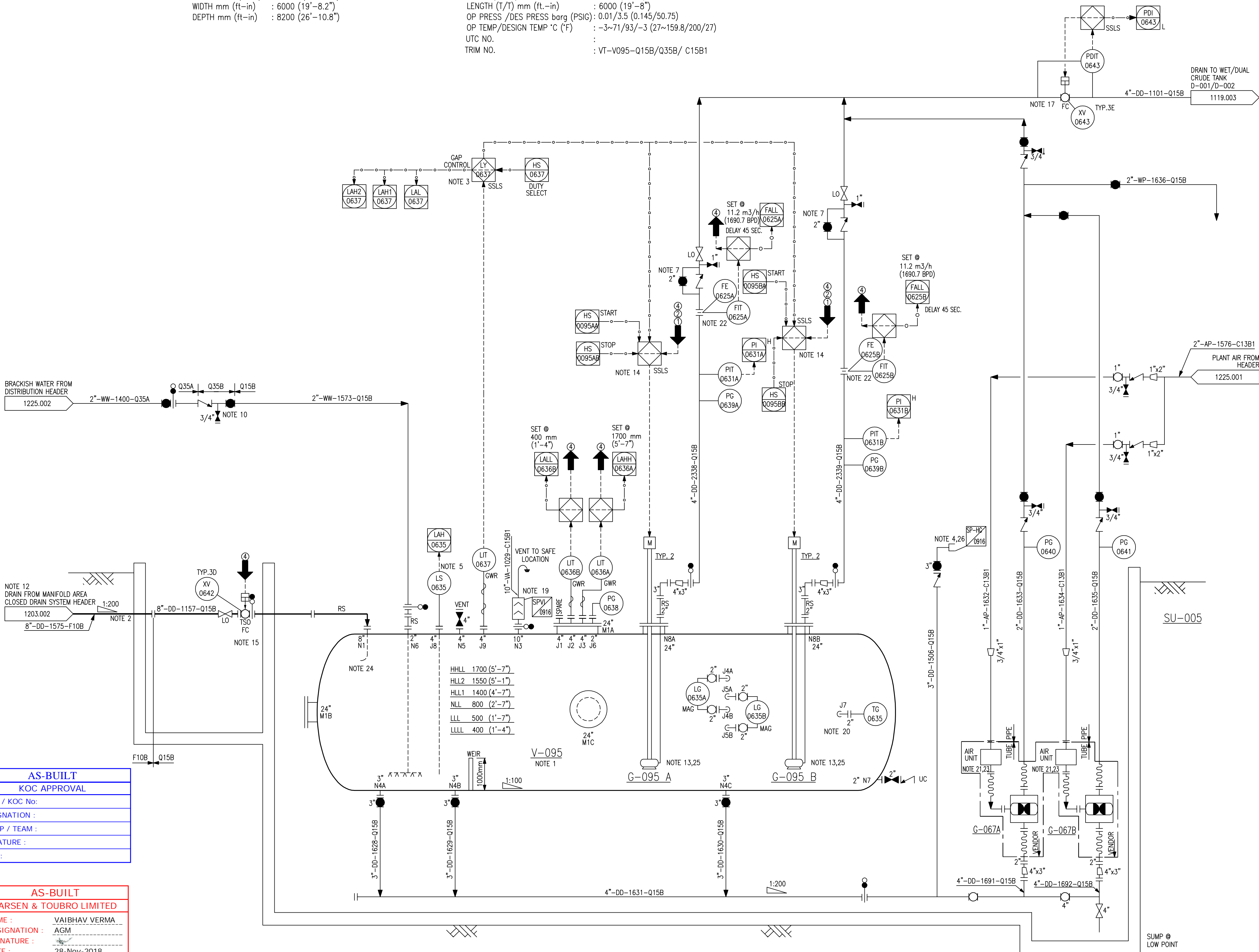


SU-005
MANIFOLD AREA DRAIN VESSEL PIT
CAPACITY m3 (BBLs) : 590.4 (3713.5)
LENGTH mm (ft-in) : 12000 (39'-4.4")
WIDTH mm (ft-in) : 6000 (19'-8.2")
DEPTH mm (ft-in) : 8200 (26'-10.8")

V-095
MANIFOLD AREA DRAIN VESSEL
CAPACITY m3 (BBLs) : 21 (132)
ID mm (ft-in) : 2000 (6'-6")
LENGTH (T/I) mm (ft-in) : 6000 (19'-8")
OP PRESS /DES PRESS barg (PSIG) : 0.01/3.5 (0.145/50.75)
OP TEMP/DESIGN TEMP °C (°F) : -3~71/93/-3 (27~159.8/200/27)
UTC NO. :
TRIM NO. : VT-V095-Q15B/Q35B/ C15B1



AS-BUILT
KOC APPROVAL
NAME / KOC No.:
DESIGNATION :
GROUP / TEAM :
SIGNATURE :
DATE :

AS-BUILT
LARSEN & TOUBRO LIMITED
NAME : VAIBHAV VERMA
DESIGNATION : AGM
SIGNATURE :
DATE : 28-Nov-2018
DEPT/ DIVISION : ENGINEERING

G-067 A/B NOTE 16
MANIFOLD AREA DRAIN VESSEL PIT PUMP
FLOWRATE m3/hr (BPD) : 6 (905.7)
DRIVER POWER KW (HP) : N/A
DIFF PRESS ΔP barg (PSIG) : 5 (72.5)
S.G. @ OP OT : 0.984~1.174
FLUID VISCOSITY @ PT CP : 51.66
OP PRESS/DES PRESS barg (PSIG) : 5/11.55 (72.5/167.52)
OP TEMP/DESIGN TEMP °C (°F) : 15~55/93/-3 (59~131/200/27)
UTC NO. :
TRIM NO. : G067A/B-Q15B

G-095 A/B NOTE 16
MANIFOLD AREA DRAIN VESSEL PUMP
FLOWRATE m3/hr (BPD) : 28 (4227)
DRIVER POWER KW (HP) : 22 (29.5)
DIFF PRESS ΔP barg (PSIG) : 5.07 (73.5)
S.G. @ OP OT : 0.847~1.17
FLUID VISCOSITY @ PT CP : 51.66
OP PRESS/DES PRESS barg (PSIG) : 5.08/14.4 (73.7/208.8)
OP TEMP/DESIGN TEMP °C (°F) : -3~71/93/-3 (27~159.8/200/27)
UTC NO. :
TRIM NO. : G095A/B-Q15B

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 SBDV, XV, MOV & ESDV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.002, .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 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:

- VESSEL IS LOCATED BELOW GRADE IN A PIT TO ACCOMMODATE GRAVITY DRAINS.
- DRAIN LINES AND HEADERS FROM ABOVE GROUND EQUIPMENT RUN UNDERGROUND WITH A SLOPE TO THE DRAIN SUMP FOR SELF DRAINING.
- G-095 A/B PUMPS ARE GAP CONTROLLED AS FOLLOWS:
 - LAH2 SET @ 1550 mm (5'-1") : START STANDBY PUMP BY SSLS
 - LAH1 SET @ 1400 mm (4'-7") : START DUTY PUMP BY SSLS
 - LAL SET @ 500 mm (1'-7") : STOP DUTY STANDBY PUMPS BY SSLS
- FAILURE OF DUTY PUMP : START STANDBY PUMP, DUTY PUMP IN LOCAL, START STANDBY PUMP ON DEMAND
- HHLL IN WET OR DRY/WET TANKS : INHIBIT START OF PUMPS
STOP DUTY AND STANDBY PUMPS
- CONNECTION FOR REMOVAL OF SLUDGE/BACK FLUSHING.
- TUNING FORK TYPE INSTRUMENT TO DETECT SAND BUILD UP. (SET AT 700mm)
- ALL LOCAL INSTRUMENTS ARE ABOVE GROUND LEVEL AND ACCESSIBLE AT A SAFE LOCATION.
- FOR BACK FLUSHING OF PUMP WHEN PUMP IS TRIPPED BY STRAINER PLUGGING.
 - FLUSHING CONNECTIONS ARE PROVIDED AT END OF COLLECTION HEADERS AND AT ANY CHANGES IN DIRECTION OF UNDERGROUND PIPE OVER 90°.
 - ADDITIONAL CLEANING FACILITIES ARE PROVIDED AT ANY CHANGE IN DIRECTION 45° AND AT A MAXIMUM OF 60 METRE INTERVALS ON STRAIGHT RUN.
 - EQUIPMENT ISOLATION VALVES ARE SHOWN ON UPSTREAM P&ID'S.
- DELETED
- SPRING LOADED BALL VALVE.
- DELETED
- PRESSURISED & GRAVITY DRAINS ARE SEGREGATED INTO SEPARATE HEADERS. REFER TO RELEVANT DRAWINGS FOR DRAIN COLLECTION AND ROUTING.
- MINIMUM SUBMERGENCE IS 380mm FROM THE BOTTOM OF THE VESSEL.
- DURING SHUTDOWN LEVEL-1 AND 2, EMERGENCY GENERATOR SUPPLIES POWER TO THESE PUMPS, SO PUMPS CAN RUN AFTER THE RELATIVE ESD LOGICS ARE RESET.
- WHEN LEVEL MEASURED BY LIT-0637 IS COMING AT LOW, VALVE IS RESET AUTOMATICALLY.
- ONE PUMP OPERATING AND ONE PUMP ON STAND-BY.
- TO PREVENT BACK FLOW VALVE TO OPEN WHEN UPSTREAM PRESSURE EXCEEDS DOWNSTREAM PRESSURE.
 - WHEN PUMP(S) ARE RUNNING PDAL ACROSS XV SHALL NOT STOP THE PUMPS.
 - NO PUMP RUNNING AUTOMATICALLY CLOSE THE XV.
 - PUMP(S) RUNNING & IN FIXED TIME IF XV OPEN FEED BACK IS NOT RECEIVED, STOP THE PUMP.
- DELETED
- VENT TO SAFE LOCATION ARE AS PER KOC-G-002.
- TO-0635 IS LOCATED BELOW LLL.
- AIR UNIT IS KEPT AT PLATFORM OUTSIDE THE PIT.
- STRAIGHT LENGTH REQUIREMENT FOR ORIFICE FLOW METER ARE 20D UPSTREAM & 5D DOWNSTREAM.
- ADUATE PIPING SUPPORT ARE PROVIDED TO AVOID OR MINIMIZE VIBRATION.
- INLET PIPE ELBOW DISTRIBUTOR WITH IMPINGEMENT PLATE.
- FOR AUTO GREASING UNIT REFER, 50489-530-020-PID-1108.004.
- PIT WATER SHALL BE REMOVED BY VACUUM TRUCK USING SLUDGE/BACK FLUSHING LINE (3"-DD-1506-Q15B).

REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
22	ISSUED FOR AS-BUILT	BAK/SSI	AKG	SRA	RAK	28.11.18
21	ISSUED FOR AS-BUILT	BAK/SSI	AKG	SRA	RAK	08.10.18
20	ISSUED FOR AS-BUILT	BAK/SSI	AKG	SRA	RAK	26.08.18
01	ISSUED FOR CONSTRUCTION	BAK/SSI	AKG	SRA	RAK	09.12.16
0	ISSUED FOR CONSTRUCTION	HSB/VSA	AKG	SRA	RAK	29.03.16
D	ISSUED INCORPORATED CLIENT COMMENTS	JSI/CHS	AKG	SRA	RAK	23.12.15
C	ISSUED INCORPORATED CLIENT COMMENTS	BAK/ABY	AKG	SRA	RAK	16.10.15
0C	ISSUED INCORPORATED CLIENT COMMENTS	JSI/VSA	AKG	SRA	RAK	01.06.15
B	ISSUED INCORPORATED CLIENT COMMENTS	JSI/VSA	AKG	SRA	RAK	20.02.15
A	ISSUED FOR APPROVAL	JSI/ABY	AKG	SRA	RAK	11.12.14

CONTRACTOR REVISION

KUWAIT OIL CO.
K. S. C.
شركة نفط الكويت
ش.م.ك.
A Subsidiary of Kuwait Petroleum Corporation

CONTRACTOR DETAILS:-
LARSEN & TOUBRO LIMITED
FARIDABAD

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

DOCUMENT TITLE:-
PIPING & INSTRUMENTATION DIAGRAM
MANIFOLD AREA DRAIN VESSEL (V-095) & PUMPS (G-095A/B)

PROJECT NO.	DRAWING NO.	REV.	KOC DRG. NO.	REV.
EF1902	50489-530-020-PID-1205.009	22		
	SHEET NO. 9 OF 12			
	COMPANY DRG. NO.	REV.		
	EF1902-530-DCO-PID-0205.00	A		
	SHEET NO.			