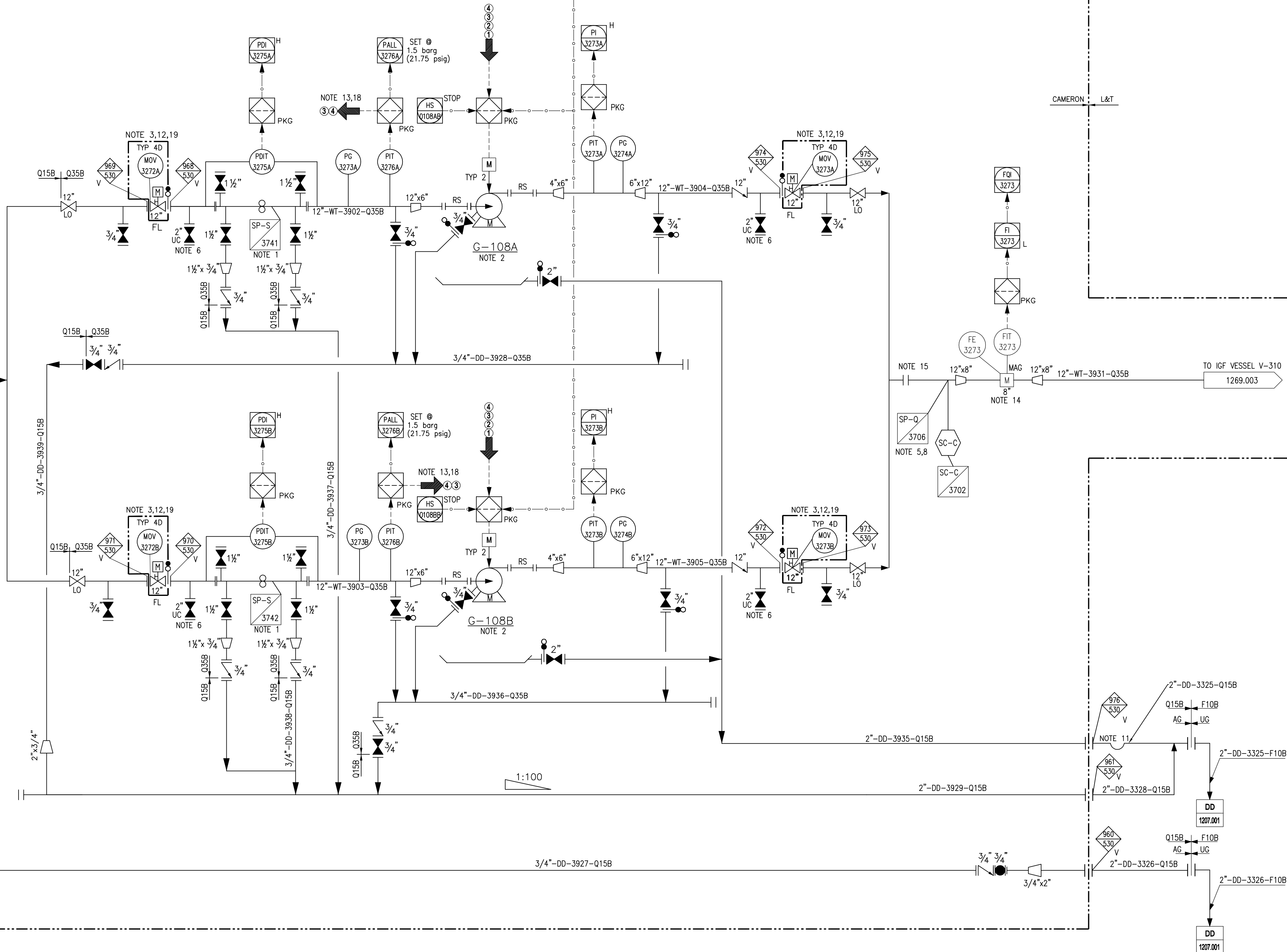


FROM LIC-3275  
1269.003

FROM IGF VESSEL V-310  
1269.003

DRAIN FROM CONTROL  
VALVE SKID  
1269.003



G-108A/B NOTE 16  
IGF RECIRCULATION PUMP  
CAPACITY m3/hr (BPD) : 208.7 (31504.4)  
DRIVER POWER KW (HP) : 75 (100)  
DIFF PRESS ΔP bar (PSI) : 6.6 (95.7)  
SP. GRAVITY @ OP OT : 1.156~1.172  
FLUID VISCOSITY @ PT CP : 0.26~3.36  
OP PRESS/DES PRESS barg (PSIG) : 11.35/24.7 (164.6/358.24)  
OP TEMP/DESIGN TEMP °C (°F) : 15~55/-3/93 (59~131/27/200)  
UTC NO. :  
TRIM NO. : GT-G108A/B-Q35B

### GENERAL NOTES:

- FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & .002.
- ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530--.
- ALL INSTRUMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 030--.
- FOR TYPICAL INSTRUMENT CONNECTION, SBOV, XV, MOV & ESDV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.001, .002, .003, .004, .005, .006 & .007.
- 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.
- 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.
- FOR MATERIAL SELECTION DIAGRAM SEE DRAWINGS 50489-530-020-MSD-1001.001 TO 1023.
- DETAIL NUMBERING FOR CI, SC, CC & CP SEE DRAWING 50489-530-020-PID-1108.003.
- PAINING & COATING ARE IN ACCORDANCE WITH KOC-P-001.
- LOW POINT DRAIN & HIGH POINT VENT ARE INDICATED IN P&ID.
- FOR CAUSE & EFFECT REFER DOC. NO. 50489-530-020-PHL-1009.
- FOR ALARM VALUES REFER DOC. NO. 50489-530-020-SUM-1006.

### NOTES:

- PERMANENT DUPLEX TYPE STRAINER ON INDIVIDUAL PUMP SUCTION.
- PUMPS COMPLETE WITH API682 53B SEAL SYSTEM. REFER TO SEAL SYSTEM P&ID 50489-530-020-PID-1108.006
- SUCTION AND DISCHARGE MOV'S LIMIT SWITCH FEEDBACK IS CONFIGURED FOR THE START PERMISSIVE OF THE PUMPS. FOR PUMP START PERMISSIVE, BOTH SUCTION & DISCHARGE MOV'S SHALL BE OPENED.
- FOR CONTINUATION, SEE DRAWING 50489-530-020-PID-1269.003.
- SAMPLE POINT WITH QUILLS. FOR DETAILS REFER 50489-530-050-07379-GAD-V001.
- UTILITY CONNECTION FOR PIPEWORK FLUSHING.
- SHUTDOWN CONTROLS ARE UNDERTAKEN IN GC DCS AND ESD SYSTEMS. ONE COMMON PLC UNIT CONTROL FOR ALL 3 TRAINS PROVIDED FOR PACKAGE CONTROL AND MONITORING,LOCATED REMOTELY IN CONTROL ROOM. ALL FIELD INSTRUMENTS TO BE WIRED TO SKID EDGE JUNCTION BOXES. CABLING BETWEEN SKID EDGE JUNCTION BOXES AND PLC BY OTHERS.
- SAMPLE POINT WITH VALVE ARRANGEMENT AS PER LEGEND WITH LOCAL SAMPLE COLLECTION POINTS.
- PRESSURE INSTRUMENT CONNECTION IS AS PER 50489-530-020-PID-1106.001
- NO INSULATION, HEAT TRACING, PERSONNEL PROTECTION OR FIREPROOFING IS CONSIDERED IN PACKAGE SCOPE OF SUPPLY.
- GOOSENECK IS PROVIDED (FOR DRIP PAN DRAIN) ON THE PROCESS DRAIN HEADER LINE DOWNSTREAM OF THE TIE IN POINT BY L&T, BUT UPSTREAM OF 2"-DD-3328-Q15B CONNECTION.
- MOV'S ARE IN L&T SCOPE OF SUPPLY
- LEVEL 3 SHUTDOWN IF BOTH INSTRUMENTS (SUCTION PRESSURE PALL-3276A & PALL-3276B OR PUMP SEAL SYSTEM PRESSURE PALL-3108AS & PALL-3108BS) OR BOTH PUMPS HAVE TRIPPED/FAULT STATUS INITIATE A TRIP.
- MINIMUM 5D UPSTREAM AND 3D DOWNSTREAM STRAIGHT LENGTH REQUIRED.
- SKID LIMIT FLANGE SET.
- PUMPS 530-G-106 A/B ARE 2x100% (i.e.) ONE OPERATING & ONE SPARE.
- VENDOR PID NO: 50489-530-020-07329-PID-V001 SHEET 2 OF 2.
- STAND BY IGF RECIRCULATION PUMP STARTS ON LOW LOW PUMP SUCTION PRESSURE OR LOW LOW SEAL SYSTEM PRESSURE.
- IGF RECIRCULATION PUMP WILL TRIP ON LOSS OF OPEN FEEDBACK OF EITHER PUMP SUCTION OR PUMP DISCHARGE MOV'S.

### AS-BUILT

#### KOC APPROVAL

NAME / KOC No:  
DESIGNATION :  
GROUP / TEAM :  
SIGNATURE :  
DATE :

### AS-BUILT

#### LARSEN & TOUBRO LIMITED

NAME : VAIBHAV VERMA  
DESIGNATION : AGM  
SIGNATURE :  
DATE : 17-Sep-2018  
DEPT/ DIVISION : ENGINEERING

Z0	ISSUED FOR AS-BUILT	BAK/VSA	AKG	SRA	RAK	17.09.18
03	RE-ISSUED FOR CONSTRUCTION	BAK/VSA	AKG	SRA	RAK	04.01.18
02	ISSUED FOR CONSTRUCTION	BAK/VSA	AKG	SRA	RAK	03.10.16
01	ISSUED FOR CONSTRUCTION	HSH/ABY	AKG	SRA	RAK	03.09.16
0	ISSUED FOR CONSTRUCTION	HSH/ABY	AKG	SRA	RAK	22.06.16
C	ISSUED INCORPORATED CLIENT COMMENTS	PAK/ABY	AKG	SRA	RAK	27.05.16
B	ISSUED INCORPORATED CLIENT COMMENTS	PAK/ABY	AKG	SRA	RAK	25.03.16
A	ISSUED FOR APPROVAL	BAK/ABY	AKG	SRA	RAK	08.09.15
REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
				APPRD.		

### 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

### DOCUMENT TITLE:-

PIPING & INSTRUMENTATION DIAGRAM  
IGF RECIRCULATION PUMPS (G-108A/B) TRAIN-C

PROJECT NO.	DRAWING NO.	REV.
EF1902	CONTRACTOR DRG. NO.	REV. KOC DRG. NO.
	50489-530-020-PID-1270.003	Z0
	SHEET NO. 3 OF 3	SHEET NO.
	COMPANY DRG. NO.	REV.
EF1902-530-DCO-PID-0269.001	A1	
SHEET NO.		