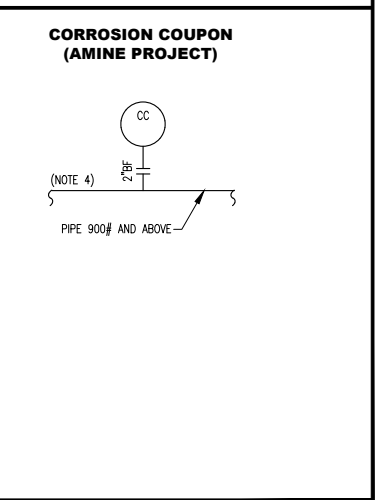
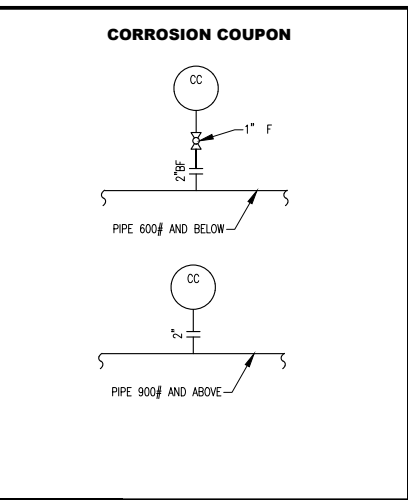
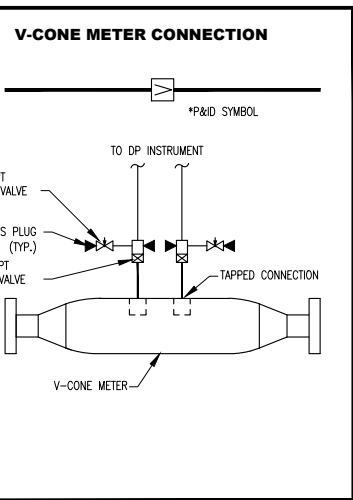
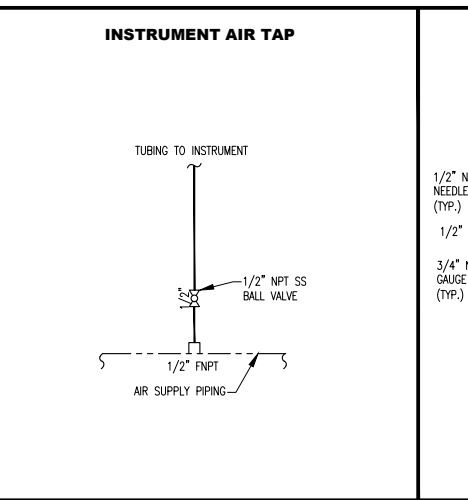
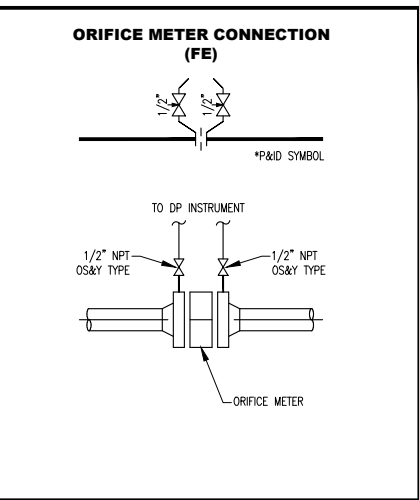
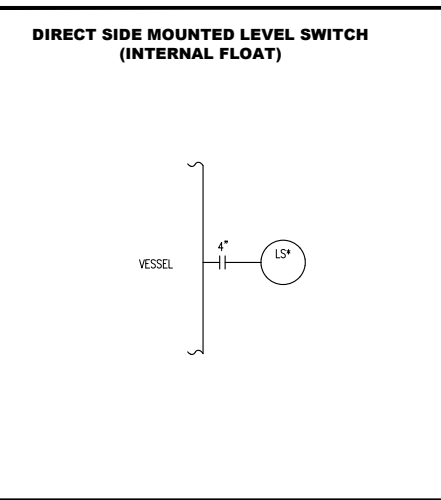
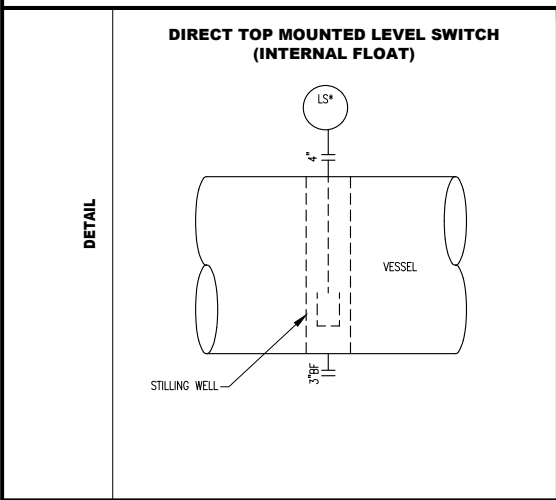
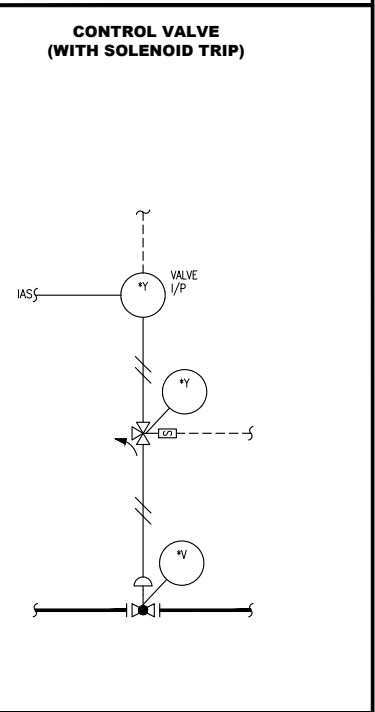
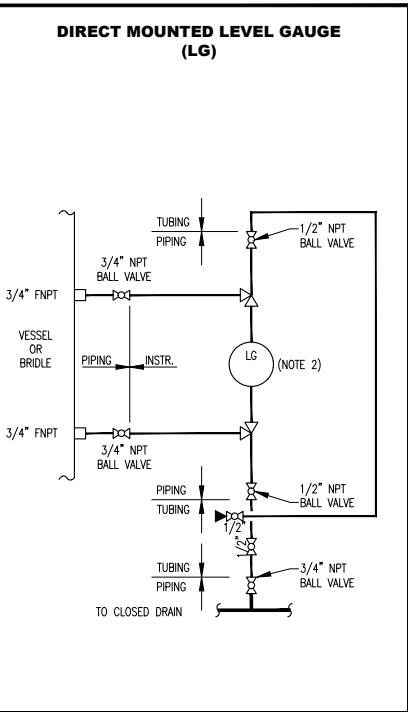
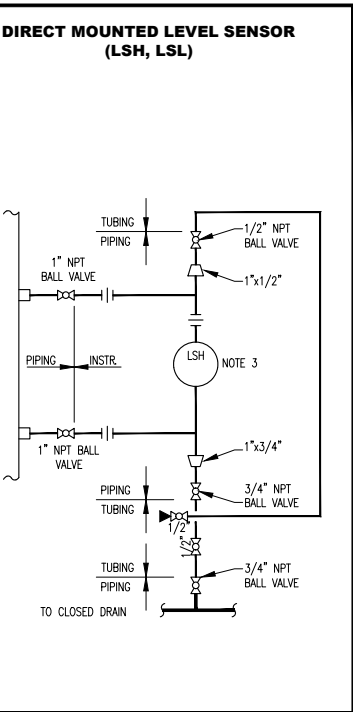
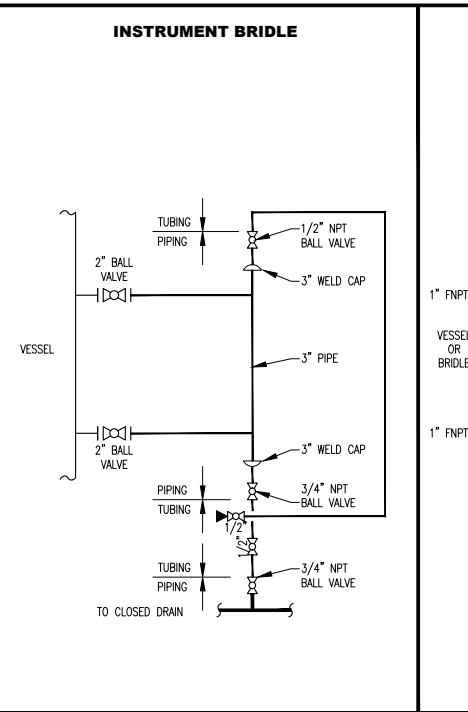
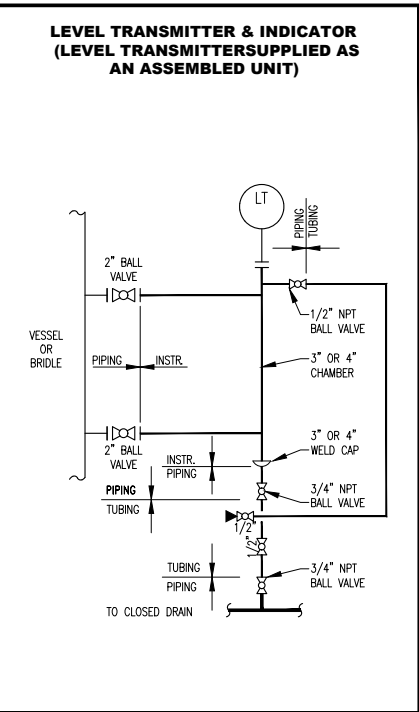
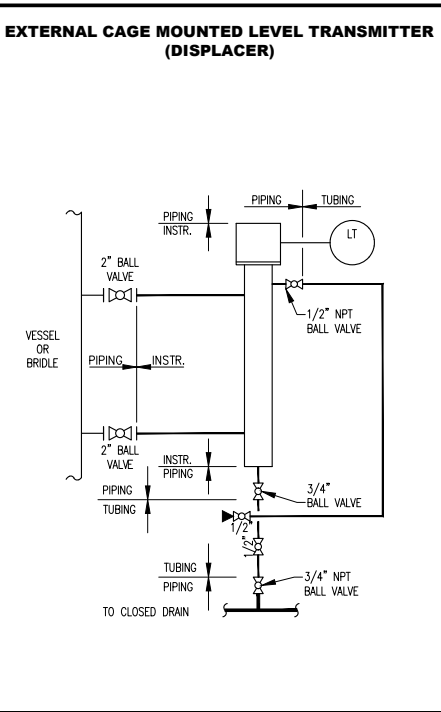
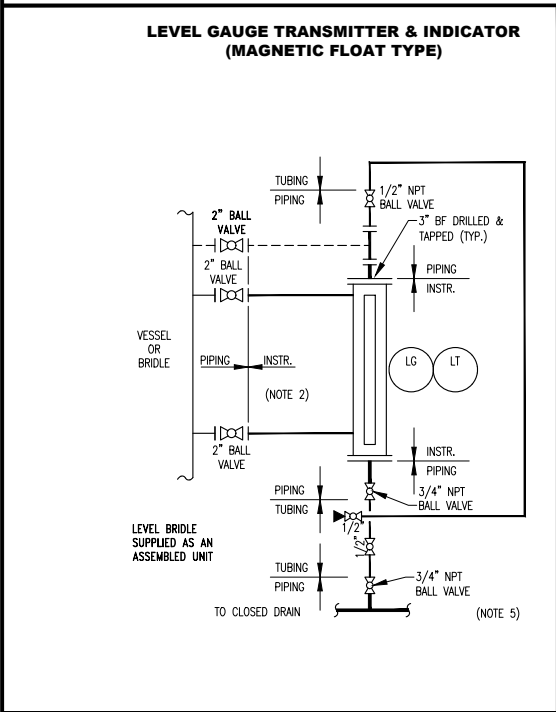
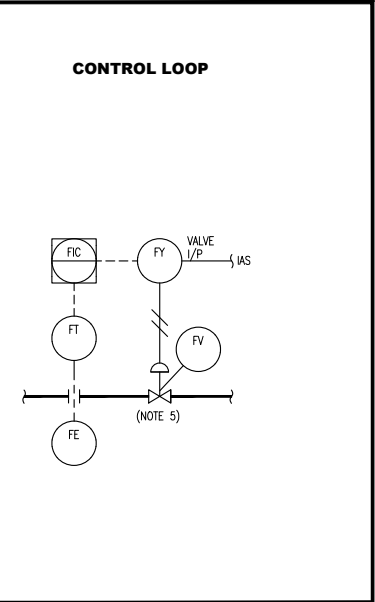
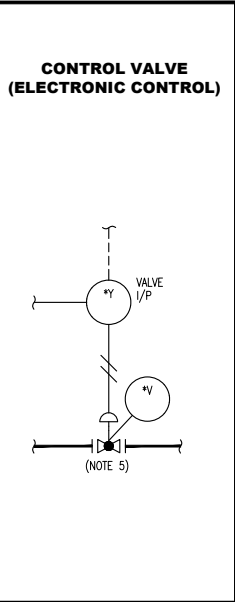
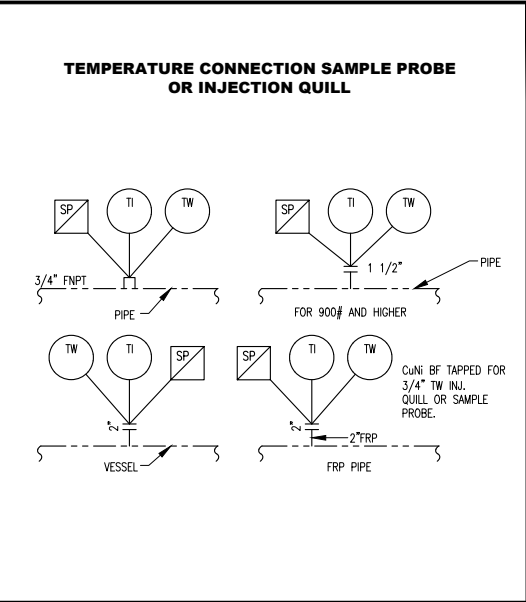
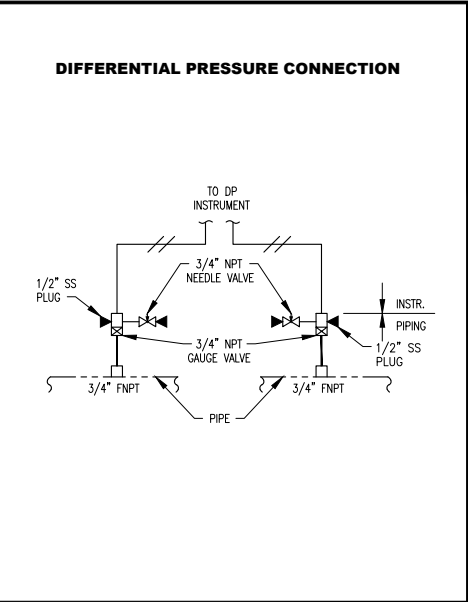
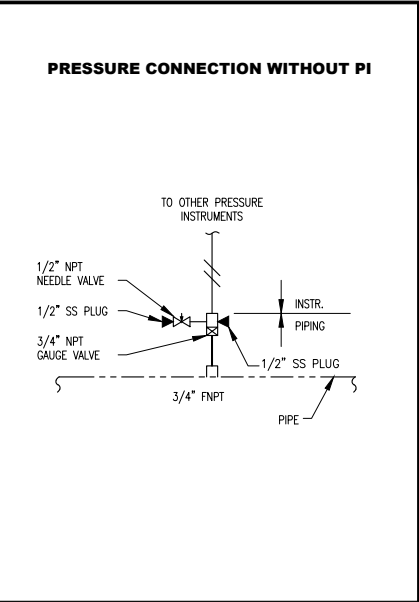
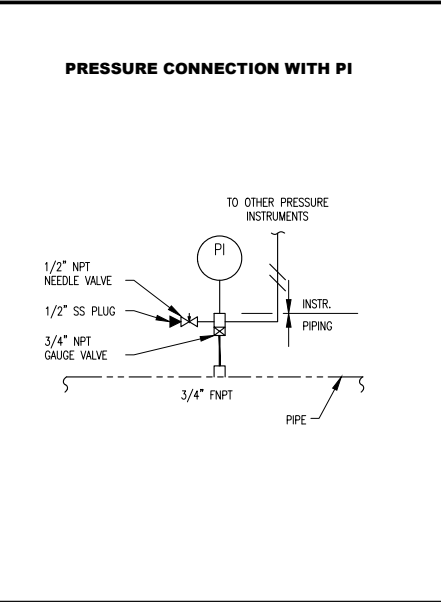
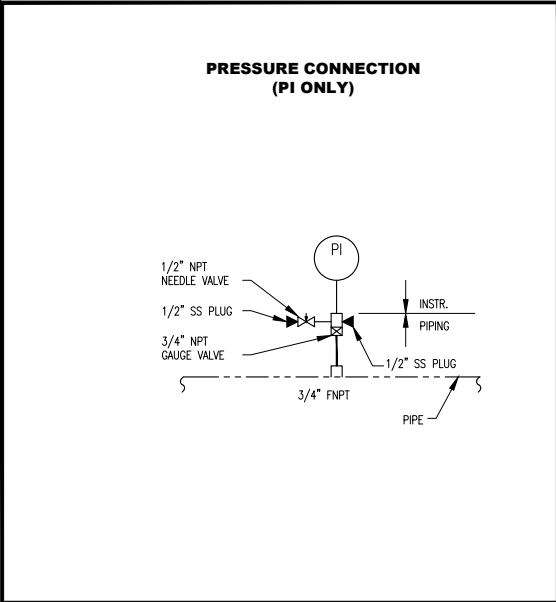


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EQUIPMENT NUMBERING STANDARD		PIPE LINE NUMBERING STANDARD		FLOW SHEET LINE TYPES		VALVES		FLANGES		INLINES		MISCELLANEOUS																																																																																																																																																																																																																																																																																																																																							
<div><div><div><div>X-####</div><div>EQUIPMENT IDENTIFICATION CODE</div><div>AREA NUMBER</div><div>TRAIN NUMBER(*)</div><div>EQUIPMENT ID</div></div></div><div>*TRAIN NUMBER (USE 0 FOR COMMON EQUIPMENT)(OR COMPRESSOR UNIT NUMBER – CTF SITES ONLY)</div><div>INSTRUMENTATION NUMBERS – MATCH EQUIPMENT ID AND INCREMENT NUMERICALLY ONLY.</div><div>ELECTRICAL NUMBERS – MATCH EQUIPMENT ID AND INCREMENT NUMERICALLY ONLY.</div><div>ALPHAS ONLY AS APPROVED BY APC ENGINEERING.</div></div> <div>EQUIPMENT IDENTIFICATION CODE</div> <table><tr><td>AC-####</td><td>AIR COOLED FIN FAN</td><td>T-####</td><td>TOWER</td></tr><tr><td>C-####</td><td>COMPRESSOR</td><td>TK-####</td><td>TANK ATMOSPHERE</td></tr><tr><td>E-####</td><td>EXCHANGER</td><td>V-####</td><td>VESSEL, PROCESS</td></tr><tr><td>F-####</td><td>FILTER</td><td>VS-####</td><td>VESSEL, STORAGE</td></tr><tr><td>H-####</td><td>FIRE HEATERS</td><td>FL-####</td><td>SPECIALTY I.E., VENT STACK, FLARE, INCINERATOR, ECD</td></tr><tr><td>M-####</td><td>MOTOR</td><td>TO-####</td><td>THERMAL OXIDIZER</td></tr><tr><td>P-####</td><td>PUMP</td><td>X-####</td><td>MISC. EQUIPMENT</td></tr><tr><td>R-####</td><td>REACTOR</td><td></td><td></td></tr></table> <div>EQUIPMENT NUMBERING SYSTEM</div> <div>COMPRESSOR STATIONS & OIL PUMPING FACILITIES</div> <table><tr><th>AREA NUMBERS</th><th>AREA REFERENCED</th><th>TYPICAL EQUIPMENT</th></tr><tr><td>10000</td><td>INLET GAS AREA</td><td>SLUG CATCHERS & SEPARATORS</td></tr><tr><td>20000</td><td>CRUDE OIL TRANSFER EQUIPMENT</td><td>LINE HEATERS, PUMPS & SURGE VESSELS</td></tr><tr><td>30000</td><td>CONDENSATE HANDLING</td><td>PUMPS, WATER SEPARATION & SURGE/STORAGE</td></tr><tr><td>40000</td><td>COMPRESSION</td><td>ENGINE/COMP. SKID EQUIP., COOLERS, ON-SKID SEPARATORS</td></tr><tr><td>50000</td><td>DISCHARGE SEPARATION, DEHYDRATION</td><td>DISCHARGE SEPARATORS, FILTERS & DEHYDRATION EQUIP.</td></tr><tr><td>60000</td><td>AMINE SYSTEM</td><td>CONTACTOR, REGEN SYSTEM & FILTERS</td></tr><tr><td>70000</td><td>OUTLET AREA</td><td>GAS METERS, LACTS, PUMPS & STORAGE</td></tr><tr><td>80000</td><td>SWD</td><td>TANKS & PUMPS</td></tr><tr><td>90000</td><td>FLARE & UTILITIES</td><td></td></tr></table> <div>OIL STABILIZATION FACILITIES</div> <table><tr><th>AREA NUMBERS</th><th>AREA REFERENCED</th><th>TYPICAL EQUIPMENT</th></tr><tr><td>10000</td><td>INLET AREA</td><td>SLUG CATCHERS, SURGE/SEPARATOR VESSELS, LACTS & INLET HEATERS</td></tr><tr><td>20000</td><td>-</td><td>-</td></tr><tr><td>30000</td><td>PROCESS EQUIPMENT</td><td>VESSELS, TOWERS, EXCHANGERS, REFLUX SYSTEM</td></tr><tr><td>40000</td><td>COMPRESSION</td><td>COMPRESSORS, AFTERCOOLERS, COMPRESSOR ASSOCIATED VESSELS</td></tr><tr><td>50000</td><td>NGL STORAGE AND LACT</td><td>STORAGE VESSELS, PUMPS, METERS, LP GAS METERS</td></tr><tr><td>60000</td><td>PRODUCT COOLING</td><td>HEAT EXCHANGERS, CHILLERS, PUMPS, REFRIGERANT COMPRESSORS</td></tr><tr><td>70000</td><td>OUTLET AREA</td><td>OIL BOOSTER PUMPS, OIL PIPELINE PUMPS, OIL LACT</td></tr><tr><td>80000</td><td>HEAT MEDIUM SYSTEM</td><td>HEATERS, HM PUMPS, FILTERS</td></tr><tr><td>90000</td><td>FLARE & UTILITIES</td><td>FLARE, KNOCKOUTS, ECD'S, T.O., AIR COMPRESSORS, DRAINS, FUEL GAS</td></tr></table> <div>GAS PLANTS</div> <table><tr><th>AREA NUMBERS</th><th>AREA REFERENCED</th><th>TYPICAL EQUIPMENT</th></tr><tr><td>10000</td><td>INLET GAS AREA</td><td>SLUG CATCHERS & SEPARATORS</td></tr><tr><td>20000</td><td>CRUDE OIL TRANSFER EQUIPMENT</td><td>LINE HEATERS, PUMPS & SURGE VESSELS</td></tr><tr><td>30000</td><td>CONDENSATE HANDLING</td><td>PUMPS, WATER SEPARATION & SURGE/STORAGE</td></tr><tr><td>40000</td><td>COMPRESSION</td><td>ENGINE/COMP. SKID EQUIP., COOLERS, ON-SKID SEPARATORS</td></tr><tr><td>50000</td><td>DISCHARGE SEPARATION, DEHYDRATION</td><td>DISCHARGE SEPARATORS, FILTERS & DEHYDRATION EQUIP.</td></tr><tr><td>60000</td><td>AMINE SYSTEM</td><td>CONTACTOR, REGEN SYSTEM & FILTERS</td></tr><tr><td>70000</td><td>OUTLET AREA</td><td>GAS METERS, LACTS, PUMPS & STORAGE</td></tr><tr><td>80000</td><td>SWD</td><td>TANKS & PUMPS</td></tr><tr><td>90000</td><td>FLARE & UTILITIES</td><td></td></tr></table> <div>PRODUCTION FACILITIES</div> <table><tr><th>AREA NUMBERS</th><th>AREA REFERENCED</th><th>TYPICAL EQUIPMENT</th></tr><tr><td>10000</td><td>WELL HEADS</td><td>WELL HEADS & METHANOL TANKS</td></tr><tr><td>20000</td><td>INLET AREA</td><td>SEPARATORS, BURNER UNITS, BURNER MANAGEMENT, FUEL SCRUBBERS</td></tr><tr><td>30000</td><td>OIL SYSTEM</td><td>BULK SEPARATORS, VAPOR RECOVERY TOWERS & LACTS</td></tr><tr><td>40000</td><td>GAS SYSTEM</td><td>GAS SCRUBBERS, DEHY'S, AMINE & GAS METERS</td></tr><tr><td>50000</td><td>FLARE SYSTEMS</td><td>FLARES, VENT & PURGE SYSTEMS, ECD'S</td></tr><tr><td>60000</td><td>STORAGE AREA</td><td>OIL TANKS, WATER TANKS, RECIRC PUMPS</td></tr><tr><td>70000</td><td>UTILITIES</td><td>AIR COMPRESSORS, GENERATORS</td></tr><tr><td>80000</td><td>GAS COMPRESSORS</td><td>VRUS & GAS COMPRESSORS</td></tr><tr><td>90000</td><td>WATER TRAIN</td><td>SWD PUMPS & WATER METERS</td></tr></table> <div>P&ID NUMBERING STANDARD</div> <div><div><div><div>X#####-PID-XXXXX</div><div>FUNCTIONAL LOCATION NUMBER</div><div>DRAWING TYPE</div><div>P&ID DRAWING NUMBERS(*)</div></div></div><div>*P&ID DRAWING NUMBERS ARE BASED OFF OF THE SITE/EQUIPMENT AREA NUMBERS. (SEE EQUIPMENT IDENTIFICATION CODE AND NUMBERING SYSTEM)</div></div>		AC-####	AIR COOLED FIN FAN	T-####	TOWER	C-####	COMPRESSOR	TK-####	TANK ATMOSPHERE	E-####	EXCHANGER	V-####	VESSEL, PROCESS	F-####	FILTER	VS-####	VESSEL, STORAGE	H-####	FIRE HEATERS	FL-####	SPECIALTY I.E., VENT STACK, FLARE, INCINERATOR, ECD	M-####	MOTOR	TO-####	THERMAL OXIDIZER	P-####	PUMP	X-####	MISC. EQUIPMENT	R-####	REACTOR			AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT	10000	INLET GAS AREA	SLUG CATCHERS & SEPARATORS	20000	CRUDE OIL TRANSFER EQUIPMENT	LINE HEATERS, PUMPS & SURGE VESSELS	30000	CONDENSATE HANDLING	PUMPS, WATER SEPARATION & SURGE/STORAGE	40000	COMPRESSION	ENGINE/COMP. SKID EQUIP., COOLERS, ON-SKID SEPARATORS	50000	DISCHARGE SEPARATION, DEHYDRATION	DISCHARGE SEPARATORS, FILTERS & DEHYDRATION EQUIP.	60000	AMINE SYSTEM	CONTACTOR, REGEN SYSTEM & FILTERS	70000	OUTLET AREA	GAS METERS, LACTS, PUMPS & STORAGE	80000	SWD	TANKS & PUMPS	90000	FLARE & UTILITIES		AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT	10000	INLET AREA	SLUG CATCHERS, SURGE/SEPARATOR VESSELS, LACTS & INLET HEATERS	20000	-	-	30000	PROCESS EQUIPMENT	VESSELS, TOWERS, EXCHANGERS, REFLUX SYSTEM	40000	COMPRESSION	COMPRESSORS, AFTERCOOLERS, COMPRESSOR ASSOCIATED VESSELS	50000	NGL STORAGE AND LACT	STORAGE VESSELS, PUMPS, METERS, LP GAS METERS	60000	PRODUCT COOLING	HEAT EXCHANGERS, CHILLERS, PUMPS, REFRIGERANT COMPRESSORS	70000	OUTLET AREA	OIL BOOSTER PUMPS, OIL PIPELINE PUMPS, OIL LACT	80000	HEAT MEDIUM SYSTEM	HEATERS, HM PUMPS, FILTERS	90000	FLARE & UTILITIES	FLARE, KNOCKOUTS, ECD'S, T.O., AIR COMPRESSORS, DRAINS, FUEL GAS	AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT	10000	INLET GAS AREA	SLUG CATCHERS & SEPARATORS	20000	CRUDE OIL TRANSFER EQUIPMENT	LINE HEATERS, PUMPS & SURGE VESSELS	30000	CONDENSATE HANDLING	PUMPS, WATER SEPARATION & SURGE/STORAGE	40000	COMPRESSION	ENGINE/COMP. SKID EQUIP., COOLERS, ON-SKID SEPARATORS	50000	DISCHARGE SEPARATION, DEHYDRATION	DISCHARGE SEPARATORS, FILTERS & DEHYDRATION EQUIP.	60000	AMINE SYSTEM	CONTACTOR, REGEN SYSTEM & FILTERS	70000	OUTLET AREA	GAS METERS, LACTS, PUMPS & STORAGE	80000	SWD	TANKS & PUMPS	90000	FLARE & UTILITIES		AREA NUMBERS	AREA REFERENCED	TYPICAL EQUIPMENT	10000	WELL HEADS	WELL HEADS & METHANOL TANKS	20000	INLET AREA	SEPARATORS, BURNER UNITS, BURNER MANAGEMENT, FUEL SCRUBBERS	30000	OIL SYSTEM	BULK SEPARATORS, VAPOR RECOVERY TOWERS & LACTS	40000	GAS SYSTEM	GAS SCRUBBERS, DEHY'S, AMINE & GAS METERS	50000	FLARE SYSTEMS	FLARES, VENT & PURGE SYSTEMS, ECD'S	60000	STORAGE AREA	OIL TANKS, WATER TANKS, RECIRC PUMPS	70000	UTILITIES	AIR COMPRESSORS, GENERATORS	80000	GAS COMPRESSORS	VRUS & GAS COMPRESSORS	90000	WATER TRAIN	SWD PUMPS & WATER METERS	<div>PIPE LINE NUMBERING STANDARD</div> <div><div><div>XX-XX-XXXX-XXXX-XXXX</div><div>INSULATION THICKNESS</div><div>PIPE SIZE</div><div>TRACING TYPE</div><div>SERVICE IDENTIFICATION</div><div>SEQUENTIAL NUMBER</div><div>INSULATION TYPE</div><div>PIPE SPECIFICATION</div></div></div> <div>SERVICE IDENTIFICATION CODE</div> <table><tr><td>AD = ACID DRAIN</td><td>LH = LIQUID HYDROCARBON</td></tr><tr><td>AF = ACID FLARE</td><td>LO = LUBE OIL</td></tr><tr><td>AG = ACID GAS</td><td>LS = LOW PRESSURE STEAM</td></tr><tr><td>AO = ABSORPTION OIL</td><td>M = METHANE</td></tr><tr><td>AV = ATMOSPHERE VENT</td><td>MC = MEDIUM PRESSURE CONDENSATE</td></tr><tr><td>B = N-BUTANE</td><td>MD = MEDIUM PRESSURE DRAIN</td></tr><tr><td>BD = BUILDING DRAIN</td><td>MF = MEDIUM PRESSURE FLARE</td></tr><tr><td>BCG = BLANKET GAS</td><td>MS = MEDIUM PRESSURE STEAM</td></tr><tr><td>BE = BLOWDOWN VENT</td><td>N = NITROGEN</td></tr><tr><td>BW = BOILER FEED WATER</td><td>NG = NATURAL GAS</td></tr><tr><td>CA = CAUSTIC</td><td>O = OIL</td></tr><tr><td>CD = COMBUSTION AIR</td><td>OD = OPEN DRAIN</td></tr><tr><td>CD = CLOSED DRAIN</td><td>OT = HOT OIL TRACE</td></tr><tr><td>OW = COLD WATER</td><td>OV = OIL VENT</td></tr><tr><td>DA = DRAIN ATMOSPHERIC</td><td>P = PROPANE</td></tr><tr><td>DP = DIESEL FUEL</td><td>PA = PROCESS AIR</td></tr><tr><td>OW = DRAIN PRESSURED</td><td>PC = PROCESS CONDENSATE</td></tr><tr><td>DW = DECHILLED WATER</td><td>PC = PROCESS FLARE</td></tr><tr><td>EG = ETHANE</td><td>PG = POWER GAS</td></tr><tr><td>FW = FUEL GAS</td><td>PG = PROCESS VENT</td></tr><tr><td>FW = FIRE WATER</td><td>PW = PRODUCED WATER</td></tr><tr><td>G = GLYCOL</td><td>RA = RICH AMINE</td></tr><tr><td>GH = GAS HYDROCARBON</td><td>RG = RICH GLYCOL</td></tr><tr><td>H = HYDROGEN SULFIDE</td><td>RW = RAW WATER</td></tr><tr><td>HC = HIGH PRESSURE CONDENSATE</td><td>SA = STARTING AIR</td></tr><tr><td>HD = HIGH PRESSURE DRAIN</td><td>SD = SOLVENT DRAIN</td></tr><tr><td>HF = HIGH PRESSURE FLARE</td><td>SG = STARTING GAS</td></tr><tr><td>HO = HOT OIL</td><td>SO = SEAL OIL</td></tr><tr><td>HS = HIGH PRESSURE STEAM</td><td>ST = STEAM TRACE</td></tr><tr><td>HW = HOT WATER</td><td>SW = SOUR (PRODUCED) WATER</td></tr><tr><td>IA = INSTRUMENT AIR</td><td>TG = TREATED GAS</td></tr><tr><td>IB = ISOBUTANE</td><td>TW = TREATED WATER</td></tr><tr><td>IG = INSTRUMENT GAS</td><td>UA = UTILITY AIR</td></tr><tr><td>JW = JACKET WATER</td><td>UV = UTILITY VENT</td></tr><tr><td>LA = LEAN AMINE</td><td>UV = UTILITY WATER</td></tr><tr><td>LC = LOW PRESSURE CONDENSATE</td><td>V = VENT GAS</td></tr><tr><td>LD = LOW PRESSURE DRAIN</td><td>WF = WELL FLUID</td></tr><tr><td>LG = LOW PRESSURE FLARE</td><td>WW = WASTE WATER</td></tr><tr><td>LG = LEAN GLYCOL</td><td></td></tr></table> <div>PIPE SPECIFICATIONS NAMING CONVENTION</div> <div><div><div>XXXX</div><div>FLANGE CLASS</div><div>MATERIAL</div><div>SERVICE</div><div>GOVERNING CODE</div></div></div> <div>FLANGE CLASS</div> <table><tr><td>A – CL 150</td><td>E – CL 900</td><td>C – CARBON STEEL</td></tr><tr><td>B – CL 300</td><td>F – CL 1500</td><td>L – LOW TEMP. CARBON STEEL</td></tr><tr><td>D – CL 600</td><td>G – CL 2500</td><td>S – STAINLESS STEEL</td></tr><tr><td></td><td></td><td>P – HDPE/PVC</td></tr></table> <div>GOVERNING CODE</div> <table><tr><td>1 – ASME B31.1</td><td>A – GENERAL SERVICE</td></tr><tr><td>3 – ASME B31.3</td><td>B – SOUR SERVICE</td></tr><tr><td>4 – ASME B31.4</td><td>C-Z – OTHER SERVICE FLUIDS</td></tr><tr><td>8 – ASME B31.8</td><td>L – DRAINS, GLYCOL, CRUDE OIL</td></tr></table> <div>INSULATION AND TRACE CODE</div> <table><tr><th>XX"</th><th>INSULATION TYPE</th><th>TRACE TYPE</th></tr><tr><td>XX"</td><td>C=COLD</td><td>ST=STEAM</td></tr><tr><td>XX"</td><td>H=HOT</td><td>ET=ELECTRIC</td></tr><tr><td>E/T</td><td>P=PERSONNEL</td><td>MT=MEDIA TRACE I.e., GLYCOL, HOT OIL</td></tr><tr><td></td><td>S=WEAT</td><td></td></tr></table> <div>MANUAL VALVE NUMBERING SYSTEM</div> <div>REPRESENTS PID <div>*-###</div> UNIQUE 3 DIGIT NUMBER</div> <div>NUMBER SHALL COMMENCE ON EACH SHEET WITH 001 AND CONTINUE SEQUENTIALLY</div> <div>ABBREVIATIONS</div> <table><tr><td>ATM = ATMOSPHERE</td><td>M = THOUSAND</td></tr><tr><td>AG = ABOVE GRADE</td><td>MM = MILLION</td></tr><tr><td>AV = AIR VENT (AUTOMATIC)</td><td>MW = MANWAY</td></tr><tr><td>BE = BURNER ELEMENT</td><td>N2 = NITROGEN</td></tr><tr><td>BF = BURNER FLAME</td><td>NC = NORMALLY CLOSED</td></tr><tr><td>BL = BLOWN</td><td>NL = NORMAL LIQUID LEVEL</td></tr><tr><td>CB = BELOW GRADE</td><td>NO = NORMALLY OPEN</td></tr><tr><td>CBDO = CONTINUOUS BLOWDOWN</td><td>OD = OPEN DRAIN</td></tr><tr><td>CD = CLOSED DRAIN</td><td>OD = OVERALL DIAMETER (SIZE)</td></tr><tr><td>CH = CHOKE</td><td>OP = OPEN</td></tr><tr><td>CHO = CHAIN OPERATED</td><td>PB = PUSH BUTTON</td></tr><tr><td>CO = CLEAN OUT</td><td>PC = PURGE CONNECTION</td></tr><tr><td>CO = CORROSION PROBE</td><td>QD = QUICK DISCONNECT</td></tr><tr><td>CSC = CAR SEAL CLOSED</td><td>R = RESET</td></tr><tr><td>CSC = CAR SEAL OPEN</td><td>ROC = RATE OF CHANGE</td></tr><tr><td>CSO = DRAIN CONNECTION</td><td>ROV = REMOTE OPERATED VALVE</td></tr><tr><td>FL = FAIL CLOSED</td><td>RTD = RESISTANCE TEMP. DETECTOR</td></tr><tr><td>FL = FAIL LAST</td><td>SC = SAMPLE CONNECTION</td></tr><tr><td>FO = FAIL OPEN</td><td>SCFD = STD. CU. FT. PER DAY</td></tr><tr><td>GPH = GALLONS PER HOUR</td><td>SCFH = STD. CU. FT. PER HOUR</td></tr><tr><td>GPM = GALLONS PER MINUTE</td><td>SCFM = STD. CU. FT. 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AO = ABSORPTION OIL	M = METHANE																																																																																																																																																																																																																																																																																																																																																		
AV = ATMOSPHERE VENT	MC = MEDIUM PRESSURE CONDENSATE																																																																																																																																																																																																																																																																																																																																																		
B = N-BUTANE	MD = MEDIUM PRESSURE DRAIN																																																																																																																																																																																																																																																																																																																																																		
BD = BUILDING DRAIN	MF = MEDIUM PRESSURE FLARE																																																																																																																																																																																																																																																																																																																																																		
BCG = BLANKET GAS	MS = MEDIUM PRESSURE STEAM																																																																																																																																																																																																																																																																																																																																																		
BE = BLOWDOWN VENT	N = NITROGEN																																																																																																																																																																																																																																																																																																																																																		
BW = BOILER FEED WATER	NG = NATURAL GAS																																																																																																																																																																																																																																																																																																																																																		
CA = CAUSTIC	O = OIL																																																																																																																																																																																																																																																																																																																																																		
CD = COMBUSTION AIR	OD = OPEN DRAIN																																																																																																																																																																																																																																																																																																																																																		
CD = CLOSED DRAIN	OT = HOT OIL TRACE																																																																																																																																																																																																																																																																																																																																																		
OW = COLD WATER	OV = OIL VENT																																																																																																																																																																																																																																																																																																																																																		
DA = DRAIN ATMOSPHERIC	P = PROPANE																																																																																																																																																																																																																																																																																																																																																		
DP = DIESEL FUEL	PA = PROCESS AIR																																																																																																																																																																																																																																																																																																																																																		
OW = DRAIN PRESSURED	PC = PROCESS CONDENSATE																																																																																																																																																																																																																																																																																																																																																		
DW = DECHILLED WATER	PC = PROCESS FLARE																																																																																																																																																																																																																																																																																																																																																		
EG = ETHANE	PG = POWER GAS																																																																																																																																																																																																																																																																																																																																																		
FW = FUEL GAS	PG = PROCESS VENT																																																																																																																																																																																																																																																																																																																																																		
FW = FIRE WATER	PW = PRODUCED WATER																																																																																																																																																																																																																																																																																																																																																		
G = GLYCOL	RA = RICH AMINE																																																																																																																																																																																																																																																																																																																																																		
GH = GAS HYDROCARBON	RG = RICH GLYCOL																																																																																																																																																																																																																																																																																																																																																		
H = HYDROGEN SULFIDE	RW = RAW WATER																																																																																																																																																																																																																																																																																																																																																		
HC = HIGH PRESSURE CONDENSATE	SA = STARTING AIR																																																																																																																																																																																																																																																																																																																																																		
HD = HIGH PRESSURE DRAIN	SD = SOLVENT DRAIN																																																																																																																																																																																																																																																																																																																																																		
HF = HIGH PRESSURE FLARE	SG = STARTING GAS																																																																																																																																																																																																																																																																																																																																																		
HO = HOT OIL	SO = SEAL OIL																																																																																																																																																																																																																																																																																																																																																		
HS = HIGH PRESSURE STEAM	ST = STEAM TRACE																																																																																																																																																																																																																																																																																																																																																		
HW = HOT WATER	SW = SOUR (PRODUCED) WATER																																																																																																																																																																																																																																																																																																																																																		
IA = INSTRUMENT AIR	TG = TREATED GAS																																																																																																																																																																																																																																																																																																																																																		
IB = ISOBUTANE	TW = TREATED WATER																																																																																																																																																																																																																																																																																																																																																		
IG = INSTRUMENT GAS	UA = UTILITY AIR																																																																																																																																																																																																																																																																																																																																																		
JW = JACKET WATER	UV = UTILITY VENT																																																																																																																																																																																																																																																																																																																																																		
LA = LEAN AMINE	UV = UTILITY WATER																																																																																																																																																																																																																																																																																																																																																		
LC = LOW PRESSURE CONDENSATE	V = VENT GAS																																																																																																																																																																																																																																																																																																																																																		
LD = LOW PRESSURE DRAIN	WF = WELL FLUID																																																																																																																																																																																																																																																																																																																																																		
LG = LOW PRESSURE FLARE	WW = WASTE WATER																																																																																																																																																																																																																																																																																																																																																		
LG = LEAN GLYCOL																																																																																																																																																																																																																																																																																																																																																			
A – CL 150	E – CL 900	C – CARBON STEEL																																																																																																																																																																																																																																																																																																																																																	
B – CL 300	F – CL 1500	L – LOW TEMP. CARBON STEEL																																																																																																																																																																																																																																																																																																																																																	
D – CL 600	G – CL 2500	S – STAINLESS STEEL																																																																																																																																																																																																																																																																																																																																																	
		P – HDPE/PVC																																																																																																																																																																																																																																																																																																																																																	
1 – ASME B31.1	A – GENERAL SERVICE																																																																																																																																																																																																																																																																																																																																																		
3 – ASME B31.3	B – SOUR SERVICE																																																																																																																																																																																																																																																																																																																																																		
4 – ASME B31.4	C-Z – OTHER SERVICE FLUIDS																																																																																																																																																																																																																																																																																																																																																		
8 – ASME B31.8	L – DRAINS, GLYCOL, CRUDE OIL																																																																																																																																																																																																																																																																																																																																																		
XX"	INSULATION TYPE	TRACE TYPE																																																																																																																																																																																																																																																																																																																																																	
XX"	C=COLD	ST=STEAM																																																																																																																																																																																																																																																																																																																																																	
XX"	H=HOT	ET=ELECTRIC																																																																																																																																																																																																																																																																																																																																																	
E/T	P=PERSONNEL	MT=MEDIA TRACE I.e., GLYCOL, HOT OIL																																																																																																																																																																																																																																																																																																																																																	
	S=WEAT																																																																																																																																																																																																																																																																																																																																																		
ATM = ATMOSPHERE	M = THOUSAND																																																																																																																																																																																																																																																																																																																																																		
AG = ABOVE GRADE	MM = MILLION																																																																																																																																																																																																																																																																																																																																																		
AV = AIR VENT (AUTOMATIC)	MW = MANWAY																																																																																																																																																																																																																																																																																																																																																		
BE = BURNER ELEMENT	N2 = NITROGEN																																																																																																																																																																																																																																																																																																																																																		
BF = BURNER FLAME	NC = NORMALLY CLOSED																																																																																																																																																																																																																																																																																																																																																		
BL = BLOWN	NL = NORMAL LIQUID LEVEL																																																																																																																																																																																																																																																																																																																																																		
CB = BELOW GRADE	NO = NORMALLY OPEN																																																																																																																																																																																																																																																																																																																																																		
CBDO = CONTINUOUS BLOWDOWN	OD = OPEN DRAIN																																																																																																																																																																																																																																																																																																																																																		
CD = CLOSED DRAIN	OD = OVERALL DIAMETER (SIZE)																																																																																																																																																																																																																																																																																																																																																		
CH = CHOKE	OP = OPEN																																																																																																																																																																																																																																																																																																																																																		
CHO = CHAIN OPERATED	PB = PUSH BUTTON																																																																																																																																																																																																																																																																																																																																																		
CO = CLEAN OUT	PC = PURGE CONNECTION																																																																																																																																																																																																																																																																																																																																																		
CO = CORROSION PROBE	QD = QUICK DISCONNECT																																																																																																																																																																																																																																																																																																																																																		
CSC = CAR SEAL CLOSED	R = RESET																																																																																																																																																																																																																																																																																																																																																		
CSC = CAR SEAL OPEN	ROC = RATE OF CHANGE																																																																																																																																																																																																																																																																																																																																																		
CSO = DRAIN CONNECTION	ROV = REMOTE OPERATED VALVE																																																																																																																																																																																																																																																																																																																																																		
FL = FAIL CLOSED	RTD = RESISTANCE TEMP. DETECTOR																																																																																																																																																																																																																																																																																																																																																		
FL = FAIL LAST	SC = SAMPLE CONNECTION																																																																																																																																																																																																																																																																																																																																																		
FO = FAIL OPEN	SCFD = STD. CU. FT. PER DAY																																																																																																																																																																																																																																																																																																																																																		
GPH = GALLONS PER HOUR	SCFH = STD. CU. FT. PER HOUR																																																																																																																																																																																																																																																																																																																																																		
GPM = GALLONS PER MINUTE	SCFM = STD. CU. FT. PER MINUTE																																																																																																																																																																																																																																																																																																																																																		
HC = HOSE CONNECTION	SD = SHUTDOWN																																																																																																																																																																																																																																																																																																																																																		
HHLL = HIGH HIGH LIQUID LEVEL	SIS = SAFETY INSTRUMENT SYSTEM																																																																																																																																																																																																																																																																																																																																																		
HLL = HIGH LIQUID LEVEL	SOC = STEAM OUT CONNECTION																																																																																																																																																																																																																																																																																																																																																		
HP = HIGH PRESSURE	SW = SCOPE OF WORK																																																																																																																																																																																																																																																																																																																																																		
HSD = HAND SHUTDOWN	SR = STRESS RELIEF																																																																																																																																																																																																																																																																																																																																																		
IA = INSTRUMENT AIR	SS = SELECTOR SWITCH																																																																																																																																																																																																																																																																																																																																																		
IGN = IGNITION	SU = START UP																																																																																																																																																																																																																																																																																																																																																		
LC = LOCK CLOSED	TS = TEMPORARY STRAINER																																																																																																																																																																																																																																																																																																																																																		
LD = LIQUID DRAIN	TS = TIGHT SHUT OFF																																																																																																																																																																																																																																																																																																																																																		
LL = LOW LIQUID LEVEL	TV = TYPICAL																																																																																																																																																																																																																																																																																																																																																		
LLLL = LOW LOW LIQUID LEVEL	VB = VENDOR SUPPLIED																																																																																																																																																																																																																																																																																																																																																		
LO = LOCK OPEN	VB = VACUUM BREAKER																																																																																																																																																																																																																																																																																																																																																		
LP = LOW PRESSURE	WC = WATER COLUMN																																																																																																																																																																																																																																																																																																																																																		
MIN = MINIMUM DISTANCE																																																																																																																																																																																																																																																																																																																																																			
NOTES:	REFERENCE DRAWINGS	REVISIONS	OXY Rockles		PIPING & INSTRUMENTATION DIAGRAM MECHANICAL LEGEND																																																																																																																																																																																																																																																																																																																																														
					DRAWN BY: MJ CREATION DATE: – AFE No.:																																																																																																																																																																																																																																																																																																																																														
					APPROVED: – APPR. DATE: –																																																																																																																																																																																																																																																																																																																																														
					DWG. No.: OXY-PID-STD-00010 SHEET No. 1 OF 4																																																																																																																																																																																																																																																																																																																																														
DWG. NO.	TITLE	NO.	DESCRIPTION	BY DATE	CHK. DATE	APPR. DATE																																																																																																																																																																																																																																																																																																																																													

TANKS	VESSELS		EXCHANGERS		PUMPS	
FLAT ROOF	VERTICAL VESSEL	VERTICAL VESSEL WITH SKIRT	EXCHANGER - DOUBLE END		PUMP - VERTICAL (Y AXIS)	
			EXCHANGER - SINGLE END		PUMP - HORIZONTAL (Y AXIS)	
SLOPING ROOF	VERTICAL VESSEL WITH CONE	VERTICAL VESSEL WITH SKIRT & CONE	EXCHANGER - DOUBLE END KETTLE		PUMP - CENTRIFUGAL (Y AXIS)	PUMP - DUAL
			EXCHANGER - SINGLE END KETTLE		PUMP - SUMP (Y AXIS)	PUMP - INLINE (Y AXIS)
FLOATING ROOF	VERTICAL FLAT BOTTOM VESSEL	HORIZONTAL VESSEL	EXCHANGER - SUPER		PUMP - ROTARY	PUMP - VACUUM
			LEAN/RICH AMINE EXCHANGER		PUMP - WITH STEAM TURBINE	PUMP - AIR OPERATED PUMP
	HORIZONTAL VESSEL WITH ECCENTRIC	CENTRIFUGAL COMPRESSOR	FUEL GAS HEATER		PUMP - DIAPHRAM	PULSATION DAMPENER
			AFTER COOLER WITH MOTOR		MOTOR	EQUIPMENT TAG
					TAG DESC --- TAG	
NOTES:	REFERENCE DRAWINGS		REVISIONS		PIPING & INSTRUMENTATION DIAGRAM EQUIPMENT LEGEND	
					DRAWN BY: MJ APPROVED: -- SCALE: NONE	
DWG. NO.		TITLE	NO.	DESCRIPTION	BY DATE CHK. DATE APPR. DATE	
					OXY STANDARD	
					OXY-PID-STD-00011	
					SHEET No. 2 OF 4	

THIS DRAWING AND THE DESIGN IT COVERS ARE CONFIDENTIAL AND REMAIN THE PROPERTY OF ANADARKO PETROLEUM CORPORATION AND SHALL NOT BE DISCLOSED TO OTHERS OR REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WHATSOEVER EXCEPT BY WRITTEN PERMISSION BY THE OWNER.



NOTES:

1. P&ID DETAILS ARE TYPICAL UNLESS INDICATED OTHERWISE ON THE P&ID WITH SPECIFIC APPLICATION.
2. LEVEL GAUGES SHOULD SPAN THE OPERATIONAL RANGE WITH 3" EXTRA VISIBLE GLASS AT HIGH AND LOW LEVELS. LEVEL GAUGE TO BE SUPPLIED AS AN ASSEMBLED UNIT.
3. LSH/LSL BRIDLES SHALL BE PROVIDED WITH EXTRA LENGTH BETWEEN CENTER-TO-CENTERS TO ALLOW FOR FIELD ADJUSTMENT WHERE POSSIBLE.
4. CORROSION COUPON TO BE EXTRACTED WITH A TOOL HAVING A DOUBLE BLOCK AND BLEED VALVE.
5. VALVES USED ON AMINE UNIT TO HAVE COMPATIBLE SOFT GOODS FOR AMINE SERVICE.

REFERENCE DRAWINGS	
DWG. NO.	TITLE

REVISIONS	
NO.	DESCRIPTION
1	INITIAL RELEASE FOR ENGINEERING STANDARD
2	ISSUED FOR REVIEW
3	ISSUED FOR APC STANDARD



OXY STANDARD

PIPING & INSTRUMENTATION DIAGRAM INSTRUMENTATION LEGEND			
DRAWN BY: MJ	CREATION DATE: --	AFE No.:	
APPROVED: --	APPR. DATE: --	SHEET No. 3 OF 4	
SCALE: NONE	DWG. No.:	OXY-PID-STD-00012	

FILE LOCATION: L:\SharedData\Denver\RockiesFC\DWGS\LEGENDS\OXY-PID-STD-00013.dwg
LAST SAVED: 1/8/2020 BY: Max Pelchenko

THIS DRAWING AND THE DESIGN IT COVERS ARE CONFIDENTIAL AND REMAIN THE PROPERTY OF ANADARKO PETROLEUM CORPORATION AND SHALL NOT BE DISCLOSED TO OTHERS OR REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WHATSOEVER EXCEPT BY WRITTEN PERMISSION BY THE OWNER.

V-20100-20400
PRODUCTION SEPARATOR

MAWP: 400 PSIG @ 350°F
MDMT: -20°F @ 400 PSI
48" OD X 16" S/S
BURNER: 750 MBTU/HR

SK-15100-15200
WELLHEAD MANIFOLD

(3 PACK)

SK-15300
WELLHEAD MANIFOLD

(1 PACK)

ABBREVIATIONS/SYMBOLS

◆

STREAM NUMBER

IA

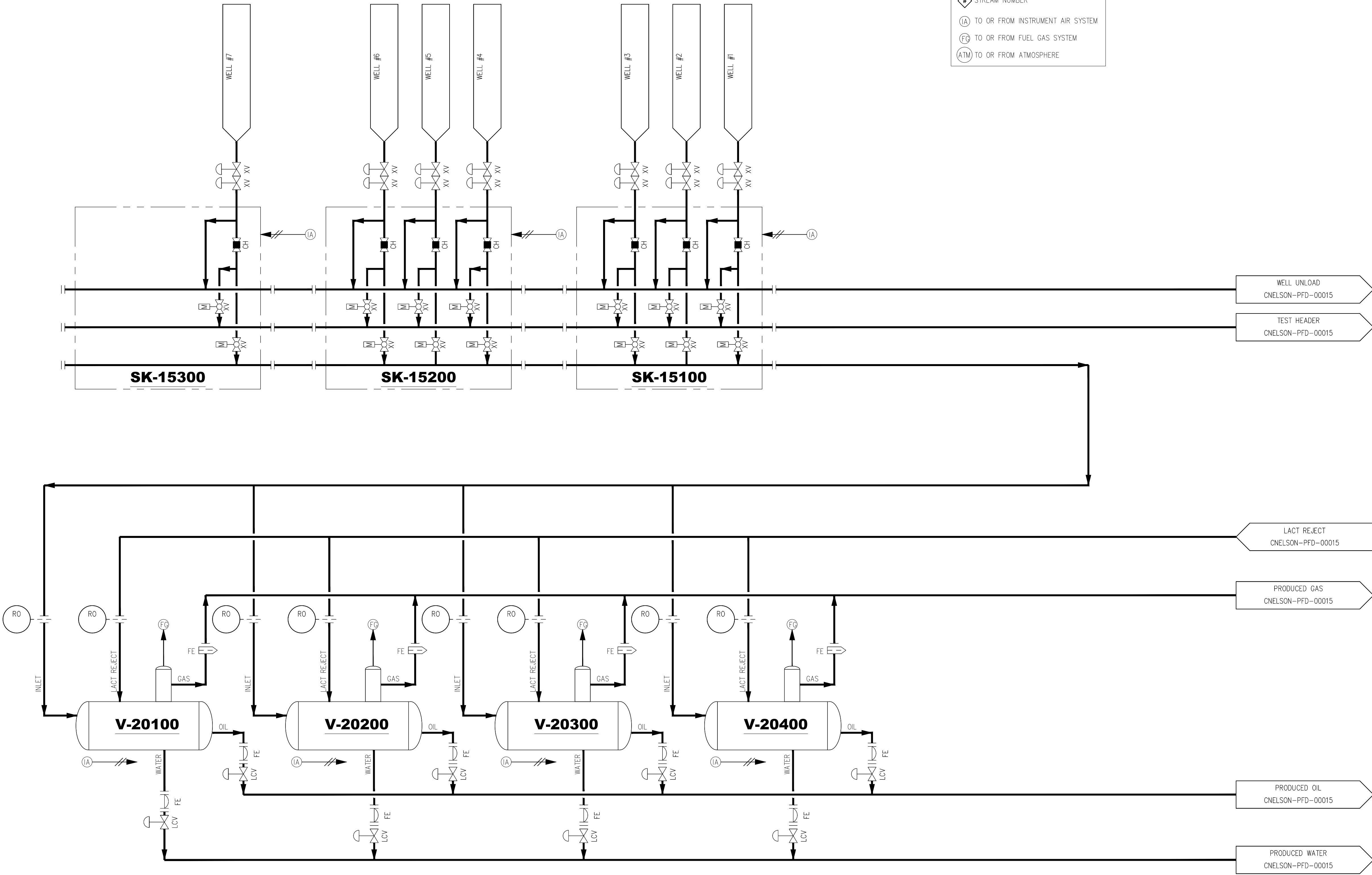
TO OR FROM INSTRUMENT AIR SYSTEM

FG

TO OR FROM FUEL GAS SYSTEM

ATM

TO OR FROM ATMOSPHERE



NOTES:

REFERENCE DRAWINGS

REVISIONS

DWG. NO.

TITLE



ISSUED FOR PERMIT

NO.

DESCRIPTION

BY

DATE

CHK.

DATE

APPR.

DATE

Kerr-McGee Oil & Gas Onshore LP

CHARLENE NELSON

PROCESS FLOW DIAGRAM
PRODUCTION FACILITY

DRAWN BY: JAK

APPROVED: JTK

CREATION DATE: 08/12/21

APPR. DATE: 08/12/21

AFE No.: --

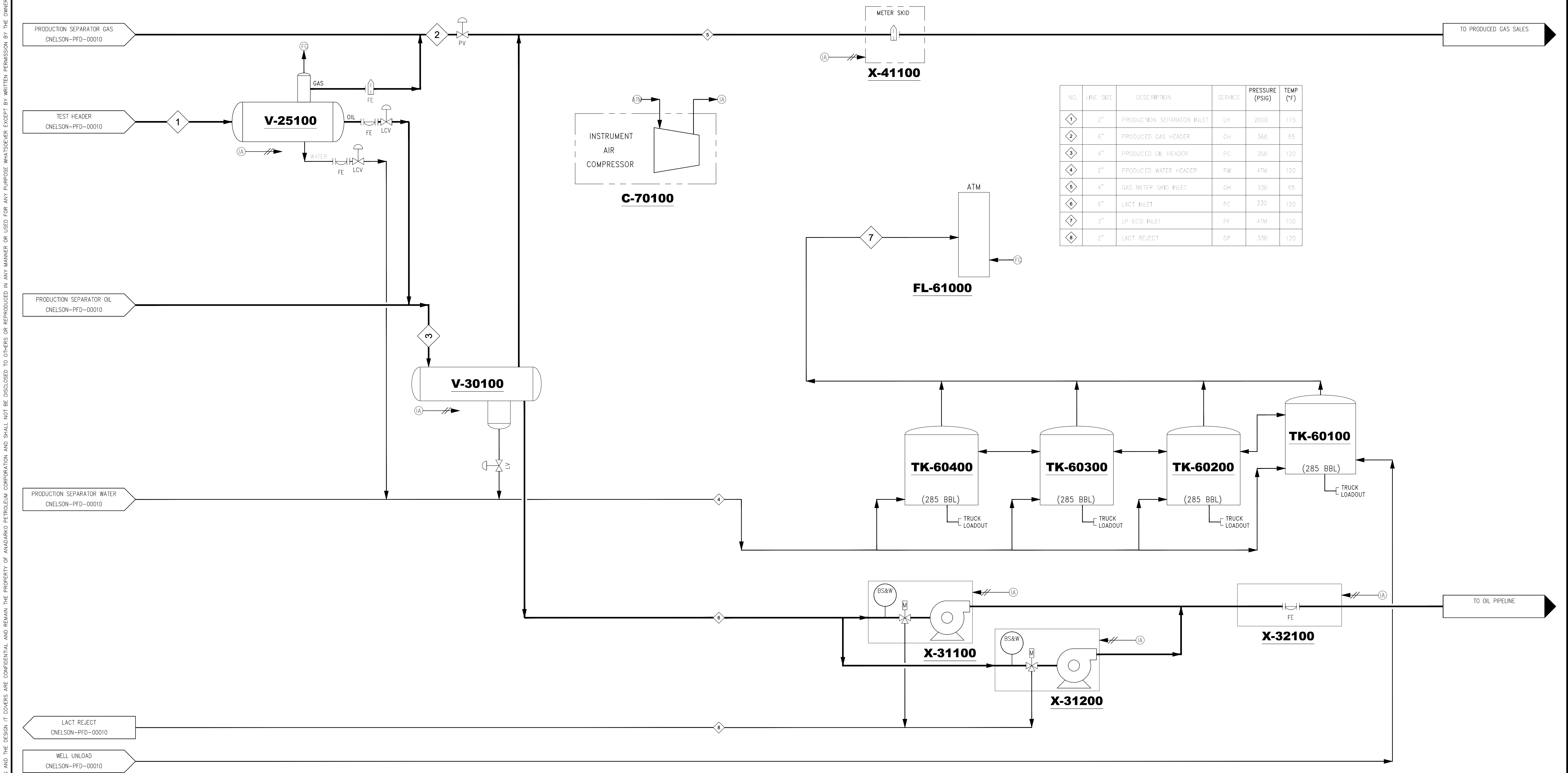
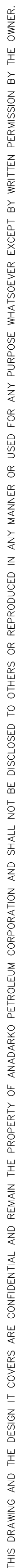
DWG. No.:

CNELSON-PFD-00010

SHEET No.

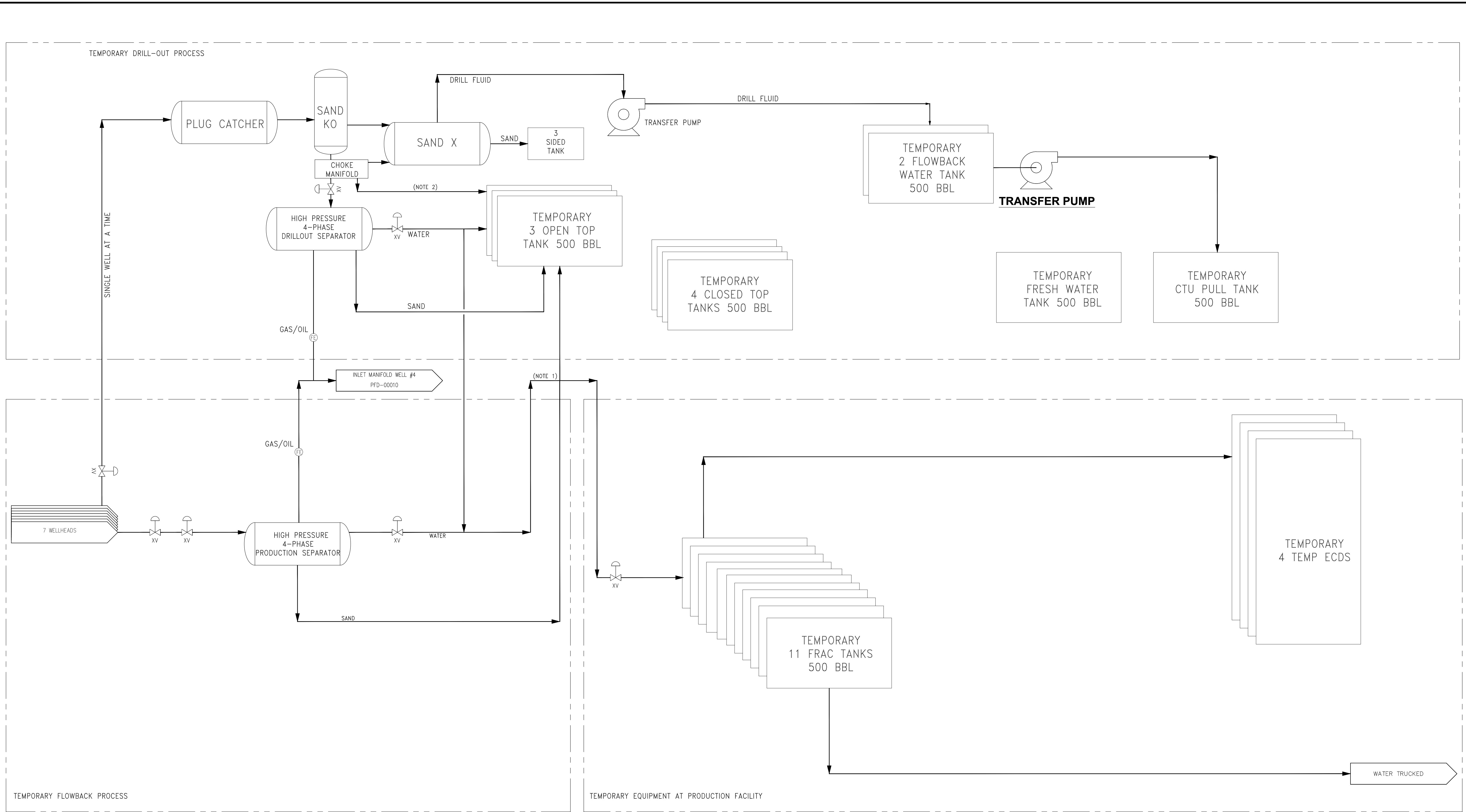
- OF -





NO.	LINE SIZE	DESCRIPTION	SERVICE	PRESSURE (PSIG)	TEMP (°F)
1	2"	PRODUCTION SEPARATOR INLET	LH	2000	115
2	6"	PRODUCED GAS HEADER	GH	360	65
3	4"	PRODUCED OIL HEADER	PC	350	120
4	2"	PRODUCED WATER HEADER	PW	ATM	120
5	4"	GAS METER SKID INLET	GH	330	65
6	6"	LACT INLET	PC	330	120
7	3"	LP ECD INLET	PF	ATM	100
8	2"	LACT REJECT	DP	330	120

[illegible]



NOTES:

1. WATER GOES TO PRODUCTION FACILITY TEMPORARY EQUIPMENT BY TEMPORARILY USING WELL #1 & #2 FLOW LINES.
2. INITIAL FLOW BYPASSES SEPARATORS DIRECTLY TO THE OPEN TOP TANKS UNTIL THE WELL PRODUCES OIL/GAS, THEN FLOW IS DIRECTED INTO THE SEPARATORS.

REFERENCE DRAWINGS		REVISIONS					
DWG. NO.	TITLE	NO.	DESCRIPTION	JAK BY	08/12/21 DATE	JTK CHK.	08/12/21 DATE
				JTK APPR.	08/12/21 DATE		

Kerr-McGee Oil & Gas Onshore LP

CHARLENE NELSON

PROCESS FLOW DIAGRAM

PRELIMINARY FLOWBACK EQUIPMENT TEMPORARY

DRAWN BY: JAK		CREATION DATE: 08/12/21		AFE No.: -	
APPROVED: JTK		APPR. DATE: 08/12/21			
		DWG. No.: CNELSON-PFD-00016			SHEET No. - OF -
SCALE: -					