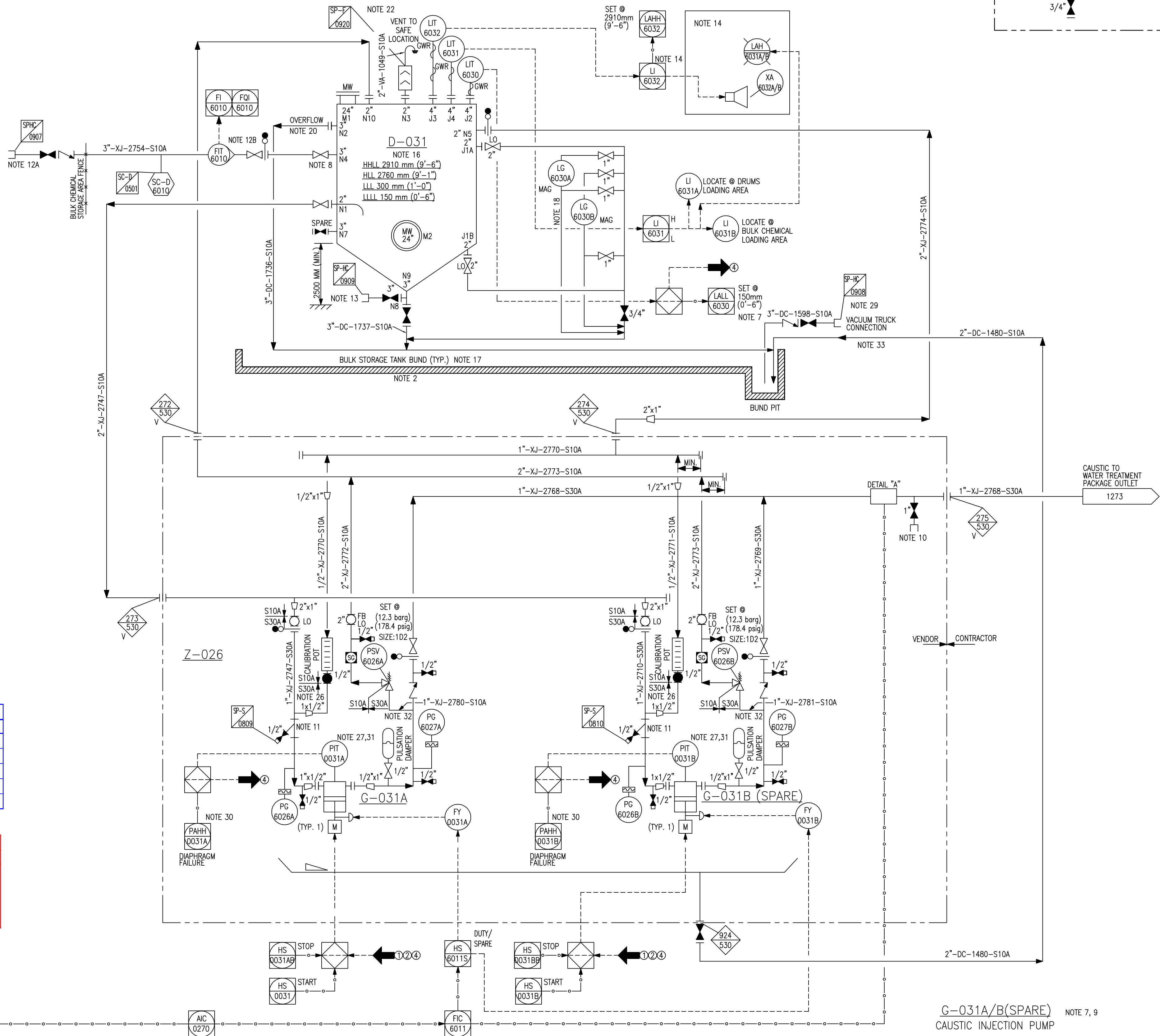
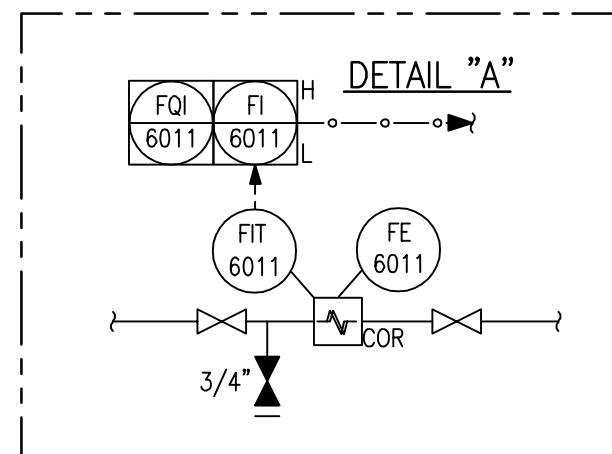


Z-026
CHEMICAL INJECTION SKID

D-031
CAUSTIC BULK STORAGE TANK

CAPACITY m3 (BBLs) : 31.37 (197.31)
ID mm (ft.-in) : 3300 (10'-10")
HEIGHT (F/T) mm (ft.-in) : 3350 (11')
OP PRESS /DES PRESS barg (PSIG) : ATM/ATM+STATIC HEAD
OP TEMP/DESIGN TEMP °C (°F) : 15~55/93/-3 (59~131/200/27)
UTC NO. :
TRIM NO. : DT-D031-S10A/S30A



- 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-1106.001, .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:
- DELETED.
 - UTILITY STATION IS PROVIDED IN CAUSTIC STORAGE AREA.
 - DELETED.
 - DELETED.
 - DELETED.
 - DELETED.
 - LOW LOW LIQUID LEVEL STOPS INJECTION PUMPS, G-031A/B.
 - LOCATE VALVE WITHIN SIGHT OF LEVEL GAUGE.
 - AUTOMATIC VARIABLE PUMP STROKE ADJUSTMENT IS THROUGH DCS.
 - FLUSHING CONNECTION.
 - PROVIDE SUITABLE FLOW MEASUREMENT AND FACILITY FOR LOCAL CALIBRATION.
 - A. CHEMICAL TANKER LOADING CONNECTION.
B. TRANSMITTER IS PROVIDED WITH LOCAL COUNTER WHICH IS RESETTABLE INSTANTANEOUS AND NON-RESETTABLE TOTAL INDICATIONS.
 - CHEMICAL PUMP/OUT CONNECTION TO BE EASILY ACCESSIBLE.
 - PROVIDE ANNUNCIATOR SCHEME TO SUIT REQUIREMENTS AS INDICATED. TANK HIGH LEVEL ALARM IS DEDICATED TO A SPECIFIC LEVEL.
(A) COMMON ALARM (WITH TEST/ACCEPT/RESET) IN DCS.
(B) DEDICATED HORN AND FLASHER FOR THE INTENDED PRODUCT AT DRUMS UNLOADING/TRANSFER PUMP AREA AND BULK CHEMICAL DELIVERY AREA.
(C) FLASHING RED LIGHT SHALL ACTIVATE ON LAH-6031.
(D) HORN SHALL ACTIVATE ON LAH-6032.
 - EYEWASH AND SAFETY SHOWERS ARE INSTALLED AT LOADING CONNECTION OUTSIDE FENCE, AND BULK CHEMICAL STORAGE TANK/INJECTION PUMP SHELTER AREA.
 - TANK LEVEL INSTRUMENTS ARE CALIBRATED IN VOLUMETRIC UNITS.
 - TANK CONCRETE BUND TO BE 115% CONTAINMENT OF D-031.
 - NUMBER OF LEVEL GAUGES ARE DETERMINED BASED ON VESSEL SIZE.
 - DELETED.
 - OVERFLOW NOZZLE IS LOCATED ABOVE HLL.
 - TANK AREA ARE PAVED. FLOOR ARE SLOPED TOWARDS SUMP PIT.
 - VENT TO SAFE LOCATION ARE AS PER KOC-G-002.
 - PROVIDE INDICATION FOR PUMP STROKE IN DCS.
 - ANTI-RESISTANT CHEMICAL FLOOR ARE PROVIDED
(A) LOW POINT DRAIN IS PROVIDED AS APPROPRIATE.
(B) DELETED
 - PUMP SUCTION BALL VALVE & CALIBRATION POT BALL VALVE ARE LOCATED ADJACENT TO ONE ANOTHER FOR MEASURING THE FLOW.
 - PUMPS ARE PROVIDED WITH DIAPHRAGM RUPTURE ALARM (PAHH).
 - DELETED
 - VACUUM TRUCK CONNECTION (PIPE & VALVE) : L&T SCOPE
 - PAHH STOPS CAUSTIC INJECTION PUMP.
 - DIRECT MOUNTING TO THE PUMP HEAD FOR DETECTING RUPTURE OF DIAPHRAGM.
 - FOR Z-026 PSV ARE LOCATED AWAY FROM CHEMICAL INJECTION SKID AND AT ELEVATION TO ENABLE FREE DRAINING OF PSV OUTLET IN RESPECTIVE TANKS. IN VIEW OF THAT ALL MATERIALS OF PSV INLET & OUTLET LINES SHALL BE SUPPLIED BY VENDOR, EXCEPT PIPING, FITTINGS, TIE-IN, FLANGE, GASKET & BOLTS.
 - CHEMICAL SKID DRAIN LINE TILL INLINE TEE CONNECTION IS IN L&T SCOPE.
 - MINIMUM STROKE OF 10% IS PROVIDED FOR ALL CHEMICAL INJECTION PUMP.

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

AS-BUILT	
LARSEN & TOUBRO LIMITED	
NAME :	VAIBHAV VERMA
DESIGNATION :	AGM
SIGNATURE :	
DATE :	26-Aug-2018
DEPT/ DIVISION :	ENGINEERING

G-031A/B(SPARE) NOTE 7, 9
CAUSTIC INJECTION PUMP

FLOWRATE l/hr (USGPH) : 34.6 (9.14)
DRIVER POWER KW (HP) : 0.75 (1.0)
DIFF PRESS ΔP bar (PSI) : 4.35 (63.1)
S.G. @ OP OT : 1.530
FLUID VISCOSITY @ PT CP : 85
OP PRESS/DES PRESS barg (PSIG) : 4.35/12.3 (63.1/178.4)
OP TEMP/DESIGN TEMP °C (°F) : 15~55/93/-3 (59~131/200/27)
UTC NO. :
TRIM NO. : GT-G031A/B-S30A

REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
Z0	ISSUED FOR AS-BUILT	HSB/CHS	AKG	SRA	RAK	26.08.18
01	ISSUED FOR CONSTRUCTION	HSB/CHS	AKG	SRA	RAK	30.09.16
0	ISSUED FOR CONSTRUCTION	HSB/CHS	AKG	SRA	RAK	06.06.16
D	ISSUED INCORPORATED CLIENT COMMENTS	PAK/ABY	AKG	SRA	RAK	07.04.16
C	ISSUED INCORPORATED CLIENT COMMENTS	JSI/ABY	AKG	SRA	RAK	30.10.15
OC	ISSUED INCORPORATED CLIENT COMMENTS	JSI/SSI	AKG	SRA	RAK	03.06.15
B	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	24.02.15
A	ISSUED FOR APPROVAL	BAK/ABY	AKG	SRA	RAK	12.12.14

CONTRACTOR REVISION



CONTRACTOR DETAILS:-
LARSEN & TOUBRO LIMITED
FARIDABAD

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

DOCUMENT TITLE:-
PIPING & INSTRUMENTATION DIAGRAM
CAUSTIC STORAGE TANK (D-031) & INJECTION PACKAGE

PROJECT NO.		DRAWING NO.	
EF1902	CONTRACTOR DRG. NO.	REV.	KOC DRG. NO.
	50489-530-020-PID-1198	Z0	
	SHEET NO. 1 OF 1	REV.	SHEET NO.
	COMPANY DRG. NO.	REV.	
EF1902-530-DCO-PID-0198.001		A3	
SHEET NO.			