

DRAWING INDEX

[illegible]

NOTES:

REFERENCE DRAWINGS:

[illegible][illegible]

P0	13-MAY-24	ISSUED FOR APPROVAL	-	-	-	-	-	-
REV	DATE	DESCRIPTION	BY	MCN	REC	CMR	CR	APP

PROJECT : TAIBA - 1 IPF

PRINCIPAL BUYER:  SAUDI POWER PROCUREMENT COMPANY

PROJECT COMPANY: شركة سدرة التوليد للكهرباء
Sidra One Electricity Company

PROJECT COMPANY'S CONSULTANT: **TRACTEBEL**  **TRACTEBEL ENGIE**

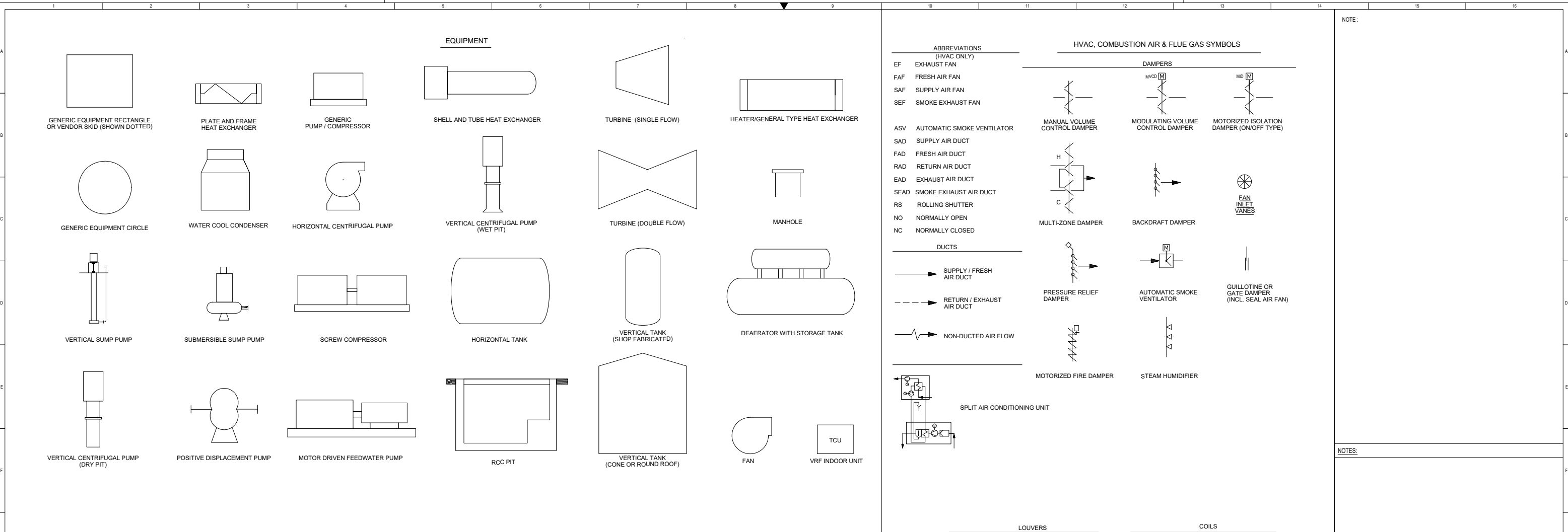
EPC CONTRACTOR:  电建铁军 TIEJUN

EPC CONTRACTOR'S ENGINEER :  SARGENT & LUNDY

VENDOR:  **BHI.CO.,LTD.**

	DATE	NAME	TITLE:
PREPARED	13-MAY-24	T.G LEE	DRAWING INDEX
DESIGNED	13-MAY-24	T.G LEE	
CHECKED	13-MAY-24	H.S KIM	

APPROVED:	12/11/11 24	INTERNAL DOCUMENT NO...	DOCUMENT OWNER:
DEPARTMENT:-			SARGENT & LUNDY



INSTRUMENT & CONTROL DEVICE SYMBOLS

DCS DISTRIBUTED CONTROL SYSTEM
DEH DIGITAL ELECTRO-HYDRAULIC
LCP LOCAL CONTROL PANEL
PLC PROGRAMMABLE LOGIC CONTROLLER
TCS TURBINE CONTROL SYSTEM
MFPP MAIN FIRE PROTECTION PANEL

LOCALLY MOUNTED DEVICE NOT ON INSTRUMENT PANEL OR ASSEMBLY
LOCALLY MOUNTED DEVICE NOT ON INSTRUMENT PANEL OR ASSEMBLY
DESIGNATES INSTRUMENT IS FURNISHED WITH ASSOCIATED EQUIPMENT OR BY OTHERS (AS SPECIFIED ON ASSOCIATED P&ID)
LOCAL INSTRUMENT PANEL MOUNTED DEVICE
MULTIPLE DEVICES IN ONE ASSEMBLY

INSTRUMENT SENSING PIPE LINE SYMBOLS

CAPILLARY TUBING (FILLED SYSTEM)
LINES NOT CONNECTED
FILLED INSTRUMENT SENSING LINE DIAPHRAGM SEAL

SENSING PIPE LINES NOT NUMBERED
PROCESS - CONNECTED SENSING LINE FOR SINGLE INSTRUMENT
PIPE LINE SYMBOL PER PAGE 1 (TYPICAL)
VALVE & PIPING DETAILS PER INSTRUMENT INSTALLATION DETAILS (TYPICAL)
PROCESS PIPE OR VESSEL (TYPICAL)
PROCESS - CONNECTED SENSING LINE COMMON TO MULTIPLE INSTRUMENTS
MAIN LINE SHUTOFF (ROOT) VALVE COMMON UNLESS SHOWN OTHERWISE (TYPICAL)
MULTIPLE PROCESS - CONNECTED SENSING LINES TO SINGLE INSTRUMENT
MULTIPLE PROCESS - CONNECTED SENSING PIPE LINES TO MULTIPLE INSTRUMENTS
DCS TO/FROM DEVICE SIGNAL LINE
PNEUMATIC LINE
CAPILLARY LINE

INSTRUMENT & CONTROL DEVICE NUMBERS

CLARIFYING SYMBOL LIST

A	ANALOG SIGNAL	MAX	MAXIMUM
ADD	ADD	MIN	MINIMUM
AVG	AVERAGE	N ₂	NITROGEN
CO ₂	CARBON DIOXIDE	Na	SODIUM
DIFF	SUBTRACT	K	POTASSIUM
DIR	DIRECT ACTING	N ₂ H ₄	HYDRAZINE
H ₂	HYDROGEN	O ₂	OXYGEN
He	HELIUM	pH	pH ANALYSIS
H	HIGH LIMIT	RES	RESET
L	LOW LIMIT	REV	REVERSE ACTING
		SI	SILICA
		SM	SMOKE OR IONIZATION
		TURB	TURBIDITY

GRILLES / DIFFUSERS

RETURN AIR GRILLES/DIFFUSERS
SUPPLY AIR GRILLES/DIFFUSERS

TERMINAL CONTROL UNITS

CVB SINGLE DUCT BOX
CVB DUAL DUCT BOX
CONSTANT VOLUME BOXES

VVB SINGLE DUCT BOX
VVB DUAL DUCT BOX
VARIABLE VOLUME BOXES

HVAC, COMBUSTION AIR & FLUE GAS SYMBOLS

FILTERS

PRE FILTER
FINE FILTER
INERTIA FILTER
RENEWABLE MEDIA FILTER/REPLACEABLE CARBON FILTER
ELIMINATOR

LOUVERS

FIXED LOUVER
OPERATING LOUVER
OPERATING DUAL COMBINATION LOUVER
EXHAUST BACKDRAFT DUAL COMBINATION LOUVER
SAND TRAP LOUVER

COILS

HW
DX
HW
STM
CW
CHW
EL
HR
DIRECT EXPANSION
HOT WATER
STEAM
COOLING WATER
CHILLED WATER
ELECTRIC
HEAT RECOVERY

SILENCER
ELECTRIC HEATER

INSTRUMENT TYPE CODES

FIRST LETTER VARIABLE (MEASURED OR INITIATING)	SECOND OR SUCCEEDING LETTERS INSTRUMENT FUNCTION
A ANALYSIS	A ALARM
B BURNER - FLAME	AC ALARM CLOSED
C CONDUCTIVITY OR CONTROL	AH ALARM HIGH
D DENSITY	AL ALARM LOW
E VOLTAGE	AO ALARM OPEN
F FLOW	C CONTROLLER (BLIND)
H HAND (MANUAL)	CK CONTROLLER & HAND/AUTO
I CURRENT (ELEC.)	DA DIFFERENTIAL ALARM
J POWER (ELEC.)	DC DIFFERENTIAL CONTROLLER
K TIME	DI DIFFERENTIAL INDICATOR
L LEVEL (LIQUID OR SOLID)	DK DIFFERENTIAL CONTROL STATION
M MOISTURE (HUMIDITY)	DR DIFFERENTIAL RECORDER
N NEUTRON FLUX	DS DIFFERENTIAL SWITCH
P PRESSURE OR VACUUM	DT DIFFERENTIAL TRANSMITTER
R RADIOACTIVITY	DY DIFFERENTIAL RELAY
S SPEED OR FREQUENCY	E PRIMARY ELEMENT
T TEMPERATURE	EW PRIMARY ELEMENT WELL
U MULTIVARIABLE	G GLASS
V VIBRATION	I INDICATOR
W WEIGHT	IC INDICATING CONTROLLER
X SPECIAL (REFER TO CLARIFYING SYMBOL)	IR INDICATING RECORDER
Y STRAIN	IS INDICATING SWITCH
Z POSITION	IT INDICATING TRANSMITTER
	IY INDICATING RELAY
	JR MULTI POINT RECORDER
	K CONTROL STATION - VARIABLE TYPE (HAND/HAND-AUTO)WITHOUT CONTROLLER
	L LIGHT (PILOT)
	P POWER
	Q INTEGRATOR
	R RECORDER CONTINUOUS PEN
	RC RECORDER CONTROLLER
	S SWITCH
	SC SWITCH - CLOSED DEVICE POSITION
	SH SWITCH HIGH
	SI SWITCH - INTERMEDIATE DEVICE POSITION
	SL SWITCH LOW
	SO SWITCH - OPEN DEVICE POSITION
	SV SOLENOID VALVE (IN CONTROL LOOPS ONLY)
	T TRANSMITTER
	U MULTI FUNCTION
	W WELL
	X SPECIAL (REFER TO CLARIFYING SYMBOL LIST) OR TEST
	Y RELAY-SIGNAL CONVERTER, COMPUTING, ETC.
	Z POWER POSITIONER/CONTROL DRIVE (EXCEPT VALVE MOUNTED)

LEGENDS:

REFERENCE DRAWINGS:

DRAWING NO.	DRAWING TITLE

HOLD LIST:

REV.	DATE	DESCRIPTION	BY	MECH	ELEC	CIVIL	C&I	APPRO

PROJECT: TAIBA - 1 IPP

PRINCIPAL BUYER: SAUDI POWER PROCUREMENT COMPANY

PROJECT COMPANY: شركة سوا للطاقة الكهربائية SIDRA ONE ELECTRICITY COMPANY

PROJECT CONTRACTOR'S CONSULTANT: TRACTEBEL TRACTEBEL ENGIE

EPC CONTRACTOR: 中建铁建 TIEJUN

EPC CONTRACTOR'S ENGINEER: SARGENT & LUNDY

VENDOR: BHI.CO.,LTD.

DATE: 13-MAY-24
NAME: T.G.LEE
TITLE: SYMBOL & LEGEND 1

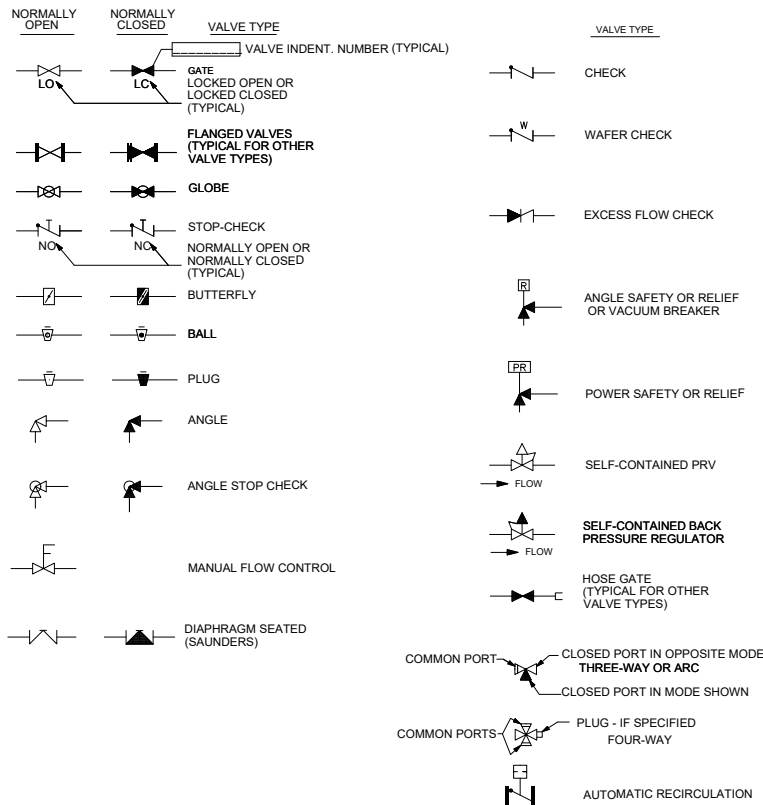
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DESIGNED: 13-MAY-24
CHECKED: 13-MAY-24
APPROVED: 13-MAY-24
DEPARTMENT:

INTERNAL DOCUMENT NO.: SAU4001-P001-HNY00-4MDA-08401
DOCUMENT OWNER: SARGENT & LUNDY

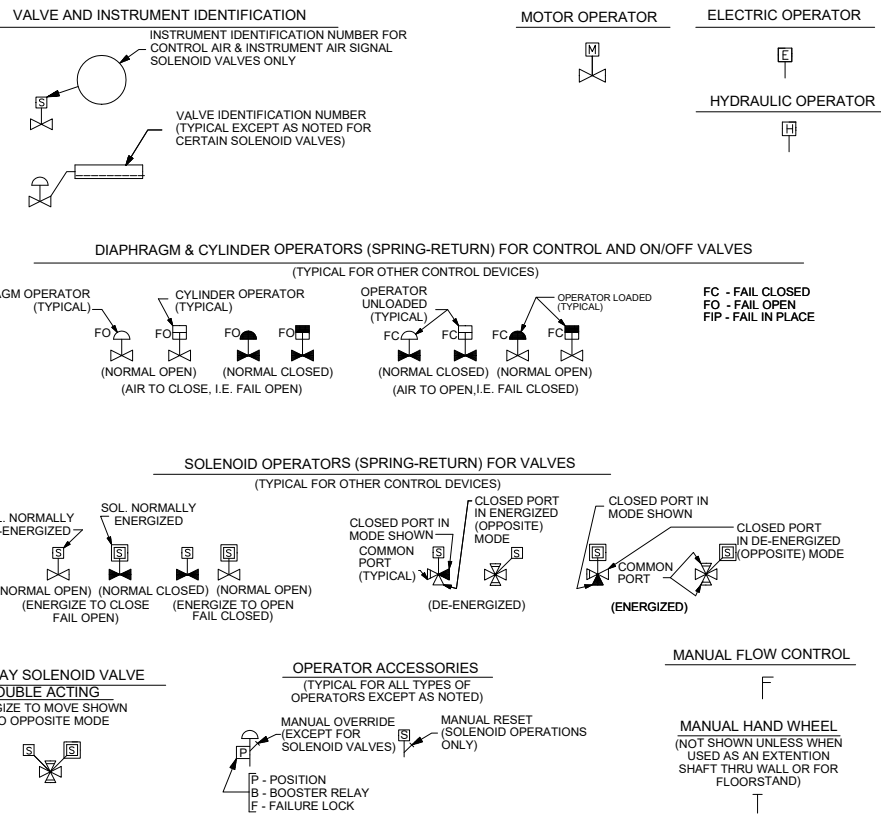
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SHT: 2 OF 8
REV: P0

FILE NAME: SAU4001-P001-HNY00-4MDA-08401

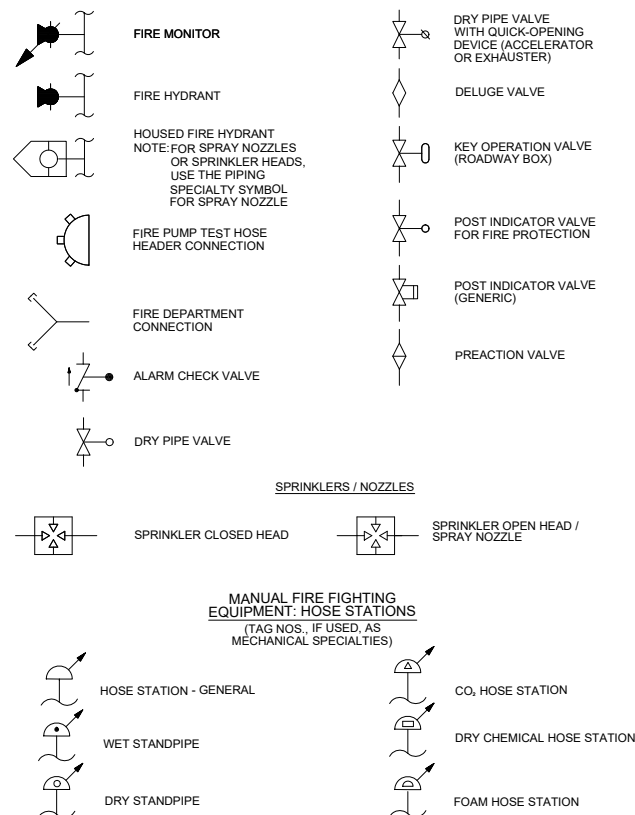
VALVE SYMBOLS



OPERATOR SYMBOLS
(FOR USE WITH VALVE & DAMPER SYMBOLS)



FIRE PROTECTION SYSTEM SYMBOLS (REF. NFPA-170)
MECHANICAL PIPING COMPONENTS
(TAG NUMBERS, IF USED AS MECHANICAL SPECIALTIES)



NOTE:

NOTES:

LEGENDS:

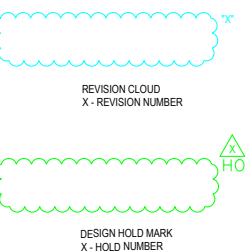
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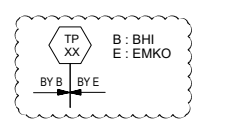
INSULATION TYPE

- A - HEAT RETENTION INSULATION
- N - NO INSULATION REQUIRED
- P - PERSONNEL PROTECTION INSULATION

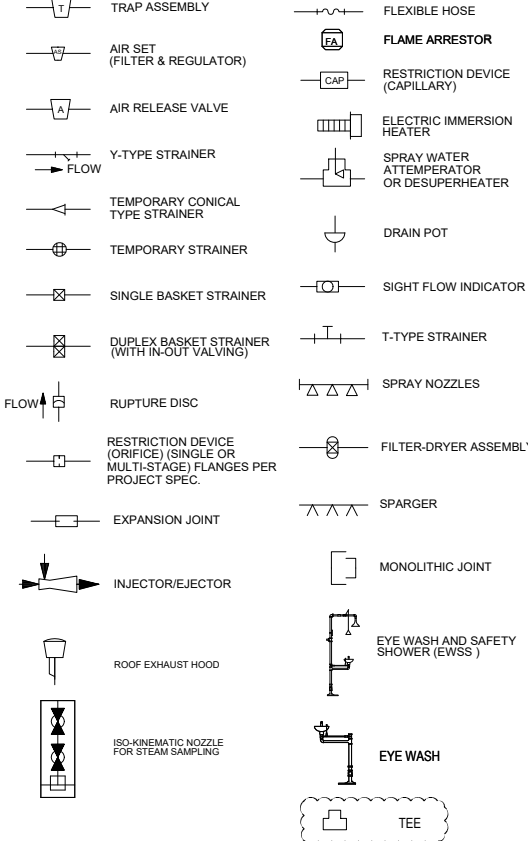
REVISION & HOLD IDENTIFICATION



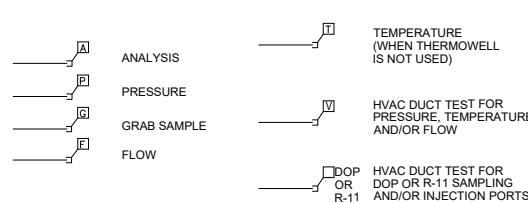
SCOPE DEMARCATION BETWEEN VENDOR & EPC



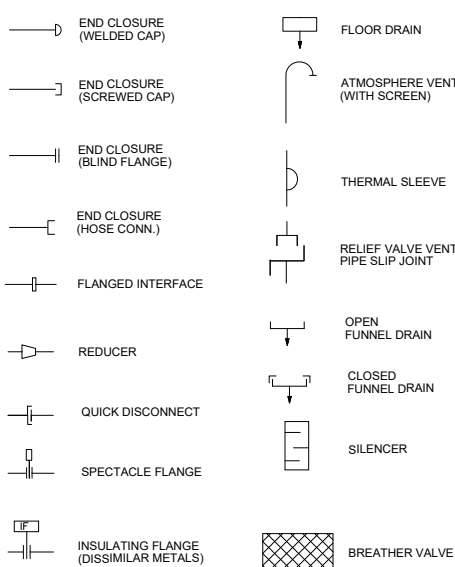
SPECIALTIES



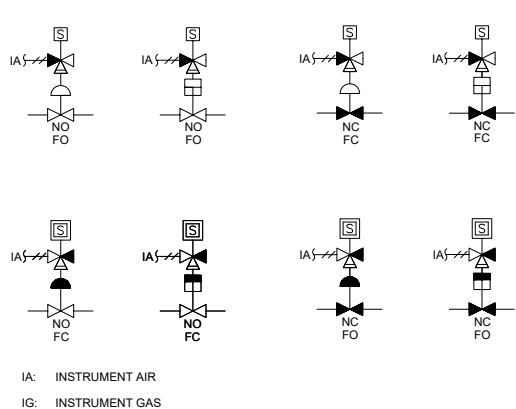
TEST CONNECTIONS



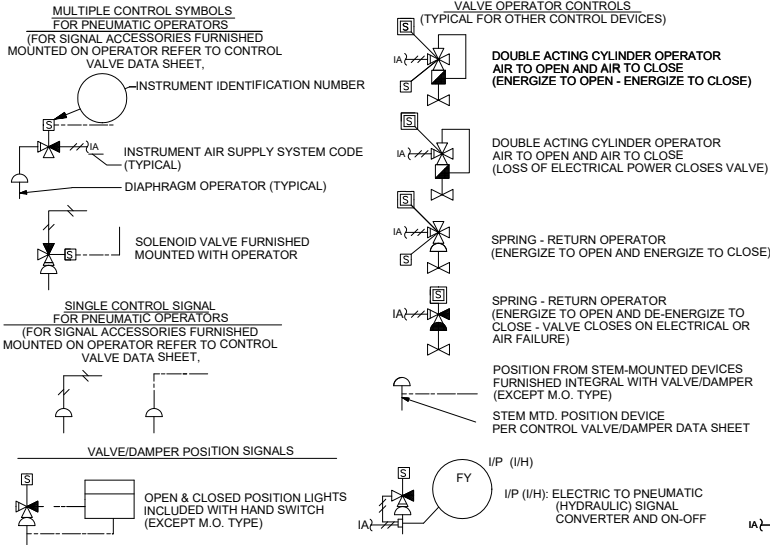
PIPE LINE COMPONENT SYMBOLS



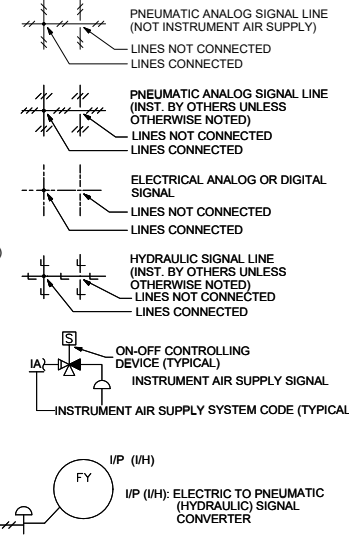
TYPICAL DIAPHRAGM & CYLINDER OPERATORS ARRANGEMENT FOR ON-OFF VALVES



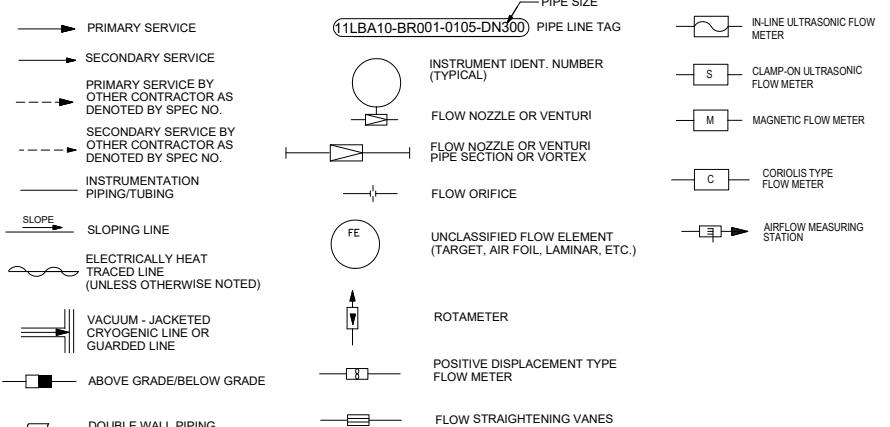
TYPICAL INSTRUMENT & CONTROL SYMBOLING EXAMPLES

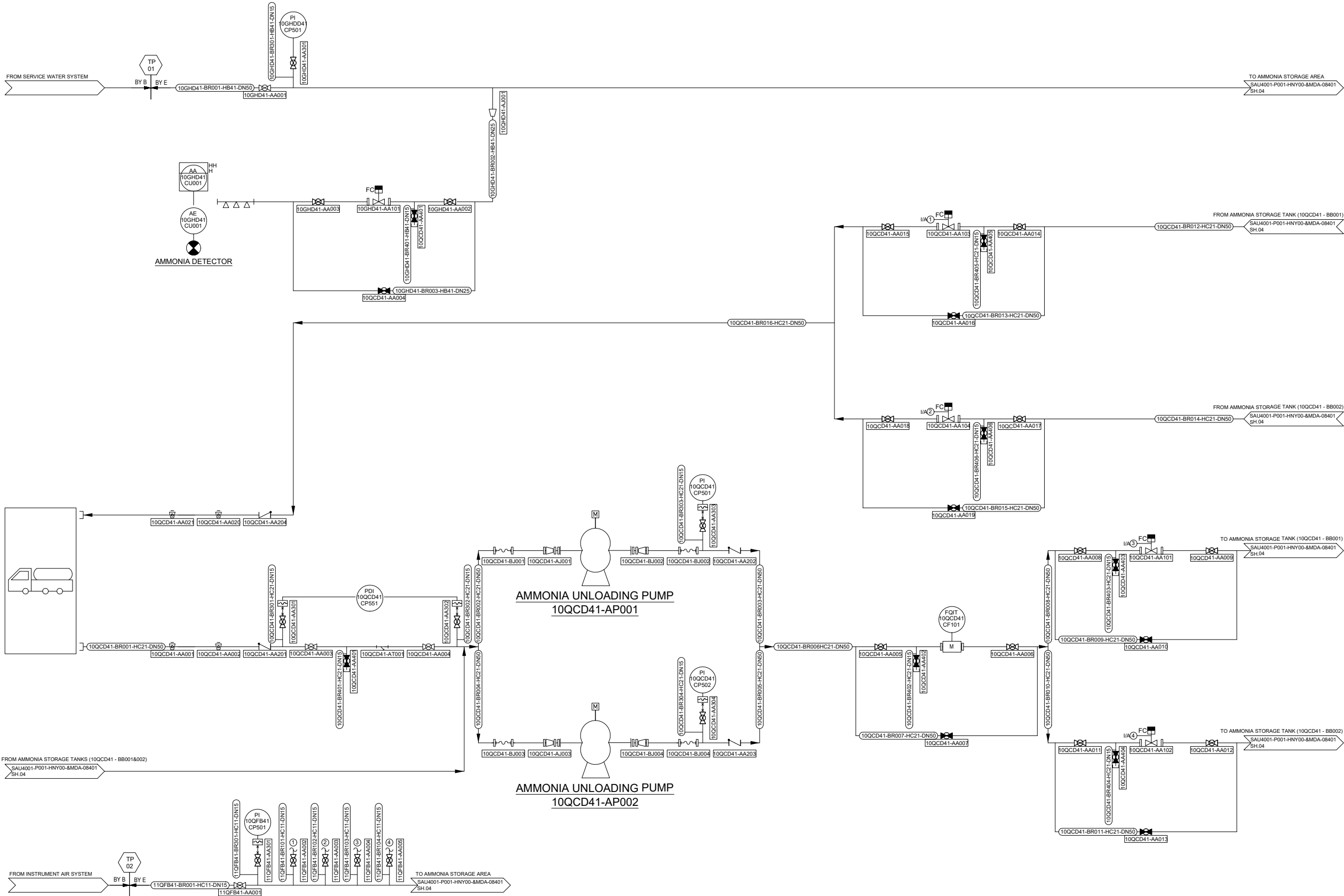


INSTRUMENT & CONTROL SIGNAL SYMBOLS



PIPE LINE SYMBOLS





NOTE :

NOTES:

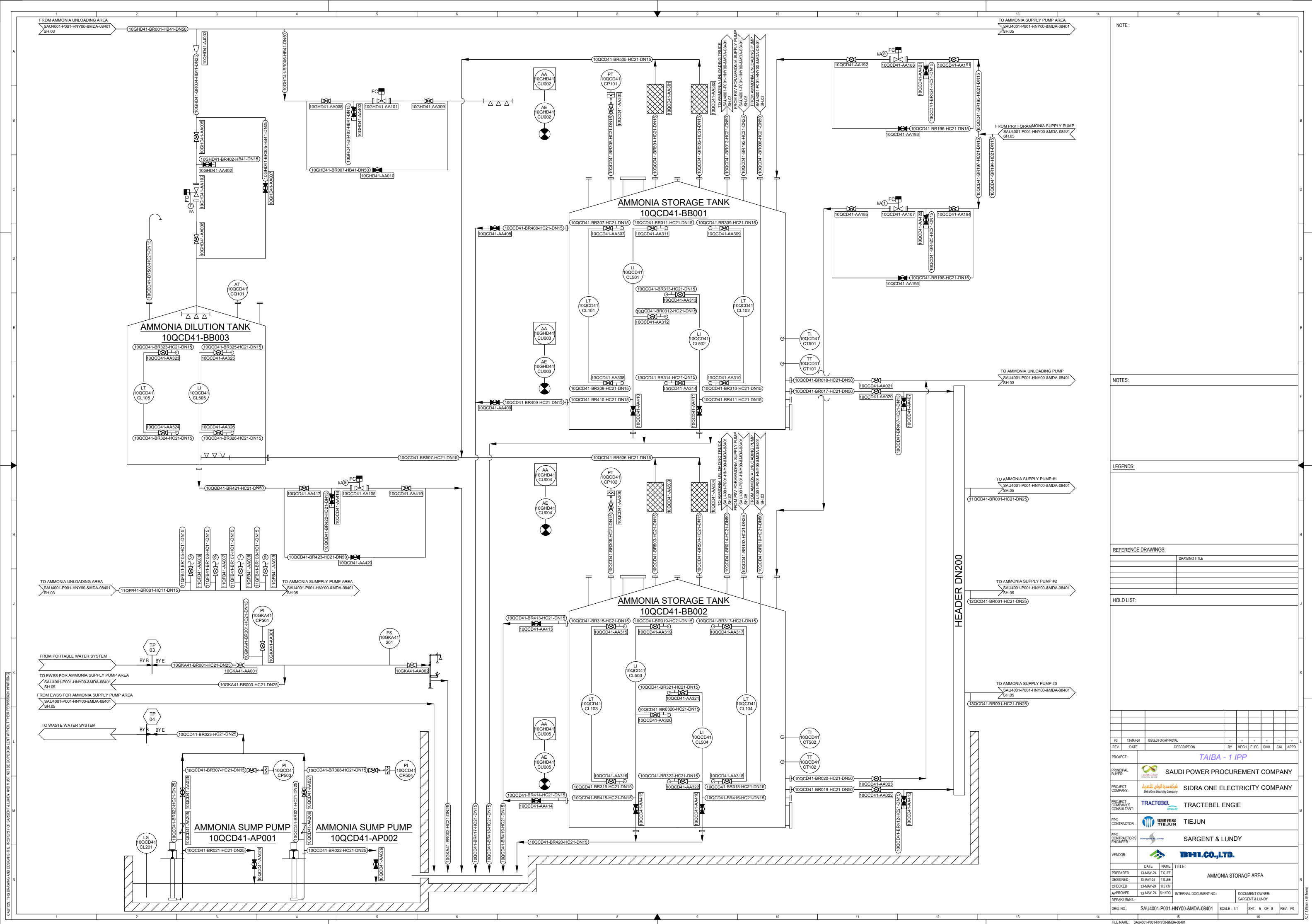
LEGENDS:

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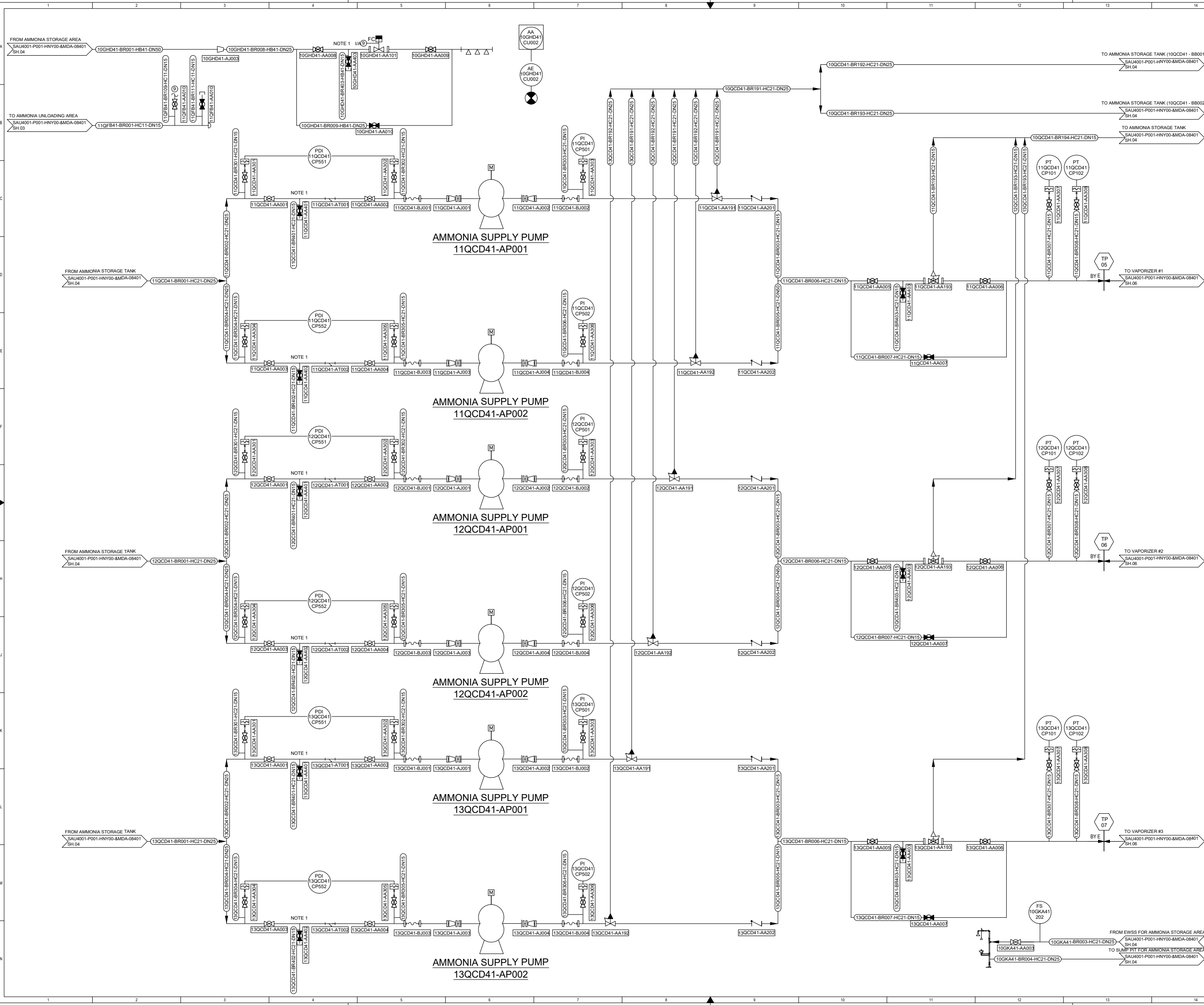
DRAWING NO.	DRAWING TITLE

HOLD LIST:

PI	13-MAY-24	ISSUED FOR APPROVAL	BY	MECH	ELEC	CIVIL	C&I	APPRO
REV.	DATE	DESCRIPTION	BY	MECH	ELEC	CIVIL	C&I	APPRO
PROJECT :		TAIBA - 1 IPP						
PRINCIPAL BUYER :		SAUDI POWER PROCUREMENT COMPANY						
PROJECT COMPANY :		شركة سودة الكهرباء Sidra One Electricity Company						
PROJECT COMPANY'S CONSULTANT :		TRACTEBEL TRACTEBEL ENGIE						
EPC CONTRACTOR :		TIEJUN						
EPC CONTRACTOR'S ENGINEER :		SARGENT & LUNDY						
VENDOR :		BHI.CO.,LTD.						
DATE		NAME		TITLE:				
PREPARED		13-MAY-24		T.G.LEE				
DESIGNED		13-MAY-24		T.G.LEE				
CHECKED		13-MAY-24		H.S.KIM				
APPROVED		13-MAY-24		S.H.YOO				
DEPARTMENT :		INTERNAL DOCUMENT NO.:		DOCUMENT OWNER:				
DRG. NO.:		SAU4001-P001-HNY00-8MDA-08401		SCALE : 1:1		SHT: 4 OF 8		REV. P0



FILE NAME: SAU4001-P001-HINY00-8MDA-0840



NOTE:
1. THE WATER SPRAY DRAIN VALVE (10GHD41-AA403) IS USED FOR PURGING AMMONIA LINES.
USE A TEMPORARY HOSE CONNECTOR TO CONNECT
TO THE DRAIN VALVE AT PUMP SUCTION TO PURGE

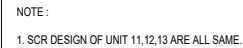
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HOLD LIST:

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LEGENDS

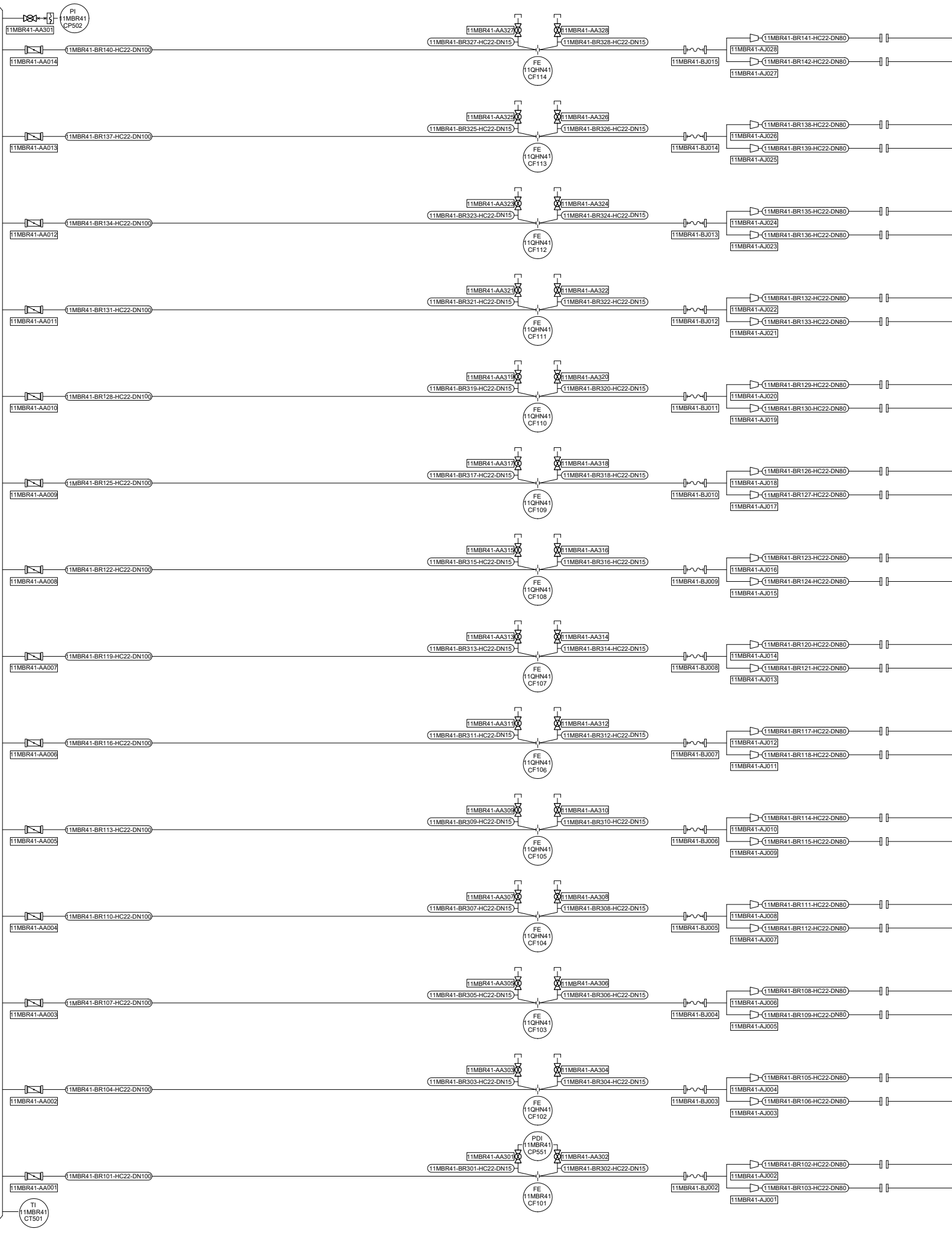
REFERENCE DRAWINGS:

DRAWING NO.	DRAWING TITLE

HOLD LIST:

[illegible][illegible]

MANI FOLD



NOTE :
1. SCR DESIGN OF UNIT 11,12,13 ARE ALL SAME.

NOTES:

LEGENDS:

REFERENCE DRAWINGS:

HOLD LIST:

PI	13-MAY-24	ISSUED FOR APPROVAL	BY	MECH	ELEC	CIVIL	C&I	APPRO
REV.	DATE	DESCRIPTION	BY	MECH	ELEC	CIVIL	C&I	APPRO
PROJECT :		TAIBA - 1 IPP						
PRINCIPAL BUYER:		SAUDI POWER PROCUREMENT COMPANY						
PROJECT COMPANY:		شركة سودة التوليد الكهربائية Sidra One Electricity Company						
PROJECT COMPANY'S CONSULTANT:		TRACTEBEL TRACTEBEL ENGIE						
EPC CONTRACTOR:		TIEJUN						
EPC CONTRACTOR'S ENGINEER:		SARGENT & LUNDY						
VENDOR:		IBHI.CO.,LTD.						
DATE		NAME		TITLE:				
PREPARED		13-MAY-24		T.G.I.E.E				
DESIGNED		13-MAY-24		T.G.I.E.E				
CHECKED		13-MAY-24		H.S.K.M				
APPROVED		13-MAY-24		S.H.Y.O.D				
DEPARTMENT:		INTERNAL DOCUMENT NO.:		DOCUMENT OWNER:				
ORG. NO.:		SAU4001-P001-HNY00-8MDA-08401		SCALE: 1:1		SHT: 8 OF 8		REV. P0