



GENERAL NOTES:

- A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & .002.
- B. ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530-.
- C. ALL INSTRUMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 030-.
- D. FOR TYPICAL INSTRUMENT CONNECTION SBDV, XV, NOV & ESDV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.002, .003, .004, .005, .006 & .007.
- E. FOR MISCELLANEOUS PIPING TYPICAL VALVING, DRAINAGE & GENERAL ARRANGEMENT OF LEVEL INSTRUMENTS, PUMPS, STRAINERS & CONTROL VALVES SEE DRAWINGS 50489-530-020-PID-1108.001 TO 1108.010.
- F. DRAWING NUMBERS SHOWN IN P&ID CONTINUATION BOXES ARE ABBREVIATED SHOWING DRAWING SEQUENTIAL NUMBERS ONLY. THE FULL FORM OF THE DRAWING NUMBER IS 50489-530-020-PID-XXXX.SHT.NO.
- G. FOR MATERIAL SELECTION DIAGRAM SEE DRAWINGS 50489-530-020-MSD-1001.001 TO 1023.
- H. DETAIL NUMBERING FOR CI, SC, CC & CP SEE DRAWING 50489-530-020-PID-1108.003.
- I. PAINTING & COATING ARE IN ACCORDANCE WITH KOC-P-001.
- J. LOW POINT DRAIN & HIGH POINT VENT ARE INDICATED IN P&ID.
- K. FOR CAUSE & EFFECT REFER DOC. NO. 50489-530-020-PHL-1009.
- L. FOR ALARM VALUES REFER DOC. NO. 50489-530-020-SUM-1006.

NOTES:

- 1. INLET STACK IS ELEVATED ABOVE DRIFTING SAND LEVEL. AIR INTAKE SILENCER AND FILTER IN AIR INTAKE STACK.
- 2. PROVISION AVAILABLE FOR LIMITING THE OPENING OF TOV TO LOW FIRE POSITION AT THE START-UP AND TO A HIGH FIRE POSITION AT THE MAXIMUM SAFE FIRING RATE. NECESSARY PROVING SWITCHES, INTERLOCKS & MANUAL LOADING STATIONS PROVIDED FOR START-UP AND SHUTDOWN.
- 3. BLOWER MOTOR IS INTERLOCKED WITH FLAME SAFETY AND SAFETY SHUTDOWN SYSTEM.
- 4. DELETED.
- 5. DELETED.
- 6. HEATER LOCAL CONTROL PANEL INCLUDE ALL RELATED ALARM SEQUENCE AND OPERATING LIGHT REPEATS.
- 7. BURNER CONFIGURATION IS 2x100% ACCORDINGLY BLOWERS ARE ABLE TO OPERATE AS 2x100%.
- 8. MECHANICAL STOPPER IS PROVIDED TO PREVENT TOTAL CLOSURE OF AIR LINE. THIS CORRESPOND TO 4140 kg/h (2.87 MMSCFD) COMBUSTION AIR.
- 9. INTERLOCK TO START-UP PERMISSIVE.
- 10. THE MATERIAL OF AIR DUCT IS ASTM A36.
- 11. LOCAL CONTROL PANEL OF BURNERS ARE LOCATED ON FIELD (20m (66FT) FROM BURNERS).
- 12. DAMPER.
- 13. VENTURI FLOW METER.
- 14. BYPASS LINE IS OPTION FOR FUTURE.
- 15. FOR TRIP INTERLOCK WITH LEVEL OF SHUT DOWN PLEASE REFER TO VENDOR DOCUMENT 50489-530-020-29021-CAE-V001
- 16. PROVIDE ACCESS TO REMOVE SAND FROM BLOWER CASING.
- 17. SHUTDOWN LEVELS (1,2,3) ARE EXECUTED IN ESD AND SHUTDOWN LEVEL-4 IS EXECUTED IN BMS (BURNER MANAGEMENT SYSTEM) LOGIC
- 18. ALL INTERCONNECTING SIGNALS BETWEEN BMS AND RELAY INTERFACE PANEL ARE SHOWN ON P&ID NO. 50489-530-020-PID-1133.008.
- 19. STRAIGHT RUN : 150 UPSTREAM = 50 DOWNSTREAM.
- 20. AS SOON AS BURNER DUTY (I.E. FUEL GAS FLOW RATE) IS STABILIZED (CRITERION FG FLOW RATE VARIATION <4% OVER A PERIOD OF 5 MINUTES : WILL BE ADJUSTED DURING COMMISSIONING), CASCADE REGULATION AC 2158 -> FIC 2171B (RESPECTIVELY AC 2159 -> FIC 2172B) IS ACTIVE. REFER CONTROL PHILOSOPHY 50489-530-020-29021-PHL-V001.
- 21. INDICATED BLOWER INFO IS FOR NORMAL WINTER CASE (LEAN GAS, 15°C AND 100% DUTY) HOWEVER THE BLOWERS ARE DESIGNED CONSIDERING MAX. AIR TEMPERATURE OF 55°C.
- 22. FY IS RATIO AIR FLOW RATE (kg/h)/FG FLOW RATE (kg/h).
- 23. ISOLATION VALVE OF PRESSURE TRANSMITTER (CONNECTED TO ESD) ARE LO TYPE.
- 24. PTC THERMISTOR EMBEDDED IN SERIES OF THREE-ONE BETWEEN EACH PHASE OF MOTOR IS INBUILT IN MOTOR FOR WINDING TEMPERATURE HIGH AND CONNECTED TO MOTOR STARTER IN MCC FOR TRIPPING THE MOTOR FROM MCC.

AS-BUILT	AS-BUILT
KOC APPROVAL	LARSEN & TOUBRO LIMITED
NAME / KOC No:	NAME : VAIBHAV VERMA
DESIGNATION :	DESIGNATION : AGM
GROUP / TEAM :	SIGNATURE :
SIGNATURE :	DATE : 16-Oct-2018
DATE :	DEPT/ DIVISION : ENGINEERING

REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
Z1	ISSUED FOR AS-BUILT	CHS	CHS	VAV	VAV	16.10.18
Z0	ISSUED FOR AS-BUILT	CHS	CHS	VAV	VAV	20.09.18
02	RE-ISSUED FOR CONSTRUCTION	CHS	CHS	VAV	VAV	24.02.18
01	ISSUED FOR CONSTRUCTION	BAK/SSI	AKG	SRA	RAK	12.12.16
0	ISSUED FOR CONSTRUCTION	HSB/PS	AKG	SRA	RAK	02.06.16
D	ISSUED INCORPORATED CLIENT COMMENTS	HSB/PS	AKG	SRA	RAK	29.04.16
C	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	11.09.15
B	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	17.02.15
A	ISSUED FOR APPROVAL	BAK/VSA	AKG	SRA	RAK	29.11.14

CONTRACTOR REVISION

KUWAIT OIL CO. K. S. C. **شركة نفط الكويت ش.م.ك.**

CONTRACTOR DETAILS:- **LARSEN & TOUBRO LIMITED FARIDABAD**

PROJECT TITLE:- **NEW GATHERING CENTRE GC-30 IN NORTH KUWAIT**

PROJECT NO.	DRAWING NO.
EF1902	50489-530-020-PID-1133.013
CONTRACTOR DRG. NO.	REV. KOC DRG. NO.
SHEET NO. 13 OF 16	Z1
COMPANY DRG. NO.	REV.
EF1902-530-DCO-PID-0133.001	A2
SHEET NO.	SHEET NO.