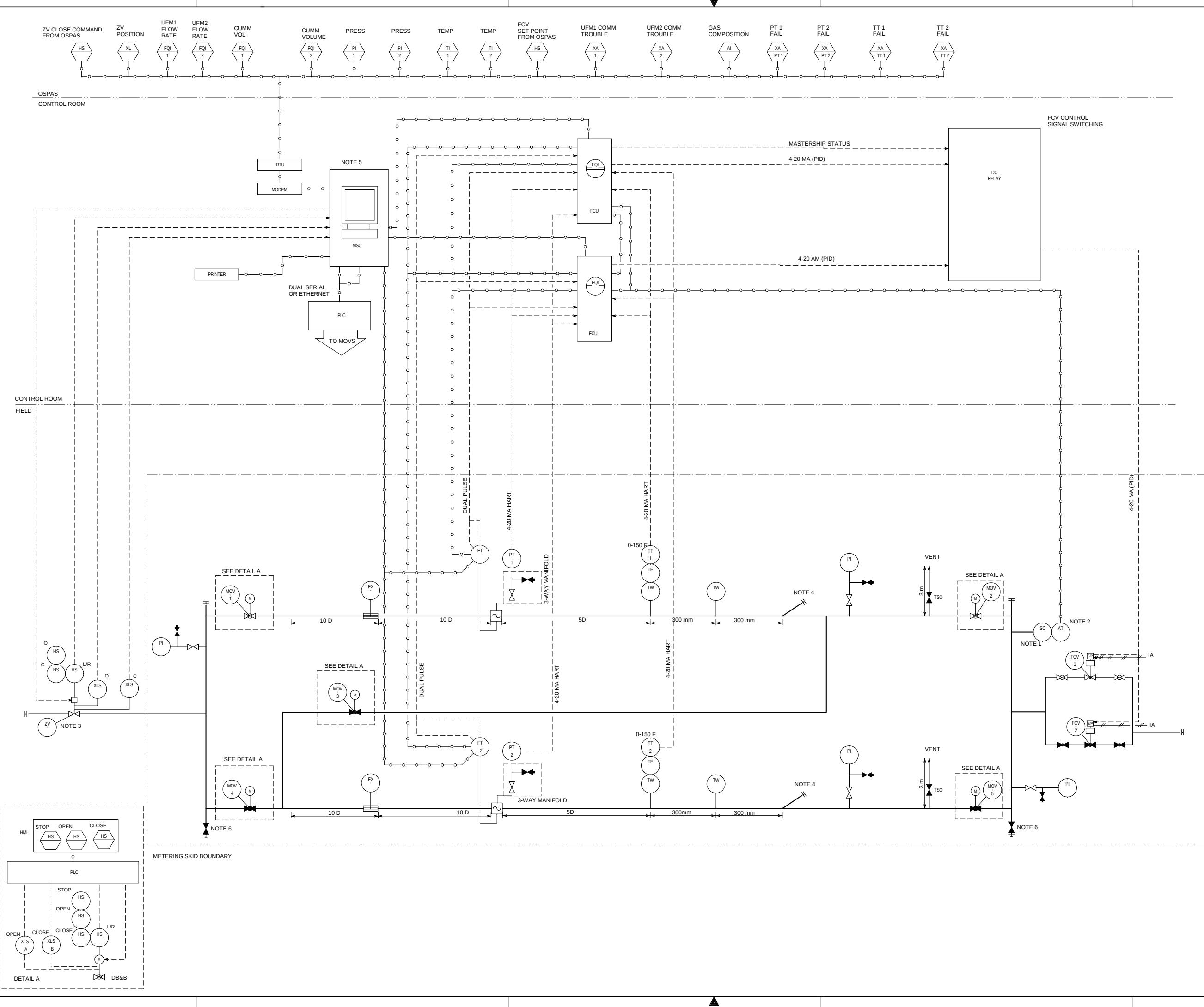




- NOTES:
1. SAMPLE CONNECTION AS PER SA STANDARD DRAWING AC-036045. OUTLET SHALL HAVE CONNECTIONS FOR GC AND MANUAL SAMPLING.
 2. AT TO BE A GC.
 3. PROVIDED BY OTHERS.
 4. UFM INSPECTION POINT.
 5. MSC LOADED WITH HMI AND USM, FLOW COMPUTER AND PLC CONFIGURATION AND DIAGNOSIS PACKAGES.
 6. VALVE NOT NEEDED WHEN A TOTAL SHUTDOWN OF THE METERING SYSTEM IS A CCEPTABLE.

LEGEND		
PIPING MATERIAL SPECIFICATION SAES-005	INSTRUMENT DEFINITION & SYMBOLS SAES-2004	
PROCESS LINE	ACAPD AIR TO CLOSE	VE VIBRATION ELEMENT
AIR LINE	ACAPF AIR TO CLOSE/FAIL	VS VIBRATION SWITCH
ELECTRICAL LINE	ACAPG AIR TO OPEN	VT VIBRATION TRANSMITTER
REDUCER	ACAPH AIR TO OPEN/FAIL	XL (NOT FOR MOTOR)
SPECTACLE PLATE OPEN	ADV AIR OPERATED VALVE	XK LIMIT SWITCH
SPECTACLE PLATE CLOSED	AT ANALYZER TRANSMITTER	XV SAFETY SHUTDOWN VALVE
GATE VALVE	DT DENSITY TRANSMITTER	
GLOBE VALVE	ESD EMER. SHUTDOWN SYSTEM	
CHECK VALVE	FC FLOW CONTROLLER	
PLUG VALVE	FV FLOW CONTROL VALVE	
BALL VALVE	FCV FLOW CONTROL VALVE (SELF-ACTUATED)	
DOUBLE DISC GATE VALVE	FE FLOW ELEMENT	
ANGLE VALVE	FS FLOW SHORT GLASS	
PRESSURE RELIEF VALVE	FNV FLOW MANUAL CONT. VALVE	
VACUUM RELIEF VALVE	PHDT FLOW MANUAL TRANSDUCER	
MOTOR OPERATED VALVE	PC FLOW INDICATOR CONTROLLER	
PISTON OPERATED VALVE	PM FLOW METER	
CONTROL VALVE	PO FLOW RECORDER	
BALL TYPE CONTROL VALVE WITH POSITIONER	PR FLOW RECORDER	
SOLENOID VALVE	PT FLOW TRANSMITTER	
VALVE NORMALLY CLOSED	PV FLOW RELAY	
ULTRASONIC FLOW METER	HIC HAND INDICATOR CONTROLLER	
FLOW CONDITIONING PLATE	HS HAND SWITCH	
	LV LEVEL VALVE	
	LCV LEVEL CONTROL VALVE (SELF-ACTUATED)	
	LG LEVEL GAUGE GLASS	
	LIC LEVEL INDICATOR CONTROLLER	
	LI LEVEL INDICATOR	
	LR LEVEL RECORDER	
	LS LEVEL SWITCH	
	LT LEVEL TRANSMITTER	
	LTD LEVEL TRANSDUCER	
	MA MANIFOLD	
	MOV MOTOR OPERATED VALVE	
	MS MOTOR STATUS LIGHT	
	PS PUSHBUTTON	
	PC PRESSURE CONTROLLER	
	PV PRESSURE CONTROL VALVE	
	PCV PRESS. CONTROL VALVE (SELF-ACTUATED)	
	POC PRESS. DIFF. CONTROLLER	
	POI PRESS. DIFF. INDICATOR	
	POD PRESS. DIFF. TRANSDUCER	
	POIS PRESSURE DIFFERENTIAL INDICATOR CONTROLLER	
	POIS PRESSURE DIFFERENTIAL	
	POT INDICATOR SWITCH	
	POT PRESS. DIFF. TRANSMITTER	
	POTD PRESS. DIFF. TRANSDUCER	
	PS PRESSURE GAUGE	
	PI PRESSURE INDICATOR	
	PR PRESSURE RECORDER	
	PS PRESSURE SWITCH	
	PT PRESSURE TRANSMITTER	
	PL PRESSURE POINT	
	PV PRESS. COMPUTATION MOD.	
	PRV PRESSURE RELIEF VALVE	
	RTD RESIST. TEMP. DETECTOR	
	SI SPEED INDICATOR	
	SS SPEED SWITCH	
	TC TEMP. CONTROLLER	
	TV TEMP. CONTROL VALVE (SELF-ACTUATED)	
	TCV TEMP. CONTROL VALVE	
	TE TEMP. ELEMENT	
	TD THERMOMETER	
	THS TEMP. HAND SWITCH	
	TI TEMP. INDICATOR	
	TR TEMP. RECORDER	
	TS TEMP. SWITCH	
	TT TEMP. TRANSMITTER	
	TTD TEMP. TRANSDUCER	
	TW THERMOWELL	

REFERENCE DRAWINGS	
LETTER IDENTIFICATION OF LINES	AE-036024
PIPING SYMBOLS	AB-036027
EQUIPMENT SYMBOLS	AB-036035
INSTRUMENT SYMBOLS	AC-036050
PIPING LAYOUT INDEX	
PLOT PLAN	
PROCESS FLOW DIAGRAM	
HYDROSTATIC TEST DIAGRAM	
DRAWING CONTROL FOR J.O.	
INSTRUMENT INSTALLATION SCHEDULES	

REVISION VALIDATION				
THIS REVISION NO. 01 IS COVERED, FOR ALL APPROVAL AND CERTIFICATION REQUIREMENTS, PER SAEP-334, UNDER DRAWING COMPLETION CERTIFICATE NO. 768530-0112-001				
DESIGN CERTIFICATION (DESIGN AGENCY)		☒ REVIEW FOR KEY DRAWINGS (SAUDI ARAMCO)	OTHER	
ENG. DATE JDE Jan 17, 2012	CERTIFIED BY/DATE KAF Jan 17, 2012	CONST. AGENCY/DATE KAF Jan 17, 2012	OPERATIONS/DATE KAF Jan 17, 2012	BY/DATE WAB Jan 17, 2012
REV. NO. 01	DATE Jan 17, 2012	REVISION DESCRIPTION REVISED PER MARK UP		
JOB ORDER/REV. NO. 768530		THIS REVISION IS NOT TO BE USED FOR CONSTRUCTION UNTIL CERTIFIED AND DATED		
SAUDI ARABIAN OIL COMPANY				
PIPING & INSTRUMENTATION DIAGRAM				DRAWING TITLE PID
LARGE METERING SKID (GAS)				
ULTRASONIC FLOW METER BASED				
SPPID Template_Plant01		SAUDI ARABIA		
PLANT NO. 990	INDEX A	DRAWING NUMBER AB-036184	SH. NO. 001	REV. NO. 01

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