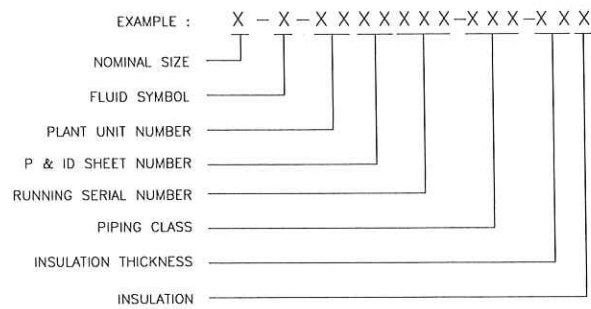


LINE IDENTIFICATION

1. LINES SHALL BE IDENTIFIED THUS:

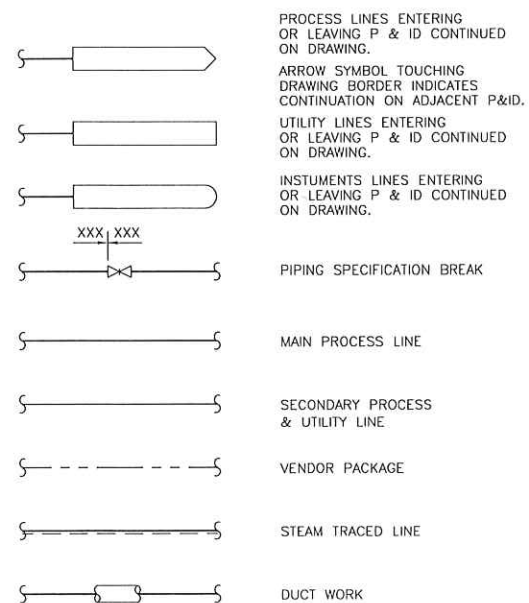


- W - HOT SERVICE INSULATION
K - COLD SERVICE INSULATION
D - PROTECTIVE HEATING BY STEAM TRACING LINE
E - ELECTRICAL HEATING
M - STEAM JACKETED PIPE
B - SOUND PROTECTION (ACOUSTIC)
F - FIRE PROOF PROTECTION
N - INSULATION (BLANK)
S - PERSONAL PROTECTION

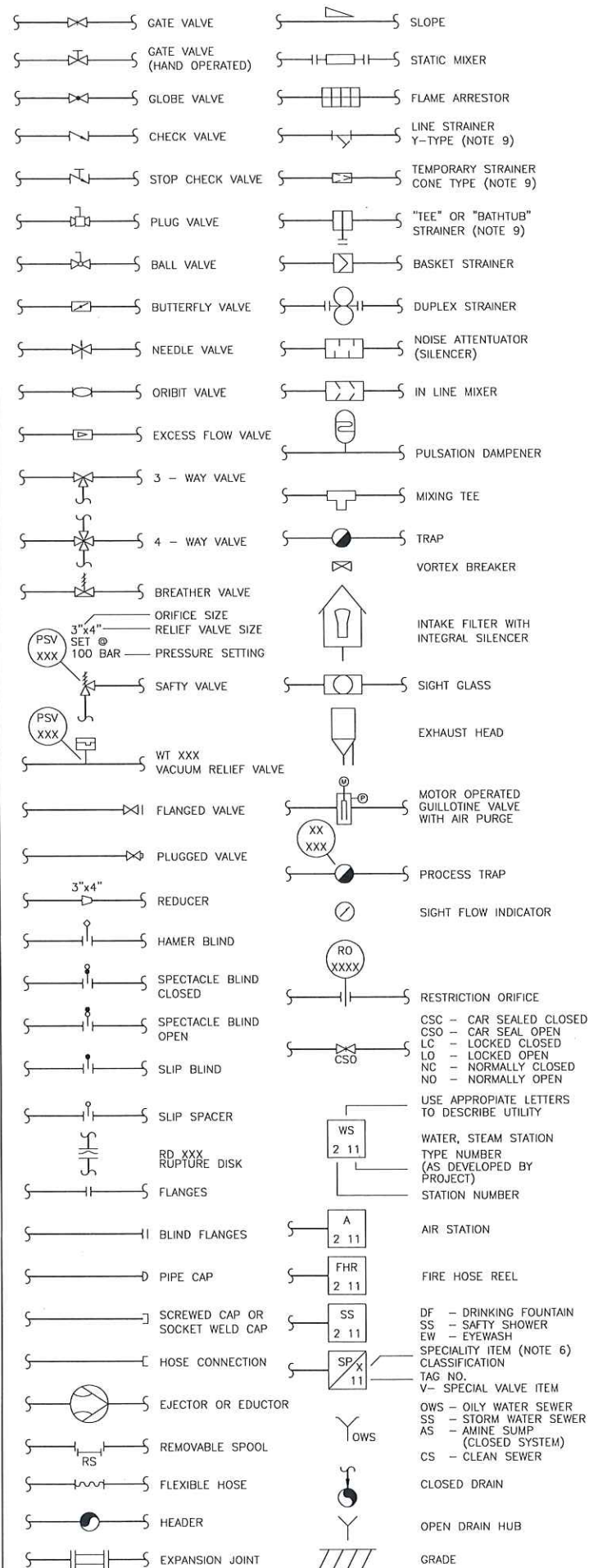
2. FLUID SYMBOLS

AD - ODORANT	LN - LIGHT NAPHTHA
AI - INSTRUMENT AIR	LPG - LIQUID PETROLEUM GAS
AP - PLANT AIR	MDA - METAL DEACTIVATOR
AW - WASTE AIR	MX - SLOP OIL
ALM - ALUM	NAM - NEUTRALIZING AMINE
AM - AMMONIA WATER	NH - HP NITROGEN (8.3 BAR)
AML - LEAN AMINE	NL - LP NITROGEN (6 BAR)
AMR - RICH AMINE	P - PROCESS MIXING FLUID
ANP - ANIONIC POLYMER	POLY - POLYMER
AO - ANTI OXIDANT	PPAL - PROPANE (LIQUID)
ATB - ATMOSPHERIC TOWER BOTTOM	PPAV - PROPANE (GAS)
CO - CONDENSATE	SL - LP STEAM (3.5/8.5 BAR)
CG - HYDROCARBON, GASEOUS	SM - MP STEAM (11 BAR)
CL - HYDROCARBON, LIQUID	SH - HP STEAM (25 BAR)
CNP - CATIONIC POLYMER	SHO - CAUSTIC SODA
CPL - LP CONDENSATE (3.5 BAR)	SAH - SULFURIC ACID (HIGH CONC.)
CPM - MP CONDENSATE (11 BAR)	SAL - SULFURIC ACID (LOW CONC.)
CPH - HP CONDENSATE (25 BAR)	SHC - SODIUM HYPOCHLORITE
CR - CRUDE OIL	TEL - TETRA ETHYL LEAD
DEM - DEMULSIFIER	TO - TOGEO (FOAM MOTHER LIQUID)
DET - DETERGENT	WB - BOILER FEED WATER
ETM - ETHYLMERCAPTAN	WBW - BRINE WATER
FO - FUEL OIL	WCI - WASTE WATER CHEMICAL CONTAMINATED
FL - FLARE LINE	WCS - WATER WITH CORROSION INHIBITOR
FAM - FILMING AMINE	WDS - DEMINERALIZED WATER
FG - FUEL GAS	WF - FIRE FIGHTING WATER
GDET - DETERGENT (FOR GASOLINE)	WFW - FILTERED WATER
GW - SOUR GAS	WGR - GRANULATING WATER
GV - VENT GAS	WH - HOT WATER
H - HYDROGEN	WP - POTABLE WATER (5 BAR G)
HGO - HEAVY GAS OIL	WR - COOLING WATER RETURN
HN - HEAVY NAPHTHA	WS - COOLING WATER SUPPLY
IL - CHEMICAL (DEMULSIFIER, AMINE, ETC.)	WSS - STRIPPED SOUR WATER
KERO - KEROSENE	WSW - SOUR WATER
LGO - LIGHT GAS OIL	WWT - TREATED WASTE WATER
	WWO - OILY WASTE WATER
	WW - WASH WATER

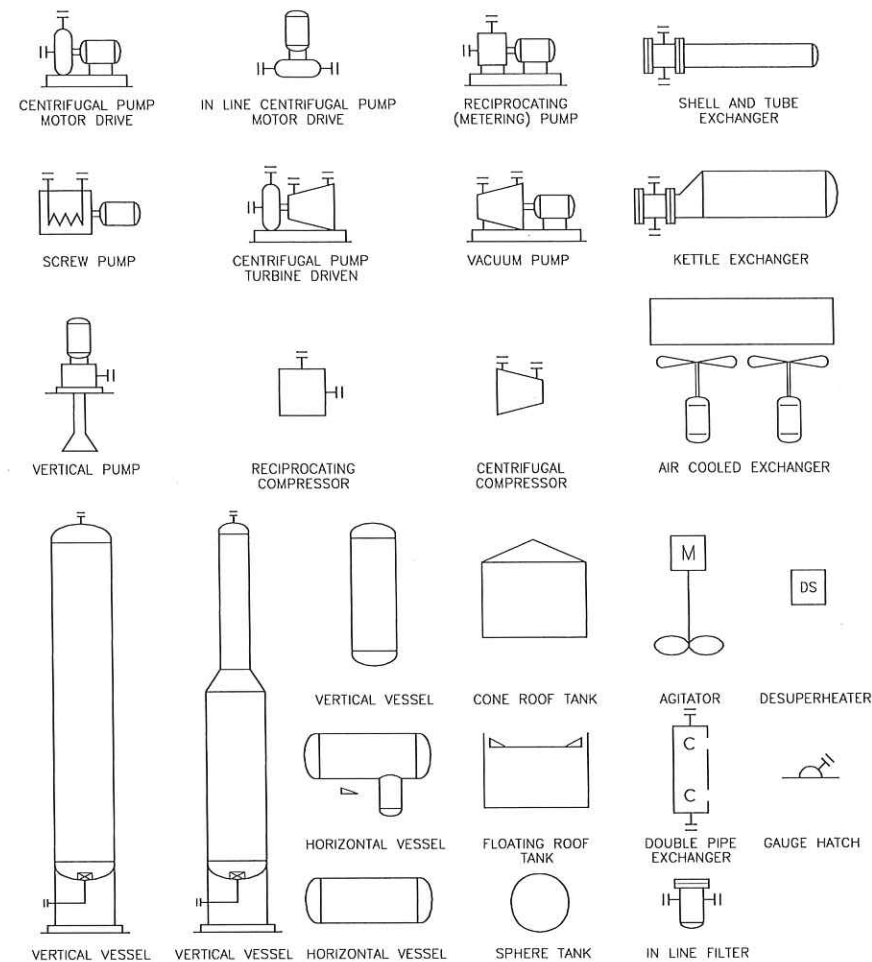
3. LINE IDENTIFICATION SYMBOLS



PIPING SYMBOLS



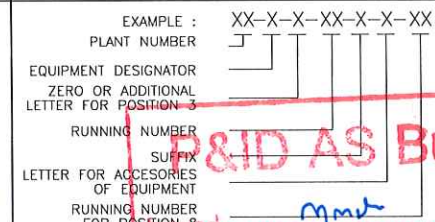
EQUIPMENT SYMBOLS



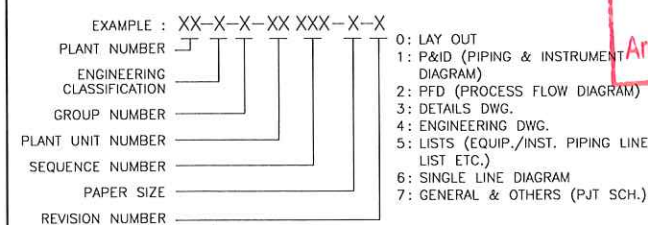
EQUIPMENT DESIGNATIONS

- A - FLARE
- B - BURNER, FURNACE
- C - COLUMN, TOWER, ETC.
- D - DRUM, VESSEL, POT, ETC.
- E - HEAT EXCHANGER, AIR COOLER
- H - TRANSPORTING EQUIP., UNLOADING ARM
- J - EJECTOR, INJECTOR
- K - COMPRESSOR, BLOWER, FAN
- L - LABORATORY EQUIP.
- M - DRIVER (MOTOR)
- N - AGITATOR, MIXER
- P - PUMP, VACUUM PUMP
- S - SEPARATOR
- T - TANK, SUMP
- W - WEIGHING MACHINE
- X - PACKAGED EQUIPMENT
- Z - DCS

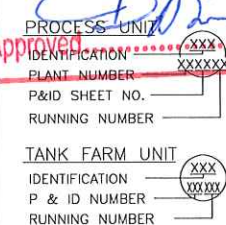
EQUIPMENT NUMBERS



DRAWING IDENTIFICATION



INSTRUMENT NUMBERS

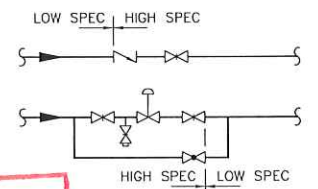


MISCELLANEOUS ABBREVIATIONS

AG - ABOVE GROUND	FR - FROM	NPSH - NET POSITIVE SUCTION
ATM - ATMOSPHERE	GH - GAUGE HATCH	- HEAD
BL - BATTERY LIMIT	GPM - GALLONS PER MINUTE	Nm ³ /hr - NORMAL CUBIC METERS PER HOUR
BW - BUTTWELD	GS - GRAVITY SEWER	NLL - NORMAL LIQUID LEVEL
CO - CARBON MONOXIDE	HC - HOSE CONNECTION	O ₂ - OXYGEN
CO ₂ - CARBON DIOXIDE	HH - HANDHOLE	REQ'D - REQUIRED
CSC - CAR SEAL CLOSE	HLL - HIGH LIQUID LEVEL	RF - RAISED FACE
CSO - CAR SEAL OPEN	HP - HORSEPOWER	S/D - SHUTDOWN
D - DRAIN	H ₂ S - HYDROGEN SULFIDE	TL - TANGENT LINE
DWG - DRAWING	IAS - INSTRUMENT AIR SUPPLY	TSO - TIGHT SHUT OFF
EFV - EXCESS FLOW VALVE	LLL - LOW LIQUID LEVEL	TYP - TYPICAL
ESD - EMERGENCY SHUTDOWN	MAX - MAXIMUM	UG - UNDER GROUND
EL - ELEVATION	MIN - MINIMUM	VB - VORTEX BREAKER
EVC - EMERGENCY VENT COVER	MW - MANWAY	V - VENDOR FURNISHED
FB - FULL BORE	NC - NORMALLY CLOSED	

GENERAL NOTES

- TPI STANDARDS ARE USED FOR PIPELINE DESCRIPTION, EQUIPMENT NUMBERS AND DRAWING IDENTIFICATION.
- WHILE NOT SHOWN ON THE DIAGRAMS, 3/4" VALVED CONNECTIONS ARE TO BE PROVIDED FOR LOW POINT DRAINS AND 3/4" PLUGGED CONNECTIONS FOR HIGH POINT VENTS.
- ALL SINGLE VALVED VENTS AND DRAINS IN PROCESS SERVICE ARE PLUGGED OR BLINDED, EXCEPT PUMP VENTS AND DRAINS.
- UNDESIGNATED PIPING AND VALVING ON EQUIPMENT SHALL FOLLOW THE CLASS OF THE LOCAL PIPING.
- TEMPERATURE WELLS FOR OPERATING INSTRUMENTS ARE NOT SHOWN. TEST WELLS ONLY ARE SHOWN ON THE P & ID'S.
- "X" DESIGNATES THE SPECIALTY ITEMS AS DEFINED BY EACH PROJECT ON A SPECIAL DATA SHEET.
- ALL VENTS AND RELIEF DISCHARGES TO ATMOSPHERE SHALL HAVE 3/8" WEEPHOLES.
- ALL CONTROL VALVE STATION UPSTREAM BLEEDS ARE 3/4" UNLESS NOTED OTHERWISE.
- PERMANENT PUMP SUCTION STRAINERS SHALL BE T-TYPE IN SIZES ABOVE 2" AND Y-TYPE IN SIZES 2" AND BELOW. TEMPORARY STRAINERS SHALL BE CONE TYPE WITH OPEN AREA EQUAL TO 200% OF PIPE CROSS SECTIONAL AREA.
- FLOW METER ORIFICE FLANGES SHALL BE SUPPLIED IN ACCORDANCE WITH THE PIPING SPECIFICATION.
- LOCAL RECEIVER INDICATORS ASSOCIATED WITH CONTROL LOOPS SHALL BE LOCATED WITHIN VIEW OF THE RESPECTIVE VALVE STATION. INDICATORS INTEGRAL WITH TRANSMITTERS ARE NOT SHOWN ON THE P & ID'S INDICATORS REMOTE FROM TRANSMITTERS ARE SHOWN ON THE P & ID'S.
- INSTRUMENTS SUPPLIED BY A VENDOR ARE IDENTIFIED BY THE LETTER "V" ADJACENT TO THE TAG BALLOON.
- VALVES AND FITTINGS SHALL CONFORM TO MATERIAL CLASSIFICATION AND VALVES SHALL BE LINE SIZE EXCEPT WHERE NOTED OTHERWISE.
- BLOCK VALVES SHALL BE LINE SIZE AND BYPASS VALVES AROUND CONTROL VALVES SHALL BE IN THE SAME SIZE AS THE CONTROL VALVE UNLESS NOTED OTHERWISE.
- WHERE LINES HAVING DIFFERENT MATERIAL CLASSIFICATION JOIN, THE HIGHER CLASSIFICATION PREVAILS UP TO THE POINT INDICATED THUS:



16. INSTRUMENT NUMBERING ON P&ID SHEETS ARE COMPOSED OF IDENTIFICATION LETTERS, PLANT UNIT NUMBER AND RUNNING NUMBER.

REV.	DATE	DESCRIPTION OF ISSUE	DRWN	CHKD	APPD	APPD
01	06-23-21	UPDATE 2021	NR	KTN		
02	03-14-08	UPDATE 2008	NR	TN		
03	08-12-95	F.F.C.	YSJ	JHS	BYJ	JVL
04	03-31-95	A.F.D.	YSJ	JHS	YSJ	GHK

IRPC

IRPC PUBLIC COMPANY LIMITED

TPI SPLITTER PLANT PHASE III PROJECT
RAYONG, THAILANDLG Engineering Co., Ltd.
SEOUL, KOREATETRA ENGINEERING & TECHNOLOGY INC.
BREA, CALIFORNIA, U.S.A.D/K HDS UNIT PIPING & INSTRUMENT DIAGRAM
LEGEND & SYMBOLS

JOB NUMBER	DRAWING NUMBER	REV. NO.
8816	69-P-1-00-400-3-3	3