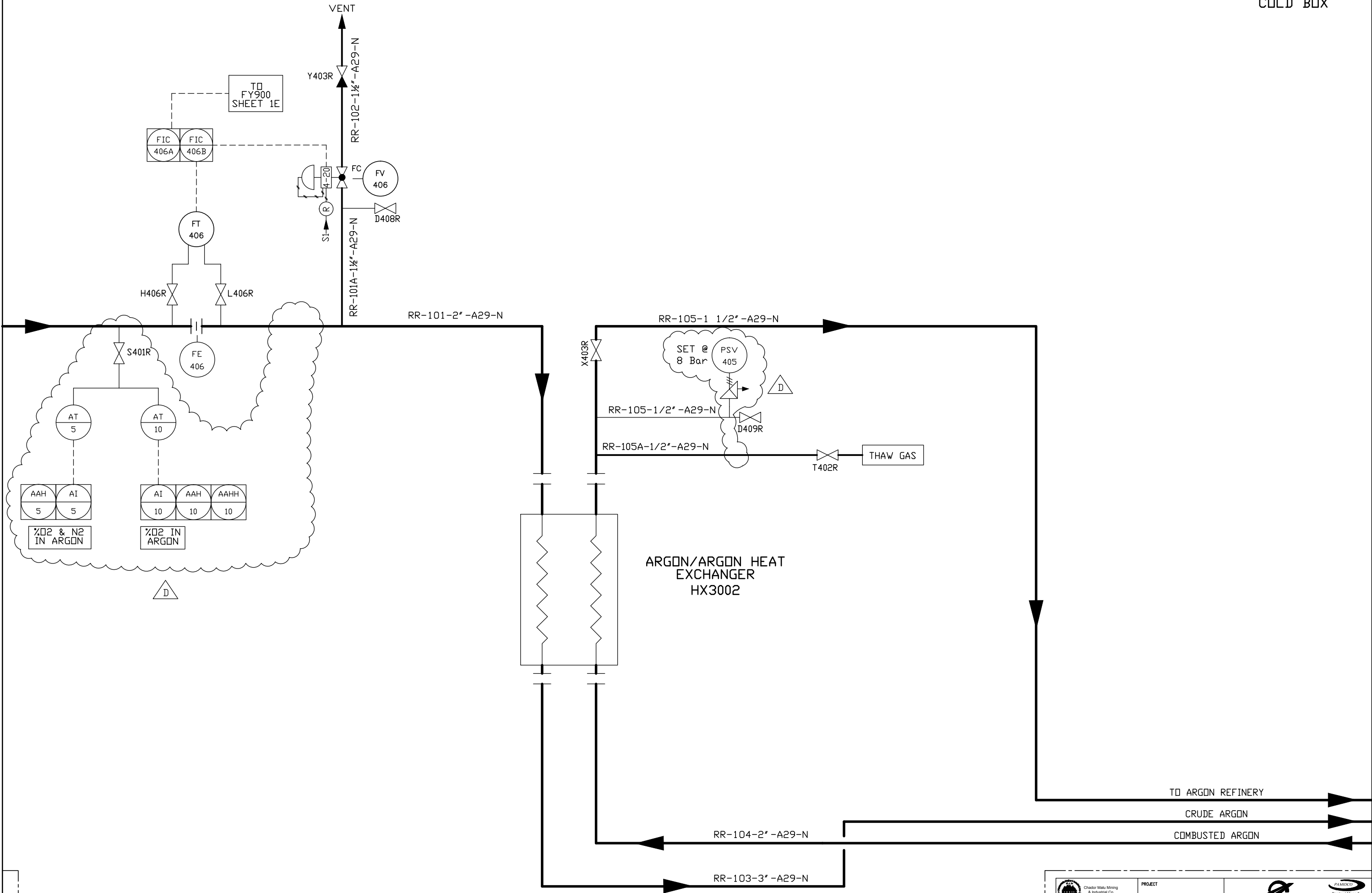
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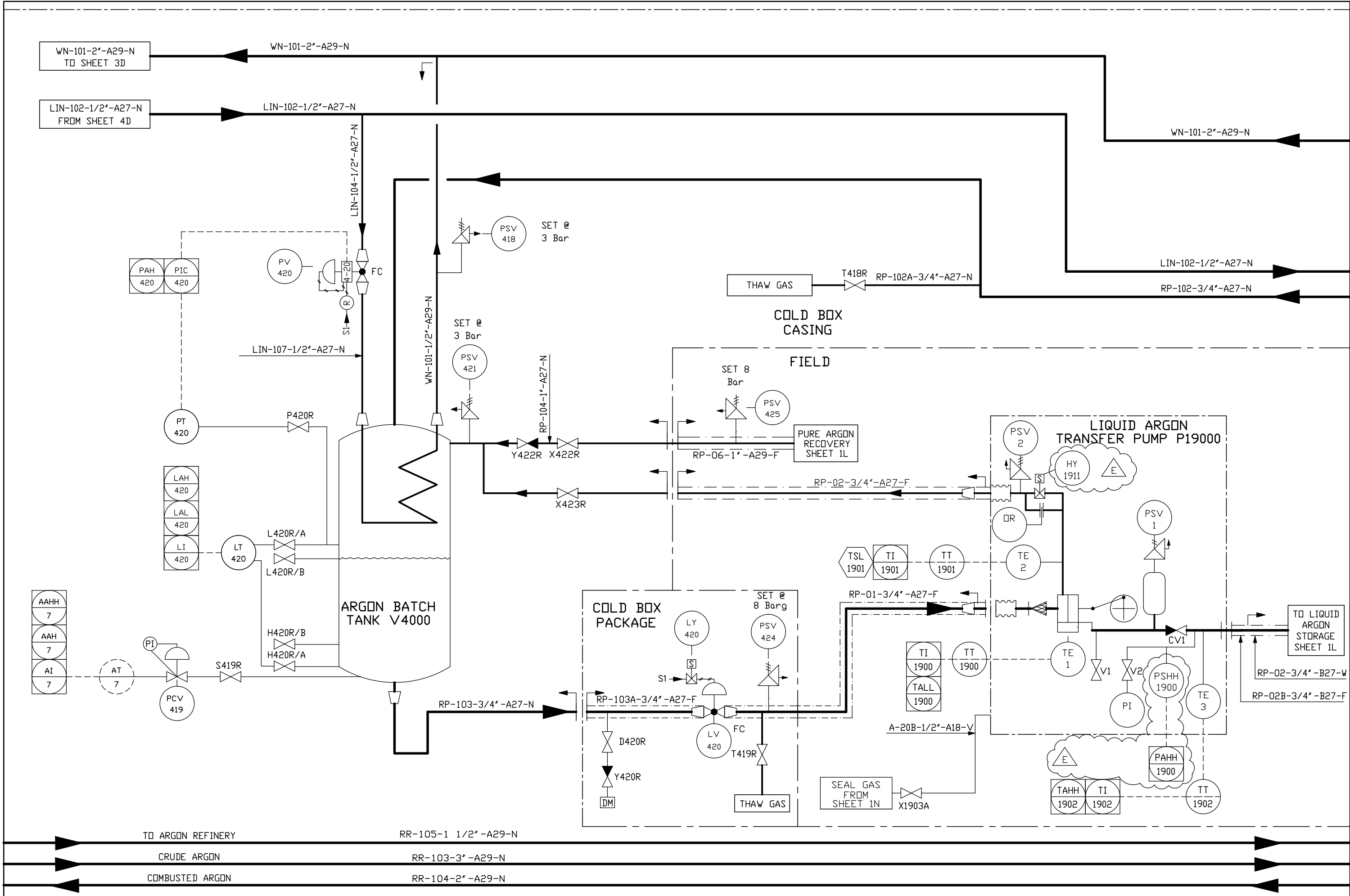
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
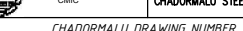
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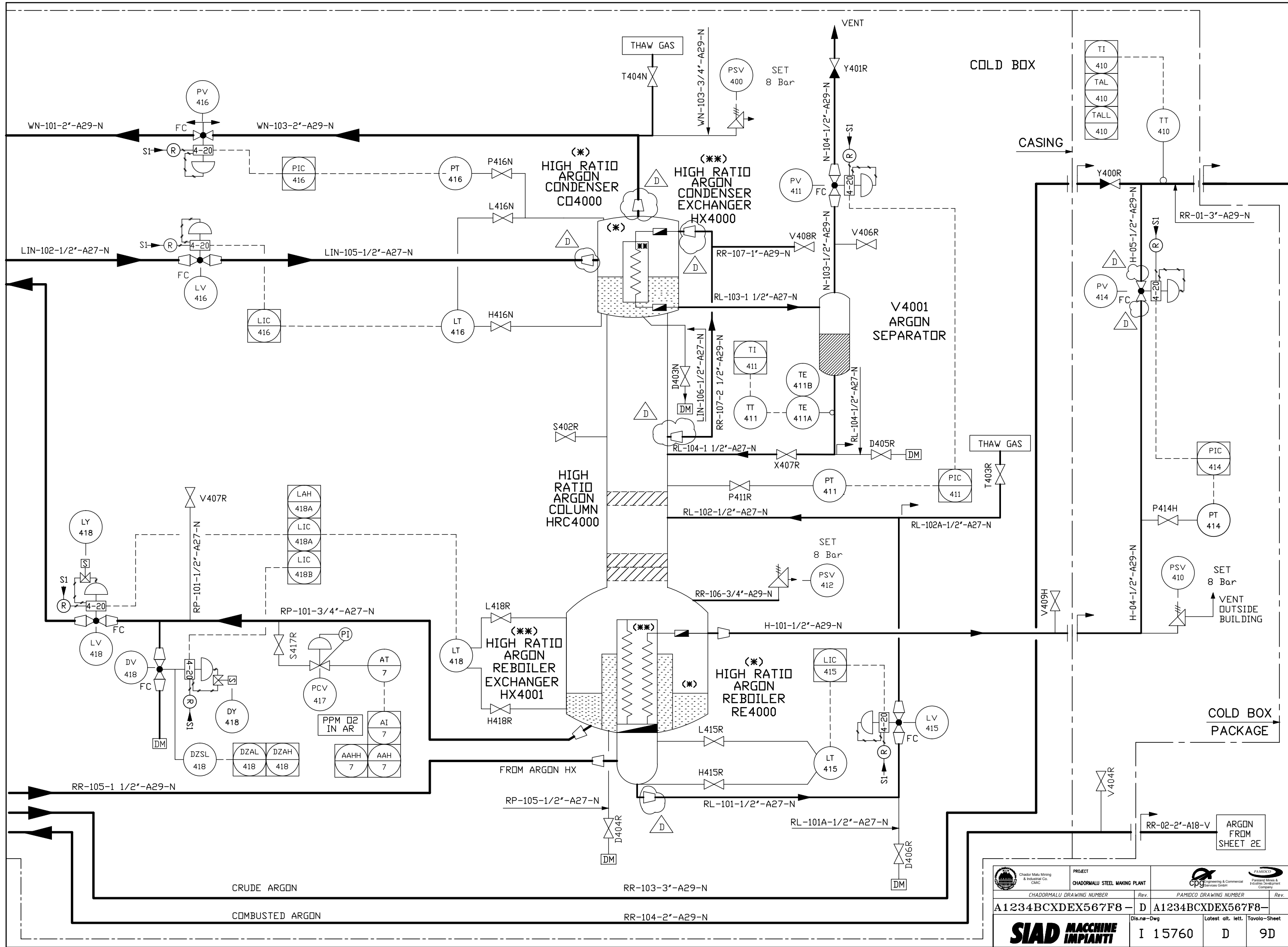
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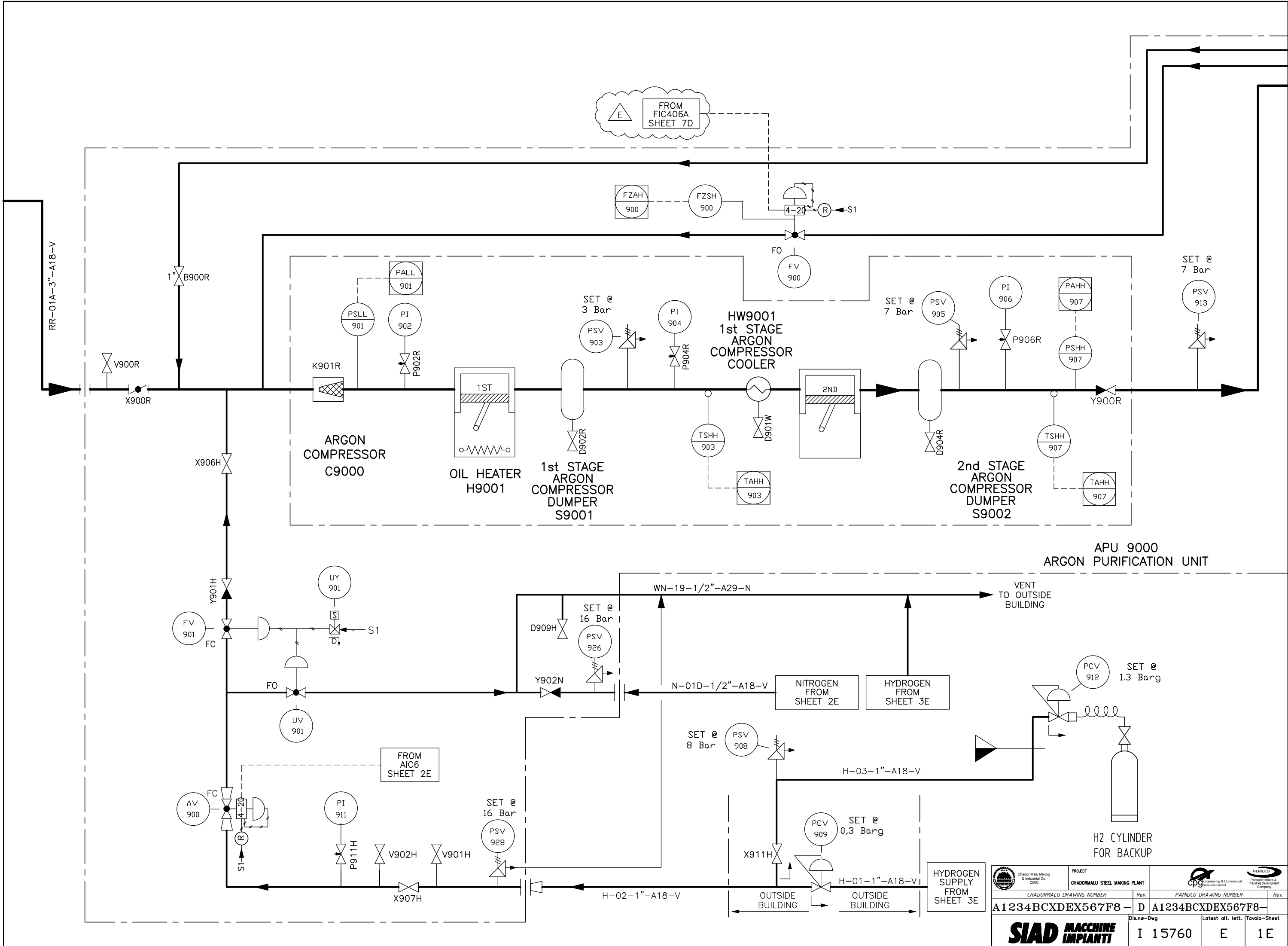
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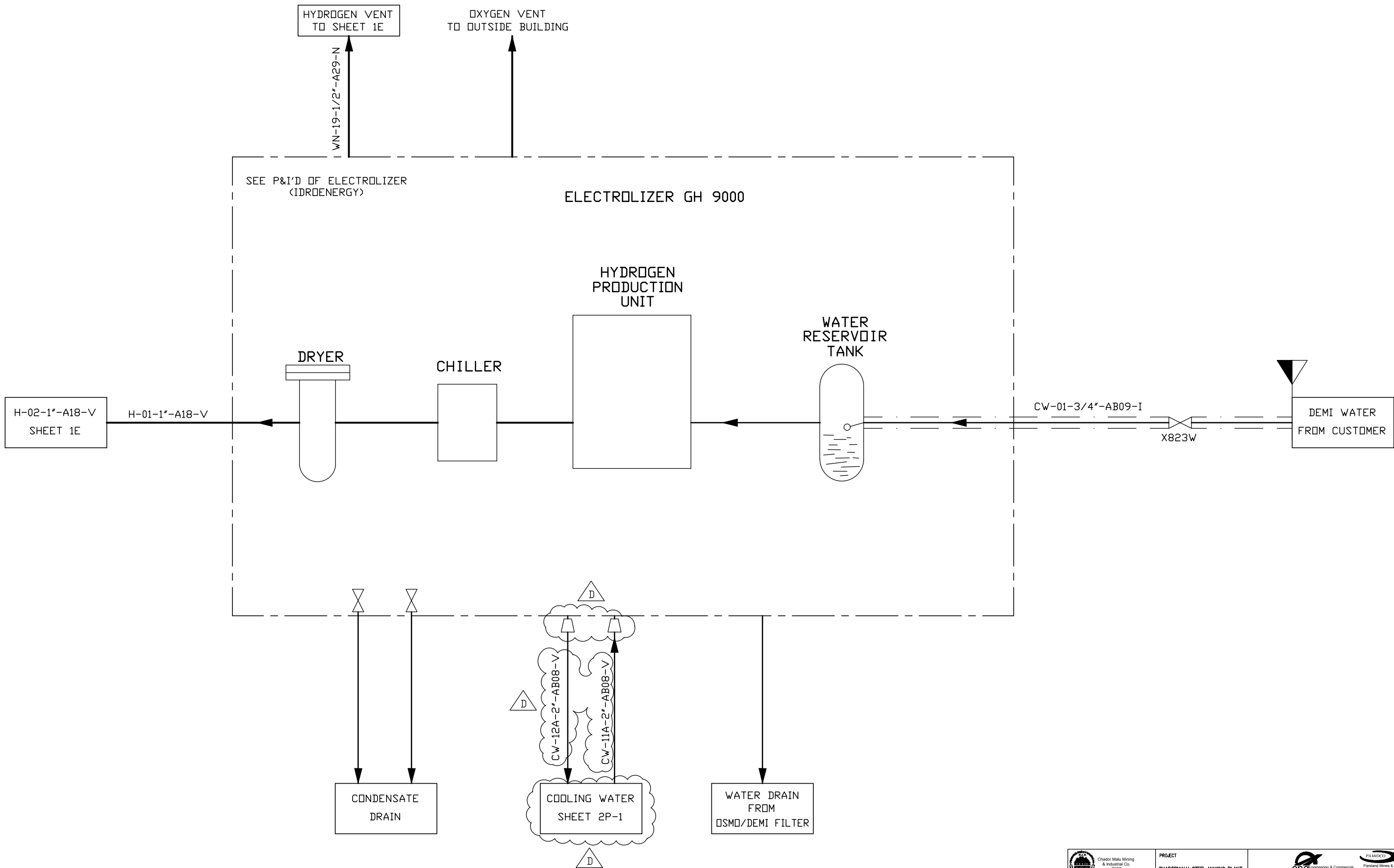
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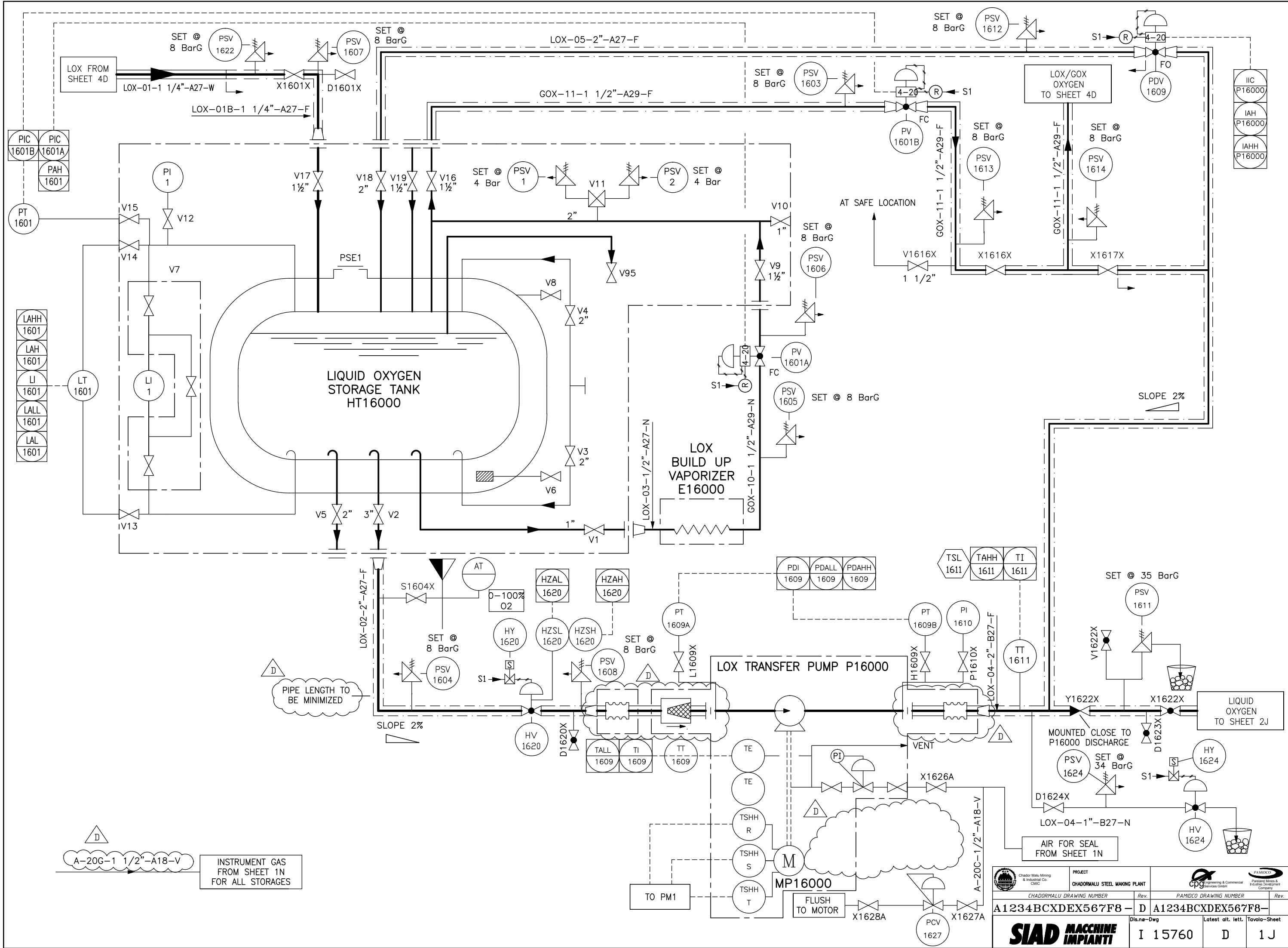
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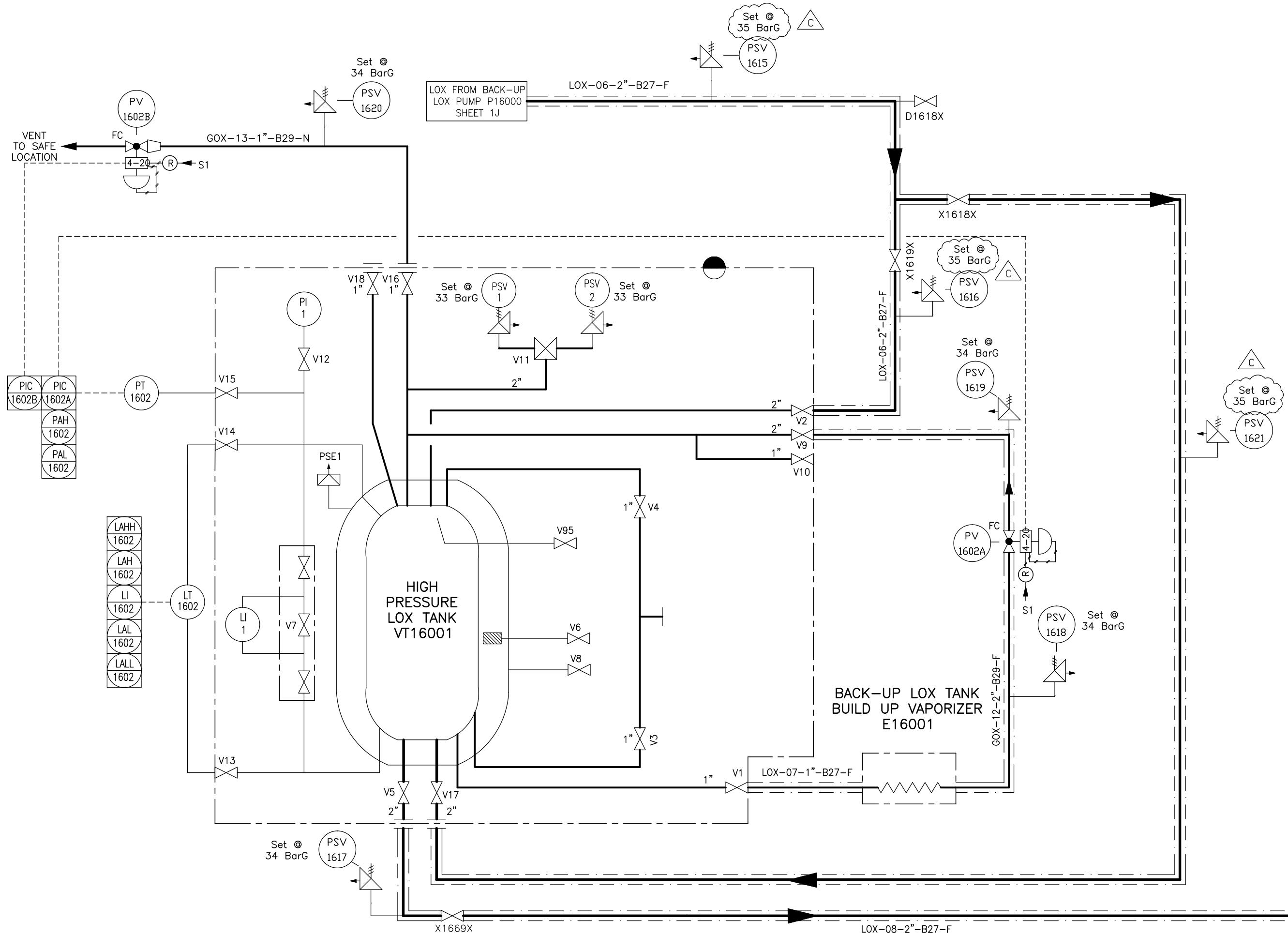


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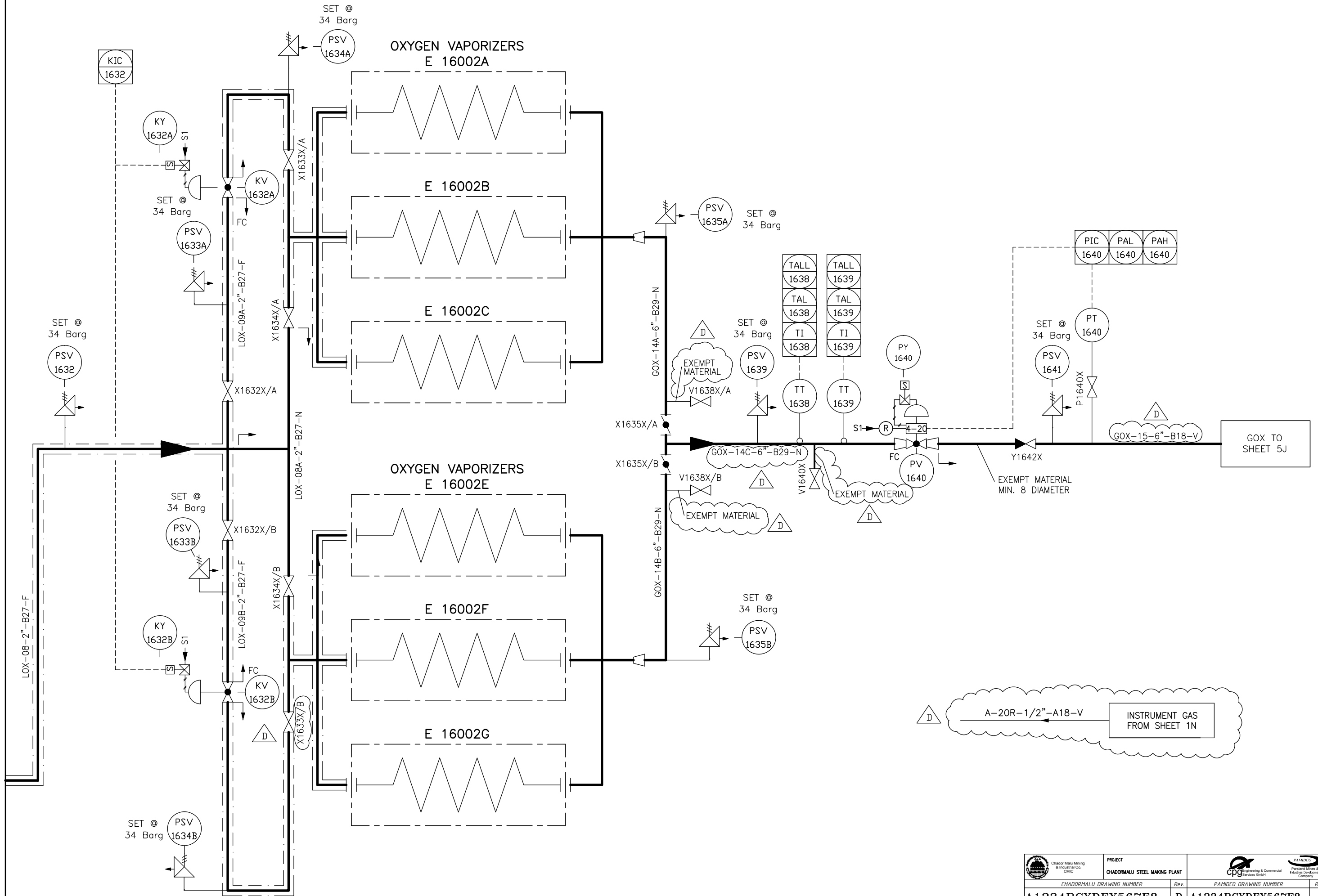




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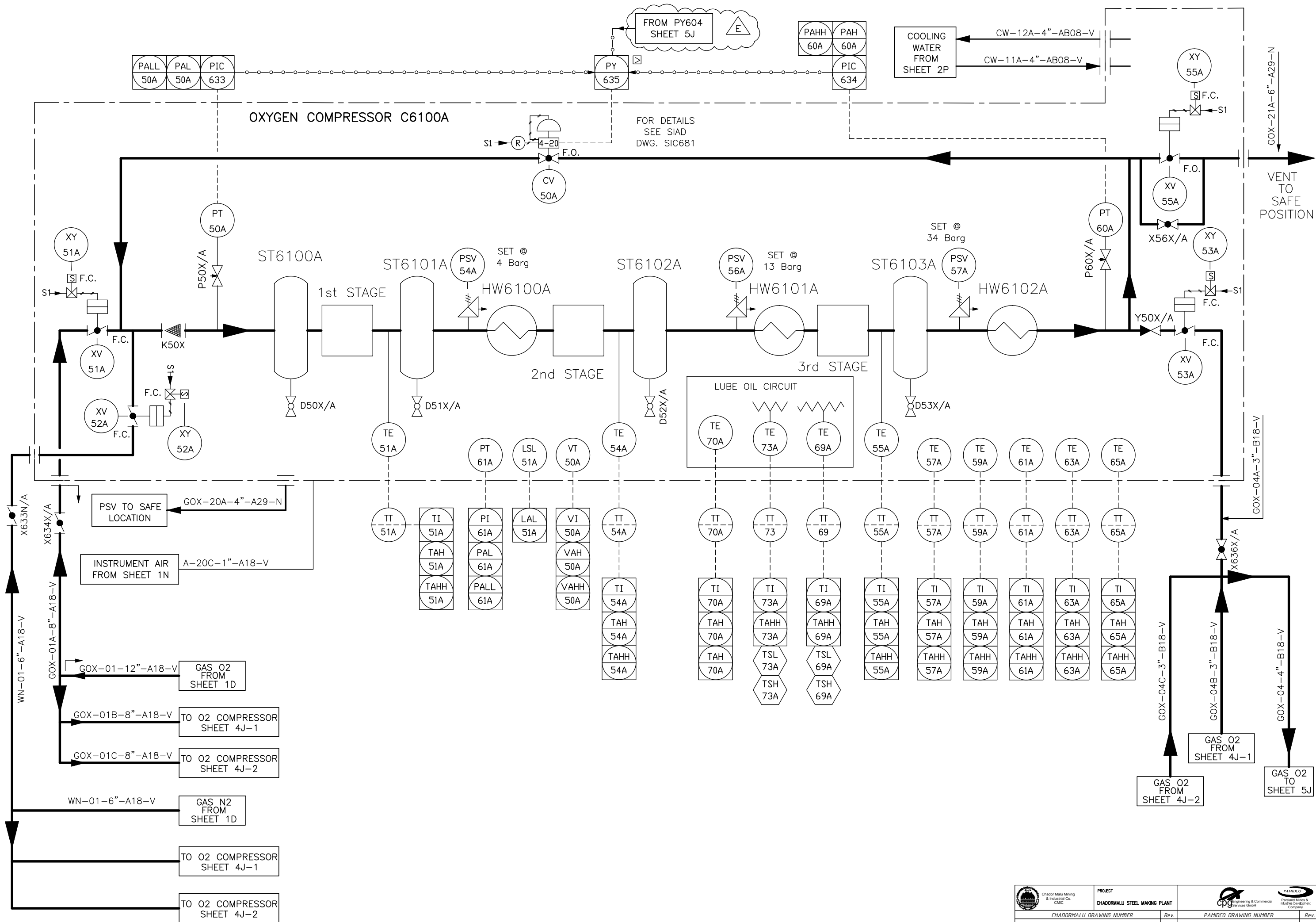
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
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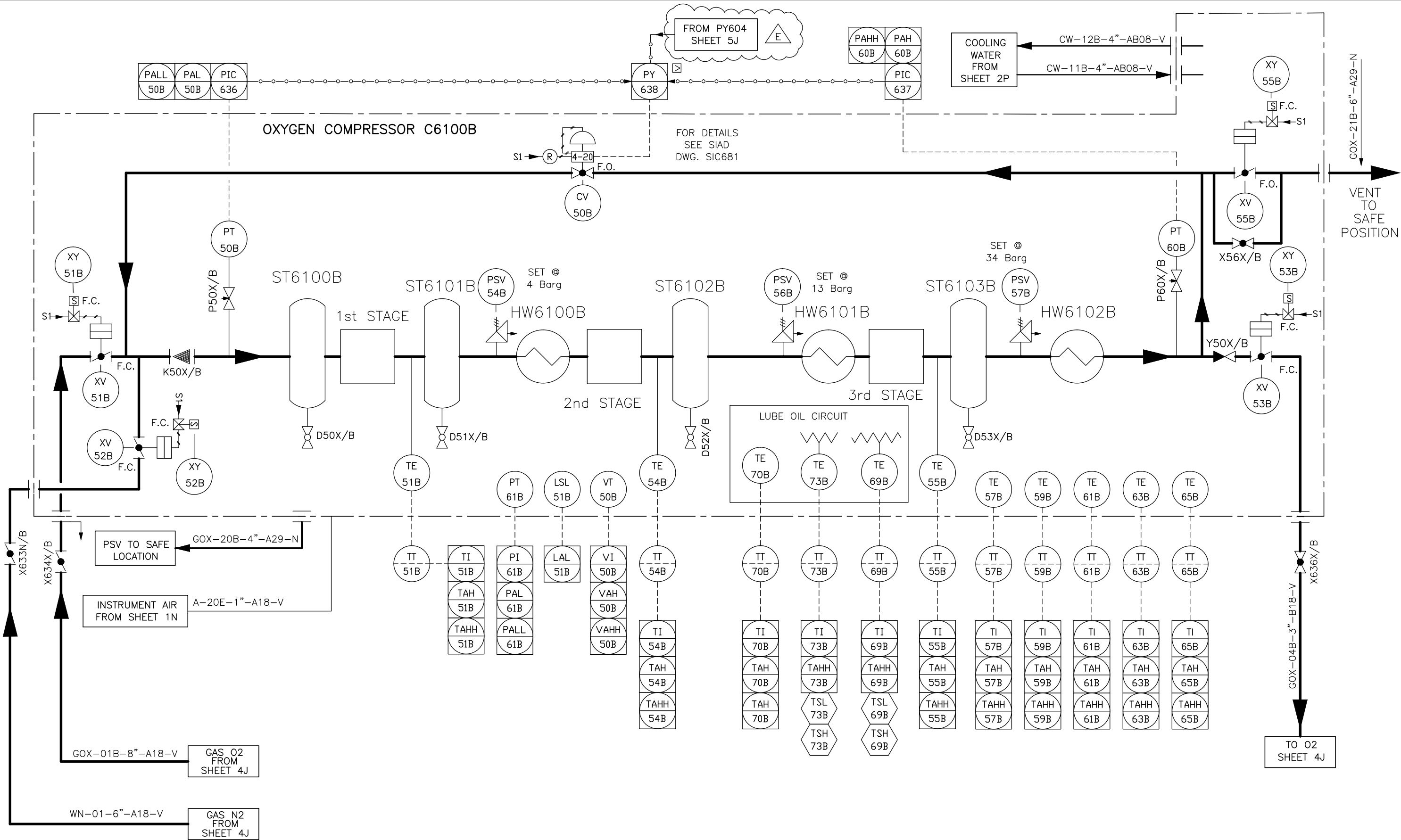
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
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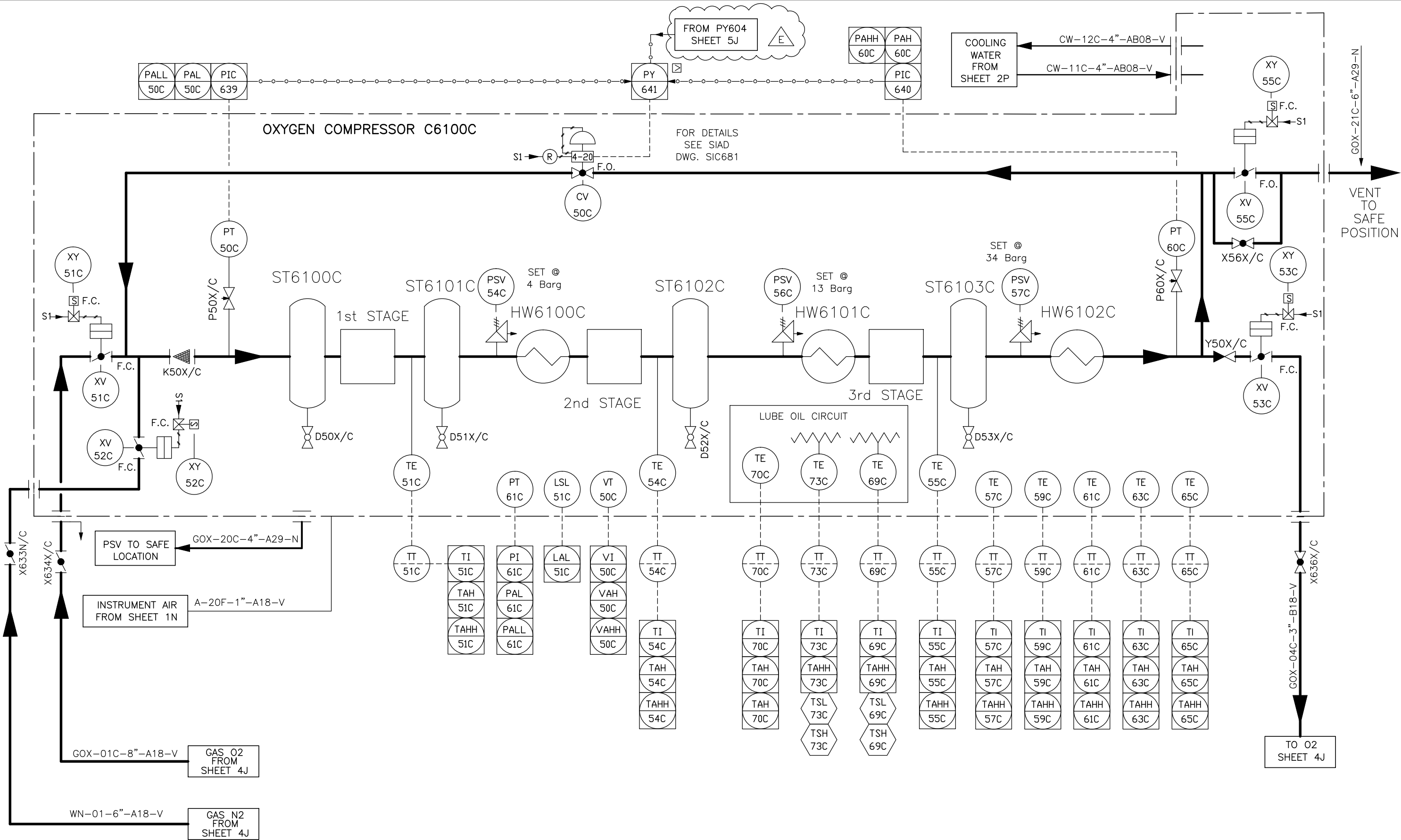
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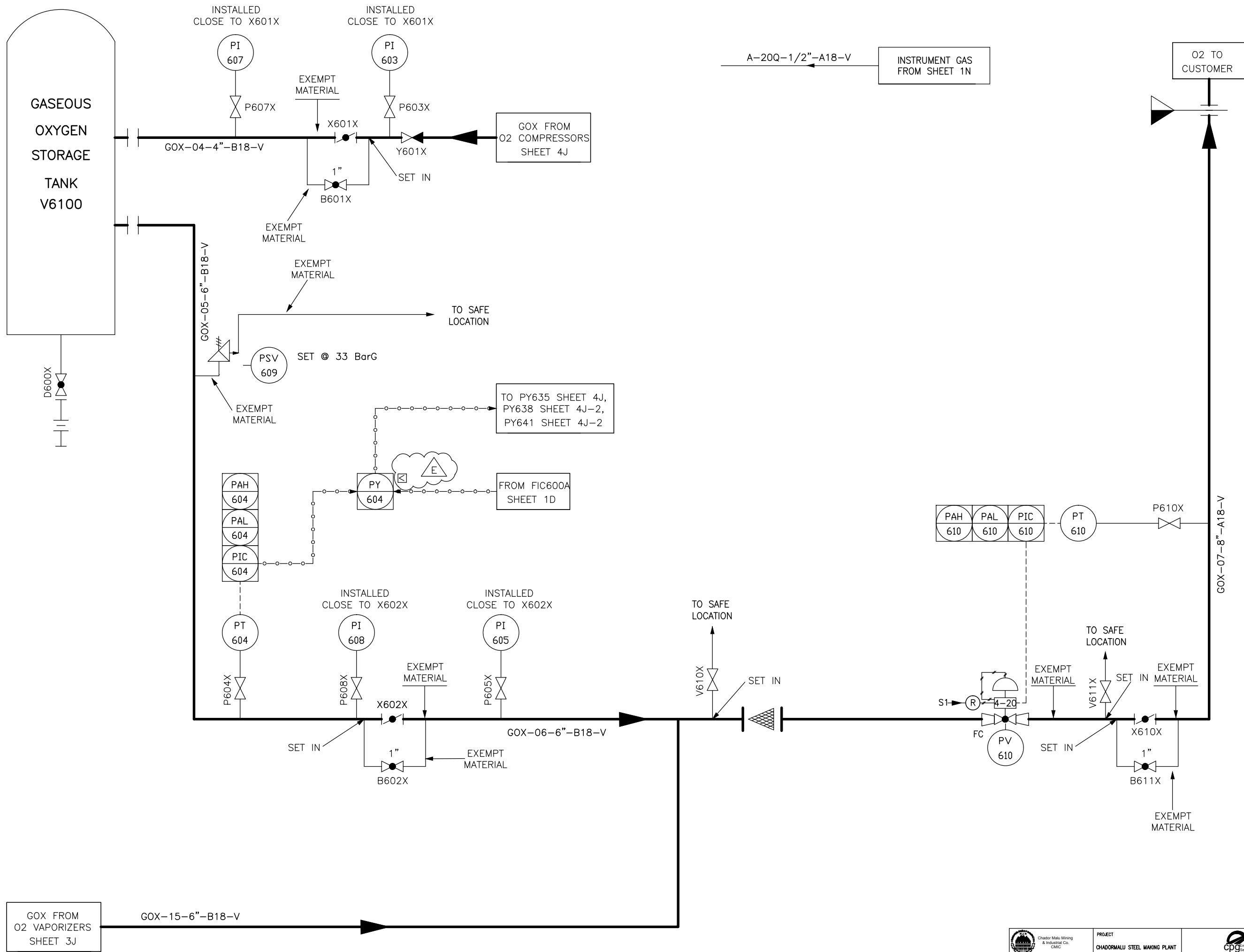
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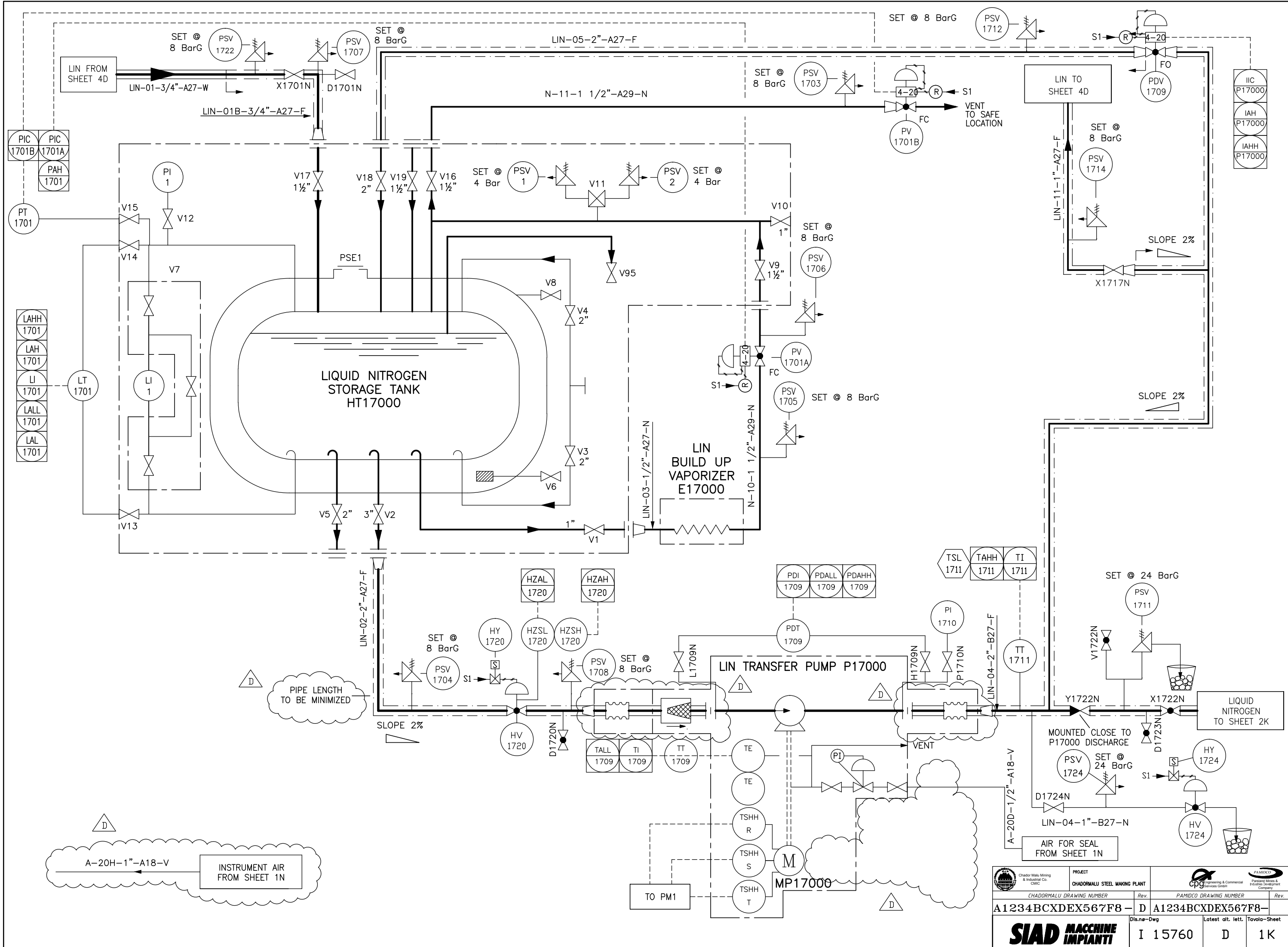
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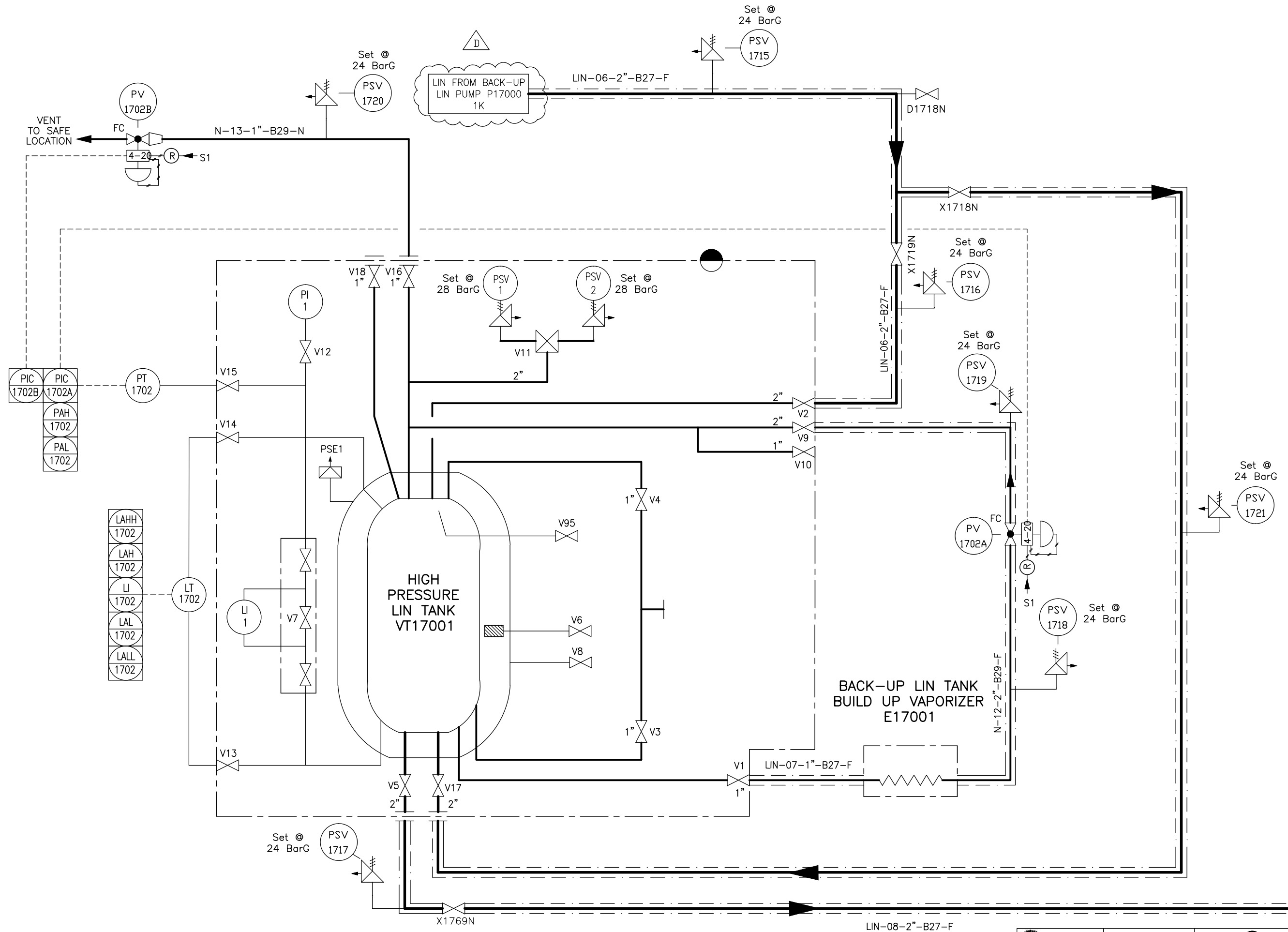
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
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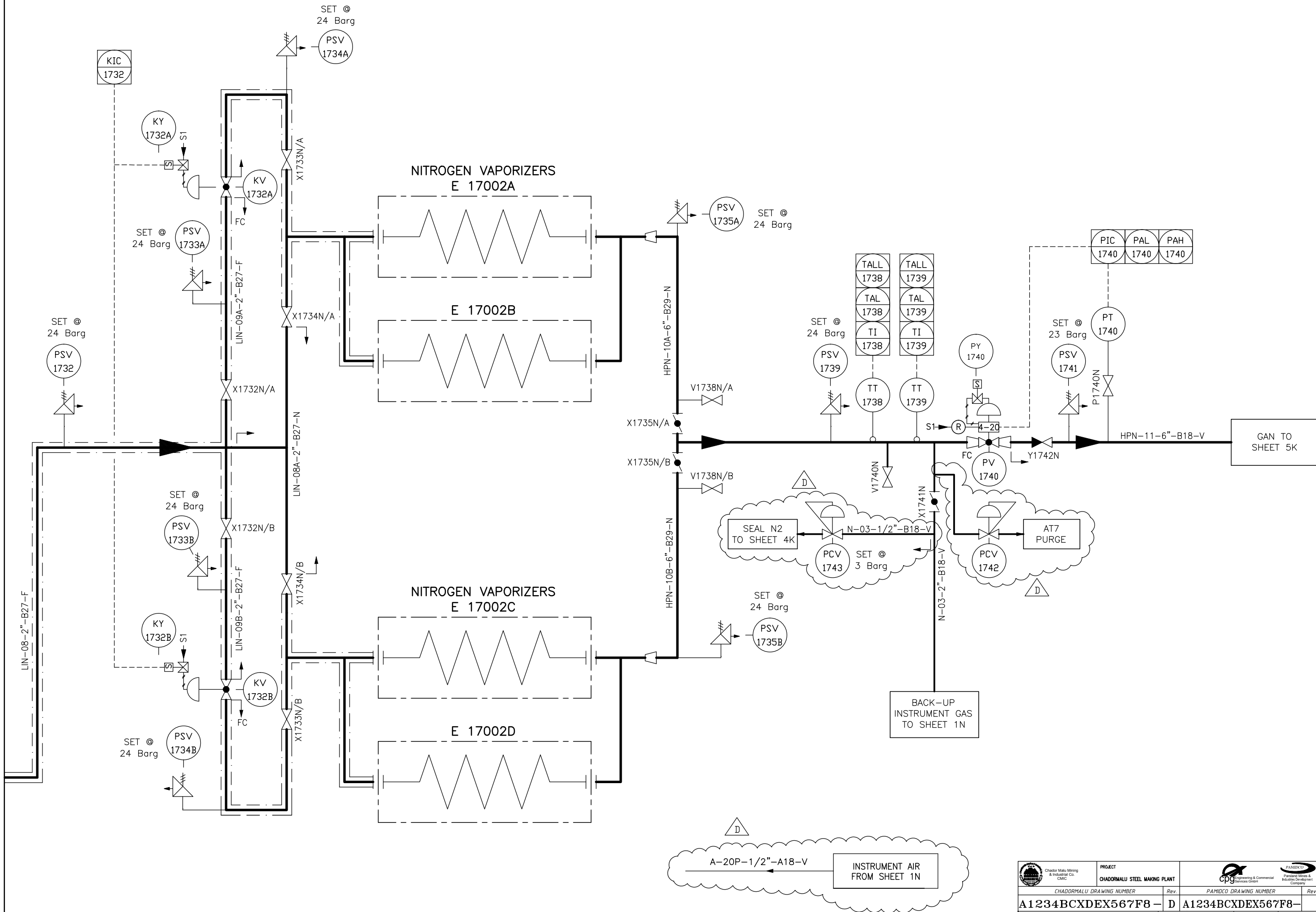


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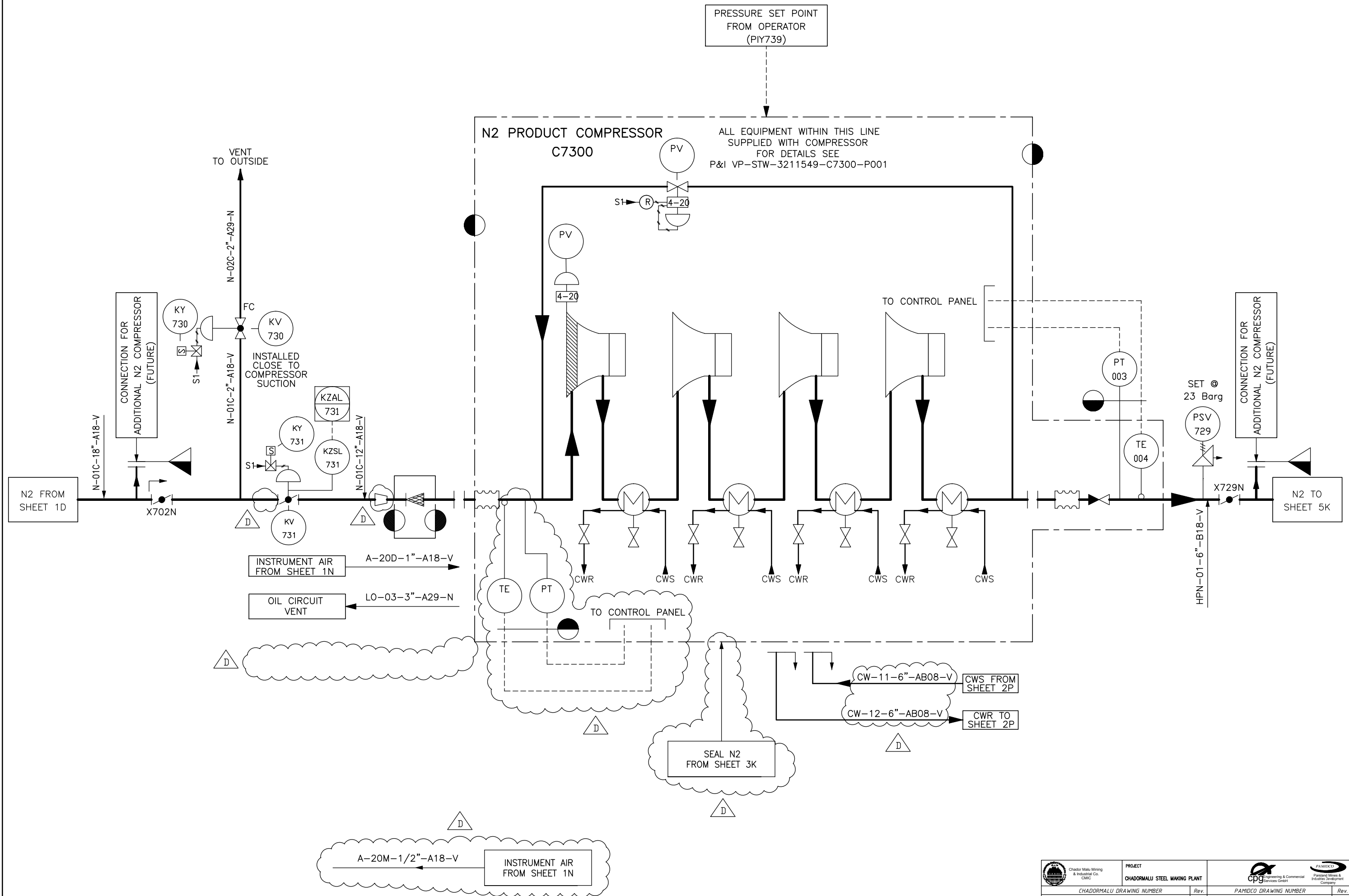
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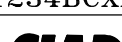


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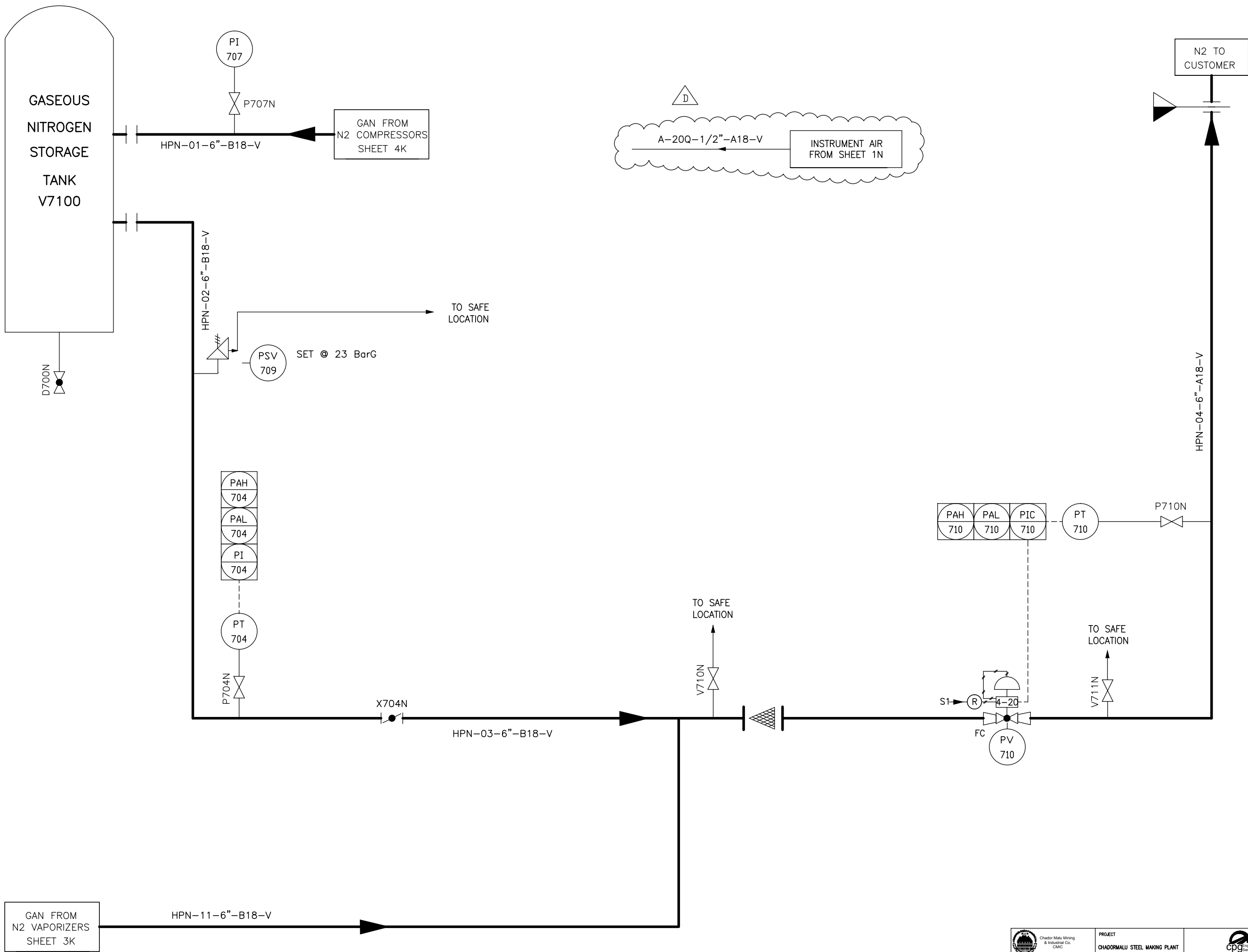


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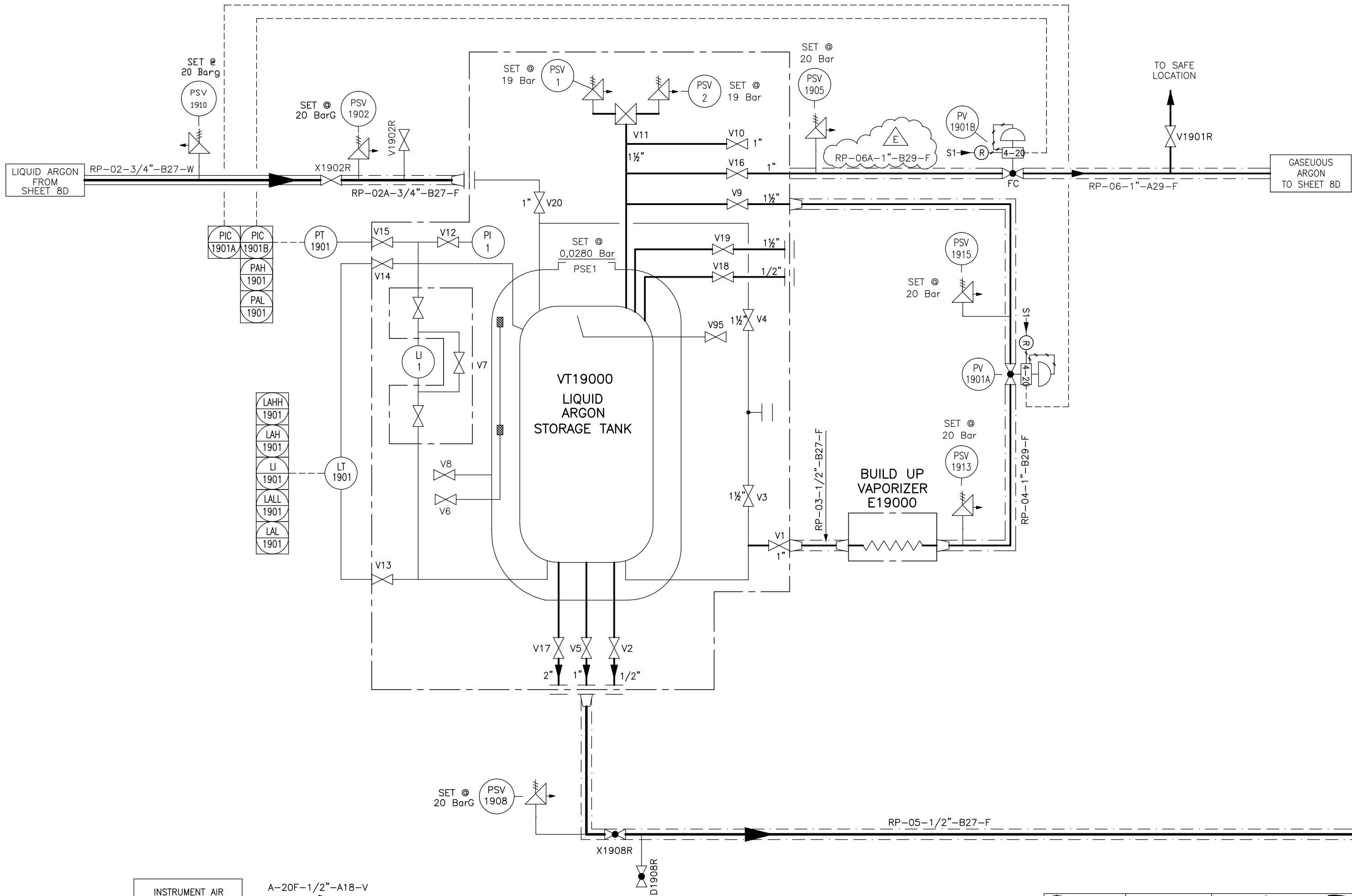
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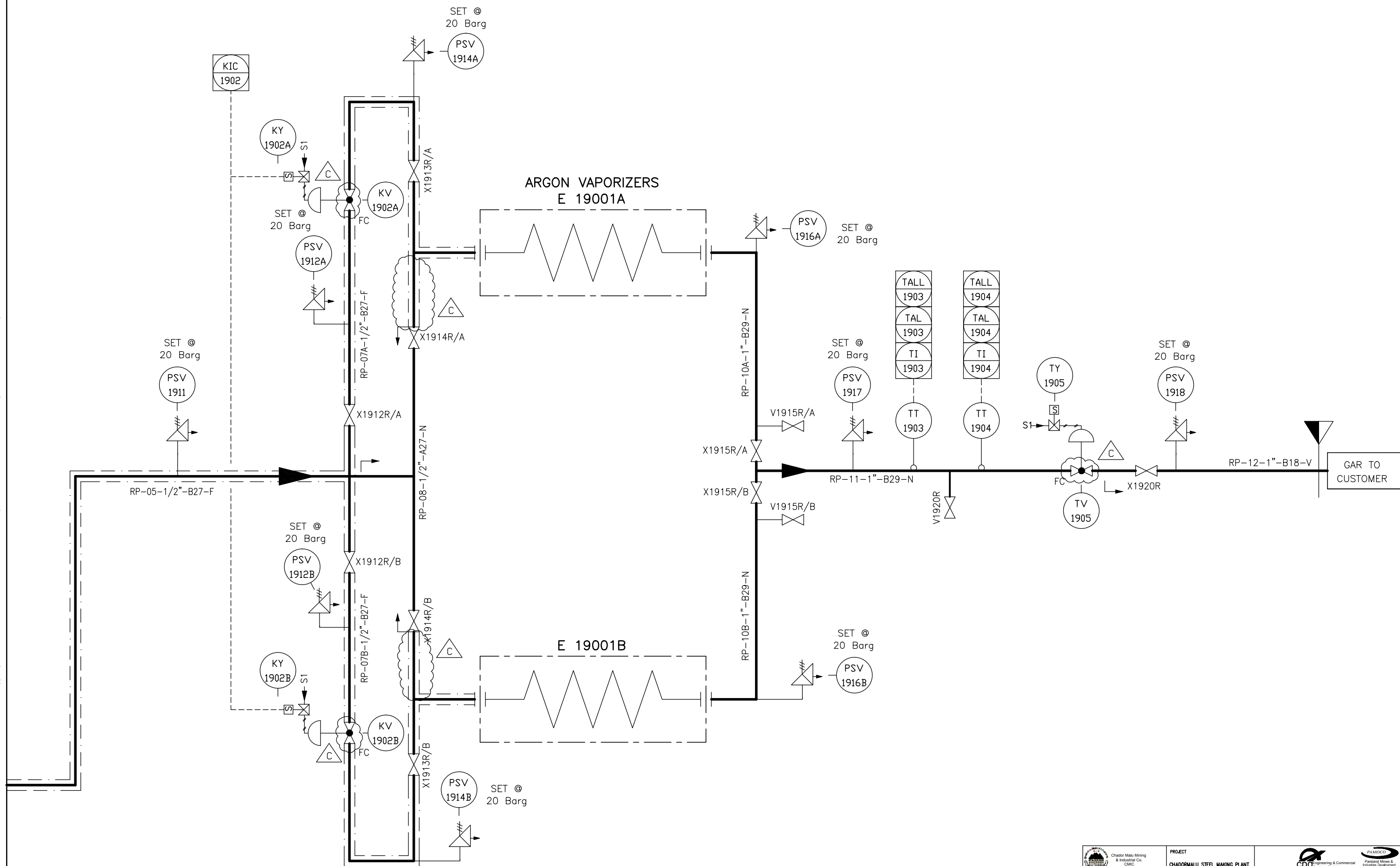
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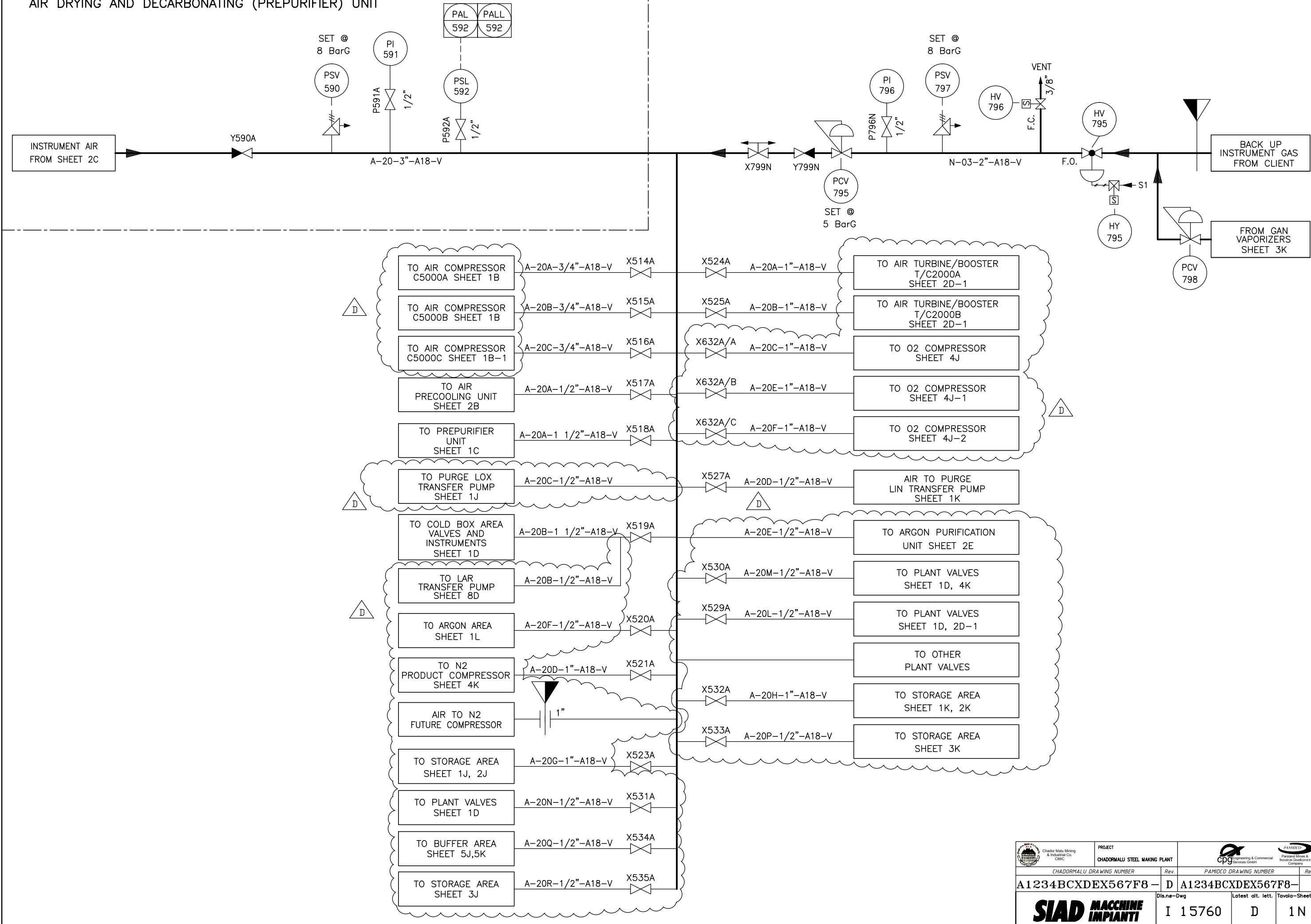
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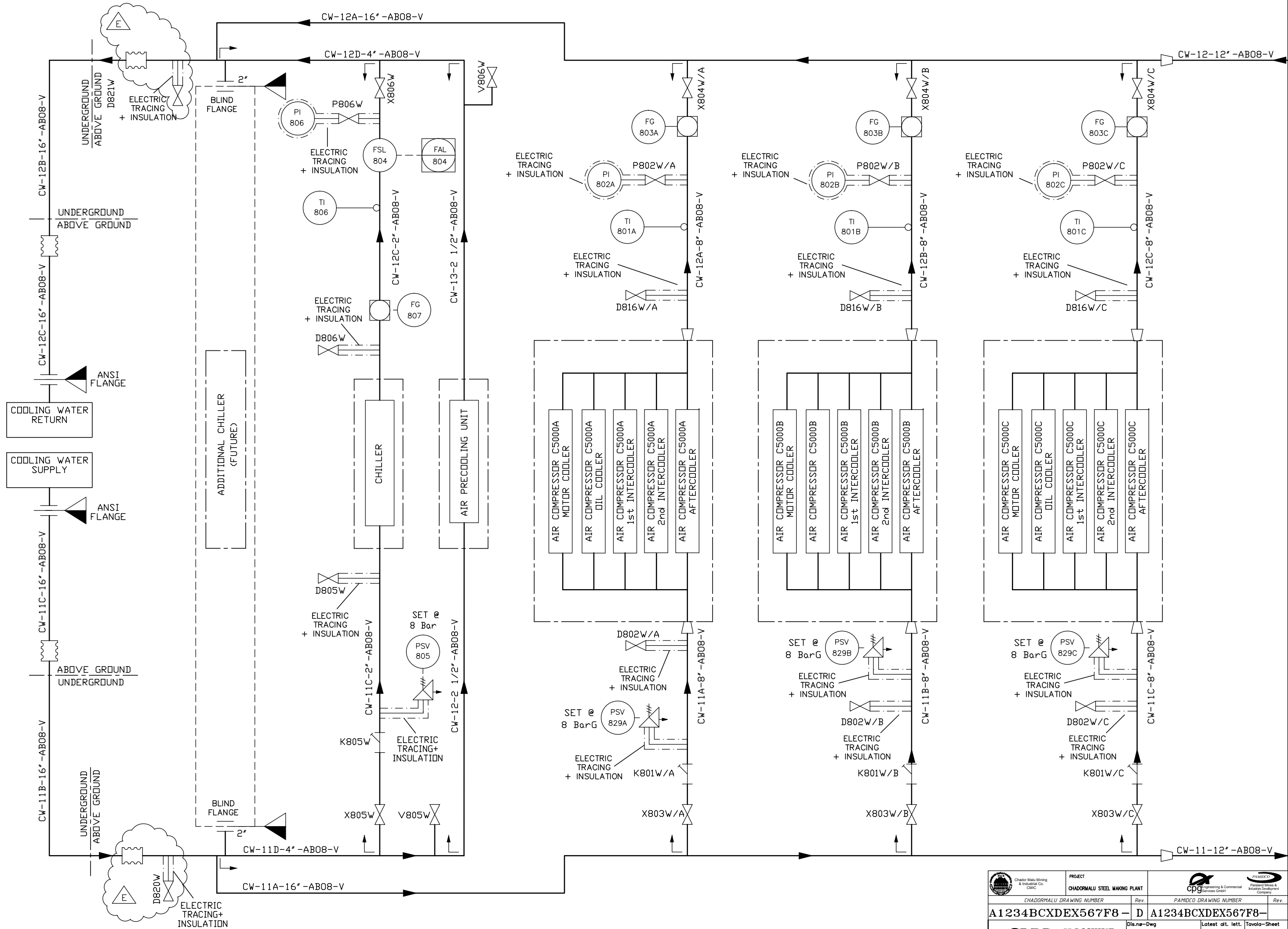
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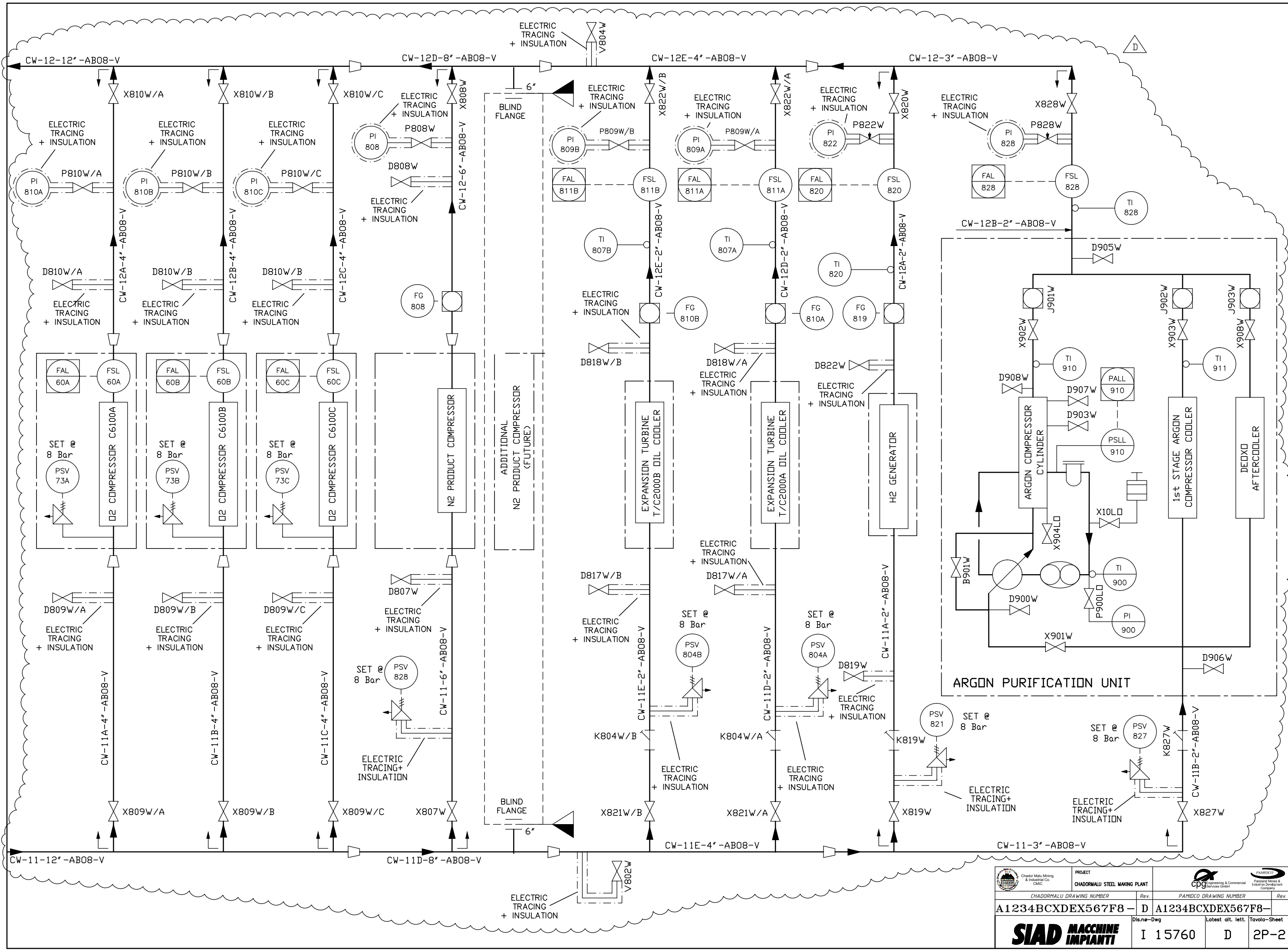
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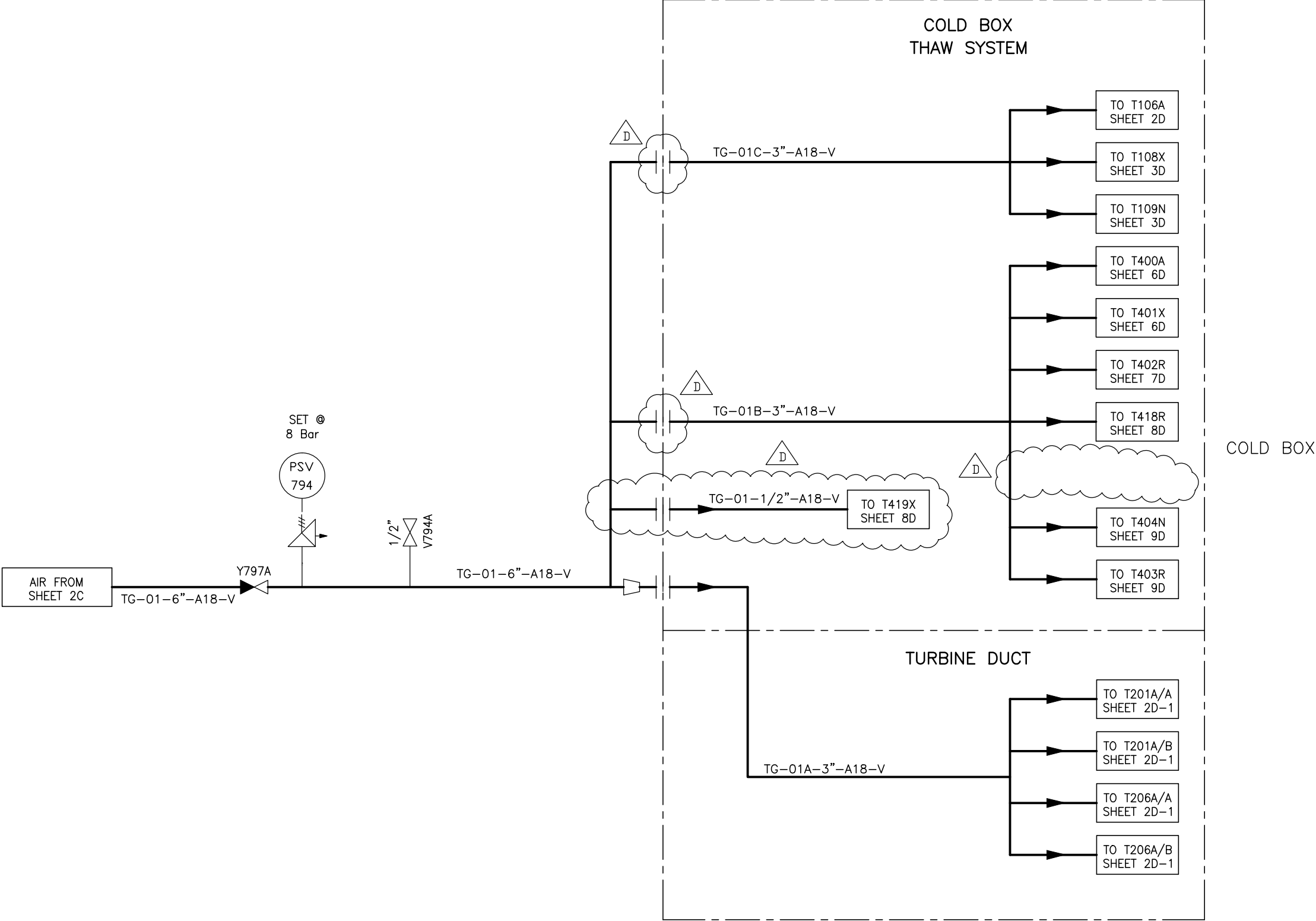
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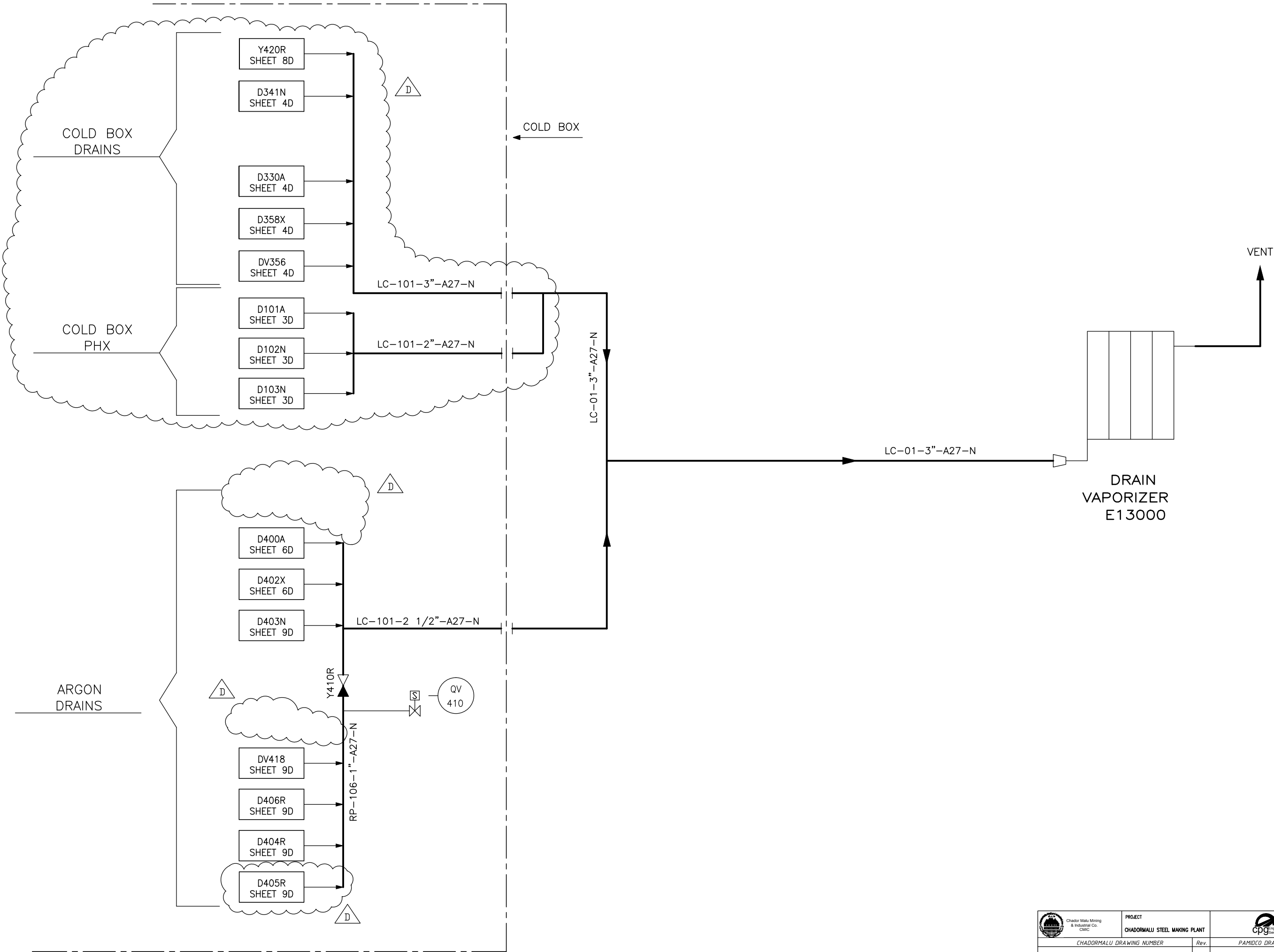
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