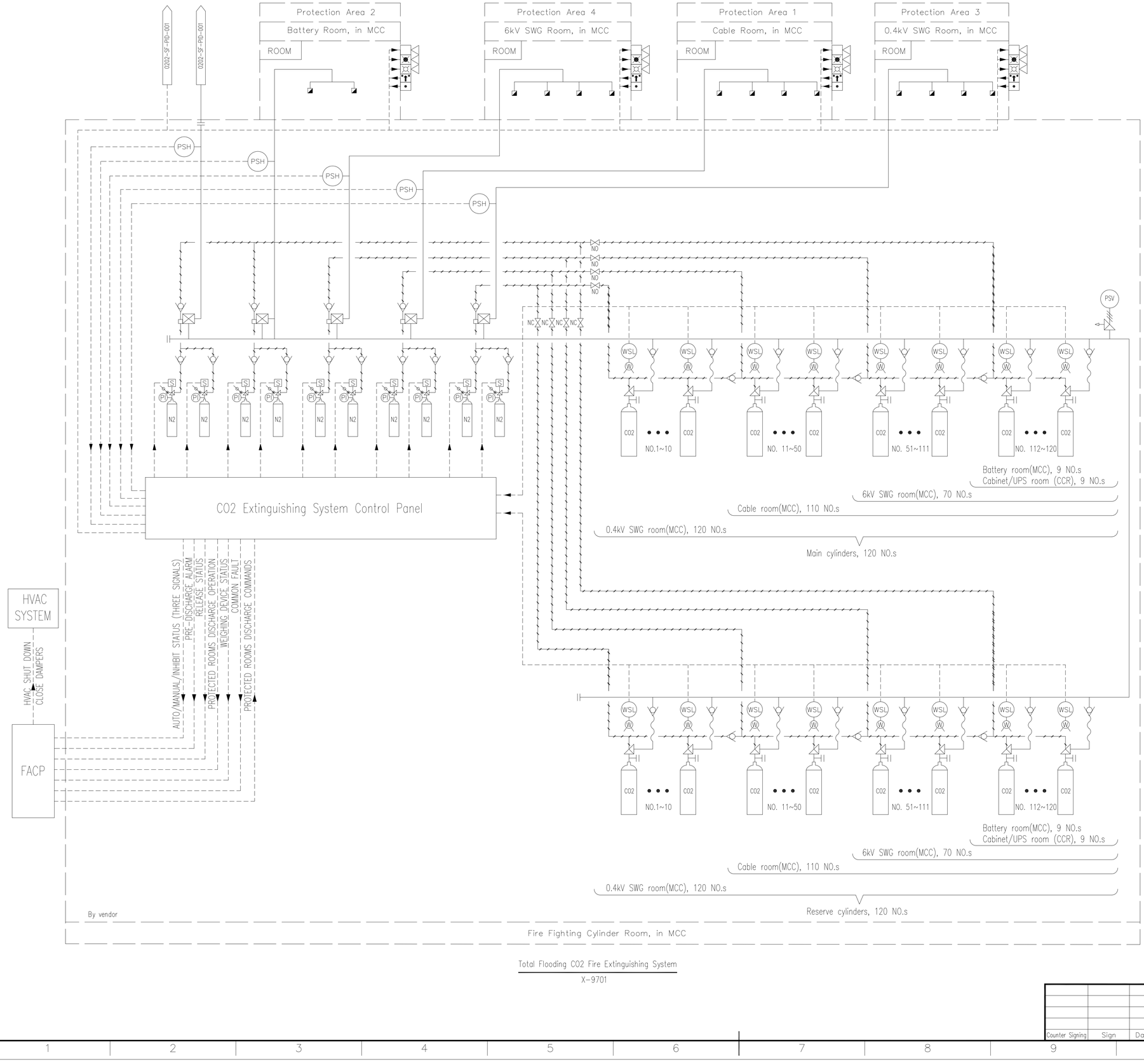


Total Flooding CO2 Fire Extinguishing System

X-9701

DATA SHEET OF CO2 EXTINGUISHING SYSTEM

	PROTECTION AREA	VOLUME (TOTAL)	VOLUME FACTOR	CO_2 REQUIRED (SAFETY FACTOR 10%)	QUANTITY OF CYLINDER (42kg)	
		m^3	kg/m^3	kg	MAIN	RESERVE
1	Cable room(MCC)	3132	1.33	4583	110	120
2	Battery room(MCC)	248	1.33	363	9	
3	0.4kV SWG room(MCC)	3430	1.33	5018	120	
4	6kV SWG room(MCC)	1992	1.33	2914	70	
5	Cabinet room(CCR)	147	1.33	243	9	
	UPS room(CCR)	18				

GENERAL NOTES

1 ALL RELEVANT EQUIPMENT, INSTRUMENTATION, PIPING, NUMBER OF CYLINDERS AND ALL REQUIRED FACILITIES WITHIN THIS DIAGRAM SHALL BE DESIGNED AND FINALIZED BY VENDOR/ SUPPLIER;
2 QUANTITY AND SIZE OF NOZZLES AND RELEVANT PIPING SHALL BE DEFINED BY VENDOR. INDICATED NUMBERS OF CYLINDERS AND NOZZLES ARE SCHEMATIC;
3 A HAND SWITCH SELECTOR BETWEEN MAIN AND RESERVED CYLINDERS SHALL BE CONSIDERED ON PANEL BY VENDOR.
4 THE SYSTEM SHALL DISCHARGE AFTER A SUITABLE WARNING DELAY AFTER INITIATION AND CONFIRMED CLOSURE OF DAMPERS AND SHUTDOWN OF THE LOCAL HVAC SYSTEMS. INTERFACES BETWEEN TOTAL FLOODING AND F&G SYSTEMS SHALL BE CONSIDERED BY VENDOR.
5 APPROPRIATE AND SUFFICIENT LOCAL ALARM DEVICES (AUDIBLE & VISUAL) SUCH AS ALARMS FOR "ENTRY FORBIDDEN / IMMEDIATELY EXIT" FOR EACH ROOM SHALL BE CONSIDERED BY VENDOR.
6 APPROPRIATE AND SUFFICIENT ALARM DEVICES AND OTHER RELEVANT REQUIREMENTS ON CONTROL PANEL SHALL BE CONSIDERED BY VENDOR.
7 A PRESSURE ALARM HIGH SHALL BE CONSIDERED ON CONTROL PANEL BY VENDOR.
8 A WEIGHT ALARM LOW SHALL BE CONSIDERED ON CONTROL PANEL BY VENDOR.
9 VENDOR SHALL FINALIZE THE DISCHARGE LOCATION OF PSV. PSV SHALL BE DISCHARGED TO SAFE LOCATION.
10 APPROPRIATE AND SUFFICIENT RESET AND SILENCE SWITCH, LOCAL MANUAL DISCHARGE AND INHIBITION DEVICES AND OTHER RELEVANT REQUIREMENTS SHALL BE CONSIDERED BY VENDOR.
11 VENT PLUG SHALL BE PROVIDED FOR THE LAST CYLINDER BY VENDOR.
12 SUPPLIERS CAN ONLY PROPOSE N2 PILOTED SYSTEM.
13 SIGNALS FROM CO2 EXTINGUISHING CONTROL PANEL WOULD BE SENT TO FACP WHICH WILL BE LOCATED IN CONTROL BUILDING.
14 AUTO/MANUAL/INHIBIT SWITCH & MANUAL RELEASE SHALL BE CONSIDERED FOR EACH PROTECTION AREA.
15 REQUIREMENTS OF NFPA-12 SHALL BE CONSIDERED COMPLETELY.
16 TEST & COMMISSIONING SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF NFPA.
17 PROPOSED PACKAGE SHOULD HAD BEEN CERTIFIED OR APPROVED BY ONE OF THE LEADING FIRE FIGHTING AUTHORITIES.
18 FOR PRELIMINARY CALCULATIONS REFER TO DATA SHEET.
19. THE PIPE BETWEEN MCC AND CCR WILL BE ARRANGED UNDERGROUND.
20 ONCE FIRE OCCURS, BOTH OF THE TWO PROTECTION AREA IN CCR WILL BE INJECTED CO2 TOGETHER.

REFERENCE DRAWINGS

MKP-11-DE-0202-SF-PID-001	

SYMBOLS AND LEGENDS

	Safety relief valve	WSL	Weight switch low
	Gas check valve		Auto/Manual/Inhibit switch
	Cylinder valve		Manual discharge
S	Solenoid cylinder valve		Alarm unit (Entry forbidden)
	Selector valve		Alarm unit (Immediately exit)
	Gas flow direction		Siren
	Gas nozzle		

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	14.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	02.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION | CONTRACTOR DRAWING NO. MKP-11-AS-0201-PF03-PID-001 | SHEET 01 | TOTAL 01

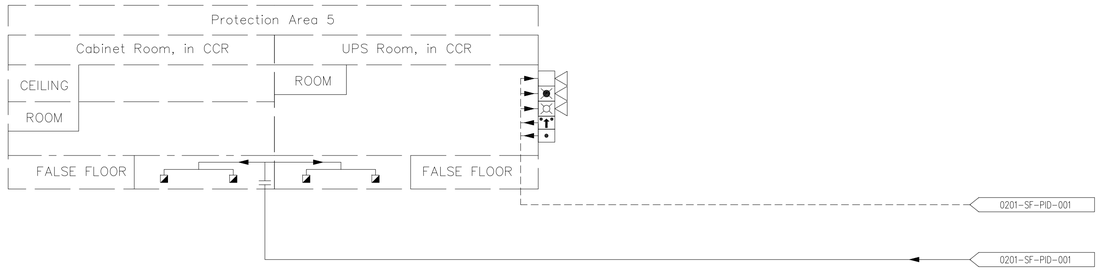
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO | SUB-CONTRACTOR DRAWING NO. – | SHEET – | TOTAL –

P&ID FOR GAS FIRE EXTINGUISHING SYSTEM IN UNIT 0201

PROJECT	MKP Methanol Project
UNIT	MCC Substation
PHASE	As built drawing

Counter Signing	Sign	Date

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1 | OWNER DWG NO. MKP-11-AS-0201-SF-PID-001



DATA SHEET OF CO2 EXTINGUISHING SYSTEM

	PROTECTION AREA	VOLUME (TOTAL)	VOLUME FACTOR	CO_2 REQUIRED (SAFETY FACTOR 10%)	QUANTITY OF CYLINDER (42kg)	
		m^3	kg/m^3	kg	MAIN	RESERVE
1	Cable room(MCC)	3132	1.33	4583	110	120
2	Battery room(MCC)	248	1.33	363	9	
3	0.4kV SWG room(MCC)	3430	1.33	5018	120	
4	6kV SWG room(MCC)	1992	1.33	2914	70	
5	Cabinet room(CCR)	147	1.33	243	9	
	UPS room(CCR)	18				

GENERAL NOTES

1 ALL RELEVANT EQUIPMENT, INSTRUMENTATION, PIPING, NUMBER OF CYLINDERS AND ALL REQUIRED FACILITIES WITHIN THIS DIAGRAM SHALL BE DESIGNED AND FINALIZED BY VENDOR/ SUPPLIER;
2 QUANTITY AND SIZE OF NOZZLES AND RELEVANT PIPING SHALL BE DEFINED BY VENDOR. INDICATED NUMBERS OF CYLINDERS AND NOZZLES ARE SCHEMATIC;
3 A HAND SWITCH SELECTOR BETWEEN MAIN AND RESERVED CYLINDERS SHALL BE CONSIDERED ON PANEL BY VENDOR.
4 THE SYSTEM SHALL DISCHARGE AFTER A SUITABLE WARNING DELAY AFTER INITIATION AND CONFIRMED CLOSURE OF DAMPERS AND SHUTDOWN OF THE LOCAL HVAC SYSTEMS. INTERFACES BETWEEN TOTAL FLOODING AND F&G SYSTEMS SHALL BE CONSIDERED BY VENDOR.
5 APPROPRIATE AND SUFFICIENT LOCAL ALARM DEVICES (AUDIBLE & VISUAL) SUCH AS ALARMS FOR "ENTRY FORBIDDEN / IMMEDIATELY EXIT" FOR EACH ROOM SHALL BE CONSIDERED BY VENDOR.
6 APPROPRIATE AND SUFFICIENT ALARM DEVICES AND OTHER RELEVANT REQUIREMENTS ON CONTROL PANEL SHALL BE CONSIDERED BY VENDOR.
7 A PRESSURE ALARM HIGH SHALL BE CONSIDERED ON CONTROL PANEL BY VENDOR.
8 A WEIGHT ALARM LOW SHALL BE CONSIDERED ON CONTROL PANEL BY VENDOR.
9 VENDOR SHALL FINALIZE THE DISCHARGE LOCATION OF PSV. PSV SHALL BE DISCHARGED TO SAFE LOCATION.
10 APPROPRIATE AND SUFFICIENT RESET AND SILENCE SWITCH, LOCAL MANUAL DISCHARGE AND INHIBITION DEVICES AND OTHER RELEVANT REQUIREMENTS SHALL BE CONSIDERED BY VENDOR.
11 VENT PLUG SHALL BE PROVIDED FOR THE LAST CYLINDER BY VENDOR.
12 SUPPLIERS CAN ONLY PROPOSE N2 PILOTED SYSTEM.
13 SIGNALS FROM CO2 EXTINGUISHING CONTROL PANEL WOULD BE SENT TO FACP WHICH WILL BE LOCATED IN CONTROL BUILDING.
14 AUTO/MANUAL/INHIBIT SWITCH & MANUAL RELEASE SHALL BE CONSIDERED FOR EACH PROTECTION AREA.
15 REQUIREMENTS OF NFPA-12 SHALL BE CONSIDERED COMPLETELY.
16 TEST & COMMISSIONING SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF NFPA.
17 PROPOSED PACKAGE SHOULD HAD BEEN CERTIFIED OR APPROVED BY ONE OF THE LEADING FIRE FIGHTING AUTHORITIES.
18 FOR PRELIMINARY CALCULATIONS REFER TO DATA SHEET.
19. THE PIPE BETWEEN MCC AND CCR WILL BE ARRANGED UNDERGROUND.
20 ONCE FIRE OCCURS, BOTH OF THE TWO PROTECTION AREA IN CCR WILL BE INJECTED CO2 TOGETHER.

REFERENCE DRAWINGS

MKP-11-DE-0201-SF-PID-001	

SYMBOLS AND LEGENDS

→	Gas flow direction		
	Gas nozzle		

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved for Construction	14.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
2	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	
1	Approved for Construction	02.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East
Kimiaye Pars Company

LICENCOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME:
JOB NO. | DOC. GRP. | #REV.
DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO.
MKP-11-AS-0202-PF03-PID-001
SHEET 01 TOTAL 01

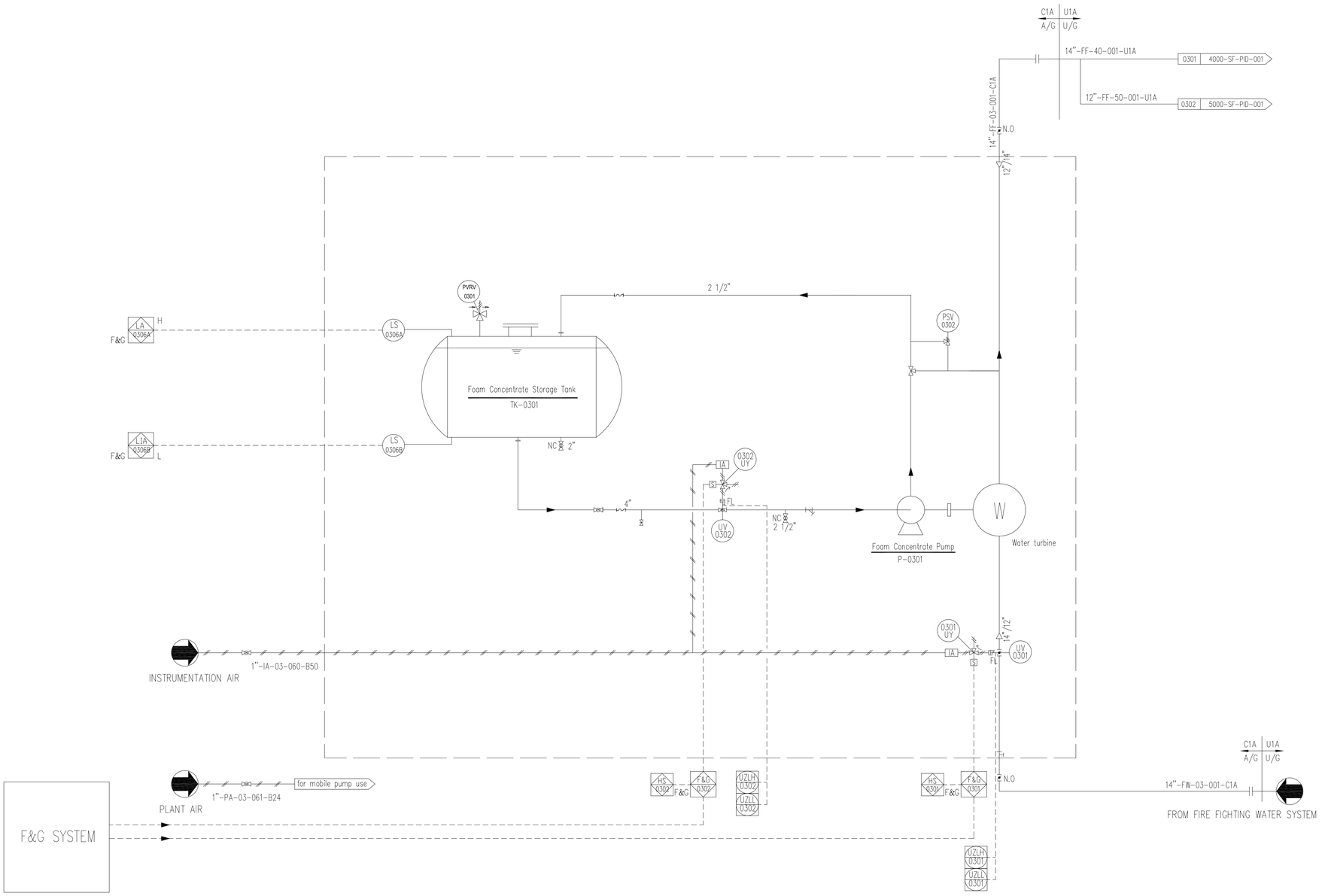
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO
SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

Counter Signing	Sign	Date

P&ID FOR GAS FIRE EXTINGUISHING SYSTEM IN UNIT 0202

PROJECT	MKP Methanol Project
UNIT	Control Room
PHASE	As built drawing

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1 | OWNER DWG NO. | MKP-11-AS-0202-SF-PID-001



Balanced Pressure Proportioning Set

X-0301

GENERAL NOTES

1 ALL RELEVANT EQUIPMENT, INSTRUMENTATION, PIPING AND ALL REQUIRED FACILITIES WITHIN THIS DIAGRAM SHALL BE DESIGNED AND FINALIZED BY VENDOR/ SUPPLIER.
2 SIZE OF RELEVANT PIPING SHALL BE DEFINED BY VENDOR.
3 THE SYSTEM SHALL BE CONTROLLED IN F&G SYSTEM, AND CONTROL LOGICAL SHALL BE SUPPLIED BY VENDOR.
4 VENDOR SHALL FINALIZE THE SET PRESSURE OF PSV.
5 PNEUMATIC VALVE SHALL EQUIPPED WITH HAND WHEEL SWITCH.
6 REQUIREMENTS OF NFPA-11 AND NFPA-20 SHALL BE CONSIDERED COMPLETELY.
7 TEST & COMMISSIONING SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF NFPA.

PIPE NUMBER

14"— FW — 03 — 001 — C1A

- 14": Nominal Diameter
- FW: Fluid Code
- 03: Unit Number
- 001: Sequence Number
- C1A: Pipe Class Code

REFERENCE DRAWINGS

MKP-11-DE-4000-SF-PID-001	MKP-11-DE-5000-SF-PID-001
MKP-11-DE-0300-PI-PPL-001	MKP-11-DE-9700-SF-SPC-001
MKP-11-DE-9700-SF-EQL-001	MKP-11-DE-7000-PR-PID-018

SYMBOLS AND LEGENDS

S IA	Pneumatic valve		Trench
IA	Instrumental air	FL	Failure locked
N.O	Normal open	N.C	Normal close
F&G	Fire and Gas system	FF	Foam solution
FW	Fire water		

Item No.	X-0301	TK-0301		P-0301	
Name	Balanced Pressure Proportioning Set	Foam Concentrate Storage Tank		Foam Concentrate Pump	
Specification	working pressure: 1.0MPa flow of foam solution: 103~247L/s concentration: 3% (AFFF-AR)	ID x LENGTH	2400 x 6000mm	CAPACITY	Q=103~247L/s
		NOMINAL CAPACITY	V=22m³	Proportioning rate	3%
		DESIGN PRESS.	ATM+Full Liquid	DENSITY@OT	1000 kg/m3
		DESIGN TEMP.	85 ℃	INSULATION/TRACING	None
		INSULATION	None	AUXILIARY PIPING	By vendor

Counter Signing	Sign	Date

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	25.12.2019	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	10.12.2019	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	30.09.2017	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	02.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

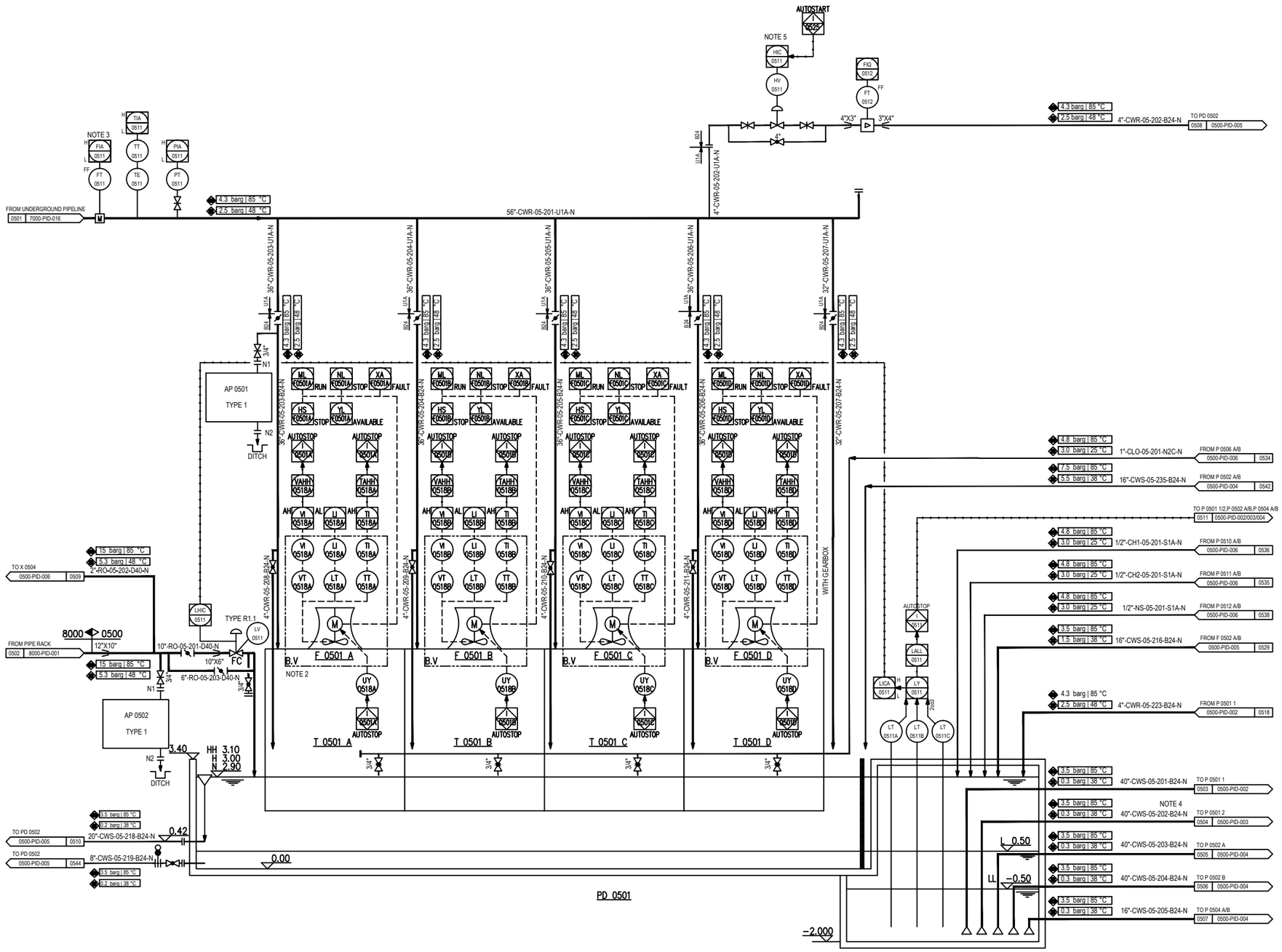
CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-0300-PF03-PID-001 — SHEET 01 — TOTAL 01

SUB CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. -- — SHEET – — TOTAL –

P&ID FOR FOAM STATION

PROJECT	MKP Methanol Project
UNIT	Foam Station
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-0300-SF-PID-001

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1



GENERAL NOTES

NOTES:

2. VT, LT AND TT ARE LOCATED ON SPEED REDUCER OF FANS.
   V-VIBRATION; L-OIL LEVEL; T-OIL TEMPERATURE.
3. ALARM HIGH TO BE CONSIDERED FOR FI.
4. COOLING WATER PUMPS WILL BE SPACED AT EQUAL DISTANCE SYMMETRICAL TO THE BASIN.
5. THE SIGNAL OF CONTROL VALVE WILL BE SHOWN IN FCS. THE OPERATOR ADJUST THE VALVE IN CONTROL ROOM.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

T 0501 A/B/C/D	COOLING WATER TOWER	F 0501 A/B/C/D	COOLING TOWER FAN	PD 0501	COOLING WATER POND
LXWXH(m)	16.4X16.4X20.1	CAPACITY(m^3/h)	2200000	LXWXH(mm)	67500X20900X3400
DESIGN PRESS.	ATM	ID(mm)	9140	NOMINAL CAPACITY	4465 m3
DESIGN TEMP.	85 ℃	DESIGN PRESS.	0.0015 barg	DESIGN PRESS.	ATM
INSULATION	NO	DESIGN TEMP.	85 ℃	DESIGN TEMP.	85 ℃
CLADDING/LINING	NONE	INSULATION	NO	INSULATION	NONE

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	30.12.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	22.08.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	17.07.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	29.09.2017	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	22.11.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	11.10.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Review	15.07.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Comments	06.06.2016	Nie Xiao		Tian Tao	Xie Xuan	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S — DOCUMENT NAME: — JOB NO. — DOC GRP — DWG. NO. — DIAGRAM — REV.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-0500-EE06-PID-001

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.

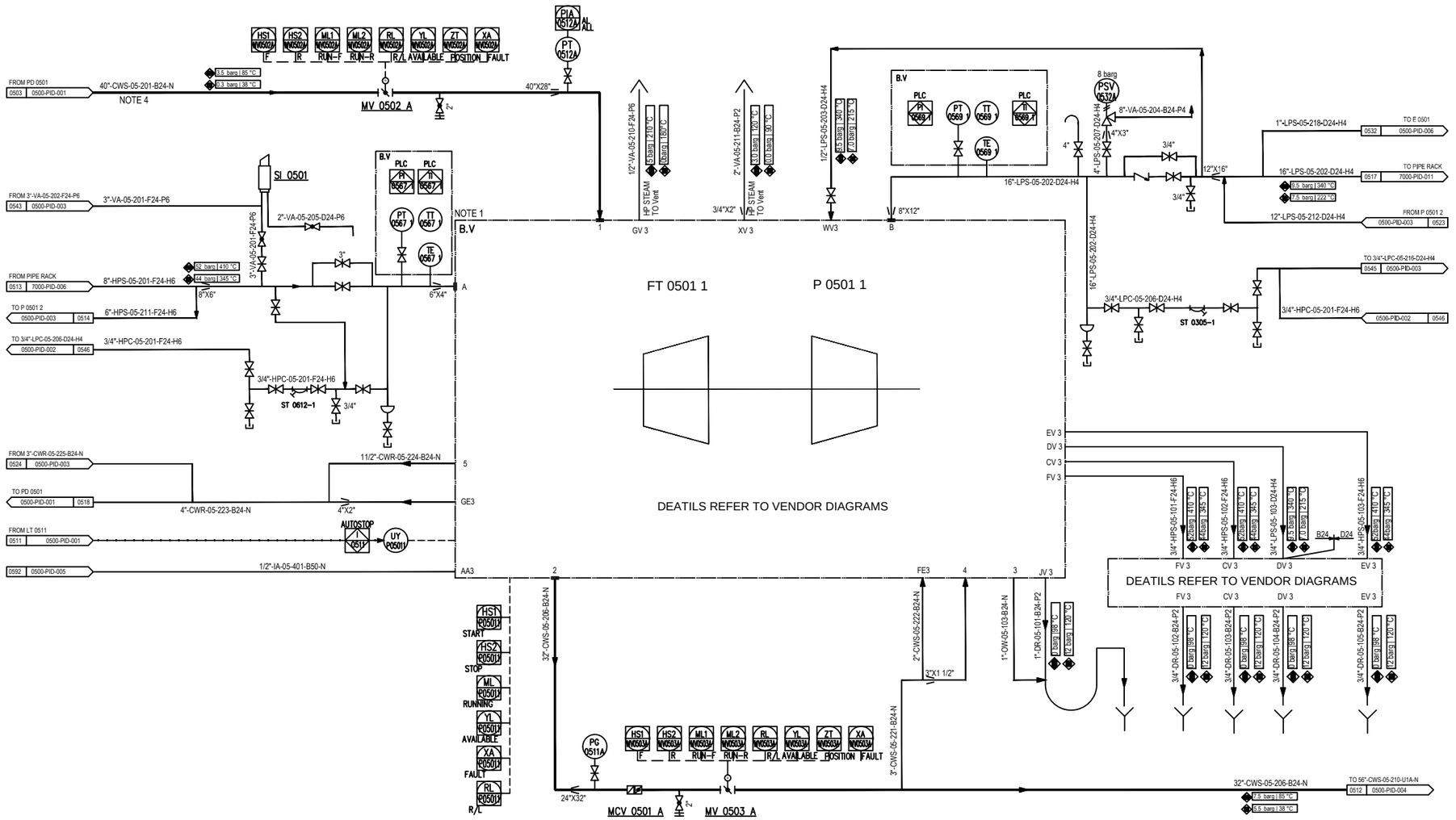
SHEET TOTAL

Counter Signing	Sign	Date

P&ID FOR COOLING WATER TOWER

PROJECT	MKP Methanol Project
UNIT	COOLING WATER UNIT
PHASE	As built drawing

SCALE | SHEET 1 | TOT. 1 | SIZE A1 | OWNER DWG NO. MKP-11-AS-0500-PR-PID-001



P 0501 1	COOLING WATER PUMP STEAM TURBINE	MV 0502 A	ELECTRIC BUTTERFLY VALVE	MV 0503 A	ELECTRIC BUTTERFLY VALVE	MCV 0501 A	MULTIFUNCTIONAL HYDRAULIC CONTROL VALVE	SI 0501	HP STEAM VENT SILENCER
CAPACITY	4500 m3/h	SIZE	40"	SIZE	32"	SIZE	32"	CAPACITY	20,000 kg/hr
HEAD	55 m	POWER	4 kW	POWER	4 kW	DESIGN PRESS.	7.3 barg	DESIGN PRESS.	7 barg
DENSITY@OT	993 kg/m3	DESIGN PRESS.	7.3 barg	DESIGN PRESS.	7.3 barg	DESIGN TEMP.	85 °C	DESIGN TEMP.	410 °C
INSULATION/TRACING	NONE	DESIGN TEMP.	85 °C	DESIGN TEMP.	85 °C	MATERIAL	BY VENDOR	MATERIAL SHELL	CS
AUXILIARY PIPING	BY STEAM TURBINE VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR		
TYPE	STEAM TURBINE								
MATERIAL	C.S								
ELEV. OF FOUNDATION	EL +100.70 m								

GENERAL NOTES

1. THE DRAWING OF TURBINE SHALL BE DESIGNED BY STEAM TURBINE VENDOR.
2. ALL OF THESE SHALL BE SUPPLIED BY STEAM TURBINE VENDOR.
4. THERE IS MESH BASKET IN FRONT OF EACH PIPE SUCTION FOR COOLING WATER PUMP.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	30.12.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	22.08.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	17.07.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	29.09.2017	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	22.11.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	11.10.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	15.07.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Comments	06.06.2016	Nie Xiao		Tian Tao	Xie Xuan	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DWG. NO. | TCC GRP. | DIAGRAM | REV.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

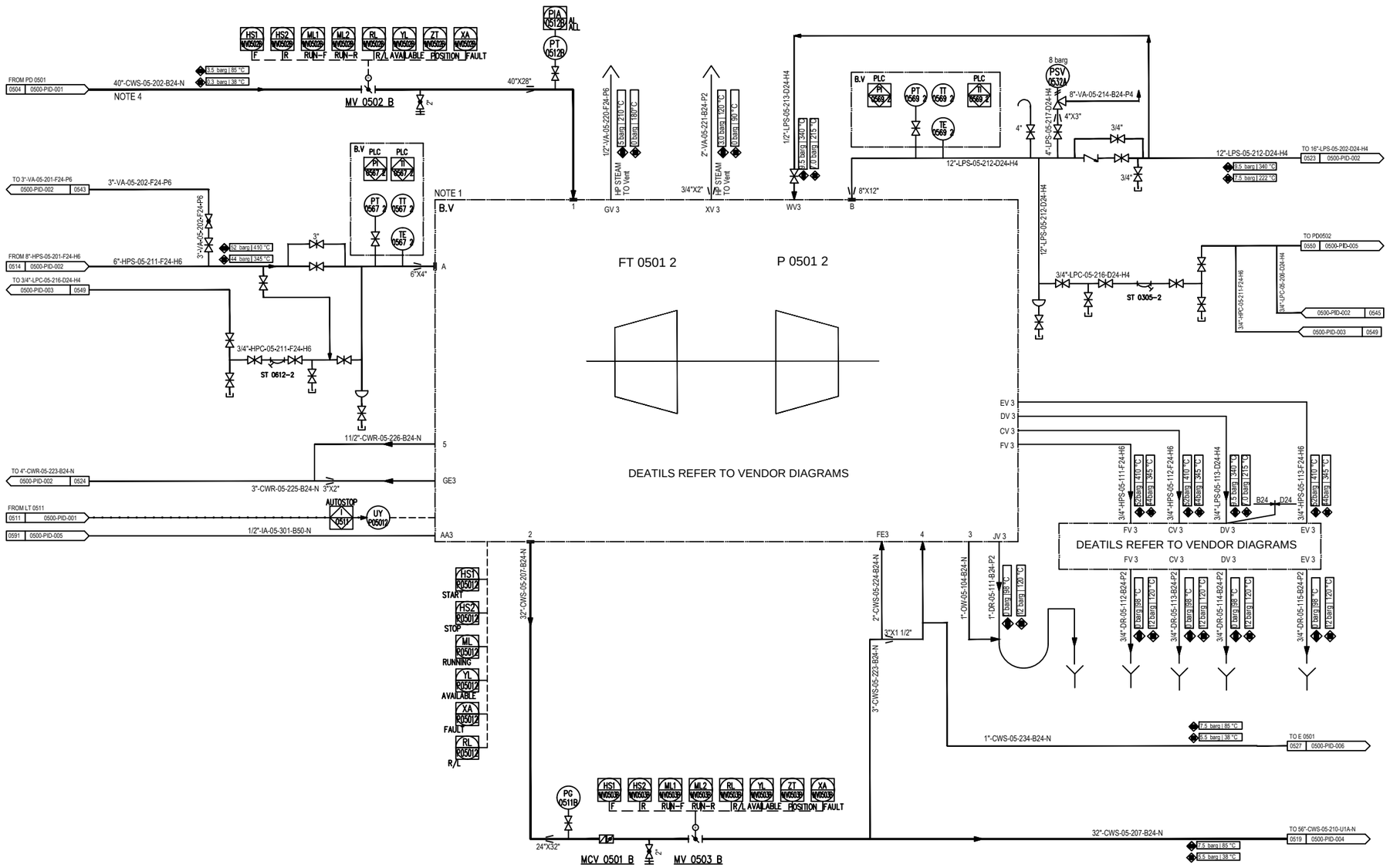
CONTRACTOR DRAWING NO.
MKP-11-AS-0500-EE06-PID-002
SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.
SHEET TOTAL

Counter Signing	Sign	Date

P&ID FOR COOLING WATER TURBINE PUMP 1

PROJECT	MKP Methanol Project
UNIT	COOLING WATER UNIT
PHASE	As built drawing
SCALE	SHEET 1 TOT. 1 SIZE A1
OWNER DWG NO.	MKP-11-AS-0500-PR-PID-002



GENERAL NOTES

1. THE DRAWING OF TURBINE SHALL BE DESIGNED BY STEAM TURBINE VENDOR.
2. ALL OF THESE SHALL BE SUPPLIED BY STEAM TURBINE VENDOR.
4. THERE IS MESH BASKET IN FRONT OF EACH PIPE SUCTION FOR COOLING WATER PUMP.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

P 0501 2	COOLING WATER PUMP STEAM TURBINE	MV 0502 B	ELECTRIC BUTTERFLY VALVE	MV 0503 B	ELECTRIC BUTTERFLY VALVE	MCV 0501 B	MULTIFUNCTIONAL HYDRAULIC CONTROL VALVE
CAPACITY	4500 m3/h	SIZE	40"	SIZE	32"	SIZE	32"
HEAD	55 m	POWER	4 kW	POWER	4 kW	DESIGN PRESS.	7.3 barg
DENSITY@OT	993 kg/m3	DESIGN PRESS.	7.3 barg	DESIGN PRESS.	7.3 barg	DESIGN TEMP.	85 °C
INSULATION/TRACING	NONE	DESIGN TEMP.	85 °C	DESIGN TEMP.	85 °C	MATERIAL	BY VENDOR
AUXILIARY PIPING	BY STEAM TURBINE VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR
TYPE	STEAM TURBINE						
MATERIAL	C.S						
ELEV. OF FOUNDATION	EL +100.70 m						

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	30.12.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	22.8.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	17.7.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	29.09.2017	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	22.11.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	11.10.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	15.07.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Comments	06.06.2016	Nie Xiao		Tian Tao	Xie Xuan	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-0500-EE06-PID-003

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.

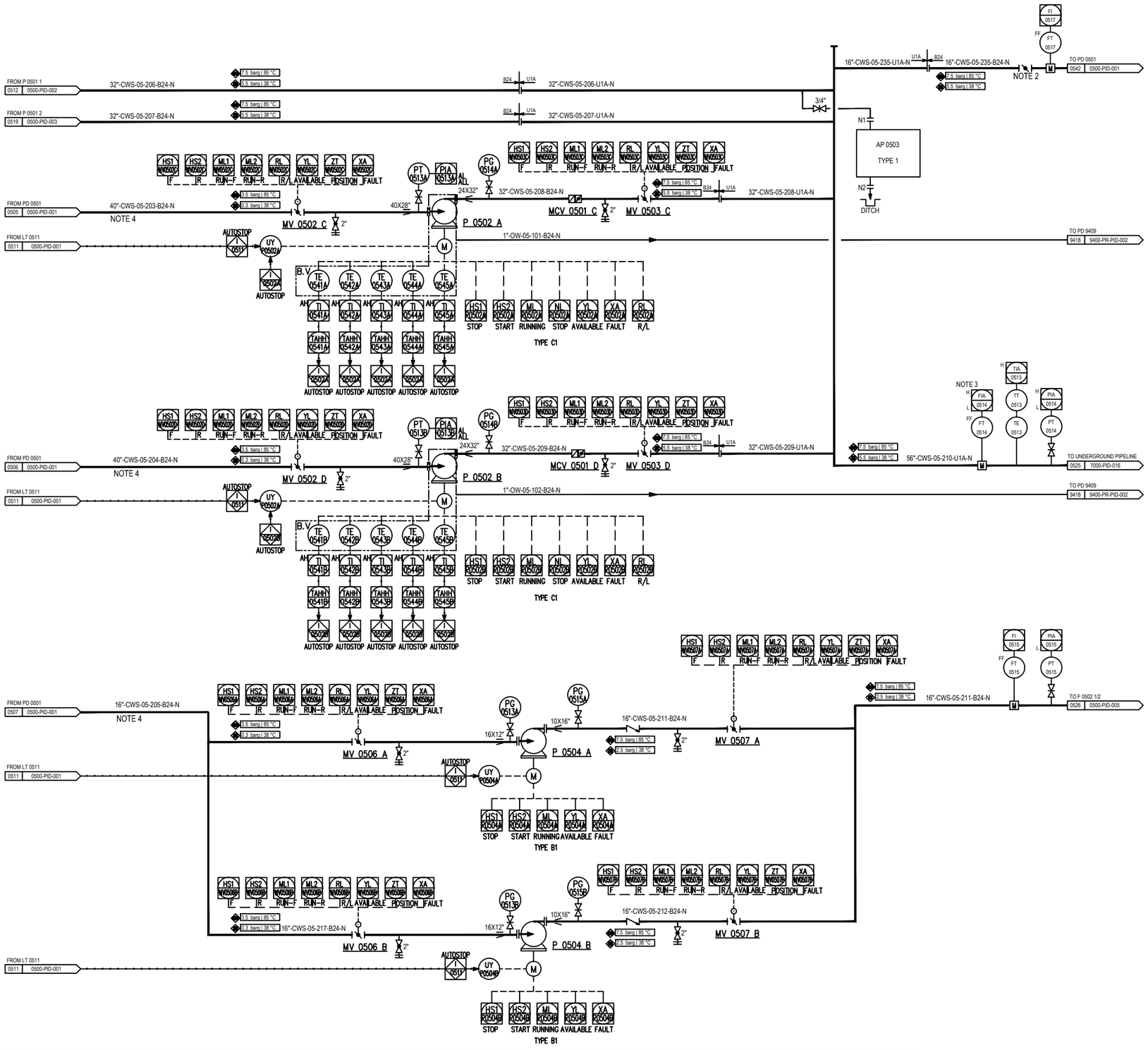
SHEET TOTAL

Counter Signing	Sign	Date

P&ID FOR COOLING WATER TURBINE PUMP 2

PROJECT	MKP Methanol Project
UNIT	COOLING WATER UNIT
PHASE	As built drawing

SCALE | SHEET 1 | TOT. 1 | SIZE A1 | OWNER DWG NO. MKP-11-AS-0500-PR-PID-003



GENERAL NOTES

2. A LOW NOISE HIGH PERFORMANCE BUTTERFLY VALVE SHOULD BE APPLIED.
3. ALARM HIGH TO BE CONSIDERED FOR FI.
4. THERE IS MESH BASKET IN FRONT OF EACH PIPE SUCTION FOR COOLING WATER PUMP.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

P 0502 A/B	COOLING WATER PUMP		MV 0502 C/D	ELECTRIC BUTTERFLY VALVE		MV 0503 C/D	ELECTRIC BUTTERFLY VALVE		P 0504 A/B	SIDE FILTER PUMP		MV 0506 A/B	ELECTRIC BUTTERFLY VALVE		MV 0507 A/B	ELECTRIC BUTTERFLY VALVE		MCV 0501 C/D	MULTIFUNCTIONAL HYDRAULIC CONTROL VALVE	
CAPACITY	4500	m3/h	SIZE	40"		SIZE	32"		CAPACITY	640	m3/h	SIZE	16"		SIZE	16"		SIZE	32"	
HEAD	55	m	POWER	4	kW	POWER	4	kW	HEAD	25	m	POWER	4	kW	POWER	4	kW	DESIGN PRESS.	7.3	barg
DENSITY@OT	993	kg/m3	DESIGN PRESS.	7.3	barg	DESIGN PRESS.	7.3	barg	DENSITY@OT	993	kg/m3	DESIGN PRESS.	4.3	barg	DESIGN PRESS.	4.3	barg	DESIGN TEMP.	85	°C
INSULATION/TRACING	NONE		DESIGN TEMP.	85	°C	DESIGN TEMP.	85	°C	INSULATION/TRACING	NONE		DESIGN TEMP.	85	°C	DESIGN TEMP.	85	°C	MATERIAL	BY VENDOR	
AUXILIARY PIPING	BY PUMP VENDOR		AUXILIARY PIPING	BY VENDOR		AUXILIARY PIPING	BY PUMP VENDOR		AUXILIARY PIPING	BY PUPMP VENDOR		AUXILIARY PIPING	BY VENDOR		AUXILIARY PIPING	BY VENDOR		AUXILIARY PIPING	BY VENDOR	
TYPE	CENTRIFUGAL								TYPE	CENTRIFUGAL										
MATERIAL	C.S								MATERIAL	C.S										
ELEV. OF FOUNDATION	EL +100.70 m								ELEV. OF FOUNDATION	EL +100.70 m										

As built	30.04.2020	Nie Xiao		Du Guiju	Xie Xuan		
Approved For Construction	30.12.2019	Nie Xiao		Du Guiju	Xie Xuan		
Approved For Construction	22.08.2018	Nie Xiao		Tian Tao	Xie Xuan		
Approved For Construction	17.07.2018	Nie Xiao		Tian Tao	Xie Xuan		
Approved For Construction	29.09.2017	Nie Xiao		Tian Tao	Xie Xuan		
Approved For Construction	22.11.2016	Nie Xiao		Tian Tao	Xie Xuan		
Issued For Approval	11.10.2016	Nie Xiao		Tian Tao	Xie Xuan		
Issued For Approval	15.07.2016	Nie Xiao		Tian Tao	Xie Xuan		
Issued For Comments	06.06.2016	Nie Xiao		Tian Tao	Xie Xuan		
REV. PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME:
JOB NO. | DOC. GRP. | REV.
DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO.: MKP-11-AS-0500-EE06-PID-004
SHEET 01 | TOTAL 01

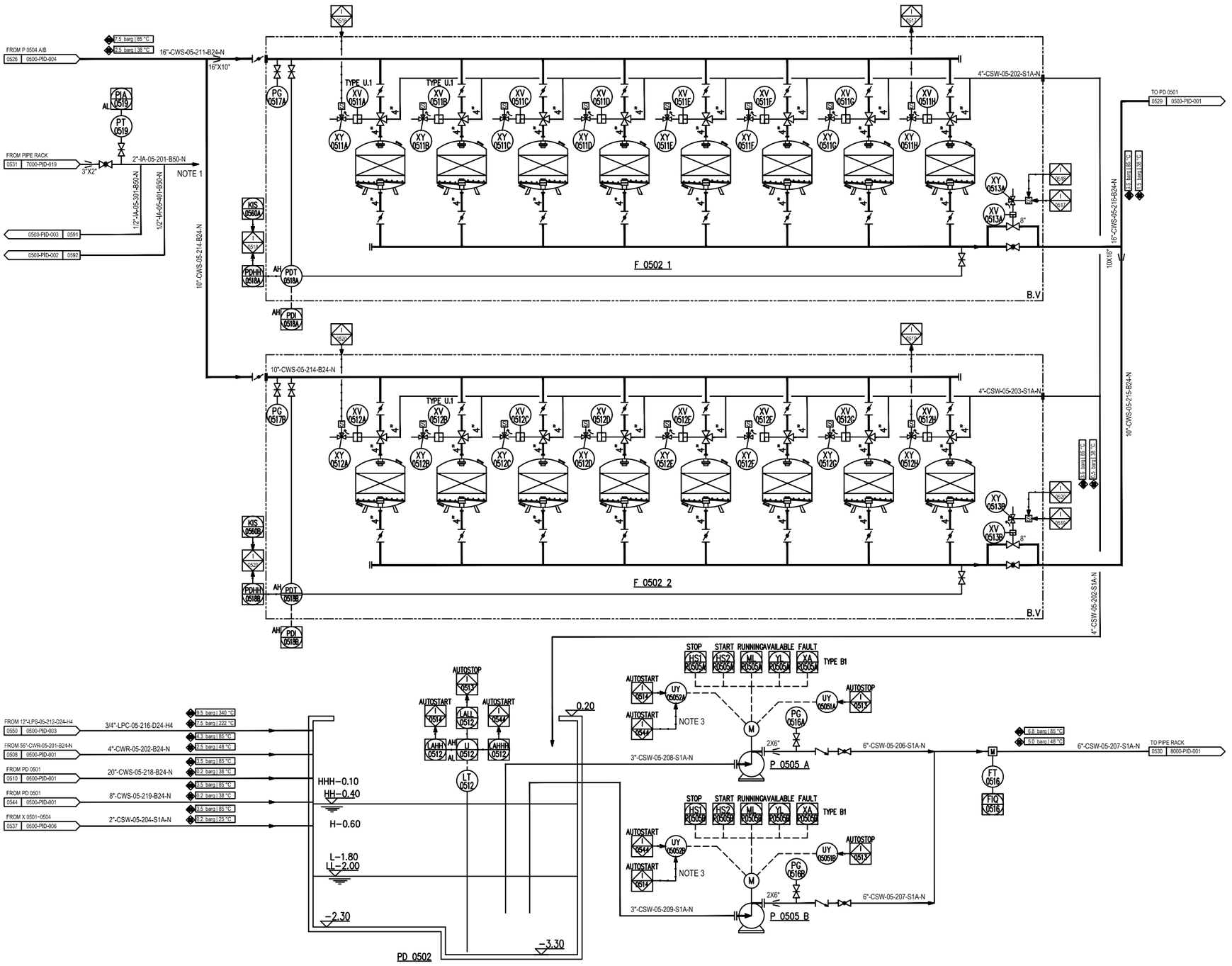
SUB-CONTRACTOR
SUB-CONTRACTOR DRAWING NO.
SHEET | TOTAL

Counter Signing	Sign	Date

P&ID FOR COOLING WATER PUMP

PROJECT	MKP Methanol Project
UNIT	COOLING WATER UNIT
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-0500-PR-PID-004

SCALE | SHEET 1 | TOT. 1 | SIZE A1



GENERAL NOTES

1. INSTRUMENT AIR PIPE HEADER WILL BE CONNECTED TO ALL PNEUMATIC VALVE.
2. ON-OFF VALVES BELONG TO TYPE U.1, THE ONLY DIFFERENCE IS THERE IS NO RESET OF INTERLOCK UNIT.
3. SOFTWARE SWITCH WILL BE SET FOR SELECTION OF AUTOSTART PUMP A OR B.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

F 0502 1/2	COOLING WATER FILTER QUARTZ SAND	PD 0502	CLEAN SALTY WATER POND	P 0505 A/B	CLEAN SALTY WATER PUMP
CAPACITY	320 m3/h	LXWXH(mm)	7500X5400X2500	CAPACITY	55 m3/h
MATERIAL SHAELL	C.S	NOMINAL CAPACITY	80 m3	HEAD	50 m
DENSITY@OT	993 kg/m3	DESIGN PRESS.	ATM	DENSITY@OT	989 kg/m3
INSULATION/TRACING	NONE	DESIGN TEMP.	85 °C	INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR	INSULATION	NONE	AUXILIARY PIPING	BY VENDOR
MATERIAL CASING	C.S+RUBBER			TYPE	SELF-PRIMING
MATERIAL FILTER ELEMENT	QUARTZ SAND			MATERIAL	C.S
ELEV. OF FOUNDATION	EL +100.70 m			ELEV. OF FOUNDATION	EL +100.70 m

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	05.07.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	22.08.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	17.07.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	29.09.2017	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	11.10.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	15.07.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Comments	06.06.2016	Nie Xiao		Tian Tao	Xie Xuan	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-0500-EE06-PID-005

SHEET 01 TOTAL 01

SUB-CONTRACTOR:

SUB-CONTRACTOR DRAWING NO.:

SHEET TOTAL

Counter Signing	Sign	Date

P&ID FOR COOLING WATER FILTER

PROJECT	MKP Methanol Project
UNIT	COOLING WATER UNIT
PHASE	As built drawing

SCALE | SHEET 1 | TOT. 1 | SIZE A1 | OWNER DWG NO. MKP-11-AS-0500-PR-PID-005

P 0506 A/B		TK 0503		TK 0508		P 0510 A/B		TK 0509	
CAPACITY	100 L/h	ID X HEIGHT(mm)	1500X2000	ID X HEIGHT(mm)	1000X1500	CAPACITY	0~50 L/h	ID X HEIGHT(mm)	1000X1500
HEAD	30 m	NOMINAL CAPACITY	3 m3	NOMINAL CAPACITY	1 m3	HEAD	30 m	NOMINAL CAPACITY	1 m3
DENSITY@OT	1000 kg/m3	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DENSITY@OT	1000 kg/m3	DESIGN PRESS.	ATM
INSULATION/TRACING	NONE	DESIGN TEMP.	85 ℃	DESIGN TEMP.	85 ℃	INSULATION/TRACING	NONE	DESIGN TEMP.	85 ℃
AUXILIARY PIPING	BY VENDOR	INSULATION	NONE	INSULATION	NONE	AUXILIARY PIPING	BY VENDOR	INSULATION	NONE
MATERIAL	PVDF	MATERIAL	FRP	MATERIAL	316L	MATERIAL	316L	MATERIAL	316L
ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m

P 0511 A/B		TK 0510		P 0512 A/B		E 0501		TK 0503A	
CAPACITY	0~50 L/h	ID X HEIGHT(mm)	1500X2000	CAPACITY	0~50 L/h	EXCHANGE AREA	4.8 m2	ID X HEIGHT(mm)	1000X610
HEAD	30 m	NOMINAL CAPACITY	3 m3	HEAD	30 m	DESIGN PRESS.(TU./SH.)	5.5/5.0 barg	NOMINAL CAPACITY	0.65 m3
DENSITY@OT	1000 kg/m3	DESIGN PRESS.	ATM	DENSITY@OT	1030 kg/m3	DESIGN TEMP.(TU./SH.)	48/50 ℃	DESIGN PRESS.	ATM
INSULATION/TRACING	NONE	DESIGN TEMP.	85 ℃	INSULATION/TRACING	NONE	INSULATION	NO	DESIGN TEMP.	85 ℃
AUXILIARY PIPING	BY VENDOR	INSULATION	NONE	AUXILIARY PIPING	BY VENDOR	TYPE	MONITORING	INSULATION	NONE
MATERIAL	316L	MATERIAL	316L	MATERIAL	316L	MATERIAL	SS304	MATERIAL	PE
ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	EL +100.70 m	ELEV. OF FOUNDATION	

GENERAL NOTES

NOTES:

1. AN EMERGENCY SHOWER AND EYE WASH WILL BE PROVIDED LOCAL TO CHEMICAL INJECTION PACKAGES.
2. ANTI-ACID BRICK WILL BE EQUIPPED ON COFFERDAM SURFACE.
3. THE LIQUID IN SOLUTION TANK TK 0503A WILL BE OVERFLOWED INTO TK 0503 DIRECTLY .

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	30.12.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	05.07.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	25.04.2019	Nie Xiao		Du Guiju	Xie Xuan	
A	Approved For Construction	22.08.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	17.07.2018	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	29.09.2017	Nie Xiao		Tian Tao	Xie Xuan	
A	Approved For Construction	22.11.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	11.10.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Approval	15.07.2016	Nie Xiao		Tian Tao	Xie Xuan	
A	Issued For Comments	06.06.2016	Nie Xiao		Tian Tao	Xie Xuan	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV.
DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-0500-EE06-PID-006
SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.
SHEET TOTAL

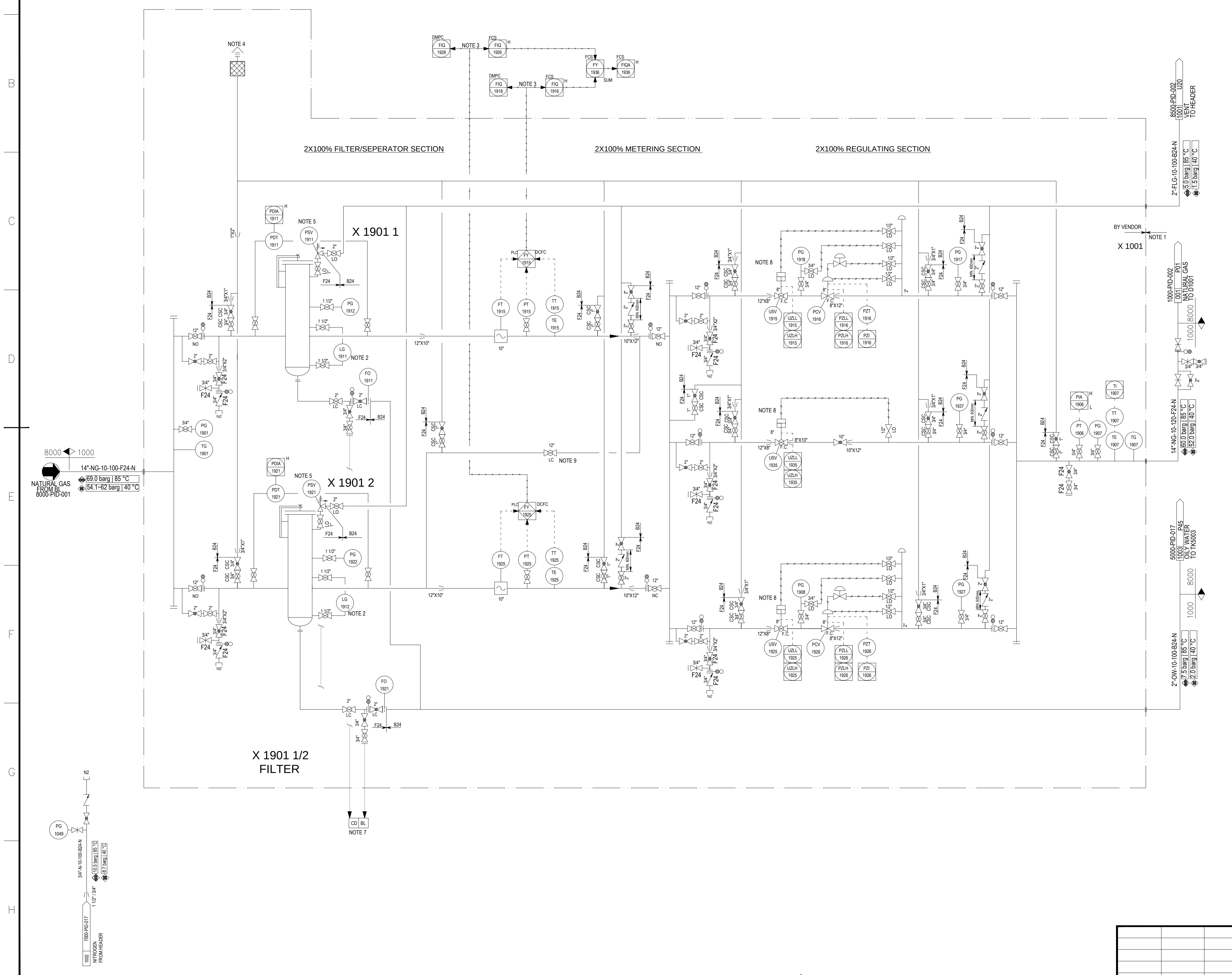
Counter Signing	Sign	Date

P&ID FOR CHEMICAL DOSING UNIT

PROJECT	MKP Methanol Project
UNIT	COOLING WATER UNIT
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-0500-PR-PID-006

SCALE | SHEET 1 | TOT. 1 | SIZE A1

X 1001	GAS STATION	
FLOW RATE	66142~198000	Nm3/h
INLET GAS PRESS.	54.1~62	barg
OUTLET GAS PRESS.	52	barg
DESIGN TEMP.	85	°C



GENERAL NOTES

NOTES:

1) DETAILS OF X1001 TO BE UPDATED ACCORDING TO TECHNICAL DOCUMENTS PROVIDED BY VENDOR.
2) THE LEVEL GAUGE SHOULD BE VISIBLE TO THE OPERATOR AT POSITION OF DRAIN VALVES.
3) FIQ CALCULATED INSIDE DUEL CHANNEL FLOW COMPUTER. ONE SIGNAL SENT TO DMPC, AND ANOTHER SENT TO FCS.
   DCFC: DUAL CHANNEL FLOW COMPUTER.
4) VENT TO SAFE AREA.
5) REQUIREMENT OF PSV ON DRY GAS FILTER TO BE CONFIRMED BY VENDOR.
6) VENT AND DRAIN TO BE FORESEEN GENERALLY AT HIGH AND LOW POINTS.
7) THE CLOSED DRAIN WILL BE COLLECTED IN A PORTABLE SEALED CONTAINER.
8) TIGHT SHUT OFF TYPE(TSO), SLAM SHUT-OFF VALVE.
9) DOUBLE LOCKED BY DMPC AND OWNER.
10) THE HIGH ALARMS FOR FIQ-1915/1925/1935 ARE FOR REAL TIME FLOW RATE, NOT FOR ACCUMULATED VALUE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
6	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
5	Approved For Construction	30.12.2019	Xu Yekun		Xu Hang	Liu Shengkai	
4	Approved For Construction	02.02.2018	Xu Yekun		Xu Hang	Liu Shengkai	
3	Approved For Construction	06.11.2017	Xu Yekun		Xu Hang	Liu Shengkai	
2	Approved For Construction	22.03.2017	Jiang Yu		Xu Hang	Liu Shengkai	
1	Approved For Construction	16.01.2017	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	11.11.2016	Jiang Yu		Xu Hang	Liu Shengkai	
C1	Issued for Approval	13.10.2016	Jiang Yu		Xu Hang	Liu Shengkai	
C	Issued for Approval	24.06.2016	Jiang Yu		Xu Hang	Liu Shengkai	
A	Issued for Comments	29.4.2016	Jiang Yu		Xu Hang	Liu Shengkai	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-1000-PS07-PID-001
SHEET 01 TOTAL 01

SUB CONTRACTOR

SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

Counter Signing	Sign	Date

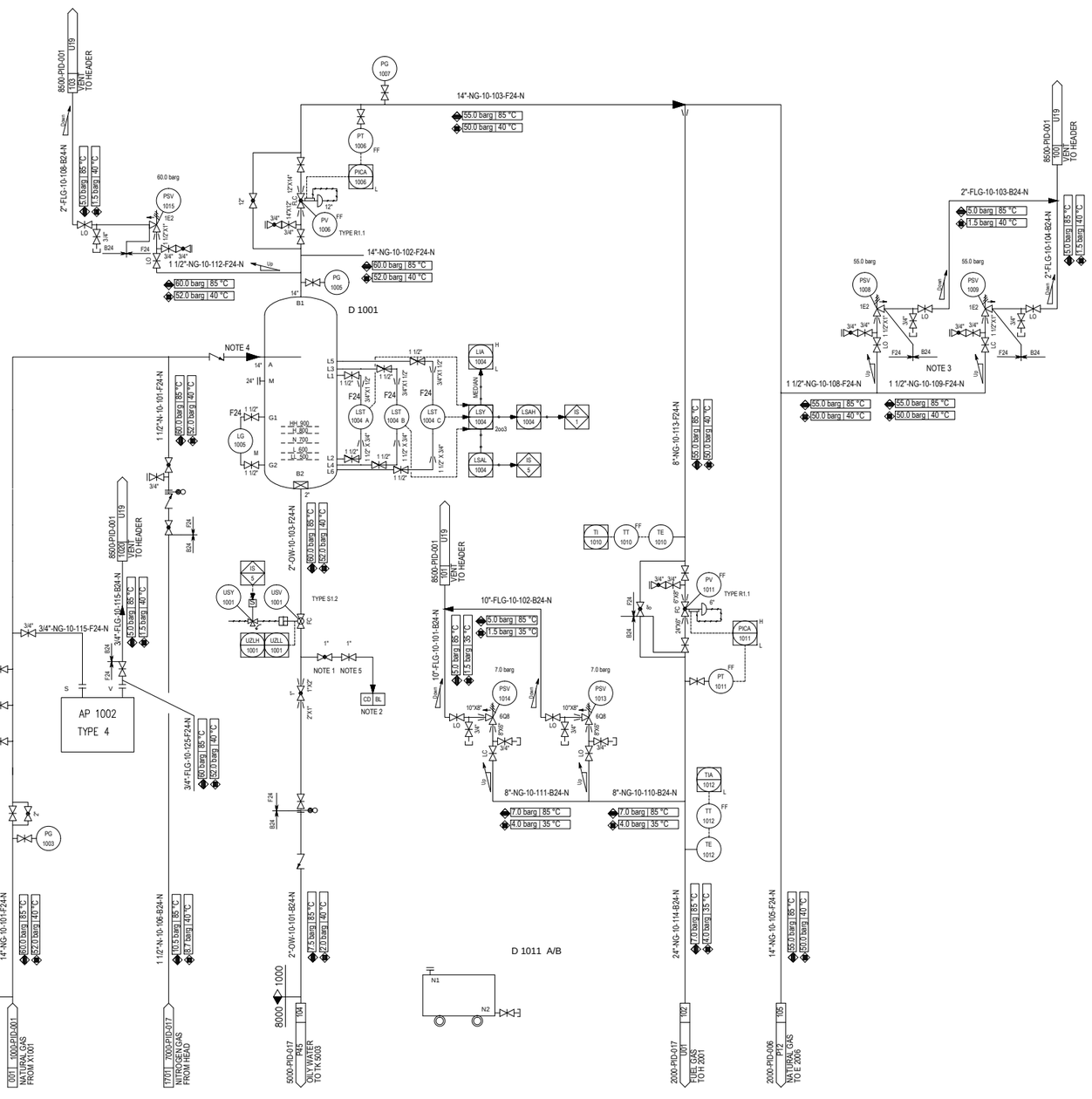
GAS STATION
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Desulphurisation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-1000-PR-PID-001

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

D 1001	NATURAL GAS K.O. DRUM
ID x LENGTHCT-T)	1550 x 2550mm
DESIGN PRESS.	60 barg
DESIGN TEMP.	85 °C
INSULATION	NO
CLADDING/LINING	NONE

D 1011 A/B	PORTABLE DRAIN DRUM
LENGTH x HEIGHT	~1000x1000x1000mm
DESIGN PRESS.	ATM barg
DESIGN TEMP.	85 °C
INSULATION	NO
CLADDING/LINING	NONE



GENERAL NOTES

+NOTES:

1) TO BE VISIBLE FROM LG 1005.
2) THE CLOSED DRAIN WILL BE COLLECTED IN A PORTABLE SEALED CONTAINER.
3) BETWEEN THESE TWO PSV, ALWAYS ONE INLET BLOCK VALVE SHALL BE L.O. AND THE OTHER ONE SHALL BE L.C..
4) THE MIN. DISTANCE OF CHECK VALVE BEFORE D 1001 SHALL BE AT LEAST 10 TIMES OF LINE INNER DIAMETER.
5) WHEN DRAINING, OPEN GATE VALVE FULLY AND THEN SLOWLY OPEN 1" GLOBE VALVE FOR DRAINING THE LIQUID AND DURING CLOSING DO REVERSE AND MAKE SURE THE DRAIN LINE IS FULLY CLOSED AFTER THE DRAIN.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
3	Approved For Construction	02.02.2018	Xu Yekun		Xu Hang	Liu Shengkai	
2	Approved For Construction	22.08.2017	Xu Yekun		Xu Hang	Liu Shengkai	
1	Approved For Construction	05.05.2017	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	22.03.2017	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	22.01.2017	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	11.11.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	13.10.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	31.08.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	24.06.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Issued for Comments	29.04.2016	Jiang Yu		Xu Hang	Liu Shengkai	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S (COPENHAGEN DENMARK)

DOCUMENT NAME: NATURAL GAS DISTRIBUTION PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. 4 | DWG. NO. 1341711 | DIAGRAM P01

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-1000-PS07-PID-002

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

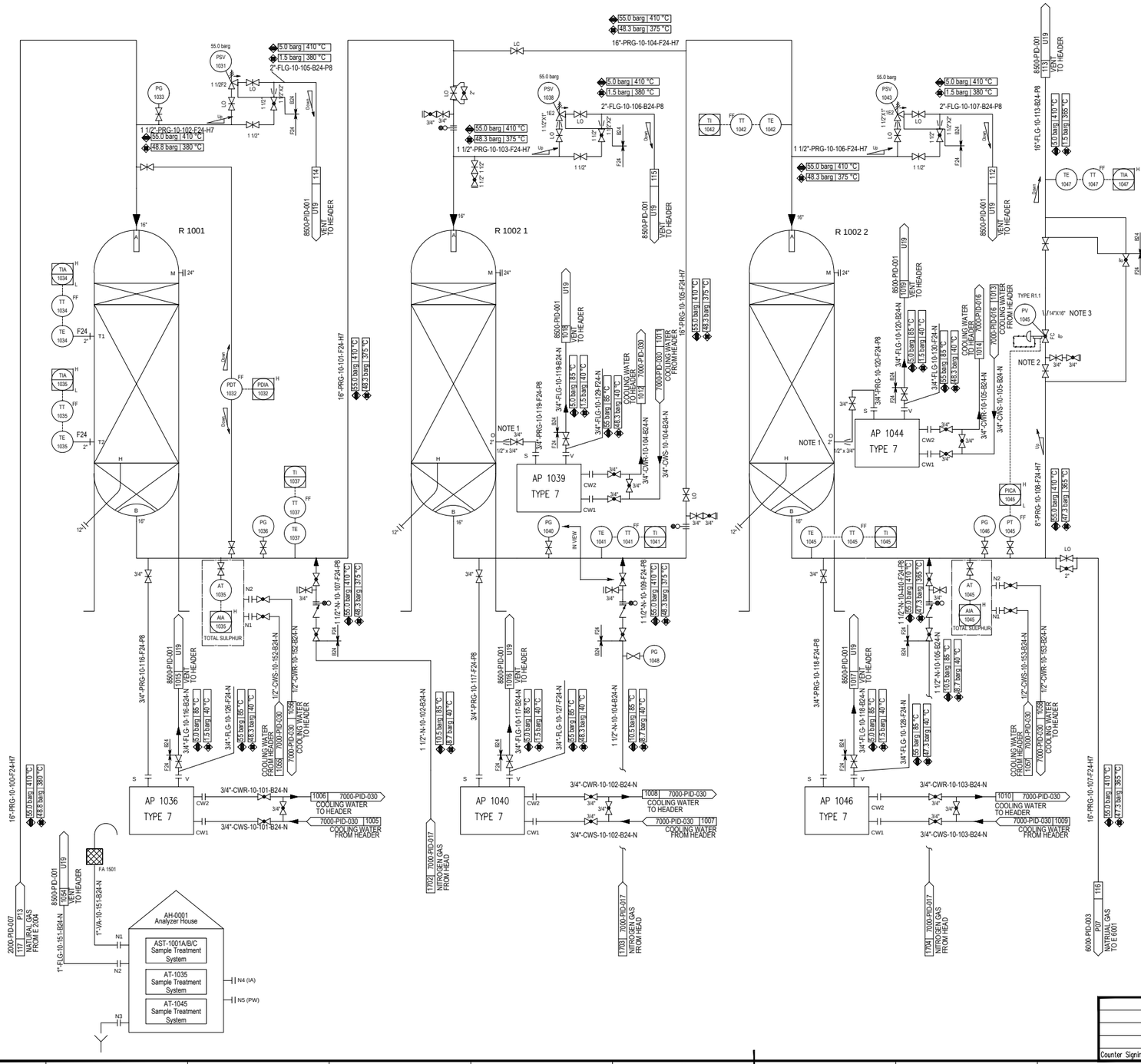
SHEET – | TOTAL –

NATURAL GAS DISTRIBUTION PIPING AND INSTRUMENT DIAGRAM	PROJECT: MKP Methanol Project
	UNIT: Desulphurisation Unit
	PHASE: As Built Drawing
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1	OWNER DWG NO.: MKP-11-AS-1000-PR-PID-002

Counter Signing	Sign	Date

R 1001	HYDROGENATOR
ID x LENGTH(T-T)	4450x3100 mm
DESIGN PRESS.	55 barg
DESIGN TEMP.	410 °C
INSULATION	YES
CLADDING/LINING	NONE

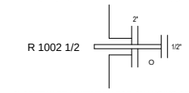
R 1002 1/2	SULPHUR ABSORBER
ID x LENGTH(T-T)	4000x1500 mm
DESIGN PRESS.	55 barg
DESIGN TEMP.	410 °C
INSULATION	YES
CLADDING/LINING	NONE



GENERAL NOTES

NOTES:

1) NOZZLE O OF R 1002 1/2 IS AN INNER EXTENSION TUBE, CONNECTING PIPE OF AP 1039/1044 WITH 1/2" FLANGE, WHICH IS MORE RELIABLE THAN NPT CONNECTION.



2) SOFTWARE LIMITATION FOR CHANGING SET POINT VALUE MUST NOT BE MORE THAN 5%.

3) PV-1045 INCLUDES 4 NOISE REDUCTION DISKS, THE SIZE IS 8"-10"-12"-14", AND THE REDUCER CONSIDERED BY PIPING.

+ GENERAL NOTE:

1) LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILEDENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
6	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
5	Approved For Construction	06.11.2017	Xu Yekun		Xu Hang	Liu Shengkai	
4	Approved For Construction	05.05.2017	Jiang Yu		Xu Hang	Liu Shengkai	
3	Approved For Construction	22.03.2017	Jiang Yu		Xu Hang	Liu Shengkai	
2	Approved For Construction	22.01.2017	Jiang Yu		Xu Hang	Liu Shengkai	
1	Approved For Construction	11.11.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	13.10.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	31.08.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	24.06.2016	Jiang Yu		Xu Hang	Liu Shengkai	
0	Issued for Comments	29.04.2016	Jiang Yu		Xu Hang	Liu Shengkai	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: DESULPHURISATION PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DCC DEP. 42 | REV. 5 | DRWG NO. 1341714 | DIAGRAM P04

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-1000-PS07-PID-003

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – | TOTAL –

Counter Signing	Sign	Date

DESULPHURISATION PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Desulphurisation Unit
PHASE	As Built Drawing

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-1000-PR-PID-003

X 2001A/B	OXYGEN FILTER	
FILTER SURFACE	BY VENDOR	m2
CAPACITY	93939	kg/hr
DESIGN PRESS.	55	barg
DESIGN TEMP.	85	°C

L 2003	HOIST	
TYPE	CHAIN HOIST	
CAPACITY	2	t
LIFT HEIGHT	5	m
SLIDING DISTANCE	8.5	m

E 2008	OXYGEN PREHEATER	
DUTY	4.8	MW
ID x LENGTH	650x5200	mm
DESIGN PRESS.(TU/SH)	55/52	barg
DESIGN TEMP.(TU/SH)	290/310	°C
Insulation	YES	

D 2011	STEAM CONDENSATE K.D. DRUM FOR E2008	
ID x LENGTH	700 x 3275	mm
DESIGN PRESS.	FV/52	barg
DESIGN TEMP.	290	°C
Insulation	YES	
CLADDING/LINING	NONE	

GENERAL NOTES

+NOTES:

2) X 2001 A/B MUST BE LOCATED CLOSE TO E 2008 AT GROUND LEVEL.BOTH FILTERS TO BE PRESSURIZED SIMULTANEOUSLY DURING START UP.ONCE PRESSURIZED,ONE BLOCK INLET FILTER MAY BE CLOSED. FILTERS NOT TO BE REPLACED ON STREAM
3) ORIFICE FLANGE TO BE PROVIDED WITH INDIVIDUAL PRESSURE TAPPING FOR EACH TRANSMITTERS.
4) ALL INTERNALS FOR VALVES IN OXYGEN SERVICE MUST BE MONEL.
5) IN OXYGEN PIPES ALL SHARP BENDS MUST BE AVOIDED.LONG RADIUS BENDS 3D.
6) THE HOIST IS USED FOR X-2001A/B MAINTENANCE.
7) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT AND ROUTED TO SAFE AND SUITABLE LOCATION BELOW TAPPING POINT.
8) E 2008 CONDENSATE OUTLET NOZZLE TO BE ELEVATED ABOVE A NOZZLE ON D 2011.E 2008 MUST BE LOCATED ABOVE SEC. REFORMER BURNER.
9) BY PASS FOR PRESSURIZATION SHALL BE MADE OF MONEL. CONNECTIONS HAVE TO BE TOP OF MAIN LINE.
10) VALVE TO BE IN MONEL INCL. MIN. 8 DIAMETERS DOWNSTREAM PIPING.
13) AUTOMATIC VALVE AT BL IS OPTIONAL.NOT A HTAS REQUIREMENT
14) DOWNWARDS SLOPE MINIMUM 0.5 % IN COLD CONDITIONS AS WELL AS AT MAX.OPERATING TEMPERATURE.
15) P&T COMPENSATION FROM PI-2002,TI-2001
16) P&T COMPENSATION FROM PI-2002,TI-2001
GENERAL NOTE:
LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihui	Liu Shengkai	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: PROCESS OXYGEN PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC. GRP. 42 | REV. 5
WORK NO. 1341712 | DIAGRAM P02

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-001
SHEET 01 | TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

PROCESS OXYGEN
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-001

SCALE	SHEET: 1	TOT: 1	SIZE: A1

Counter Signing	Sign	Date

X 2002A/B	STEAM FILTER	
FILTER SURFACE	N/A	m2
CAPACITY	9200	kg/hr
DESIGN PRESS.	52	barg
DESIGN TEMP.	410	°C

L 2001	HOIST	
TYPE	CHAIN HOIST	
CAPACITY	2	t
LIFT HEIGHT	5	m
SLIDING DISTANCE	7	m

SI 2001	HP STEAM SILENCER-1	
CAPACITY	4000	kg/hr
DESIGN PRESS.	52	barg
DESIGN TEMP.	410	°C

GENERAL NOTES

+NOTES:

2) ORIFICE FLANGE TO BE PROVIDED WITH INDIVIDUAL PRESSURE TAPPING FOR EACH TRANSMITTERS.
3) NO POCKETS ALLOWED.
4) DETAILED DESIGNER MUST CONSIDER THERMAL STRESSES IN THE MIXING POINT.
THE TEE MUST BE MOUNTED TO ENSURE A STRAIGHT FLOW OF OXYGEN.
5) ANY ELBOWS BETWEEN O2 / STEAM MIXING TEE AND R 2004 MUST BE WITH LONG RADIUS (1.5 D)
6) IN OXYGEN PIPES ALL SHARP BENDS MUST BE AVOIDED.LONG RADIUS BENDS 3D.
7) MIN. LENGTH OF MONEL PIPE FROM MIXING POINT: 4m. DISTANCE TO R 2004 MUST BE MINIMIZED.
8) PIPE MUST BE DESIGNED IN MATERIALS AS SPECIFIED IN F70 (MONEL) BUT MUST BE ABLE TO WITHSTAND DESIGN TEMPERATURE AND DESIGN PRESSURE AS SPECIFIED.
9) BLEED TO BE TAKEN FROM BOTTOM OF OXYGEN LINE AND ROUTED TO SAFE LOCATION BELOW TAPPING POINT.
10) START-UP PREHEATEING OF OXYGEN LINE.IT MUST BE POSSIBLE TO OPERATE THIS BLEED AFTER IS-2 IS RESET BUT BEFORE DOUBLE BLOCK AND BLEED IS RESET
11) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT AND ROUTED TO SAFE AND SUITABLE LOCATION BELOW TAPPING POINT.
12) STEAM TRAPS AT LOW POINTS/ DEAD ENDS MUST BE PROVIDED.
13) MI CABLE TRACING TO 250 °C.
14) THE HOIST IS USED FOR X-2002A/B MAINTENANCE.
15) BYPASS LINE IN MANIFOLD IS NOT ALLOWED
16) P&T COMPENSATION FROM PIC-7003,TI-7007

+GENERAL NOTE:
LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.
IN OXYGEN PIPES ALL SHARP BENDS MUST BE AVOIDED.LONG RADIUS BENDS 3D.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK
DOCUMENT NAME: OXYGEN PREHEATING PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115
DWG NO. 1341713
DOC GRP. 42
DIAGRAM P03
REV. 5

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-002
SHEET 01 TOTAL 01
SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

OXYGEN PREHEATING
PIPING AND INSTRUMENT DIAGRAM

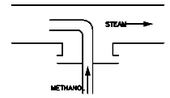
PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-2000-PR-PID-002

GENERAL NOTES

+NOTES:

1) METHANOL INJECTION CONNECTION.



3) DISTANCE MINIMISED BETWEEN PROCESS VENT AND E 2002 B.
4) SUBSEQUENT TO IS-1 THIS SET POINT IS RAMPED DOWN.
5) P&T COMPENSATION FROM PIC-7003,TI-7007
6) P&T COMPENSATION FROM PI-2061,TI-2061
7) PV-2073 includes 4 noise reduction disks, the size is 14"-24" and the reducer considered by piping.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
8	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
7	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
6	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
5	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
4	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
3	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
2	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
1	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: S/C RATIO CONTROL I PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DWG. NO. 1341719 | DOC. SEP. 42 | DIAGRAM P09 | REV. 4

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-003

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. --

SHEET – TOTAL –

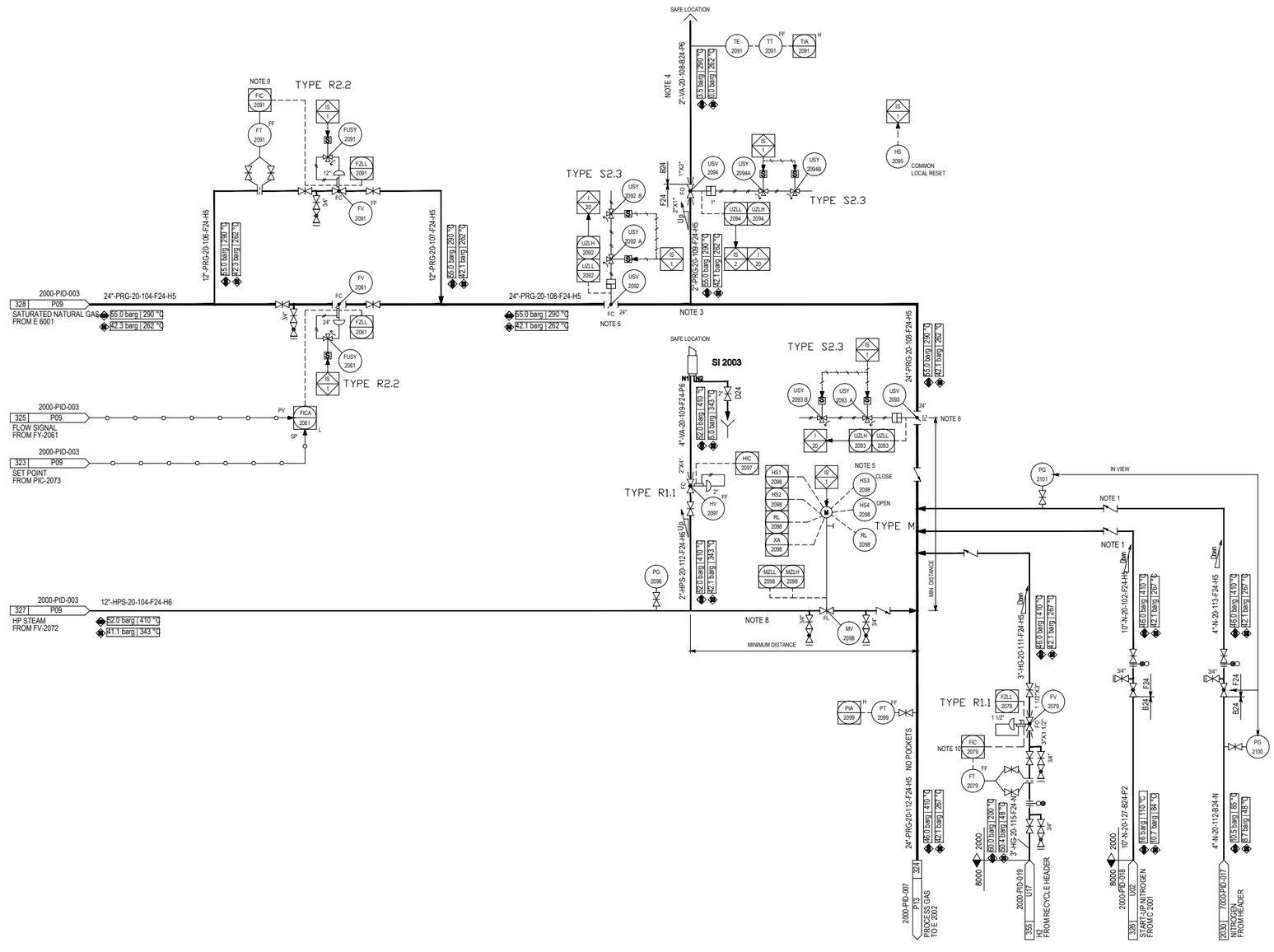
Counter Signing	Sign	Date

S/C RATIO CONTROL I
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-003

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1

SI 2003	HP STEAM SILENCER-2	
CAPACITY	4000	kg/hr
DESIGN PRESS.	52	barg
DESIGN TEMP.	410	°C



GENERAL NOTES

+NOTES:

1) TOP ENTRY CONNECTION.

3) DISTANCE MINIMIZED BETWEEN PROCESS VENT AND E 2002.
4) 1/2" DRIPHOLE TO BE DRILED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
5) OPERATED LOCAL.
6) MIN. DISTANCE BETWEEN USV-2092 AND USV-2093.

8) CONSIDER DRAIN LINE AT LOW POINT.
9) P&T COMPENSATION FROM PIC-2073,TI-2061.
10) P&T COMPENSATION FROM PI-2150,TI-2150.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
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A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	28.12.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: S/C RATIO CONTROL II PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC. NO. 42 | REV. 1
DWG NO. 1341720 | DIAGRAM P10

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-004
SHEET 01 | TOTAL 01

SUB-CONTRACTOR
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

Counter Signing	Sign	Date

S/C RATIO CONTROL II
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-004

SCALE | SHEET:1 | TOT:1 | SIZE: A1

F 2002	COMBUSTION AIR BLOWER
CAPACITY	424237 kg/hr
PRESS. (SUC./DIS.)	-0.012/0.034 barg
TEMP. (SUC./DIS.)	48/ °C
GRIVE POWER	1400 kW
AUXILIARY PIPING	By Vendor

FT 2002	STEAM TURBINE FOR F 2002
TYPE	BACK PRESSURE
DESIGN PRESS.	52 barg
DESIGN TEMP.	410 °C
RATED POWER	1350 kW

SI 2005	HP STEAM SILENCER-3
CAPACITY	6000 kg/hr
DESIGN PRESS.	52 barg
DESIGN TEMP.	410 °C

GENERAL NOTES

+NOTES:

1) AIR INTAKE WITH DUST FILTER TO BE LOCATED MINIMUM 5 m ABOVE GRADE.
2) PIPE SIZES FOR STEAM AT FT-2002 BY TURBINE VENDOR.
3) VENDOR SCOPE, TO BE DETAILED BY VENDOR.
4) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
5) VALVE SIZE WILL BE COMFIRMED BY VENDOR.
6) AIR DUCTING SIZE WILL BE CONFIRMED BY VENDOR FINALLY
7) THE SUPPLY SCOPE OF PRIMARY REFORMER VENDOR INSTRUMENTS ARE OUT OF VENDOR SUPPLY SCOPE IF NO SPECIAL INSTRUCTIONS
8) THE FLOWMETER ELEMENT IS SUPPLIED BY PRIMARY REFORMER VENDOR
9) P&T COMPENSATION FROM PIC-7003,TI-7007
10) P&T COMPENSATION FROM PI-2111,TI-2111
11) THE TEMPERATURE INDICATOR/GAUGE(TT-2851/2852) AND THE PRESSURE INDICATOR/GAUGE (PT-2854/PT-2855/PG-2851) ARE SUPPLIED BY FT2002 VENDOR. PLEASE FIND VENDOR DOCUMENT FOR DETAILS.

+GENERAL NOTE:
LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihui	Liu Shengkai	
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A	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihui	Liu Shengkai	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK
DOCUMENT NAME: FLUE GAS WHS I PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | DRWG NO. 1341721 | DIAGRAM P11 | REV. 4

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-005
SHEET 01 TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

FLUE GAS WHS I
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
SCALE	SHEET: 1 / TOT: 1 / SIZE: A1
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-005

S 2001	FLUE GAS STACK	
CAPACITY	4392510	Nm3/hr
DESIGN PRESS.	Ambient	barg
DESIGN TEMP.	250	°C

F 2001	FLUE GAS BLOWER	
CAPACITY	469314	kg/hr
PRESS. (SUC./DIS.)	-0.05/0	barg
TEMP. (SUC./DIS.)	150/	°C
DRIVE POWER	2350	kW
AUXILIARY PIPING	By Vendor	

FT 2001	STEAM TURBINE FOR F 2001	
TYPE	BACK PRESSURE	
DESIGN PRESS.	52	barg
DESIGN TEMP.	410	°C
RATED POWER	2500	kW

E 2007	COMBUSTION AIR PREHEATER	
DUTY	14.3	MW
DESIGN PRESS.(CDIL)	BY VENDOR	barg
DESIGN TEMP.(CDIL)	210	°C

E 2006	1st NATURAL GAS FEED PREHEAT COIL	
DUTY(EDR-rich gas)	17.7	MW
DESIGN PRESS.(CDIL)	55	barg
DESIGN TEMP.(CDIL)	350	°C

SI 2006	HP STEAM SILENCER-4	
CAPACITY	8000	kg/hr
DESIGN PRESS.	52	barg
DESIGN TEMP.	410	°C

GENERAL NOTES

NOTES:

1) PST-2163 A/B/C TO BE LOCATED AS CLOSE AS POSSIBLE TO H 2001.
2) GUIDE VANES
3) PIPE SIZES FOR STEAM AT FT 2001 BY TURBINE VENDOR.
4) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
5) VALVE SIZE WILL BE COMFIRMED BY VENDOR.

7) SIZE OF AIR DAMPER IS DETERMINED BY VENDOR
8) AIR DUCTING SIZE WILL BE CONFIRMED BY VENDOR FINALLY
9) THE SUPPLY SCOPE OF PRIMARY REFORMER VENDOR.
INSTRUMENTS ARE OUT OF VENDOR SUPPLY SCOPE IF NO SPECIAL INSTRUCTIONS
10) THE PIPE AND VALVE FOR AP-2160 IS SUPPLIED BY PRIMARY REFORMER VENDOR
11) P&T COMPENSATION FROM PI-2150,TI-2150
12) P&T COMPENSATION FROM PIC-1006,TI-2151
13) P&T COMPENSATION FROM PIC-7003,TI-7007
14) THE TEMPERATURE INDICATOR/GAUGE(TT-2801/2802) AND THE PRESSURE INDICATOR/GAUGE (PT-2804/PT-2805/PG-2801) ARE SUPPLIED BY FT2001 VENDOR.
PLEASE FIND VENDOR DOCUMENT FOR DETAILS.

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDEDD URING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	28.12.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihui	Liu Shengkai	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: FLUE GAS WHS II PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | REV. A
TAGE NO. 1341722 | DIAGRAM P12

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-006
SHEET 01 | TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-006

FLUE GAS WHS II
PIPING AND INSTRUMENT DIAGRAM

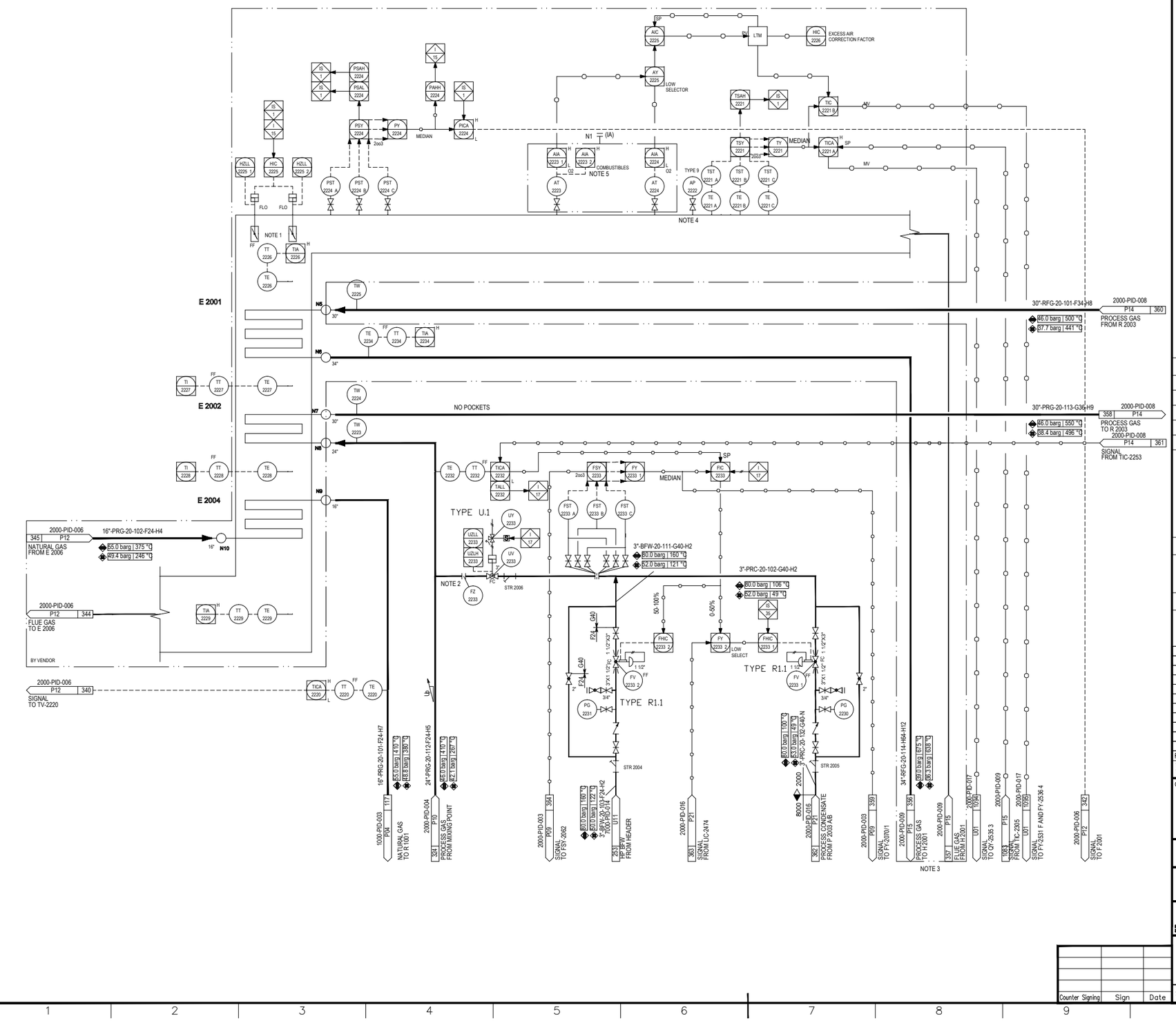
SCALE | SHEET: 1 | TOT: 1 | SIZE: A1

Counter Signing	Sign	Date

E 2001	REFORMER FEED PREHEAT COIL	
DUTY(EDR-rich gas)	53.5	MW
DESIGN PRESS.(COIL)	46	barg
DESIGN TEMP.(COIL)	705	°C

E 2002	PREREFORMER FEED PREHEAT COIL	
DUTY(EDR-rich gas)	61.8	MW
DESIGN PRESS.(COIL)	46	barg
DESIGN TEMP.(COIL)	610	°C
Elevation	EL +107.05m	

E 2004	2nd NATURAL GAS FEED PREHEAT COIL	
DUTY(EDR-rich gas)	14.3	MW
DESIGN PRESS.(COIL)	55	barg
DESIGN TEMP.(COIL)	440	°C



GENERAL NOTES

+NOTES:

1) FALSE AIR DAMPER.

2) SPRAY NOZZLES TO BE INSTALLED ACCORDING TO VENDOR INSTRUCTIONS.

3) THE SUPPLY SCOPE OF PRIMARY REFORMER VENDOR INSTRUMENTS ARE OUT OF VENDOR SUPPLY SCOPE IF NO SPECIAL INSTRUCTIONS

4) THE PIPE AND VALVE FOR AP-2222 IS SUPPLIED BY PRIMARY REFORMER VENDOR

5) WHEN THERE IS NO INSTRUMENT AIR SUPPLY FOR THE ANALYZER AT-2223, THE LAST EFFECTIVE DATA SHALL BE RECORDED IN FCS.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
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A	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
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A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: FLUE GAS WHS III PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DWG NO. 1341723 | DOC. GRP. 42 | DIAGRAM P13 | REV. A

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-007

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

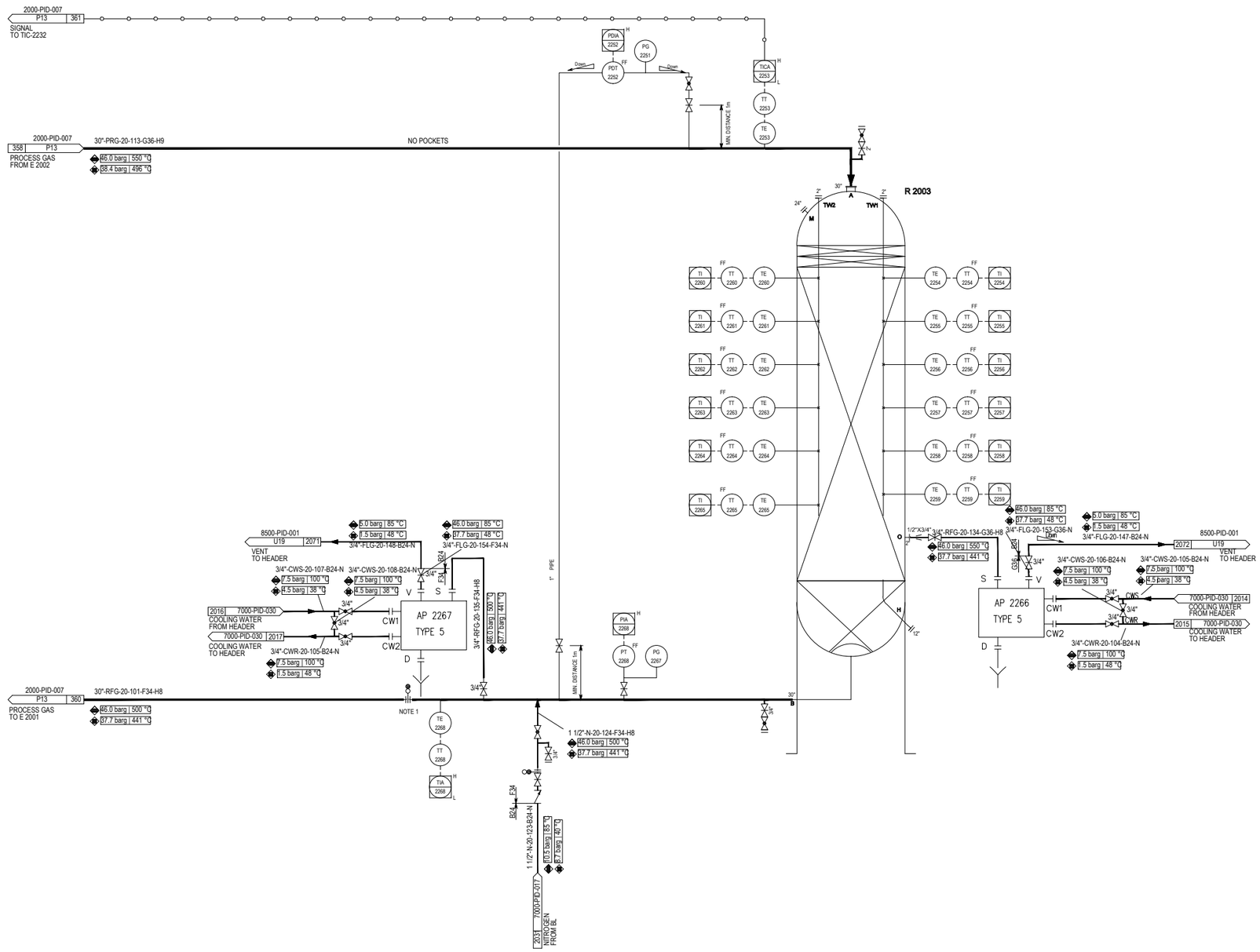
SHEET – TOTAL –

Counter Signing	Sign	Date

FLUE GAS WHS III
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
SCALE	
SHEET: 1	TOT: 1
SIZE: A1	
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-007

R 2003	PREREFORMER
ID x LENGTH	3900 x 2600mm
DESIGN PRESS.	46 barg
DESIGN TEMP.	550 °C
Insulation	YES
CLADDING/LINING	NONE



GENERAL NOTES

+NOTES:

1) ISOLATE PREREFORMER DURING OPENING OF DOWNSTREAM SYSTEM TO PREVENT AIR INGRESS TO CATALYST.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
3	Approval for Construction	02.02.2018	Wang Furui		Gao Zhihui	Liu Shengkai	
2	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
1	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
C	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
B	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: PREREFORMING PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | DWG NO. 1341724 | DIAGRAM P14 | REV. 3

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-008

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

PREREFORMING
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-2000-PR-PID-008

H 2001	PRIMARY REFORMER	
CAPACITY	154.1	MW
DESIGN PRESS.(COIL)	39	barg
DESIGN TEMP.(COIL)	850	°C

GENERAL NOTES

+NOTES:

1) HIGH PRESSURE IN REFORMER FURNACE BOX ACTIVATES HAZARD FLASHERS, THREE FLASHERS ARE LOCATED AT EACH END OF THE REFORMER AND ON EACH FLOOR.
2) FUEL PIPING TO BE SYMMETRICAL
3) FUEL PIPING AND AIR DUCTING TO BE SUPPLIED WITH FLANGES AT THE END OF SUBHEATERS. IF WELDED CAPS ARE SUPPLIED THESE MUST BE REMOVED FOR PIPE BLOWING
4) END CAP FOR DISTRIBUTOR TO BE FIELD WELDED AFTER PIPE BLOWING.
5) MIN 4 m INCOLOY 600 PIPE OF 1".
6) COLD COLLECTOR IS REFRACTORY LINE.THE OPERATING/DESIGN PRESSURE IS 32.0/34.7 BARG.
   THE OPERATING TEMPERATURE FOR PROCESS GAS IS 742 .
   THE OPERATING/DESIGN TEMPERATURE FOR SHELL AFTER LINING IS 150/400 .
7) THE LINE IS IN THE SUPPLY SCOPE OF AP-2306 VENDOR.
8) NEW STANDARD IS THREE THERMOWELLS ONE FOR EACH THERMOCOUPLE.
   (THREE INDIVIDUAL THERMOELEMENTS IN THE SAME THERMOWELL IS ACCEPTABLE IF ALREADY IMPLEMENTED)
9) AIR DUCTING SIZE WILL BE CONFIRMED BY VENDOR FINALLY
10) THE SUPPLY SCOPE OF PRIMARY REFORMER VENDOR
INSTRUMENTS ARE OUT OF VENDOR SUPPLY SCOPE IF NO SPECIAL INSTRUCTIONS
11) THE PIPE AND VALVE FOR PT-2282/2307/PG-2283/PDT-2283 ARE SUPPLIED BY PRIMARY REFORMER VENDOR
12) THE PIPE AND VALVE FOR AP-2294/2296 IS SUPPLIED BY PRIMARY REFORMER VENDOR

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	02.02.2018	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Comments	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: TUBULAR REFORMER PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC. NO. 42 | REV. 4
DWG NO. 1341725 | DIAGRAM P15

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-009
SHEET 01 | TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

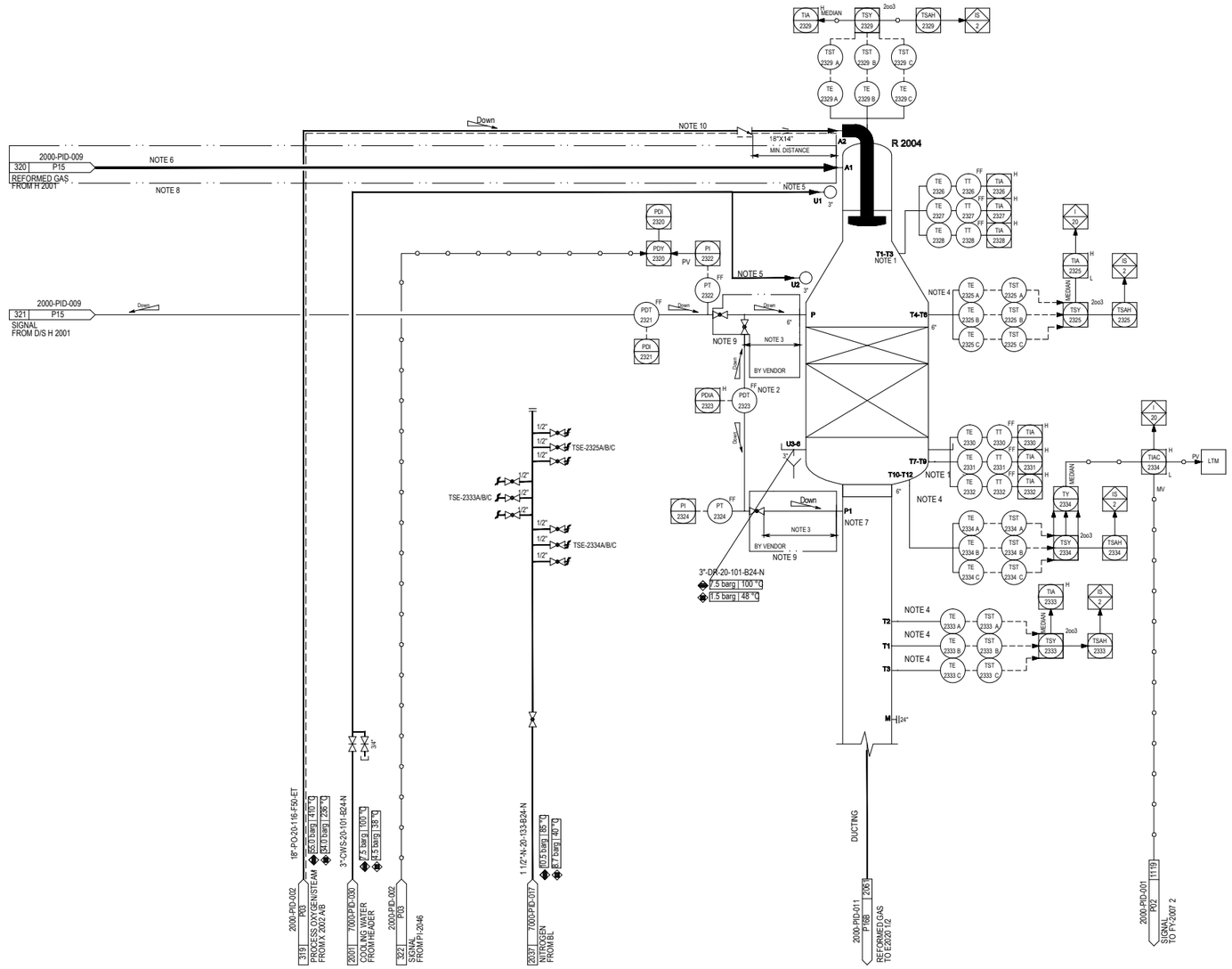
TUBULAR REFORMER
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-009

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1

Counter Signing	Sign	Date

R 2004	SECONDARY REFORMER
ID x LENGTH	5400 x 8231mm
DESIGN PRESS.	34.7 barg
DESIGN TEMP.	400 °C
Insulation	YES
CLADDING/LINING	LINING



GENERAL NOTES

+NOTES:

1) SHELL TEMPERATURE MONITORING.
2) TRANSMITTERS MUST BE INSTALLED ABOVE R 2004 WITH SLOPE BACK TO THE PROCESS.IMPULSE LINES MUST BE MIN. 1" PIPE.
3) MIN 4 m INCOLOY 600 PIPE OF 1".
4) NITROGEN REQUIRED AT THERMOWELL.
5) WATER SPRAYING FOR SHELL COOLING IN CASE OF HOT SPOT TO OPEN DRAIN.
6) COLD COLLECTO IS REFRACTORY LINE.THE OPERATING/DESIGN PRESSURE IS 32.0/34.7 BARG.
   THE OPERATING TEMPERATURE FOR PROCESS GAS IS 742 .
   THE OPERATING/DESIGN TEMPERATURE FOR SHELL AFTER LINING IS 150/400 .
7) P1 IS POSITIONED ON MANIFOLD TO E2020 1/2 (P1 IN PROCESS SPECIFICATION)
8) THE SUPPLY SCOPE OF PRIMARY REFORMER VENDOR
   INSTRUMENTS ARE OUT OF VENDOR SUPPLY SCOPE IF NO SPECIAL INSTRUCTIONS
9) THE PIPE AND VALVE FOR PT-2324/2322/PDT-2323/2321 ARE SUPPLIED BY PRIMARY REFORMER VENDOR
10) MINIMUM DISTANCE TO SPE-0201

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
3	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
2	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
1	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
0	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: SECONDARY REFORMER PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | DRWG NO. 1341726 | DIAGRAM P16A | REV. 4

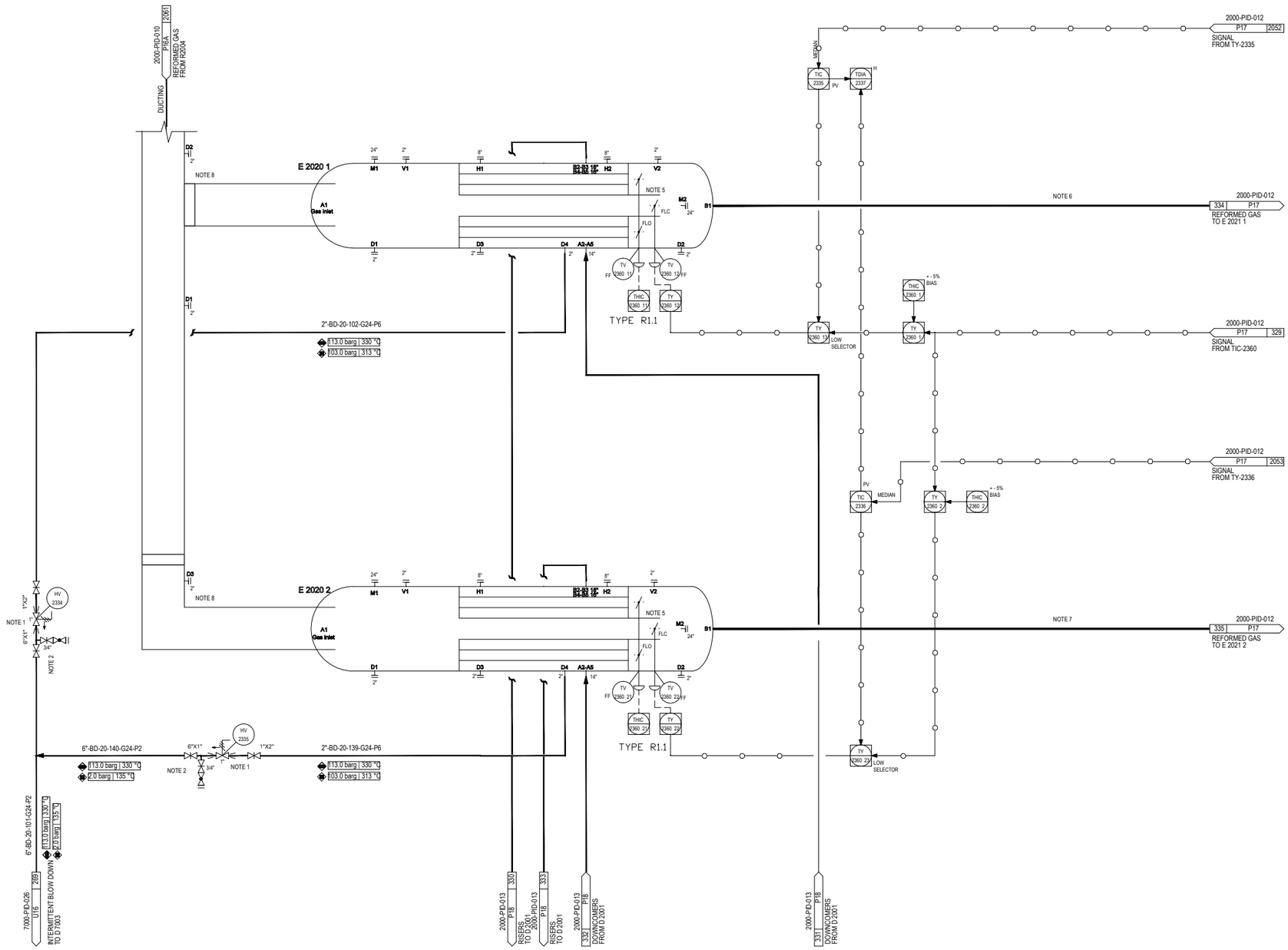
CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-010
SHEET 01 TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

SECONDARY REFORMER PIPING AND INSTRUMENT DIAGRAM				PROJECT	MKP Methanol Project
				UNIT	Reformer
				PHASE	As Built Drawing
SCALE	SHEET: 1	TOT: 1	SIZE: A1	OWNER DWG NO.	MKP-11-AS-2000-PR-PID-010

E 2020 1/2	WASTE HEAT BOILER	
DUTY	82.5	MW
ID x LENGTH(T-T)	2890x7000	mm
DESIGN PRESS.(TU/SH)	31/113	barg
DESIGN TEMP.(TU/SH)	400/330	°C
Insulation	NA	



GENERAL NOTES

+NOTES:

1) BLOW DOWN VALVE TO BE PLACED AS CLOSE AS POSSIBLE TO D 7003. NO POCKETS ON BOILER BLOW DOWN LINE DOWNSTREAM BLOW DOWN VALVE.
2) TWO PHASE FLOW.

5) TO BE PROVIDED WITH ADJUSTABLE MINIMUM STOP.

6) E 2020 1 AND E 2021 1 ARE DIRECT CONNECTION.

7) E 2020 2 AND E 2021 2 ARE DIRECT CONNECTION.

8) SYMMETRICAL DUCTING.

+GENERAL NOTE:
LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Approval	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Approval	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK

DOCUMENT NAME: SECONDARY REFORMER II PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 2
DWG NO. 1341756 | DIAGRAM P16B

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-2000-PS07-PID-011
SHEET 01 TOTAL 01

SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

Counter Signing	Sign	Date

SECONDARY REFORMER II
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-2000-PR-PID-011

E 2021 1/2	STEAM SUPERHEATER
DUTY	22.01 MW
ID x LENGTH(T-T)	2500x9000 mm
DESIGN PRESS.(TU/SH)	112/31 barg
DESIGN TEMP.(TU/SH)	490/450 °C
Insulation	YES

SI 2004	HHP Steam SILENCER-1
CAPACITY	117000 kg/hr
DESIGN PRESS.	22 barg
DESIGN TEMP.	490 °C

E 2021 3	STEAM SUPERHEATER
DUTY	15.8 MW
ID x LENGTH(T-T)	1675x7200 mm
DESIGN PRESS.(TU/SH)	112/31 barg
DESIGN TEMP.(TU/SH)	370/440 °C
Insulation	YES

GENERAL NOTES

+NOTES:

1) SYMMETRICAL STEAM PIPING AROUND E 2021 1/2.
2) E 2020 1 AND E 2021 1 ARE DIRECT CONNECTION.
3) E 2020 2 AND E 2021 2 ARE DIRECT CONNECTION.
4) SYMMETRICAL PIPING.
5) VALVE SIZE WILL BE COMFIRMED BY VENDOR.
6) THE FLANGE CLASS FOR INLET OF SAFETY-RELIEF VALVES PSV-2354~2360 SHOULD BE CL600 DIFFERING FROM PIPE.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR	HALDOR TOPSØE A/S COPENHAGEN DENMARK	DOCUMENT NAME: STEAM SUPERHEATER PIPING AND INSTRUMENT DIAGRAM	JOB NO. S-02115	DOC. NO. 42	REV. A
			DWG NO. 1341727	DIAGRAM P17	
CONTRACTOR	TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION	CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-012			
		SHEET 01	TOTAL 01		
SUB-CONTRACTOR		SUB-CONTRACTOR DRAWING NO. --			
		SHEET –	TOTAL –		

Counter Signing	Sign	Date

STEAM SUPERHEATER PIPING AND INSTRUMENT DIAGRAM				PROJECT	MKP Methanol Project
				UNIT	Reformer
				PHASE	As Built Drawing
SCALE	SHEET: 1	TOT: 1	SIZE: A1	OWNER DWG NO.	MKP-11-AS-2000-PR-PID-012

D 2001	HHP STEAM DRUM
ID x LENGTHT-T)	3325 x 17000mm
DESIGN PRESS.	112 barg
DESIGN TEMP.	330 °C
Insulation	YES
CLADDING/LINING	NONE

SI 2002	HHP Steam SILENCER-2	
CAPACITY	4000	kg/hr
DESIGN PRESS.	112	barg
DESIGN TEMP.	330	°C

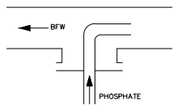
GENERAL NOTES

+NOTES:

1) ACCESIBLE FROM PLATFORM.

2) LINE SIZING BY SILENCER VENDOR.

3) SPE-1901: PHOSPHATE INJECTION CONNECTION.



+4) HYDRASTEP WITH LOCAL INDICATOR AT GROUND LEVEL AND SIGNAL TO DCS.

5) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

6) PRESSURE COMPENSATION.

7) FLOW NOZZLE TO BE LOCATED ABOVE D 2001.

8) ALARM TO BE PROGRAMMED DEPENDANT ON PI-2372 READING: AH = 100 x ($\sqrt{(}$ PI-2372+1)) - 10

9) PRESSURE COMPENSATION FROM PI-2372

+GENERAL NOTE:
LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
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A	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	07.12.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: STEAM GENERATION PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC. NO. 42 | REV. A
DWG NO. 1341728 | DIAGRAM P18

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO.: MKP-11-AS-2000-PS07-PID-013
SHEET 01 | TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO.: –
SHEET – | TOTAL –

STEAM GENERATION PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project	
	UNIT	Reformer	
	PHASE	As Built Drawing	
SCALE	SHEET:1	TOT:1	SIZE:A1
	OWNER DWG NO.	MKP-11-AS-2000-PR-PID-013	

Counter Signing	Sign	Date

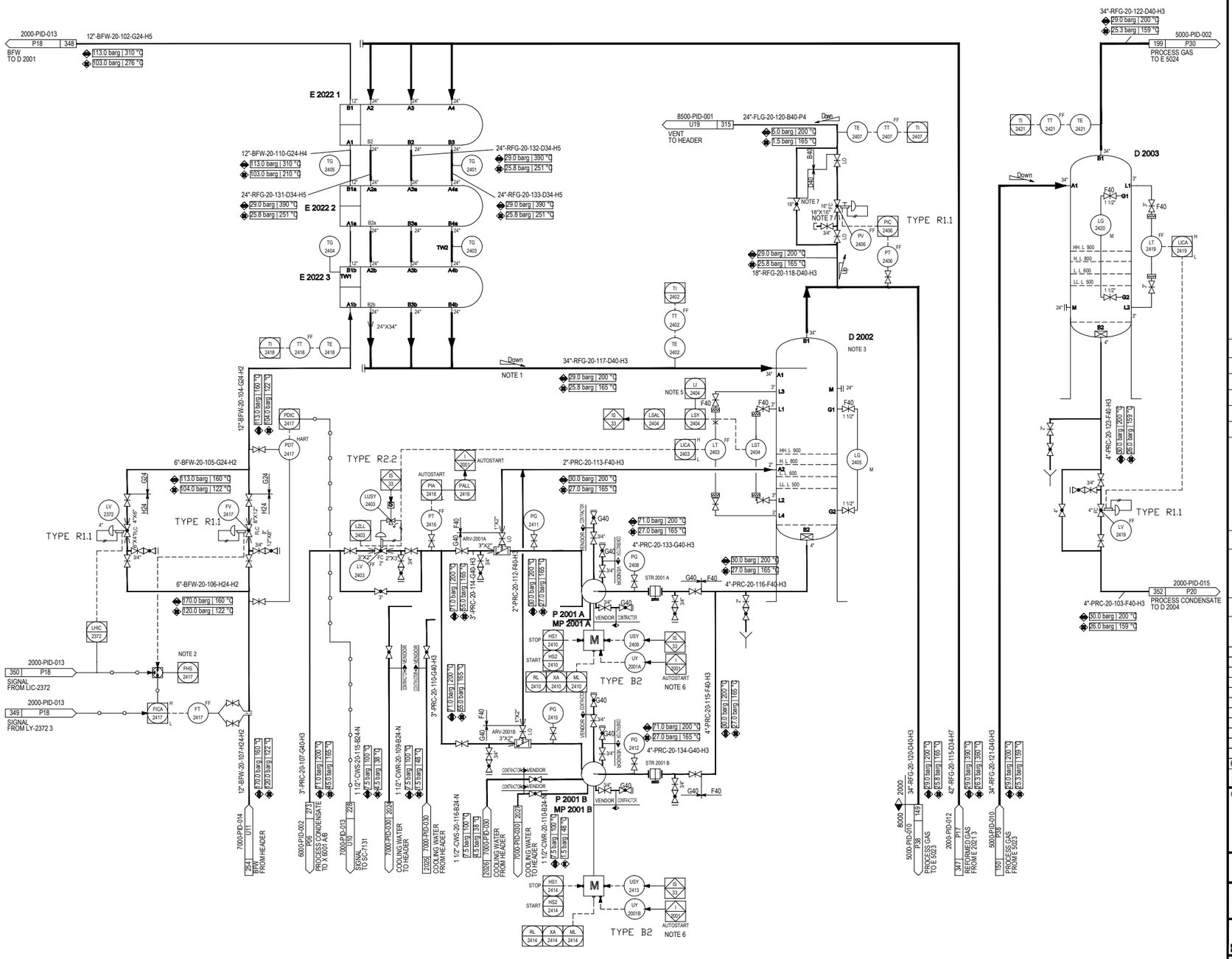
E 2022 1	BFW Preheater
DUTY	34.8 MW
ID x LENGTHKT-T)	1450x10000 mm
DESIGN PRESS.(TU/SH)	113/29 barg
DESIGN TEMP.(TU/SH)	310/390 °C
Insulation	YES

E 2022 2/3	BFW Preheater
DUTY	41.6 MW
ID x LENGTHKT-T)	1450x10000 mm
DESIGN PRESS.(TU/SH)	113/29 barg
DESIGN TEMP.(TU/SH)	310/280 °C
Insulation	YES

P 2001 A/B	PROCESS CONDENSATE PUMP NO.1
CAPACITY	32.3 m3/h
HEAD	274.3 m
DENSITY	903 kg/m3
INSULATION/TRACING	YES
AUXILIARY PIPING	By Vendor

D 2002	1st SEPARATOR
ID x LENGTHKT-T)	3750 x 4850 mm
DESIGN PRESS.	29 barg
DESIGN TEMP.	200 °C
Insulation	YES
CLADDING/LINING	NONE
Elevation of Equipment	EL +103.54m

D 2003	2nd SEPARATOR
ID x LENGTHKT-T)	3650 x 4750 mm
DESIGN PRESS.	29 barg
DESIGN TEMP.	200 °C
Insulation	YES
CLADDING/LINING	NONE



GENERAL NOTES

+NOTES:

1) TWO PHASE FLOW.
2) SWITCHING BY FHS-2417 (SYMBOLIC INDICATED) FROM 3-ELEMENT LEVEL CONTROL VIA FIC- 2417 TO SINGLE ELEMENT LEVEL CONTROL IS DONE WITH AUTOMATIC CHANGE OF TUNING CONSTANTS IN LIC-2372.
3) NOZZLE B2 ON D2002 MUST BE LOCATED MIN. 1.5 m ABOVE P 2001 A/B TO BE CONFORMED BY PUMP VENDOR.
4) VALVE SIZE WILL BE COMFIRMED BY VENDOR.
5) MOUNT ON STANDPIPE OR BRIDLE. AL TERNATIVELY ADD A SET OF NOZZLES (ONE SET FOR EACH LT-).
6) PIA-2416 LOW PRESSURE THEN I-2001 WORK MAKE STAND-BY PUMP AUTOSTART.
7) PV-2406 INCLUDES 3 NOISE REDUCTION DISKS, THE SIZE IS 16"-24" AND THE REDUCER CONSIDERED BY PIPING.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
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A	Issued for Approval	16.06.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: GAS COOLING AND SEPARATION I PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. 1 | DWG NO. 1341729 | DIAGRAM P19

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-014

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

GAS COOLING AND SEPARATION I
PIPING AND INSTRUMENT DIAGRAM

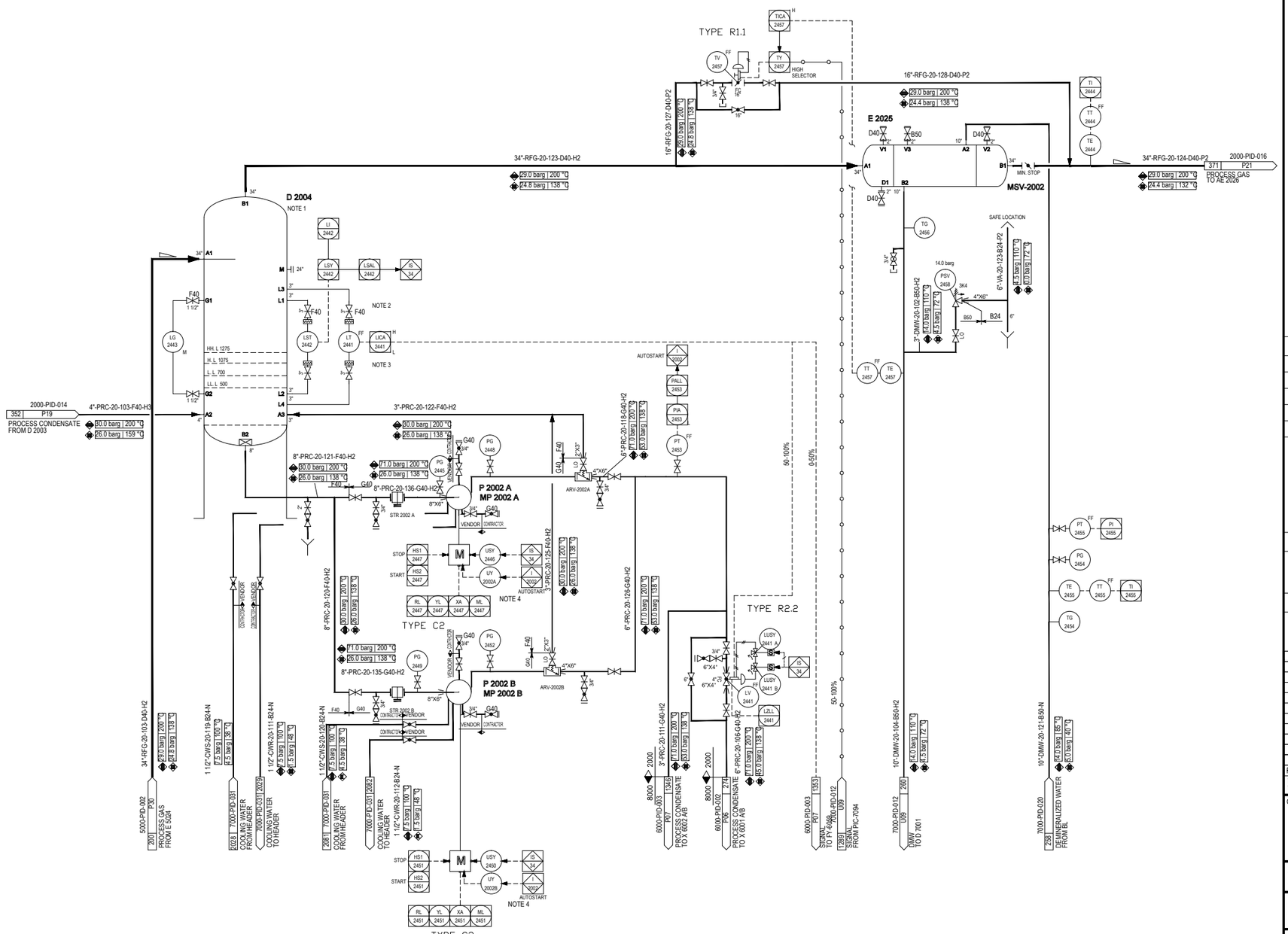
PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-014

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1

D 2004	3rd SEPARATOR
ID x LENGTH(T-T)	3350 x 4825 mm
DESIGN PRESS.	29 barg
DESIGN TEMP.	200 °C
Insulation	YES
CLADDING/LINING	NONE
Elevation of Equipment	EL +103.8m

P 2002 A/B	PROCESS CONDENSATE PUMP NO.2
CAPACITY	116.5 m3/h
Head	279.9 m
DENSITY	928 kg/m3
INSULATION/TRACING	YES
AUXILIARY PIPING	By Vendor

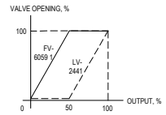
E 2025	DMW PREHEATER
DUTY	9.4 MW
ID x LENGTH(T-T)	1000x1800 mm
DESIGN PRESS.(TU/SH)	29/14 barg
DESIGN TEMP.(TU/SH)	200/100 °C
Insulation	YES



GENERAL NOTES

+NOTES:

1) NOZZLE B2 ON D 2004 MUST BE LOCATED MIN 1.5m ABOVE P2002 A/B. TO BE CONFIRMED BY PUNP VENDOR.
2) MOUNT ON STANDPIPE OR BRIDLE. AL TERNATIVELY ADD A SET OF NOZZLES (ONE SET FOR EACH LT-).
3) FUNCTION OF LIC-2441



4) PIA2453 LOW PRESSURE THEN I-2002 WORK MAKE STAND-BY PUMP AUTOSTART.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	16.06.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: GAS COOLING AND SEPARATION II PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 1 | WBS NO. 1341730 | DIAGRAM P20

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-015

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

GAS COOLING AND SEPARATION II
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-015

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1

AE 2026	AIR COOLER	
DUTY	51.3	MW
ID x LENGTHCT-T)	BY VENDOR	mm
DESIGN PRESS.(TU/SH)	29	barg
DESIGN TEMP.(TU/SH)	200	°C

P 2003 A/B	PROCESS CONDENSATE PUMP NO.3	
CAPACITY	83	m3/h
Head	351	m
DENSITY	989	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	

E 2027	WATER COOLER	
DUTY	6.5	MW
ID x LENGTHCT-T)	1400x10000	mm
DESIGN PRESS.(TU/SH)	7.5/29	barg
DESIGN TEMP.(TU/SH)	100/120	°C
Insulation	NA	

D 2005	FINAL SEPARATOR
ID x LENGTHCT-T)	3500 x 4825 mm
DESIGN PRESS.	29 barg
DESIGN TEMP.	100 °C
Insulation	NONE
CLADDING/LINING	NONE
Elevation of Equipment	EL. +103.7m

GENERAL NOTES

+NOTES:

1) TOP EXIT CONNECTION.
2) CONTROLLER TO AUTO WHEN SIGNAL FROM IS-1. SETPOINT EQUAL TO PROCESS VALUE BEFORE TRIP. SETPOINT MUST BE RAMPED DOWN TO 3 barg OVER 10 min.
3) PRESSURE TO BE HALVED EVERY 4 MINUTES OF DEPRESSURISATION.
4) IS-3 TO PUT CONTROLLER IN MANUAL OPEN VALVE TO AN OPENING CORRESPONING TO THE FLOW AT TIME OF TRIP THEN PIC-2481 IS PUT IN AUTO WITH SET POINT EQUAL TO ACTUAL PRESSURE AT TIME OF TRIP.
5) D 2005 TO BE LOCATED CLOSE TO C 3001. NOZZLE B2 ON D 2005 MUST BE LOCATED MIN 1.5m ABOBVE P 2003 A/B. TO BE CONFIRMED BY PUMP VENDOR.
6) TW IS TO BE INSTALLED ON EACH OUTLET HEADER FROM AE 2026.

9) VALVE SIZE WILL BE COMFIRMED BY VENDOR.
10) PIA2493 LOW PRESSURE THEN I-2003 WORK MAKE STAND-BY PUMP AUTOSTART.
11) DETAIL DRAWING FOR AE 2026 PLEASE SEE MKP-11-DE-2000-PR-PID-020
12) P&T COMPENSATION FROM PI-2481,TI-2476
13) PV-2481 INCLUDES 3 NOISE REDUCTION DISKS, THE SIZE IS 16"-28" AND THE REDUCER CONSIDERED BY PIPING.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	28.12.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Issued for Review	31.08.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Issued for Review	16.06.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihu	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: GAS COOLING AND SEPARATION III PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. A

DWG NO. 1341731 | DIAGRAM P21

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS07-PID-016

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – | TOTAL –

GAS COOLING AND SEPARATION III PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project
	UNIT	Reformer
	PHASE	As Built Drawing
SCALE	SHEET: 1 / TOT: 1 / SIZE: A1	OWNER DWG NO. MKP-11-AS-2000-PR-PID-016

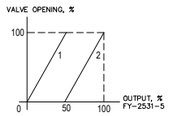
Counter Signing	Sign	Date

X 2003	STATIC FUEL GAS MIXER	
MIXER SIZE	BY VENDOR MM	
CAPACITY	55280	kg/hr
DESIGN PRESS.	7	barg
DESIGN TEMP.	100	°C

GENERAL NOTES

+NOTES:

1) MIN. DISTANCE BETWEEN FT-2531 AND PV-1011: 10 meter ALTERNATIVE INCREASE PIPE DIAMETER TO ACHIVE IDENTICAL GAS VOLUME. REQUIREMENTS OF FLOW MEASURING EQUIPMENT MUST ALSE BE CONSIDERED.
2) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
3) DISTANCE TO FURNACE TO BE MINIMIZED.
4) SOLENOID VALVES TO BE IN 2oo2D CONFIGURATION FOR SAFETY AND AVAILABILITY.
5)



6) VALVE SIZE WILL BE COMFIRMED BY VENDOR.
7) THE DESIGN SCOPE OF PRIMARY REFORMER VENDOR
8) WHEN THERE IS NO INSTRUMENT AIR SUPPLY FOR THE ANALYZER AT-2531/AT-2532, THE LAST EFFECTIVE DATA SHALL BE RECORDED IN FCS.
9) P&T COMPENSATION FROM PIC-1011,TI-1012
10) P&T COMPENSATION FROM PIC-2536A,TI-2536
11) PV-2536B includes 1 noise reduction disks, the size is 14" and the reducer considered by piping.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihui	Liu Shengkai	
3	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihui	Liu Shengkai	
2	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
1	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	23.01.2017	Wang Furu		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	31.08.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
0	Approval for Construction	16.06.2016	Wang Furu		Gao Zhihui	Liu Shengkai	
0	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S

DOCUMENT NAME: FUEL SYSTEM PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 4

DWG NO. 1341757 | DIAGRAM U01

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS09-PID-001

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – | TOTAL –

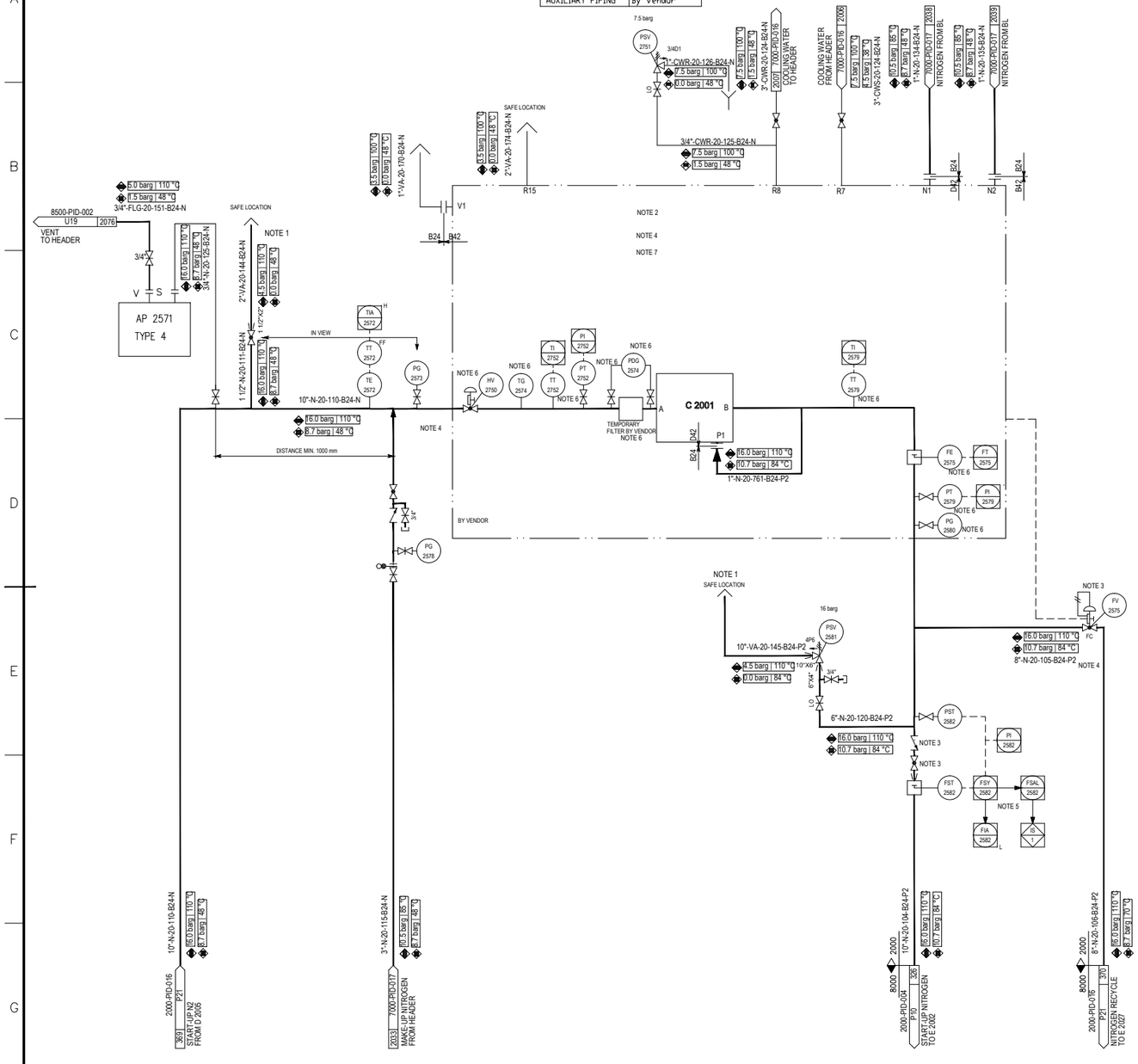
Counter Signing	Sign	Date

FUEL SYSTEM
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-2000-PR-PID-017

C 2001	START-UP NITROGEN COMPRESSOR	
CAPACITY	31189	Nm3/h
PRESS. (SUC./DIS.)	6/8	barg
TEMP. (SUC./DIS.)	48/	°C
GRIVE POWER	400	kW
AUXILIARY PIPING	By Vendor	



GENERAL NOTES

+NOTES:

1) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
2) DETAILS BY VENDOR.
3) THE FV-2575 BLOCK VALVE AND CHECK VALVE WILL BE SUPPLIED BY C 2001 VENDOR LOOSE.
4) THE PROCESS NITROGEN PIPE CONNECTING WITH INLET AND OUTLET OF C 2001 IS SUPPLIED BY TCC
5) PRESSURE COMPENSATION FROM PT-2582.
6) THE TEMPERATURE INDICATOR/GAUGE(TG-2574/TT-2752/2579), THE PRESSURE INDICATOR/GAUGE (PT-2752/PT-2579/PG-2580),THE FLOWMETER(FT-2575),THE DIFFIERENT PRESSURE GAUGE (PDG-2574) AND TEMPORARY FILTER ARE SUPPLIED BY C2001 VENDOR.
7) PLEASE FIND VENDOR DOCUMENT FOR DETAILS.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furu		Gao Zhihu	Liu Shengkai	
9	Approval for Construction	30.12.2019	Wang Furu		Gao Zhihu	Liu Shengkai	
8	Approval for Construction	02.02.2018	Wang Furu		Gao Zhihu	Liu Shengkai	
7	Approval for Construction	06.11.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
6	Approval for Construction	05.05.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
5	Approval for Construction	22.03.2017	Wang Furu		Gao Zhihu	Liu Shengkai	
4	Approval for Construction	12.10.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
3	Approval for Construction	31.08.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
2	Approval for Construction	16.06.2016	Wang Furu		Gao Zhihu	Liu Shengkai	
1	Issued for Comments	29.04.2016	Wang Furu		Gao Zhihu	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: START-UP BLOWER PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. 3

DWG NO. 1341758 | DIAGRAM U02

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-2000-PS09-PID-002
SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

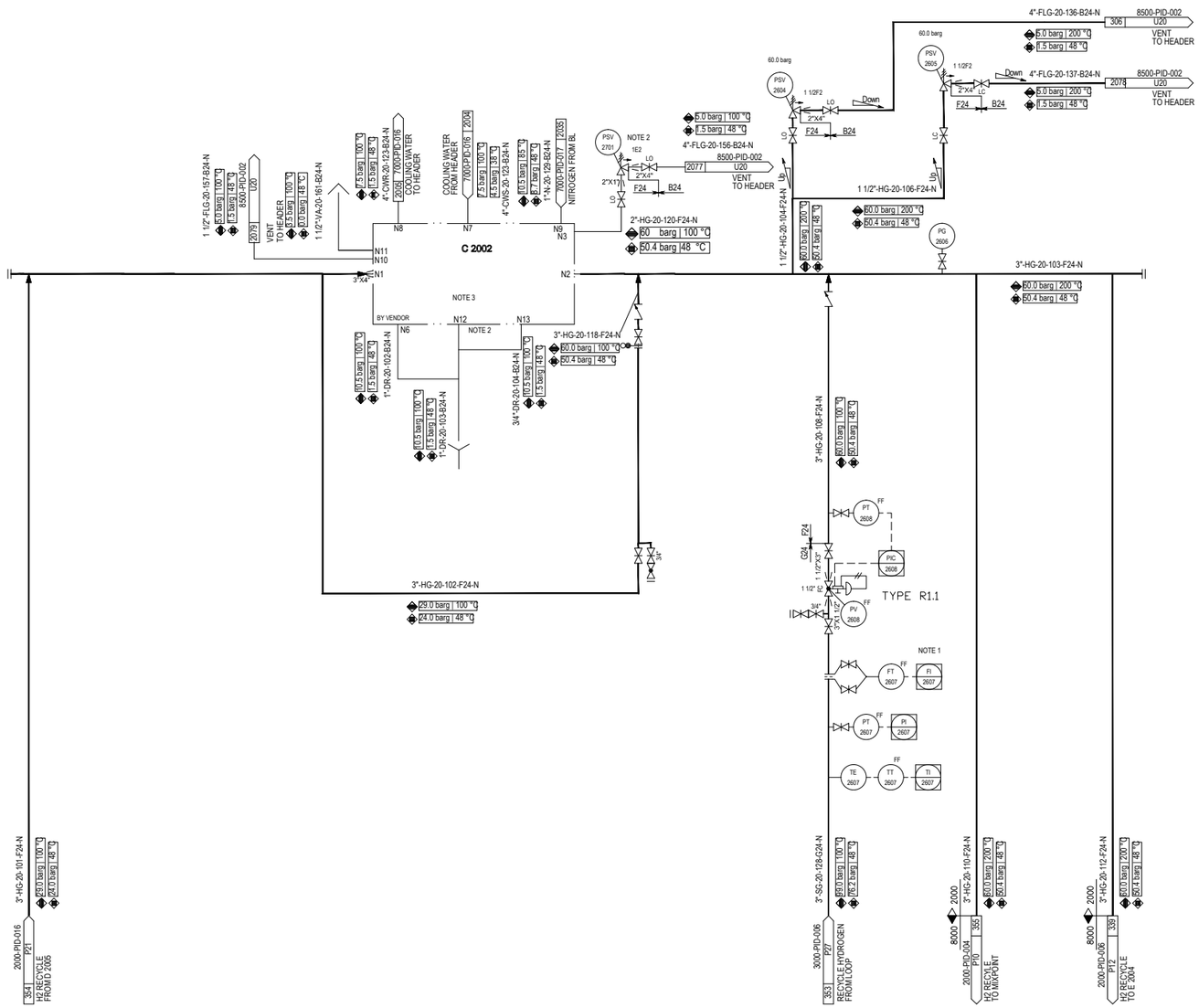
START-UP BLOWER
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-2000-PR-PID-018

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1

Counter Signing	Sign	Date

C 2002	HYDROGEN RECYCLE COMPRESSOR	
CAPACITY	5078	Nm3/h
PRESS. (SUC./DIS.)	24/50.4	barg
TEMP. (SUC./DIS.)	48/	°C
DRIVE POWER	200	kW
AUXILIARY PIPING	By Vendor	



GENERAL NOTES

+NOTES:

1) P&T COMPENSATION FROM PI-2607,TI-2607
2) PSV-2701 IS SUPPLIED BY C2002 VENDOR
3) PLEASE FIND VENDOR DOCUMENT FOR DETAILS.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	30.12.2019	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	02.02.2018	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	06.11.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	10.11.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Construction	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Approval for Comments	16.06.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	29.04.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: H2 RECYCLE SYSTEM PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC GRP. 42 | DRWG NO. 1341773 | DIAGRAM U17 | REV. 2

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-2000-PS09-PID-003
SHEET 01 TOTAL 01

SUB CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

H2 RECYCLE SYSTEM
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing

SCALE	SHEET: 1	TOT: 1	SIZE: A1	OWNER DWG NO.	MKP-11-AS-2000-PR-PID-019

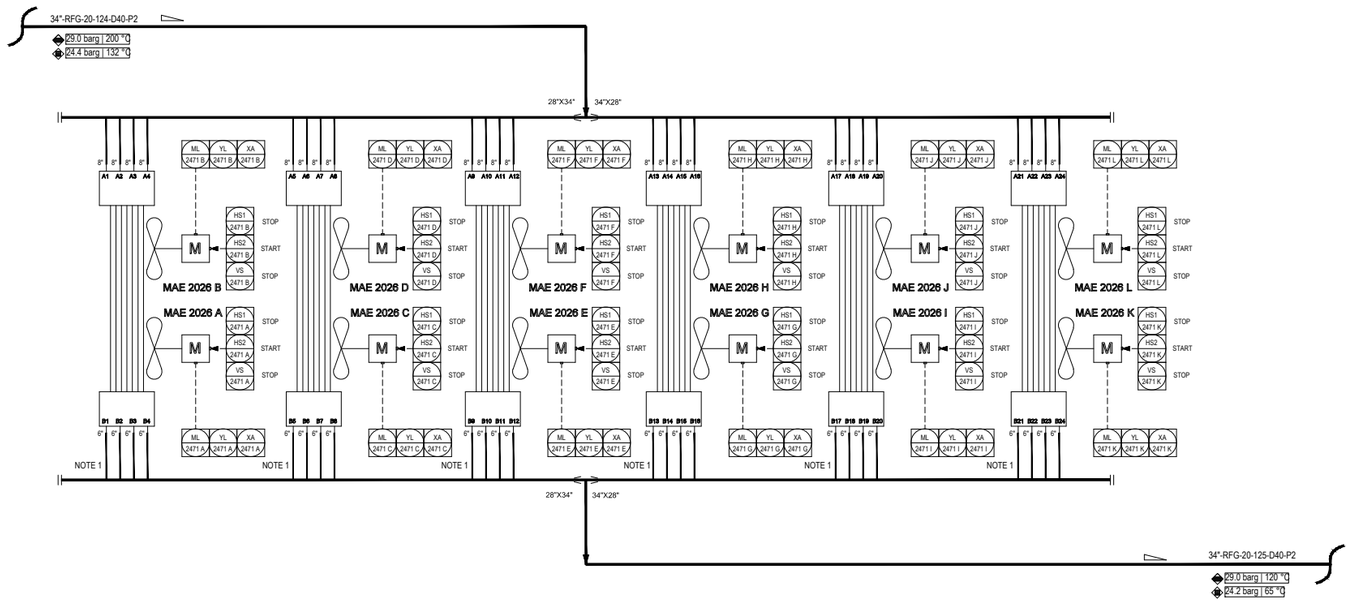
L 2004	CANTILEVER CRANE	
TYPE	COLUMN CANTILEVER	
CAPACITY	1	t
LIFT HEIGHT	20	m
SLIDING DISTANCE	1.8	m

AE 2026	AIR COOLER	
DUTY	51.3	MW
ID x LENGTH(T-T)	BY VENDOR	mm
DESIGN PRESS.(TU/SH)	29	barg
DESIGN TEMP.(TU/SH)	200	°C

L 2004

NOTE 2

AE 2026



GENERAL NOTES

+NOTES:

1) THERMOWELL TABEL IS SHOWED BELOW (ONE TW FOR EACH TUBE BOX OUTLET):

MAE2026A, MAE2026B	MAE2026G, MAE2026H
B1 TW2473A	B13 TW2473G
B3 TW2473B	B15 TW2473H
MAE2026C, MAE2026D	MAE2026I, MAE2026J
B5 TW2473C	B17 TW2473I
B7 TW2473D	B19 TW2473J
MAE2026E, MAE2026F	MAE2026K, MAE2026L
B9 TW2473E	B21 TW2473K
B11 TW2473F	B23 TW2473L

2) CANTILEVER CRANE IS USED FOR AE-2026 MAINTENANCE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Furui		Gao Zhihui	Liu Shengkai	
3	Approval for Construction	05.05.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
2	Approval for Construction	22.03.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
1	Approval for Construction	23.01.2017	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Review	28.12.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Review	12.10.2016	Wang Furui		Gao Zhihui	Liu Shengkai	
A	Issued for Comments	31.08.2016	Wang Furui		Gao Zhihui	Liu Shengkai	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG. NO. | DISCIPLINE

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-2000-PS07-PID-017

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO.: –

SHEET – TOTAL –

Counter Signing	Sign	Date

AIR COOLER AE 2026 DETAIL
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Reformer
PHASE	As Built Drawing

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1 | OWNER DWG NO.: MKP-11-AS-2000-PR-PID-020

FT 3001 1/2	STEAM TURBINE FOR C 3001	
TYPE	Extraction	
DESIGN PRESS.	102	barg
DESIGN TEMP.	475	°C
MATERIAL	CS	
RATED POWER	1300	kW

C3001/C3002	SYNTHESIS GAS COMPRESSOR / RECIRCULATOR	
CAPACITY	552868	Nm3/h
PRESS. (SUC./DIS.)	24/90	barg
TEMP.(SUC./DIS.)	48/	°C
DRIVE POWER	43395	kW
AUXILIARY PIPING	By Vendor	

L 3001	CRANE	
TYPE	OVERHEAD CRANE	
CAPACITY	32/5	t
LIFT HEIGHT	21	m
SLIDING DISTANCE	54	m

GENERAL NOTES

NOTES:

1) PURGE POINT. TO DE LOCATED AS CLOSE AS POSSIBLE TO COMPRESSOR BLOCK VALVE.
2) FOR PRESSURIZING LOOP AT START-UP AND FOR PURGING TO BE LOCATED AS CLOSE AS POSSIBLE TO COMPRESSOR BLOCK VALVE.
3) BLOCK VALVES TO BE LOCATED AS CLOSE AS POSSIBLE TO COMPRESSOR SHUT-OFF VALVE. PIPING CLASS DOWNSTREAM BLOCK VALVES TO BE CONFIRMED BY COMPRESSOR VENDOR.
4) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
5) TOP ENTRY CONNECTION.
6) SAFETY VALVE ON COOLING WATER TO BE INCLUDED IN VENDOR SCOPE.
7) SLOPE REQUIREMENT MUST BE FULFILLED. IF THIS IS NOT POSSIBLE, EL TRACED.
8) AUTOMATIC MANIFOLD.
9) FIGURE-8 TYPE BLIND TO BE TURNED TO NORMALLY CLOSED POSITION BEFORE STARTING LOOP PRESURISATION.
10) AP-3019 MUST DE LOCATED AT A DISTANCE OF MINIMUM 20 X PIPEDIAMETER FROM SG 30-130.
11) AFY-3004: MODULE = $\frac{H2.CO2}{CO+CO2}$
12) TO DE CONFIRMED BY COMPRESSOR VENDOR.
13) PIPE SIZE MUST BE CONFIRMED BY TURBINE VENDOR.
14) THE SAMPLING POINT IS SHOWN IN THE TOP LEFT CORNER OF THIS PAGE.
15) THE DISTANCE BETWEEN CHECK VALVE AND THE CONNECTED MAIN PIPE SHOULD BE MINIMIZED.
16) P&T COMPENSATION FROM PI-3023, T FROM TT 3719 (COMPRESSOR PACKAGE). MW COMPENSATION FROM HIC-3020.
17) CRANE IS USED FOR COMPRESSOR AND TURBINE MAINTENANCE.
18) HV-3011 INCLUDES 1 NOISE REDUCTION DISKS, THE SIZE IS 3" AND THE REDUCER CONSIDERED BY PIPING.
19) INTERNAL INSPECTION AND MAINTENANCE ARE NEEDED FOR THE CHECK VALVE ACCORDING TO THE REQUIREMENT OF API 521.

+

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

ALL WELDING CONNECTION WITH SIZE GREATER THAN 2 INCHES SHALL BE BUTT WELDED TYPE UNLESS OTHERWISE SPECIFIED.

ALL VALVES GREATER THAN 2 INCHES SHALL BE FLANGED TYPE UNLESS OTHERWISE SPECIFIED.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	11.11.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.02.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Review	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: SYNTHESIS GAS COMPRESSOR PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | DRWG NO. 1341732 | DIAGRAM P22 | REV. 4

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-001
SHEET 01 TOTAL 01

SUB CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

SYNTHESIS GAS COMPRESSOR
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-3000-PR-PID-001

D 3003	MP STEAM DRUM
ID x LENGTH(CT-CT)	3250 x 16850mm
DESIGN PRESS.	FV/45 barg
DESIGN TEMP.	290 °C
INSULATION	YES
CLADDING/LINING	NONE
ELEVATION OF EQUIPMENT	EL 124.516 m

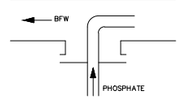
SI 3002	MP STEAM DRUM SILENCER	
CAPACITY	6000	kg/hr
DESIGN PRESS.	16	barg
DESIGN TEMP.	300	°C
MATERIAL SHELL	CS	
MATERIAL FILTER ELEMENT	SS	

GENERAL NOTES

+NOTES:

1) SWITCHING FHS-3041 (SYMBOLIC INDICATED) FROM 3-ELEMENT LEVEL CONTROL VIA FIC- 3041 TO SINGLE ELEMENT LEVEL CONTROL IS DONE WITH AUTOMATIC CHANGE OF TUNING CONSTANTS IN LIC-3042.

2) PHOSPHATE INJECTION CONNECTION.



+3) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

4) LINE SIZING BY SILENCER VENDOR.

5) HYDRASTEP WITH LOCAL INDICATOR AT GROUND LEVEL AND SIGNAL TO DCS.

6) FLOW NOZZLE TO DE LOCATED ABOVE D 3003.

7) EQUIPPED WITH GEAR BOX.

8) P&T COMPENSATION FROM PIC-3042.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
9	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
8	Approved for Construction	11.11.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
7	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Issued for Approval	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: SYNTHESIS, PART I PIPING AND INSTRUMENT DIAGRAM

JOB NO. 8-02115 | DOC. NO. 42 | REV. 4 | DWG NO. 1341733 | DIAGRAM P23

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-002

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

SYNTHESIS, PART I PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project	
	UNIT	METHANOL SYNTHESIS	
	PHASE	As Built Drawing	
SCALE: – / SHEET: 1 / TOT.: 1 / SIZE: A1	OWNER DWG NO.	MKP-11-AS-3000-PR-PID-002	

Counter Signing	Sign	Date

J 3002 1/2/3	START-UP EJECTOR
CAPACITY Suction/Motive	525/30 t/h
DESIGN PRESS.	46.5/52 barg
DESIGN TEMP.	260/470 °C
MATERIAL	CS, Motive nozzle SS

R 3001 1/2/3	METHANOL REACTOR
ID x LENGTH	4700 x 9000mm
VOLUME	m3
DESIGN PRESS.	99/46.5 barg
DESIGN TEMP.(TU./SH.)	300/260 °C
MATERIAL SHELL	CS; HEAD: 1.25Cr0.5Mo
Elev. of EQUIPMENT	EL 110.200 m

GENERAL NOTES

+NOTES:

1) MIN. DISTANCE BETWEEN J 3003 1/2/3 AND R 3001 1/2/3.
2) TO DE LOCATED AS CLOSE AS POSSIBLE TO R 3001 1/2/3.
3) DRIPHOLE IS NEEDED.
4) A10 AND B10 HAVE TO BE LOCATED 180 DEG APART.
5) THE SAMPLING POINT IS SHOWN IN THE BOTTOM OF THIS PAGE.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S

DOCUMENT NAME: METHANOL SYNTHESIS PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC GRP. 42 | REV. 4 | DWG NO. 1341734 | DIAGRAM P24

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-003

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

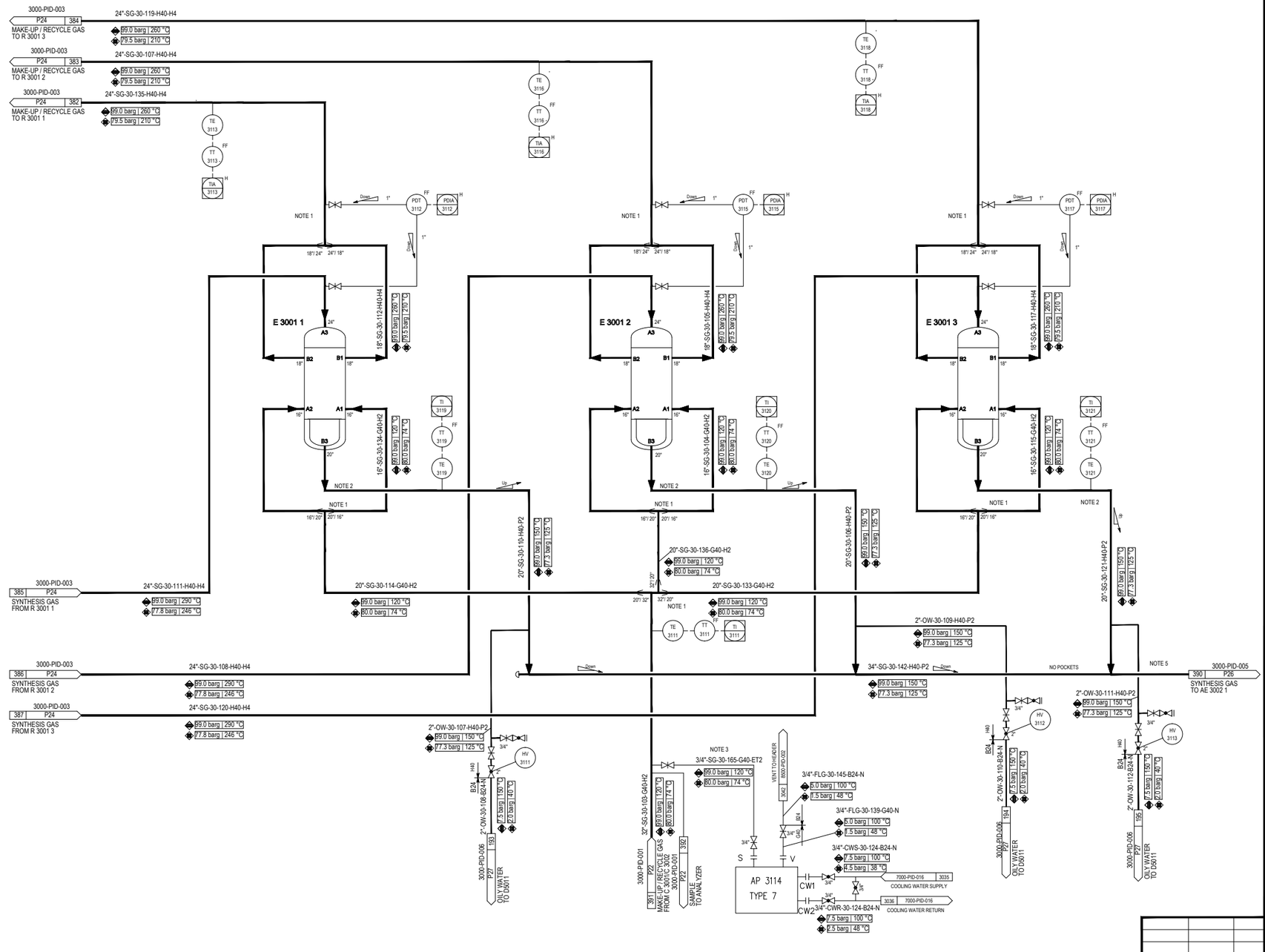
PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-3000-PR-PID-003

METHANOL SYNTHESIS
PIPING AND INSTRUMENT DIAGRAM

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing	Sign	Date

E 3001 1/2/3	FEED/EFFLUENT EXCHANGER	
DUTY	133.1	MW
ID x LENGTH	1710x18600	mm
DESIGN PRESS.(TU./SH.)	99/99	barg
DESIGN TEMP.(TU./SH.)	290/260	°C
MATERIAL SHELL SIDE	SS304L	
MATERIAL TUBE SIDE	SS304L	
No. of Tubes	2360	
Insulation	YES	
Elev. of EQUIPMENT	EL 104.300 m	



GENERAL NOTES

+NOTES:

1) SYMMETRICAL PIPING.

2) TWO PHASE FLOW- NO POCKETS ALLOWED.

3) EL-TRACED.

4) I- TO PUT TIC- IN AUTO WITH SETPOINT EQUAL TO ACTUAL PV AT TIME OF TRIP, MINUS 10°C.

5) SG-30-142 MUST DE AT HORIZONTAL AND THE SAME ELEVATION AS AE 3002 1/2/3.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: METHANOL F/E EXCHANGER PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. MKP 42 | REV. A

DWG NO. 1341735 | DIAGRAM P25

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-004

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

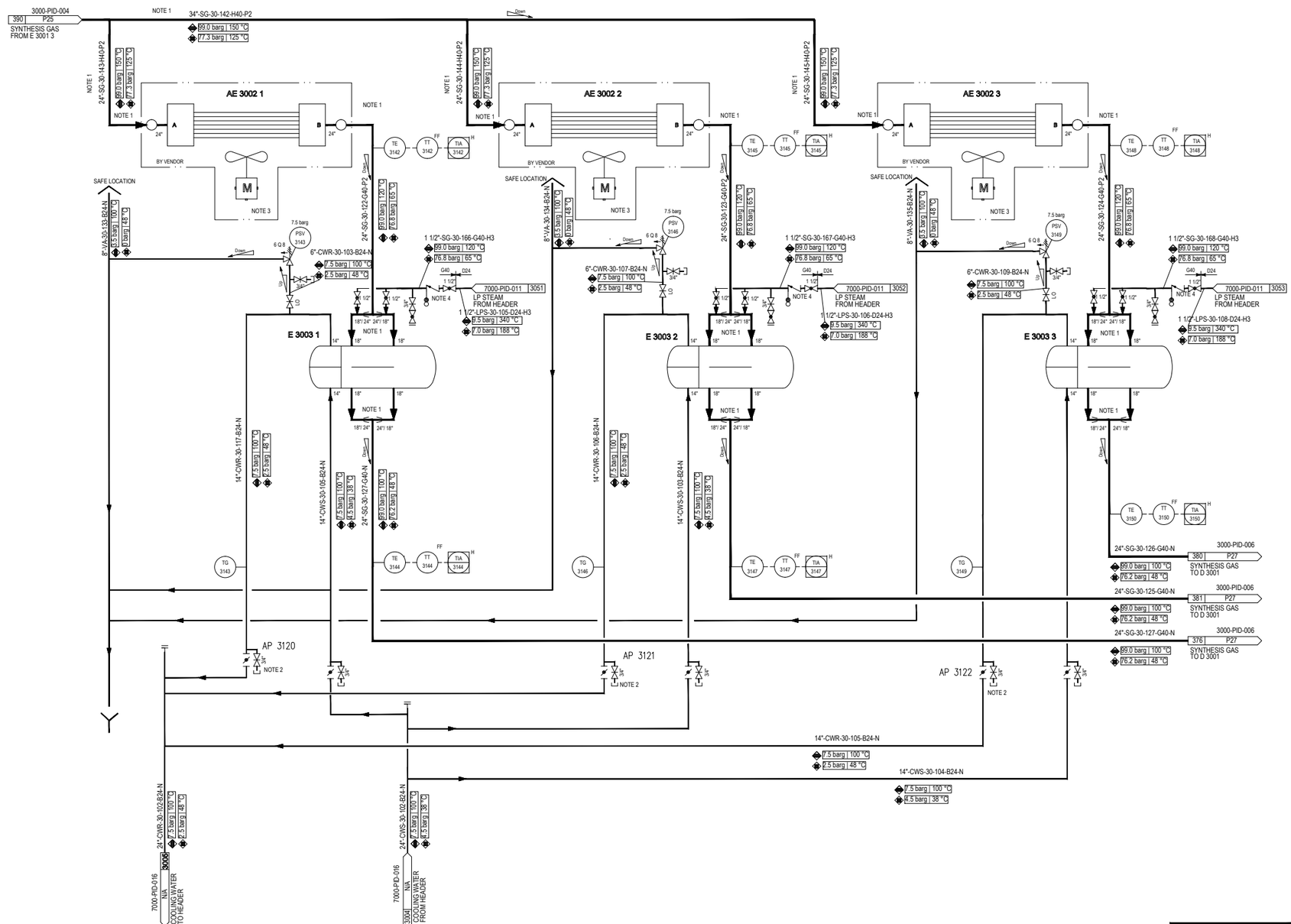
METHANOL F/E EXCHANGER PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-3000-PR-PID-004

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

AE 3002 1/2/3	LOOP AIR COOLER
DUTY	95 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TUBE)	99/ barg
DESIGN TEMP.(TUBE)	150/ °C

E 3003 1/2/3	LOOP WATER COOLER
DUTY	20 MW
DESIGN PRESS.(TU/SH)	7.5/99 barg
DESIGN TEMP.(TU/SH)	100/120 °C
INSULATION	YES
Elev. of EQUIPMENT	EL 113.487 m



GENERAL NOTES

+NOTES:

1) TWO PHASE FLOW NO POCKETS ALLOWED.

2) THE DRAIN NOZZLE IS ALSO USED AS THE SAMPLING POINT. THE SAMPLING POINT IS USED FOR DETECTING THE POSSIBLE EQUIPMENT LEAKAGE REGULARIY.

3) THE DETAIL DRAWING OF AE 3002 1/2/3 CAN BE SEEN ON MKP-11-DE-3000-PR-PID-008.

4) THE DISTANCE BETWEEN CHECK VALVE AND THE CONNECTED MAIN PIPE SHOULD BE MINIMIZED.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	13.08.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
B	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Approval	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
D	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: SYNTHESIS GAS COOLING PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC. GRP. 42 | REV. 4
DWG NO. 1341738 | DIAGRAM P26

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-005
SHEET 01 TOTAL 01

SUB-CONTRACTOR
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

SYNTHESIS GAS COOLING PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-3000-PR-PID-005

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

D 3001	HP SEPARATOR
ID x LENGTHKT-T)	4900 x 4800 mm
DESIGN PRESS.	99.0 barg
DESIGN TEMP.	100 °C
INSULATION	NO
CLADDING/LINNING	CS Cladded With SS304L
Elev. of EQUIPMENT	EL 104.100 m

J 3001	EJECTOR
CAPACITY Suction/Motive	577/62275 Nm3/h
DESIGN PRESS.	FV/3.5 /99.0 barg
DESIGN TEMP.	75/100 °C
MATERIAL	CS, Motive nozzle SS

GENERAL NOTES

+NOTES:

1) VALVE TO DE PLACED OUTSIDE SYNTHESIS AREA - ACCESSIBLE IN CASE OF FIRE.

2) EMERGENCY DEPRESSURISATION TO DE ACTUATED MANUALLY IN CASE OF FIRE. PIC-3166 B IS RAMPING DOWN TO 50% OF DESIGN PRESSURE IN 15 MINUTES.

3) D 3001 MUST DE LOCATED AS CLOSE AS POSSIBLE TO C 3002.

4) CONNECTION FOR STEAM OUT/DEWAXING.

5) SWITCH FIC-3169 TO AUTO WITH A SETPOINT EQUAL TO ACTUAL OPERATING POINT AND RAMPING THIS SETPOINT DOWN TO ZERO IN TWO MINUTES. HEREAFTER FIC-3169 IS SET IN MANUAL WITH ZERO OUTPUT.

6) SLOPE REQUIREMENT MUST DE FULFILLED. IF THIS IS NOT POSSIBLE, EL TRACED.

7) STEAM OUT OF DEMISTER.

9) BOTH VALVES DESIGNED FOR FULL FLOW.

11) REQUIRED PIPING RUN UPSTREAM (10D) AND DOWN STREAM (5D) OF ALL FLOW METERS SHOULD BE CONSIDERED.

12)DIRECTLY CONNECT THE BYPASS WITH THE MAIN PIPE.

13) P&T COMPENSATION FROM PIC-3166A,TI-3164. MW COMPENSATION FROM HIC-3167.

14) P&T COMPENSATION FROM PIC-3166A,TI-3164.

15) P&T COMPENSATION FROM PIC-3166A,TI-3164.

16) PV-3166 INCLUDES 4 NOISE REDUCTION DISKS, THE SIZE IS 4"-12" AND THE REDUCER CONSIDERED BY PIPING.

17) FV-3169 INCLUDES 2 NOISE REDUCTION DISKS, THE SIZE IS 4"-24" AND THE REDUCER CONSIDERED BY PIPING.

18) 10" WAS FIRST CHANGED TO 16" AND THEN CHANGED TO 24" BY TWO REDUCERS.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: SYNTHESIS, PART II PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. A | DWG NO. 1341737 | DIAGRAM P27

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-006

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

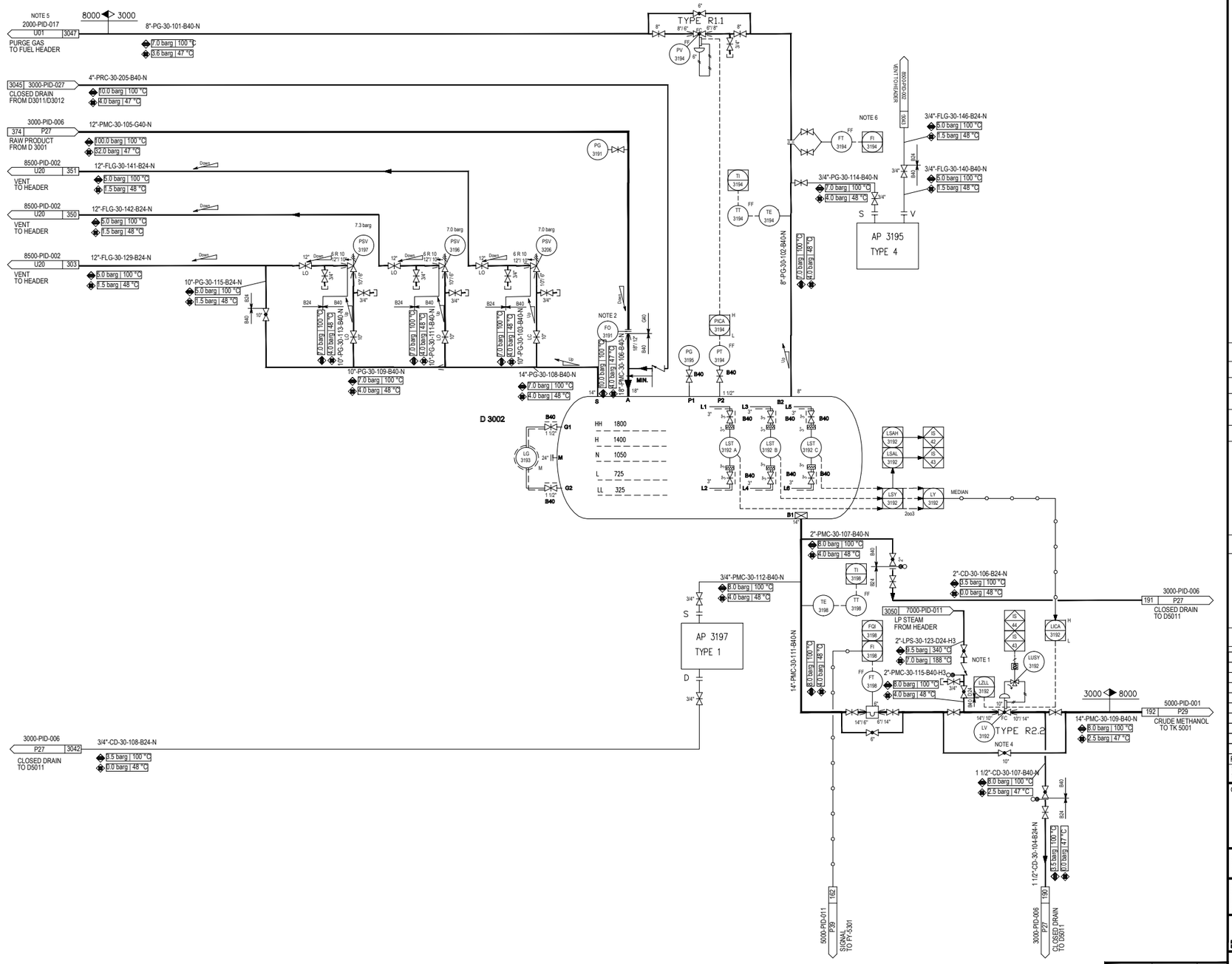
Counter Signing	Sign	Date

SYNTHESIS, PART II
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-3000-PR-PID-006

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

D 3002	LP SEPARATOR
ID x LENGTH(T-T)	2200 x 6450 mm
DESIGN PRESS.	7.0 barg
DESIGN TEMP.	100 °C
INSULATION	NO
CLADDING/LINING	NONE
Elev. of EQUIPMENT	EL 101.948 m



GENERAL NOTES

NOTES:

1) CONNECTION FOR STEAM OUT/DEWAXING.

2) DISTANCE TO D 3002 TO BE MINIMIZED.

4) TO BE READABLE FROM LG-3193.

5) THIS PIPE HAS BEEN MIXED WITH 24"-PG-30-104-B24-N ON PIPE RACK.

6) P&T COMPENSATION FROM PIC-3194,TI-3194.

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	25.06.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK

DOCUMENT NAME: RAW PRODUCT FLASH PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC GRP. 42 | REV. 4
DWG. NO. 1341738 | DIAGRAM P28

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-3000-PS07-PID-007
SHEET 01 TOTAL 01

SUB-CONTRACTOR: –
SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

RAW PRODUCT FLASH
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-3000-PR-PID-007

Counter Signing	Sign	Date

AE 3002 1/2/3	LOOP AIR COOLER	
DUTY	95	MW
ID x LENGTH(T-T)	BY VENDOR	mm
DESIGN PRESS.(TUBE)	99/	barg
DESIGN TEMP.(TUBE)	150/	°C

L 3002	CRANE 3002	
TYPE	COLUMN CANTILEVER CRANE	
CAPACITY	1	t
LIFT HEIGHT	22	m
SLIDING DISTANCE	1.8	m

NOTE 1

MAE 3002 1A MAE 3002 1B

MAC 3002 1C MAE 3002 1D

24"-SG-30-122-G40-P2 — 89.0 barg | 120 °C — 76.8 barg | 65 °C — 3000-PID-005 P26 SYNTHESIS GAS TO E 3003 1

24"-SG-30-143-H40-P2 — 3000-PID-005 P26 SYNTHESIS GAS FROM E3001 — 89.0 barg | 150 °C — 77.3 barg | 125 °C

MAE 3002 1E MAE 3002 1F

MAE 3002 1G MAE 3002 1H

MAE 3002 2A MAE 3002 2B

MAC 3002 2C MAE 3002 2D

24"-SG-30-123-G40-P2 — 89.0 barg | 120 °C — 76.8 barg | 65 °C — 3000-PID-005 P26 SYNTHESIS GAS TO E 3003 2

24"-SG-30-144-H40-P2 — 3000-PID-005 P26 SYNTHESIS GAS FROM E3001 — 89.0 barg | 150 °C — 77.3 barg | 125 °C

MAE 3002 2E MAE 3002 2F

MAE 3002 2A MAE 3002 2H

24"-SG-30-145-H40-P2 — 3000-PID-005 P26 SYNTHESIS GAS FROM E3001 — 89.0 barg | 150 °C — 77.3 barg | 125 °C

L 3002

NOTE 2

MAE 3002 3A MAE 3002 3B

MAC 3002 3C MAE 3002 3D

24"-SG-30-124-G40-P2 — 89.0 barg | 120 °C — 76.8 barg | 65 °C — 3000-PID-005 P26 SYNTHESIS GAS TO E 3003 3

MAE 3002 3E MAE 3002 3F

MAE 3002 3G MAE 3002 3H

GENERAL NOTES

+NOTES:

1) THERMOWELL TABEL IS SHOWED BELOW:

MAE3002 1A, MAE3002 1B		MAE3002 2A, MAE3002 2B		MAE3002 3A, MAE3002 3B	
B1	TW3001	B1	TW3009	B1	TW3017
B3	TW3002	B3	TW3010	B3	TW3018

MAE3002 1C, MAE3002 1D		MAE3002 2C, MAE3002 2D		MAE3002 3C, MAE3002 3D	
B5	TW3003	B5	TW3011	B5	TW3019
B7	TW3004	B7	TW3012	B7	TW3020

MAE3002 1E, MAE3002 1F		MAE3002 2E, MAE3002 2F		MAE3002 3E, MAE3002 3F	
B9	TW3005	B9	TW3013	B9	TW3021
B11	TW3006	B11	TW3014	B11	TW3022

MAE3002 1G, MAE3002 1H		MAE3002 2G, MAE3002 2H		MAE3002 3G, MAE3002 3H	
B13	TW3007	B13	TW3015	B13	TW3023
B15	TW3008	B15	TW3016	B15	TW3024

2) CRANE IS USED FOR AE 3002 1/2/3 MAINTENANCE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	13.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GROUP | REV.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS09-PID-008

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

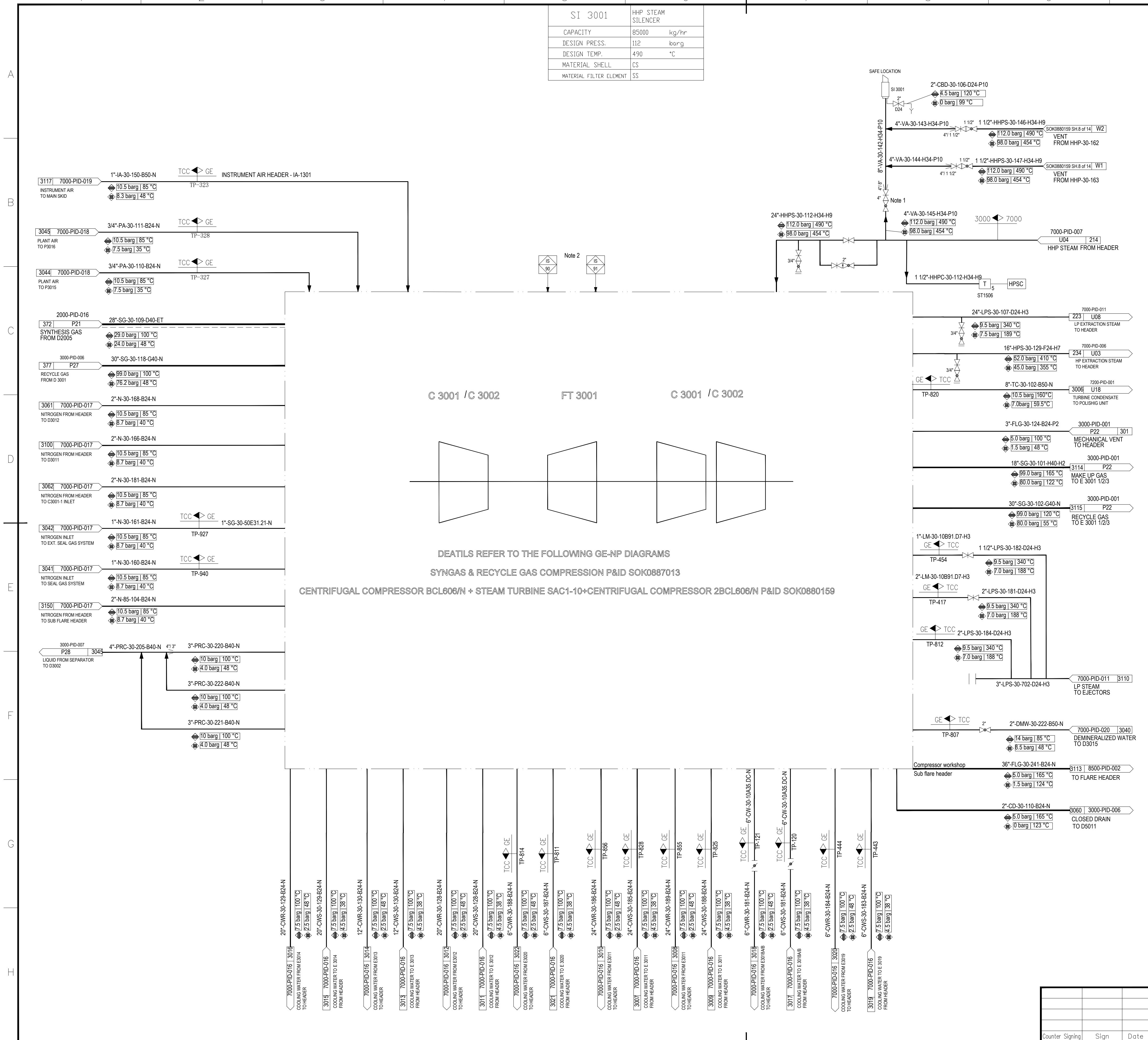
SHEET – TOTAL –

Counter Signing	Sign	Date

AIR COOLER AE 3002 1/2/3 DETAIL PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-3000-PR-PID-008

SCALE | SHEET: 1 | TOT: 1 | SIZE: A1



GENERAL NOTES

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

ALL WELDING CONNECTION WITH SIZE GREATER THAN 2 INCHES SHALL BE BUTT WELDED TYPE UNLESS OTHERWISE SPECIFIED.

ALL VALVES GREATER THAN 2 INCHES SHALL BE FLANGED TYPE UNLESS OTHERWISE SPECIFIED.

NOTE 1: THE HAND VALVES SHOULD BE OPENED SLOWLY.

NOTE 2: IS 90 IS THE TRIP OF SYNGAS COMPRESSOR AND RECIRCULATOR; IS 91 IS THE DEPRESSURIZATION OF SYNTHESIS GAS COMPRESSOR.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
201	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
4	Issued for Information	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
3	Issued for Information	11.11.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
2	Issued for Information	02.02.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
1	Issued for Information	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
0	Issued for Information	07.07.2017	Xu Jun		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR | JOB NO. | DOC. GRP. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

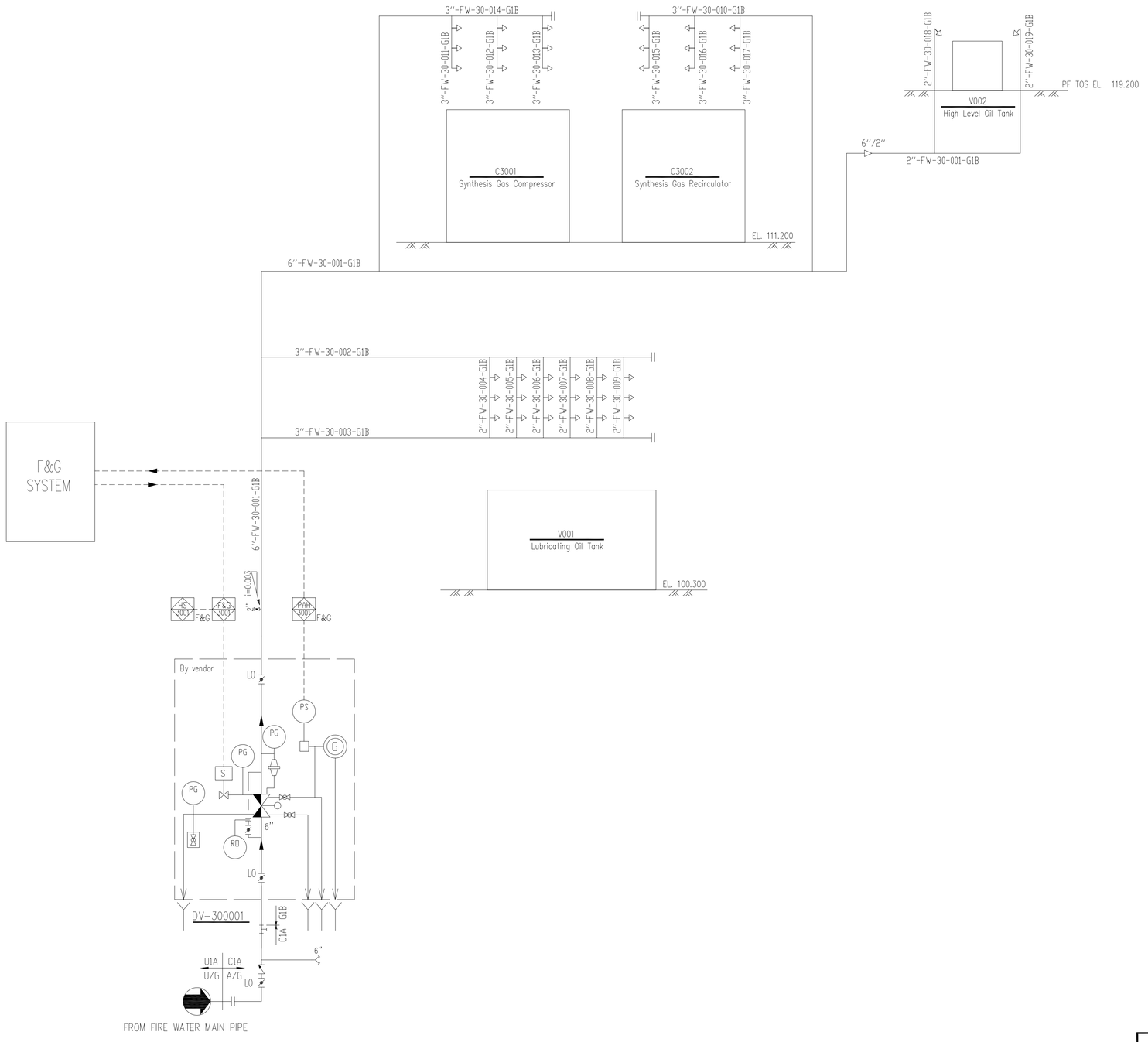
CONTRACTOR DRAWING NO. MKP-11-AS-3000-PS07-PID-027
SHEET 01 TOTAL 01

SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

SYNTHESIS GAS COMPRESSOR PACKAGE
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL SYNTHESIS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-3000-PR-PID-027

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1



GENERAL NOTES

1. THE PIPE SHALL BE SLOPED TO THE DRAIN POINT , THE PIPE SHALL BE DRAINED BY DRAIN VALVE AFTER BEING USED .

DESIGN PRAMETER FOR SPRAY SYSTEM

DELUGE VALVE		DV-300001			
EQP.NO.		V001	V002	C3001	C3002
AREA (m^2)		48.5	2.6	26.0	26.0
INTENSITY ($L/min.m^2$)		20.40	20.40	20.40	20.40
SUPPLY POWER (L/s)		35.06			
PRAMETER FOR NOZZLE	TYPE	MEDIUM-SPEED SPRAY SPRINKLER (CONE NOZZLE)			
	QUANTITY	18	2	9	9
	K-FACTOR	42	42	42	42
	MIN WORKING PRESSUR (MPa)	0.2	0.2	0.2	0.2
	SPRAY ANGLE	90°	90°	90°	90°
	DISTANCE TO EQUIPMENT BODY	2150mm	750mm	1500mm	1500mm

PIPE NUMBER

6" — FW — 30 — 001 — G1B

- 6" — Nominal Diameter
- FW — Fluid Code
- 30 — Unit Number
- 001 — Sequence Number
- G1B — Pipe Class Code

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-3000-PI-PPL-011
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	pressure reducing orifice		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	pressure operated relief valve(P.O.R.V.)		emergency release

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
1	Approved for Construction	10.12.2019	Liu Jian		Cui Yanjun	Deng Wenhui	
0	Approved for Construction	16.03.2017	Liu Jian		Cui Yanjun	Deng Wenhui	
0	Approved for Construction	12.12.2016	Liu Jian		Cui Yanjun	Deng Wenhui	
0	Approved for Construction	19.12.2016	Liu Jian		Cui Yanjun	Deng Wenhui	
0	Approved for Construction	31.10.2016	Liu Jian		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-3000-PF03-PID-001 — SHEET 01 — TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. -- — SHEET – — TOTAL –

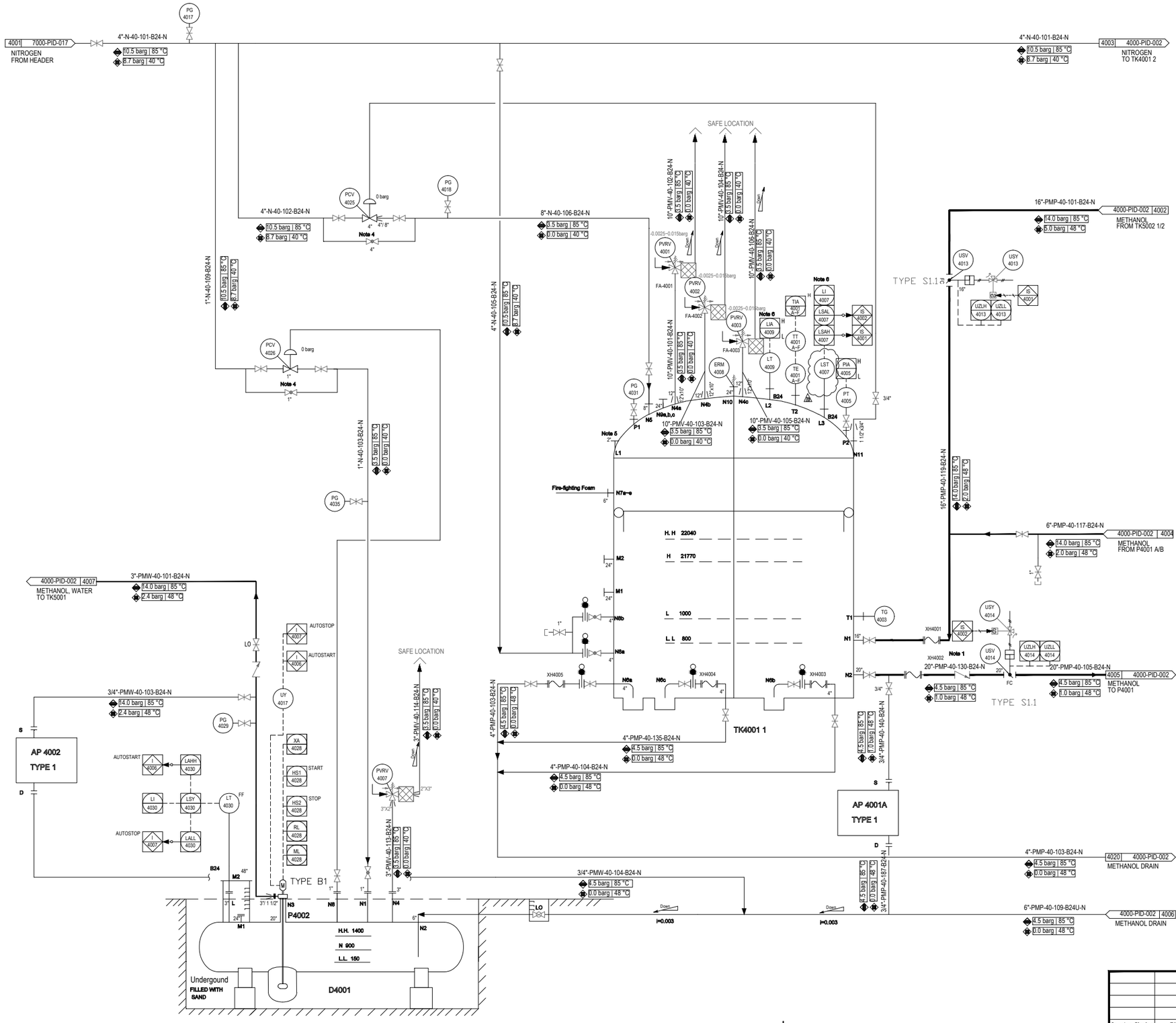
P&ID FOR SPRINKLER SYSTEM IN UNIT 3000	PROJECT	MKP Methanol Project	
	UNIT	Methanol synthesis	
	PHASE	As built drawing	
SCALE N/A	SHEET 1	TOT. 1	SIZE A1
OWNER DWG NO.	MKP-11-AS-3000-SF-PID-001		

Counter Signing	Sign	Date

P4002	METHANOL TANKS UNIT CLOSED DRAIN DRUM PUMP	
CAPACITY	12	m3/h
Head	32	m
POWER	3	kW
MATERIAL	SS	
DRIVER TYPE	MOTOR	

D4001	METHANOL TANKS UNIT CLOSED DRAIN DRUM	
ID x LENGTH	1600 x 3600	mm
VOLUME	7	m3
DESIGN PRESS.	3.5	barg
DESIGN TEMP.	85	°C
MATERIAL SHELL	CS	
Elev. of EQUIPMENT	EL 96.700	m

TK4001 1	METHANOL TANK	
ID x LENGTH	34000 x 27000	mm
NET WORKING CAPACITY	18848	m3
DESIGN PRESS.	-0.003/0.02	barg
DESIGN TEMP.	85	°C
MATERIAL SHELL	CS	
Elev. of EQUIPMENT	EL 101.050	m



GENERAL NOTES

+NOTES:

1) NO POCKET ALLOWED.

2) ALL METHANOL PIPES TO DE CONNECTED TO GROUND FOR ELECTROSTATIC PROTECTION.

4) SELF REGULATING PRESSURE CONTROL VALVE. INSTALLED ON THE TOP OF THE TANK.

5) L1 IS USED FOR THE INDUCED TUBE.

6) LT 4007, LT 4009 SHOULD HAVE A LOCAL INDICATOR EASILY TO BEEN SEEN AT THE TANK SIDE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.01.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	09.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Review	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV.

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-4000-PS07-PID-001

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

METHANOL TANKS (1)
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL TANKS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-4000-PR-PID-001

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

TK4001 2	METHANOL TANK	
ID x LENGTH	34000 x 27000	mm
NET WORKING CAPACITY	18848	m3
DESIGN PRESS.	-0.003/0.02	barg
DESIGN TEMP.	85	°C
MATERIAL SHELL	CS	
Elev. of EQUIPMENT	EL 101.050	m

P4001 A/B	METHANOL TRANSFER PUMP	
CAPACITY	487	m3/h
Head	102	m
POWER	160	kW
MATERIAL	CS	
DRIVER TYPE	MOTOR	
Elev. of Equipment	101.13	m

GENERAL NOTES

NOTES:

1) NO POCKET ALLOWED.

2) ALL METHANOL PIPES TO DE CONNECTED TO GROUND FOR ELECTROSTATIC PROTECTION.

5) SELF REGULATING PRESSURE CONTROL VALVE. INSTALLED ON THE TOP OF THE TANK.

7) L1 IS USED FOR THE INDUCED TUBE.

8) LT 4008, LT 4010 SHOULD HAVE A LOCAL INDICATOR EASILY TO BEEN SEEN AT THE TANK SIDE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.01.2018	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Xu Jun		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	18.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	09.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Review	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG. NO. | DRAWING

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-4000-PS07-PID-002

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO.: –

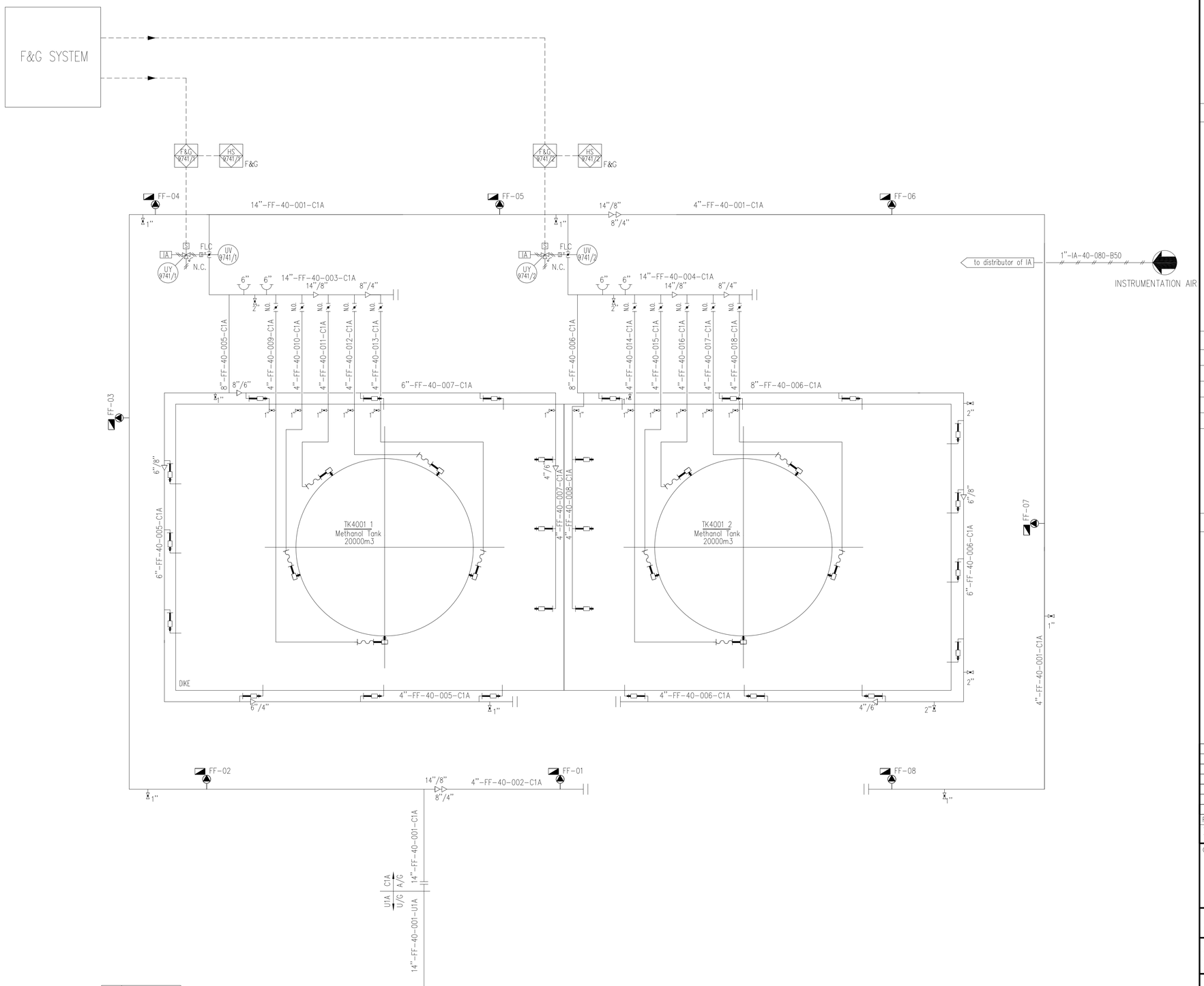
SHEET – TOTAL –

Counter Signing	Sign	Date

METHANOL TANKS (2)
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	METHANOL TANKS
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-4000-PR-PID-002

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1



GENERAL NOTES

Emptying foam solution should be collected to oily water collection system.

PIPE NUMBER

14"— FF — 40 — 001 — C1A

- Pipe Class Code
- Sequence Number
- Unit Number
- Fluid Code
- Nominal Diameter

REFERENCE DRAWINGS

MKP-11-DE-0300-SF-PID-001	MKP-11-DE-4000-PI-PPL-014
MKP-11-DE-9700-SF-SPC-001	

SYMBOLS AND LEGENDS

	Foam chamber (Vertical)		Foam chamber (Horizonal)
	Metalic hose	FF	Foam solution
	Foam hydrant	N.C.	Normal close
	Foam hydrant cabinet	N.O.	Normal open
	Reducer		Fire connection

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved for Construction	31.12.2019	Liu Jian		Cui Yanjun	Deng Wenhui	
2	Approved for Construction	28.11.2019	Liu Jian		Cui Yanjun	Deng Wenhui	
1	Approved for Construction	30.09.2017	Li Yang		Cui Yanjun	Deng Wenhui	
0	Approved for Construction	19.10.2016	Li Yang		Cui Yanjun	Deng Wenhui	
B	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	02.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East
Kimiaye Pars Company

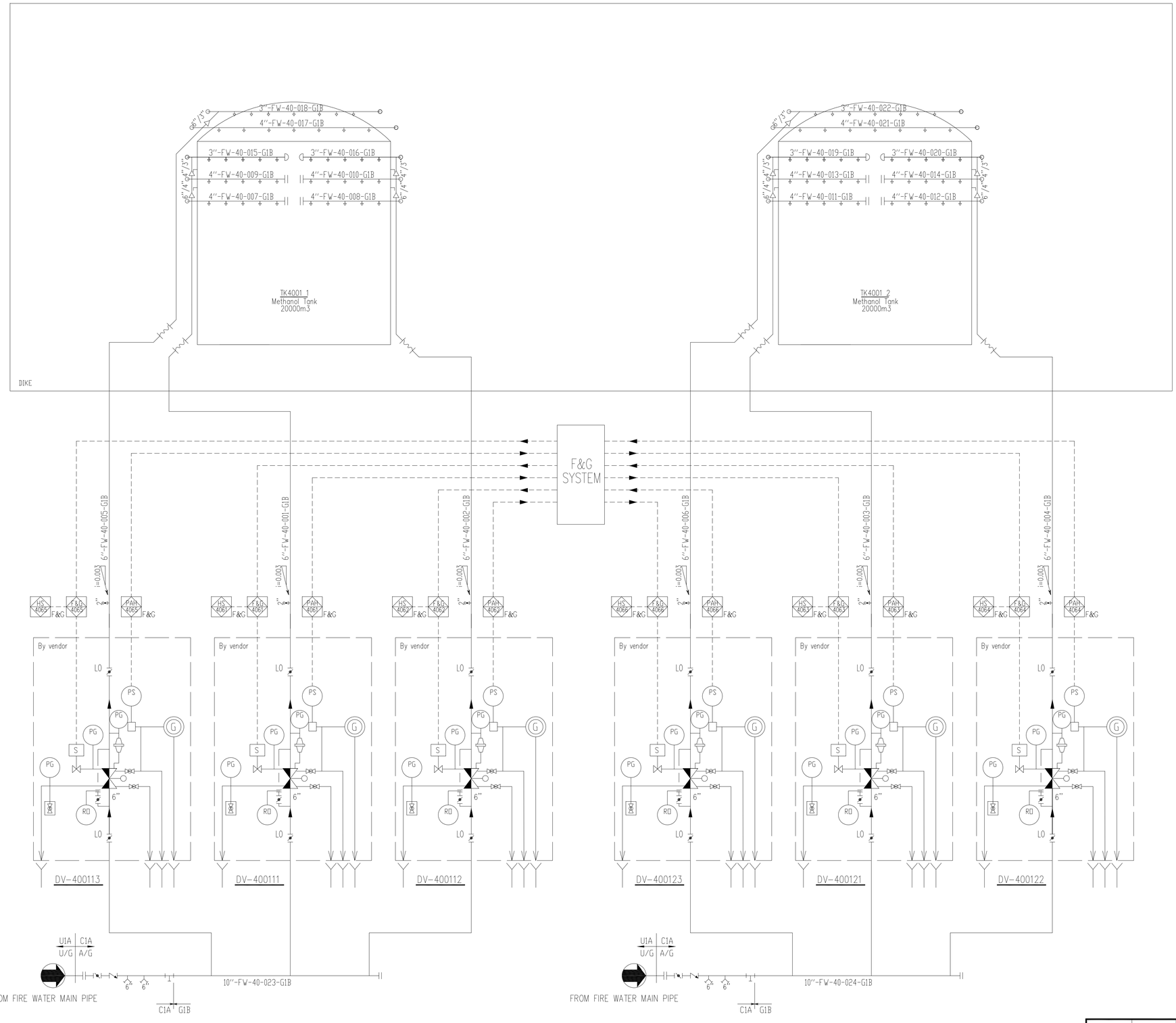
LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — DWG. NO. — DIAGRAM — REV.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-4000-PF03-PID-001 — SHEET 01 TOTAL 01

SUB CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – TOTAL –

P&ID FOR FOAM SYSTEM IN UNIT 4000	PROJECT	MKP Methanol Project	
	UNIT	Methanol Tanks	
	PHASE	As built drawing	
SCALE N/A	SHEET 1	TOT. 1	SIZE A1
	OWNER DWG NO.	MKP-11-AS-4000-SF-PID-001	

Counter Signing	Sign	Date



GENERAL NOTES

PIPE NUMBER

6" — FW — 40 — 001 — G1B

- G1B: Pipe Class Code
- 001: Sequence Number
- 40: Unit Number
- FW: Fluid Code
- 6": Nominal Diameter

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-4000-PI-PPL-014
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	metal hose		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	vacuum stiff. ring		blind flange
	pipe gap		emergency release
	pressure operated relief valve(P.O.R.V.)		

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	15.03.2016	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	16.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
A	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENCE: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-4000-PF03-PID-002

SHEET 01 TOTAL 01

SUB CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO. –

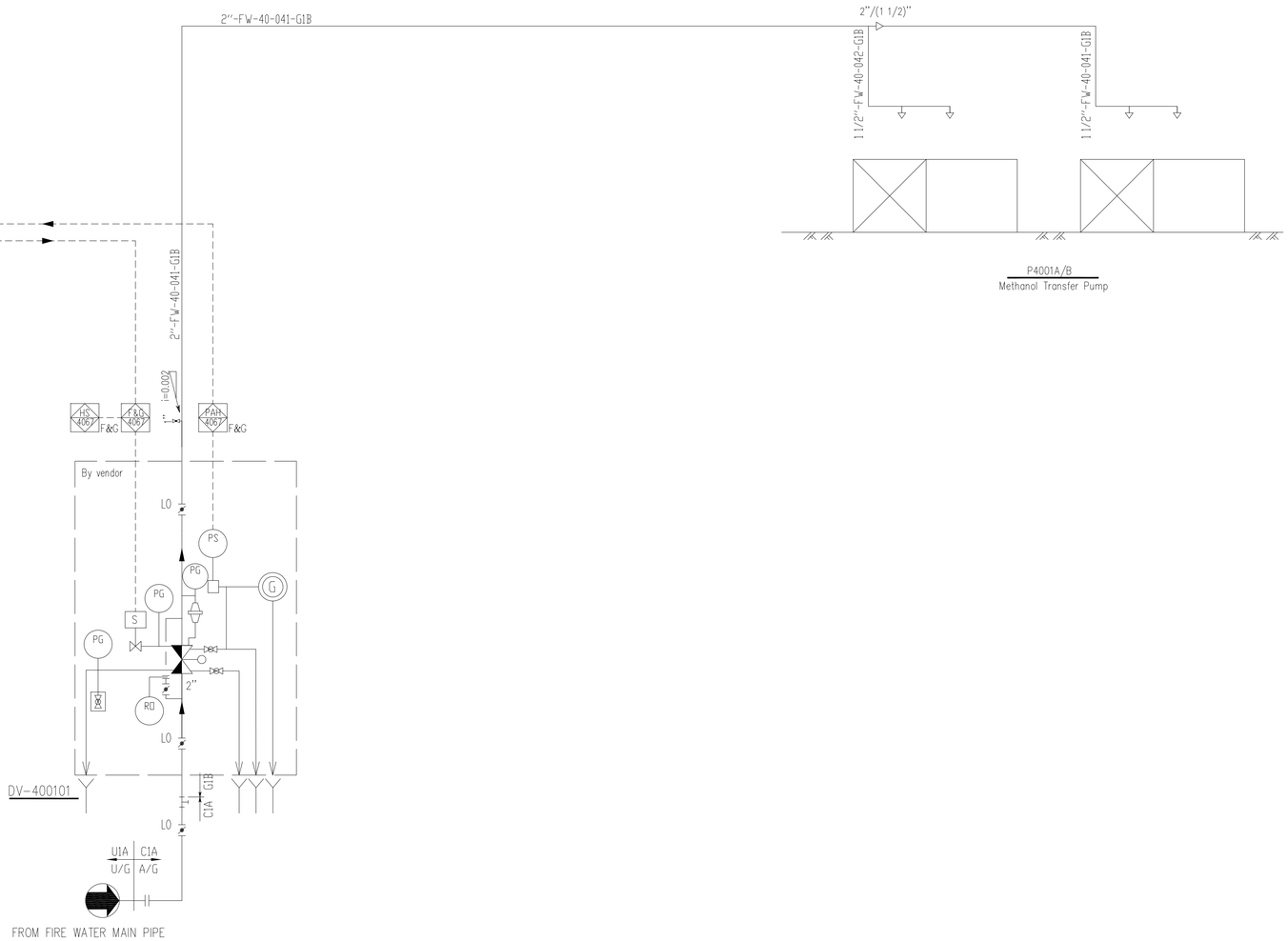
SHEET – TOTAL –

P&ID FOR SPRINKLER SYSTEM IN UNIT 4000

PROJECT	MKP Methanol Project
UNIT	Methanol Tanks
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-4000-SF-PID-002

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date



GENERAL NOTES

1. THE PIPE SHALL BE SLOPED TO THE DRAIN POINT , THE PIPE SHALL BE DRAINED BY DRAIN VALVE AFTER BEING USED .
2. DELUGE VALVE SHALL BE LOCATED AT A MINIMUM DISTANCE OF 15m AWAY FROM PROTECTED EQUIPMENT.
3. DOWN STREAM OF DELUGE VALVE SHALL BE CONSIDERED AS DRY SECTION AND FACILITIES SHALL BE PROVIDED TO DRAIN THE DRY PIPING AFTER OPERATION.

DESIGN PRAMETER FOR SPRAY SYSTEM

DELUGE VALVE		DV-400101	
EQP.NO.		P4001A	P4001B
AREA (m^2)		5.55	5.55
INTENSITY ($L/min.m^2$)		20.40	20.40
SUPPLY POWER (L/s)		4.8	
PRAMETER FOR NOZZLE	TYPE	MEDIUM-SPEED SPRAY SPRINKLER (CONE NOZZLE)	
	QUANTITY	2	2
	K-FACTOR	67	67
	MIN WORKING PRESSUR (MPa)	0.2	0.2
	SPRAY ANGLE	90°	90°
	DISTANCE ABOVE GROUND	2140mm	2140mm

PIPE NUMBER

6" — FW — 40 — 001 — G1B

- Pipe Class Code
- Sequence Number
- Unit Number
- Fluid Code
- Nominal Diameter

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-4000-PI-PPL-014
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	pressure reducing orifice		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	pressure operated relief valve(P.O.R.V.)		emergency release

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
5	Approved For Construction	02.06.2017	Li Yang		Cui Yanjun	Deng Wenhui	
4	Approved For Construction	15.03.2017	Li Yang		Cui Yanjun	Deng Wenhui	
3	Approved For Construction	16.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
2	Approved For Construction	31.10.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-4000-PF03-PID-003 — SHEET 01 — TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – — TOTAL –

P&ID FOR SPRINKLER SYSTEM FOR PUMPS IN UNIT 4000

PROJECT	MKP Methanol Project
UNIT	Methanol Tanks
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-4000-SF-PID-003

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date

TK 5001	RAW METHANOL BUFFER TANK
ID x LENGTHCT-T)	25000 x 22000mm
NET WORKING CAPACITY	7440 m3
DESIGN PRESS.	-0.006~0.020 barg
DESIGN TEMP.	85 °C
INSULATION	NONE
LEVEL OF EQUIPMENT	101.300 m

T 5004	VENT WASH COLUMN
ID x LENGTHCT-T)	1500 x 7000 mm
DESIGN PRESS.	FV/3.5 barg
DESIGN TEMP.	85 °C
INSULATION	NONE
LEVEL OF EQUIPMENT	125.750 m

L 5001	HOIST 5001
TYPE	CHAIN NO SPARK HOIST
CAPACITY	5 t
LIFT HEIGHT	5.5 m
SLIDING DISTANCE	20 m

P 5001 A/B/C	RAW METHANOL PUMP
CAPACITY	186.6 m3/h
HEAD	69 m
DENSITY@OT	792 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR
LEVEL OF EQUIPMENT	101.200 m

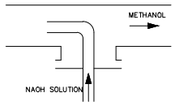
GENERAL NOTES

+NOTES:

1) LI 1-5001 AT GRADE.

2) MIN. DISTANCE TO TK 5001.

3) NAOH SOLUTION INJECTION CONNECTION.



+4) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

5) T 5004 MUST BE LOCATED ON TOP OF TK 5001.

6) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET FLOWRATE DECREASED.

7) AP-5021 SHALL BE PLACED NEAR T5004 NOZZLE B2.

8) THIS FLAME ARRESTER WILL BE PROVIDED WITH PVRV TOGETHER BY PVRV VENDOR.

9) CRANE IS USED FOR P5001 A/B/C MAINTENANCE.

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.01.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	10.07.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.06.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, KONGENS LYNGBY, DENMARK
DOCUMENT NAME: CRUDE METHANOL TANK PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 DWG NO. 1341739 DOC. GRP. 42 DIAGRAM P29 REV. A

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-001
SHEET 01 TOTAL 01

SUB-CONTRACTOR: –
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

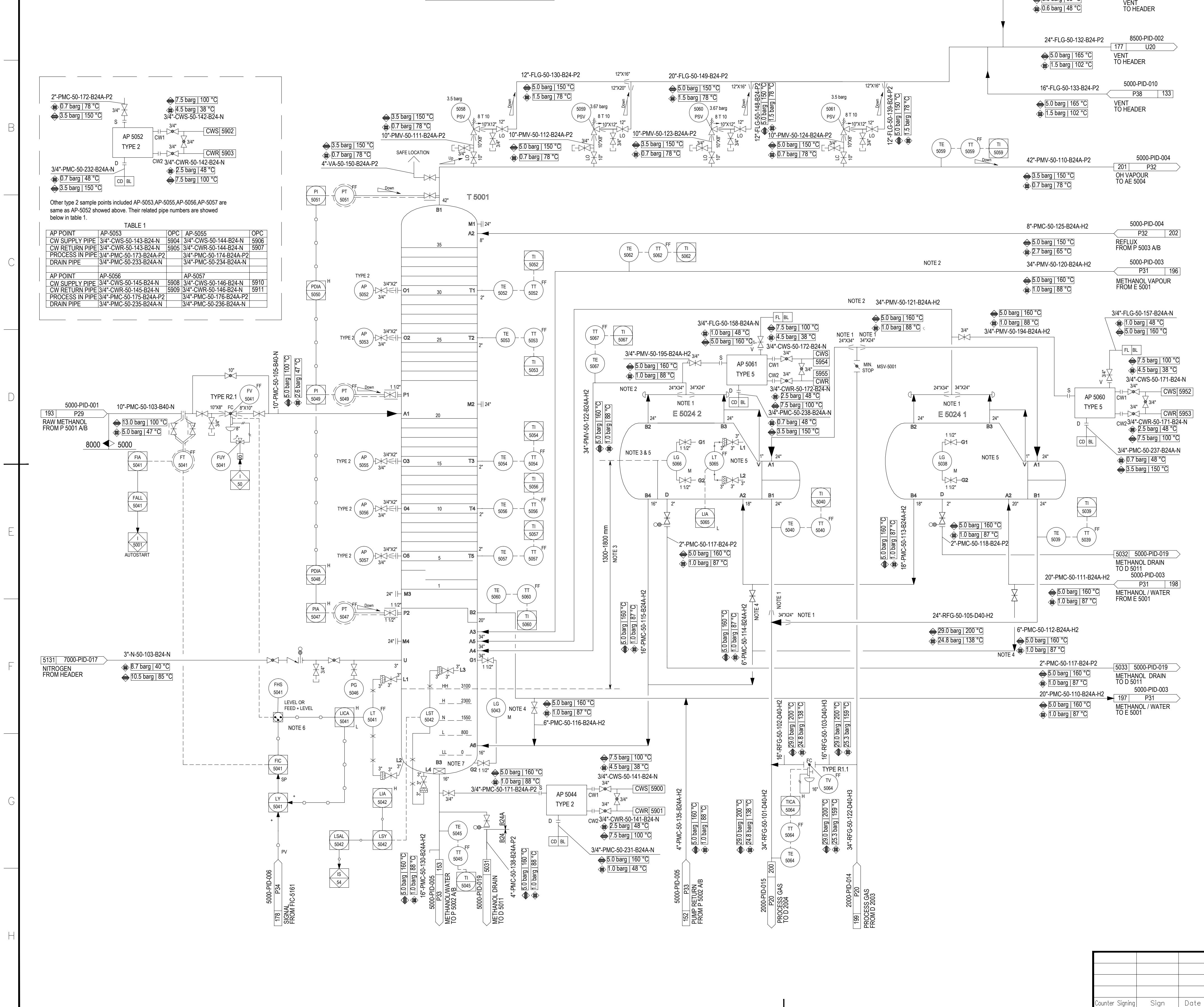
Counter Signing	Sign	Date

CRUDE METHANOL TANK
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
SCALE: –	SHEET: 1 / TOT.: 1 / SIZE: A1
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-001

T 5001	STABILIZER COLUMN
ID x LENGTH(T-T)	4300 x 28700 mm
DESIGN PRESS.	FV/3.5 barg
DESIGN TEMP.	150 °C
INSULATION	YES
LEVEL OF EQUIPMENT	109.900 m

E 5024 1/2	STABILIZER COLUMN REBOILER
DUTY	42.7 MW
DESIGN PRESS.(TU./SH.)	29/(FV/5.0) barg
DESIGN TEMP.(TU./SH.)	200/160 °C
INSULATION	YES



Other type 2 sample points included AP-5053,AP-5055,AP-5056,AP-5057 are same as AP-5052 showed above. Their related pipe numbers are showed below in table 1.

TABLE 1

AP POINT	AP-5053	OPC	AP-5055	OPC
CW SUPPLY PIPE	3/4"-CWS-50-143-B24-N	5904	3/4"-CWS-50-144-B24-N	5906
CW RETURN PIPE	3/4"-CWR-50-143-B24-N	5905	3/4"-CWR-50-144-B24-N	5907
PROCESS IN PIPE	3/4"-PMC-50-173-B24A-P2		3/4"-PMC-50-174-B24A-P2	
DRAIN PIPE	3/4"-PMC-50-233-B24A-N		3/4"-PMC-50-234-B24A-N	
AP POINT	AP-5056		AP-5057	
CW SUPPLY PIPE	3/4"-CWS-50-145-B24-N	5908	3/4"-CWS-50-146-B24-N	5910
CW RETURN PIPE	3/4"-CWR-50-145-B24-N	5909	3/4"-CWR-50-146-B24-N	5911
PROCESS IN PIPE	3/4"-PMC-50-175-B24A-P2		3/4"-PMC-50-176-B24A-P2	
DRAIN PIPE	3/4"-PMC-50-235-B24A-N		3/4"-PMC-50-236-B24A-N	

GENERAL NOTES

NOTES:

1) SYMMETRICAL PIPING.

2) NO POCKETS

3) UPPER EDGE OF OVERFLOW WEIRS IN E 5024 2 TO BE 1800 mm ABOVE MAX. LEVEL IN T 5001.

4) GRAVIATIONAL LIQUID FLOW FROM T 5001 TO E 5024 1/2 E 5001 AND BACK TO T 5001. PIPING MUST BE SELF-DRAINING WHEN BYPASS IS OPEN.

5) TOP OF TUBE BUNDLE IN E 5024 1/2 AND E 5001 MUST BE IN SAME ELEVATION.

6) SWITCHING OF FHS-5041 (SYMBOLIC INDICATED) FROM 3-ELEMENT LEVEL CONTROL VIA FIC- 5041 TO SINGLE ELEMENT LEVEL CONTROL IS DONE WITH AUTOMATIC CHANGE OF TUNING CONSTANTS IN LIC-5041.

7) NOZZLE B3 ON T 5001 MUST BE LOCATED MIN. 4.3 m ABOVE P 5002 A/B. TO BE CONFIRMED BY PUMP VENDOR.

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A4	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C1	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER: Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: STABILIZER COLUMN PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | DWG. NO. 1341740 | DIAGRAM P30 | REV. 4

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-002 | SHEET 01 | TOTAL 01

SUB-CONTRACTOR DRAWING NO. – | SHEET – | TOTAL –

Counter Signing	Sign	Date

STABILIZER COLUMN
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-002

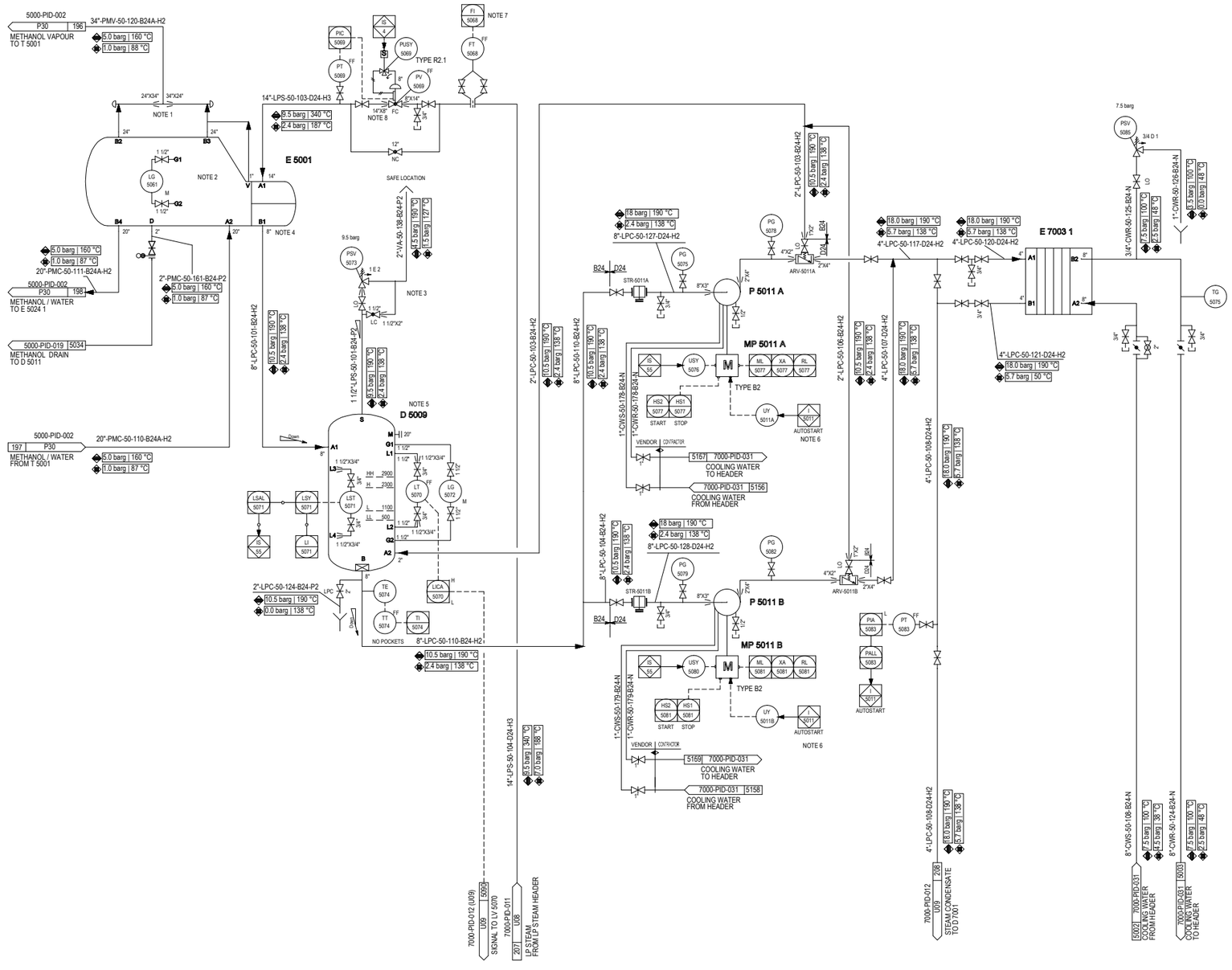
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

E 5001	STABILIZER COLUMN STEAM REBOILER
DUTY	21.4 MW
DESIGN PRESS.(TU/SH)	(FV/95)/(FV/5.0)barg
DESIGN TEMP.(TU/SH)	340/160 °C
INSULATION	YES

D 5009	STEAM CONDENSATE K.O. DRUM FOR E 5001
ID x LENGTH(T-T)	1150 x 3400 mm
DESIGN PRESS.	FV/10.5 barg
DESIGN TEMP.	190 °C
INSULATION	YES
CLADDING/LINING	NONE
LEVEL OF EQUIPMENT	105.600 m

P 5011 A/B	STEAM CONDENSATE PUMP
CAPACITY	53.8 m3/h
HEAD	61 m
DENSITY@DT	951 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR
LEVEL OF EQUIPMENT	101.200 m

E 7003 1	EXCESS STEAM CONDENSATE COOLER
DUTY	3.51 MW
DESIGN PRESS.(TU/SH)	7.5/19 barg
DESIGN TEMP.(TU/SH)	100/190 °C
INSULATION	YES



GENERAL NOTES

+NOTES:

1) SYMMETRICAL PIPING.

2) TOP OF TUBE BUNDLE IN E 2024 1/2 AND E 5001 MUST BE IN SAME ELEVATION.

3) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

4) STEAM CONDENSATE OUTLET NOZZLE ON E 5001 TO BE ELEVATED ABOVE INLET NOZZLE A1 ON D 5009

5) NOZZLE B ON D 5009 MUST BE LOCATED MIN. 4 m ABOVE P 5011 A/B. (TO BE CONFIRMED BY PUMP VENDOR).

6) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

7) P&T COMPENSATION FROM PIC-7056,TI-7056.

8) PV-5069 INCLUDE 1 NOISE REDUCTION DISKS, THE SIZE IS 14" AND THE REDUCER CONSIDERED BY PIPING.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	28.03.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construtuion	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK

DOCUMENT NAME: STABILIZER COLUMN REBOILER PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC GRP. 42 | REV. 4
TASK NO. 1341741 | DIAGRAM P31

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-5000-PS07-PID-003
SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

STABILIZER COLUMN REBOILER
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-003

Counter Signing	Sign	Date

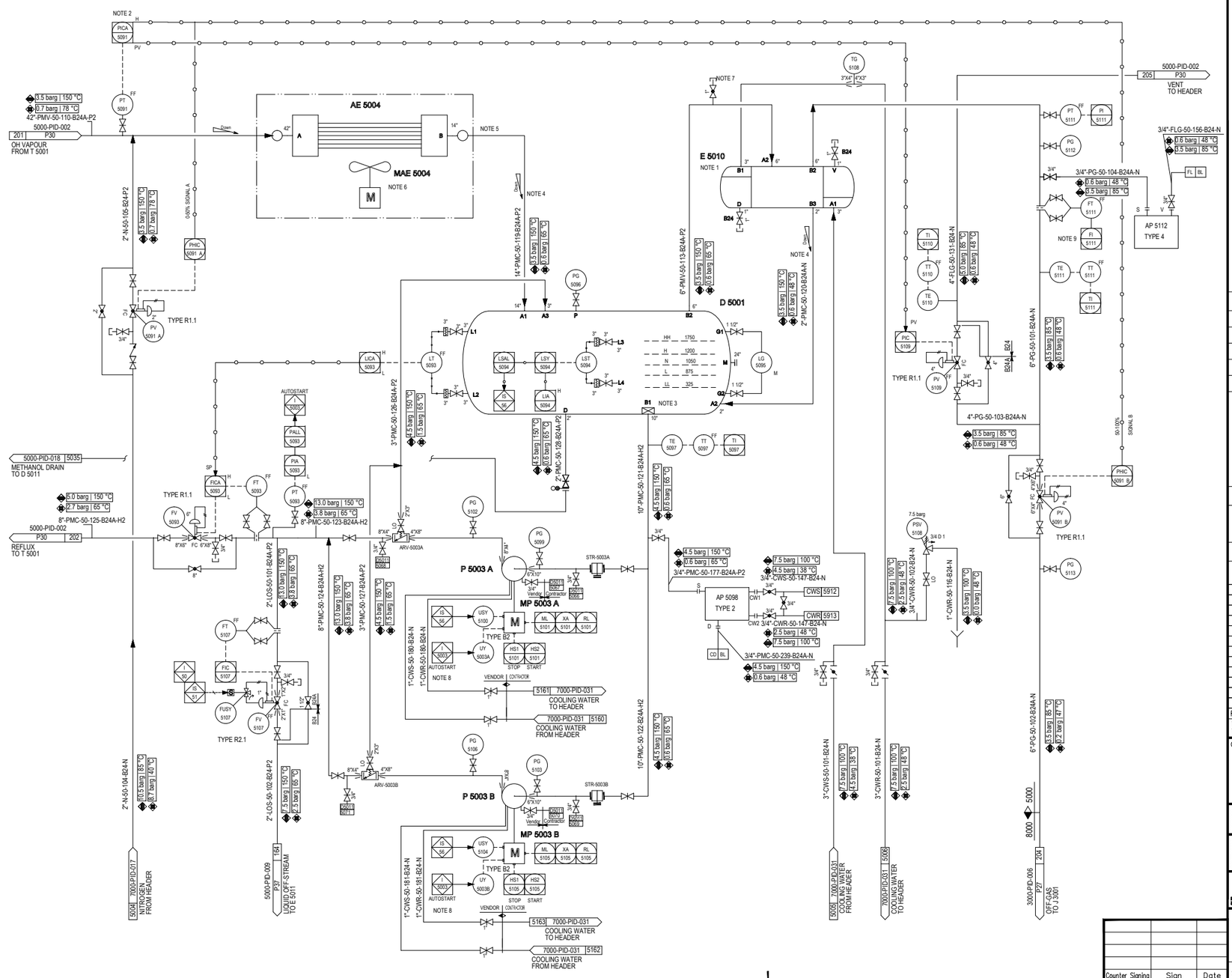
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

AE 5004	STABILIZER COLUMN OH CONDENSER
DUTY	33.5 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NA barg
DESIGN TEMP.(TU/SH)	150/NA °C

D 5001	STEAM COLUMN OH ACCUMULATOR
ID x LENGTH(T-T)	2100 x 6500 mm
DESIGN PRESS.	FV/3.5 barg
DESIGN TEMP.	150 °C
INSULATION	YES
CLADDING/LINING	NONE
LEVEL OF EQUIPMENT	113.200 m

P 5003 A/B	STABILIZER COLUMN REFLUX PUMP
CAPACITY	192.6 m3/h
HEAD	57 m
DENSITY@DT	752 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR
LEVEL OF EQUIPMENT	101.160 m

E 5010	OH GAS CONDENSER
DUTY	0.30 MW
DESIGN PRESS.(TU/SH)	7.5/(FV/3.5) barg
DESIGN TEMP.(TU/SH)	100/150 °C
INSULATION	NONE

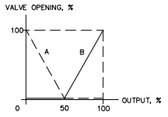


GENERAL NOTES

+NOTES:

1) E 5010 TO BE MOUNTED FOR SELF-DRAINING TO D 5001.

2) FUNCTION OF PIC-5091:



3) NOZZLE B1 ON D 5001 MUST BE PLACED MIN. 4 m ABOVE P 5003 A/B (TO BE CONFIRMED BY PUMP VENDOR).

4) NO POCKETS.

5) TWS TO BE INSTALLED ON EACH OUTLET HEADER FROM AE 5004.

6) DETAIL AIR COOLER DRAWING IN 5000-PR-PID-024.

7) VENT TO SAFE LOCATION.

8) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

9) P&T COMPENSATION FROM PI-5111,TI-5111.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
3	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	26.03.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
9	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
8	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
7	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
4	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: STABILIZER COLUMN OH SYSTEM PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. 3 | DWG. NO. 1341742 | DIAGRAM P32

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-004

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

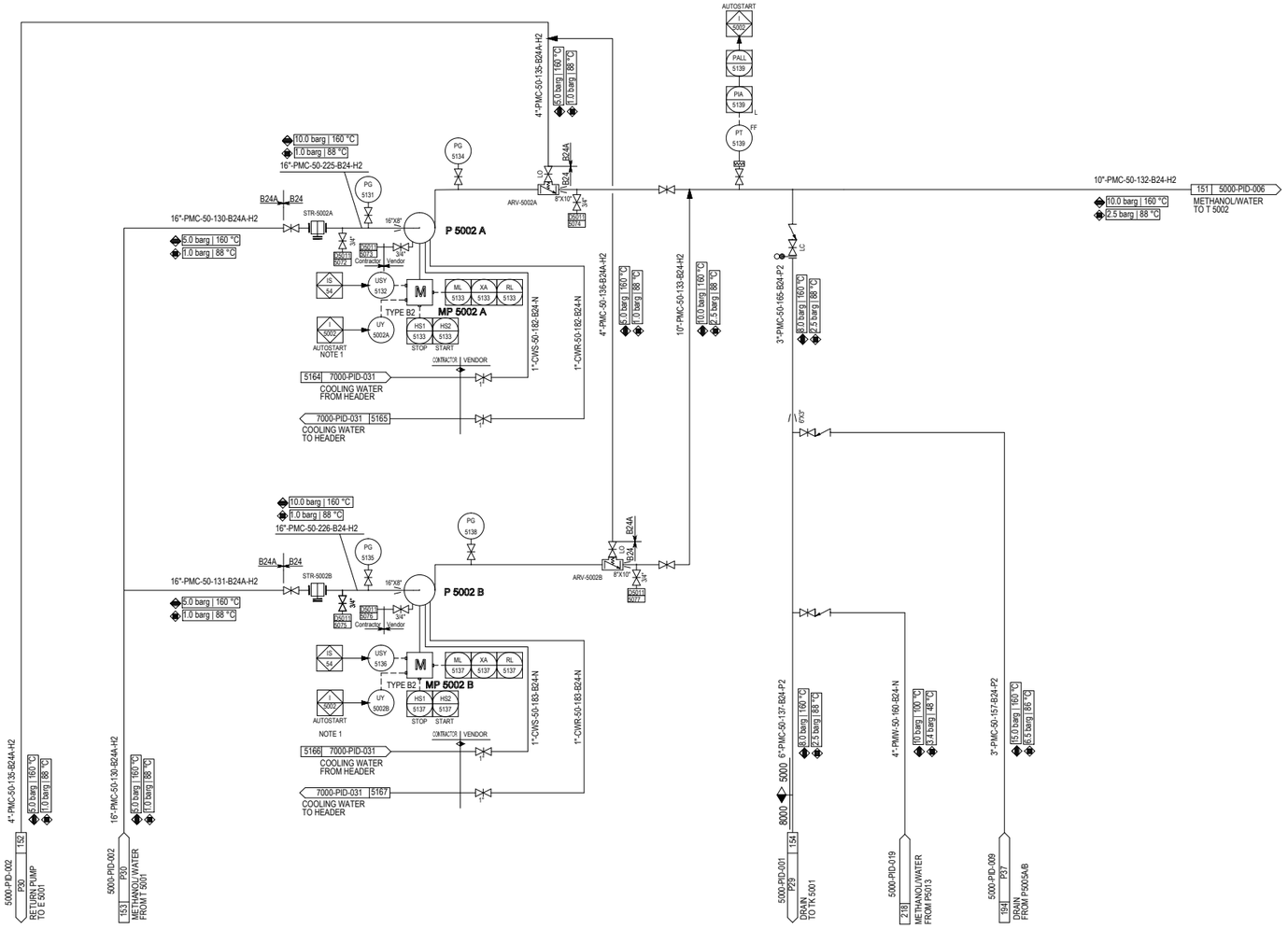
STABILIZER COLUMN OH SYSTEM
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-004

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing	Sign	Date

P 5002 A/B	STABILIZER METHANOL PUMP	
CAPACITY	390.6	m3/h
HEAD	35	m
DENSITY@OT	753	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	101.280	m



GENERAL NOTES

1) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S

DOCUMENT NAME: STABILIZER COLUMN PUMPS PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 DWG NO. 1341743 DOC. GRP. 42 DIAGRAM P33 REV. 3

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-005

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

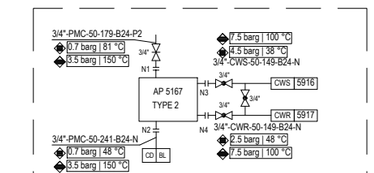
SHEET – TOTAL –

Counter Signing	Sign	Date

STABILIZER COLUMN PUMPS PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-005

SCALE: – SHEET:1 TOT.:1 SIZE: A1



T 5002	LP METHANOL COLUMN
ID x LENGTH(T-T)	7700 x 43400 mm
DESIGN PRESS.	FV/3.5 barg
DESIGN TEMP.	150 °C
INSULATION	YES
LEVEL OF EQUIPMENT	111.900 m

E 5002 4	LP COLUMN REBOILER
DUTY	31.3 MW
DESIGN PRESS.(TU./SH.)	(FV/6.0)/(FV/5.0) barg
DESIGN TEMP.(TU./SH.)	165/160 °C
INSULATION	YES

Other type 2 sample points included AP-5171,AP-5173,AP-5174,AP-5175,AP-5180 are same as AP-5167 showed above. Their related pipe numbers are showed below in table 2.

TABLE 2

AP POINT	AP-5171	OPC	AP-5173	OPC
CW SUPPLY PIPE	3/4"-CWS-50-150-B24-N	5918	3/4"-CWS-50-151-B24-N	5920
CW RETURN PIPE	3/4"-CWR-50-150-B24-N	5919	3/4"-CWR-50-151-B24-N	5921
PROCESS IN PIPE	3/4"-PMC-50-180-B24-P2		3/4"-PMC-50-181-B24-P2	
DRAIN	3/4"-PMC-50-242-B24-N		3/4"-PMC-50-243-B24-N	
AP POINT	AP-5174		AP-5175	
CW SUPPLY PIPE	3/4"-CWS-50-152-B24-N	5922	3/4"-CWS-50-153-B24-N	5924
CW RETURN PIPE	3/4"-CWR-50-152-B24-N	5923	3/4"-CWR-50-153-B24-N	5925
PROCESS IN PIPE	3/4"-PMC-50-182-B24-P2		3/4"-PMC-50-183-B24-P2	
DRAIN	3/4"-PMC-50-244-B24-N		3/4"-PMC-50-245-B24-N	
AP POINT	AP-5180			
CW SUPPLY PIPE	3/4"-CWS-50-154-B24-N	5926		
CW RETURN PIPE	3/4"-CWR-50-154-B24-N	5927		
PROCESS IN PIPE	3/4"-PMC-50-184-B24-P2			
DRAIN	3/4"-PMC-50-246-B24-N			

GENERAL NOTES

NOTES:

1) NO POCKETS.

2) GRAVITIONAL LIQUID FLOW FROM T 5002 TO E 5002 1/2/3/4 AND BACK TO T 5002.

PIPING MUST BE SELFDRAINING WHEN BYPASS IS OPEN.

3) UPPER EDGE OF OVERFLOW WEIR IN E 5002 4 TO BE LOCATED 3100 mm ABOVE MAX. LEVEL IN T 5002.

4) SWITCHING OF FHS-5161 (SYMBOLIC INDICATED) FROM 3-ELEMENT LEVEL CONTROL VIA FIC- 5161 TO SINGLE ELEMENT LEVEL CONTROL IS DONE WITH AUTOMATIC CHANGE OF TUNING CONSTANTS IN LIC-5161.

5) TOP OF TUBE BUNDLE IN E 5002 1/2/3/4 MUST BE IN SAME ELEVATION.

6) MINIMUM 500mm UPWARDS LINE.

7) NOZZLE B3 ON T 5002 MUST BE LOCATED MIN. 3.5m ABOVE P 5005 A/B. (TO BE CONFIRMED BY PUMP VENDOR.)

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
Z01	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
7	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	11.11.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR
HALDOR TOPSØE A/S
COPENHAGEN
DENMARK

DOCUMENT NAME:	JOB NO.	DOC. GRP.	REV.
LP METHANOL COLUMN PIPING AND INSTRUMENT DIAGRAM	S-02115	42	4
	DWG. NO. 1341744	DIAGRAM P34	

CONTRACTOR
中国天辰工程有限公司
CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-5000-PS07-PID-006
SHEET 01 TOTAL 01

SUB CONTRACTOR
SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

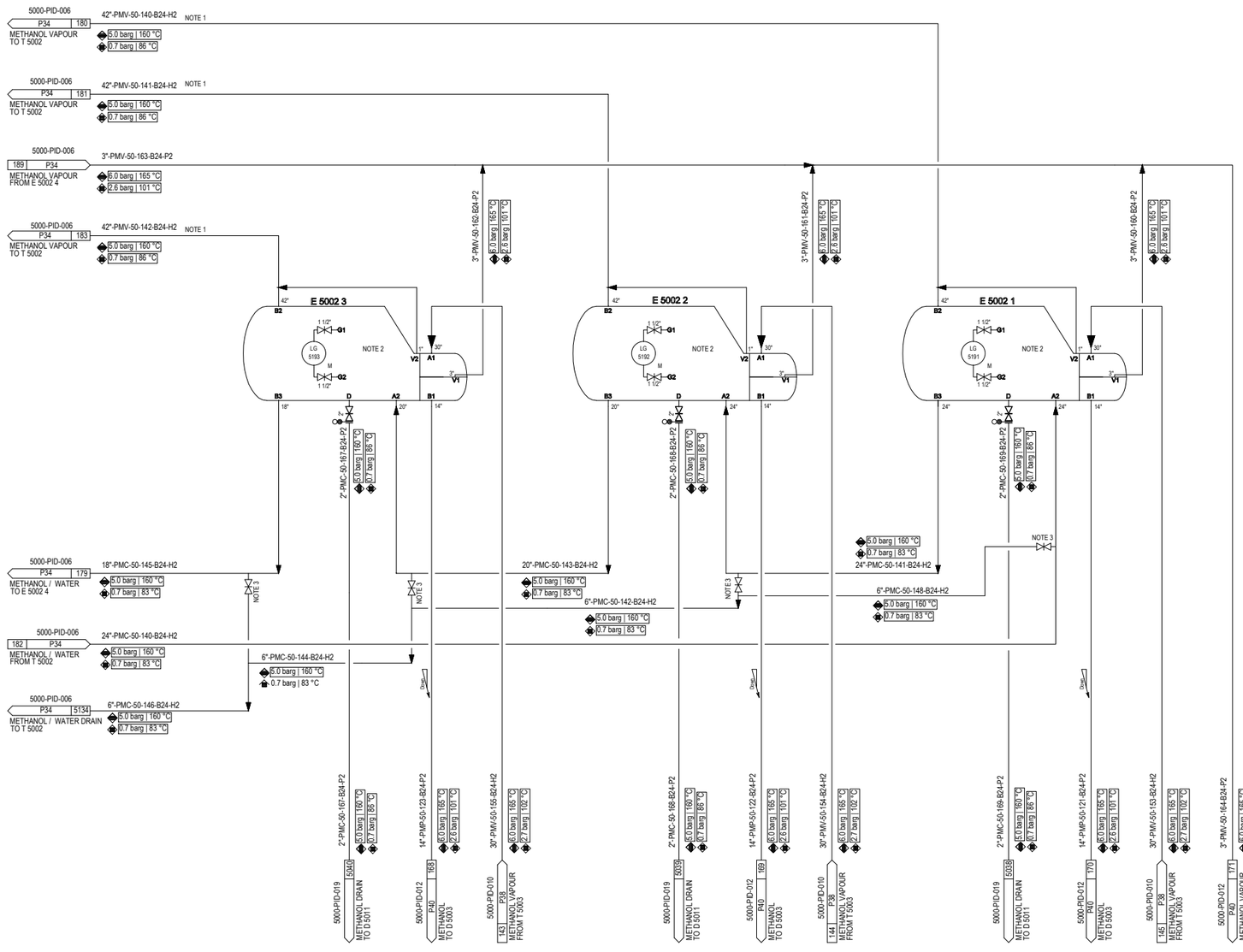
Counter Signing	Sign	Date

LP METHANOL COLUMN PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project
	UNIT	Distillation Unit
	PHASE	As Built Drawing
SCALE: – SHEET: 1 TOT.: 1 SIZE: A1	OWNER DWG NO.	MKP-11-AS-5000-PR-PID-006

E 5002 3	LP COLUMN REBOILER
DUTY	31.3 MW
DESIGN PRESS.(TU/SH)	(FV/6.0)/(FV/5.0) barg
DESIGN TEMP.(TU/SH)	165/160 °C
INSULATION	YES

E 5002 2	LP COLUMN REBOILER
DUTY	31.3 MW
DESIGN PRESS.(TU/SH)	(FV/6.0)/(FV/5.0) barg
DESIGN TEMP.(TU/SH)	165/160 °C
INSULATION	YES

E 5002 1	LP COLUMN REBOILER
DUTY	31.3 MW
DESIGN PRESS.(TU/SH)	(FV/6.0)/(FV/5.0) barg
DESIGN TEMP.(TU/SH)	165/160 °C
INSULATION	YES



GENERAL NOTES

+NOTES:

1) NO POCKETS.

2) TOP OF TUBE BUNDLE IN E 5002 1/2/3/4 MUST BE IN SAME ELEVATION.

3) UPPER EDGE OF OVERFLOW WEIR. GRAVITIONAL LIQUID FLOW FROM T 5002 TO E 5002 1/2/3/4 AND BACK TO T 5002. PIPING MUST BE SELFDRAINING WHEN BYPASS IS OPEN.

4) VENT TO SAFE LOCATION.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
6	As Built	30.04.2020	Li Zhijuan		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: LP METHANOL COLUMN REBOILER PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DWG. NO. 1341745 | DOC. GRP. 42 | DIAGRAM P35 | REV. 3

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-007

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

LP METHANOL COLUMN REBOILER PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-007

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

E 5008	METHANOL PRODUCT COOLER NO.1	
DUTY	1.6	MW
DESIGN PRESS.(TU/SH)	7.5/13	barg
DESIGN TEMP.(TU/SH)	100/150	°C
INSULATION	YES	

AE 5005	LP COLUMN OH CONDENSER	
DUTY	127.7	MW
ID x LENGTH(T-T)	BY VENDOR	mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NA	barg
DESIGN TEMP.(TU/SH)	150/NA	°C

P 5004 A/B	LP COLUMN REFLUX PUMP	
CAPACITY	725.3	m3/h
HEAD	92	m
DENSITY@DT	750	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	101.440	m

D 5002	LP COLUMN OH ACCUMULATOR	
ID x LENGTH(T-T)	3300 x 9850	mm
DESIGN PRESS.	FV/3.5	barg
DESIGN TEMP.	150	°C
INSULATION	YES	
CLADDING/LINING	NONE	
LEVEL OF EQUIPMENT	105.200	m

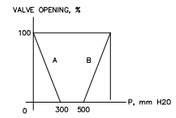
GENERAL NOTES

+NOTES:

1) NOZZLE B ON D 5002 MUST BE LOCATED MIN. 4 m. ABOVE P 5004 A/B (TO BE CONFIRMED BY PUMP VENDOR) .

2) VENT TO BE AT HIGHER ELEVATION THAN AE 5005 AND AT SAFE LOCATION.

3) FUNTION OF PIC-5207:



+4) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

5) TW'S TO BE INSTALLED ON EACH OUTLET HEADER FROM AE 5005.

6) DETAIL AIR COOLER DRAWING IN 5000-PR-PID-023(1) TO 5000-PR-PID-023(4).

7) ONE SET IN WARE HOUSE (E 5008).

8) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	11.11.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S — COPENHAGEN DENMARK

DOCUMENT NAME: LP METHANOL COLUMN OH SYSTEM PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 3

DWG NO. 1341746 | DIAGRAM P36

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-008

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – | TOTAL –

Counter Signing	Sign	Date

LP METHANOL COLUMN OH SYSTEM PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-008

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

P 5005 A/B	MP COLUMN FEED PUMP	
CAPACITY	182.1	m3/h
HEAD	94	m
DENSITY@DT	786	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	101.230	m

E 5011	LIQUID OFF-STREAM COOLER	
DUTY	0.16	MW
DESIGN PRESS.(TU/SH)	7.5/7.5	barg
DESIGN TEMP.(TU/SH)	100/175	°C
INSULATION	YES	

GENERAL NOTES

1) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.
2) FV-5441 MUST BE LOCATED AS CLOSE AS POSSIBLE TO E 5011.
3) FOR T5002 BOTTOM DRAIN TO D5011.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
7	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	26.03.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
B	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK
DOCUMENT NAME: MP METHANOL COLUMN FEED PUMP PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | DWG NO. 1341747 | DIAGRAM P37 | REV. 4

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-009
SHEET 01 TOTAL 01

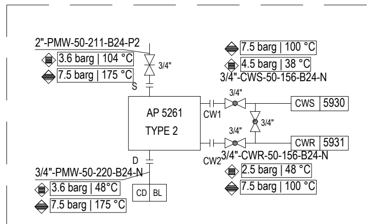
SUB CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

MP METHANOL COLUMN FEED PUMP PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-5000-PR-PID-009



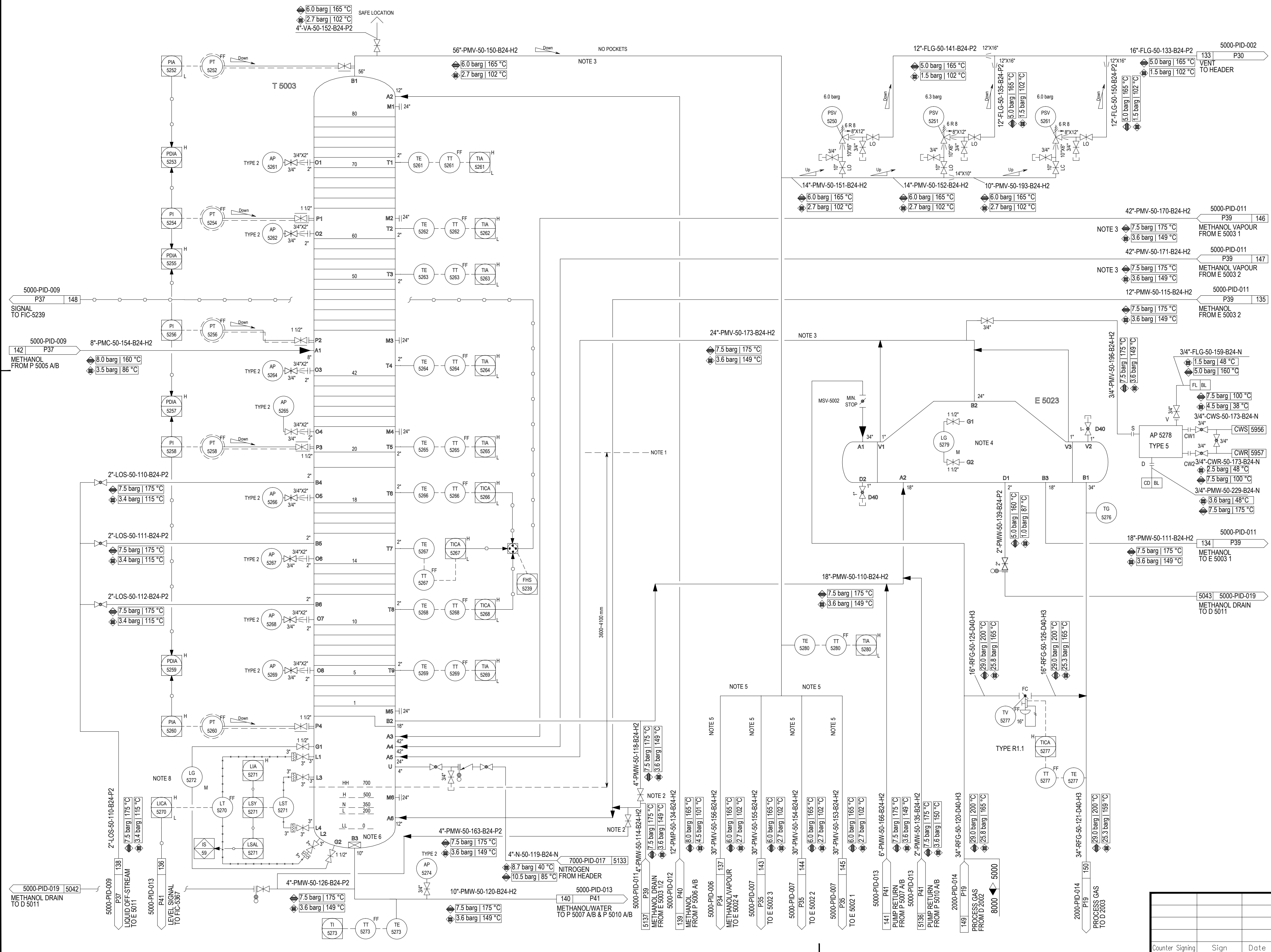
Other type 2 sample points included AP-5262,AP-5264,AP-5265,AP-5266,AP-5267 AP-5268,AP-5269,AP-5274 are same as AP-5261 showed above. Their related pipe numbers are showed right in table 3.

TABLE 3

AP POINT	AP-5262	OPC	AP-5264	OPC
CW SUPPLY PIPE	3/4"-CWS-50-157-B24-N	5932	3/4"-CWS-50-158-B24-N	5934
CW RETURN PIPE	3/4"-CWR-50-157-B24-N	5933	3/4"-CWR-50-158-B24-N	5935
PROCESS IN PIPE	3/4"-PMW-50-212-B24-P2		3/4"-PMW-50-213-B24-P2	
DRAIN	3/4"-PMW-50-221-B24-N		3/4"-PMW-50-222-B24-N	
AP POINT	AP-5265		AP-5266	
CW SUPPLY PIPE	3/4"-CWS-50-159-B24-N	5936	3/4"-CWS-50-160-B24-N	5938
CW RETURN PIPE	3/4"-CWR-50-159-B24-N	5937	3/4"-CWR-50-160-B24-N	5939
PROCESS IN PIPE	3/4"-PMW-50-214-B24-P2		3/4"-PMW-50-215-B24-P2	
DRAIN	3/4"-PMW-50-223-B24-N		3/4"-PMW-50-224-B24-N	
AP POINT	AP-5267		AP-5268	
CW SUPPLY PIPE	3/4"-CWS-50-161B24-N	5940	3/4"-CWS-50-162-B24-N	5942
CW RETURN PIPE	3/4"-CWR-50-161-B24-N	5941	3/4"-CWR-50-162-B24-N	5943
PROCESS IN PIPE	3/4"-PMW-50-216-B24-P2		3/4"-PMW-50-217-B24-P2	
DRAIN	3/4"-PMW-50-225-B24-N		3/4"-PMW-50-226-B24-N	
AP POINT	AP-5269		AP-5274	
CW SUPPLY PIPE	3/4"-CWS-50-163-B24-N	5944	3/4"-CWS-50-164-B24-N	5946
CW RETURN PIPE	3/4"-CWR-50-163-B24-N	5945	3/4"-CWR-50-164-B24-N	5947
PROCESS IN PIPE	3/4"-PMW-50-218-B24-P2		3/4"-PMW-50-219-B24-P2	
DRAIN	3/4"-PMW-50-227-B24-N		3/4"-PMW-50-228-B24-N	

T 5003	MP METHANOL COLUMN
ID x LENGTH(T-T)	6350 x 56400 mm
DESIGN PRESS.	FV/6 barg
DESIGN TEMP.	165 °C
INSULATION	YES
LEVEL OF EQUIPMENT	110.700 m

E 5023	MP COLUMN REBOILER NO. 2
DUTY	17.2 MW
DESIGN PRESS.(TU./SH.)	29/(FV/7.5) barg
DESIGN TEMP.(TU./SH.)	200/175 °C
INSULATION	YES



GENERAL NOTES

NOTES:

1) UPPER EDGE OF OVERFLOW WEIR IN E 5003 2 TO BE 4100 mm ABOVE MAX. LEVEL IN T 5003.

2) GRAVIATIONAL LIQUID FLOW FROM T 5003 TO E 5023/E 5003 1/2 AND BACK TO T 5003. PIPING TO BE SELF-DRAINING WHEN BYPASS IS OPEN.

3) NO POCKETS.

4) TOP OF THE TUBE BUNDLE IN E 5023 AND E 5003 1/2 MUST BE AT THE SAME ELEVATION.

5) SYMMETRICAL PIPING.

6) NOZZLE B3 ON T 5003 MUST BE LOCATED MIN. 3.5 m ABOVE P 5010 A/B. TO BE CONFIRMED BY PUMP VENDOR.

7) DELETED.

8) TO BE READABLE AT GRADE.

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
10	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: MP METHANOL COLUMN PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | DWG. NO. 1341748 | DIAGRAM P38 | REV. 1

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP–11–AS–5000–PS07–PID–010

SHEET 01 TOTAL 01

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

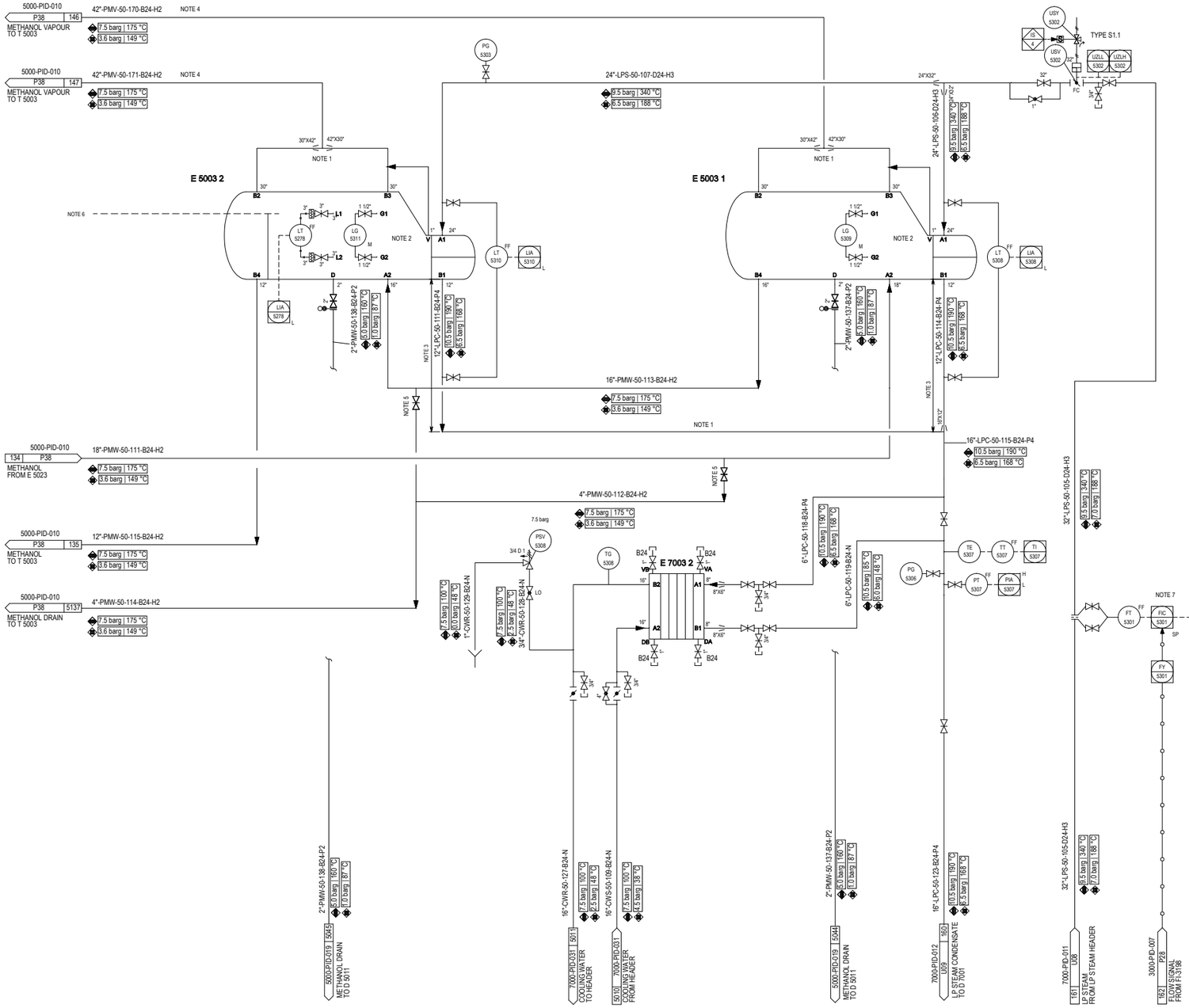
MP METHANOL COLUMN
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP–11–AS–5000–PR–PID–010

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

E 7003 2	EXCESS STEAM CONDENSATE COOLER
DUTY	15.7 MW
WIDE x LENGTH	BY VENDOR mm
DESIGN PRESS.(TU/SH)	7.5/10.5 barg
DESIGN TEMP.(TU/SH)	100/190 °C

E 5003 1/2	MP COLUMN REBOILER NO. 1
DUTY	113.3 MW
DESIGN PRESS.(TU/SH)	(FV/9.5)/(FV/7.5)barg
DESIGN TEMP.(TU/SH)	340/175 °C
INSULATION	YES



GENERAL NOTES

+NOTES:

1) SYMMETRICAL PIPING.

2) TOP OF TUBE BUNDLE IN E 5023 AND E 5003 1/2 MUST BE AT SAME ELEVATION.

3) MIN 1000 mm PIPE.

4) NO POCKETS.

5) GRAVITIONAL LIQUID FLOW FROM T 5003 TO E 5003 1/2 AND BACK TO T 5003 FOR DRAINING.

6) UPPER EDGE OF OVERFLOW WEIR IN E 5003 2 TO BE 4100 mm ABOVE MAX. LEVEL IN T 5003 FOR DRAINING.

7) P&T COMPENSATION FROM PIC-7056,TI-7056.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.01.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: MP COLUMN REBOILERS PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DWG NO. 1341749 | DOC GRP. 42 | DIAGRAM P39 | REV. A

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-011
SHEET 01 TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

MP COLUMN REBOILERS
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-011

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

E 5012	METHANOL PRODUCT COOLER NO. 2	
DUTY	3.6	MW
DESIGN PRESS.(TU/SH)	7.5/19	barg
DESIGN TEMP.(TU/SH)	100/165	°C
INSULATION	YES	

P 5006 A/B	MP COLUMN REFLUX PUMP	
CAPACITY	743.9	m3/h
HEAD	100	m
DENSITY@DT	711	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	101.440	m

D 5003	MP COLUMN OH ACCUMULATOR	
ID x LENGTH(T-T)	3400 x 10250	mm
DESIGN PRESS.	FV/6.0	barg
DESIGN TEMP.	165	°C
INSULATION	YES	
CLADDING/LINING	NONE	
LEVEL OF EQUIPMENT	105.200	m

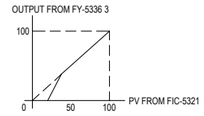
GENERAL NOTES

+NOTES:

1) NOZZLE B ON D 5003 MUST BE LOCATED MIN. 4 m ABOVE P 5006 A/B. (TO BE CONFIRMED BY PUMP VENDOR).

2) NO POCKETS.

3) FUNCTION OF FIC-5336:



4) ONE SET IN WARE HOUSE (E 5012).

5) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
8	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
7	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
B	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK

DOCUMENT NAME: MP METHANOL COLUMN OH SYSTEM PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DWG NO. 1341750 | DOC. MKP 42 | DIAGRAM P40 | REV. 3

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-012

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

MP METHANOL COLUMN OH SYSTEM PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-012

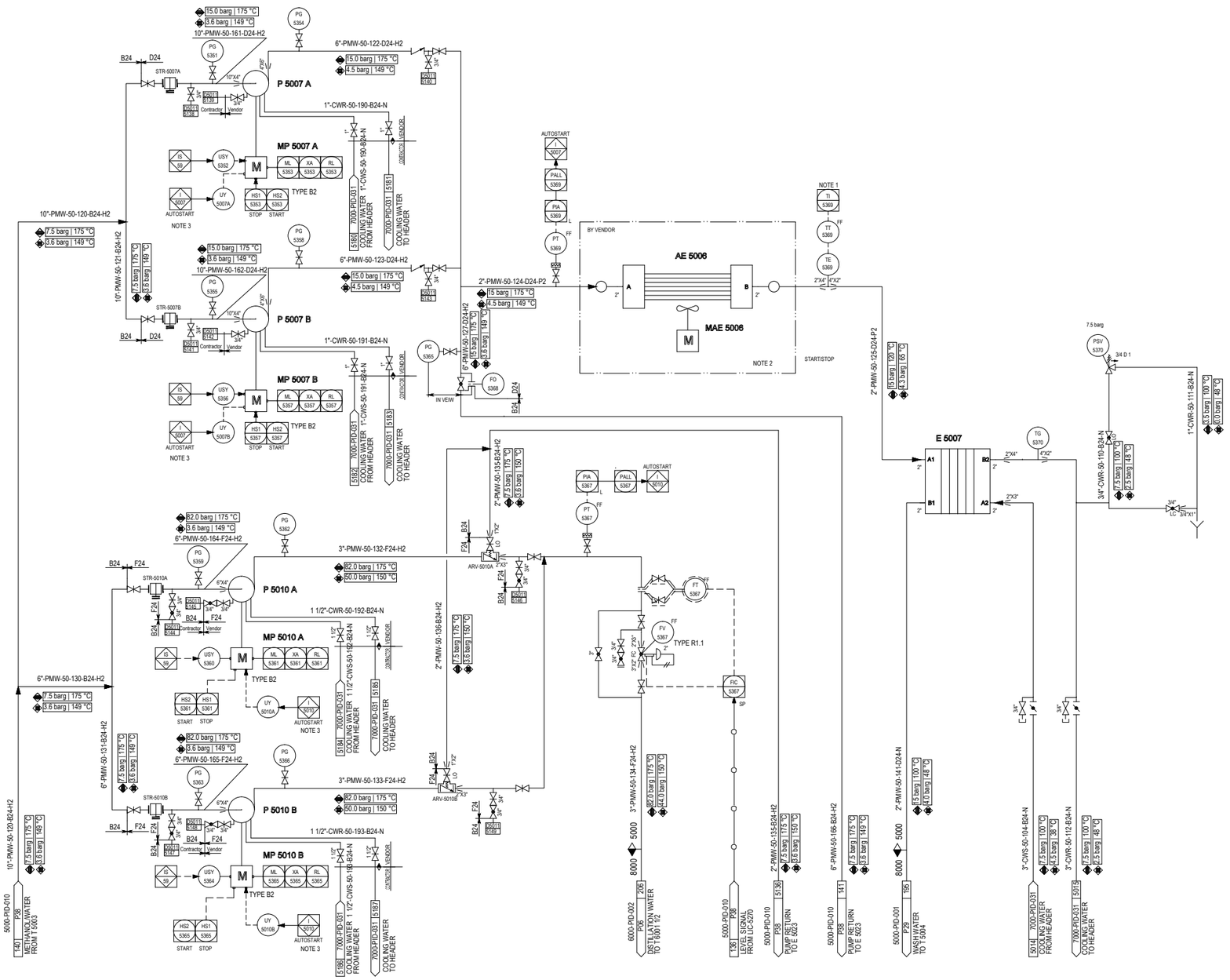
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

P 5007 A/B	MP COLUMN RECYLE PUMP	
CAPACITY	127	m3/h
HEAD	50	m
DENSITY@DT	918	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	101.140	m

P 5010 A/B	EXCESS WATER PUMP	
CAPACITY	36.3	m3/h
HEAD	570	m
DENSITY@DT	918	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	101.620	m

AE 5006	WASH WATER AIR COOLER	
DUTY	0.8	MW
ID x LENGTHCT-T)	BY VENDOR	mm
DESIGN PRESS.(TU/SH)	15/NA	barg
DESIGN TEMP.(TU/SH)	175/NA	°C

E 5007	WASH WATER COOLER	
DUTY	0.16	MW
DESIGN PRESS.(TU/SH)	15/7.5	barg
DESIGN TEMP.(TU/SH)	100/120	°C
INSULATION	YES	



GENERAL NOTES

+NOTES:

1) TWS TO BE INSTALLED ON EACH OUTLET HEADER FROM AE 5006.
2) DETAIL AIR COOLER DRAWING IN 5000-PR-PID-026.
3) THE SPARE PUMP WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	WangYishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	WangYishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK

DOCUMENT NAME: MP METHANOL COLUMN BY PRODUCT PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC GRP. 42 | DWG NO. 1341751 | DIAGRAM P41 | REV. A

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-013

SHEET 01 TOTAL 01

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

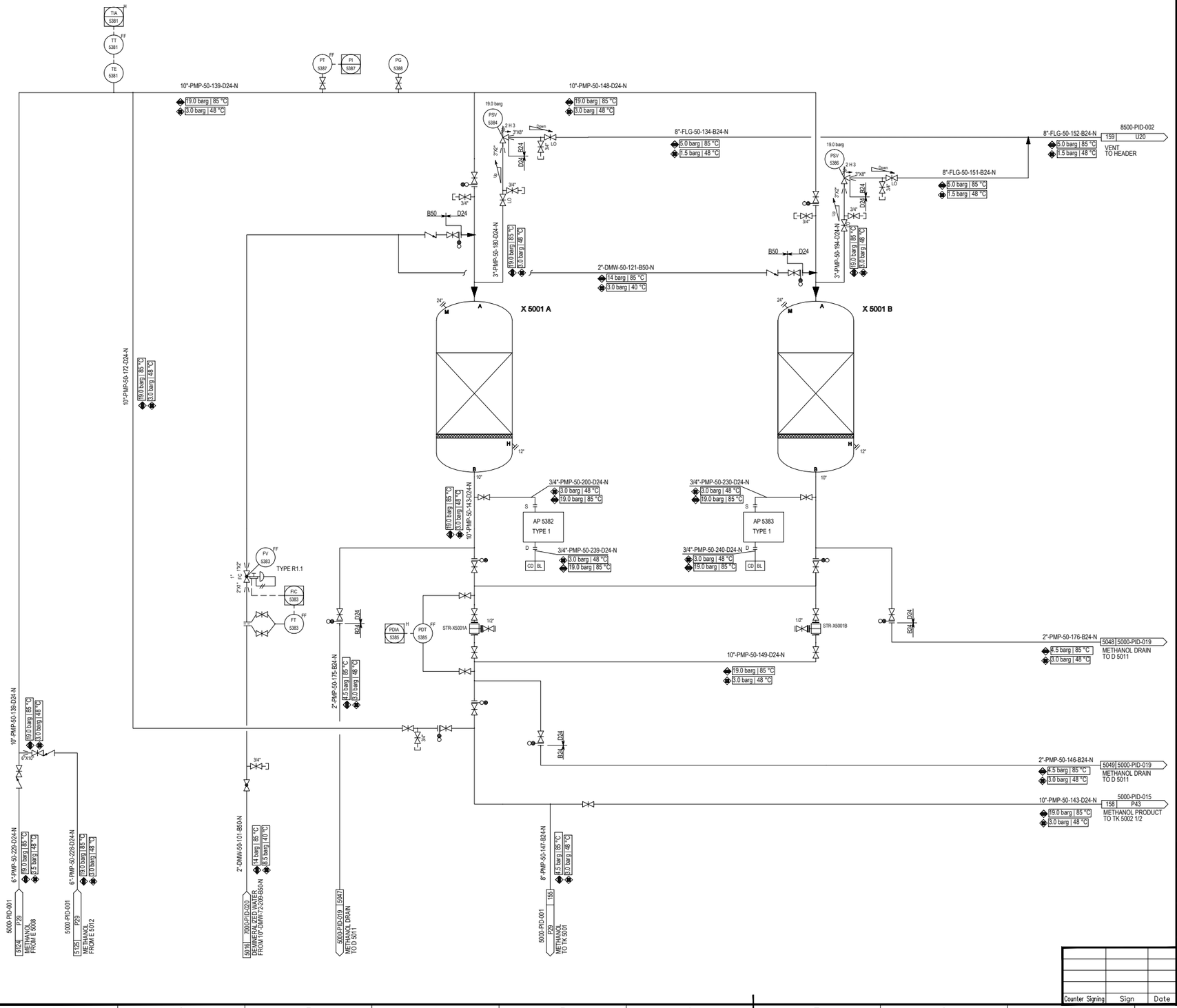
Counter Signing	Sign	Date

MP METHANOL COLUMN BY PRODUCT PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-013

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

X 5001 A/B	PRODUCT POLISHER UNIT
ID x LENGTH(T-T)	3900 x 6400 mm
DESIGN PRESS.	19 barg
DESIGN TEMP.	85 °C
INSULATION	NONE
CATALYST TYPE	AMBERLYST 15 WET



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Review	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: METHANOL PRODUCT PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. A

DWG. NO. 1341762 | DIAGRAM P42

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-5000-PS07-PID-014

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO.: –

SHEET – | TOTAL –

Counter Signing	Sign	Date

METHANOL PRODUCT PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-014

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

P 5014	METHANOL UNLOADING PUMP	
CAPACITY	30	m3/h
HEAD	32	m
DENSITY@DT	766	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	

P 5012 A/B	METHANOL START-UP PUMP	
CAPACITY	11.3	m3/h
HEAD	680	m
DENSITY@DT	766	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	
LEVEL OF EQUIPMENT	100.870	m

D 5301	UNLOADING BUFFER DRUM	
ID x LENGTH(T-T)	500 x 700	mm
DESIGN PRESS.	FV/19	barg
DESIGN TEMP.	85	°C
INSULATION	NONE	
CLADDING/LINING	NONE	
LEVEL OF EQUIPMENT	100.343	m

TK 5002 1	METHANOL PRODUCT BUFFER TANK	
ID x LENGTH(T-T)	20000 x 24400	mm
NET WORKING CAPACITY	6600	m3
DESIGN PRESS.	-0.006~0.020	barg
DESIGN TEMP.	85	°C
INSULATION	NONE	
LEVEL OF EQUIPMENT	101.300	m

P 5072 A/B	METHANOL START-UP SEALING PUMP	
CAPACITY	4.99	L/h
HEAD	25	m
DENSITY@DT	1000	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	

GENERAL NOTES

+NOTES:

1) AT GRADE.

2) FOR FILLING IN METHANOL PRIOR TO INITIAL START-UP.

3) OUTPUT OF FIC-5407 IS 100%, WHEN IN MANUAL

4) SUBSEQUENT TO IS-1 THIS SET POINT IS RAMPED DOWN.

5) IF OUTPUT FROM FIC-5407 IS BELOW 100%, FV-5407 B IS FULLY OPEN.

6) THIS FLAME ARRESTER WILL BE PROVIDED WITH PVRV TOGETHER BY PVRV VENDOR.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	11.11.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.02.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S — DOCUMENT NAME: METHANOL PRODUCT BUFFER TANK I PIPING AND INSTRUMENT DIAGRAM — JOB NO. S-02115 — DOC. NO. 42 — DWG. NO. 1341753 — DIAGRAM P43 — REV. 4

CONTRACTOR: 中国天辰工程有限公司 TCC CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-015 — SHEET 01 TOTAL 01

SUB CONTRACTOR: SUB-CONTRACTOR DRAWING NO. – — SHEET – TOTAL –

METHANOL PRODUCT BUFFER TANK I PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project	
	UNIT	Distillation Unit	
	PHASE	As Built Drawing	
SCALE: – SHEET: 1 TOT.: 1 SIZE: A1	OWNER DWG NO.	MKP-11-AS-5000-PR-PID-015	

Counter Signing	Sign	Date

TK 5002 2	METHANOL PRODUCT BUFFER TANK
ID x LENGTH(T-T)	20000 x 24400 mm
NET WORKING CAPACITY	6600 m3
DESIGN PRESS.	-0.006~0.020 barg
DESIGN TEMP.	85 ° C
INSULATION	NONE
LEVEL OF EQUIPMENT	101.300 m

P 5008 A/B/C	METHANOL PRODUCT PUMP
CAPACITY	487.2 m3/h
HEAD	102 m
DENSITY@OT	766 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR
LEVEL OF EQUIPMENT	101.210 m

GENERAL NOTES

+NOTES:

1) THERMAL PSV ON RUNDOWN LINE MAY BE REQUIRED DEPENDING ON FINAL PIPING LAYOUT.

2) AT GRADE.

3) THIS FLAME ARRESTER WILL BE PROVIDED WITH PVRV TOGETHER BY PVRV VENDOR.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.02.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.06.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK

DOCUMENT NAME: METHANOL PRODUCT BUFFER TANK II PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DWG. NO. 1341754 | DOC. GRP. 42 | DIAGRAM P44 | REV. A

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-016

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – | TOTAL –

METHANOL PRODUCT BUFFER TANK II PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project	
	UNIT	Distillation Unit	
	PHASE	As Built Drawing	
SCALE: – SHEET:1 TOT.:1 SIZE: A1	OWNER DWG NO.	MKP-11-AS-5000-PR-PID-016	

Counter Signing	Sign	Date

TK 5003	LIQUID OFF-STREAM TANK
ID x LENGTH(T-T)	5000 x 6500 mm
NET WORKING CAPACITY	75 m3
DESIGN PRESS.	-0.006~0.020 barg
DESIGN TEMP.	85 °C
INSULATION	NONE
LEVEL OF EQUIPMENT	100.900 m

P 5009 A/B	LIQUID OFF-STREAM PUMP
CAPACITY	4.6 m3/h
HEAD	598 m
DENSITY@DT	814 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR
LEVEL OF EQUIPMENT	100.870 m

P 5071 A/B	LIQUID OFF-STREAM SEALING PUMP
CAPACITY	4.99 L/h
HEAD	25 m
DENSITY@DT	1000 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR

GENERAL NOTES

+NOTES:

1) AT GRADE
2) NOW A BLIND FLANGE IS USED DUE TO DOWNSTREAM ACCEPTANCE PLANT SITUATION IS NOT KNOWN.
3) THIS FLAME ARRESTER WILL BE PROVIDED WITH PVRV TOGETHER BY PVRV VENDOR.
4) THIS VALVE ONLY COULD BE CLOSED WHEN XH-5003B NEEDS TO BE REMOVED.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
8	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
7	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
6	Approved for Construction	11.11.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
5	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
4	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
B	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: LIQUID OFF-STREAM TANK PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | REV. 1
DWG NO. 1341755 | DIAGRAM P45

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS07-PID-017
SHEET 01 | TOTAL 01

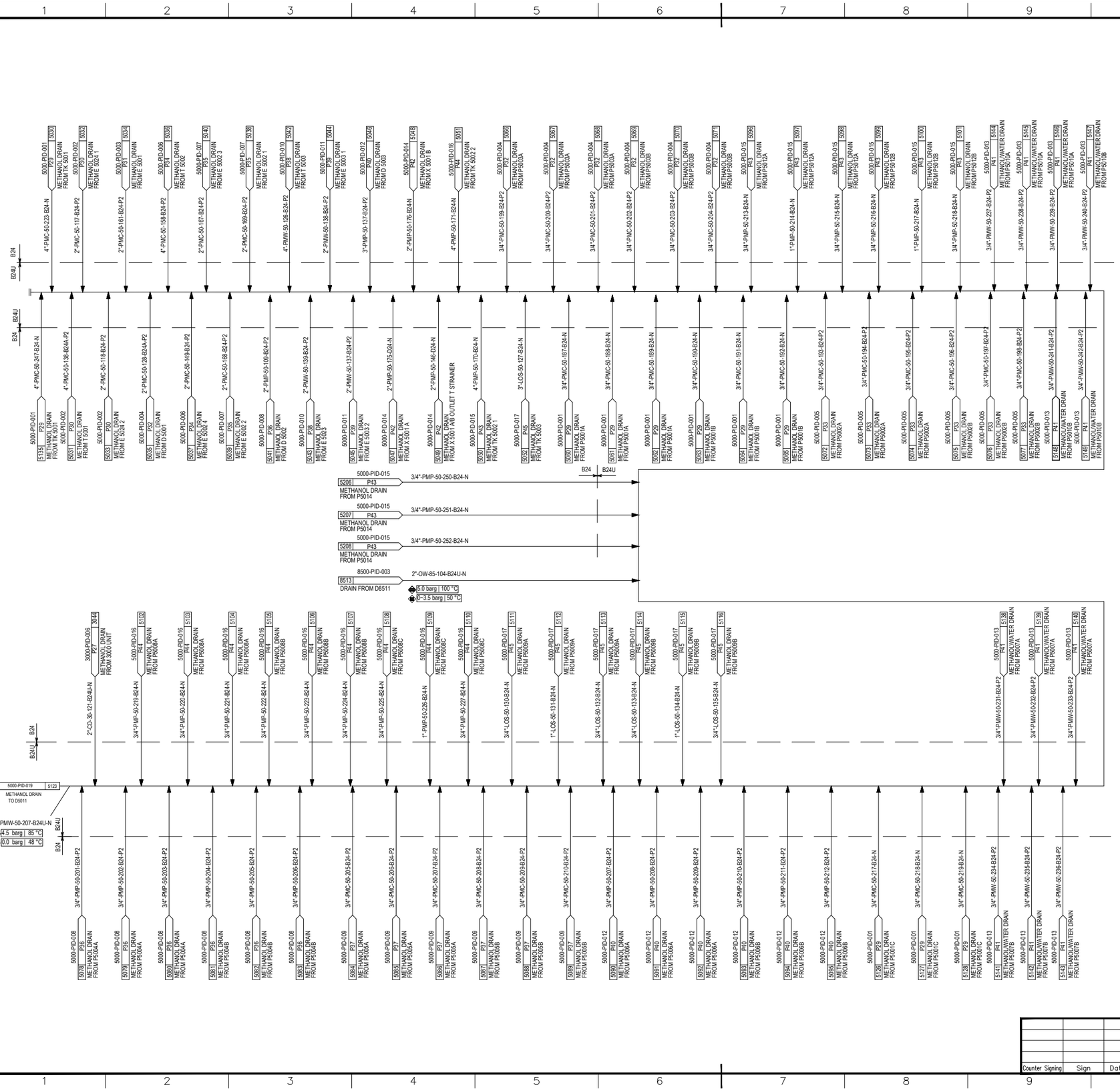
SUB CONTRACTOR
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

LIQUID OFF-STREAM TANK PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-017

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing	Sign	Date



GENERAL NOTES

NOTES:

1) ALL LOW POINT DRAINS WHICH CONTAIN METHANOL MUST BE CONNECTED TO THE MAIN DRAIN PIPE 6"-PMC-150-201-B24-N AND COLLECTED IN THE CLOSED DRAIN DRUM D 5011.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	WangYishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	WangYishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME:
JOB NO. | DOC. SEQ. | REV.
DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO.: MKP-11-AS-5000-PS07-PID-018
SHEET 01 TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO.: –
SHEET – TOTAL –

CLOSED DRAIN COLLECTION
PIPING AND INSTRUMENT DIAGRAM

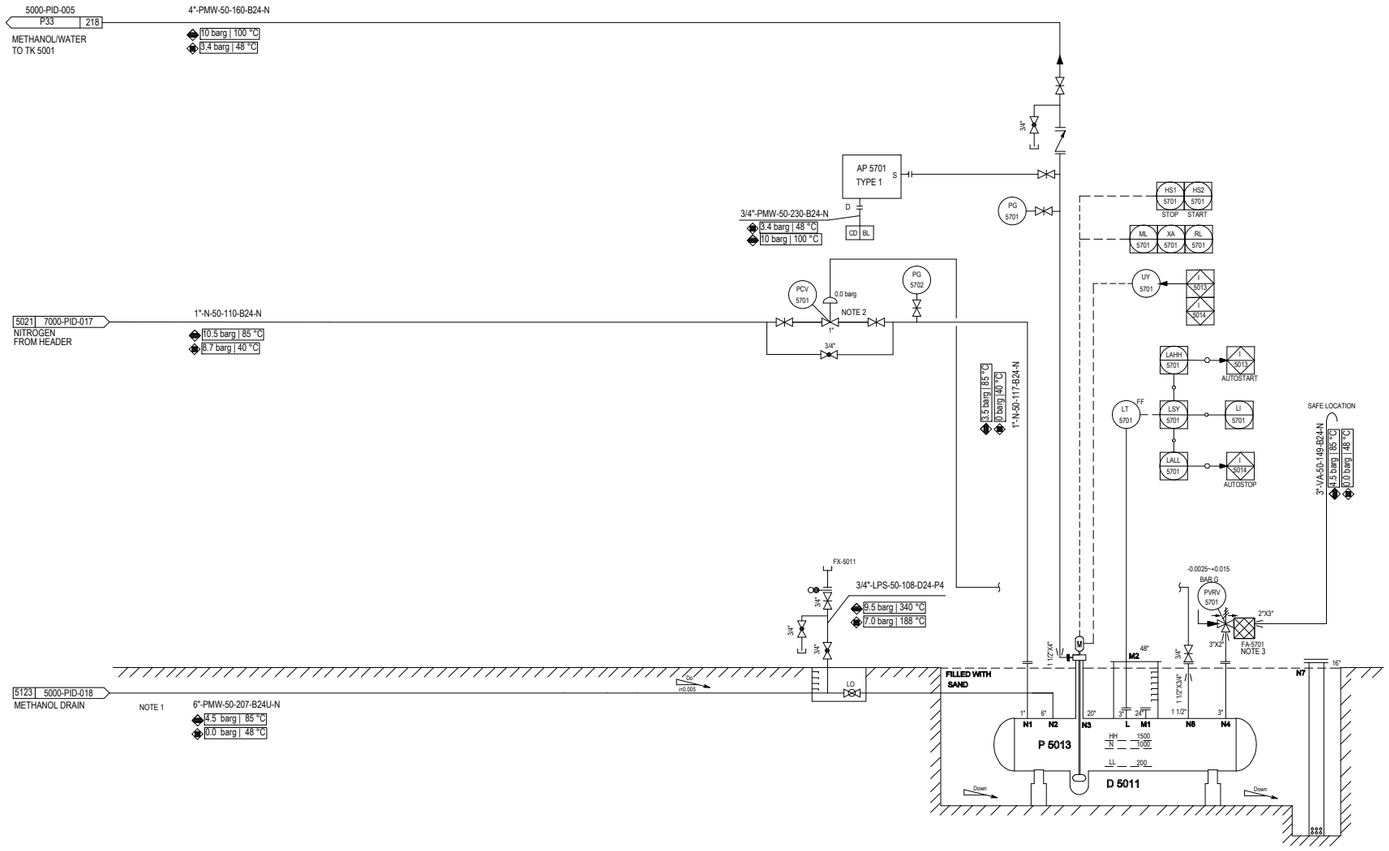
PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-018

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing	Sign	Date

D 5011	CLOSED DRAIN DRUM
ID x LENGTHCT-T)	1800 x 4000 mm
DESIGN PRESS.	-0.003~3.5 barg
DESIGN TEMP.	150 °C
INSULATION	NONE
CLADDING/LINING	NONE
LEVEL OF EQUIPMENT	96.300 m

P 5013	CLOSED DRAIN DRUM PUMP
CAPACITY	12 m3/h
HEAD	33 m
DENSITY@DT	750~1000 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR



GENERAL NOTES

NOTES:

1) ALL LOW POINT DRAINS WHICH CONTAIN METHANOL MUST BE CONNECTED TO THE MAIN DRAIN PIPE 6"-PMC-150-201-B24-N AND COLLECTED IN THE CLOSED DRAIN DRUM D 5011.
2) THE DISTANCE BETWEEN PCV-5701 AND THE TOP SURFACE OF GROUND OF INSTALLATION POSITION OF D 5011 SHALL BE LESS THAN 1.5 M.
3) THIS FLAME ARRESTER WILL BE PROVIDED WITH PVRV TOGETHER BY PVRV VENDOR.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.01.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	28.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Review	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:
Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME:
JOB NO. | DOC. GRP | REV.
DWG NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TUNGCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO.
MKP-11-AS-5000-PS07-PID-019
SHEET 01 TOTAL 01

SUB-CONTRACTOR
SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

SLOPS COLLECTION
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-019

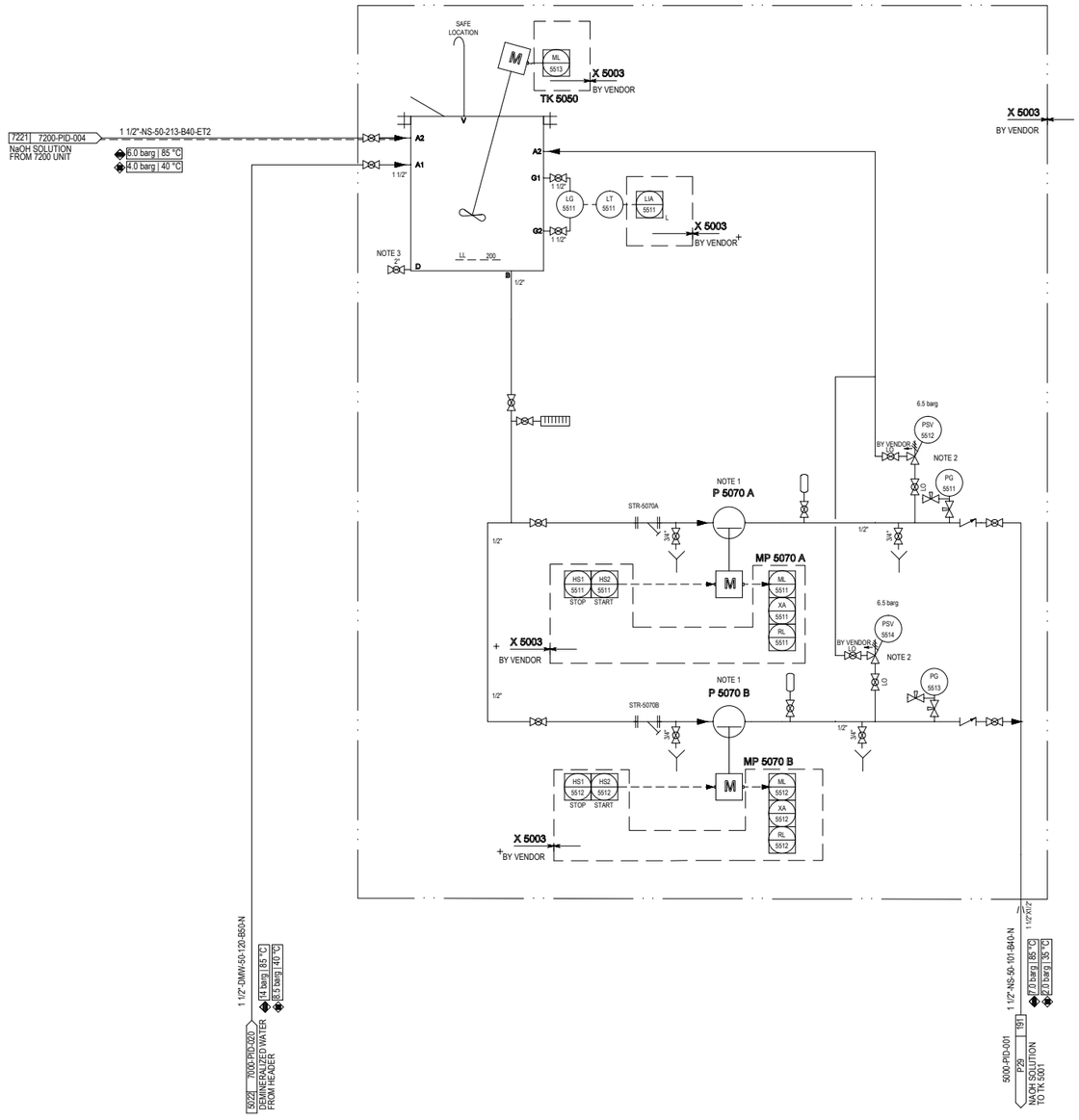
Counter Signing	Sign	Date

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

X 5003	NaOH DOSING UNIT
INCLUDED	TK 5050
INCLUDED	P 5070 A/B

TK 5050	NaOH TANK	
ID x LENGTH(T-T)	1800 x 2100	mm
NET WORKING CAPACITY	4.4	m3
DESIGN PRESS.	ATM	barg
DESIGN TEMP.	85	°C
INSULATION	NONE	

P 5070 A/B	NaOH SOLUTION DOSING PUMP	
CAPACITY	60	L/h
HEAD	50	m
DENSITY@OT	1220	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	BY VENDOR	



GENERAL NOTES

+NOTES:

1) CALIBRATION POTS FOR METERING SHALL BE PROVIDED BY PUMP VENDOR.

2) PUMP VENDOR TO SPECIFY PSV

3) DRAIN FROM DOSING SYSTEMS INTO CLOSED DRUMS.

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	30.12.2019	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	11.11.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	06.11.2017	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	08.05.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	14.10.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	31.08.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	05.07.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	29.04.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: NaOH DOSING UNIT X 5003 UTILITY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 1 | DWG NO. 1353322 | DIAGRAM U24

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PS09-PID-001

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

NaOH DOSING UNIT X 5003
UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing

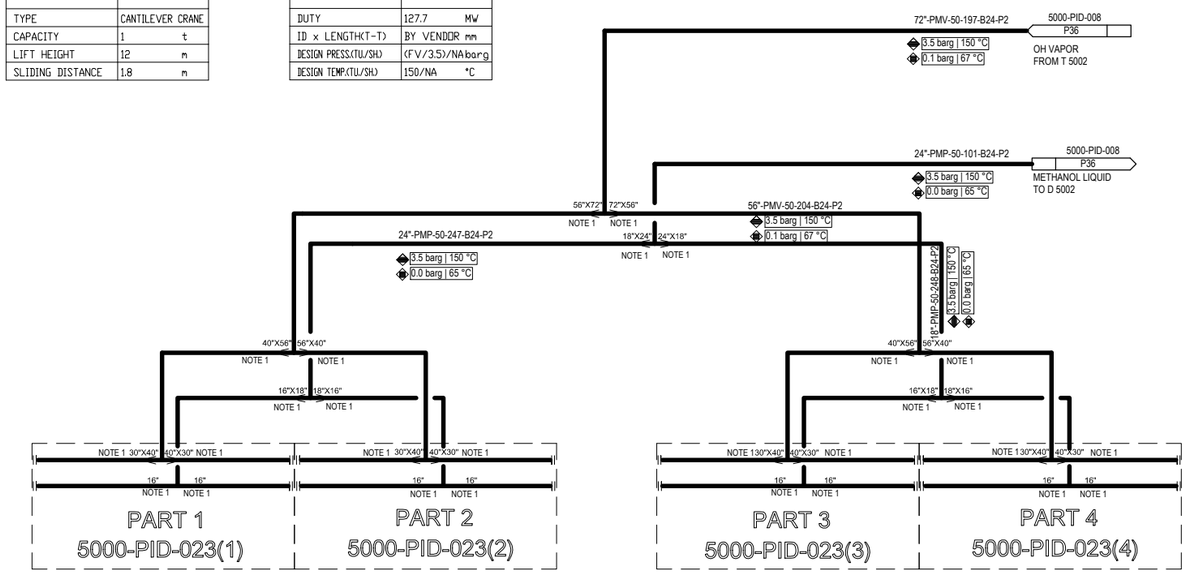
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-5000-PR-PID-020

MOTOR POSITION

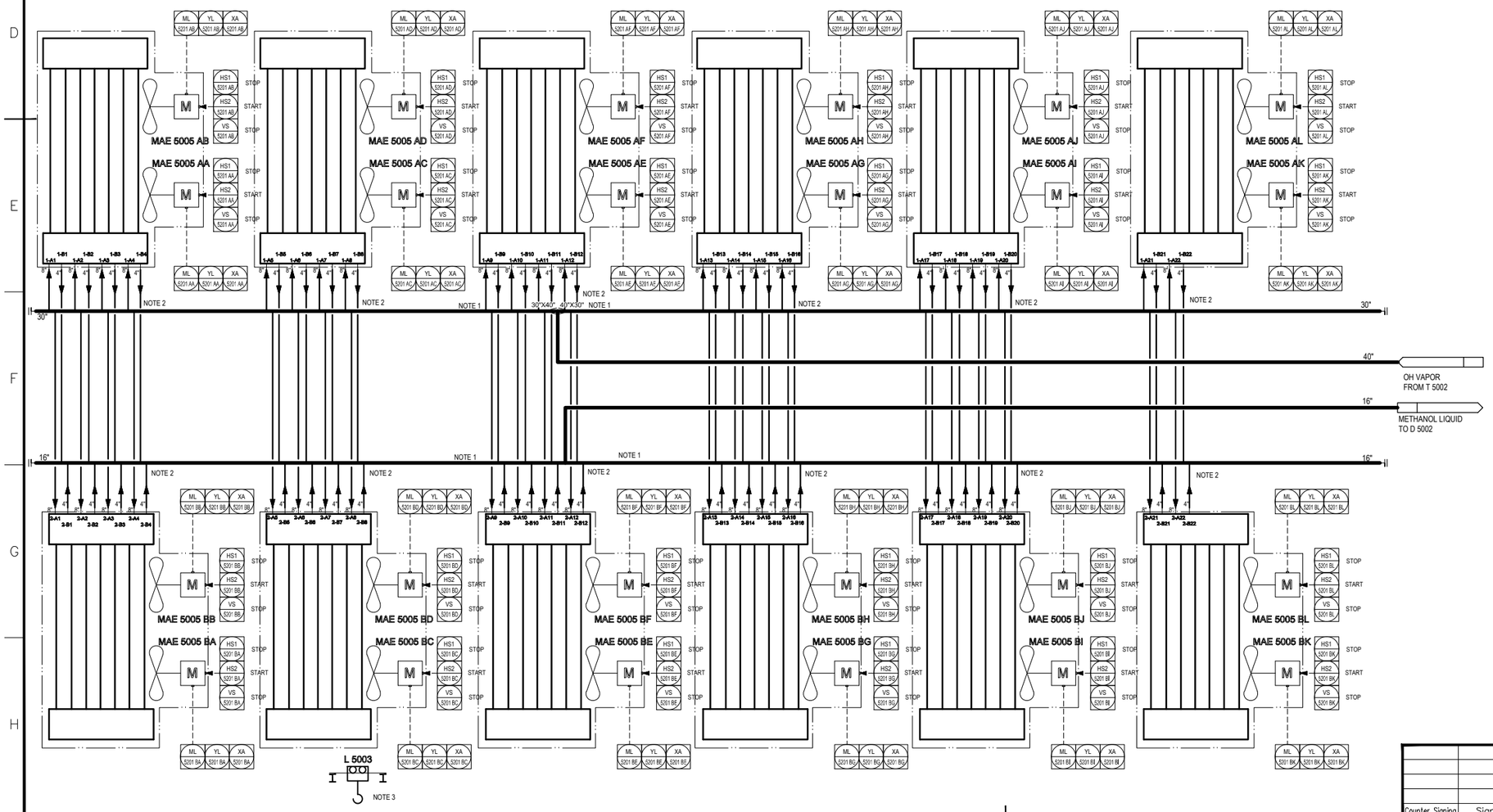
AB	AD	AF	AH	AJ	AL	AN	AP	AR	AT	AV
AA	AC	AE	AG	AI	AK	AM	AO	AQ	AS	AU
BB	BD	BF	BH	BJ	BL	BN	BP	BR	BT	BV
BA	BC	BE	BG	BI	BK	BM	BO	BQ	BS	BU
PART 1 PART 3						PART 2 PART 4				
CB	CD	CF	CH	CJ	CL	CN	CP	CR	CT	CV
CA	CC	CE	CG	CI	CK	CM	CO	CQ	CS	CU
DB	DD	DF	DH	DJ	DL	DN	DP	DR	DT	DV
DA	DC	DE	DG	DI	DK	DM	DO	DQ	DS	DU

L 5003	CRANE 5003	
TYPE	CANTILEVER CRANE	
CAPACITY	1	t
LIFT HEIGHT	12	m
SLIDING DISTANCE	1.8	m

AE 5005	LP COLUMN DH CONDENSER	
DUTY	127.7	MW
ID x LENGTH(T-T)	BY VENDOR	mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NA	barg
DESIGN TEMP.(TU/SH)	150/NA	°C



PART 1



GENERAL NOTES

+NOTES:

1) SYMMETRICAL PIPING.

2) THERMOWELL TABEL IS SHOWED BELOW:

MAE5005AA, MAE5005AB	MAE5005BA, MAE5005BB
1-B1 TW5101	2-B1 TW5145
1-B3 TW5103	2-B3 TW5147
MAE5005AC, MAE5005AD	MAE5005BC, MAE5005BD
1-B5 TW5105	2-B5 TW5149
1-B7 TW5107	2-B7 TW5151
MAE5005AE, MAE5005AF	MAE5005BE, MAE5005BF
1-B9 TW5109	2-B9 TW5153
1-B11 TW5111	2-B11 TW5155
MAE5005AG, MAE5005AH	MAE5005BG, MAE5005BH
1-B13 TW5113	2-B13 TW5157
1-B15 TW5115	2-B15 TW5159
MAE5005AI, MAE5005AJ	MAE5005BI, MAE5005BJ
1-B17 TW5117	2-B17 TW5161
1-B19 TW5119	2-B19 TW5163
MAE5005AK, MAE5005AL	MAE5005BK, MAE5005BL
1-B21 TW5121	2-B21 TW5165

3) CRANE IS USED FOR AE 5005 MAINTENANCE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.02.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	22.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. DISP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. –

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

AIR COOLER AE 5005 DETAIL
PIPING AND INSTRUMENT DIAGRAM

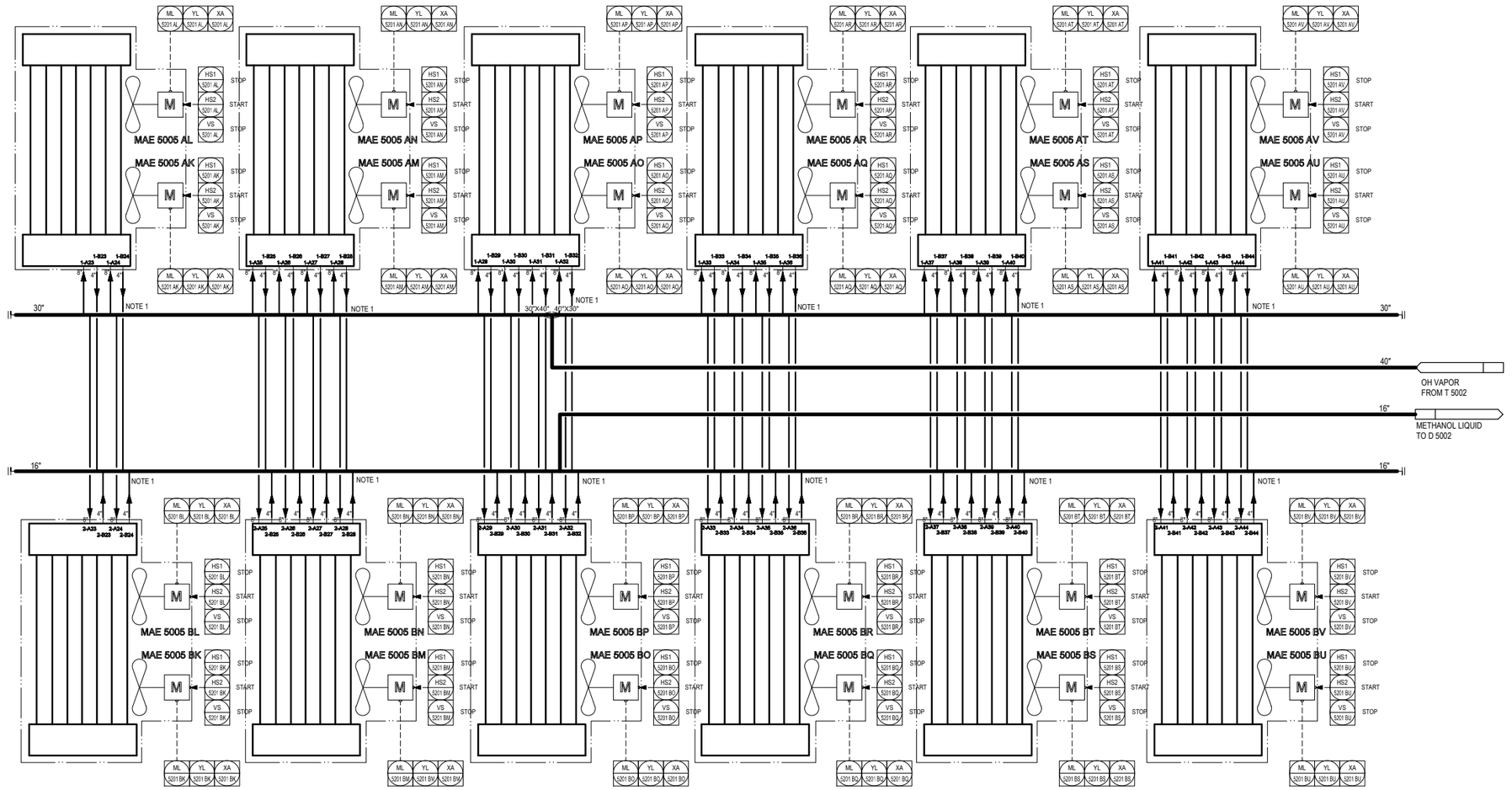
PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing

SCALE: – | SHEET: 1 | TOT.: 4 | SIZE: A1 | OWNER DWG NO. | MKP-11-DE-5000-PR-PID-023

Counter Signing	Sign	Date

AE 5005	LP COLUMN OH CONDENSER
DUTY	127.7 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NA barg
DESIGN TEMP.(TU/SH)	150/NA °C

PART 2



GENERAL NOTES

+NOTES:

1) THERMOWELL TABEL IS SHOWED BELOW:

MAE5005AK, MAE5005AL	MAE5005BK, MAE5005BL
1-B23|TW5123	2-B23|TW5167
MAE5005AM, MAE5005AN	MAE5005BM, MAE5005BN
1-B25|TW5125	2-B25|TW5169
1-B27|TW5127	2-B27|TW5171
MAE5005AO, MAE5005AP	MAE5005BO, MAE5005BP
1-B29|TW5129	2-B29|TW5173
1-B31|TW5131	2-B31|TW5175
MAE5005AQ, MAE5005AR	MAE5005BQ, MAE5005BR
1-B33|TW5133	2-B33|TW5177
1-B35|TW5135	2-B35|TW5179
MAE5005AS, MAE5005AT	MAE5005BS, MAE5005BT
1-B37|TW5137	2-B37|TW5181
1-B39|TW5139	2-B39|TW5183
MAE5005AU, MAE5005AV	MAE5005BU, MAE5005BV
1-B41|TW5141	2-B41|TW5185
1-B43|TW5143	2-B43|TW5187

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	02.02.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	22.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. –

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

AIR COOLER AE 5005 DETAIL
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-023

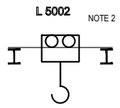
SCALE: – | SHEET: 2 | TOT.: 4 | SIZE: A1

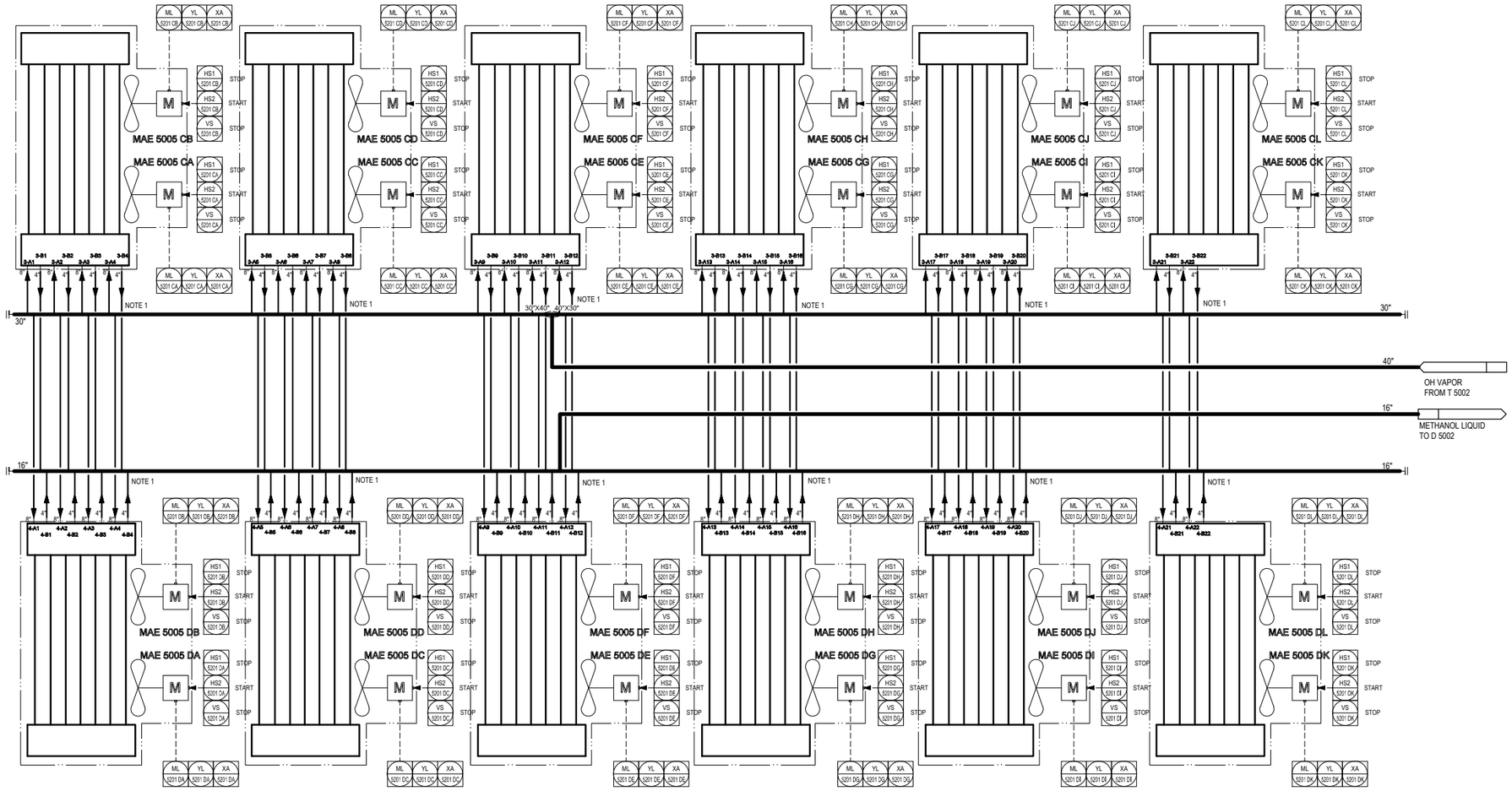
Counter Signing	Sign	Date

L 5002	CRANE 5002
TYPE	CANTILEVER CRANE
CAPACITY	1 t
LIFT HEIGHT	12 m
SLIDING DISTANCE	1.8 m

AE 5005	LP COLUMN OH CONDENSER
DUTY	127.7 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NA barg
DESIGN TEMP.(TU/SH)	150/NA °C

PART 3





GENERAL NOTES

+NOTES:

1) THERMOWELL TABEL IS SHOWED BELOW:

MAE5005CA MAE5005CB	MAE5005DA MAE5005DB
3-B1 TW5189	4-B1 TW5233
3-B3 TW5191	4-B3 TW5235
MAE5005CC, MAE5005CD	MAE5005DC, MAE5005DD
3-B5 TW5193	4-B5 TW5237
3-B7 TW5195	4-B7 TW5239
MAE5005CE, MAE5005CF	MAE5005DE, MAE5005DF
3-B9 TW5197	4-B9 TW5241
3-B11 TW5199	4-B11 TW5243
MAE5005CG, MAE5005CH	MAE5005DG, MAE5005DH
3-B13 TW5201	4-B13 TW5245
3-B15 TW5203	4-B15 TW5247
MAE5005CI, MAE5005CJ	MAE5005DI, MAE5005DJ
3-B17 TW5205	4-B17 TW5249
3-B19 TW5207	4-B19 TW5251
MAE5005CK, MAE5005CL	MAE5005DK, MAE5005DL
3-B21 TW5209	4-B21 TW5253

2) CRANE IS USED FOR AE 5005 MAINTENANCE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	02.02.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
1	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	22.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中國天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. –

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

AIR COOLER AE 5005 DETAIL
PIPING AND INSTRUMENT DIAGRAM

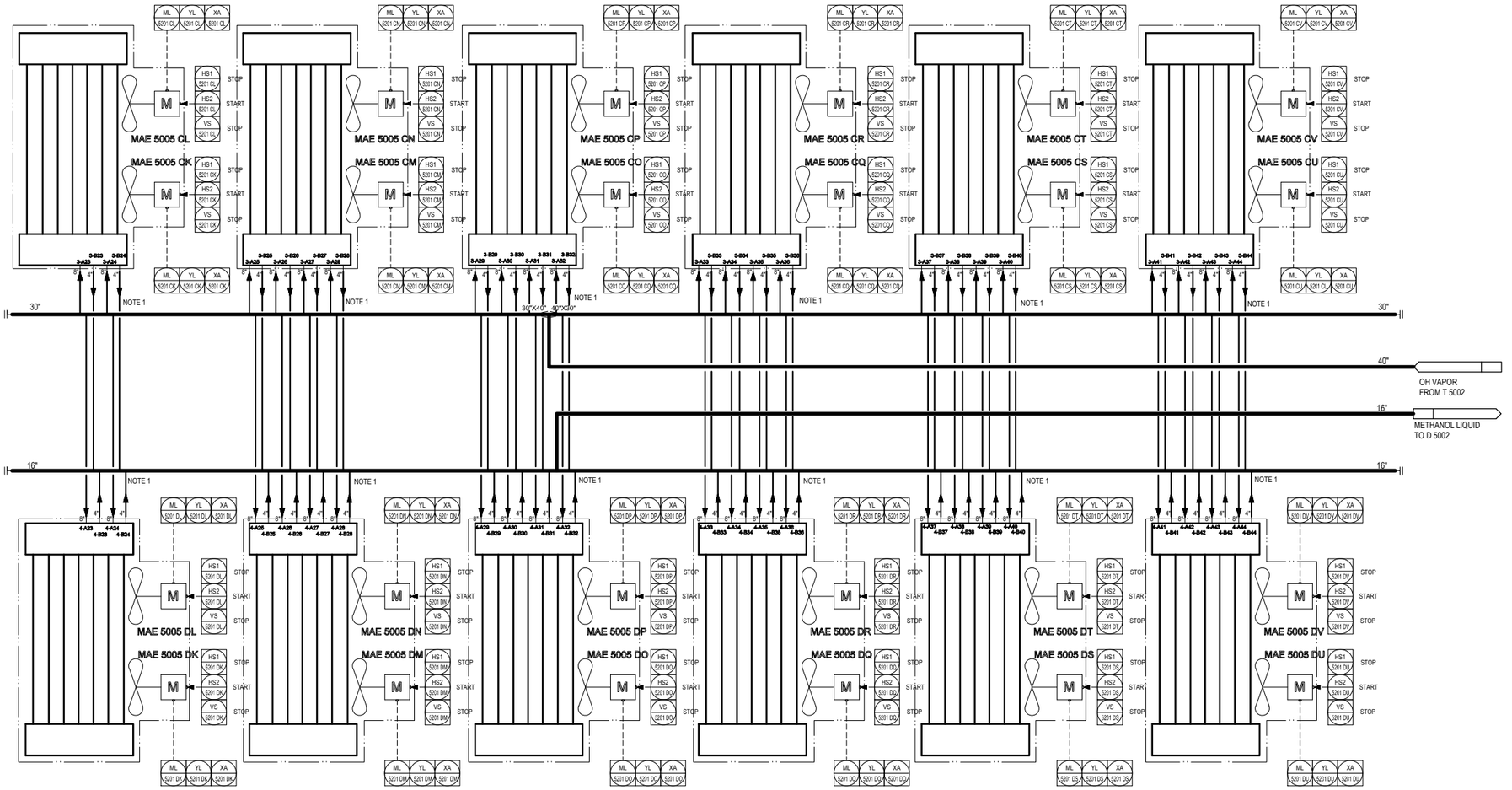
PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-023

SCALE: – | SHEET: 3 | TOT.: 4 | SIZE: A1

Counter Signing	Sign	Date

AE 5005	LP COLUMN OH CONDENSER
DUTY	127.7 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NA barg
DESIGN TEMP.(TU/SH)	150/NA °C

PART 4



GENERAL NOTES

+NOTES:

1) THERMOWELL TABEL IS SHOWED BELOW:

MAE5005CK, MAE5005CL	MAE5005DK, MAE5005DL
3-B23|TW5211	4-B23|TW5255
MAE5005CM, MAE5005CN	MAE5005DM, MAE5005DN
3-B25|TW5213	4-B25|TW5257
3-B27|TW5215	4-B27|TW5259
MAE5005CO, MAE5005CP	MAE5005DO, MAE5005DP
3-B29|TW5217	4-B29|TW5261
3-B31|TW5219	4-B31|TW5263
MAE5005CQ, MAE5005CR	MAE5005DQ, MAE5005DR
3-B33|TW5221	4-B33|TW5265
3-B35|TW5223	4-B35|TW5267
MAE5005CS, MAE5005CT	MAE5005DS, MAE5005DT
3-B37|TW5225	4-B37|TW5269
3-B39|TW5227	4-B39|TW5271
MAE5005CU, MAE5005CV	MAE5005DU, MAE5005DV
3-B41|TW5229	4-B41|TW5273
3-B43|TW5231	4-B43|TW5275

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Wang Yishu		Mu Yujun	Hu Qiuyi	
3	Approved for Construction	02.02.2018	Wang Yishu		Mu Yujun	Hu Qiuyi	
2	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
1	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Issued for Comments	22.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG. NO. | DISCIPLINE

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. –

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

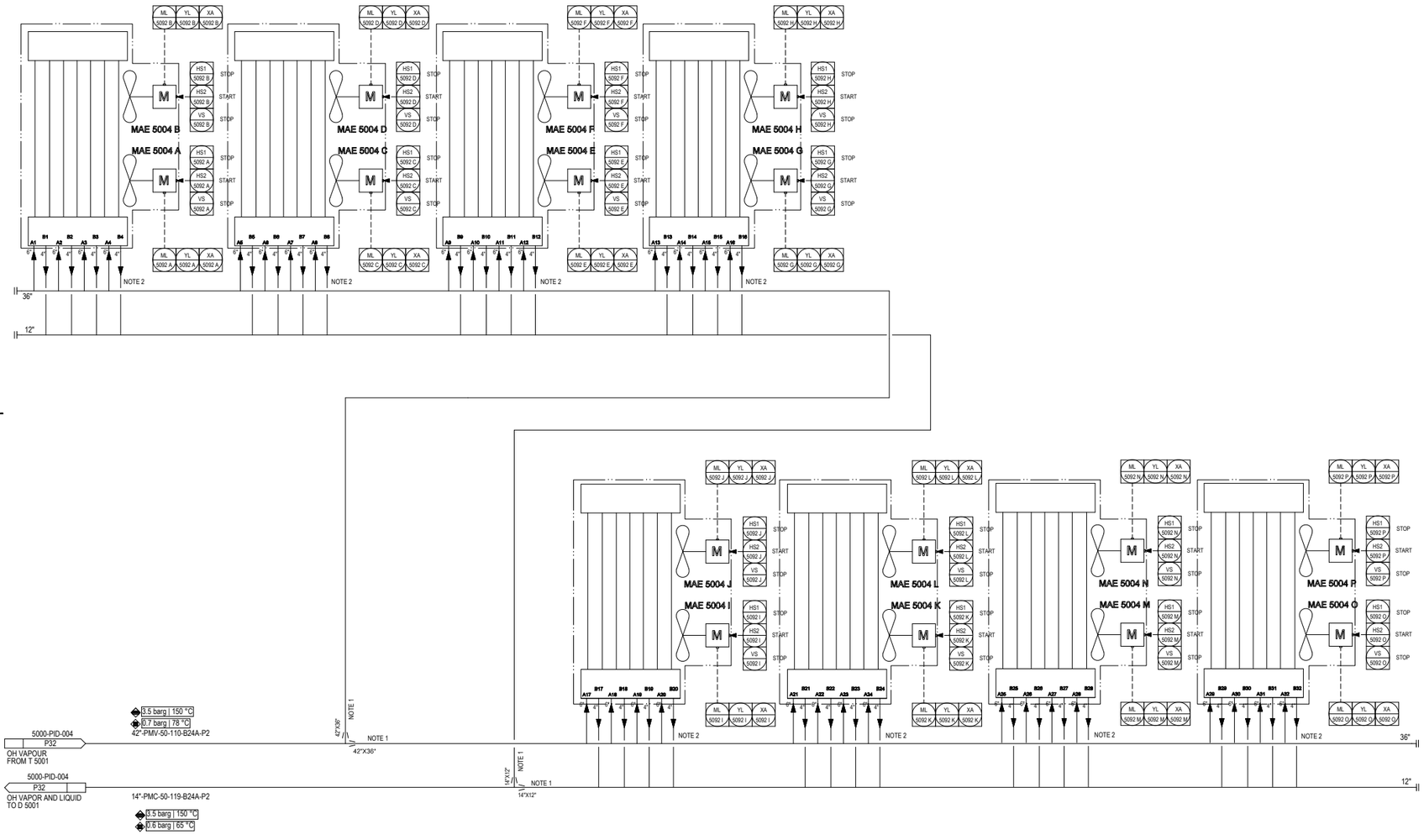
AIR COOLER AE 5005 DETAIL
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-023

SCALE: – | SHEET: 4 | TOT.: 4 | SIZE: A1

Counter Signing	Sign	Date

AE 5004	STABILIZER COLUMN OH CONDENSER
DUTY	33.5 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TU/SH)	(FV/3.5)/NAbarg
DESIGN TEMP.(TU/SH)	150/NA °C



GENERAL NOTES

+NOTES:

1) SYMMETRICAL PIPING.

2) THERMOWELL TABEL IS SHOWED BELOW:

MAE5004A, MAE5004B	MAE5004I, MAE5004J
B1 TW5001	B17 TW5017
B3 TW5003	B19 TW5019
MAE5004C, MAE5004D	MAE5004K, MAE5004L
B5 TW5005	B21 TW5021
B7 TW5007	B23 TW5023
MAE5004E, MAE5004F	MAE5004M, MAE5004N
B9 TW5009	B25 TW5025
B11 TW5011	B27 TW5027
MAE5004G, MAE5004H	MAE5004O, MAE5004P
B13 TW5013	B29 TW5029
B15 TW5015	B31 TW5031

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	22.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR | DOCUMENT NAME: | JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. –

SHEET 01 TOTAL 01

SUB-CONTRACTOR | SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

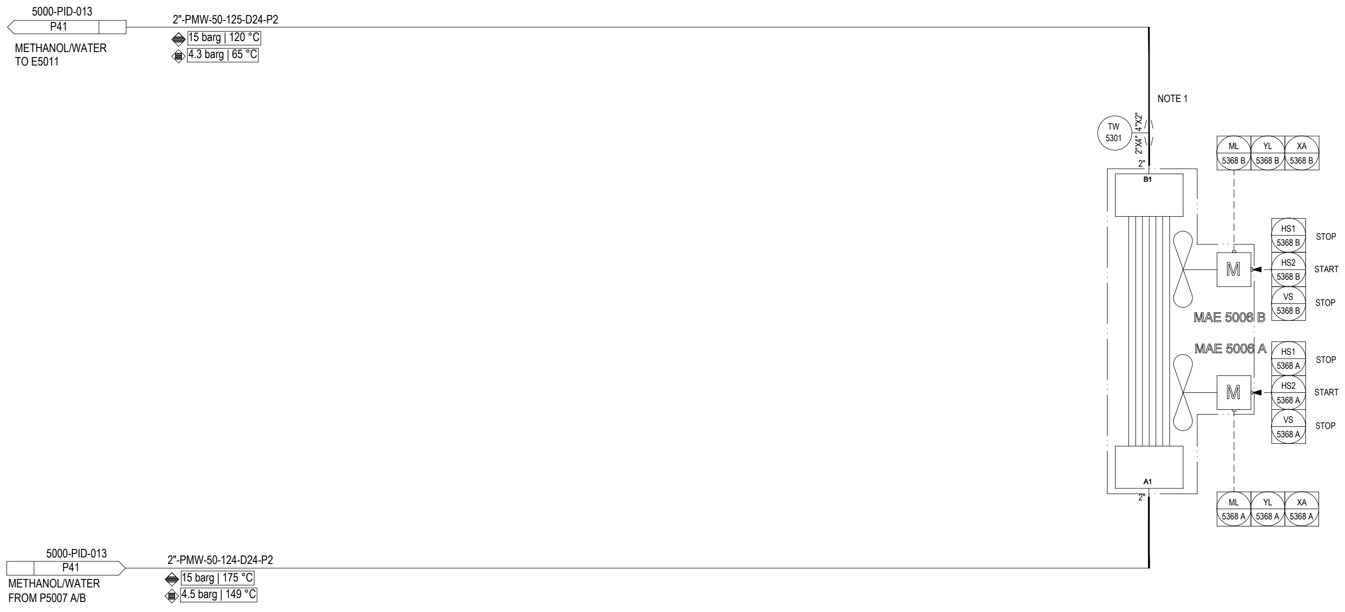
AIR COOLER AE 5004 DETAIL
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-024

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing	Sign	Date

AE 5006	WASH WATER AIR COOLER
DUTY	0.8 MW
ID x LENGTH(T-T)	BY VENDOR mm
DESIGN PRESS.(TU./SH.)	15/NA barg
DESIGN TEMP.(TU./SH.)	175/NA °C



GENERAL NOTES

NOTES:

1) THERMOWELL TABEL IS SHOWED BELOW:

MAE5006A, MAE5006B	
B1	TW5301

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
	As Built	30.04.2020	Li Zhijuan		Mu Yujun	Hu Qiuyi	
0	Approved for Construction	22.03.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
C	Issued for Approval	22.01.2017	Li Zhijuan		Mu Yujun	Hu Qiuyi	
A	Issued for Comments	22.11.2016	Li Zhijuan		Mu Yujun	Hu Qiuyi	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR	DOCUMENT NAME:	JOB NO. / DWG. NO.	DOC. GRP. / DIAGRAM	REV.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.	
–	
SHEET 01	TOTAL 01

SUB CONTRACTOR

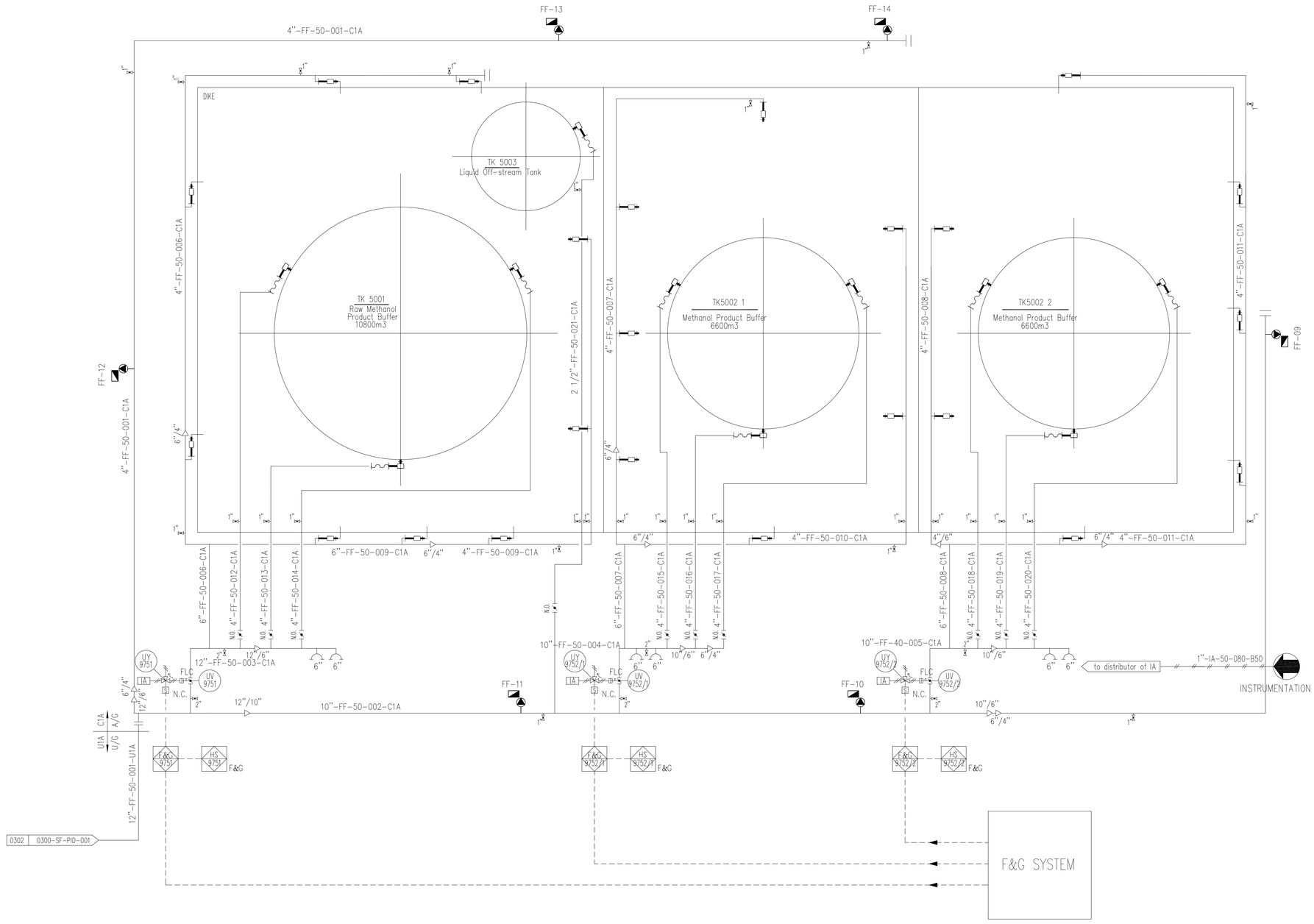
SUB-CONTRACTOR DRAWING NO.	
–	
SHEET –	TOTAL –

Counter Signing	Sign	Date

AIR COOLER AE 5006 DETAIL
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-5000-PR-PID-026

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1



GENERAL NOTES

Emptying foam solution should be collected to oily water collection system.

PIPE NUMBER

12"— FF — 50 — 001 — C1A

- Pipe Class Code
- Sequence Number
- Unit Number
- Fluid Code
- Nominal Diameter

REFERENCE DRAWINGS

MKP-11-DE-0300-SF-PID-001	MKP-11-DE-5000-PI-PPL-019
MKP-11-DE-9700-SF-SPC-001	

SYMBOLS AND LEGENDS

	Foam chamber (Vertical)		Foam chamber (Horizonal)
	Metalic hose	FF	Foam solution
	Foam hydrant	N.C.	Normal close
	Foam hydrant cabinet	N.O.	Normal open
	Reducer		Fire connection

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
5	Approved for Construction	31.12.2019	Liu Jian		Cui Yanjun	Deng Wenhui	
4	Approved for Construction	28.11.2019	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved for Construction	12.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
2	Approved for Construction	24.10.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-5000-PF03-PID-001 — SHEET 01 — TOTAL 01

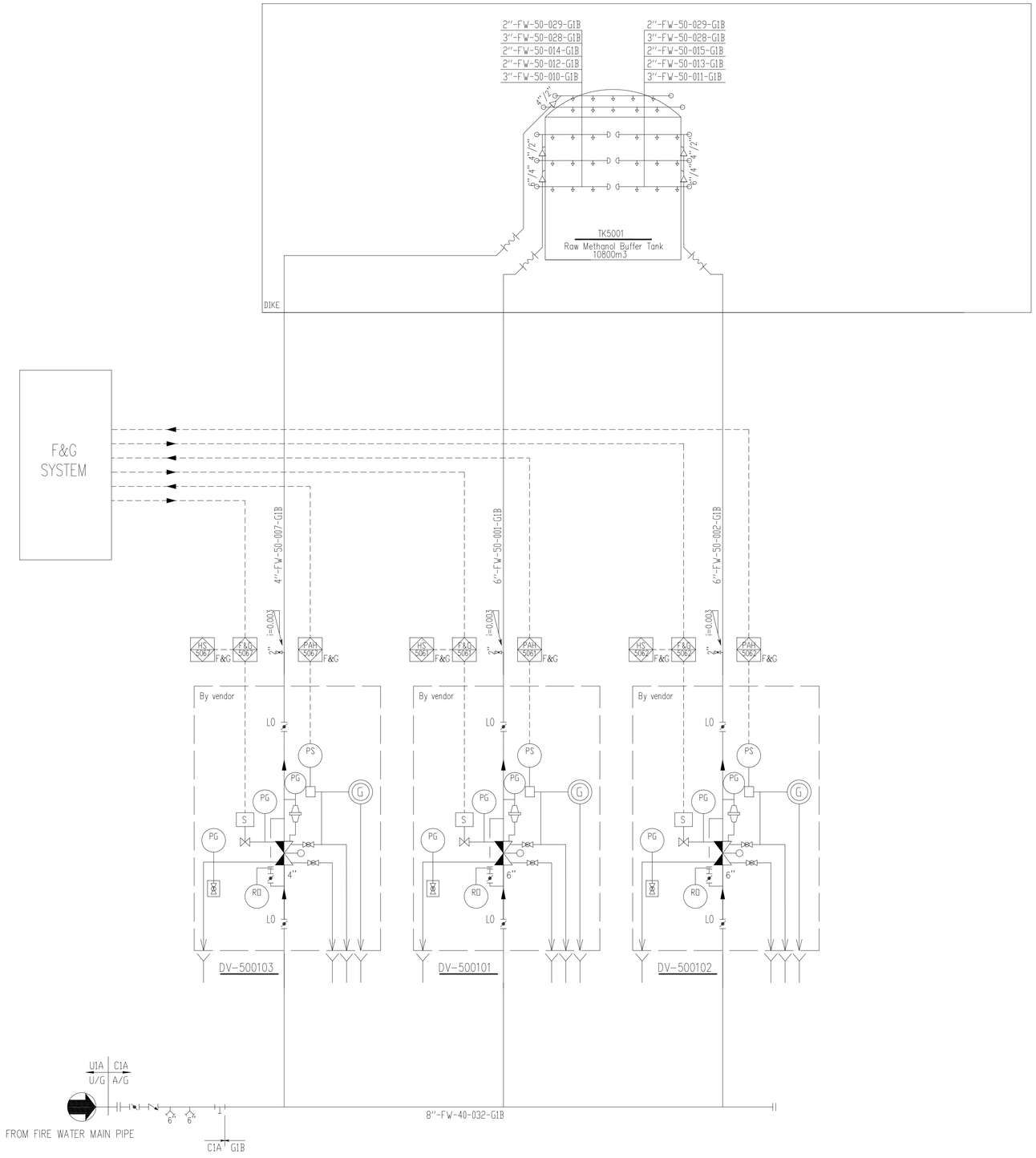
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – — TOTAL –

P&ID FOR FOAM SYSTEM IN UNIT 5000

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-5000-SF-PID-001

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date



GENERAL NOTES

PIPE NUMBER

6" — FW — 50 — 001 — G1B

- 6" — Nominal Diameter
- FW — Fluid Code
- 50 — Unit Number
- 001 — Sequence Number
- G1B — Pipe Class Code

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-5000-PI-PPL-019
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	metal hose		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	vacuum stiff. ring		pipe gap
	pressure operated relief valve(P.O.R.V.)		emergency release

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved for Construction	15.03.2017	Li Yang		Cui Yanjun	Deng Wenhui	
2	Approved for Construction	16.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
1	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-5000-PF03-PID-002

SHEET 01 TOTAL 01

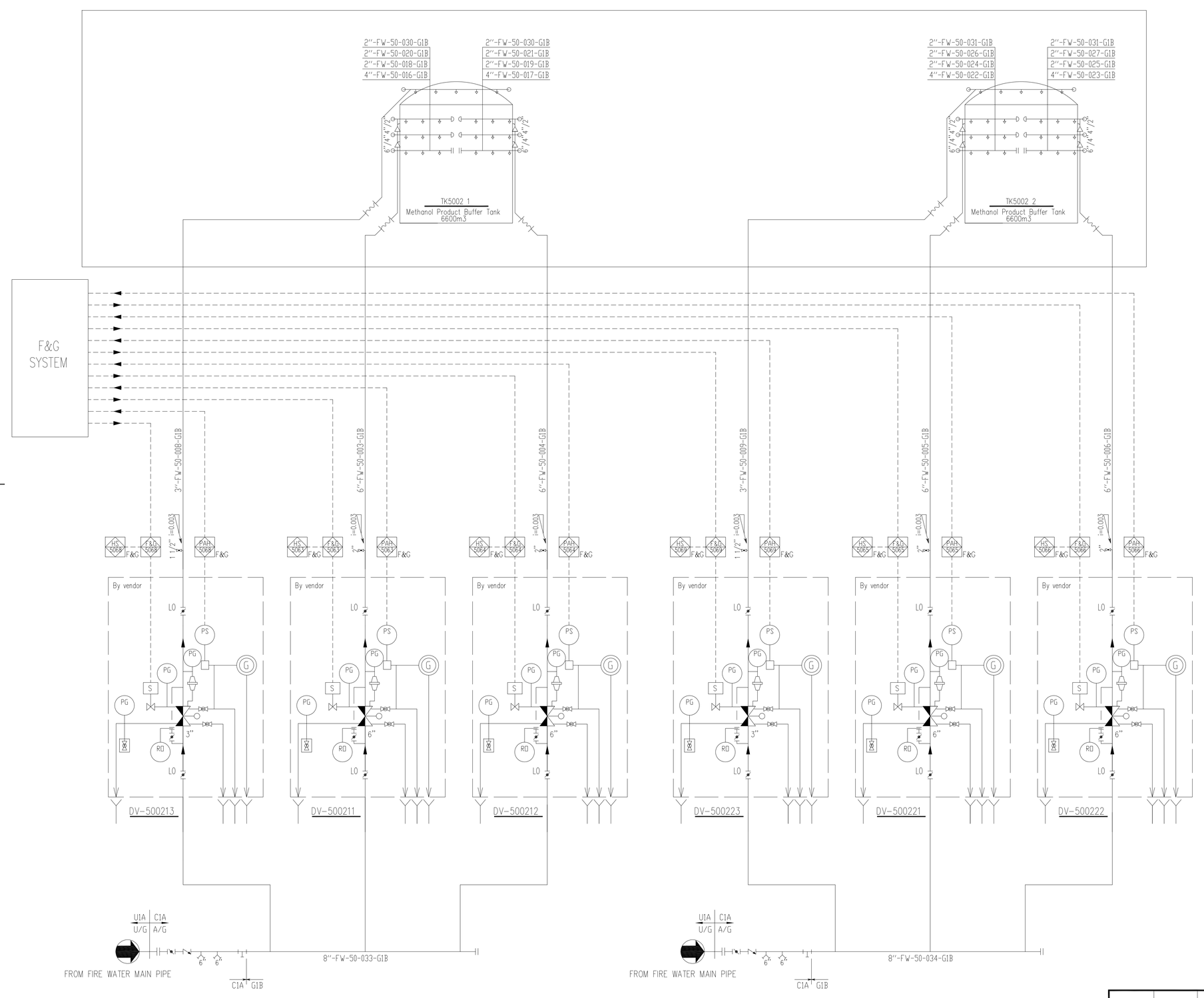
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

P&ID FOR SPRINKLER SYSTEM IN UNIT 5000	PROJECT	MKP Methanol Project	
	UNIT	Distillation Unit	
	PHASE	As built drawing	
SCALE N/A / SHEET 1 / TOT. 2 / SIZE A1	OWNER DWG NO.	MKP-11-AS-5000-SF-PID-002	

Counter Signing	Sign	Date



GENERAL NOTES

PIPE NUMBER

6" — FW — 50 — 005 — G1B

- Pipe Class Code
- Sequence Number
- Unit Number
- Fluid Code
- Nominal Diameter

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-5000-PI-PPL-019
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	metal hose		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	vacuum stiff. ring		blind flange
	pipe gap		emergency release
	pressure operated relief valve(P.O.R.V.)		

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved for Construction	15.03.2017	Li Yang		Cui Yanjun	Deng Wenhui	
2	Approved for Construction	16.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
1	Approved for Construction	23.09.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

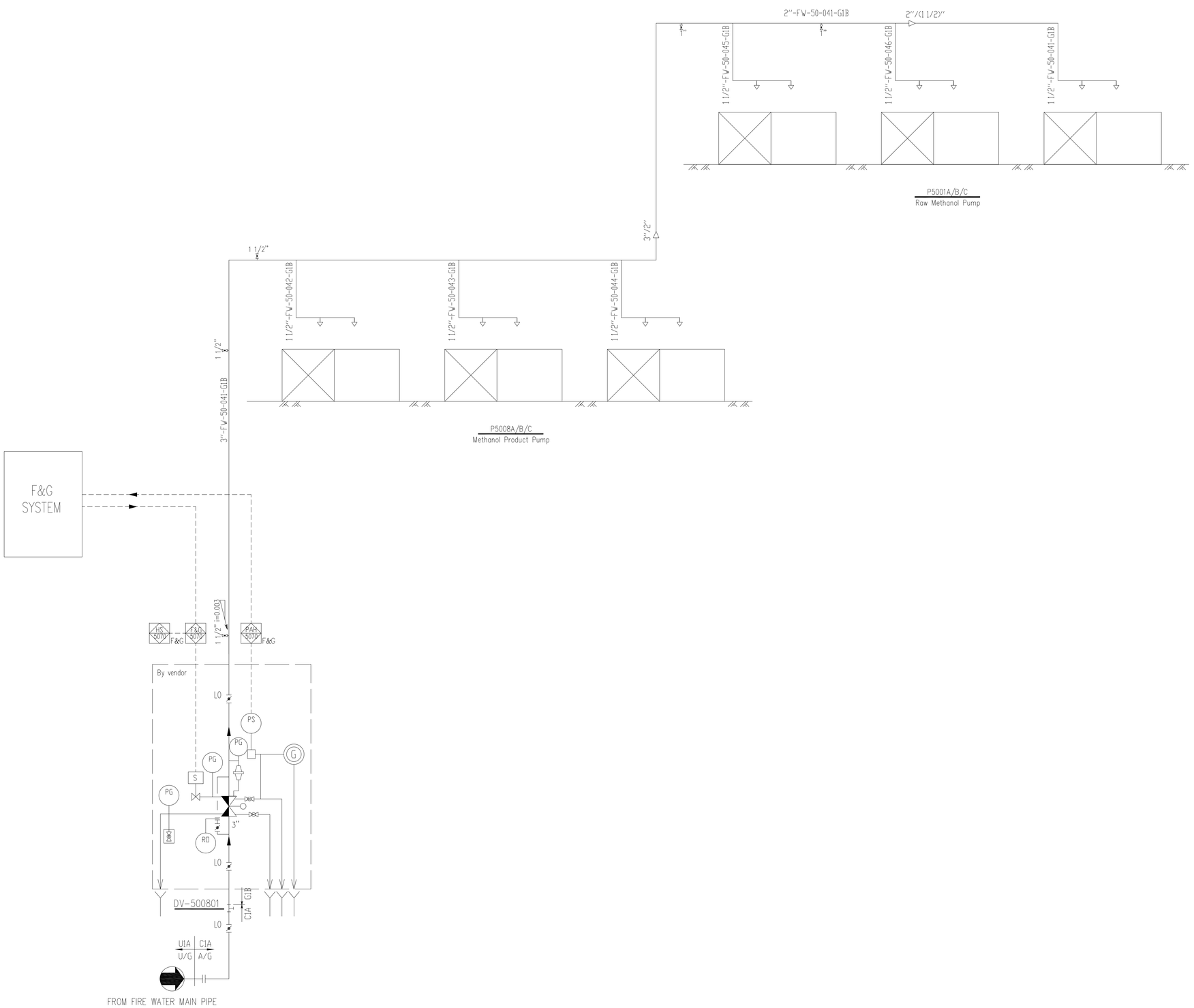
LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-5000-PF03-PID-002 — SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – TOTAL –

P&ID FOR SPRINKLER SYSTEM IN UNIT 5000		PROJECT	MKP Methanol Project
		UNIT	Distillation Unit
		PHASE	As built drawing
SCALE N/A	SHEET 2 / TOT. 2 / SIZE A1	OWNER DWG NO.	MKP-11-AS-5000-SF-PID-002

Counter Signing	Sign	Date



GENERAL NOTES

1. THE PIPE SHALL BE SLOPED TO THE DRAIN POINT , THE PIPE SHALL BE DRAINED BY DRAIN VALVE AFTER BEING USED .
2. DELUGE VALVE SHALL BE LOCATED AT A MINIMUM DISTANCE OF 15m AWAY FROM PROTECTED EQUIPMENT.
3. DOWN STREAM OF DELUGE VALVE SHALL BE CONSIDERED AS DRY SECTION AND FACILITIES SHALL BE PROVIDED TO DRAIN THE DRY PIPING AFTER OPERATION.

DESIGN PRAMETER FOR SPRAY SYSTEM

DELUGE VALVE		DV-500801					
EQP.NO.		P5008A	P5008B	P5008C	P5001A	P5001A	P5001A
AREA (m^2)		4.2	4.2	4.2	2.9	2.9	2.9
INTENSITY ($L/min.m^2$)		20.40	20.40	20.40	20.40	20.40	20.40
SUPPLY POWER (L/s)		14.4					
PRAMETER FOR NOZZLE	TYPE	MEDIUM-SPEED SPRAY SPRINKLER (CONE NOZZLE)					
	QUANTITY	2	2	2	2	2	2
	K-FACTOR	42	42	42	42	42	42
	MIN WORKING PRESSUR (MPa)	0.2	0.2	0.2	0.2	0.2	0.2
	SPRAY ANGLE	90°	90°	90°	90°	90°	90°
	DISTANCE ABOVE GROUND	2000mm	2000mm	2000mm	2000mm	2000mm	2000mm

PIPE NUMBER

3" — FW — 50 — 041 — G1B

- 3" — Nominal Diameter
- FW — Fluid Code
- 50 — Unit Number
- 041 — Sequence Number
- G1B — Pipe Class Code

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-5000-PI-PPL-019
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	pressure reducing orifice		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	pressure operated relief valve(P.O.R.V.)		emergency release

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved For Construction	02.06.2017	Li Yang		Cui Yanjun	Deng Wenhui	
2	Approved For Construction	15.03.2016	Li Yang		Cui Yanjun	Deng Wenhui	
1	Approved For Construction	16.12.2016	Li Yang		Cui Yanjun	Deng Wenhui	
0	Approved For Construction	31.10.2016	Li Yang		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-5000-PF03-PID-003 — SHEET 01 — TOTAL 01

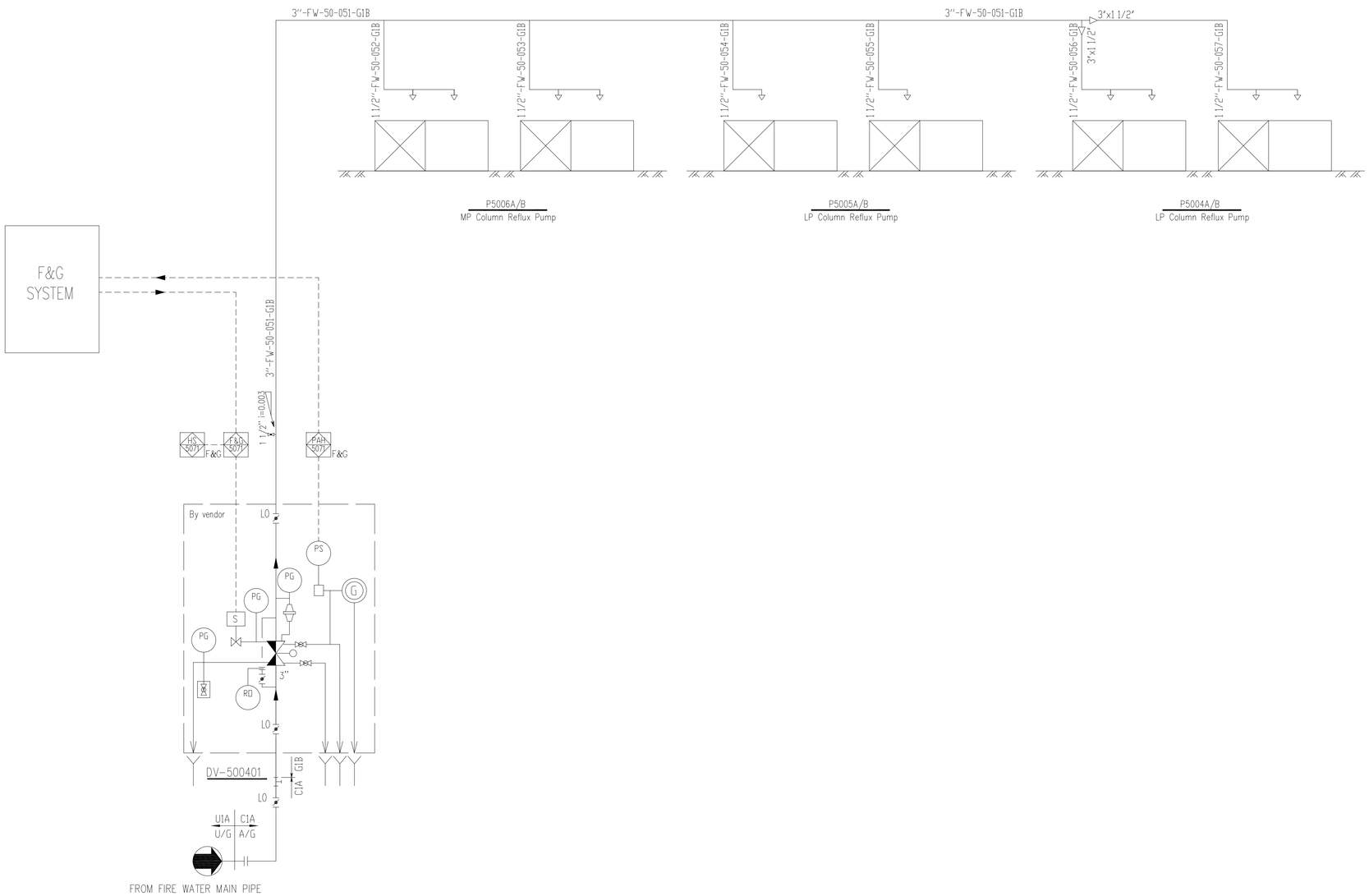
SUB CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – — TOTAL –

P&ID FOR SPRINKLER SYSTEM FOR PUMPS IN UNIT 5003

PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-5000-SF-PID-003

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date



GENERAL NOTES

1. THE PIPE SHALL BE SLOPED TO THE DRAIN POINT , THE PIPE SHALL BE DRAINED BY DRAIN VALVE AFTER BEING USED .

DESIGN PRAMETER FOR SPRAY SYSTEM

DELUGE VALVE		DV-500401					
EQP.NO.		P5004A	P5004B	P5005A	P5005B	P5006A	P5006B
AREA (m^2)		8.5	8.5	3.0	3.0	8.5	8.5
INTENSITY ($L/min.m^2$)		20.40	20.40	20.40	20.40	20.40	20.40
SUPPLY POWER (L/s)		13.2					
PRAMETER FOR NOZZLE	TYPE	MEDIUM-SPEED SPRAY SPRINKLER (CONE NOZZLE)					
	QUANTITY	2	2	1	1	2	2
	K-FACTOR	42	42	42	42	42	42
	MIN WORKING PRESSUR (MPa)	0.2	0.2	0.2	0.2	0.2	0.2
	SPRAY ANGLE	90°	90°	90°	90°	90°	90°
	DISTANCE TO EQUIPMENT BODY	1200mm	1200mm	1200mm	1200mm	1200mm	1200mm

PIPE NUMBER

6" — FW — 50 — 001 — G1B

- Pipe Class Code
- Sequence Number
- Unit Number
- Fluid Code
- Nominal Diameter

REFERENCE DRAWINGS

MKP-11-DE-9700-SF-SPC-001	MKP-11-DE-5000-PI-PPL-020
MKP-11-DE-9000-IN-CED-001	

SYMBOLS AND LEGENDS

	spray nozzle		deluge vavle
FW	fire fighting water		T type strainer
	pressure reducing orifice		butterfly valve
	globe valve		ball valve
G	water motor gong		check valve
	pressure operated relief valve(P.O.R.V.)		emergency release

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Liu Jian		Cui Yanjun	Deng Wenhui	
4	Approved for Construction	04.06.2016	Liu Jian		Cui Yanjun	Deng Wenhui	
3	Approved for Construction	15.03.2016	Liu Jian		Cui Yanjun	Deng Wenhui	
2	Approved For Construction	12.12.2016	Liu Jian		Cui Yanjun	Deng Wenhui	
1	Approved For Construction	31.10.2016	Liu Jian		Cui Yanjun	Deng Wenhui	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM:

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-5000-PF03-PID-004 — SHEET 01 — TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – — TOTAL –

P&ID FOR SPRINKLER SYSTEM FOR PUMPS IN UNIT 5001

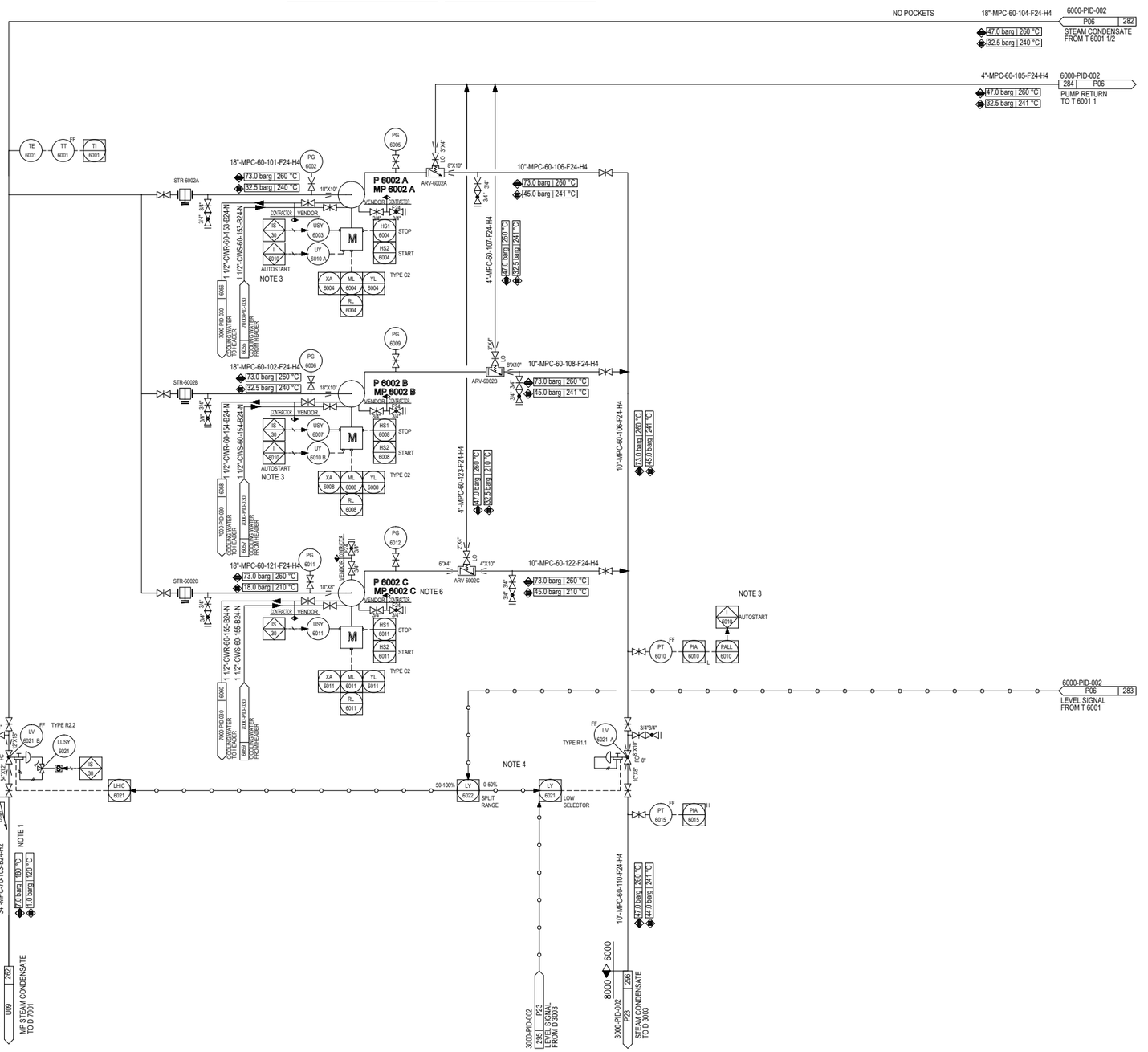
PROJECT	MKP Methanol Project
UNIT	Distillation Unit
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-5000-SF-PID-004

SCALE N/A | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date

P 6002 A/B	STEAM CONDENSATE RETURN PUMP
RATED CAPACITY	351.6 m3/h
HEAD	155.7 m
DENSITY@DT	814 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	By Vendor
ELEV. OF EQUIPMENT	EL +101.230m

P 6002 C	STEAM CONDENSATE RETURN PUMP
RATED CAPACITY	157 m3/h
HEAD	322 m
DENSITY@DT	853 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	By Vendor
ELEV. OF EQUIPMENT	EL +101.230m



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

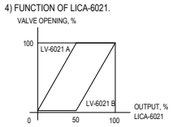
+NOTES:

1) TWO PHASE FLOW.

2) LV-6021 B MUST BE LOCATED AS CLOSE AS POSSIBLE TO D-7001. ELEVATION ABOVE D 7001.

3) THE SPARE PUMP OF P 6002 A/B WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

4) FUNCTION OF LICA-6021.



6) P 6002 C JUST FOR STARTUP CASE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.01.2018	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	05.05.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.03.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.01.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	13.10.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	31.08.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	25.06.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Xu Yekun		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: STEAM CONDENSATE RETURN PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC. SEQ. 42 | REV. A | DRWG NO. 1341715 | DIAGRAM P05

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-6000-PS07-PID-001

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

STEAM CONDENSATE RETURN PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Saturator Unit
PHASE	As Built Drawing

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1 | OWNER DWG NO. MKP-11-AS-6000-PR-PID-001

T 6001 1/2	SATURATOR	
DUTY	124.1	MW
DESIGN PRESS.(TU/SH)	55/FV-45	barg
DESIGN TEMP.(TU/SH)	290/300	°C
INSULATION	YES	
ELEV. OF EQUIPMENT	EL +107.240m	

X 6001A/B	PARTICLE FILTER	
FILTER SURFACE	N/A	m2
CAPACITY	178000	kg/hr
DESIGN PRESS.	71	barg
DESIGN TEMP.	200	°C
MATERIAL SHELL	SS	
MATERIAL FILTER ELEMENT	SS	
ELEV. OF EQUIPMENT	EL +101.250m	

L 6001	HOIST 6001	
TYPE	CHAIN HOIST	
CAPACITY	3	t
LIFT HEIGHT	6	m
SLIDING DISTANCE	7	m

GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) SYMMETRICAL PIPING

2) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

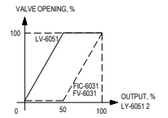
3) TWO PHASE FLOW.

4) STEAM TRAPS TO BE PROVIDED AT LOW POINTS.

5) NOZZLE B2 ON T 6001 1/2 MUST BE ELEVATED MIN. 4 m ABOVE P 6002 A/B. TO BE CONFIRMED BY VENDOR.

6) T 6001 1/2 MUST BE LOCATED AT SAME ELEVATION. NOZZLE B2 ON T 6001 1/2 MUST BE LOCATED MIN. 4m ABOVE P 6002 A/B. TO BE CONFIRMED BY VENDOR.

7) FUNCTION OF LY-6051 2.



8) HOIST IS USED FOR CLEANING OF X 6001 A/B.

9) AS PER EQUIPMENT ENGINEER AND VENDOR'S SUGGESTION, THE VENT NOZZLE OF T 6001 1/2 (V1) ARE MOVED TO THE HIGHEST POINT OF T 6001 1/2 SHELL SIDE TO INCREASE VENTING PERFORMANCE. SINCE THE SPACE IS VERY LIMITED, THE VEN NOZZLE (V1, 2") IS SEPARATED TO TWO NOZZLES (V1 AND V3 ,1").

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	13.12.2018	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	05.05.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.03.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.01.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	13.10.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	31.08.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	25.06.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Xu Yekun		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S

DOCUMENT NAME: NG SATURATION I PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DOC GRP. 42 | DISCIPLINE 1341716 | DIAGRAM P06 | REV. 1

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-6000-PS07-PID-002

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – | TOTAL –

Counter Signing	Sign	Date

NG SATURATION I
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Saturator Unit
PHASE	As Built Drawing
SCALE: –	SHEET: 1 / TOT.: 1 / SIZE: A1
OWNER DWG NO.	MKP-11-AS-6000-PR-PID-002

X 6002A/B	PARTICLE FILTER	
FILTER SURFACE	N/A	m2
CAPACITY	32200	kg/hr
DESIGN PRESS.	71	barg
DESIGN TEMP.	200	°C
MATERIAL SHELL	SS	
MATERIAL FILTER ELEMENT	SS	
ELEV. OF EQUIPMENT	EL +101.150m	

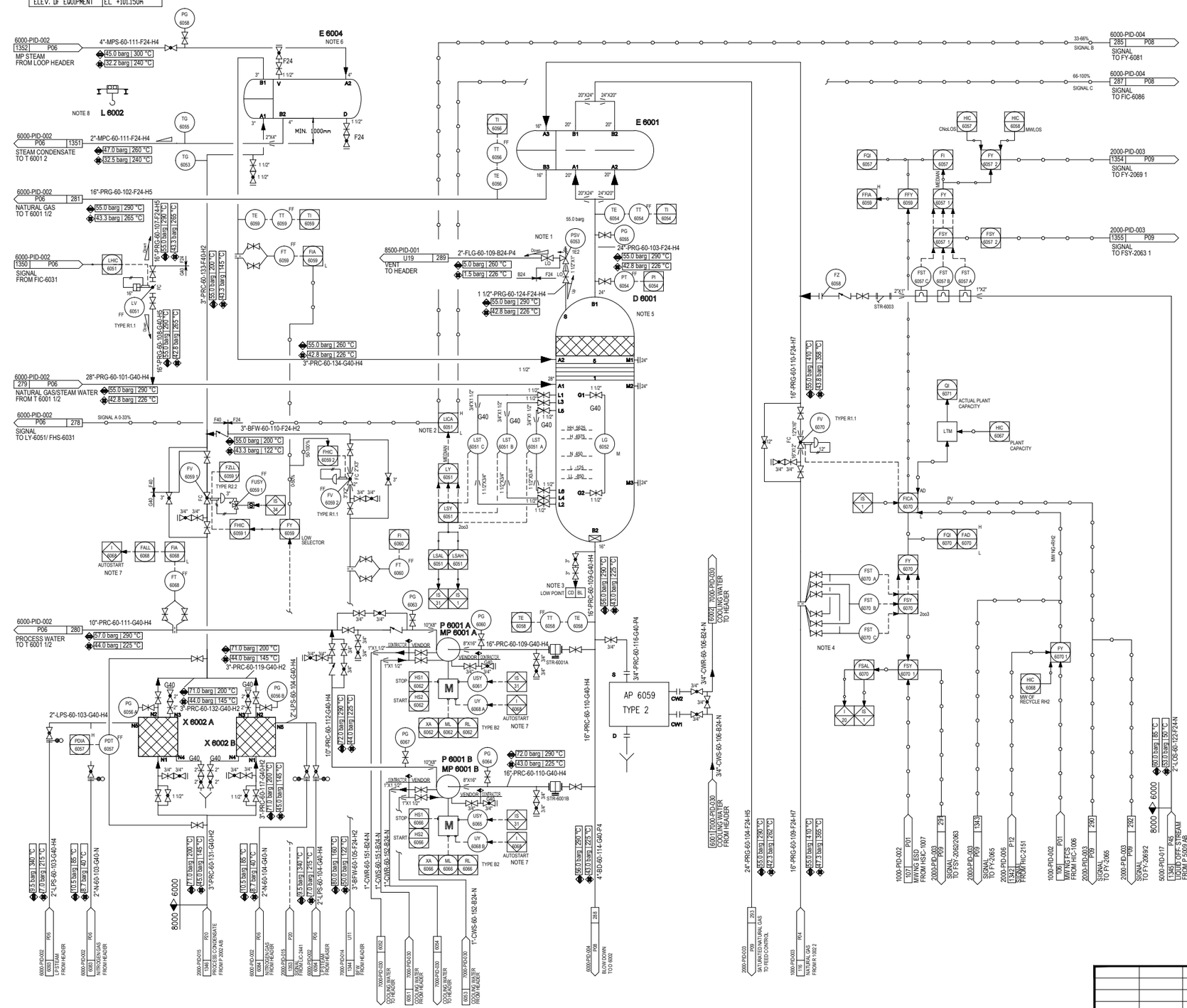
L 6002	HOIST 6002	
TYPE	CHAIN HOIST	
CAPACITY	2	t
LIFT HEIGHT	6	m
SLIDING DISTANCE	6	m

E 6004	WASH WATER PREHEATER	
DUTY	2.9	MW
DESIGN PRESS.(TU/SH)	55/45	barg
DESIGN TEMP.(TU/SH)	260/300	°C
INSULATION	YES	
ELEV. OF EQUIPMENT	EL +121.550m	

P 6001 A/B	SATURATOR CIRCULATION PUMP	
RATED CAPACITY	416.8	m3/h
HEAD	43.5	M
DENSITY@OT	832	kg/n3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
ELEV. OF EQUIPMENT	EL +101.260m	

D 6001	FEED GAS SCRUBBER SEPARATOR	
ID x LENGTHT-T)	3400 x 12400	mm
DESIGN PRESS.	55/FV	barg
DESIGN TEMP.	290	°C
INSULATION	YES	
CLADDING/LINING	NONE	
ELEV. OF EQUIPMENT	EL +105.140m	

E 6001	SATURATOR FEED/EFFL. EXCHANGER	
DUTY	10.0	MW
DESIGN PRESS.(TU/SH)	55/55	barg
DESIGN TEMP.(TU/SH)	410/290	°C
INSULATION	YES	
ELEV. OF EQUIPMENT	EL +126.350m	



GENERAL NOTES

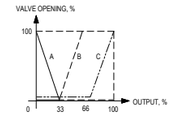
+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

NOTES:

1) TO BE LOCATED ABOVE FLARE HEADER.

2) FUNCTION OF LIC-6051



3) THE CLOSED DRAIN WILL BE COLLECTED IN A PORTABLE SEALED CONTAINER.

4) P&T COMPENSATION FROM PIC-1045,TI-1045; MW COMPENSATION FROM HIC-1006.

5) NOZZLE B2 ON D 6001 MUST BE LOCATED MIN 2 m ABOVE P 6001 A/B. (TO BE CONFIRMED BY PUMP VENDOR.)

6) E 6004 TO BE LOCATED MIN. 5m ABOVE MAX LEVEL IN T 6001 1/2.

7) THE SPARE PUMP OF P 6001 A/B WOULD AUTOSTART WHEN THE OUTLET FLOWRATE DECREASED.

8) HOIST IS USED FOR CLEANING OF X 6002 A/B.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	13.12.2018	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.02.2018	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	05.05.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.03.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.01.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	13.10.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	31.08.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	25.06.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Xu Yekun		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
DOCUMENT NAME: NG SATURATION II PIPING AND INSTRUMENT DIAGRAM
JOB NO. S-02115 | DOC GRP. 42 | REV. 1
DWG NO. 1341717 | DIAGRAM P07

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-6000-PS07-PID-003
SHEET 01 | TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

NG SATURATION II PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project	
	UNIT	Saturator Unit	
	PHASE	As Built Drawing	
SCALE: –	SHEET: 1	TOT.: 1	SIZE: A1
	OWNER DWG NO.	MKP-11-AS-6000-PR-PID-003	

Counter Signing	Sign	Date

E6002	PROCESS CONDENSATE PREHEATER
DUTY	0.7 MW
DESIGN PRESS.(TU/SH)	71/56 barg
DESIGN TEMP.(TU/SH)	255/ 255 °C
INSULATION	YES
ELEV. OF EQUIPMENT	EL +101.230m

P 7003 A/B/C	EXCESS PROCESS CONDENSATE PUMP
RATED CAPACITY	22 m3/h
HEAD	63.22 M
DENSITY@DT	959 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	By Vendor
ELEV. OF EQUIPMENT	EL +101.060m

D 6002	SATURATOR BLOW DOWN DRUM
ID x LENGTH(T-T)	1300 x 4375mm
DESIGN PRESS.	3.5 barg
DESIGN TEMP.	125 °C
INSULATION	NO
CLADDING/LINING	PERSONNEL PROTECTION
ELEV. OF EPUIPMENT	EL +107.240m

E 6003	SATURATOR BLOW DOWN COOLER
DUTY	1.9 MW
DESIGN PRESS.(TU/SH)	7.5/9.9 barg
DESIGN TEMP.(TU/SH)	100/125 °C
INSULATION	YES
ELEV. OF EQUIPMENT	EL +101.355m

GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) TWO PHASE FLOW.

2) FV-6081 AND FV-6086 MUST BE LOCATED CLOSE TO D 6002.

3) FUNCTION OF LIC-6082

+4) NOZZLE B ON D 6002 MUST BE LOCATED MIN. 5m ABOVE P 7003 A/B/C (TO BE CONFIRMED BY PUMP VENDOR).

5) THE SPARE PUMP OF P 7003 A/B/C WOULD AUTOSTART WHEN THE OUTLET PRESSURE DECREASED.

6) IN NORMAL CONDITION, THE FLOW RATE OF LINE 4"-BD-60-138-B40-N IS 0. THE MAXIMUM OPERATING TEMPERATURE OF THIS LINE IS 65°C WHEN ITS FLOW RATE ACHIEVED THE MAXIMUM VALUE.

7) DURING THE MAXIMUM FLOW RATE PHASE, ALL OF THE THREE PUMPS WILL BE UNDER OPERATION.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.02.2018	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	05.05.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.03.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	22.01.2017	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	13.10.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Approval	25.06.2016	Xu Yekun		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Xu Yekun		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: NG SATURATION III PIPING AND INSTRUMENT DIAGRAM

JOB NO. S-02115 | DWG NO. 1341718 | DOC. TYP. 42 | DIAGRAM P08 | REV. A

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-6000-PS07-PID-004

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

NG SATURATION III PIPING AND INSTRUMENT DIAGRAM	PROJECT	MKP Methanol Project	
	UNIT	Saturator Unit	
	PHASE	As Built Drawing	
SCALE: – SHEET: 1 TOT.: 1 SIZE: A1	OWNER DWG NO.	MKP-11-AS-6000-PR-PID-004	

Counter Signing	Sign	Date

X 7011AB	HHP-HP STEAM LET DOWN STATION	
CAPACITY	400,000	kg/hr
STEAM INLET PRESS.	98	barg
STEAM INLET TEMP.	454	°C
STEAM OUTLET PRESS.	44	barg
STEAM OUTLET TEMP.	345	°C

X 7010	HHP-HP STEAM LET DOWN STATION	
CAPACITY	40,000	kg/hr
STEAM INLET PRESS.	98	barg
STEAM INLET TEMP.	454	°C
STEAM OUTLET PRESS.	44	barg
STEAM OUTLET TEMP.	345	°C

SI 7010	HP STEAM VENT SILENCER	
CAPACITY	400,000	kg/hr
DESIGN PRESS.	12	barg
DESIGN TEMP.	410	°C
MATERIAL SHELL	CS	

GENERAL NOTES

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

NOTES:

1)THE MINIMUM DISTANCE BETWEEN BFW INJECTION POINT AND THE TI ELEMENT WHICH CONTROLS THE CONTROL VALVE SHALL BE SATISFIED, THIS DISTANCE TO BE DIRECT WITHOUT EXTRA FITTING PREFERABLY.

2) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

3) LOCK UP SIGNAL FROM COMPLETE TRIP OF SYNTHESIS GAS COMPRESSOR C 3001/3002.

4) P&T COMPENSATION FROM PIC-7003, TI-7001

5)NOTE: PV-7004 includes 3 noise reduction disks, the size is 16"-20"-28"and the reducer considered by piping.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
3	Approved For Construction	1.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
2	Approved For Construction	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
B	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
C	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
D	Issued For Comments	06.05.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: HP STEAM EXPORT/IMPORT UTILITY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 4

DWG. NO. 1341759 | DIAGRAM U03

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-001

SHEET 01 | TOTAL 01

SUB CONTRACTOR: – | SHEET – | TOTAL –

HHP-HP STEAM CONTROL SYSTEM PIPING AND INSTRUMENT DIAGRAM

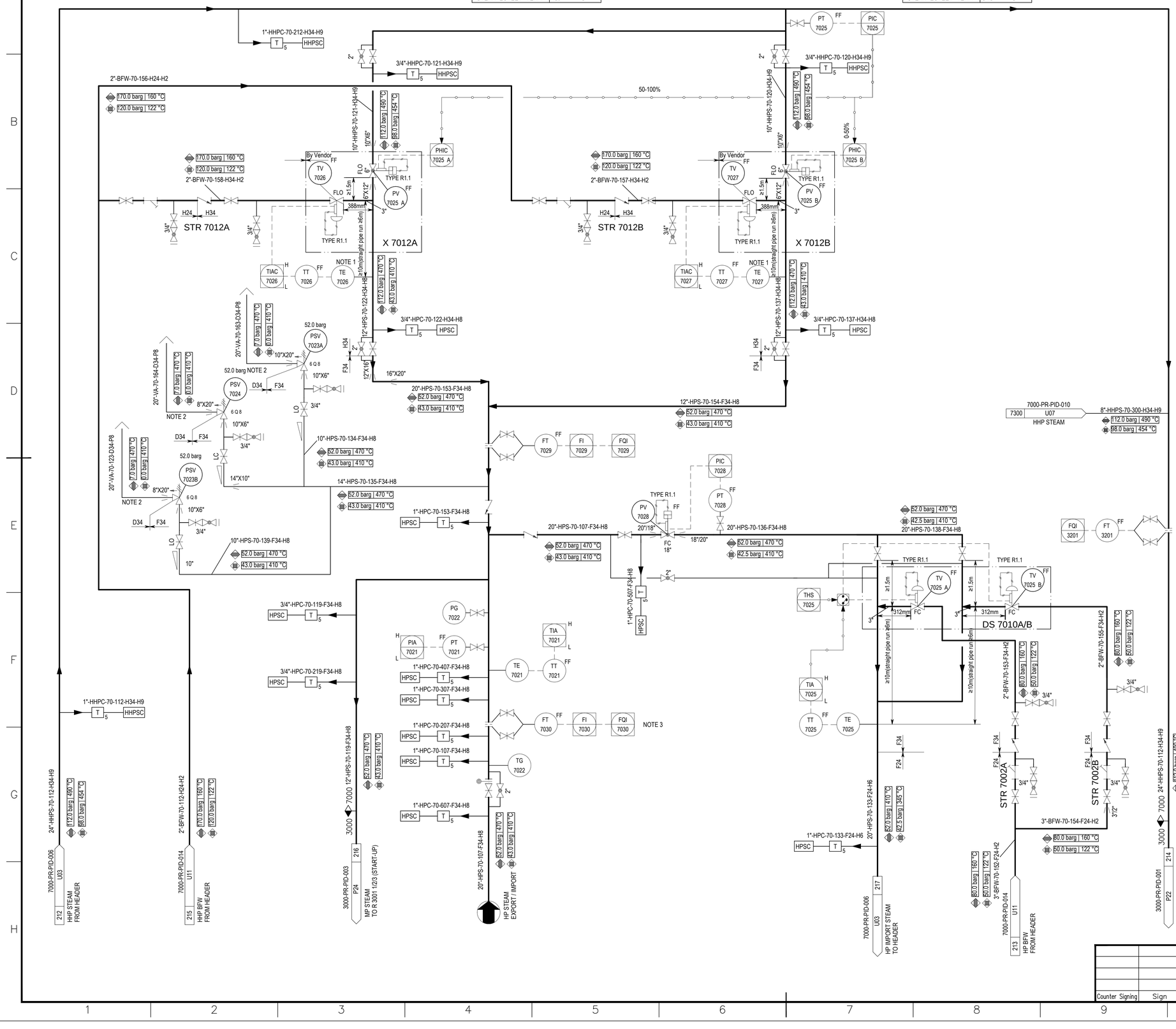
PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1 | OWNER | MKP-11-AS-7000-PR-PID-006

Counter Signing	Sign	Date

X 7012A/B	HHP-HP STEAM LET DOWN STATION
CAPACITY	115,000 kg/hr
STEAM INLET PRESS.	98 barg
STEAM INLET TEMP.	454 °C
STEAM OUTLET PRESS.	44 barg
STEAM OUTLET TEMP.	410 °C

DS 7010A/B	HP-HP STEAM DESUPERHEATER
CAPACITY	200,000 kg/hr
STEAM INLET PRESS.	44 barg
STEAM INLET TEMP.	430 °C
STEAM OUTLET PRESS.	44 barg
STEAM OUTLET TEMP.	345 °C



GENERAL NOTES

+GENERAL NOTE:

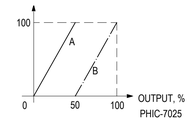
LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

NOTES:

1)THE MINIMUM DISTANCE BETWEEN BFW INJECTION POINT AND THE TI ELEMENT WHICH CONTROLS THE CONTROL VALVE SHALL BE SATISFIED, THIS DISTANCE TO BE DIRECT WITHOUT EXTRA FITTING PREFERABLY.

2) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

3) P&T COMPENSATION FROM PI-7021, TI-7021



REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
7	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
6	Approved For Construction	01.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
5	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
4	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
3	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
2	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Issued For Comments	29.04.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: HP STEAM EXPORT/IMPORT UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 3

DWG. NO. 1341760 | DIAGRAM U04

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-002

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

SHEET – | TOTAL –

Counter Signing	Sign	Date

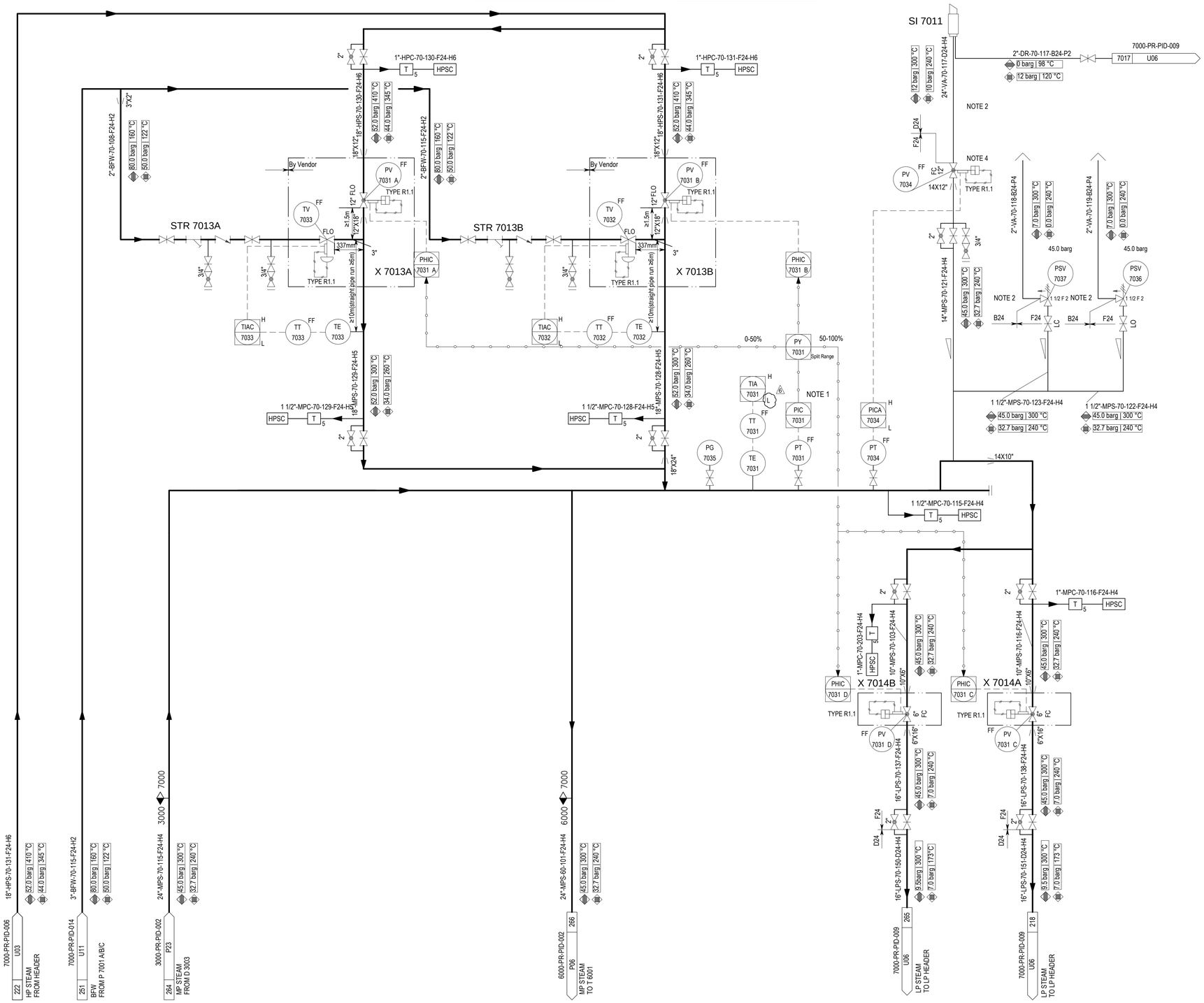
HP STEAM EXPORT/IMPORT
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
SCALE 1 / SHEET 1 / TOT. 1 / SIZE A1	OWNER: MKP-11-AS-7000-PR-PID-007

X 7013A/B	HHP-MP STEAM LET DOWN STATION	
CAPACITY	260,000	kg/hr
STEAM INLET PRESS.	44	barg
STEAM INLET TEMP.	345	°C
STEAM OUTLET PRESS.	34	barg
STEAM OUTLET TEMP.	260	°C

X 7014A/B	MP-LP STEAM LET DOWN STATION	
CAPACITY	50,000	kg/hr
STEAM INLET PRESS.	40	barg
STEAM INLET TEMP.	252	°C
STEAM OUTLET PRESS.	7.5	barg
STEAM OUTLET TEMP.	188	°C

SI 7011	MP STEAM VENT SILENCER	
CAPACITY	280,000	kg/hr
DESIGN PRESS.	12	barg
DESIGN TEMP.	300	°C
MATERIAL SHELL	CS	



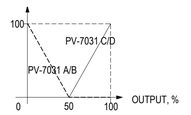
GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) FUNCTION OF PIC-7031 VALVE OPENING, %



+2) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

3)THE MINIMUM DISTANCE BETWEEN BFW INJECTION POINT AND THE TI ELEMENT WHICH CONTROLS THE CONTROL VALVE SHALL BE SPECIFIED BY VENDOR, THIS DISTANCE TO BE DIRECT WITHOUT EXTRA FITTING PREFERABLY.

4)PV-7034 includes 3 noise reduction disks, the size is 16"-20"-24" and the reducer considered by piping.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
3	Approved For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
2	Approved For Construction	01.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Approved For Construction	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Comments	29.04.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: MP AND LP STEAM CONTROL UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 3

DWG. NO. 1341761 | DIAGRAM U05

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-003

SHEET 01 | TOTAL 01

SUB CONTRACTOR: –

SHEET – | TOTAL –

MP AND LP STEAM CONTROL SYSTEM
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-008

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date

X 7015A/B	HP-LP STEAM LET DOWN STATION	
CAPACITY	130,000	kg/hr
STEAM INLET PRESS.	44	barg
STEAM INLET TEMP.	345	°C
STEAM OUTLET PRESS.	7.5	barg
STEAM OUTLET TEMP.	190	°C

SI 7012	LP STEAM VENT SILENCER	
CAPACITY	200,000	kg/hr
DESIGN PRESS.	7	barg
DESIGN TEMP.	340	°C
MATERIAL SHELL	CS	

GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

2)THE MINIMUM DISTANCE BETWEEN BFW INJECTION POINT AND THE TI ELEMENT WHICH CONTROLS THE CONTROL VALVE SHALL BE SPECIFIED BY VENDOR, THIS DISTANCE TO BE DIRECT WITHOUT EXTRA FITTING PREFERABLY.

3)PV-7056 includes 1 noise reduction disks, the size is 20"and the reducer considered by piping.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
5	Approved For Construction	01.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
4	Approved For Construction	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
3	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
2	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Issued For Comments	29.04.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: LP STEAM CONTROL UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. DISP. 42 | REV. 3

DWG. NO. 1341762 | DIAGRAM U06

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-004

SHEET 01 | TOTAL 01

SUB CONTRACTOR: –

SHEET – | TOTAL –

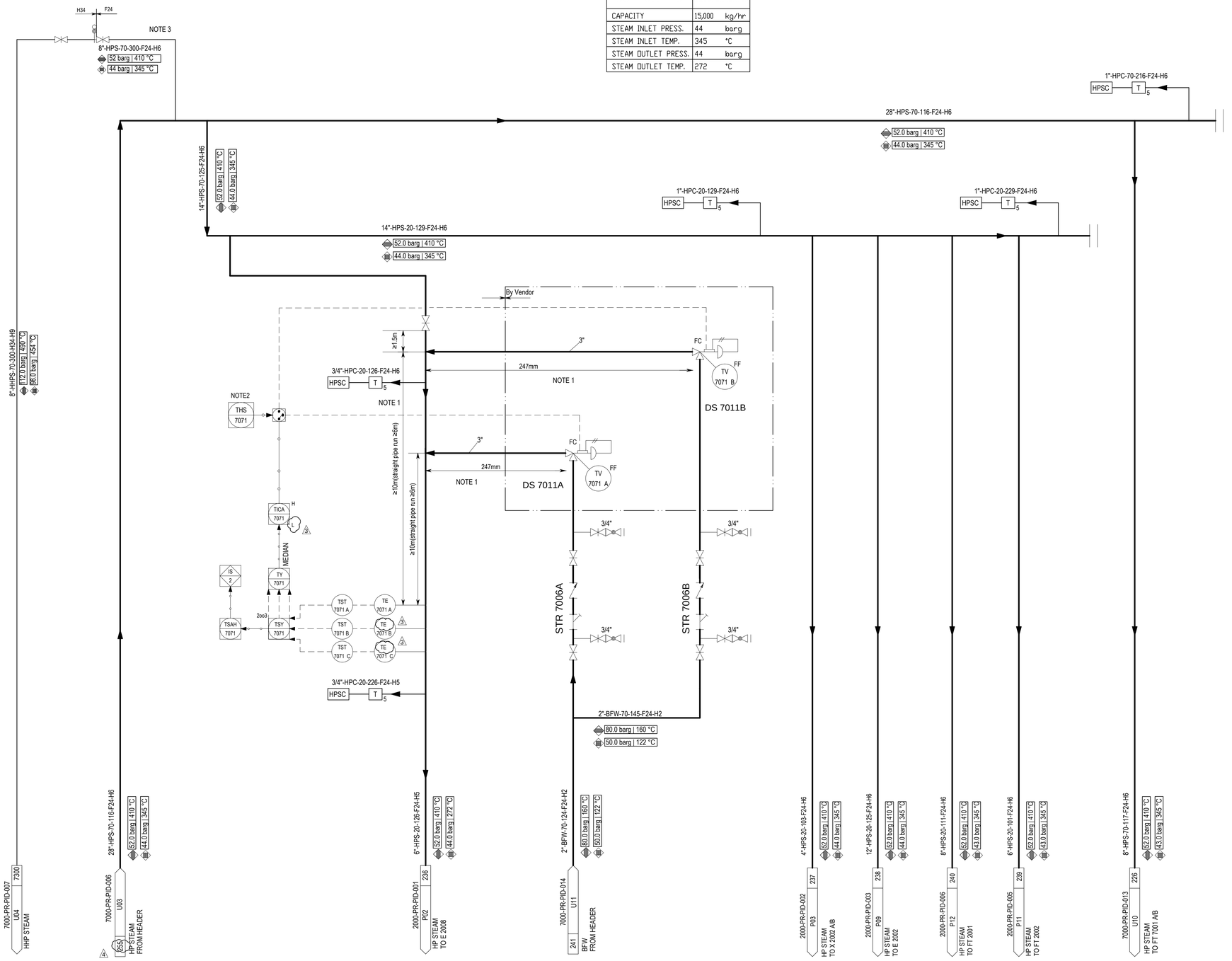
LP STEAM CONTROL
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-009

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date

DS 7011A/B	HP-HP STEAM DESUPERHEATER	
CAPACITY	15,000	kg/hr
STEAM INLET PRESS.	44	barg
STEAM INLET TEMP.	345	°C
STEAM OUTLET PRESS.	44	barg
STEAM OUTLET TEMP.	272	°C



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

NOTES:

1)THE MINIMUM DISTANCE BETWEEN BFW INJECTION POINT AND THE TI ELEMENT WHICH CONTROLS THE CONTROL VALVE SHALL BE SATISFIED, THIS DISTANCE TO BE DIRECT WITHOUT EXTRA FITTING PREFERABLY.

2) THE SELECTOR SWITCH THS-7071 ALLOWS OPERATOR TO SELECT CONTROL TV-7071A or TV-7071B

3) Steam line only used for FT3001 commissioning,the blind flange must be assembled in normal operation.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
A	Approved For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
A	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Approval	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Review	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Comments	29.04.2015	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: HHP-HP STEAM CONTROL SYSTEM UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. DEPT. 42 | REV. 1

DWG. NO. 1341763 | DIAGRAM U07

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-005

SHEET 01 | TOTAL 01

SUB-CONTRACTOR: –

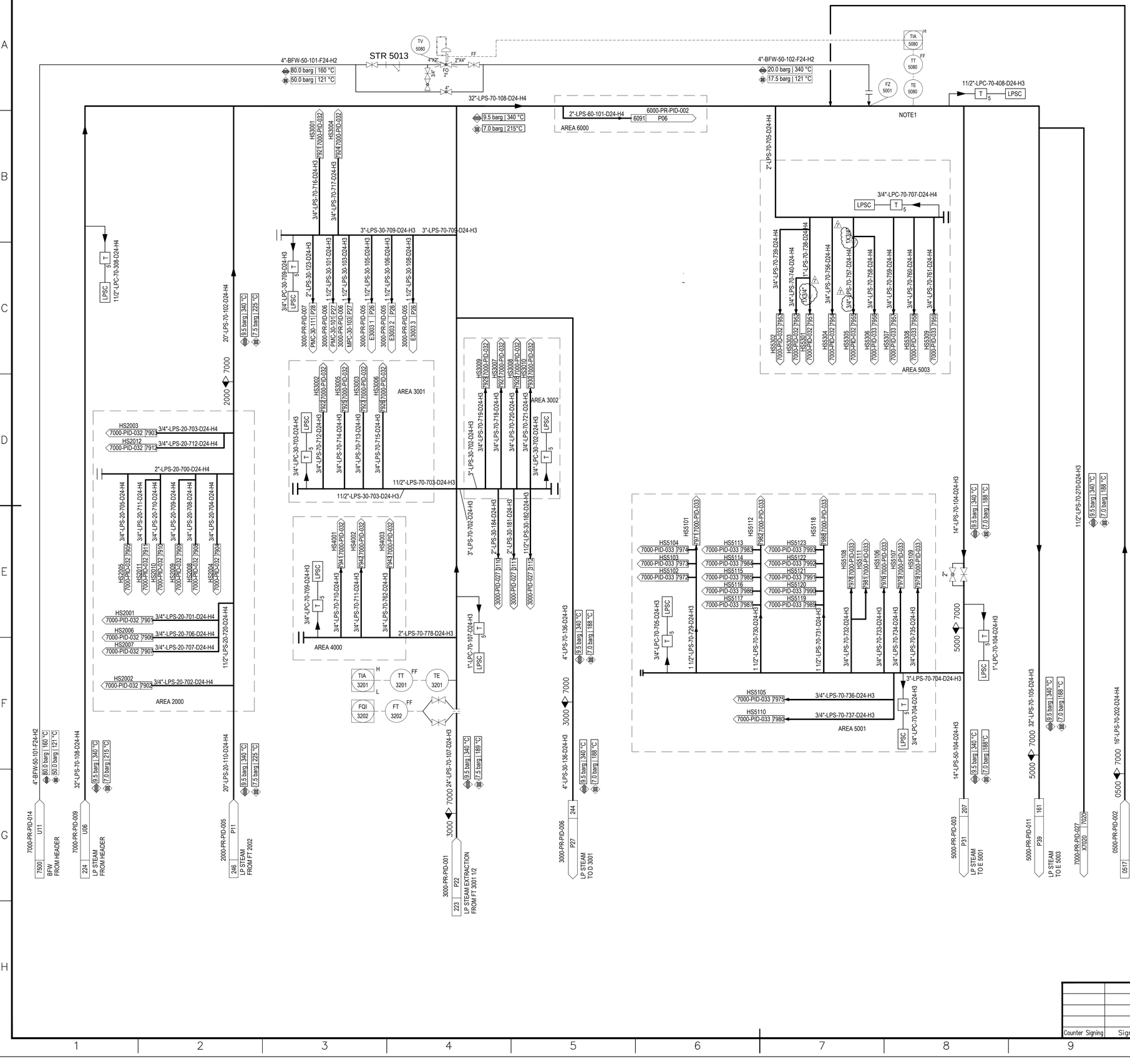
SHEET – | TOTAL –

HHP AND HP STEAM HEADER
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-010

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

NOTE1

The spray nozzle and TE shall be 2 meters before branch line to LPS-50-104 and 2 meters after connection point from LPS-70-202.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
A	Approved For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
A	Approved For Construction	18.10.2018	Chen Peng		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.08.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Comments	26.04.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: LP STEAM HEADER UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 2

DWG. NO. 1341764 | DIAGRAM U08

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-006

SHEET 01 | TOTAL 01

SUB-CONTRACTOR DRAWING NO. –

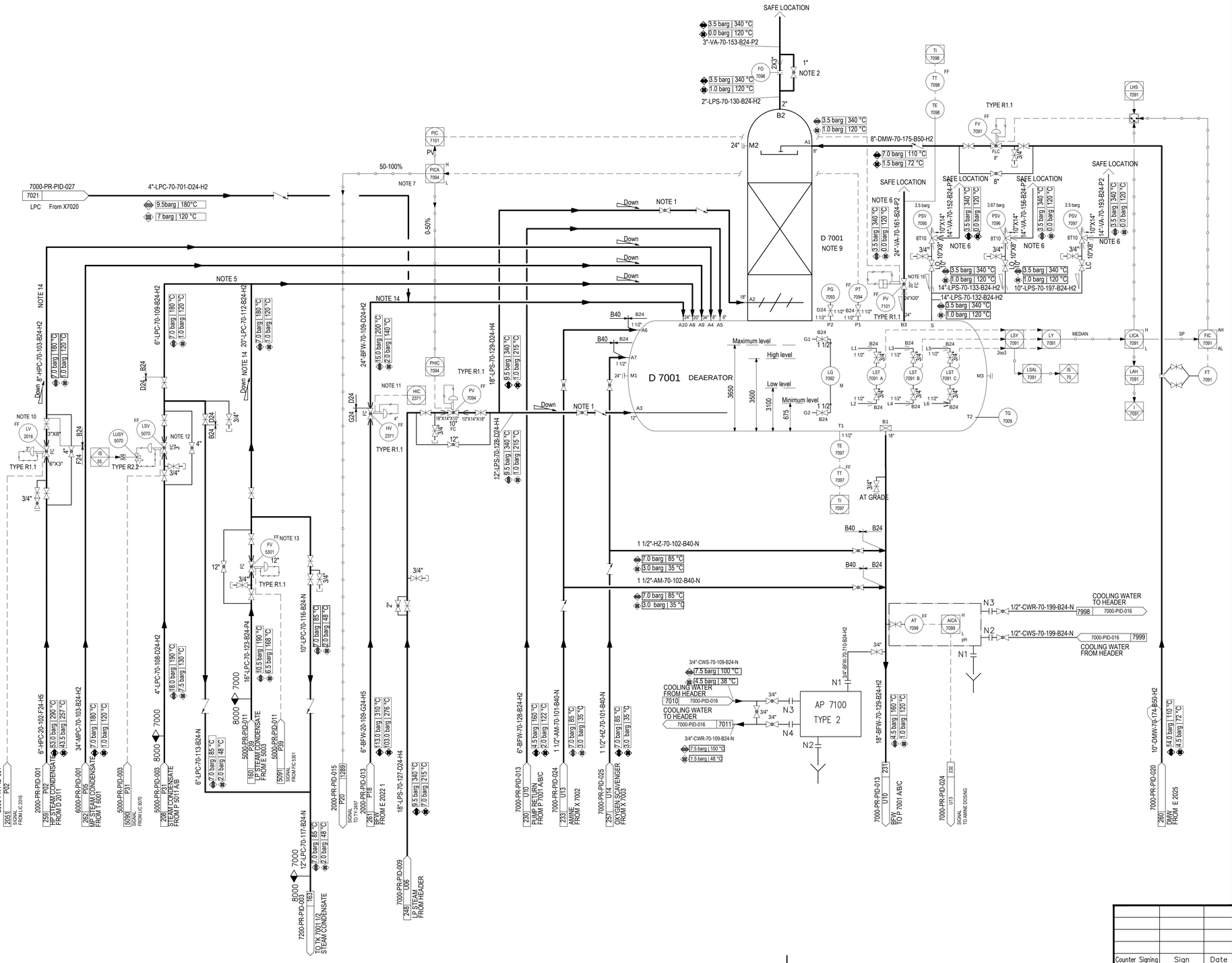
SHEET – | TOTAL –

Counter Signing	Sign	Date

LP STEAM HEADER
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-011

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1



D 7001	DEAERATOR
ID x LENGTH(T-T)	4400 x 13350 mm
DESIGN PRESS.	3.5 barg
DESIGN TEMP.	200 °C
INSULATION	YES
CLADDING/LINING	NONE
LEVEL OF EQUIPMENT	118.55m

GENERAL NOTES

GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED
DURING DETAILED ENGINEERING.

NOTES:

1) AS CLOSE AS POSSIBLE TO D 7001.

2) VALVE TO BE ACCESSIBLE.

3) PUMP IS STOPPED IN CASE OF LOW SUCTION PRESSURE.

4) CHECK VALVE AND MIN. FLOW VALVE TO BE OF DIFFERENT MAKE.

5) COMMON HEADER AT ELEVATION ABOVE INLET NOZZLE TO D 7001.

6) 1/2" DRIP HOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

7) PIC-7094 SPLIT RANGE CONTROL

8) ANALYSER ELEMENT TO BE INSTALLED MIN. 15x PIPE ID DOWNSTREAM THE MIXING POINT.

9) NOZZLE B1 ON D 7001 MUST BE LOCATED MIN. 10 m ABOVE P 7001 A/B/C. TO BE CONFIRMED BY PUMP VENDOR.

10) LV-2016 MUST BE LOCATED AS CLOSE AS POSSIBLE TO D 7001.

11) HV-2371 MUST BE LOCATED CLOSE TO D 7001.

12) LV-5070 MUST BE PLACED AS CLOSE AS POSSIBLE TO D 7001. ELEVATION ABOVE D 7001.

13) FV-5301 MUST BE PLACED AS CLOSE AS POSSIBLE TO D 7001.

14) TWO PHASE FLOW.

15) PV-7101 includes 1 noise reduction disks, the size is 20"and the reducer considered by piping.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
7	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
6	Approved For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
5	Approved For Construction	01.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
4	Approved For Construction	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
3	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
2	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
C	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Comments	29.04.2015	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

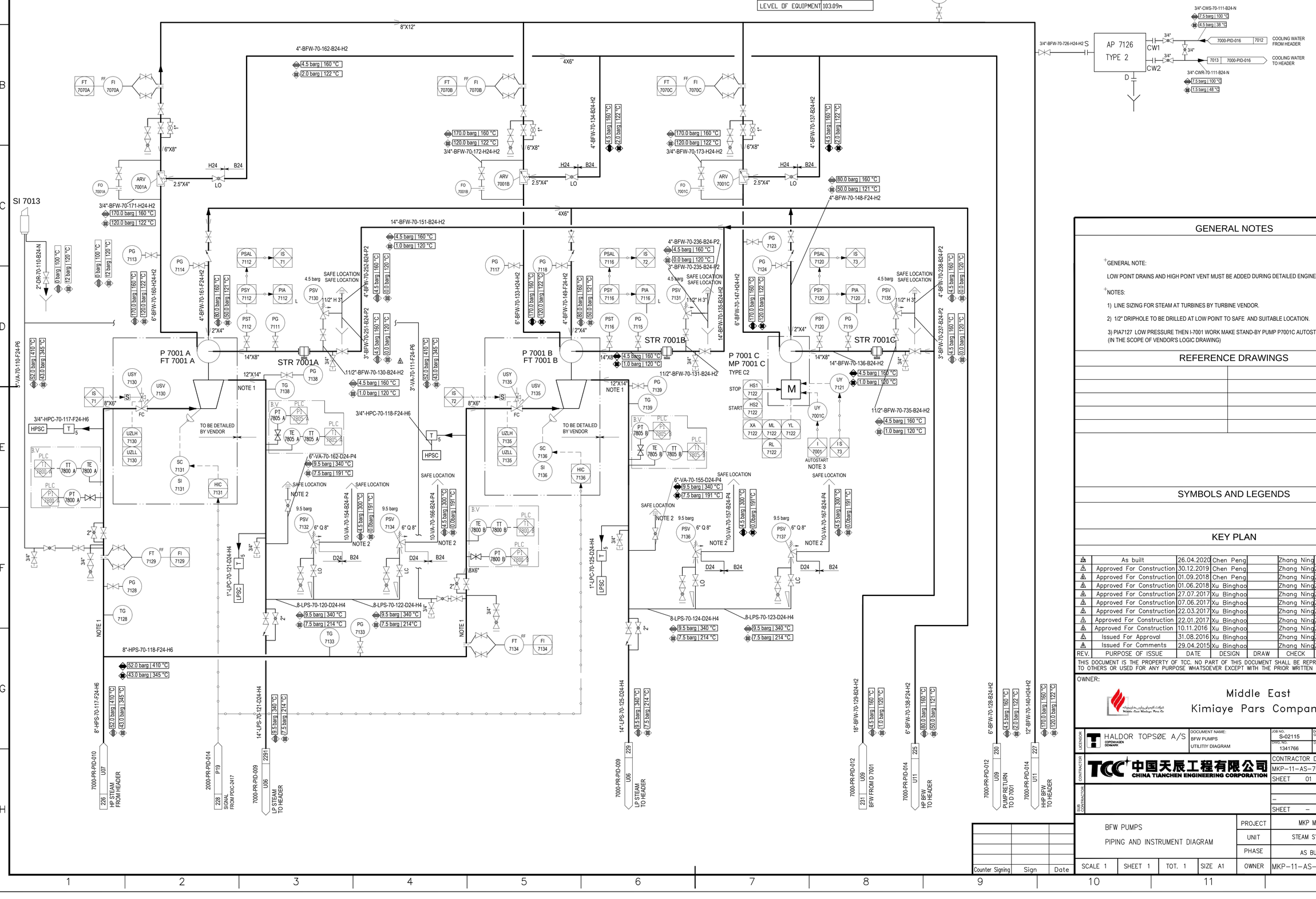
LICENSOR	HALDOR TOPSØE A/S COPENHAGEN DENMARK	DOCUMENT NAME: DEAERATOR UTILITIY DIAGRAM	JOB NO. S-02115 DWG. NO. 1341765	DOC. GRP. 42 DIAGRAM U09	REV. 3
CONTRACTOR	TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION		CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-007 SHEET 01	TOTAL 01	
SUB CONTRACTOR			– SHEET –	TOTAL –	

DEAERATOR PIPING AND INSTRUMENT DIAGRAM				PROJECT	MKP Methanol Project
				UNIT	STEAM SYSTEM & UTILITIES
				PHASE	AS BUILT DRAWING
SCALE 1	SHEET 1	TOT. 1	SIZE A1	OWNER	MKP-11-AS-7000-PR-PID-012

SI 7013	HP STEAM VENT SILENCER	
CAPACITY	20,000	kg/hr
DESIGN PRESS.	7	barg
DESIGN TEMP.	410	°C
MATERIAL SHELL	CS	

FT 7001A/B	STEAM TURBINE FOR P7001 A/B
TYPE	BACK PRESSURE
DESIGN PRESS.	52 barg
DESIGN TEMP.	410 °C
MATERIAL	CS
RATED POWER	1344.5 kW

P 7001A/BC	BFW PUMP	
CAPACITY	267.3	m3/h
HEAD	1374.3	m
DENSITY@OT	943	barg
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
AUXILIARY PIPING	By Vendor	
LEVEL OF EQUIPMENT	103.09m	



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) LINE SIZING FOR STEAM AT TURBINES BY TURBINE VENDOR.

2) 1/2" DRIPHOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.

3) PIA7127 LOW PRESSURE THEN I-7001 WORK MAKE STAND-BY PUMP P7001C AUTOSTART.
(IN THE SCOPE OF VENDOR'S LOGIC DRAWING)

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
3	Approved For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
2	Approved For Construction	01.09.2018	Chen Peng		Zhang Ning	Zhang Yushu	
1	Approved For Construction	01.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	27.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Issued For Comments	29.04.2015	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: BFW PUMPS UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | DWG. NO. 1341766 | DIAGRAM U10 | REV. 3

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-008

SHEET 01 TOTAL 01

SUB-CONTRACTOR:

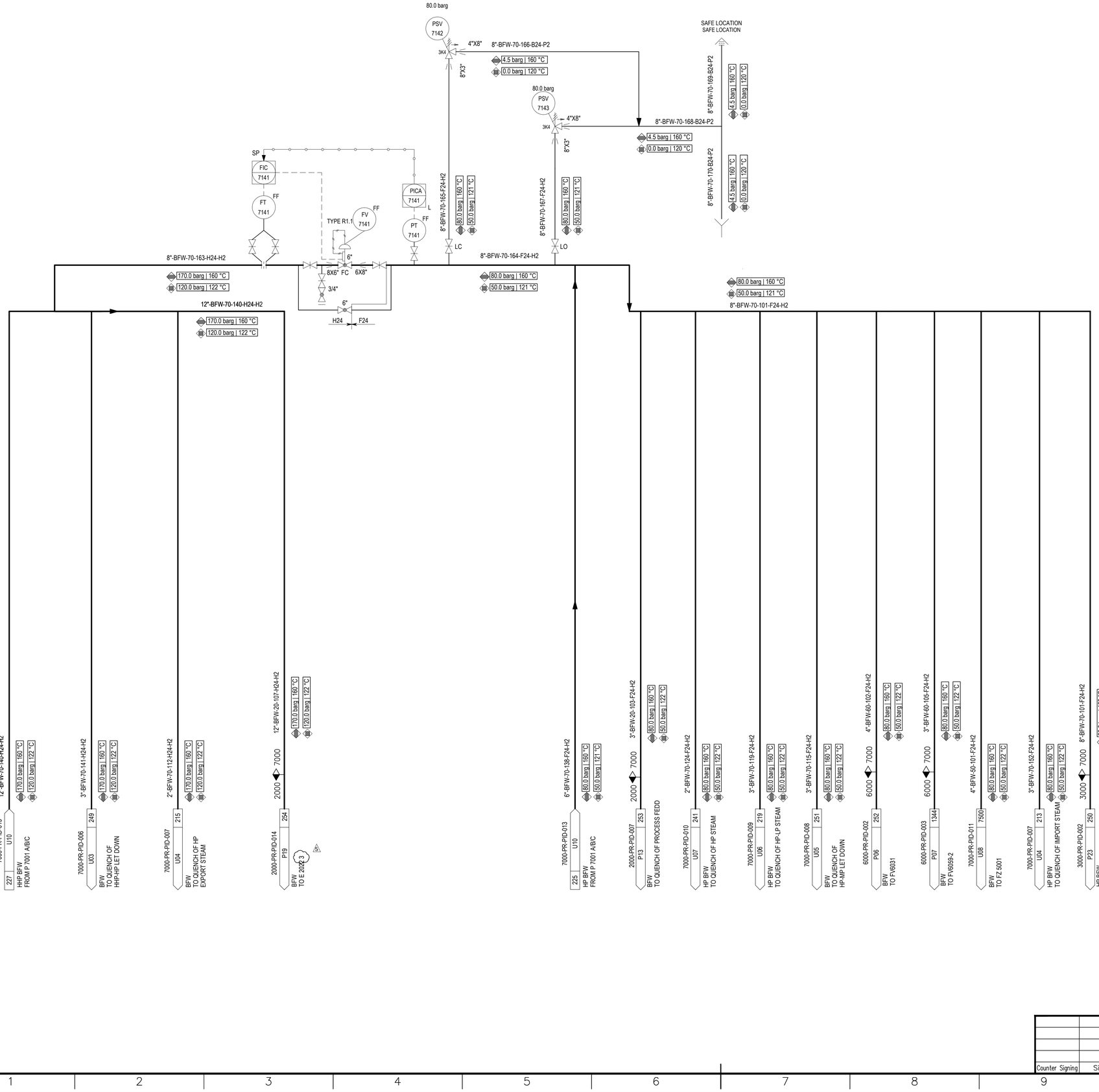
SHEET – TOTAL –

Counter Signing	Sign	Date

BFW PUMPS
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-013

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDE DDURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
3	Approved For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
2	Approved For Construction	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
1	Approved For Construction	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
0	Approved For Construction	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
B	Approved For Construction	10.11.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
C	Issued For Approval	31.08.2016	Xu Binghao		Zhang Ning	Zhang Yushu	
D	Issued For Comments	06.05.2016	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: BFW HEADER UTILITIY DIAGRAM

JOB NO. S-02115 | DOC. DISP. 42 | REV. 4

DWG. NO. 1341767 | DIAGRAM U11

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-009

SHEET 01 | TOTAL 01

SUB CONTRACTOR: –

SHEET – | TOTAL –

Counter Signing	Sign	Date

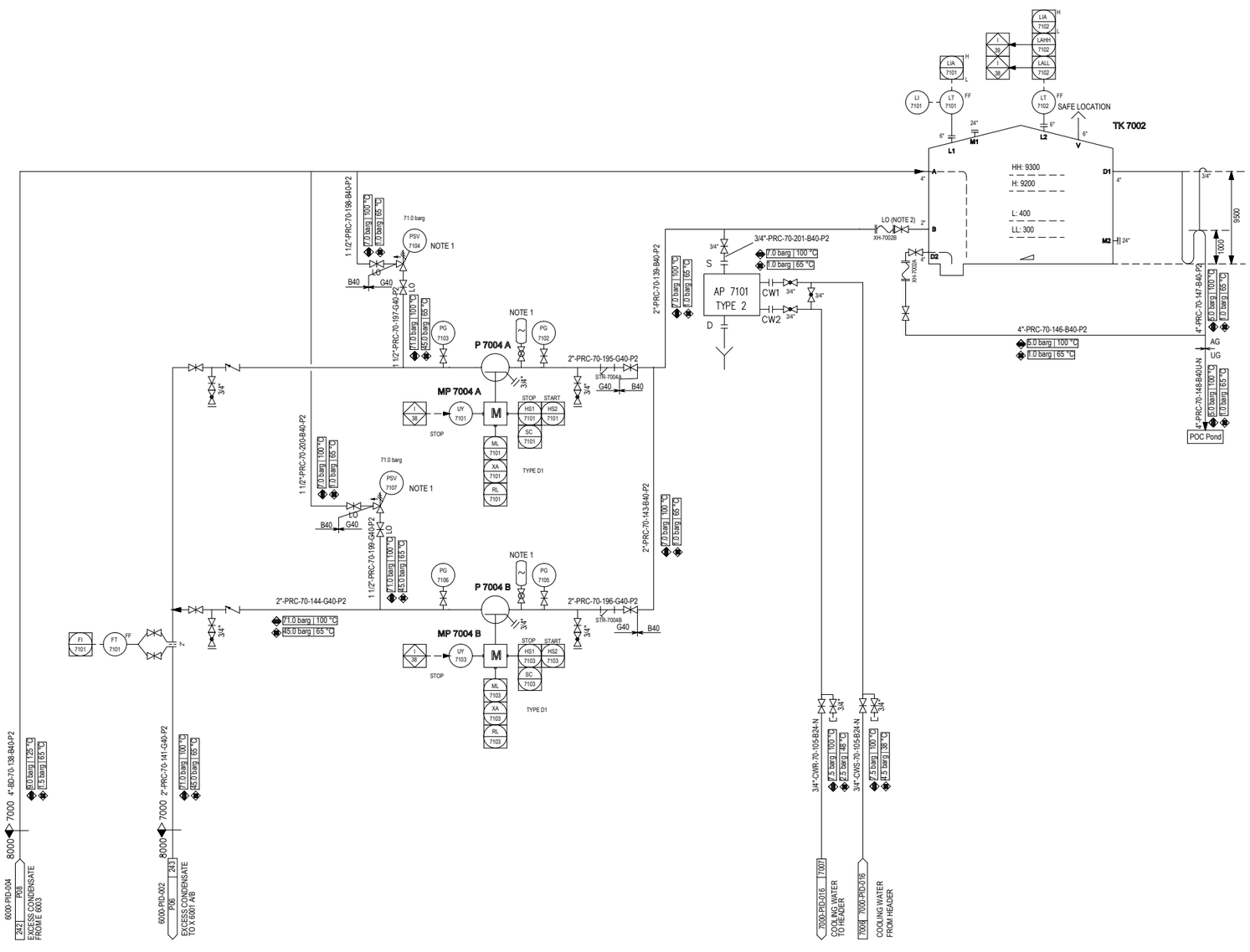
BFW HEADER
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1 | OWNER | MKP-11-AS-7000-PR-PID-014

P7004A/B	EXCESS CONDENSATE RETURN PUMP	
RATED CAPACITY	6.1	m3/h
HEAD	542	m
DENSITY@OT	980	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
ELEV. of EQUIPMENT	EL+101.050m	

TK7002	PROCESS CONDENSATE BUFFER TANK	
ID x LENGTH	12000x10000	mm
NET WORKING CAPACITY	1000	m3
DESIGN PRESS.	0.02	barg
DESIGN TEMP.	100	°C
INSULATION	NONE	
ELEV. of EQUIPMENT	EL+100.540m	



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) PSV AND PULSATION DAMPER ARE IN VENDOR'S SUPPLY SCOPE.

2) THIS VALVE ONLY COULD BE CLOSED WHEN XH-7002B NEEDS TO BE REMOVED.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
8	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
7	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
6	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
5	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
4	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
3	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
2	Issued for Approval	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
1	Issued for Approval	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
B	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: PROCESS CONDENSATE STORAGE UTILITY DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. 2 | DWG. NO. 1353319 | DIAGRAM U22

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-015

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO. --

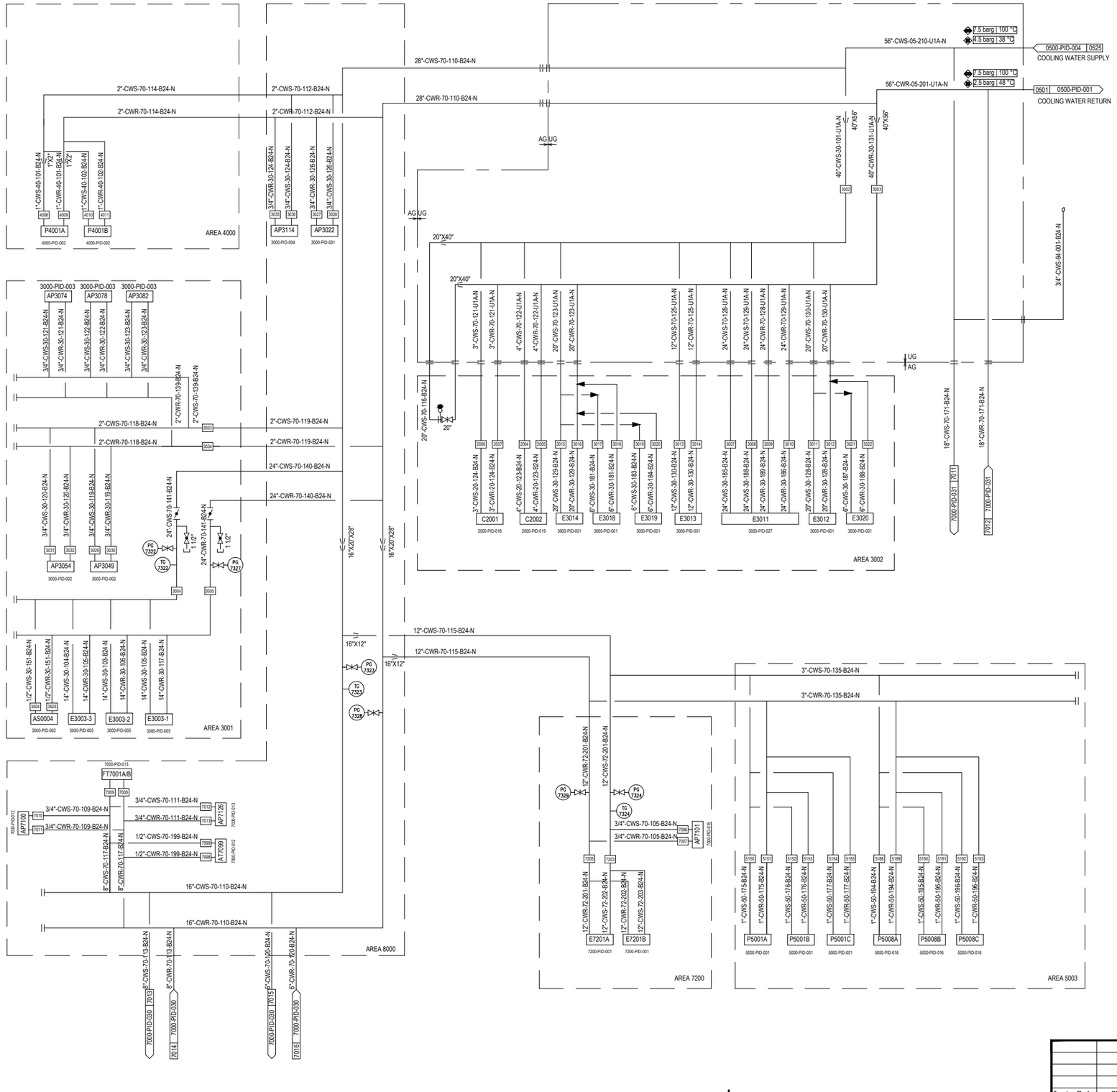
SHEET – TOTAL –

Counter Signing	Sign	Date

PROCESS CONDENSATE STORAGE UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-015

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	16.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.02.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Review	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — SHEET NO. — DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-7000-PS09-PID-016

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.: –

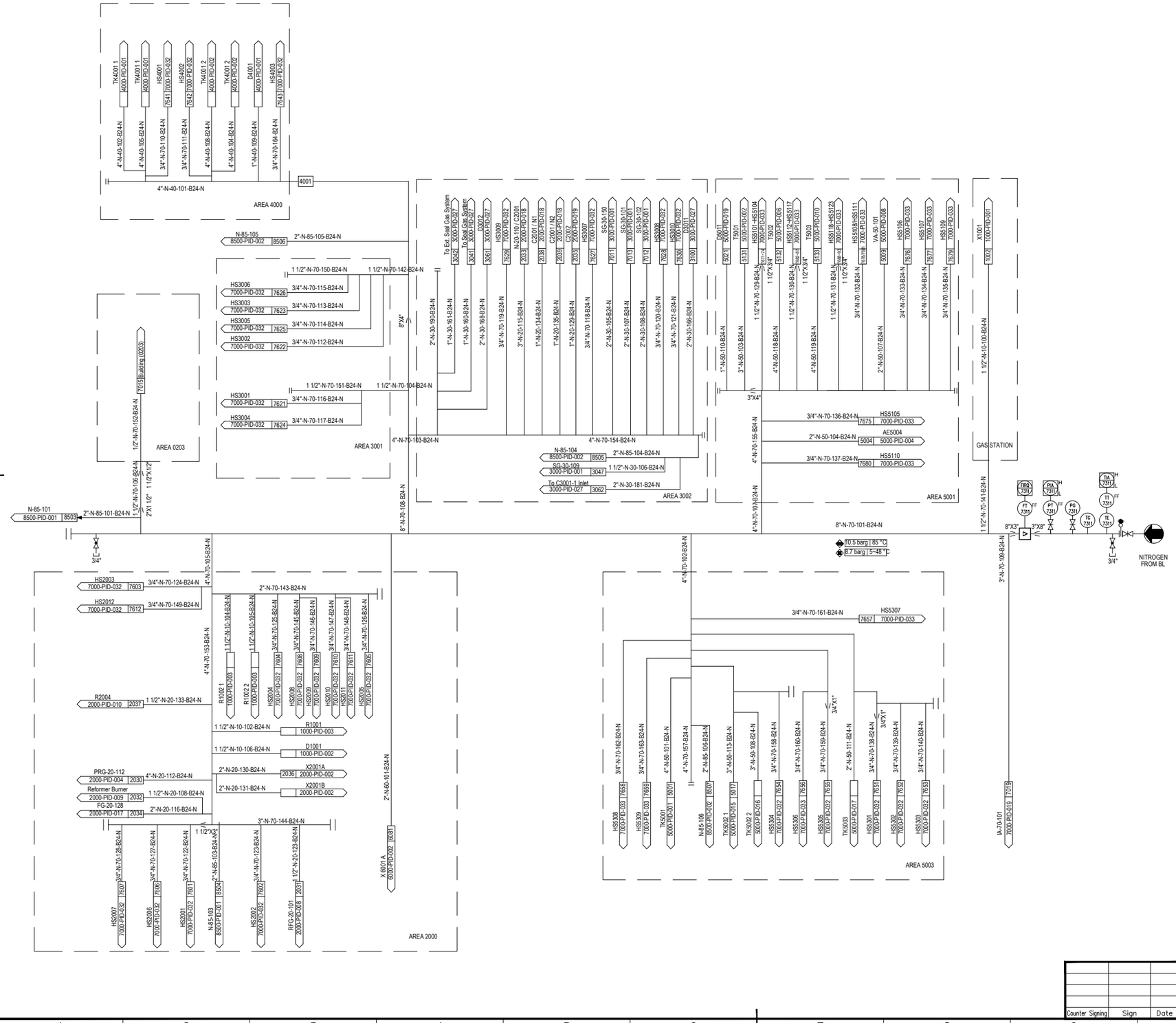
SHEET – TOTAL –

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-016

COOLING WATER HEADER I
UTILITY DIAGRAM

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-7000-PS09-PID-017

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.: –

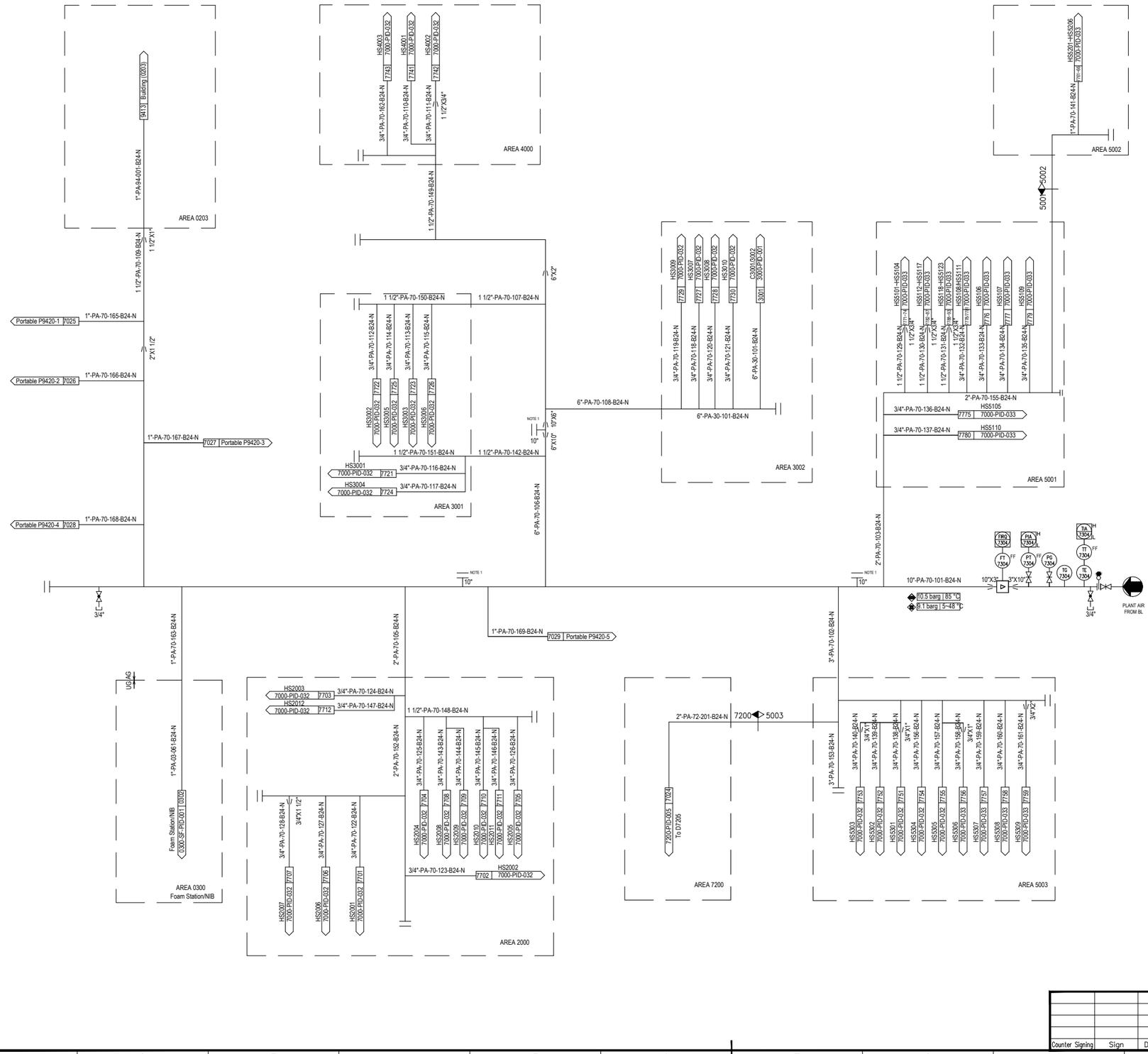
SHEET – TOTAL –

NITROGEN HEADER UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-017

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) THIS TEE IS JUST USED FOR PURGING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	11.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GROUP | REV.
DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-7000-PS09-PID-018
SHEET 01 | TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.
–
SHEET – | TOTAL –

PLANT AIR HEADER UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-018

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date

GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1. THE POSITION OF ACTUAL INSTRUMENT USER SHALL REFER TO THE INSTRUMENT AIR PIPING LAYOUT.
2. WHEN N2 VALVE COME SHIFT TO OPEN AN ALARM SHALL INFORM OPERATOR THAT INSTRUMENT AIR HEADER IS CHARGED BY N2.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	11.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.02.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 TCC CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-7000-PS09-PID-019

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.: –

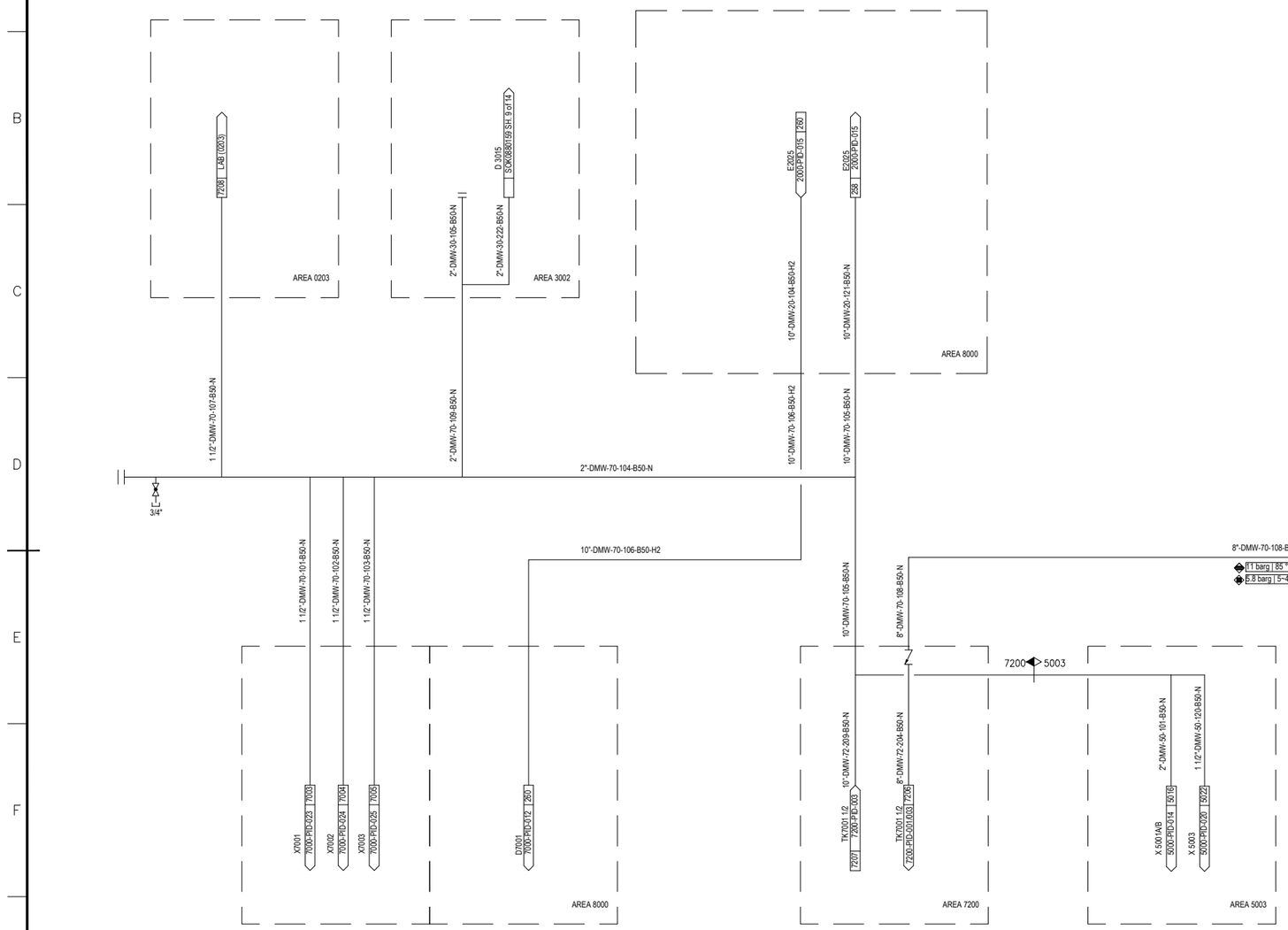
SHEET – TOTAL –

Counter Signing	Sign	Date

INSTRUMENT AIR HEADER UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-019

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	11.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — SHEET NO. — DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-020 — SHEET 01 — TOTAL 01

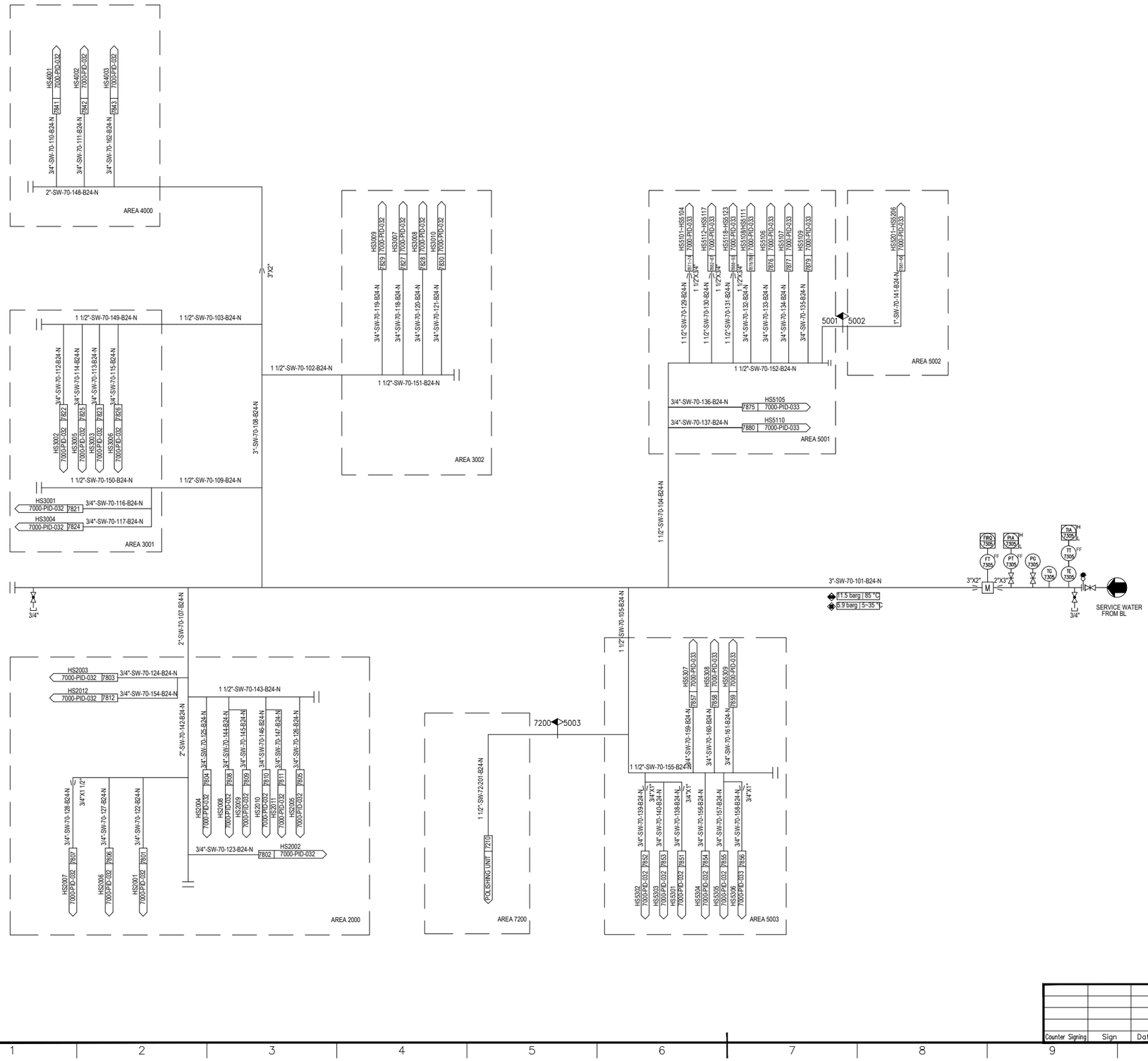
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – — TOTAL –

DEMINERALIZED WATER HEADER UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-020

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	11.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-7000-PS09-PID-021

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.: –

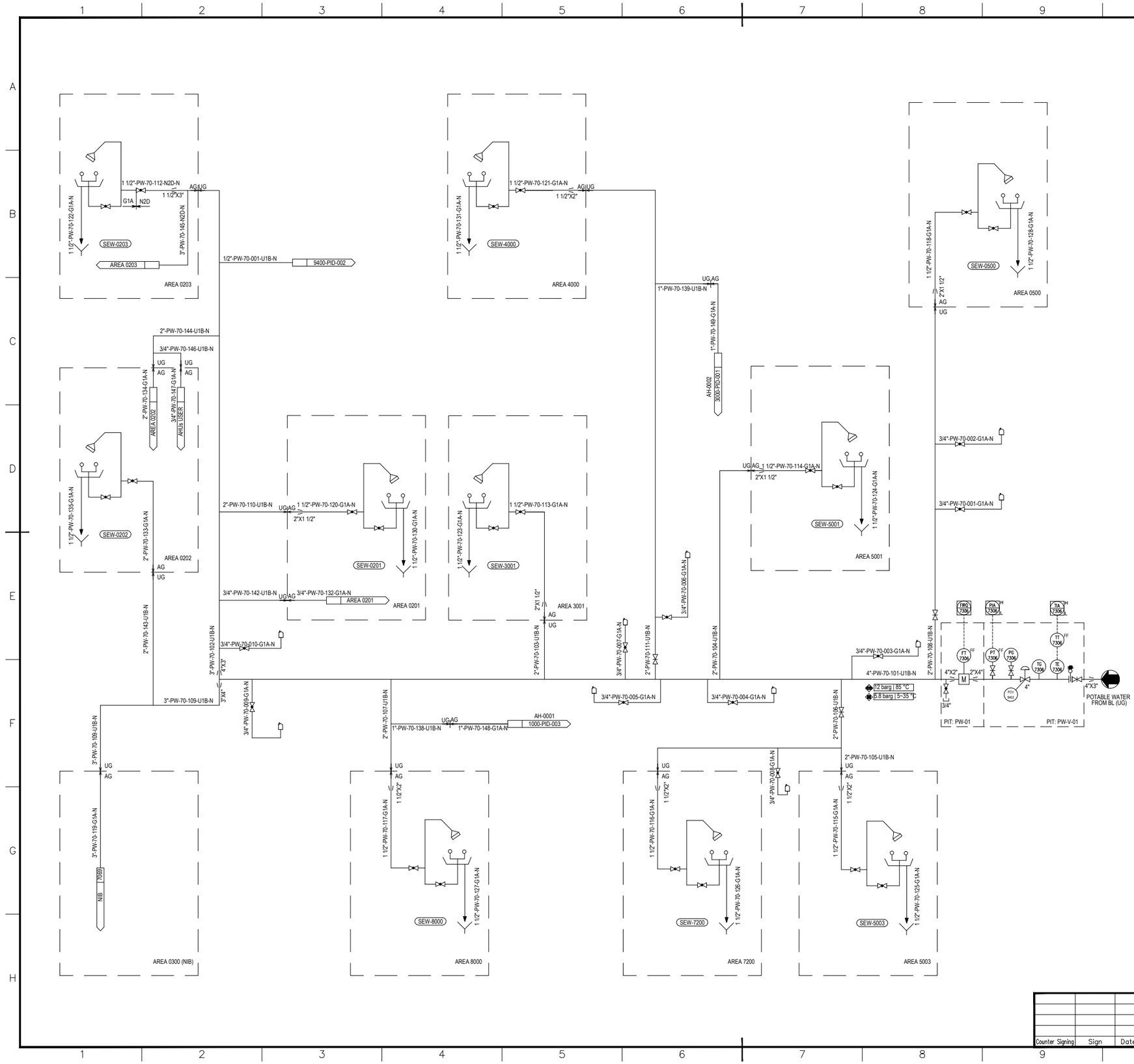
SHEET – TOTAL –

SERVICE WATER HEADER UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-021

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	11.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.02.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV.
DWG. NO. | DISCIPLINE

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-7000-PS09-PID-022
SHEET 01 | TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.
–
SHEET – | TOTAL –

POTABLE WATER HEADER UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1 | OWNER DWG NO.: MKP-11-AS-7000-PR-PID-022

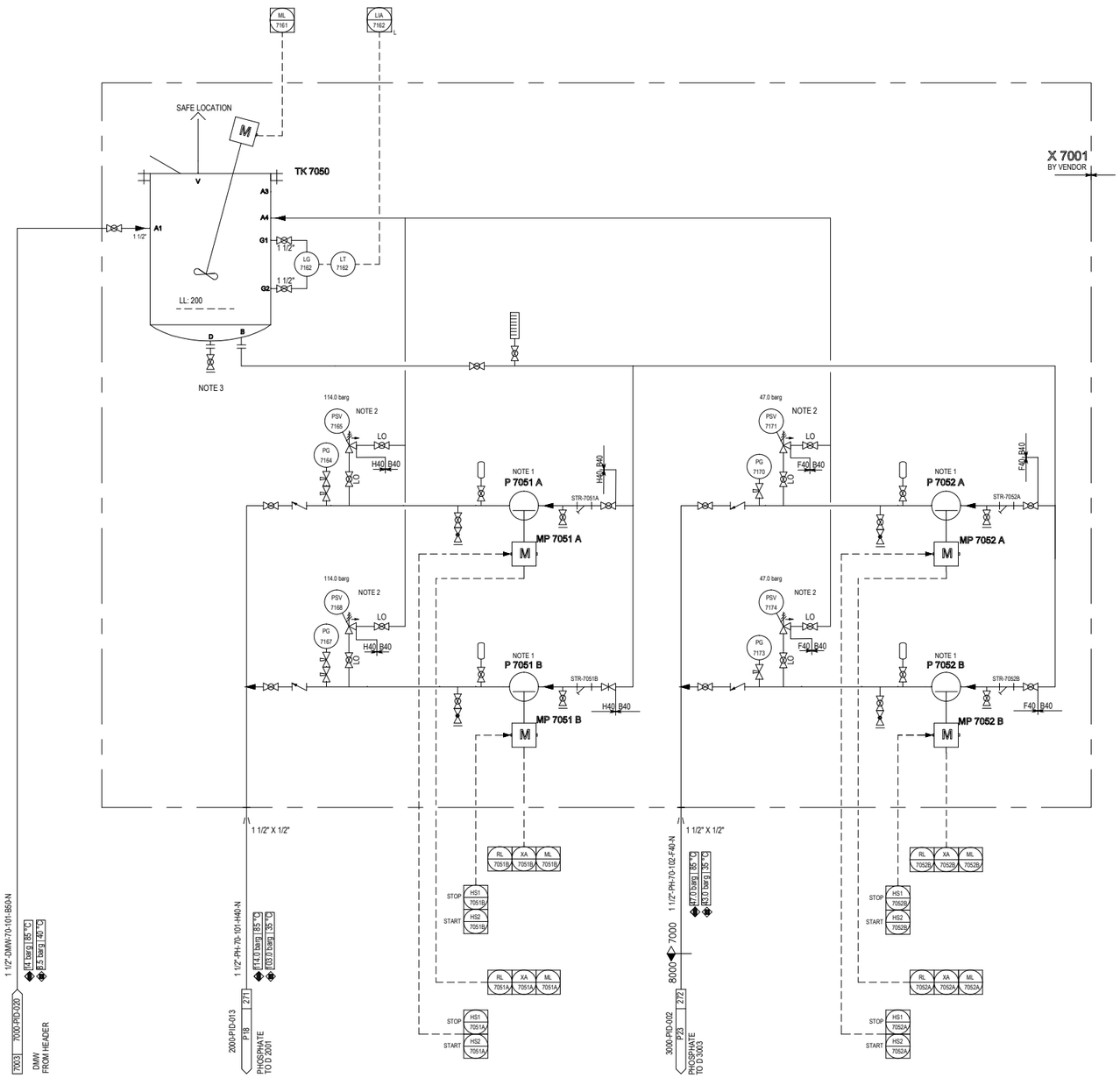
Counter Signing	Sign	Date

TK7050	PHOSPHATE SOLUTION TANK	
ID x LENGTH	1000X1600	mm
NET WORKING CAPACITY	1	m3
DESIGN PRESS.	ATM	barg
DESIGN TEMP.	85	°C
INSULATION	NONE	
ELEV. of EQUIPMENT	EL+101.160m	

P7051A/B	PHOSPHATE DOSING PUMP	
RATED CAPACITY	4	L/h
DISCHARGE PRESSURE	112	barg
DENSITY@DT	1002	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
ELEV. of EQUIPMENT	EL+100.760m	

P7052A/B	PHOSPHATE DOSING PUMP	
RATED CAPACITY	3	L/h
DISCHARGE PRESSURE	45	barg
DENSITY@DT	1002	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
ELEV. of EQUIPMENT	EL+100.760m	

X 7001 PHOSPHATE DOSING UNIT



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) CALIBRATION POTS FOR METERING SHALL BE PROVIDED BY PUMP VENDOR.
2) PUMP VENDOR TO SPECIFY PSV
3) DRAIN FROM DOSING SYSTEMS INTO CLOSED DRUMS, THEN SHALL BE TRANSFERRED AND TREATED BY PROFESSIONAL AND QUALIFIED COMPANY.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	16.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: PHOSPHATE DOSING UNIT-X 7001 UTILITY DIAGRAM
JOB NO. S-02115 | DOC. GRP. 42 | DRWG NO. 1341788 | DIAGRAM U12 | REV. 2

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-010
SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

PHOSPHATE DOSING UNIT-X 7001 UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-023

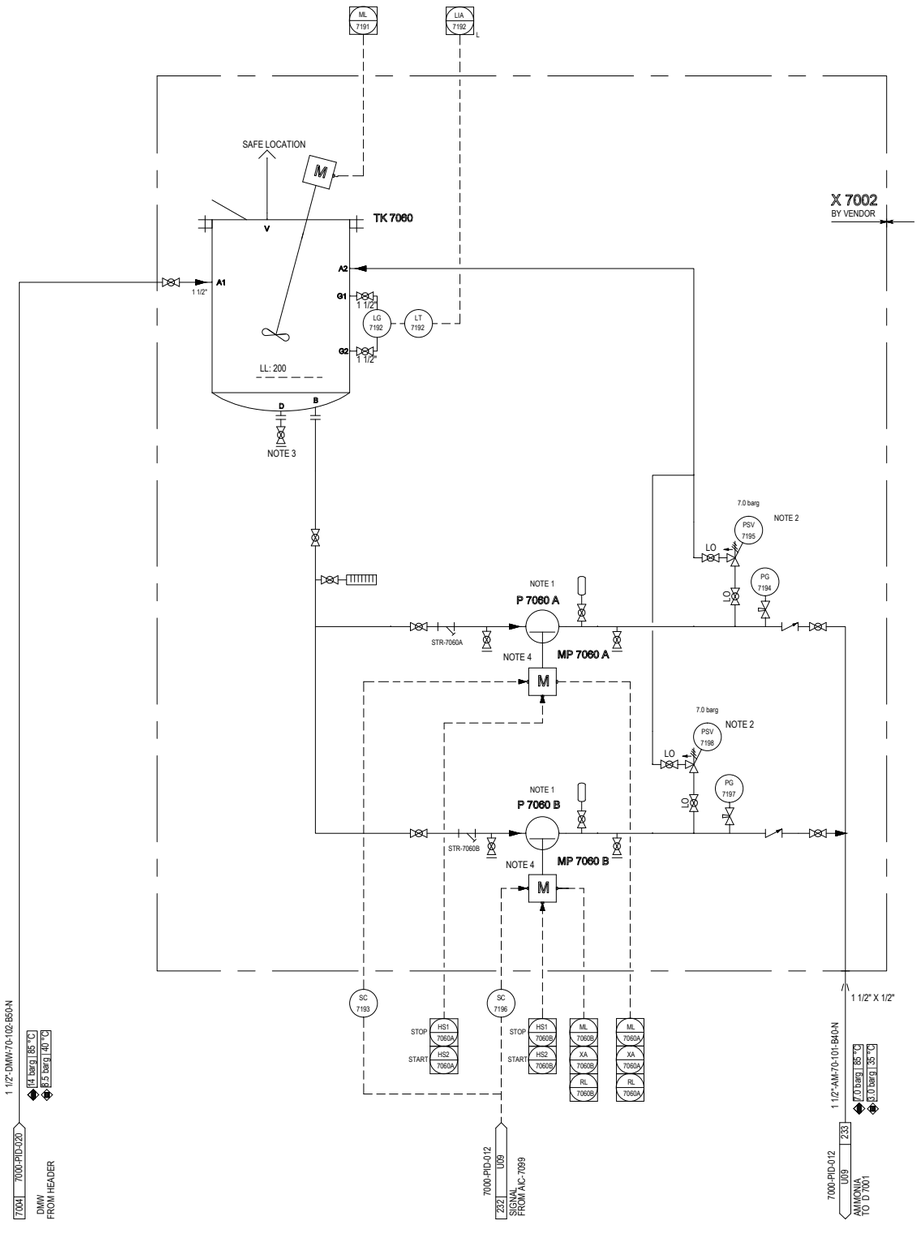
SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date

TK7060	AMMONIA TANK
ID x LENGTH	1600X2100 mm
NET WORKING CAPACITY	3.6 m3
DESIGN PRESS.	ATM barg
DESIGN TEMP.	85 °C
INSULATION	YES
ELEV. of EQUIPMENT	EL+101.310m

P7060A/B	AMMONIA DOSING PUMP	
RATED CAPACITY	40	L/h
DISCHARGE PRESSURE	5.5	barg
DENSITY@DT	948	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
ELEV. of EQUIPMENT	EL+100.780m	

X 7002 AMMONIA DOSING UNIT



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) CALIBRATION POTS FOR METERING SHALL BE PROVIDED BY PUMP VENDOR.
2) PUMP VENDOR TO SPECIFY PSV.
3) DRAIN FROM DOSING SYSTEMS INTO CLOSED DRUMS, THEN SHALL BE TRANSFERRED AND TREATED BY PROFESSIONAL AND QUALIFIED COMPANY.
4) SPEED CONTROL IS PERFORMED BY ELECTRICAL STROKE ADJUSTMENT (SERVO MOTOR).

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	16.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: AMMONIA DOSING UNIT-X 7002 UTILITY DIAGRAM

JOB NO. S-02115 | DOC. NO. 42 | REV. 2 | DWG NO. 1341789 | DIAGRAM U13

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-011

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

AMMONIA DOSING UNIT-X 7002 UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-024

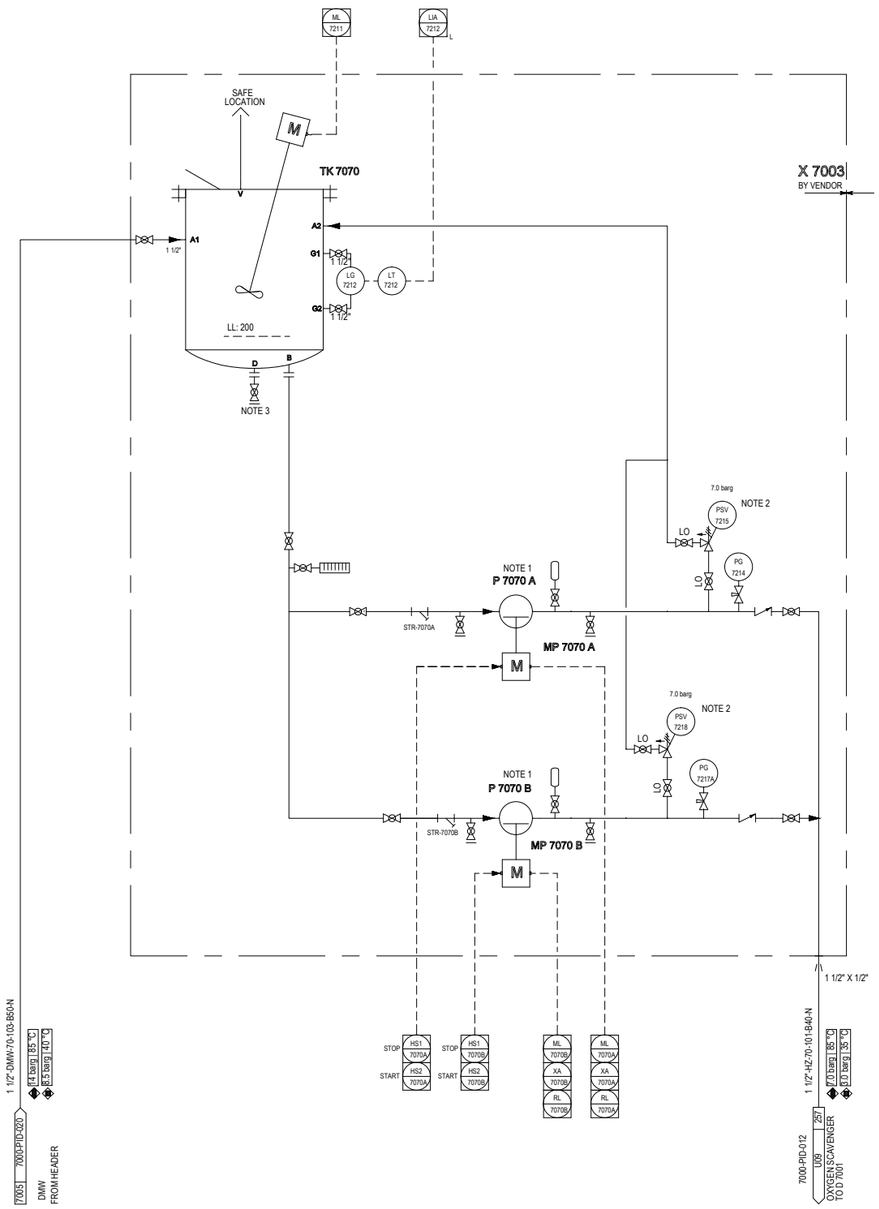
SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date

TK7070	OXYGEN SCAVENGER TANK
ID x LENGTH	1500X2200 mm
NET WORKING CAPACITY	3.2 m3
DESIGN PRESS.	ATM barg
DESIGN TEMP.	100 °C
INSULATION	NONE
ELEV. of EQUIPMENT	EL+101.290m

P7070A/B	OXYGEN SCAVENGER PUMP
RATED CAPACITY	38 L/h
DISCHARGE PRESSURE	5.5 barg
DENSITY@DT	990 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	By Vendor
ELEV. of EQUIPMENT	EL+100.780m

X 7003 OXYGEN SCAVENGER DOSING UNIT



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) CALIBRATION POTS FOR METERING SHALL BE PROVIDED BY PUMP VENDOR.
2) PUMP VENDOR TO SPECIFY PSV.
3) DRAIN FROM DOSING SYSTEMS INTO CLOSED DRUMS, THEN SHALL BE TRANSFERRED AND TREATED BY PROFESSIONAL AND QUALIFIED COMPANY.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	16.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: OXYGEN SCAV.DOSING UNIT-X 7003 UTILITY DIAGRAM

JOB NO. S-02115 | DOC. GRP. 42 | REV. 2

DWG NO. 1341770 | DIAGRAM U14

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-012

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

Counter Signing	Sign	Date

OXYGEN SCAV.DOSING UNIT-X 7003 UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-025

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

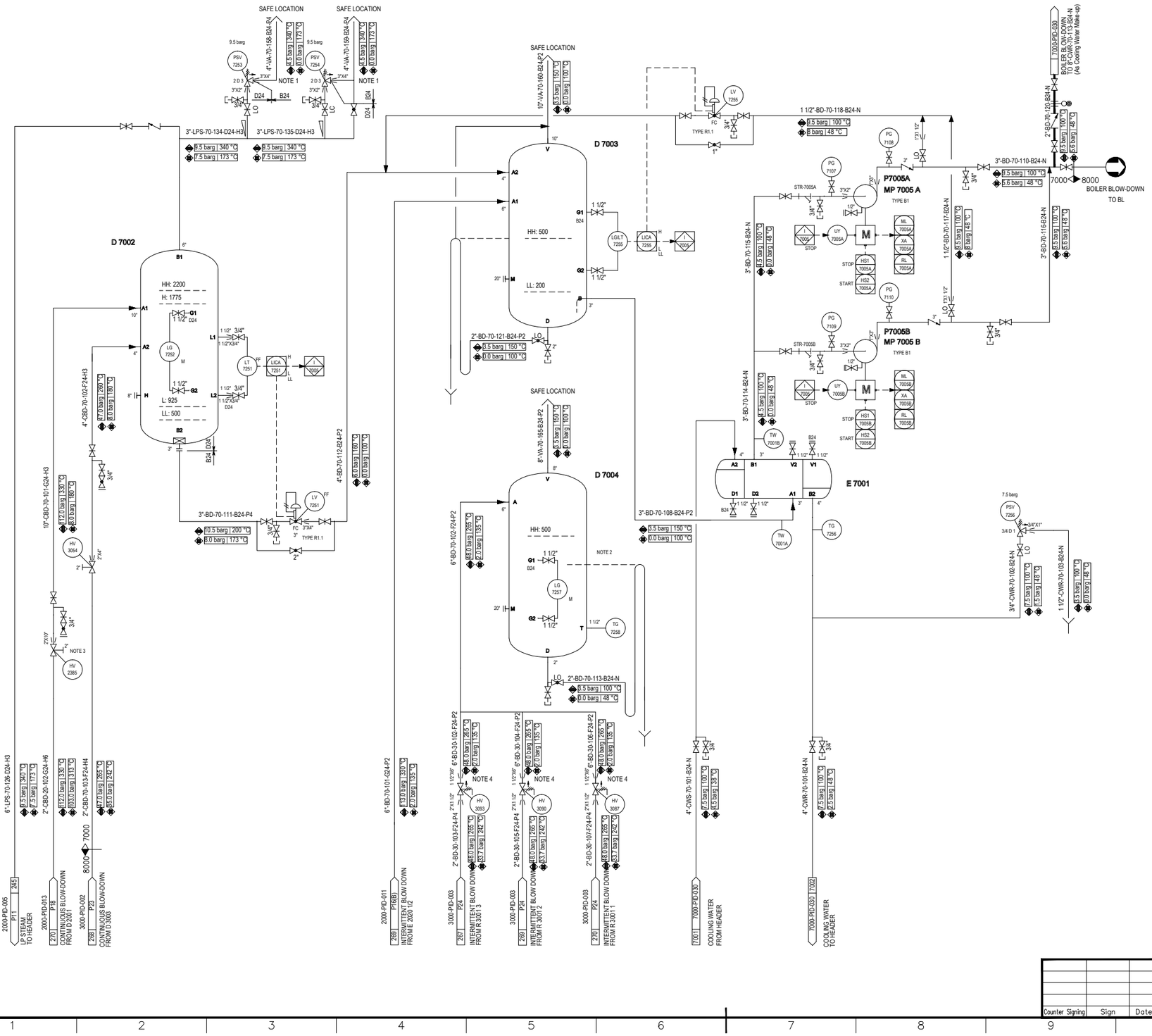
D7002	CONTINUOUS BLDW DOWN DRUM
ID x LENGTH(T-T)	750x3325 mm
DESIGN PRESS.	F.V/9.5 barg
DESIGN TEMP.	340 °C
INSULATION	YES
CLADDING/LINING	NONE
ELEV. of EQUIPMENT	EL+105.870m

D7003	INTERMITTENT BLOW-DOWN DRUM NO. 1
ID x LENGTH(T-T)	1250x1825 mm
DESIGN PRESS.	3.5 barg
DESIGN TEMP.	150 °C
INSULATION	YES
CLADDING/LINING	NONE
ELEV. of EQUIPMENT	EL+103.940m

D7004	INTERMITTENT BLOW-DOWN DRUM NO. 2
ID x LENGTH(T-T)	950x1575 mm
DESIGN PRESS.	3.5 barg
DESIGN TEMP.	150 °C
INSULATION	YES
CLADDING/LINING	NONE
ELEV. of EQUIPMENT	EL+102.500m

P7005A/B	BOILER BLOW-DOWN PUMP
RATED CAPACITY	10 m3/h
HEAD	80 m
DENSITY@DT	958 kg/m3
INSULATION/TRACING	NONE
AUXILIARY PIPING	By Vendor
ELEV. of EQUIPMENT	EL+101.040m

E7001	BLOW-DOWN COOLER FOR D 7003
DUTY	0.5 MW
DESIGN PRESS.(TU./SH.)	7.5/3.5 barg
DESIGN TEMP.(TU./SH.)	100/150 °C
INSULATION	YES
ELEV. of EQUIPMENT	EL+101.040m



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

+NOTES:

1) 1/2" DRIPHOLE TO BE DRILLED AT LOW POINT TO SAFE AND SUITABLE LOCATION.
2) ELEVATION AT MAX LEVEL IN D 7004.
3) CONTINUOUS BLOW DOWN VALVE TO BE PLACED AS CLOSE AS POSSIBLE TO D 7002.
4) INTERMITTENT BLOW DOWN VALVE TO BE PLACED AS CLOSE AS POSSIBLE TO D 7004.
5) DISTANCE BETWEEN E-7001 AND D-7003 SHALL BE MINIMIZED IN ORDER TO REDUCE THE RISK OF VAPORIZING THE HOT CONDENSATE DUE TO PRESSURE DROP IN THE LINE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
4	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
3	Approved for Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
2	Approved for Construction	24.04.2019	Jiang Yu		Xu Hang	Liu Shengkai	
1	Approved for Construction	13.08.2018	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved for Construction	26.03.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
9	Approved for Construction	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
8	Approved for Construction	12.04.2017	Chen Tao		Xu Hang	Shi Jing	
7	Approved for Construction	20.01.2017	Chen Tao		Xu Hang	Shi Jing	
6	Approved for Construction	16.10.2016	Chen Tao		Xu Hang	Shi Jing	
5	Approved for Construction	31.08.2016	Chen Tao		Xu Hang	Shi Jing	
4	Issued for Approval	29.06.2016	Chen Tao		Xu Hang	Shi Jing	
3	Issued for Comments	29.04.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:
Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: BOILER BLOW-DOWN UTILITY DIAGRAM
JOB NO. S-02115 | DOC. NO. 42 | REV. 4
DWG. NO. 1341772 | DIAGRAM U16

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-013
SHEET 01 | TOTAL 01

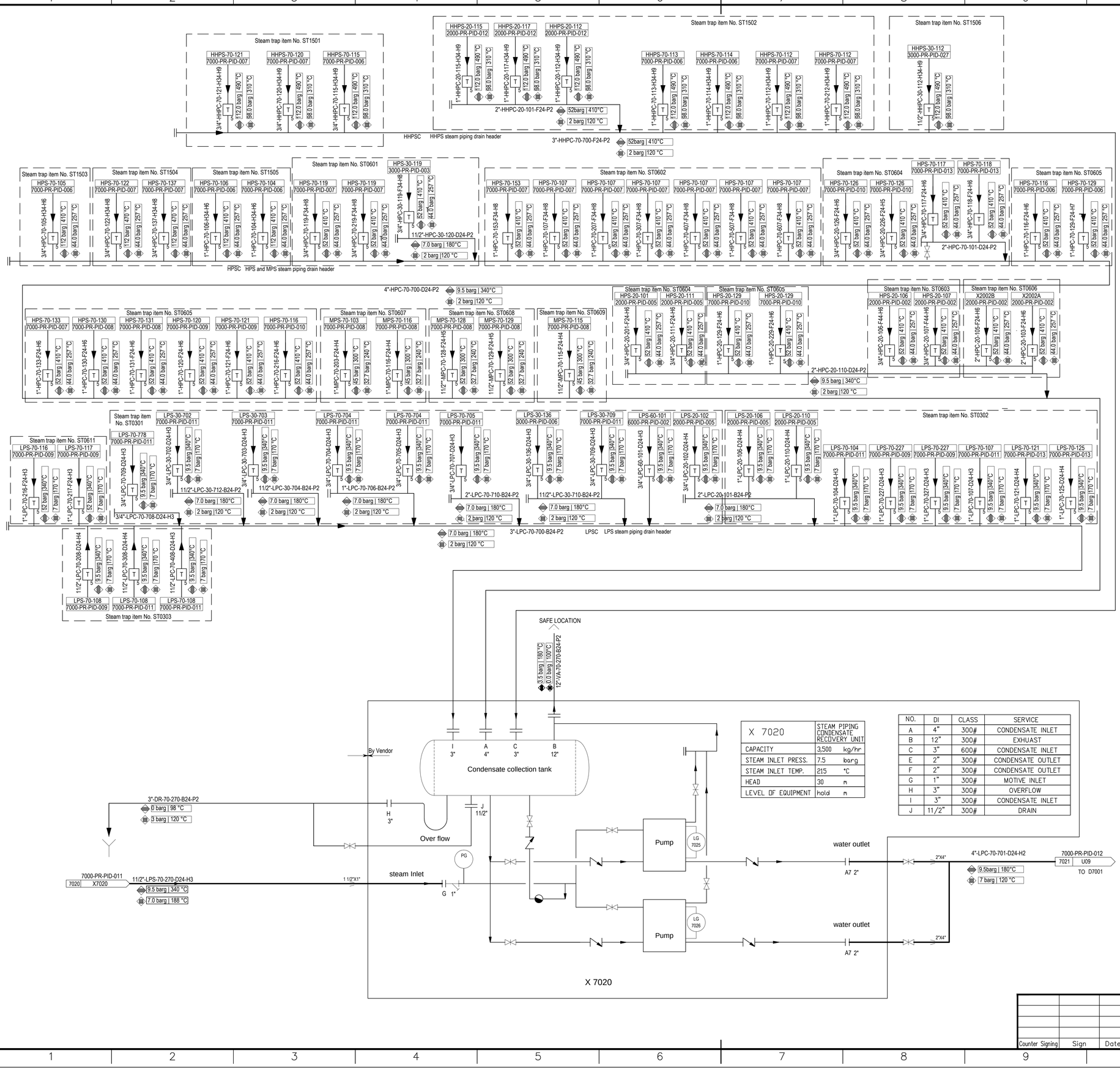
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

Counter Signing	Sign	Date

BOILER BLOW-DOWN UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-026

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDE DDURING DETAILED ENGINEERING.

Steam trap item No.is accordant with "MKP-11-DE-9000-PI-DSH-009 DATA SHEET FOR STEAM TRAP"

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
11	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
10	Approval For Construction	30.12.2019	Chen Peng		Zhang Ning	Zhang Yushu	
9	Approval For Construction	19.10.2018	Chen Peng		Zhang Ning	Zhang Yushu	
8	Approval For Construction	01.06.2018	Xu Binghao		Zhang Ning	Zhang Yushu	
7	Approval For Construction	26.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
6	Issued For Approval	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
5	Issued For Approval	22.03.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
4	Issued For Comments	22.01.2017	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: BFW HEADER UTILITIY DIAGRAM

JOB NO. | DOC. GRP. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-010

SHEET 01 TOTAL 01

SUB CONTRACTORS: –

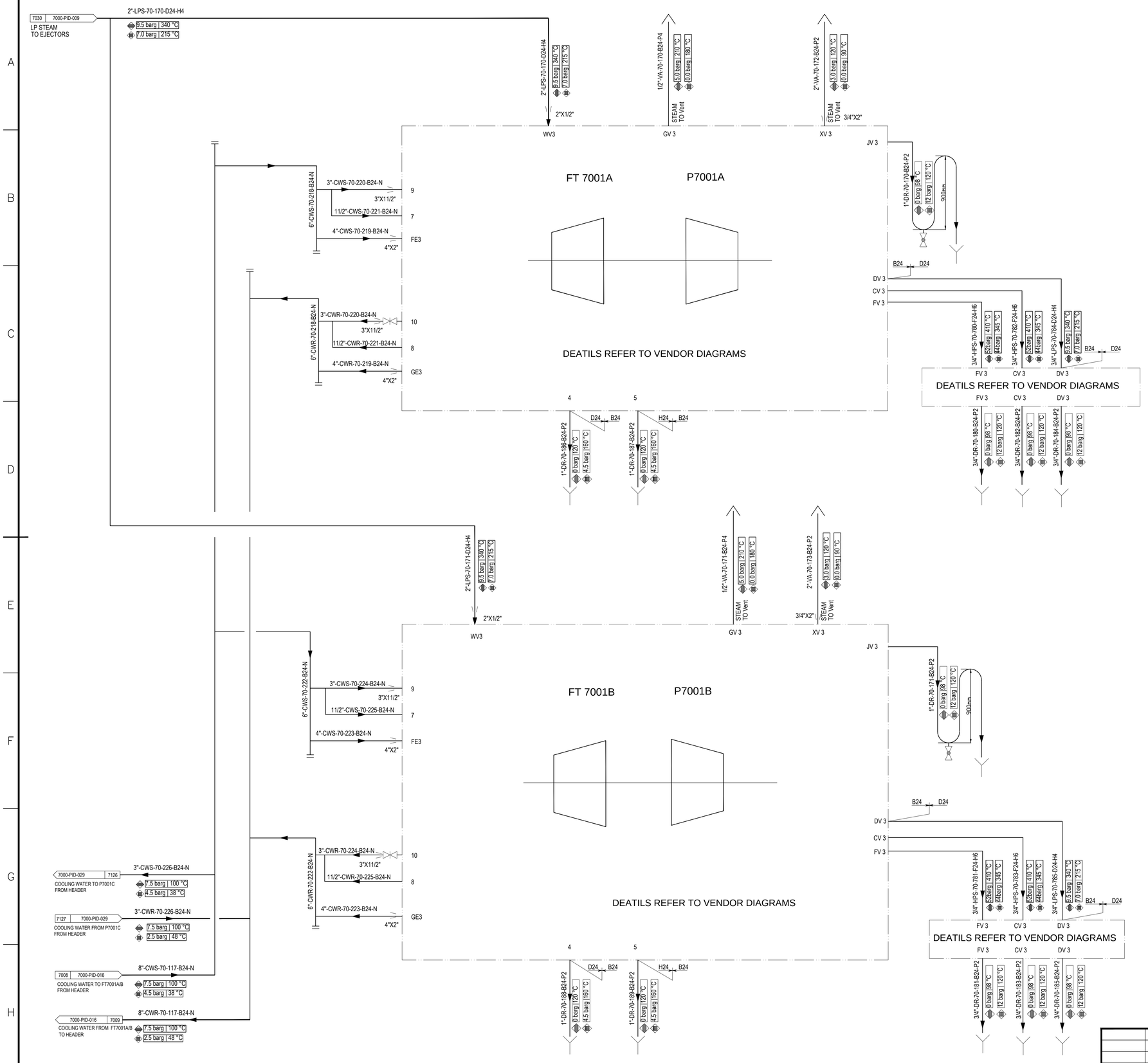
SHEET – TOTAL –

Counter Signing	Sign	Date

STEAM CONDENSATE RECOVERY UNIT
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-027

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1



GENERAL NOTES

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
A	Approved For Construction	22.08.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	21.08.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Approval	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Comments	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: BFW HEADER UTILITIY DIAGRAM

JOB NO. | DOC. GRP.

DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-7000-HE07-PID-010

SHEET 01 | TOTAL 01

SUB CONTRACTOR: –

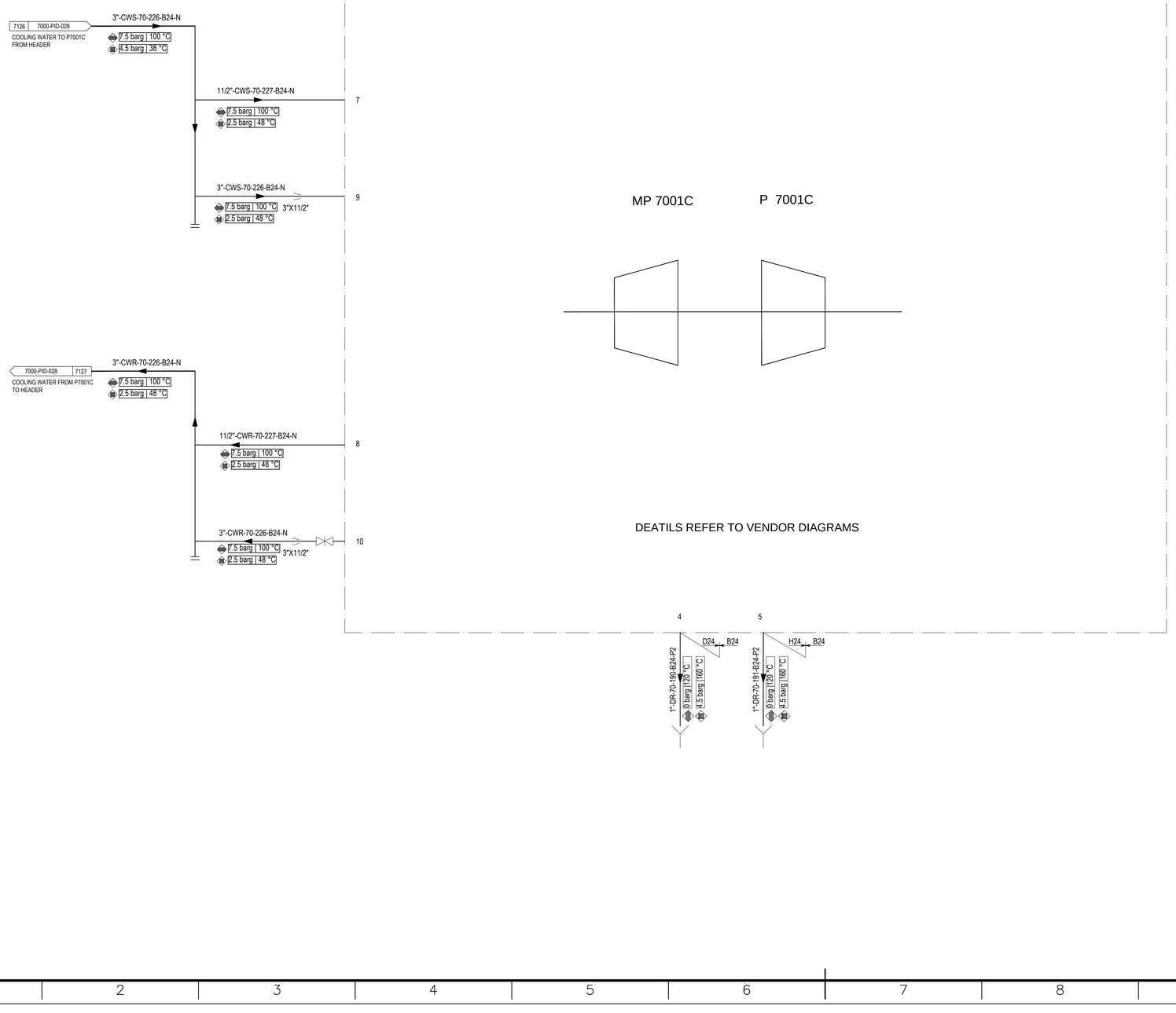
SHEET – | TOTAL –

Counter Signing	Sign	Date

P7001A/B BFW PUMP
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-028

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1



GENERAL NOTES

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	26.04.2020	Chen Peng		Zhang Ning	Li Li	
A	Approved For Construction	22.08.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Approved For Construction	21.08.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Approval	26.07.2017	Xu Binghao		Zhang Ning	Zhang Yushu	
A	Issued For Comments	07.06.2017	Xu Binghao		Zhang Ning	Zhang Yushu	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK

DOCUMENT NAME: BFW HEADER UTILITIY DIAGRAM

JOB NO. | DOC. GRP.

DWG. NO. | DIAGRAM

CONTRACTION: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-7000-HE07-PID-010

SHEET 01 TOTAL 01

SUB CONTRACTOR: –

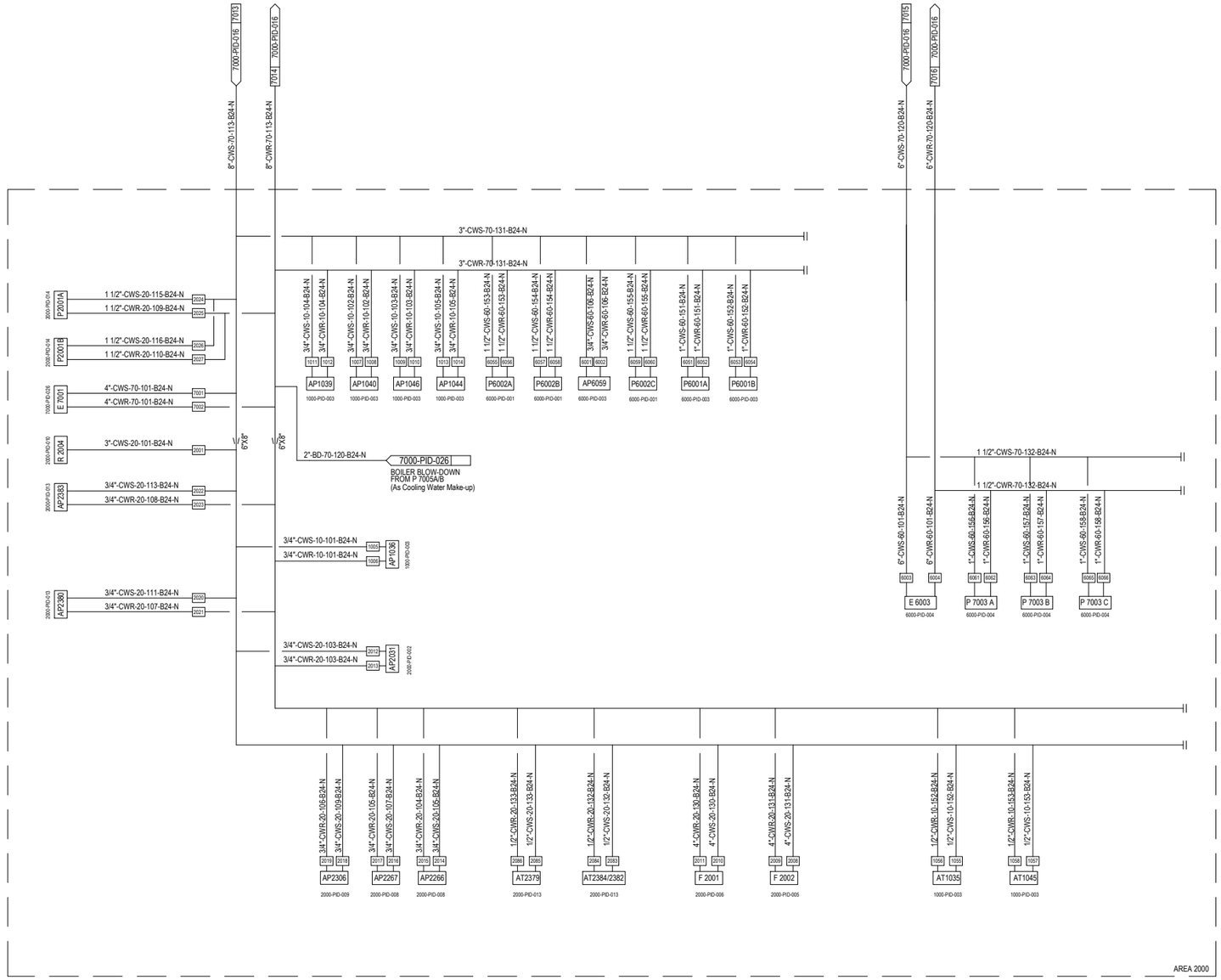
SHEET – TOTAL –

Counter Signing	Sign	Date

P7001C BFW PUMP
PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	STEAM SYSTEM & UTILITIES
PHASE	AS BUILT DRAWING
OWNER	MKP-11-AS-7000-PR-PID-029

SCALE 1 | SHEET 1 | TOT. 1 | SIZE A1



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	13.08.2018	Jiang Yu		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	16.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Review	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	12.04.2017	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, LYNGBYVEJ 2, DK-2800 KGS. LYNGBY, DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV.
DRWG NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-7000-PS09-PID-030
SHEET 01 | TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

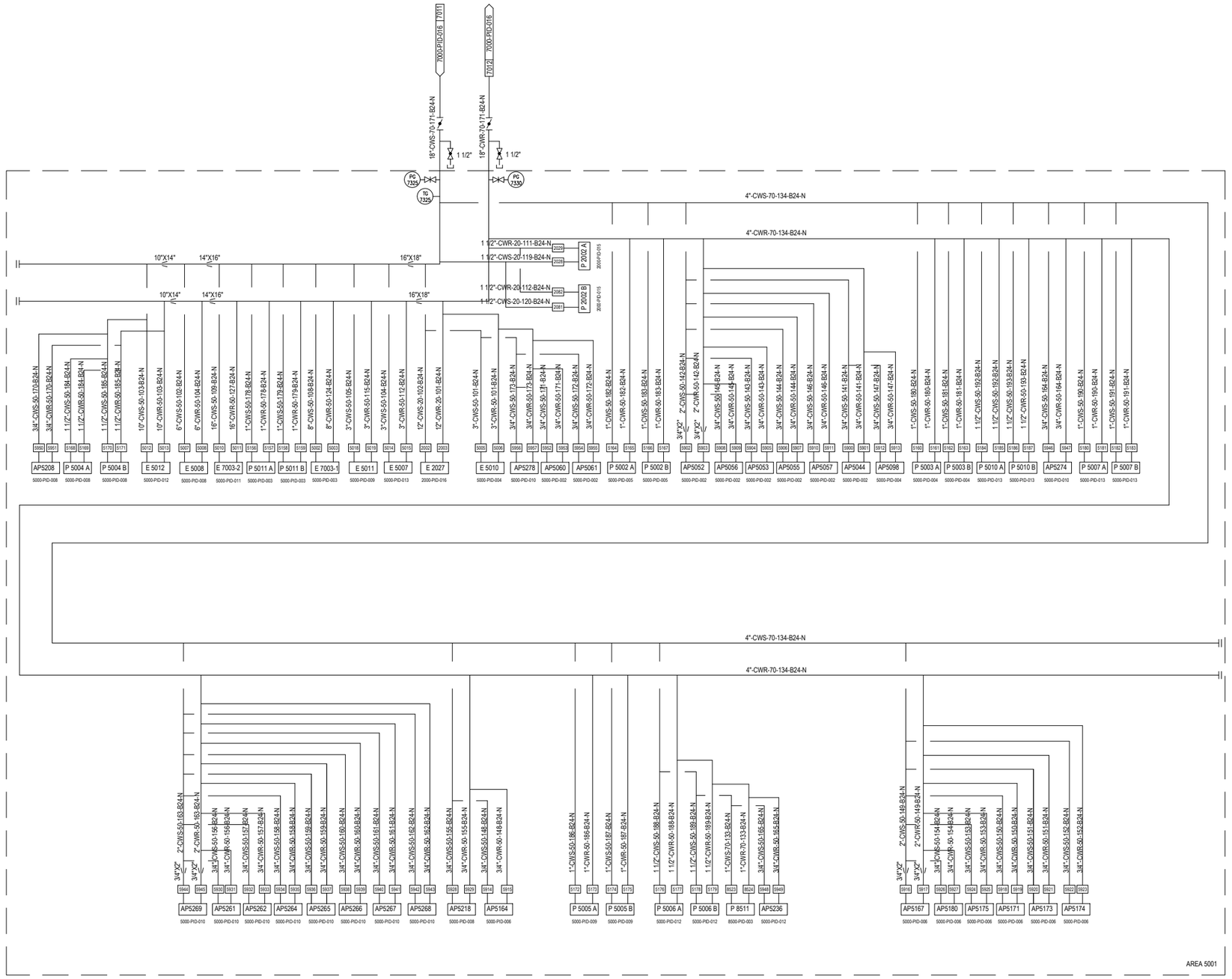
SUB-CONTRACTOR DRAWING NO.
–
SHEET – | TOTAL –

COOLING WATER HEADER II
UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing

SCALE: –	SHEET: 01	TOT.: 01	SIZE: A1	OWNER DWG NO.	MKP-11-AS-7000-PR-PID-030

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	24.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	16.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Review	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	12.04.2017	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN, DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — DWG. NO. — DIAGRAM — REV.

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TUANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-7000-PS09-PID-031 — SHEET 01 — TOTAL 01

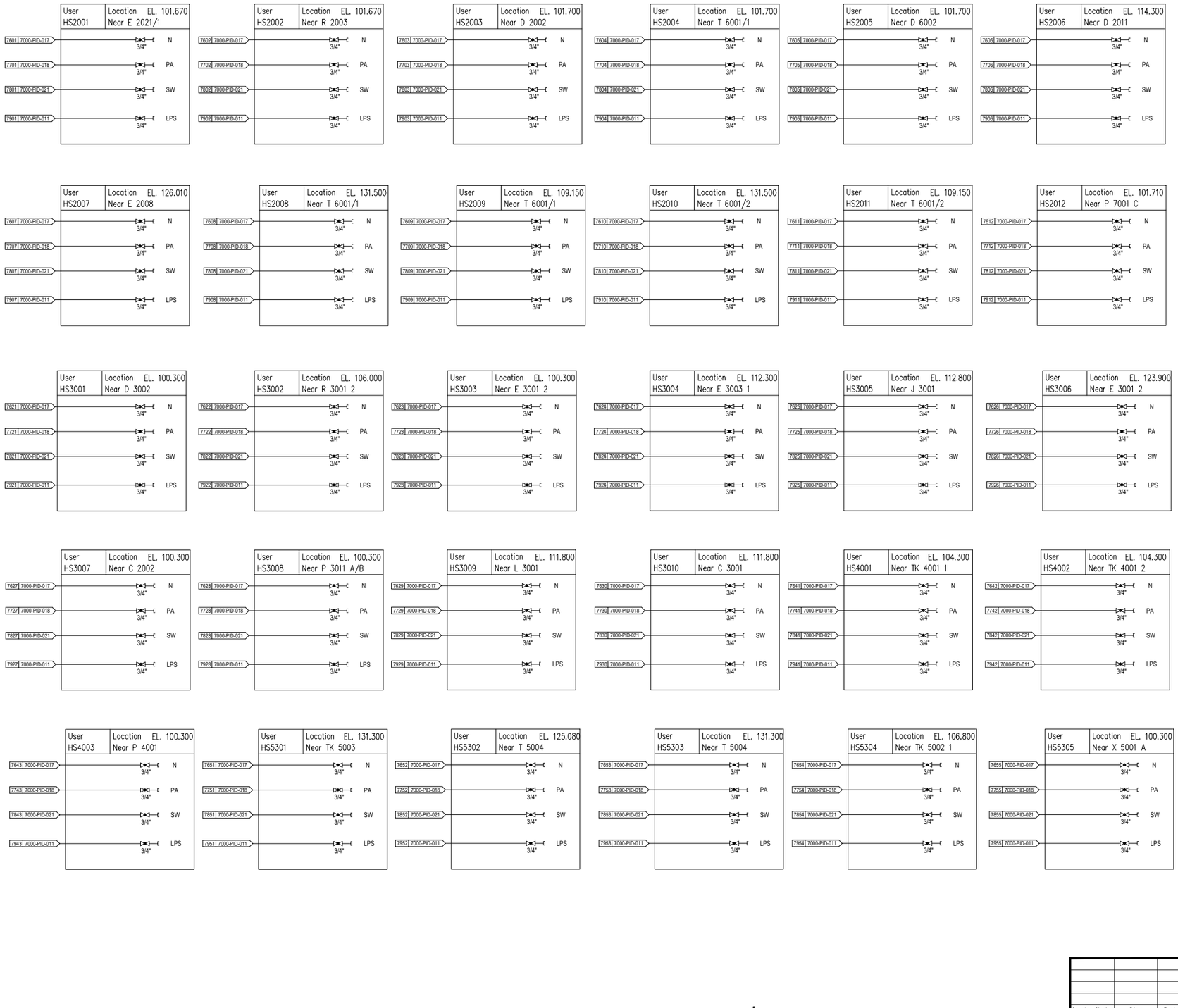
SUB-CONTRACTOR: SUB-CONTRACTOR LOGO — SUB-CONTRACTOR DRAWING NO. – — SHEET – — TOTAL –

Counter Signing	Sign	Date

COOLING WATER HEADER III
UTILITY DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-031

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	Liu Shengkai	
1	Approved for Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved for Construction	24.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	16.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Review	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	12.04.2017	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S COPENHAGEN DENMARK — DOCUMENT NAME: — JOB NO. — DOC. GRP. — REV. — DWG. NO. — DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-7000-PS09-PID-032

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR LOGO

SUB-CONTRACTOR DRAWING NO.: –

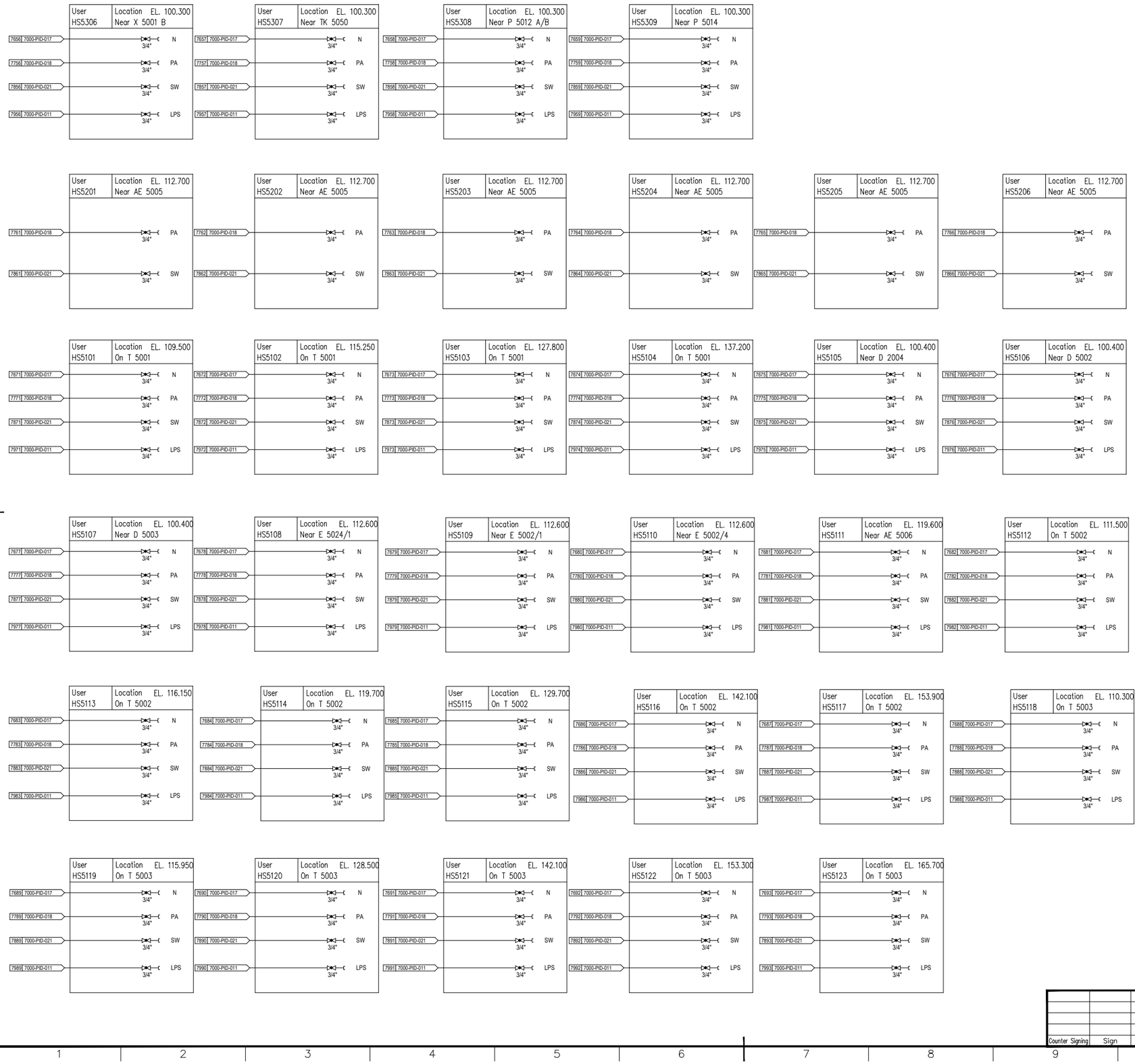
SHEET – TOTAL –

PROJECT	MKP Methanol Project
UNIT	Steam System & Utilities
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-7000-PR-PID-032

HOSE STATION SYSTEM I
UTILITY DIAGRAM

SCALE: – | SHEET: 01 | TOT.: 01 | SIZE: A1

Counter Signing	Sign	Date



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	Shi Jing	
A	Approved for Construction	24.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Approval	16.07.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Review	04.05.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued for Comments	12.04.2017	Chen Tao		Xu Hang	Shi Jing	

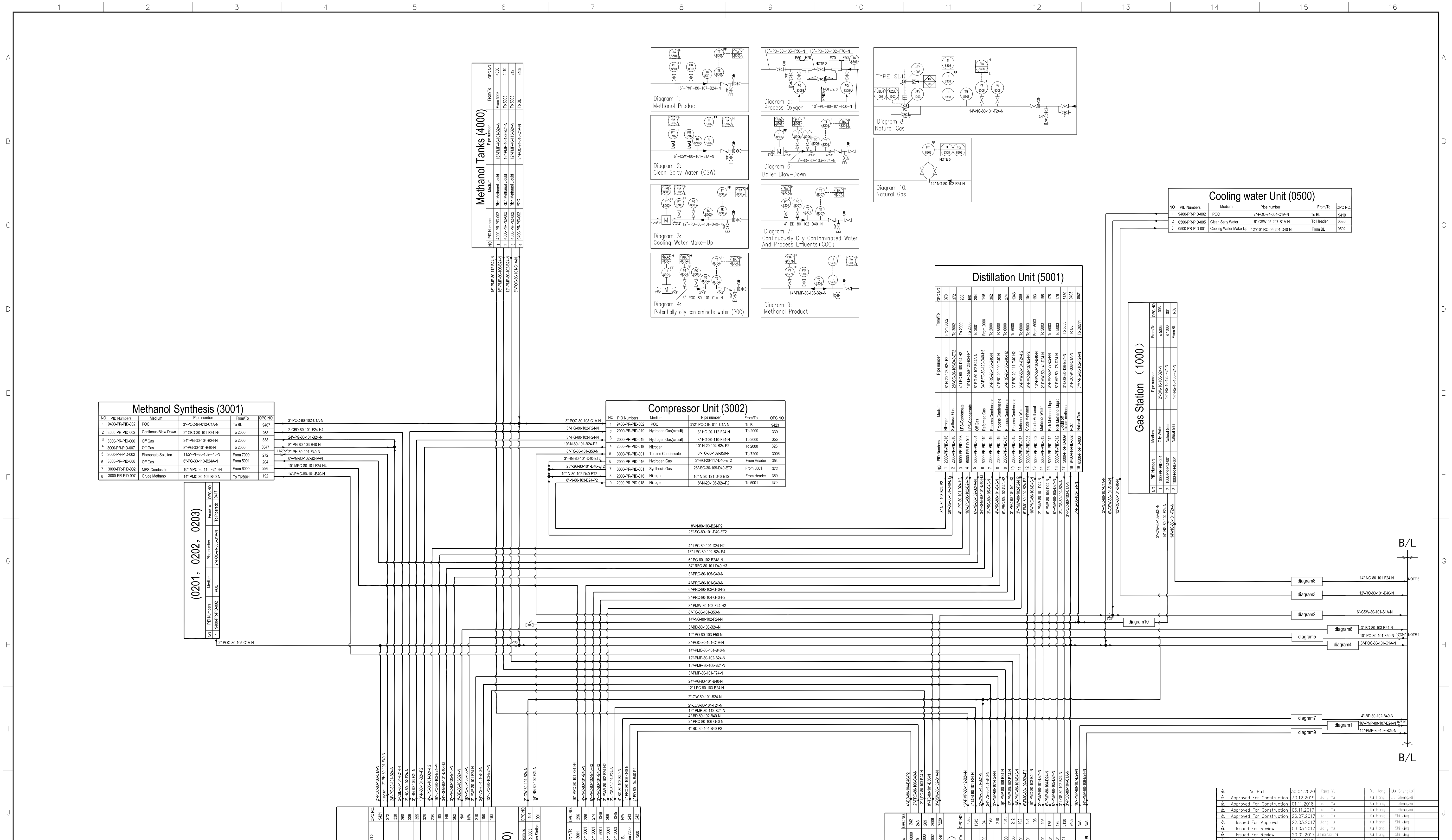
OWNER:

Middle East Kimiaye Pars Company

LICENSOR	HALDOR TOPSØE A/S COPENHAGEN DENMARK	DOCUMENT NAME:	JOB NO. / DWG. NO.	DOC. GRP. / DIAGRAM / REV.
CONTRACTOR	TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION		CONTRACTOR DRAWING NO.	MKP-11-AS-7000-PS09-PID-033
			SHEET 01	TOTAL 01
SUB-CONTRACTOR	SUB-CONTRACTOR LOGO		SUB-CONTRACTOR DRAWING NO.	–
			SHEET –	TOTAL –

HOSE STATION SYSTEM II UTILITY DIAGRAM	PROJECT	MKP Methanol Project
	UNIT	Steam System & Utilities
	PHASE	As Built Drawing
SCALE: – / SHEET: 01 / TOT.: 01 / SIZE: A1	OWNER DWG NO.	MKP-11-AS-7000-PR-PID-033

Counter Signing	Sign	Date



Methanol Synthesis (3001)

NO	PID Numbers	Medium	Pipe number	From/To	OPC NO.
1	9400-PR-PID-002	POC	3"-POC-94-012-C1A-N	To BL	9407
2	3000-PR-PID-002	Continous Blow-Down	2"-CBD-30-101-F24-H4	To 2000	268
3	3000-PR-PID-006	Off Gas	24"-PG-30-104-B24-N	To 2000	338
4	3000-PR-PID-007	Off Gas	8"-PG-30-101-B40-N	To 2000	3047
5	3000-PR-PID-002	Phosphate Solution	11/2"-PH-30-102-F40-N	From 7000	272
6	3000-PR-PID-006	Off Gas	6"-PG-30-110-B24A-N	From 5001	204
7	3000-PR-PID-002	MPS-Condesate	10"-MPC-30-110-F24-H4	From 6000	296
8	3000-PR-PID-007	Crude Methanol	14"-PMC-30-109-B40-N	To TK5001	192

Compressor Unit (3002)

NO	PID Numbers	Medium	Pipe number	From/To	OPC NO.
1	9400-PR-PID-002	POC	3"/2"-POC-94-011-C1A-N	To BL	9423
2	2000-PR-PID-019	Hydrogen Gas(circuit)	3"-HG-20-112-F24-N	To 2000	339
3	2000-PR-PID-019	Hydrogen Gas(circuit)	3"-HG-20-110-F24-N	To 2000	355
4	2000-PR-PID-018	Nitrogen	10"-N-20-104-B24-P2	To 2000	326
5	3000-PR-PID-001	Turbine Condensate	8"-TC-30-102-B50-N	To 7200	3006
6	2000-PR-PID-016	Hydrogen Gas	3"-HG-20-117-D40-ET2	From Header	354
7	3000-PR-PID-001	Synthesis Gas	28"-SG-30-109-D40-ET2	From 5001	372
8	2000-PR-PID-016	Nitrogen	10"-N-20-121-D40-ET2	From Header	369
9	2000-PR-PID-018	Nitrogen	8"-N-20-106-B24-P2	To 5001	370

Cooling water Unit (0500)

NO	PID Numbers	Medium	Pipe number	From/To	OPC NO.
1	9400-PR-PID-002	POC	2"-POC-94-004-C1A-N	To BL	9419
2	0500-PR-PID-005	Clean Salty Water	6"-CSW-05-207-S1A-N	To Header	0530
3	0500-PR-PID-001	Cooling Water Make-Up	12"/10"-RO-05-201-D40-N	From BL	0502

Note: 1) ● THIS DOT REPRESENTS THAT TWO PIPELINES ARE CONNECTED.

2) SAFE AREA FOR EMERGENCY ISOLATION OF OXYGEN SUPPLY. THE OXYGEN VALVE SHOULD BE POSITIONED IN SUCH A WAY THAT IT CAN BE SAFELY OPERATED.FIRE SHIELDS (CONCRETE) MUST BE PROVIDED.

3) BY PASS FOR PRESSURIZATION SHALL BE MADE OF MONEL. CONNECTIONS HAVE TO BE TOP OF MAIN LINE.

4) THE 14"/10" REDUCTION OF PROCESS OXYGEN LINE SHALL BE ACHIEVED WITH TWO SEQUENCING REDUCERS OF 14"X12" AND 12X10". IGC DOC 13/12/E, OXYGEN PIPELINE. AND PIPING SYSTEMS SHOULD BE FOLLOWED.

5) P&T COMPENSATION FROM PI-8308,TI-8308.

6) UNDERGROUND CONNECTION POINT NEAR THE GATE OF PLANT.

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
	As Built	30.04.2020	Jiang Yu		Xu Hang	Liu Shengkai	
3	Approved For Construction	30.12.2019	Jiang Yu		Xu Hang	Liu Shengkai	
2	Approved For Construction	01.11.2018	Jiang Yu		Xu Hang	Liu Shengkai	
1	Approved For Construction	06.11.2017	Jiang Yu		Xu Hang	Liu Shengkai	
0	Approved For Construction	26.07.2017	Jiang Yu		Xu Hang	Shi Jing	
C	Issued For Approval	22.03.2017	Jiang Yu		Xu Hang	Shi Jing	
B4	Issued For Review	03.03.2017	Jiang Yu		Xu Hang	Shi Jing	
B3	Issued For Review	20.01.2017	Li Yanan/Jiang Yu		Xu Hang	Shi Jing	
B2	Issued For Review	15.11.2016	Li Yanan		Xu Hang	Shi Jing	
B1	Issued For Review	09.10.2016	Li Yanan		Xu Hang	Shi Jing	
B	Issued For Review	6.7.2016	Li Yanan		Xu Hang	Shi Jing	
A	Issued For Comments	29.4.2016	Li Yanan		Xu Hang	Shi Jing	

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-8000-PS07-PID-001 — SHEET 01 TOTAL 01

SUB-CONTRACTOR DRAWING NO. – — SHEET – TOTAL –

PIPE RACK AND PIPE NET SYSTEM PIPING AND INSTRUMENT DIAGRAM

PROJECT	MKP Methanol Project
UNIT	Pipe Rack and Pipe Net
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-8000-PR-PID-001

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing | Sign | Date

GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED.

+NOTE:

1) THE DIRECT ROUTING DISTANCE BETWEEN THE TIE-IN POINT LOCATION OF THE METHANOL PLANT AND THE ACTUAL FLARE SITE IS ABOUT 1600 M.

2) FOR THE FLARE PIPING ROUTING, ONE STRESS EXPANSION LOOP IS SET AT ABOUT EVERY 60M DISTANCE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
8	As Built	30.04.2020	Chen Tao		Xu Hang	Liu Shengkai	
7	Approved For Construction	11.11.2018	Chen Tao		Xu Hang	Liu Shengkai	
6	Approved For Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
5	Approved For Construction	22.3.2017	Chen Tao		Xu Hang	Shi Jing	
4	Approved For Construction	20.12.2016	Chen Tao		Xu Hang	Shi Jing	
3	Issued For Approval	12.10.2016	Chen Tao		Xu Hang	Shi Jing	
2	Issued For Review	31.8.2016	Chen Tao		Xu Hang	Shi Jing	
1	Issued For Comments	29.4.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: FLARE HEADER I UTILITY DIAGRAM

JOB NO. S-02115 | DWG NO. 1341775 | DOC. MKP. 42 | DIAGRAM U19 | REV. 3

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-8500-PS09-PID-001

SHEET 01 TOTAL 01

SUB-CONTRACTOR: –

SUB-CONTRACTOR DRAWING NO. –

SHEET – TOTAL –

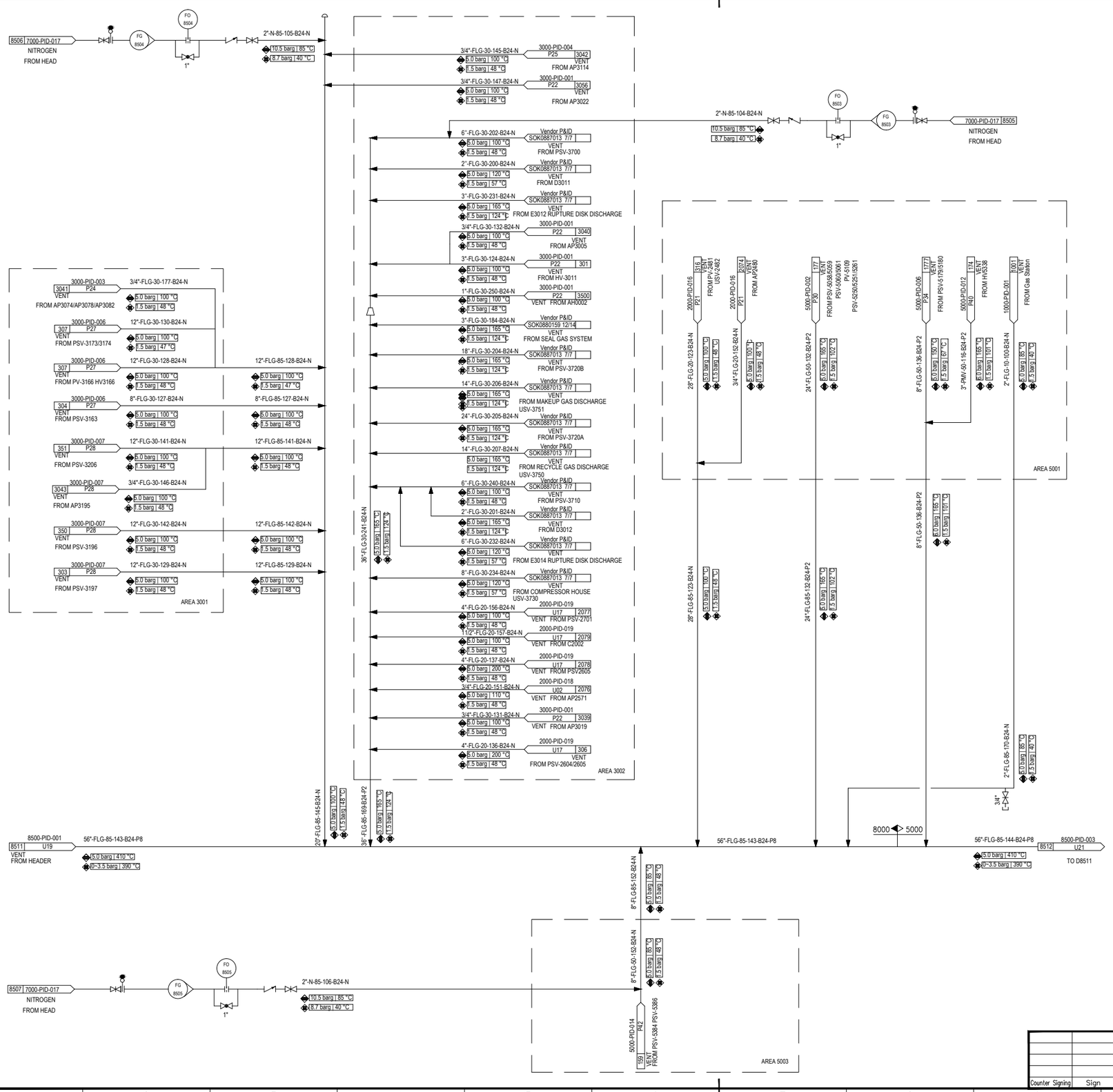
Counter Signing	Sign	Date

UTILITY DISTRIBUTION DIAGRAM
FLARE HEADER I

PROJECT	MKP Methanol Project
UNIT	Flare
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-8500-PR-PID-001

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Drawing2.dwg



GENERAL NOTES

+GENERAL NOTE:

LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED.

+NOTE:

1) THE DIRECT ROUTING DISTANCE BETWEEN THE TIE-IN POINT LOCATION OF THE METHANOL PLANT AND THE ACTUAL FLARE SITE IS ABOUT 1600 M.
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REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	Liu Shengkai	
9	Approved For Construction	16.12.2018	Chen Tao		Xu Hang	Liu Shengkai	
8	Approved For Construction	11.11.2018	Chen Tao		Xu Hang	Liu Shengkai	
7	Approved For Construction	09.01.2018	Chen Tao		Xu Hang	Liu Shengkai	
6	Approved For Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
5	Approved For Construction	22.3.2017	Chen Tao		Xu Hang	Shi Jing	
4	Approved For Construction	20.12.2016	Chen Tao		Xu Hang	Shi Jing	
3	Issued For Approval	12.10.2016	Chen Tao		Xu Hang	Shi Jing	
2	Issued For Review	31.8.2016	Chen Tao		Xu Hang	Shi Jing	
1	Issued For Comments	29.4.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: FLARE HEADER II UTILITY DIAGRAM
JOB NO. S-02115 | DOC. GRP. 42 | REV. 1
DWG NO. 1341778 | DIAGRAM U20

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-8500-PS09-PID-002
SHEET 01 | TOTAL 01

SUB-CONTRACTOR
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

UTILITY DISTRIBUTION DIAGRAM
FLARE HEADER II

PROJECT	MKP Methanol Project
UNIT	Flare
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-8500-PR-PID-002

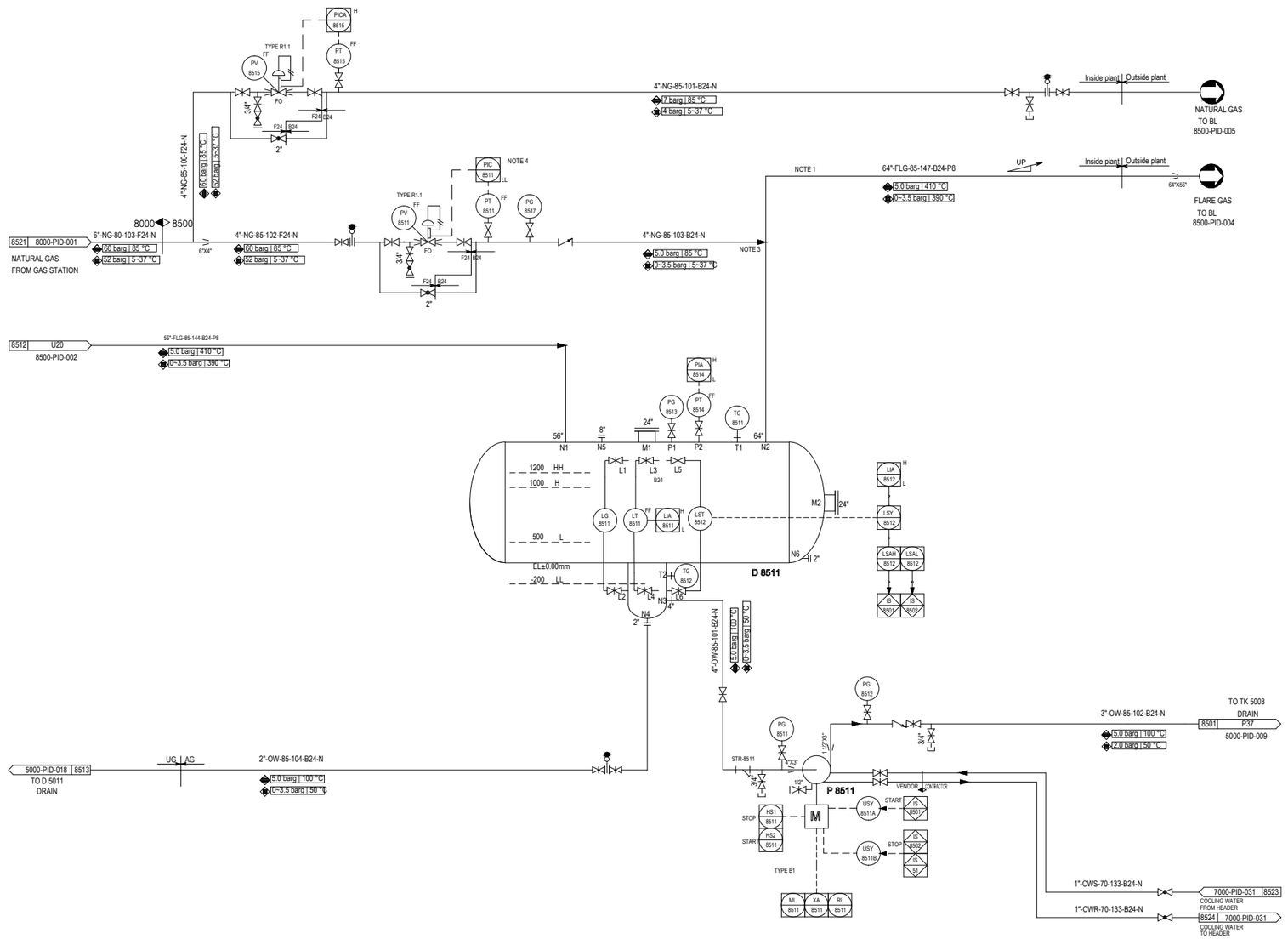
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

Counter Signing	Sign	Date

Drawing2.dwg

P 8511	KNOCK-OUT DRUM PUMP	
CAPACITY	30	m3/h
HEAD	30	m
DENSITY@OT	990	kg/m3
INSULATION/TRACING	NONE	
AUXILIARY PIPING	By Vendor	
ELEV. of EQUIPMENT	EL+101.100m	

D 8511	FLARE KNOCK OUT DRUM	
ID x LENGTH(T-T)	5000 x 11000	mm
DESIGN PRESS.	5.5	barg
DESIGN TEMP.	410	°C
INSULATION	YES	
CLADDING/LINING	NONE	
ELEV. of EQUIPMENT	EL+102.700m	



GENERAL NOTES

GENERAL NOTE:

1) LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED.
2) FLARE LINE WITH AN UPWARD SLOPE SHALL ADD LOW POINT DRAINS.

NOTE:

1) THE DIRECT ROUTING DISTANCE BETWEEN THE TIE-IN POINT LOCATION OF THE METHANOL PLANT AND THE ACTUAL FLARE SITE IS ABOUT 1600 M.
2) FOR THE FLARE PIPING ROUTING, ONE STRESS EXPANSION LOOP IS SET AT ABOUT EVERY 60M DISTANCE.
3) THIS CONNECTION POINT IS NEAR TO K.O.D INSIDE OF PLANT B.L.
4) CONTROLLER TO MANUAL WITH 100% OUTPUT WHEN LOWER THAN SETTING PRESSURE DATA, TO PREVENT VACUUM.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved For Construction	30.12.2019	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved For Construction	16.12.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved For Construction	11.11.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved For Construction	02.01.2018	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved For Construction	06.11.2017	Chen Tao		Xu Hang	Liu Shengkai	
A	Approved For Construction	22.3.2017	Chen Tao		Xu Hang	Shi Jing	
A	Approved For Construction	20.1.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Approval	20.12.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Approval	12.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Review	31.8.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Comments	29.4.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: FLARE STACK UTILITY DIAGRAM
JOB NO. S-02115 | DOC. GRP. 42 | REV. 1
DWG NO. 1344813 | DIAGRAM U21

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-8500-PS09-PID-003
SHEET 01 | TOTAL 01
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

Counter Signing	Sign	Date

P&ID FLARE K.O DRUM

PROJECT	MKP Methanol Project
UNIT	Flare
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-8500-PR-PID-003

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

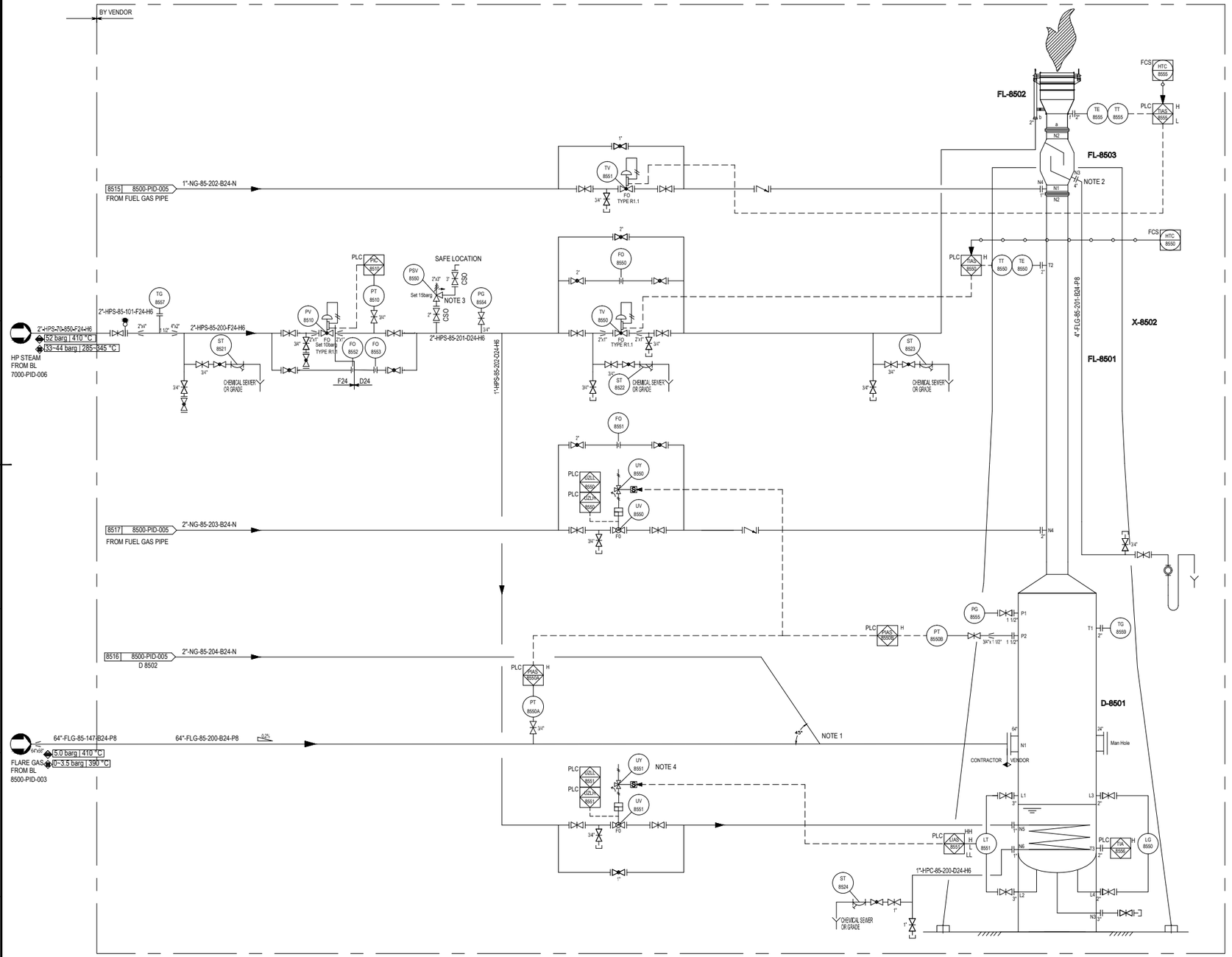
D-8501	Knock-Out Drum	
ID x LENGTH(T-T)	DN3600xH10000	mm
DESIGN PRESS.	7.0	barg
DESIGN TEMP.	410	°C
INSULATION	YES	
CLADDING/LINING	NONE	

FL-8501	Flare Stack	
ID x LENGTH(T-T)	DN1600xH44450	mm
DESIGN PRESS.	7.0	barg
DESIGN TEMP.	410	°C
INSULATION	NONE	

FL-8502	Flare Tip	
ID x LENGTH(T-T)	DN1600xH5000	mm
DESIGN PRESS.	0.5	barg
DESIGN TEMP.	1200	°C
INSULATION	NONE	

FL-8503	Molecular Seal	
ID x LENGTH(T-T)	DN3000xH5000	mm
DESIGN PRESS.	5.0	barg
DESIGN TEMP.	410	°C
INSULATION	NONE	

X-8502	Derrick	
HEIGHT	64	m
ROOT LENGTH	12	m
TYPE	BOLTING CONNECTED	
METERIAL	CS(HOT DIP GALVANIZED)	



GENERAL NOTES

GENERAL NOTE:

1) LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.
2) FLARE LINE WITH AN UPWARD SLOPE SHALL ADD LOW POINT DRAINS,THE DETAIL INFORMATION ABOUT IT SHOULD SPECIFY IN DE PHASE.

NOTE:

1) TO ENTER VENT TO FLARE HEADER AT 45 DEGREES TO HEADER AXIS IN DIRECTION OF FLOW.
2) MOLECULAR SEAL FLARE TYPE INSTEAD OF WATER SEAL TYPE, UTILIZING NATURAL GAS AS THE EMERGENCY SUPPLEMENTARY PRESSURE, (MAKE UP GAS) WITH PRESSURE CONTROL VALVE.
3) A Ø 6 HOLE SHOULD BE OPENED ON HORIZONTAL PIPE AFTER SAFTY VAVLE.
4) WHEN THE LIQUID LEVEL IS AT HH,INTERLOCK SWITCH VALVE UV-8551 OPEN.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Chen Tao		Xu Hang	LiuShengkai	
A	Approved For Construction	30.12.2019	Chen Tao		Xu Hang	LiuShengkai	
A	Approved For Construction	30.06.2018	Chen Tao		Xu Hang	LiuShengkai	
A	Approved For Construction	24.01.2018	Chen Tao		Xu Hang	LiuShengkai	
A	Approved For Construction	20.1.2017	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Approval	20.12.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Approval	12.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Comments	31.8.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East
Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S
COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-8500-PS09-PID-004
SHEET 01 TOTAL 01
SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

Counter Signing	Sign	Date

P&ID FLARE STACK I

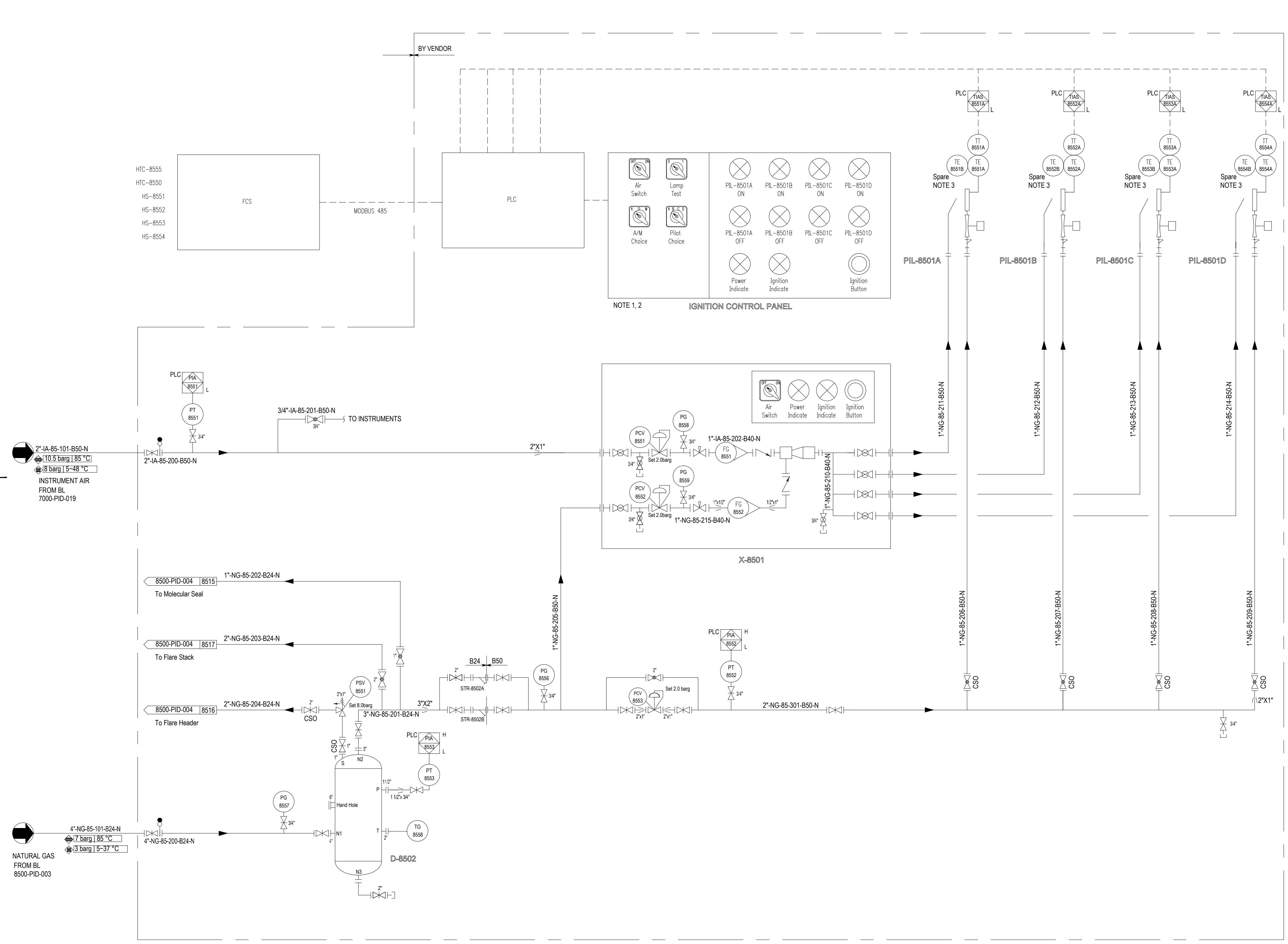
PROJECT	MKP Methanol Project
UNIT	Flare
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-8500-PR-PID-004

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

D-8502	Fuel Gas Buffer Drum
ID x LENGTH(T-T)	DN600xH1500 mm
DESIGN PRESS.	7.0 barg
DESIGN TEMP.	85 °C
INSULATION	NONE
CLADDING/LINING	NONE

X-8501	Flame Front Generator
LENGTH	4300 mm
WIDTH	800 mm
HEIGHT	2000 mm
FRAME METERIAL	SA-36+GALV

PIL-8501A~D	Pilot (with FFG & HEI)
LENGTH	4300 mm
DESIGN PRESS.	5.0 barg
DESIGN TEMP.	1200 °C
INSULATION	NONE



GENERAL NOTES

GENERAL NOTE:

1) LOW POINT DRAINS AND HIGH POINT VENT MUST BE ADDED DURING DETAILED ENGINEERING.

2) FLARE LINE WITH AN UPWARD SLOPE SHALL ADD LOW POINT DRAINS,THE DETAIL INFORMATION ABOUT IT SHOULD SPECIFY IN DE PHASE.

NOTE:

1) XL-01~04: PILOT CONDITION INDICATION LAMP, WHEN PIL-8501A/B/C/D ARE IN NORMAL CONDITION, THE RELEVANT LAMP IS ON.

2) TAL-01~04: PILOT TEMPERATURE LOW ALARM LAMP, WHEN THE TEMPERATURE OF ANY ONE IN PIL-8501A/B/C/D IS LOWER THAN 150 , THE RELEVANT LAMP IS ON.

3) THERMOCOUPLE IS THE K TYPE DUAL SHEATHE THERMOCOUPLE. ONE IS DUTY, ANOTHER ONE IS SPARE.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A01	As Built	30.04.2020	Chen Tao		Xu Hang	Liu Shengkai	
4	Approved For Construction	30.12.2019	Chen Tao		Xu Hang	Liu Shengkai	
3	Approved For Construction	24.01.2018	Chen Tao		Xu Hang	Liu Shengkai	
2	Approved For Construction	20.1.2017	Chen Tao		Xu Hang	Shi Jing	
1	Approved For Construction	20.12.2016	Chen Tao		Xu Hang	Shi Jing	
0	Approved For Construction	12.10.2016	Chen Tao		Xu Hang	Shi Jing	
A	Issued For Comments	31.8.2016	Chen Tao		Xu Hang	Shi Jing	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME: | JOB NO. | DOC. GRP. | DWG. NO. | DIAGRAM | REV.

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.
MKP-11-AS-8500-PS09-PID-005
SHEET 01 TOTAL 01

SUB-CONTRACTOR DRAWING NO.
–
SHEET – TOTAL –

Counter Signing	Sign	Date	

P&ID FLARE STACK II	PROJECT	MKP Methanol Project
	UNIT	Flare
	PHASE	As Built Drawing
SCALE: – SHEET: 1 TOT.: 1 SIZE: A1	OWNER DWG NO.	MKP-11-AS-8500-PR-PID-005

SYMBOLS FOR PROCESS AND INSTRUMENTATION

PIPES

- MAIN PROCESS LINE
- OTHER LINE
- STEAM TRACING
- ELECTRIC TRACED
- TRACED-MEDIA UNSPECIFIED
- STEAM JACKETED
- SLOPE DOWN (DOWN)
- SLOPE UP (UP)
- FREE DRAINING

INSTRUMENT LINES

- CONNECT TO PROCESS OR UNDEFINED SIGNAL
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- ELECTRIC BINARY SIGNAL
- CAPILLARY TUBE
- HYDRAULIC SIGNAL
- DATA LINE OR SOFTWARE
- MECHANICAL LINK
- BY VENDOR (B.V.)
- AUTOMATIC MANIFOLD

INSTRUMENT OR FUNCTION

- INSTRUMENT SURROUNDED BY BOX IS PART OF DISTRIBUTED CONTROL SYSTEM / ESD SYSTEM
- FIELD MOUNTED
- PRIMARY LOCATION (MAIN PANEL)
- BEHIND-PANEL DEVICE (NORM. INACCESSIBLE)
- AUXILIARY LOCATION (LOCAL PANEL)
- INTERLOCK FUNCTION (GROUP 1) (IS 1)
- ESD SYSTEM (GROUP 1) (IS 1)
- INTERLOCK LOGIC (GROUP 1) (1)
- SWITCH
- INSTRUMENT WITH ELECTRIC TRACING
- SIGNAL FOR VENDOR TO PLC (PLC)

TYPICAL EQUIPMENT SYMBOLS

- CENTRIFUGAL PUMP
- RECIPROCATING PUMP
- SUBMERGED PUMP
- AIR BLOWER
- VERTICAL PUMP
- MOTOR (M)
- EJECTOR
- TURBINE
- ROOT'S COMPRESSOR (B)
- CRANE

LINE SYMBOLS

- CONTROL VALVE
- CONTROL VALVE WITH POSITIONER
- CONTROL VALVE WITH MANUAL OPERATION DEVICE
- AIR CYLINDER OPERATED VALVE
- HAND OPERATED CONTROL VALVE
- SOLENOID VALVE (S)
- ELECTRIC MOTOR OPERATED VALVE (M)
- SELF OPERATING BACK PRESSURE REGULATING VALVE
- SELF OPERATING PRESSURE REDUCING VALVE
- SPRING VALVE
- SPRING LOADED RELIEF VALVE
- SPRING LOADED QUICK CLOSING VALVE-INTERMITTENT BLOW DOWN
- SPRING LOADED SAFETY RELIEF VALVE
- SPRING LOADED VACUUM RELIEF VALVE
- BREATHER VALVE
- EMERGENCY RELIEF MANHOLE
- RUPTURE DISC
- ORIFICE
- VENTURI
- FLOW NOZZLE
- ROTAMETER
- TURBINE OR PROPELLER TYPE FLOW METER
- ANNUBAR TYPE FLOW ELEMENT
- AVERAGE PILOT TUBE OR ANNUBAR
- POSITIVE DIS-PLACEMENT METER
- VORTEX FLOWMETER
- ULTRASONIC FLOWMETER
- CORIOLIS FLOWMETER
- MAGNETIC FLOWMETER (M)
- 3-WAY SOLENOID VALVE: ARROW INDICATES STATE WHEN DE-ENERGIZED (S)
- INSTRUMENT WITH DIAPHRAGM SEAL
- ELECTRO / PNEUMATIC CONVERTER
- DAMPER
- TEST POINT

SYMBOLS FOR PIPING ELEMENTS

- GATE VALVE
- GLOBE VALVE
- NEEDLE VALVE
- BALL VALVE
- PLUG VALVE
- DIAPHRAGM VALVE
- BUTTERFLY VALVE
- VALVE CAN'T BE FULLY CLOSED (MIN. STOP)
- VALVE WITH ELECTRIC TRACING
- NON-RETURN OR CHECK VALVE
- ANGLE VALVE
- 3-WAY VALVE
- MINIMUM FLOW AND CHECK VALVE
- TEE WITH PIPE CLASS CHANGE
- MIXING TEE
- COMPENSATOR
- PULSATION DAMPER
- SURGE DRUM (~)
- TEMPORARY STRAINER
- Y-STRAINER
- STEAM TRAP WITHOUT STRAINER
- STEAM TRAP WITH STRAINER
- T-STRAINER
- CONICAL STRAINER
- BUCKET TYPE STRAINER
- FIGURE 8-TYPE BLIND, NORMALLY CLOSED
- FIGURE 8-TYPE BLIND, NORMALLY OPEN
- BLIND
- SPACER
- MANIFOLD / COLLECTOR
- MANIFOLD
- HOSE
- HOSE CONNECTION
- FLANGED CONNECTION
- FLANGED END
- CAPPED END
- SCREWED CAP
- VALVE WITH BLIND FLANGE
- PLUG
- MULTIVANE LOUVER

- SPRAY NOZZLE
- SIGHT GLASS
- SPOOL PIECE
- SWING ELBOW
- DRAIN
- SILENCER
- VENT / FLARE
- OPEN VENT
- LIQUID SEAL
- FLAME ARRESTOR / DEMISTER
- AIR INTAKE
- QUENCH NOZZLE
- SPECIAL PIPING ELEMENT (SPE)
- BIRD SCREEN
- CORROSION COUPON
- DITCH
- MULTIFUNCTIONAL HYDRAULIC CONTROL VALVE (MCV)
- OVERFLOW
- RESIN TRAPPER
- FLEXIBLE CONNECTION (ICH)
- FOR SUMP
- CALIBRATION POT
- DESICCANT VENT

OFF PAGE CONNECTOR

XX | XXX — DIAGRAM NO. / OPC NO.

- FROM BATTERY LIMIT
- TO BATTERY LIMIT
- U | U1 — UTILITY | DIAGRAM (U1)
- 2000 ▶ 8000 — FROM/TO PIPE RACK
- CONTRACTOR ▶ VENDOR — CHANGE OF SCOPE (FOR PIPE)

LIMITS

- BATTERY LIMIT
- B24 D24 — CHANGE OF PIPE CLASS
- DESIGN CONDITIONS
- OPERATING CONDITIONS
- 4"X3" — CHANGE OF NOMINAL DIAMETER
- 4"X3" — ECCENTRIC REDUCER

LETTER CODE FOR INSTRUMENTATION

FIRST LETTER

	MEASURED OR INITIATING VARIABLES	MODIFIER
A	ANALYSIS	
B	BURNER, COMBUSTION	
C		
D		DIFFERENTIAL
E	VOLTAGE (EMF)	
F	FLOW RATE	RATIO (FRACTION)
G		
H	HAND (MANUALLY INITIATED)	
I	CURRENT (ELECTRICAL)	
J	POWER	SCAN
K	TIME, TIME SCHEDULE	TIME, RATE OF CHANGE
L	LEVEL	
M	MONITORING (MOTORS)	
N		
O		
P	PRESSURE, VACUUM	
Q	QUANTITY	INTEGRATE, TOTALIZE
R	RADIOACTIVITY	
S	SPEED, FREQUENCY	SAFETY
T	TEMPERATURE	
U	MULTIVARIABLE	
V	VIBRATION	
W	WEIGHT, FORCE	
X	UNCLASSIFIED	X AXIS
Y	EVENT, STATE, PRESENCE	Y AXIS
Z	POSITION, DIMENSION	Z AXIS
ML	RUNNING	
NL	STOP STATUS	
RL	LOCAL/REMOTE	
XA	FAULT	
YL	READY FOR START	
HS1	STOP	
HS2	START	
LTM	LOAD AND TEMPERATURE MANAGEMENT SYSTEM	
FF	FF INSTRUMENT	

SUCCEEDING LETTER

	MEASURED OR INITIATING VARIABLES	MODIFIER
A	ALARM	
B		
C	CONTROL	
D		
E	PRIMARY ELEMENT	
F		
G	GLASS, GAUGE	
H		HIGH
I	INDICATE	
J		
K	CONTROL STATION	
L	LIGHT	LOW
M		MIDDLE, INTERMEDIAT
N	MANUAL INPUT	
O	ORIFICE (RESTRICTION)	
P	POINT (TEST CONN.)	
Q		
R	RECORD	
S	SWITCH	
T	TRANSMIT	
U	MULTIFUNCTION	MULTIFUNCTION
V	VALVE, DAMPER, LOUVER	
W	WELL	
X	UNCLASSIFIED	UNCLASSIFIED
Y	RELAY, COMPUTE, CONVERT	
Z	DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

ALARM

ALARM ON DCS ARE IDENTIFIED BY PLACING INSTRUMENT DESIGNATION ADJACENT TO THE INSTRUMENT SYMBOLS i.e. :

FICA (Y) — H / L

HIGH ALARM : UPPER RIGHT SIDE
LOW ALARM : LOWER RIGHT SIDE

TYPE OF LEVEL GAUGE:

LG — X

B = BICOLOR
C = CONDUCTIVITY
M = MAGNETIC
R = REFLEX
T = TRANSPARENT

GENERAL NOTE:

1. LETTER CODE FOR INSTRUMENTATION: IDENTIFICATION LETTERS ARE IN ACCORDANCE WITH ANSI -ISA -S 5.1
2. ALL GAS AND STEAM FLOW MEASUREMENTS IN DCS ARE PRESSURE AND TEMPERATURE COMPENSATED

LETTER CODE FOR PROCESS EQUIPMENT ANG PIPING FITTINGS

PROCESS EQUIPMENT

A	PROCESS FILTER
AE	COOLER, CONDENSER
B	BLOWER, DRUM
C	COMPRESSOR
D	VESSEL, SEPARATOR
E	HEAT EXCHANGER
F	FAN
FT	TURBINE
G	ALTERNATOR
H	HEATER
I	NOT TO BE USED
J	EJECTOR
L	ELECTRICAL EQUIPMENT
M	ELECTRIC MOTOR (PREFIX TO K, P, W OR X)
N	CONVEYER
O	NOT TO BE USED
P	PUMP
Q	AVAILABLE
R	REACTOR, CONVERTER
S	STACK, STRUCTURE
T	COLUMN, TOWER
TK	TANK, STORAGE
U	FOUNDATION
U*	FOUNDATION (PREFIX TO B, D, E, F, H, R, T ETC.)
V	VENT, FLARE
W	CRANE, ELEVATOR
X	MISCELLANEOUS EQUIPMENT
Y	INTERNALS (HARDWARE)
Y*	INTERNALS (HARDWARE) (PREFIX TO B, E, F, H, R, T ETC.)
Z	INTERNALS (CATALYST)
Z*	INTERNALS (CATALYST) (PREFIX TO R)
MCV	MULTIFUNCTIONAL HYDRAULIC CONTROL VALVE
PD	POND
RT	RESIN TRAPPER
SU	FOR SUMP

PIPING FITTINGS

ARV	AUTOMATIC RECIRCULATION VALVE
BDV	BLOW DOWN VALVE
ERM	EMERGENCY RELIEF MANHOLE
FA	FLAME ARRESTOR / DEMISTER
FO	RESTRICTION ORIFICE
FX	FLEXIBLE CONNECTION
FZ	SPRAY NOZZLE
MSV	MINIMUM STOP VALVE
MX	MIXER
OF	OVER FLOW
PSV	SAFETY RELIEF VALVES
PVRV	PRESSURE AND VACUUM RELIEF VALVE (BREATHING VALVE)
RD	RUPTURE DISC
SEW	SAFETY SHOWER AND EYE WASHER
SPE	SPECIAL PIPING ELEMENT
ST	STEAM TRAP
STR	STRAINER
XG	SIGHT GLASS
XH	HOSE

DESIGNATION OF NOZZLES ON PROCESS EQUIPMENT

A	INLET
B	OUTLET
C	
D	DRAIN
E	LEVEL SWITCH
G	LEVEL GAUGE
H	HANDHOLE
I	
J	
K	
L	LEVEL INSTRUMENT
M	MANHOLE
N	
O	SAMPLE CONNECTION
P	PRESSURE MEASUREMENT
Q	
R	
S	SAFETY VALVE
T	TEMPERATURE MEASUREMENT
U	UTILITY
V	VENT
W	
X	
Y	
Z	

IDENTIFICATION:

PIPE NUMBER:

12"-SG-50-401-B23-H1

- 12" — NOMINAL DIAMETER
- SG — FLUID CODE
- 50 — UNIT NUMBER
- 401 — SEQUENCE NUMBER
- B23 — PIPE CLASS CODE
- H — INSULATION PURPOSE
- 1 — INSULATION CLASS

EQUIPMENT NUMBER:

R 5001 1/2 or A/B

- R — EQUIPMENT GROUP LETTER
- 5001 — UNIT NUMBER
- 1/2 — SERIAL NUMBER
- A/B — FIRST OF TWO PARTS
- MAIN STAND BY

INSTRUMENT NUMBER:

FIC -0001 1/2 or A/B

- FIC — FUNCTIONAL IDENTIFICATION
- 0001 — LOOP OR INSTRUMENT NUMBER
- 1/2 — FIRST OF TWO PARTS
- A/B — MAIN STAND BY

FLUID CODES:

AM	AMMONIA WATER
BD	BOILER BLOW DOWN
BFW	BOILER FEED WATER
BW	WARM UP WATER
CBD	CONTINOUS BLOW DOWN
CD	CLOSED DRAIN
CH1	CORROSION INHIBITOR SOLUTION
CH2	ANTISCALE SOLUTION
CLO	$Ca(ClO)_2$ SOLUTION
CS	CAUSTIC SOLUTION
CSW	CLEAN SALTY WATER
CWR	COOLING WATER RETURN
CWS	COOLING WATER SUPPLY
DR	DRAIN
DMW	DEMINERALIZED WATER
FF	FOAM SOLUTION
FG	FUEL GAS
FLG	FLARE VENT GAS
FW	FIRE FIGHTING WATER
HG	HYDROGEN GAS
HHPC	HIGH HIGH PRESSURE STEAM CONDENSATE
HHPS	HIGH HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HZ	OXYGEN SCAVENGER
IA	INSTRUMENT AIR
LO	LUBRICANT OIL
LOS	LIQUID OFF STREAM METHANOL
LPC	LOW PRESSURE STEAM CONDENSATE
LPS	LOW PRESSURE STEAM
MC	CONDENSATE LIQUID
ME	METHANOL
MPC	MEDIUM PRESSURE STEAM CONDENSATE
MPS	MEDIUM PRESSURE STEAM
N	NITROGEN
NG	NATURAL GAS
NS	NaOH SOLUTION
OW	OILY WATER
PA	PROCESS AIR
PG	OFF GAS
PH	PHOSPHATE SOLUTION
PMC	CRUDE METHANOL
PMP	RICH METHANOL LIQUID
PMV	RICH METHANOL GAS
PMW	METHANOL WATER
PO	PROCESS OXYGEN
POC	POTENTIALLY OILY CONTAMINATE WATER
PRC	PROCESS CONDENSATE
PRG	PROCESS GAS -HDS
PW	POTABLE WATER
RO	RO WATER
RFG	REFORMED GAS
SG	SYNTHESIS GAS
SN	SANITARY SEWAGE
SU	H_2SO_4 SOLUTION (98%)
SW	SERVICE WATER
TC	TURBINE CONDENSATE
VA	VENT TO ATMOSPHERE
VE	VENT EXTRACTION
VG	VENT GAS

GENERAL NOTES:

1) LOOP TAG NUMBERING EG. FHS, FHIC.

F = LOOP DESIGNATION
H = HAND
S = SWITCH
I = INDICATING
C = CONTROLER

2) AUTOSTART:

FAILURE OF RUNNING PUMP TO START STANDBY PUMP.

IDENTIFICATION:

VALVE STATE

CSC	CAR SEALED CLOSED
CSO	CAR SEALED OPEN
FO	FAILURE OPEN
FC	FAILURE CLOSED
FL	FAILURE LOCKED
FLO	FAILURE LOCKED OPEN
FLC	FAILURE LOCKED CLOSED
LO	LOCKED OPEN
LC	LOCKED CLOSED
NO	NORMALLY OPEN
NC	NORMALLY CLOSED

INSULATION CODES:

C	COLD INSULATED
H	HOT INSULATED
N	NOT INSULATED
P	PERSONNEL PROTECTION INSULATED

HEAT TRACING CODES:

ET	ELECTRIC TRACED
ST	STEAM TRACED
SJ	STEAM JACKETED
TR	TRACED -MEDIA UNSPECIFIED

PIPE CLASS CODES:

FIRST LETTER INDICATES FLANGE RATING:	NUMBER MATERIA
B = class 150	24 = CS
D = class 300	34 = P11
F = class 600	36 = P22
G = class 900	40 = SS304L
H = class 1500	42 = SS316L
J = class 2500	44 = SS321
	50 = SS304
EXAMPLE: B24	64 = SS321H
MISCELLANEOUS:	66 = SS347H
C1A = CS	70 = MNL
G1A = CS / GALV	class 150 RF
G1B = CS / GALV	class 150 RF
L1A = CS / PVC LINED	class 150 RF
N0A = PVC-U	GRAVITY FLOW
N0C = PE	GRAVITY FLOW
N2A = GRP	class 150 RF
N2B = HDPE	class 150 RF
N2C = PVC-C	PN16 FF
N2D = PP-R	PN16 FF
U1A = CS PTFE COATED	class 150 RF
B24U = B24 FOR UNDERGROUD	

LIST OF DIAGRAMS

DIAGRAM NUMBER	TITLE	DWG. NO.
S01	SYMBOLS AND IDENTIFICATIONS	1341708
S02	SYMBOLS AND IDENTIFICATIONS	1341709
P01	NATURAL GAS DISTRUBUTION	1341711
P02	PROCESS OXYGEN	1341712
P03	OXYGEN PREHEATING	1341713
P04	DESULPHURISATION	1341714
P05	STEAM CONDENSATE RETURN	1341715
P06	NG SATURATION I	1341716
P07	NG SATURATION II	1341717
P08	NG SATURATION III	1341718
P09	S C RATIO CONTROL I	1341719
P10	S C RATIO CONTROL II	1341720
P11	FLUE GAS WHS I	1341721
P12	FLUE GAS WHS II	1341722
P13	FLUE GAS WHS IV	1341723
P14	PREREFORMING	1341724
P15	TUBULAR REFORMER	1341725
P16A	SECONDARY REFORMER I	1341726
P16B	SECONDARY REFORMER II	1341756
P17	STEAM SUPERHEATER	1341727
P18	STEAM GENERATION	1341728
P19	GAS COOLING AND SEPARATION I	1341729
P20	GAS COOLING AND SEPARATION II	1341730
P21	GAS COOLING AND SEPARATION III	1341731
P22	SYNTHESIS GAS COMPRESSOR	1341732
P23	SYNTHESIS, PART I	1341733
P24	METHANOL SYNTHESIS	1341734
P25	METHANOL F E EXCHANGER	1341735
P26	SYNTHESIS GAS COOLING	1341736
P27	SYNTHESIS, PART III	1341737
P28	RAW PRODUCT FLASH	1341738
P29	CRUDE METHANOL TANK	1341739
P30	STABILIZER COLUMN	1341740
P31	STABILIZER COLUMN REBOILER	1341741
P32	STABILIZER COLUMN OH SYSTEM	1341742
P33	STABILIZER COLUMN PUMPS	1341743
P34	LP METHANOL COLUMN	1341744
P35	LP METHANOL COLUMN REBOILER	1341745
P36	LP METHANOL COLUMN OH SYSTEM	1341746
P37	MP METHANOL COLUMN FEED PUMP	1341747
P38	MP METHANOL COLUMN	1341748
P39	MP COLUMN REBOILERS	1341749
P40	MP METHANOL COLUMN OH SYSTEM	1341750
P41	MP METHANOL COLUMN BY PRODUCT	1341751
P42	METHANOL PRODUCT	1341752
P43	METHANOL PRODUCT BUFFER TANK I	1341753
P44	METHANOL PRODUCT BUFFER TANK II	1341754
P45	LIQUID OFF -STREAM TANK	1341755
U01	FUEL SYSTEM	1341757
U02	START -UP BLOWER	1341758
U03	HHP-HP CONTROL STEAM	1341759
U04	HP STEAM EXPORT IMPORT	1341760
U05	MP AND LP STEAM CONTROL	1341761
U06	LP STEAM CONTROL	1341762
U07	HHP AND HP STEAM HEADER	1341763
U08	LP STEAM HEADER	1341764
U09	DEAERATOR	1341765
U10	BFW PUMPS	1341766
U11	BFW HEADER	1341767
U12	PHOSPHATE DOSING UNIT-X 7001	1341768
U13	AMINE DOSING UNIT-X 7002	1341769
U14	OXYGEN SCAV. DOSING UNIT-X 7003	1341770
U15	MORPHOLINE DOSING UNIT	1341771
U16	BOILER BLOW DOWN	1341772
U17	H2 RECYCLE SYSTEM	1341773
U18	DEMINERALIZED WATER STORAGE	1341774
U19	FLARE HEADER I	1341775
U20	FLARE HEADER II	1341776
U21	FLARE STACK	1341777
U22	PROCESS CONDENSATE STORGE	1353319
U23A	ION EXCHANGE UNIT (OPTIONAL)	1353320
U23B	ION EXCHANGE UNIT (OPTIONAL)	1353321
U24	NaOH DOSING UNIT X 5003	1353322
U25	LIQUID OFF STREAM STRIPPER	1354612

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	XuYekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	30.12.2019	XuYekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	02.02.2018	XuYekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	XuYekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	05.05.2017	XuYekun		Xu Hang	Liu Shengkai	
A	**Issued for Review**	22.03.2017	**XuYekun**		Xu Hang	Liu Shengkai	
A	Issued for Review	22.01.2017	XuYekun		Xu Hang	Liu Shengkai	
A	Issued for Review	10.10.2016	Jiang Yu		Xu Hang	Liu Shengkai	
A	Issued for Review	25.06.2016	Jiang Yu		Xu Hang	Liu Shengkai	

OWNER: Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: SYMBOLS AND IDENTIFICATIONS FOR PIPING AND INSTRUMENT DIAGRAM(1)
JOB NO. S-02115 | DOC. DISP. 42 | REV. 1
DWG. NO. 1341778 | DIAGRAM S01

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS07-PID-001
SHEET 01 | TOTAL 01

SUB-CONTRACTOR:
SUB-CONTRACTOR DRAWING NO. –
SHEET – | TOTAL –

Counter Signing	Sign	Date

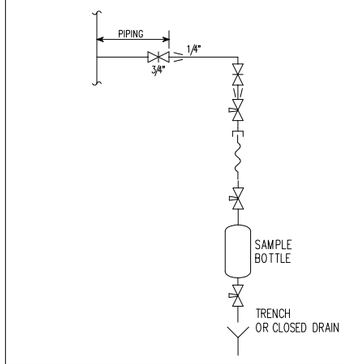
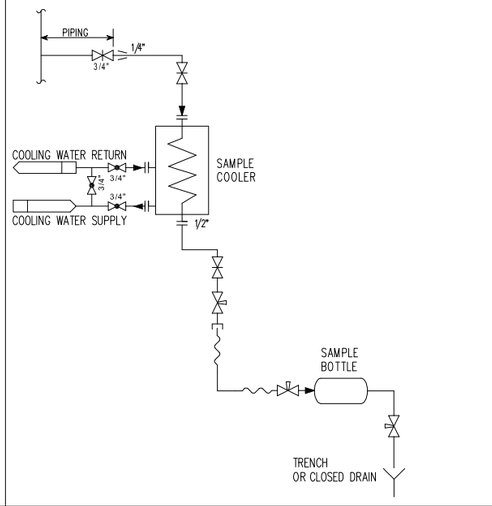
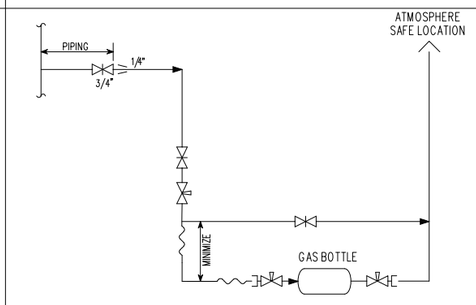
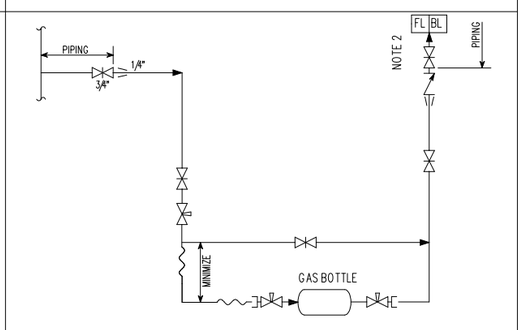
SYMBOLS AND INDENTIFICATIONS FOR PIPING AND INSTRUMENT DIAGRAM(1)

PROJECT	MKP Methanol Project
UNIT	General Technical
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-9000-PR-PID-001

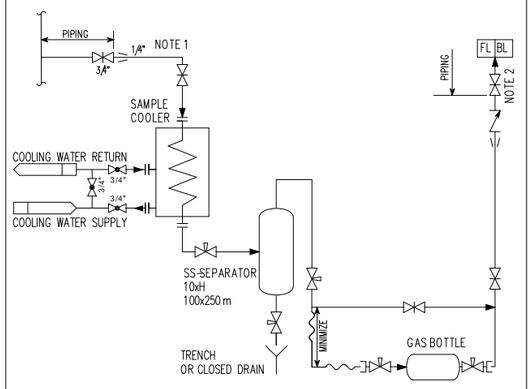
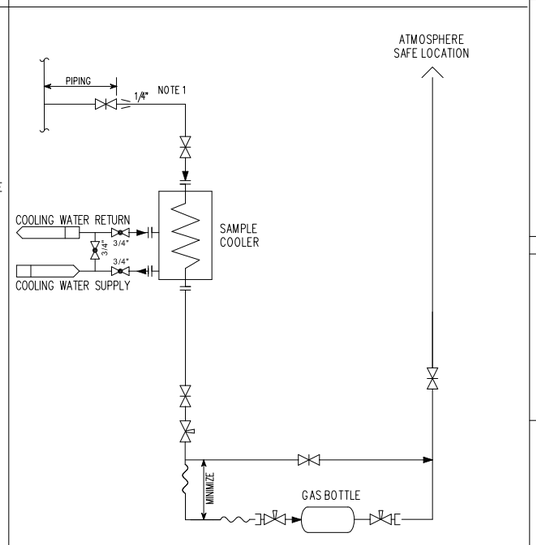
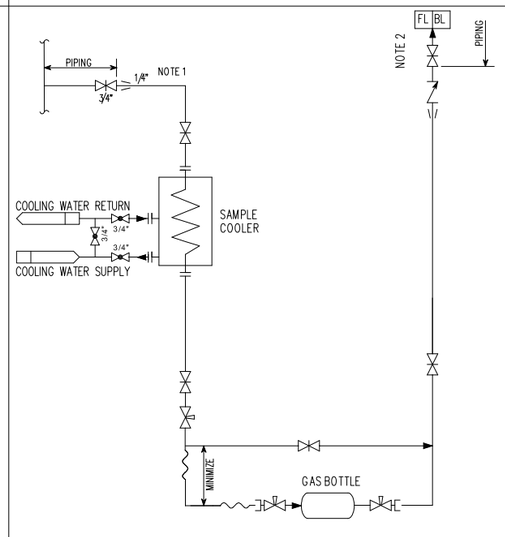
SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

VARIOUS SYMBOLS

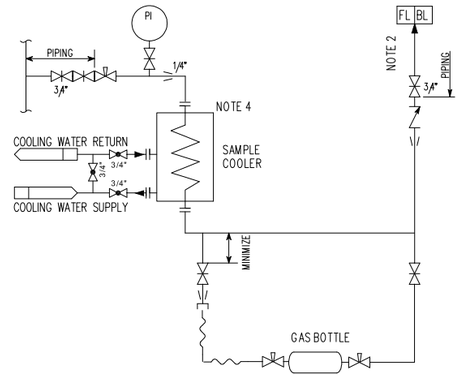
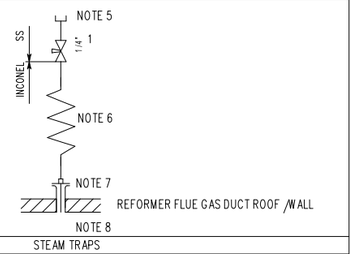
SAMPLE STATIONS

SYMBOLS ON P&I DIAGRAM	DETAIL DRAWING
AP TYPE 1 NON-FLASHING LIQUIDS BELOW 60 °C OR LIQUID METHANOL	
AP TYPE 2 FLASHING LIQUIDS OR NON-FLASHING LIQUIDS ABOVE 60 °C OR NON-HAZARDOUS VAPOR	
AP TYPE 3 GAS BELOW 60 °C VENT TO ATMOSPHERE AT SAFE LOCATION	
AP TYPE 4 FLASHING OR HAZARDOUS LIQUID OR GAS BELOW 60 °C VENT TO FLARE	

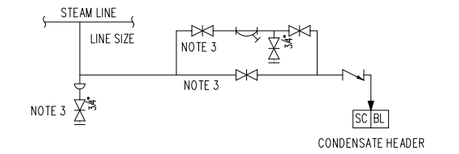
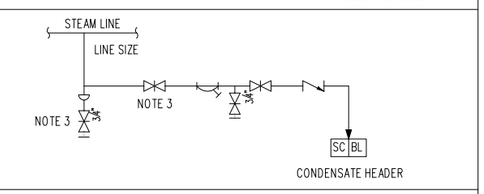
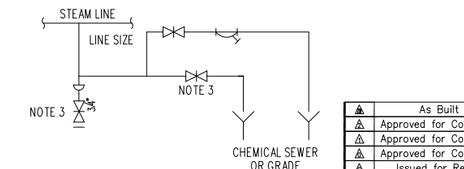
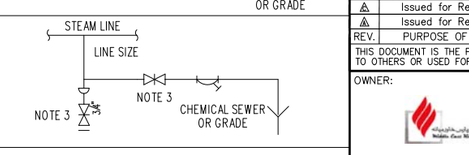
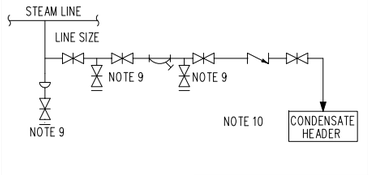
SAMPLE STATIONS

SYMBOLS ON P&I DIAGRAM	DETAIL DRAWING
AP TYPE 5 CONDENSABLE GAS ABOVE 60 °C	
AP TYPE 6 NON HARZARDOUS FLASHING LIQUIDS OR GAS ABOVE 60 °C VENT TO ATMOSPHERE AT SAFE LOCATION	
AP TYPE 7 FLASHING OR HAZARDOUS LIQUID OR GAS ABOVE 60 °C VENT TO FLARE	

SAMPLE STATIONS

SYMBOLS ON P&I DIAGRAM	DETAIL DRAWING
AP TYPE 8 NH3 ANALYSIS IN HP LOOP	
AP TYPE 9 HOT FLUE GAS UNDER VACUUM	

STEAM TRAPS

SYMBOLS ON P&I DIAGRAM	
T 1 SC BL	
T 2 SC BL	
T 3	
T 4	
T 5 XXSC	

NOTES:

1) MINIMUM 4m BARE TUBE FOR AIR COOLING BEFORE ENTERING WATER COOLER.
2) VALVE TO FLARE TO BE IN ACCORDANCE WITH PROCESS PIPECLASS.
3) VALVES TO BE DOUBLED IN HIGH PRESSURE SYSTEMS.
4) SAMPLE COOLER TO BE OMITTED IF TEMPERATURE <60 °C.
5) CONNECTION TO SUIT PORTABLE SAMPLE BOTTLE WITH VACUUM PUMP OR PORTABLE ANALYSER.
6) MIN 4m OF BARE 1/4" INCONEL TUBE.
7) CONAX FITTING WITH LAVA SEAL.
8) TUBE INSERTED CLOSE TO EDGE OF BRICK WORK.
9) THE PRINCIPLE FOR DRAIN VALVES AS FOLLOWS:
   A. USING ONE SHUT-OFF VALVE AND THREADED PIPE CAP IF PIPE CLASS LESS THAN CLASS 600.
   B. USING TWO SHUT-OFF VALVES AND BLIND FLANGE IF PIPE CLASS EQUAL OR MORE THAN CLASS 600, BUT LESS THAN CLASS 1500.
   C. USING TWO WELDING SHUT-OFF VALVES AND ONE SHORT PIPE IN THE END IF PIPE CLASS EQUAL CLASS 1500.
10) THE PRINCIPLE FOR STEAM CONDENSATE HEADER AS FOLLOWS:
   A. FOR HHPS STEAM PIPE, CONDENSATE HEADER HHPSC.
   B. FOR HPS AND MPS STEAM PIPE, CONDENSATE HEADER HPSC.
   C. FOR LPS STEAM PIPE, CONDENSATE HEADER LPSC.

GENERAL NOTES:

1) REQUIREMENTS FOR TRACING TO BE CONSIDERED.
2) ALL SAMPLE CONNECTIONS SHALL BE FROM TOP OF PROCESS PIPE.
3) ALL SAMPLE TUBING TO BE 1/4" SS.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	06.11.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	22.03.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	22.01.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Issued for Review	10.10.2016	Jiang Yu		Xu Hang	Liu Shengkai	
A	Issued for Review	25.06.2016	Jiang Yu		Xu Hang	Liu Shengkai	

OWNER: Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK
DOCUMENT NAME: SYMBOLS AND IDENTIFICATIONS FOR PIPING AND INSTRUMENT DIAGRAM(2)
JOB NO. S-02115 | DOC. GRP. 42 | DWG. NO. 1341709 | DIAGRAM S01 | REV. 2

CONTRACTOR: 中國天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION
CONTRACTOR DRAWING NO. MKP-11-AS-9000-PS07-PID-002
SHEET 01 TOTAL 01

SUB-CONTRACTOR
SUB-CONTRACTOR DRAWING NO. –
SHEET – TOTAL –

Counter Signing	Sign	Date

SYMBOLS AND IDENTIFICATIONS FOR PIPING AND INSTRUMENT DIAGRAM(2)

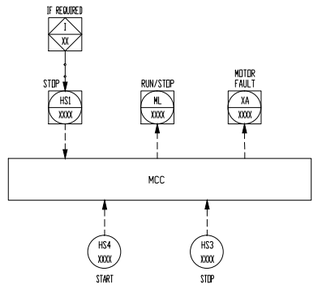
PROJECT	MKP Methanol Project
UNIT	General Technical
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-9000-PR-PID-002

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1

SYMBOLS FOR TYPICAL MCC

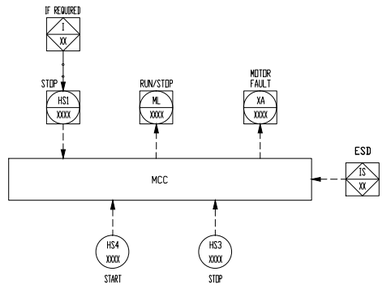
TYPICAL MOTOR TYPE A1

LOW VOLTAGE MOTOR



TYPICAL MOTOR TYPE A2

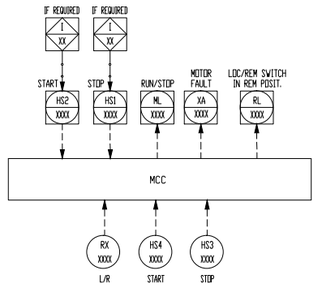
LOW VOLTAGE MOTOR



TYPICAL MOTOR TYPE B1

LOW VOLTAGE MOTOR

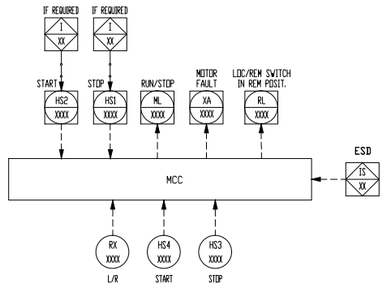
LOCAL & FCS COMMAND



TYPICAL MOTOR TYPE B2

LOW VOLTAGE MOTOR

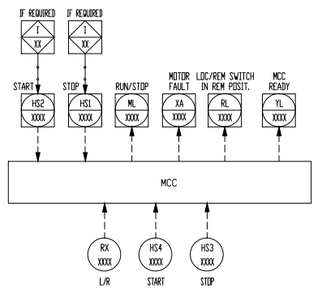
LOCAL & FCS COMMAND



TYPICAL MOTOR TYPE C1

MEDIUM VOLTAGE MOTOR

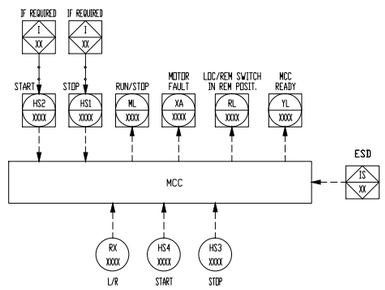
LOCAL & FCS COMMAND



TYPICAL MOTOR TYPE C2

MEDIUM VOLTAGE MOTOR

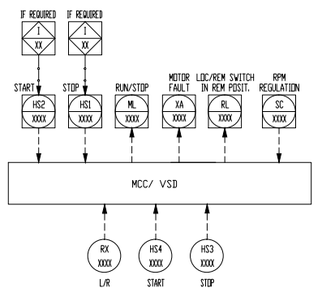
LOCAL & FCS COMMAND



TYPICAL MOTOR TYPE D1

LOW VOLTAGE MOTOR

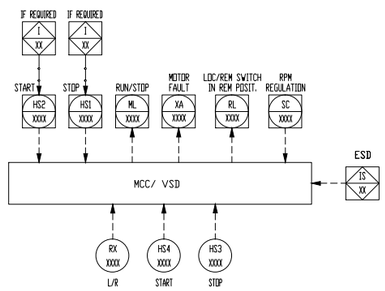
LOCAL & FCS COMMAND& VSD



TYPICAL MOTOR TYPE D2

LOW VOLTAGE MOTOR

LOCAL & FCS COMMAND& VSD

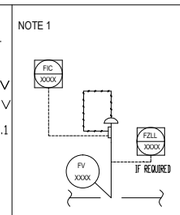


SYMBOLS FOR TYPICAL VALVE

TYPICAL VAVLE

FV,HV,LV PV,PDV,TV

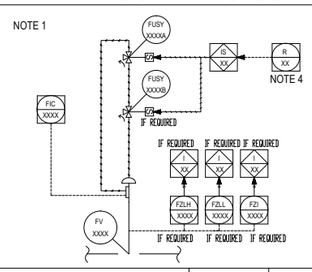
TYPE R1.1



TYPICAL VAVLE

FV,HV,LV PV,PDV,TV

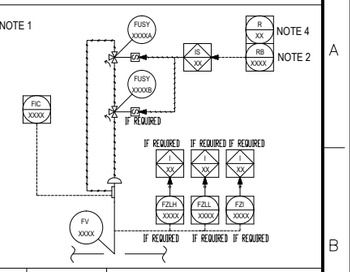
TYPE R2.1



TYPICAL VAVLE

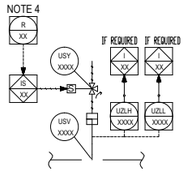
FV,HV,LV PV,PDV,TV

TYPE R2.2



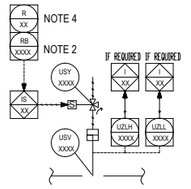
TYPICAL VAVLE

USV TYPE S1.1



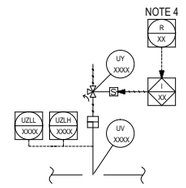
TYPICAL VAVLE

USV TYPE S1.2



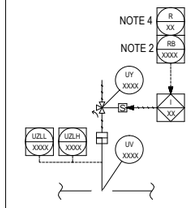
TYPICAL VAVLE

UV TYPE U.1



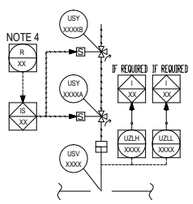
TYPICAL VAVLE

UV TYPE U.2



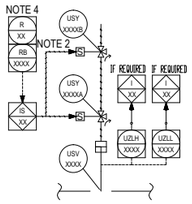
TYPICAL VAVLE

USV TYPE S2.1



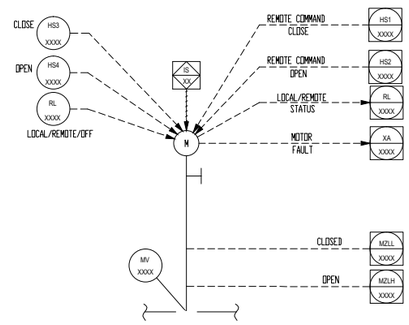
TYPICAL VAVLE

USV TYPE S2.2



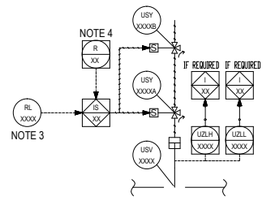
TYPICAL VAVLE

MV TYPE M



TYPICAL VAVLE

USV TYPE S2.3



NOTES:

1. "F" SHALL BE "F", "H", "L", "P", "PD", OR "T" FOR DIFFERENT SERVICE.
2. RB: FINAL ELEMENT TO BE RESET ON CONTROL PANEL AFTER RESET OF IS-UNIT OR I-UNIT.
3. RL: FINAL ELEMENT TO BE RESET LOCALLY AFTER RESET OF IS-UNIT.
4. R: RESET OF IS-UNIT OR I-UNIT.

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As Built	30.04.2020	Xu Yekun		Xu Hang	Liu Shengkai	
A	Approved for Construction	15.05.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Issued for Review	05.05.2017	Xu Yekun		Xu Hang	Liu Shengkai	
A	Issued for Review	22.03.2017	Xu Yekun		Xu Hang	Liu Shengkai	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. CONT. | REV.

DWG. NO. | DIAGRAM

CONTRACTOR: TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO.: MKP-11-AS-9000-PS07-PID-003

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. –

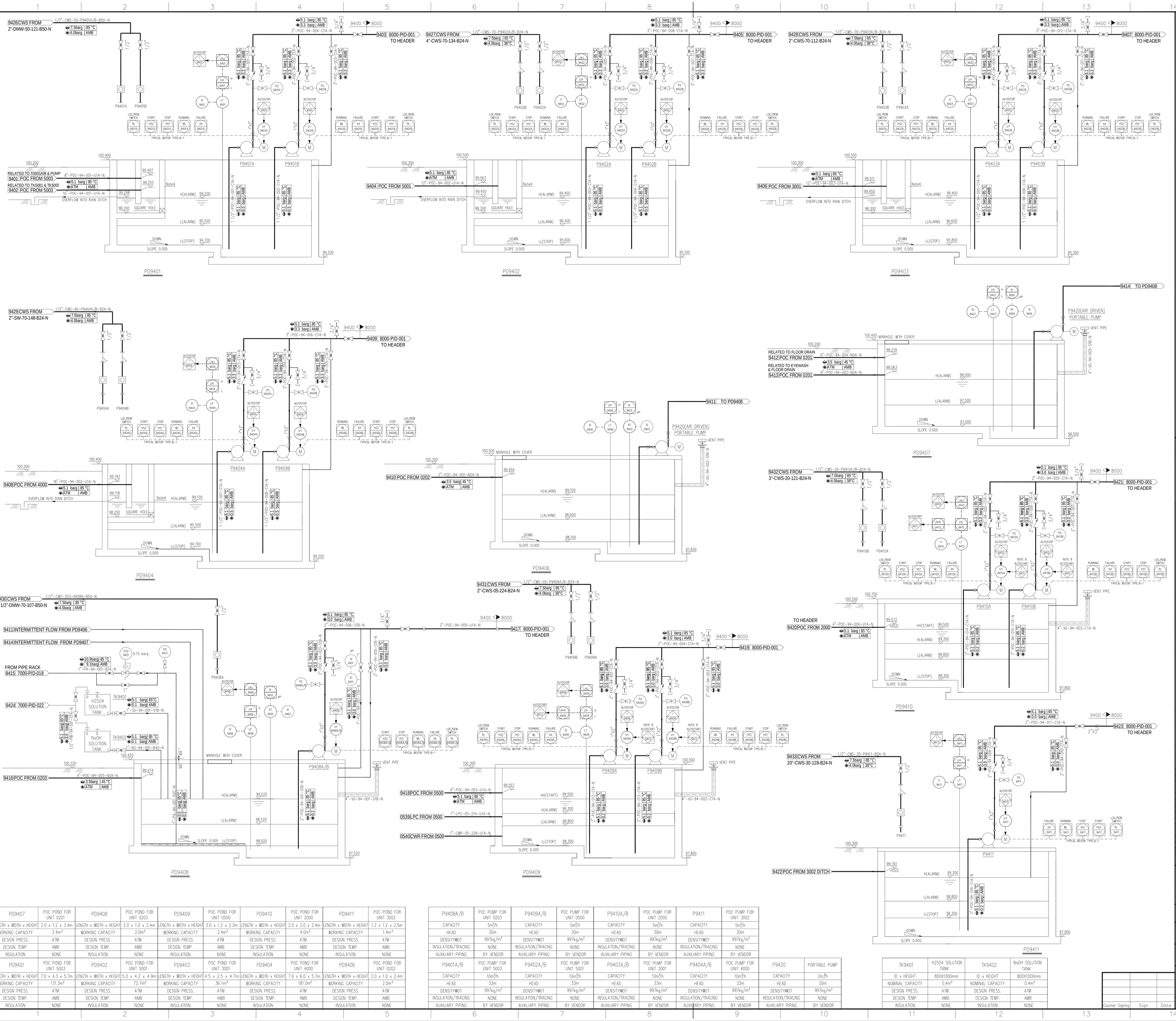
SHEET – TOTAL –

Counter Signing	Sign	Date

SYMBOLS AND IDENTIFICATIONS FOR PIPING AND INSTRUMENT DIAGRAM(3)

PROJECT	MKP Methanol Project
UNIT	General Technical
PHASE	As Built Drawing
OWNER DWG NO.	MKP-11-AS-9000-PR-PID-003

SCALE: – | SHEET: 1 | TOT.: 1 | SIZE: A1



GENERAL NOTES

1. PD9401~PD9404 RESPECTIVELY SET TO COLLECT POC IN THE AREA 5003, 5001, 3001&4000.
2. PD9406~PD9410 RESPECTIVELY SET TO COLLECT POC OF 0202, 0201, 0203, 0500&2000.
3. BOTTOM OF PONDS WITH A SLOPE OF 0.005.
4. THIS WALL SEPARATES THE POND INTO TWO PARTS, ONE FOR OIL-SEPARATING, THE OTHER FOR STORING WATER.
5. INPUTS TO PONDS IS BY SLOPED PIPES.
6. THE PD9408 AND RELATED TANKS SHOULD BE CONSIDERED IN FENCE AREA.
7. THE ELEVATION OF PIPE IS INSIDE BOTTOM ELEVATION.
8. SOFTWARE SWITCH WILL BE SET FOR SELECTION OF AUTOSTART PUMP A OR B.

REFERENCE DRAWINGS

POC PROCESS FLOW DIAGRAM	MKP-11-DE-9400-PR-PFD-005
ENVIRONMENT ENGINEERING DESCRIPTION	MKP-11-DE-9400-CI-SPC-004

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
A	As built	30.04.2020	Wang Lei	Wang Lei	Du Guiju	Xie Xuan	
A	Approved For Construction	07.11.2019	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Approved For Construction	14.01.2019	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Approved For Construction	17.07.2018	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Approved For Construction	18.04.2017	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Approved For Construction	27.02.2017	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Approval	16.02.2017	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Approval	09.02.2017	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Approval	11.01.2017	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Approval	19.12.2016	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Approval	05.12.2016	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Approval	09.10.2016	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
A	Issued For Comments	06.06.2016	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	

OWNER: Middle East Kimiaye Pars Company

CONSULTANT: HALDOR TOPSØE A/S — DOCUMENT NAME: — JOB NO. — DOC. NO. — REV.

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION — CONTRACTOR DRAWING NO. MKP-11-AS-9400-EE06-PID-002 — SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO. — SHEET — TOTAL

PIPING AND INSTRUMENT DIAGRAM FOR POC

PROJECT: MKP Methanol Project
UNIT: WATER SUPPLY & DRAINAGE FOR WHOLE PLANT
PHASE: As built drawing
SCALE: - SHEET 1 TOT. 1 SIZE A0
OWNER DWG. NO.: MKP-11-AS-9400-PR-PID-002

Counter Signing | Sign | Date

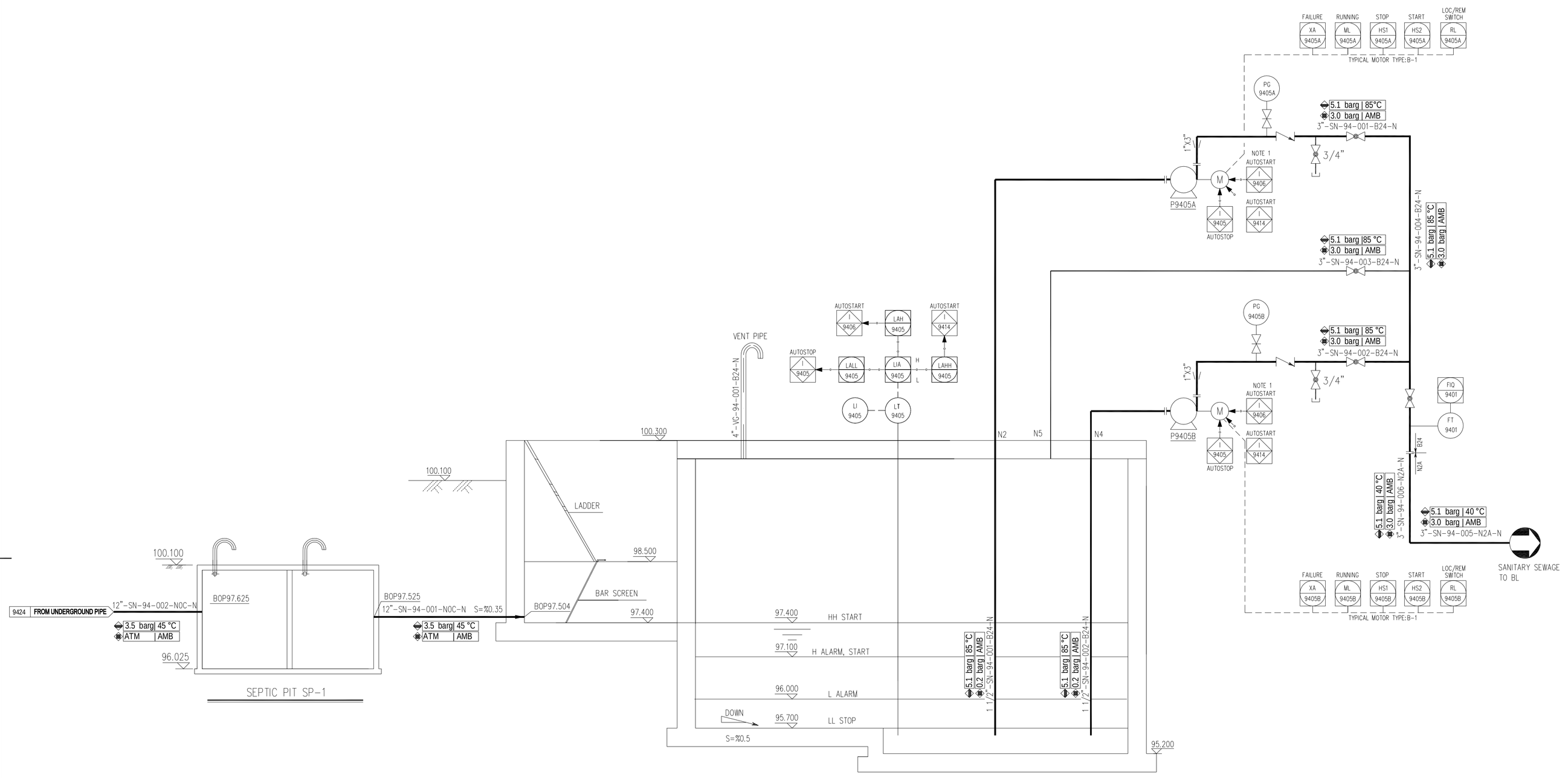
PD9407	POC POND FOR UNIT 0201	PD9408	POC POND FOR UNIT 0203	PD9409	POC POND FOR UNIT 0500	PD9410	POC POND FOR UNIT 2000	PD9411	POC POND FOR UNIT 3002
LENGTH x WIDTH x HEIGHT	2.0 x 1.2 x 3.4m	LENGTH x WIDTH x HEIGHT	2.0 x 1.0 x 2.4m	LENGTH x WIDTH x HEIGHT	2.0 x 1.2 x 2.2m	LENGTH x WIDTH x HEIGHT	2.0 x 2.0 x 2.4m	LENGTH x WIDTH x HEIGHT	1.2 x 1.2 x 2.5m
WORKING CAPACITY	2.4m³	WORKING CAPACITY	2.0m³	WORKING CAPACITY	2.4m³	WORKING CAPACITY	4.0m³	WORKING CAPACITY	1.4m³
DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM
DESIGN TEMP.	AMB	DESIGN TEMP.	AMB	DESIGN TEMP.	AMB	DESIGN TEMP.	AMB	DESIGN TEMP.	AMB
INSULATION	NONE	INSULATION	NONE	INSULATION	NONE	INSULATION	NONE	INSULATION	NONE

PD9401	POC POND FOR UNIT 5003	PD9402	POC POND FOR UNIT 5001	PD9403	POC POND FOR UNIT 3001	PD9404	POC POND FOR UNIT 4000	PD9406	POC POND FOR UNIT 0202
LENGTH x WIDTH x HEIGHT	7.0 x 4.3 x 5.7m	LENGTH x WIDTH x HEIGHT	5.0 x 4.2 x 4.9m	LENGTH x WIDTH x HEIGHT	4.5 x 2.5 x 4.7m	LENGTH x WIDTH x HEIGHT	7.0 x 6.0 x 5.7m	LENGTH x WIDTH x HEIGHT	2.0 x 1.0 x 2.4m
WORKING CAPACITY	131.3m³	WORKING CAPACITY	72.7m³	WORKING CAPACITY	36.1m³	WORKING CAPACITY	181.0m³	WORKING CAPACITY	2.0m³
DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM	DESIGN PRESS.	ATM
DESIGN TEMP.	AMB	DESIGN TEMP.	AMB	DESIGN TEMP.	AMB	DESIGN TEMP.	AMB	DESIGN TEMP.	AMB
INSULATION	NONE	INSULATION	NONE	INSULATION	NONE	INSULATION	NONE	INSULATION	NONE

P9408A/B	POC PUMP FOR UNIT 0203	P9409A/B	POC PUMP FOR UNIT 0500	P9410A/B	POC PUMP FOR UNIT 2000	P9411	POC PUMP FOR UNIT 3002
CAPACITY	5m³/h	CAPACITY	5m³/h	CAPACITY	5m³/h	CAPACITY	5m³/h
HEAD	30m	HEAD	30m	HEAD	30m	HEAD	30m
DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³
INSULATION/TRACING	NONE	INSULATION/TRACING	NONE	INSULATION/TRACING	NONE	INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR

P9401A/B	POC PUMP FOR UNIT 5003	P9402A/B	POC PUMP FOR UNIT 5001	P9403A/B	POC PUMP FOR UNIT 3001	P9404A/B	POC PUMP FOR UNIT 4000	P9420	PORTABLE PUMP
CAPACITY	10m³/h	CAPACITY	10m³/h	CAPACITY	10m³/h	CAPACITY	10m³/h	CAPACITY	2m³/h
HEAD	33m	HEAD	33m	HEAD	33m	HEAD	33m	HEAD	20m
DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³	DENSITY@OT	997kg/m³
INSULATION/TRACING	NONE	INSULATION/TRACING	NONE	INSULATION/TRACING	NONE	INSULATION/TRACING	NONE	INSULATION/TRACING	NONE
AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR	AUXILIARY PIPING	BY VENDOR

TK9401	H2SO4 SOLUTION TANK	TK9402	NaOH SOLUTION TANK
ID x HEIGHT	800X1000mm	ID x HEIGHT	800X1000mm
NOMINAL CAPACITY	0.4m³	NOMINAL CAPACITY	0.4m³
DESIGN PRESS.	ATM	DESIGN PRESS.	ATM
DESIGN TEMP.	AMB	DESIGN TEMP.	AMB
INSULATION	NONE	INSULATION	NONE



PD9405 SANITARY SEWAGE POND

PD9405	SANITARY SEWAGE POND	P9405A/B	SANITARY SEWAGE PUMP	X9401	BAR SCREEN	SP-1	SEPTIC PIT
ID x HEIGHT	3.0X3.0X4.6m	CAPACITY	10m³/h	LENGTH	1.0m	ID x HEIGHT	9.5X4.8X4.075m
NOMINAL CAPACITY	15.3m³	HEAD	30m	BREADTH	0.5m	NOMINAL CAPACITY	75m³
DESIGN PRESS.	ATM	DENSITY@OT	997kg/m³	BAR SCREEN GAP	20mm	DESIGN PRESS.	ATM
DESIGN TEMP.	AMB	INSULATION/TRACING	NONE	INSULATION/TRACING	NONE	DESIGN TEMP.	AMB
INSULATION	NONE	AUXILIARY PIPING	BY VENDOR	–	–	INSULATION	NONE

GENERAL NOTES

1: SOFTWARE SWITCH WILL BE SET FOR SELECTION OF AUTOSTART PUMP A OR B.

REFERENCE DRAWINGS

SYMBOLS AND LEGENDS

KEY PLAN

REV.	PURPOSE OF ISSUE	DATE	DESIGN	DRAW	CHECK	REVIEW	APPROVE
8	As built	30.04.2020	Wang Lei	Wang Lei	Du Guiju	Xie Xuan	
7	Approved For Construction	7.11.2019	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
6	Approved For Construction	17.06.2019	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
5	Approved For Construction	27.02.2019	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
4	Approved For Construction	14.12.2018	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
3	Approved For Construction	01.08.2018	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
2	Approved For Construction	17.07.2018	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
1	Approved For Construction	09.10.2016	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	
0	Issued For Comments	06.06.2016	Wang Lei	Wang Lei	Tian Tao	Xie Xuan	

OWNER:

Middle East Kimiaye Pars Company

LICENSOR: HALDOR TOPSØE A/S, COPENHAGEN DENMARK

DOCUMENT NAME:

JOB NO. | DOC. GRP. | REV. | DWG. NO. | DIAGRAM

CONTRACTOR: 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION

CONTRACTOR DRAWING NO. MKP-11-AS-9400-EE06-PID-003

SHEET 01 TOTAL 01

SUB-CONTRACTOR: SUB-CONTRACTOR DRAWING NO.

SHEET TOTAL

Counter Signing	Sign	Date

PIPING AND INSTRUMENT DIAGRAM FOR SANITARY WASTEWATER

PROJECT	MKP Methanol Project
UNIT	WATER SUPPLY & DRAINAGE FOR WHOLE PLANT
PHASE	As built drawing
OWNER DWG NO.	MKP-11-AS-9400-PR-PID-003

SCALE – | SHEET 1 | TOT. 1 | SIZE A1