



Exploration & Production

GENERAL SPECIFICATION

DESIGN OF FIELD FACILITIES

GS EP ECI 002

**Drawings and symbols principles of presentation
at project definition phase**

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1. Scope

The purpose of this specification is to define Company requirements and principles for:

- Drawing normalization (symbols, title blocks etc.),
- Their implementation in Computer Assisted Drawing (CAD),
- CAD system settings and files requirements.

Its aim is to obtain standardized CAD documents in accordance with Company Rules, through all the project phases i.e. project definition, project execution and production operations.

This specification is for schematics (ESD, PFD, UFD, PID etc.) and layouts (Plot Plans, etc.) deliverables.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
ISO 128-20	Technical drawings - General principles of presentation Part 20: Basic conventions for lines
ISO 5455	
ISO 7200-0	
	Technical drawings - Scales
	Technical product documentation - Data fields in title blocks and document headers

Professional Documents

Reference	Title
NFPA 170	Standard for fire safety and emergency symbols

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	



Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP ECP 105	Process documents to be prepared during engineering phase
GS EP ELE 001	Electrical design criteria
GS EP HVA 803	Symbols for P&ID and D&ID
GS EP INS 102	Instrumentation identification

3. Terminology and definitions

There are five types of **statements** in this specification, the “shall”, “should”, “may”, “can” and “must” statements. They are to be understood as follows:

Shall	Is to be understood as mandatory. Deviating from a “shall” statement requires derogation approved by Company.
Should	Is to be understood as strongly recommended to comply with the requirements of the specification. Alternatives shall provide a similar level of protection and this shall be documented.
May	Is to be understood as permission.
Can	Is to be understood as a physical possibility.
Must	Expresses a regulatory obligation

Note that “will” is not to be understood as a statement. Its use is to be avoided, unless it is necessary to describe a sequence of events.

For the purpose of this specification, the following definitions shall apply:

CAD system	Computer Assisted Drawing system
Document	Pieces of information gathered for a specific goal on a support identified by a unique reference. It is an information “vehicle” as opposed to the information itself (e.g. data). A document may include one or more electronic files. A document itself may include one or more documents (e.g. a Study with appendices).
Drawing	All graphical representation with a technical purpose and applicability issued during a project.
Format	Format may have two meanings: 1)“ <u>Electronic file</u> ” format: Characterises the form in which an information is recorded on its support, or coded in its electronic file. For



documents on digital supports, it is generally determined by the software used to generate it and it is characterised by its file extension(s): .doc, .xls, .pdf, etc., It can be native or imported (from another application),

2)"Paper, print / document" format = Size (A0, A1,...,A4), orientation.

Graphics

The art or science of drawing a representation of an object

Project definition

All studies carried out from discovery to before basic engineering / feed such as: preliminary study, conceptual studies and pre-project

Project execution

All studies and works carried out from basic engineering / FEED up to facilities commissioning.

Support

The type of physical support or physical form under which a document is accessible, such as: paper / server / magnetic support / CD ROM.

Symbol

All conventional sign used in writing, drawing or printing to represent equipment of petroleum facilities or infrastructures on PFDs and PIDs

Title block

A box shown on a document or a drawing relating to ownership, identification and numbering of said document / drawing

Visuals

Visible elements of a document or drawing such as letter, color, line, dash, etc.

4. Symbols

Process, instrumentation and safety symbols shall be in accordance with Appendices "symbols".

In no circumstance, two different representations may be used for a same technical function / item in the same plant.

In case any additional specific symbols are needed, Contractor shall submit its proposal to Company for acceptance before implementation.

Contractor shall submit to Company for acceptance, a set of documents, showing the project specific PFD and PID symbols, in accordance with this Specification. This set of standard drawings will be the starting point for all ESD, UFD, PFD and PID drawings.

4.1 Equipment and piping symbols

Equipment and piping symbols shall be in accordance with Appendices "symbols".

4.2 P&ID's equipment characteristics tables

Equipment characteristics shall be indicated in a specific table as shown in Appendices "symbols".

Tables characteristics denomination with their reported values shall be in accordance with Company General Specification: **GS EP ECP 105**.

4.3 Instrumentation symbols

Instrument symbols and identifications are in accordance with above mentioned international rules and practices and with Company General Specification: **GS EP INS 102**.



4.4 Safety symbols

Main symbols commonly used in projects are shown in Appendices “symbols”.

Additional symbols needed shall be taken from [NFPA 170](#), and submitted to Company for approval.

4.5 Electrical symbols

Electrical symbols and identifications shall be in accordance with Company General Specification: [GS EP ELE 001](#).

Additional symbols needed shall be taken from international standards, and submitted to Company for approval.

4.6 HVAC symbols

Electrical symbols and identifications shall be in accordance with Company General Specification: [GS EP HVA 803](#).

Additional symbols needed shall be taken from international standards, and submitted to Company for approval.

5. Graphics and visuals

5.1 Title block

Title blocks deal with the identification, administration and understanding of technical drawings and associated documents.

Title block has a specific representation, as shown in Appendix 3.

5.2 Drawings scale and print tables

Drawing selected scale shall be large enough to permit easy and clear interpretation of the information.

The scale to be chosen for a drawing will depend upon the complexity of the object depicted and the job purpose, refer to [ISO 5455](#).

Due to the degree of detail, P&ID's plot can have only one main equipment item represented on one sheet (system, vendor or sub-supplier package details).

Refer to Company General Specification: [GS EP ECP 105](#).

5.3 Colours

Drawing execution must respect the colour code as described in section 7.

5.4 Drawings revisions

Drawing revision will be highlighted. The concerned drawing area should be delimited by a closed freehand continuous line, representing a cloud (refer to [ISO 128-20](#)).

This line must be executed in the same modified item's layer, just as any other drawing line.



5.5 Fonts, lines

Fonts shapes, sizes and lines formats are described in section 7.

5.6 Trademarks blocks

The Total corporate logo and trademark blocks must be in accordance with the group's graphic standard guidelines as shown in Appendix 3.

Corporate's name and its commercial brands, logos and trademark blocks are registered trademarks.

6. CAD software

Files shall be supplied to Company in native Autocad 2000 format (.dwg), which may be generated by Autocad or Microstation, plus one copy in Adobe Acrobat format (.pdf).

Function	Software	Highest permissible version	Lowest permissible version
Engineering (drawings)	AutoCAD	2009	2005
	Bentley Micro Station	XM	8.5

Drawings shall be made in accordance with the rules defined in paragraph "CAD system settings".

- Adobe Acrobat parameters:
- Format PDF 1.6 shall be used.
- The Adobe property "Tagged PDF" must be set: NO.
- As a firm principle, the Contractor shall keep until the end of Contract, in accordance with the Company, the software configuration described here above **unless** mutually agreed and endorsed by the Company (during Contract period). The Company agreement shall, in that case, be required in writing.
- PDF files shall be created exclusively from the native electronic file and shall not be the result of scans of paper documents.

7. CAD system settings

7.1 Templates

The following templates for screen display and printing shall be used, according to the type of drawing:

Diagrams (PFD's, PID's..)

The selected template is:

- Vision_DIAGRAM_A3H_2010.dwt

DIAGRAMS shall be drawn in Model Space, in horizontal A1 format.

The template and the title block are in this "Paper Space".



DIAGRAMS shall be printed by contractors in A3 format only (P A3H "Layout").

In the P A3H "Layout" there are 6 other "Layout Printing Configurations" for exceptional prints:

- "Layout Printing Configurations": A0H, A1H, A2H, A4H, (A0, A1, A2, A4)
(To be adjusted according to the contractor's printers)
- "Layout Acrobat Generation Configurations": A3H ACROBAT, A4H ACROBAT

Layouts, plot plans...

The selected template is:

- Vision_LAYOUT_A3H_2010.dwt

Layouts shall be drawn in the "Model Space", at scale 1:1.

Layouts shall be printed in A3 format only (P A3H "Layout").

The template and the title block are in this "Paper Space":

- "Layout Printing Configurations": A0H, A1H, A2H, A4H, (A0, A1, A2, A4)
(To be adjusted according to printer)
- "Layout Acrobat Generation Configurations": A3H ACROBAT, A4H ACROBAT

7.2 Layers

Two conventions for the use of layers shall be used, following the type of drawing:

Diagrams (ESD's, PFD's, UFD's, PID's and other schematics.):

Refer to Appendix 1.

Layouts, plot plans:

Refer to Appendix 2.

These Appendices show the names given to the layers, the different colours on screen, the types of lines and their thickness which are linked to the output format (A1 and A3).

They are generally linked to specific associated groups (piping, fitting, instruments...) depending on the disciplines.

For Diagrams, special types of lines have been created (in layers INS_Capill, INS_Elemag, INS_Hydrau, INS_Intern, INS_Pneum) and are provided under specific files:

- Itypeshp1.lin
- Itypeshp1.shx

As well as for particular fonts:

- Arial (Normal)
- Arial Bold

7.3 Title blocks formats

Refer to Appendix 3.



Standard format for title blocks shall be:

- Title_Block_A3_2010.dwg for format A3.

Refer to Appendix 3.

Under no circumstances shall be these title blocks split as they are formatted with “Attributes” for Electronic Documents Management Software.

They shall be filled in accordance with project specifics.

Title Blocks shall be set up in accordance with [ISO 7200-0](#).

Size of symbols / blocks

Symbols are sized considering that they are used in format A1.

The symbol hook-up point is standardized.

A representation is given in Appendices 4 and 5.

Additional blocks may be used if necessary, subject to prior Company approval.

7.4 Indication of dimensions

The main characteristics are, in A1 format:

- Arrowhead size: 5 mm,
- Text size: 3.5 mm,
- Interval between text and dimension line: 1.5 mm

The dimensioning of an element in a non-associative mode will be realised on layer E20.

In other modes, the dimensioning will be carried out in the element's layer.

7.5 Company provided electronics files

Company will supply to Contractor the following electronic files:

7.5.1 Templates

- Vision_DIAGRAM_A3H_2010.dwt
- Vision_LAYOUT_A3H_2010.dwt

7.5.2 Title block

Included in the templates above

7.5.3 Libraries

- Itypeshp1.lin
- Itypeshp1.shx

7.5.4 Plot styles table

- DC12_a3h.ctb



7.5.5 Symbols / blocks directory

As per Appendix 4.

8. Deliverables

Files shall be delivered in A3 "Layout" (P A3H), "extended zoom" function being on (this function shows the drawing in its active limits: 0,0; 420,297).

A drawing list, under Excel and the CAD system used, shall be set up to keep track of all files (CAD System Number, Title, Detail, Revision).

All files and supports shall be virusless guaranteed at the date of their supply.

In case of compression, only ".exe" (self-extracting) files are accepted.

An Adobe Acrobat file (.pdf) shall be created when the CAD drawing is "ready for delivery". This .pdf file shall be generated in colour with plot styles table: DC12_A3H.ctb.

The acrobat file name shall be the same as the native file.

Contractor shall keep a backup copy of all files.



Bibliography

Reference	Title
ISO 3098-0	Technical product documentation – Lettering Part 0: General requirements
ISO 3166-1	Codes for the representation of names of countries and their subdivisions Part 1: Country codes

Reference	Title
GS EP ECI 003	Numbering of wells, Facilities, Equipment and Documents at Project Definition phase
GS EP EXP 501	Equipment and piping numbering
GS EP PJC 702	Requirements for electronic documents at project execution and field operations phases
GS EP PVV 111	Piping design specification
GS EP SAF 312	Fire and gas detection systems



Appendix 1 Layers convention for diagrams

Layer	Designation (group)	Type of line	Screen colour Autocad code	Print Thickness (mm)		Print colour
				A1	A3	

1/ Grassroot project at project definition stage

C35	PRO_Eqp	Equipment (all symbols)	Continuous	102	Dark green	0,35	0,20	Black
C50	PIP_Util	Utility line	Continuous	6	Magenta	0,50	0,30	Black
C70	PIP_Second	Secondary process line	Continuous	55	Khaki	0,70	0,40	Black
C100	PIP_Main	Main process line	Continuous	31	Salmon pink	1,00	0,50	Black
C35	INS_Eqp	Equipment, instrumts (all symbols)	Continuous	132	Sky-blue	0,20	0,17	Black
C20	INS_Undef	Instrum undefined link	Continuous	132	Sky-blue	0,20	0,17	Black
P20	INS_Elect	Instrum electrical link	Cache	132	Sky-blue	0,20	0,17	Black
SP1	INS_Capill	Instrum capillary tube	Capillary tubing	132	Sky-blue	0,20	0,17	Black
SP3	INS_Elemag	Instrum electromagnetic signal	Electromagnetic	132	Sky-blue	0,20	0,17	Black
SP5	INS_Hydrau	Instrum hydraulic signal	Hydraulic	132	Sky-blue	0,20	0,17	Black
SP7	INS_Intern	Instrum internal system link	Internal link	132	Sky-blue	0,20	0,17	Black
SP9	INS_Pneum	Instrum pneumatic signal	Pneumatic	132	Sky-blue	0,20	0,17	Black
F100	Unit_Limit	Unit limit	Fantom	31	Salmon pink	1,00	0,50	Black
D50	Future	Future	Discontinuous	6	Magenta	0,50	0,30	Black
E20	TEXT	Writings	Continuous	7	"White"	-	-	-

2/ Revamping or extension project – at project definition stage

2.1/ Diagrams not showing any existing facilities

New and future facilities diagrams shall be drawn on the same layers as for grass root facilities as described here above.

2.2/ Diagrams showing both existing and new or future facilities

If available in Autocad format, existing facilities diagrams shall be left on their respective layers, but in colour 132 (black), thus keeping the type and thickness of lines. If not available, they shall be inserted in the diagram background as "raster image" of a greyscale scanned paper print of the existing facilities diagram.

New and future facilities diagrams shall be drawn on the layers described here below. If necessary for a better understanding, it is authorised to force the lines thickness by using the Autocad "polyline".



2.2.1/ New facilities

R	R_INS_Eq_Pip	All symbols and piping	Continuous	1	Red	0,35	0,35	Red
PR	R_INS_Elect	Instrum electrical link	Cache	1	Red	0,35	0,35	Red
SP1R	R_INS_Capill	Instrum capillary tube	Capillary tubing	1	Red	0,35	0,35	Red
SP3R	R_INS_Elemag	Instrum electromagnetic signal	Electromagnetic	1	Red	0,35	0,35	Red
SP5R	R_INS_Hydrau	Instrum hydraulic signal	Hydraulic	1	Red	0,35	0,35	Red
SP7R	R_INS_Intern	Instrum internal system link	Internal link	1	Red	0,35	0,35	Red
SP9R	R_INS_Pneum	Instrum pneumatic signal	Pneumatic	1	Red	0,35	0,35	Red
FR	R_Unit_Limit	Unit limit	Fantom	1	Red	0,35	0,35	Red
DR	R_Misc	Others	Discontinuous	1	Red	0,35	0,35	Red
-	R_TEXT	Writings	Continuous	1	Red	0,35	0,35	Red

2.2.2/ Future facilities

V	G_INS_Eq_Pip	All symbols and piping	Continuous	3	Green	0,35	0,35	Green
PV	G_INS_Elect	Instrum electrical link	Cache	3	Green	0,35	0,35	Green
SP1V	G_INS_Capill	Instrum capillary tube	Capillary tubing	3	Green	0,35	0,35	Green
SP3V	G_INS_Elemag	Instrum electromagnetic signal	Electromagnetic	3	Green	0,35	0,35	Green
SP5V	G_INS_Hydrau	Instrum hydraulic signal	Hydraulic	3	Green	0,35	0,35	Green
SP7V	G_INS_Intern	Instrum internal system link	Internal link	3	Green	0,35	0,35	Green
SP9V	G_INS_Pneum	Instrum pneumatic signal	Pneumatic	3	Green	0,35	0,35	Green
FV	G_Unit_Limit	Unit limit	Fantom	3	Green	0,35	0,35	Green
DV	G_Misc	Others	Discontinuous	3	Green	0,35	0,35	Green
-	G_TEXT	Writings	Continuous	3	Green	0,35	0,35	Green

2.2.3/ Other available layers

VI	V_INS_Eq_Pip	All symbols and piping	Continuous	200	Violet	0,35	0,35	Violet
PVI	V_INS_Elect	Instrum electrical link	Cache	200	Violet	0,35	0,35	Violet
SP1VI	V_INS_Capill	Instrum capillary tube	Capillary tubing	200	Violet	0,35	0,35	Violet
SP3VI	V_INS_Elemag	Instrum electromagnetic signal	Electromagnetic	200	Violet	0,35	0,35	Violet
SP5VI	V_INS_Hydrau	Instrum hydraulic signal	Hydraulic	200	Violet	0,35	0,35	Violet
SP7VI	V_INS_Intern	Instrum internal system link	Internal link	200	Violet	0,35	0,35	Violet
SP9VI	V_INS_Pneum	Instrum pneumatic signal	Pneumatic	200	Violet	0,35	0,35	Violet
FV	V_Unit_Limit	Unit limit	Fantom	200	Violet	0,35	0,35	Violet
DV	V_Misc	Others	Discontinuous	200	Violet	0,35	0,35	Violet
-	V_TEXT	Writings	Continuous	200	Violet	0,35	0,35	Violet



Title blocks

CART20	Line 1	Continuous	132	Sky-blue	0,20	0,17	Black
CART35	Line 2	Continuous	102	Dark green	0,35	0,20	Black
CART50	Line 3	Continuous	6	Magenta	0,50	0,30	Black
CART70	Line 4	Continuous	55	Khaki	0,70	0,40	Black
CARTTEXT	Texts	Continuous	7	"White"	0,35	0,35	Black
LOGO	Logo	Continuous	7	"White"	0,35	0,35	Black

Presentation

WINDOW	Fenêtre	Continuous	254	Grey			Grey
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Writings

All writings (Except Title Blocks) shall be realized in the object space, on the _TEXT layers, using the following styles:

Style name	Font		Height (mm)
Arial 1	Arial	Normal	1.0
Arial 1.7	Arial	Normal	1.7
Arial 2.5	Arial	Normal	2.5
Arial 3.5	Arial	Normal	3.5
Arial 5	Arial	Normal	5.0
Arial G 1	Arial	Bold	1.0
Arial G 1.7	Arial	Bold	1.7
Arial G 2.5	Arial	Bold	2.5
Arial G 3.5	Arial	Bold	3.5
Arial G 5	Arial	Bold	5.0



Appendix 2 Layers conventions for layouts

Layers		Designation (group)	Type of line	Screen colour (AutoCad palette)		Print Thickness (mm)		Print colour
(Old)	(Current)			(Code)	(Visual)	A1	A3	

1/ Grassroot project at project definition stage

C50	EQUIPMENT	Visible facilities: equipment	Continuous	6	Magenta	0,50	0,30	Black
C50	UTILITIES	Visible facilities: equipment	Continuous	6	Magenta	0,50	0,30	Black
C70	PRI_STRU	Primary structure	Continuous	55	Khaki	0,70	0,40	Black
C35	SEC_STRU	Secondary structure	Continuous	102	Dark green	0,35	0,20	Black
C20	TER_STRU	Tertiary structure	Continuous	132	Sky-blue	0,20	0,17	Black
C50	PRI_PIPE	Primary piping	Continuous	6	Magenta	0,50	0,30	Black
C35	SEC_PIPE	Secondary piping	Continuous	102	Dark green	0,35	0,20	Black
C20	TER_PIPE	Tertiary piping	Continuous	132	Sky-blue	0,20	0,17	Black
C20	CIV_WORK	Civil work	Continuous	132	Sky-blue	0,20	0,17	Black
SP1	FENCE	Fences	Capillary tubing	132	Sky-blue	0,20	0,17	Black
F35	UNIT_LIM	Boundaries & units limits	Fantom	102	Dark green	0,35	0,20	Black
C20	MAINTEN	Maintenance Areas & Facilities	Continuous	132	Sky-blue	0,20	0,17	Black
E20	TEXT	Writings	Continuous	7	White			Black
C20	DIM	Dimensioning	Continuous	132	Sky-blue	0,20	0,17	Black
VI	SAF_DIST	Safety distances	Continuous	200	Violet	0,50	0,30	Violet
OD	SAF_ESC	Safety Escape ways	Continuous	30	Orange	0,50	0,30	Orange
VI	HAZ_AREA	Hazardous Areas	Continuous	200	Violet	0,50	0,30	Violet
VI	FLA_RAD	Flaring radiations	Continuous	200	Violet	0,50	0,30	Violet
BR	TOPO	Topography	Continuous	34	Brown	0,50	0,30	Brown
B	BATHY	Bathymetry	Continuous	5	Blue	0,50	0,30	Blue

2/ Revamping or extension project – at project definition stage

2.1/ Layouts not showing any existing facilities

New and future facilities shall be drawn on the same layers as for grass root facilities as described here above.

2.2/ Layouts showing both existing and new or future facilities

If available in Autocad format, existing facilities layouts shall be left on their respective layers, but in colour 132 (black), thus keeping the type and thickness of lines. If not available, they shall be inserted in the drawing background as "raster image" of a greyscale scanned paper print of the existing facilities drawing.

New and future facilities shall be drawn on the layers described here below. If necessary for a better understanding, it is authorised to force the lines thickness by using the Autocad "polyline" command.



2.2.1/ New facilities

AR	R_Axis_Struct	Construction Axis & one line struct	Axis	1	Red	0,35	0,35	Red
PR	R_Hidden_CA	Not visible (hidden) facilities	Cache	1	Red	0,35	0,35	Red
POR	R_Hidden_DO	Not visible (hidden) facilities	Dotted	1	Red	0,35	0,35	Red
DR	R_Buried	Buried items: pipes, cables etc...	Discontinuous	1	Red	0,35	0,35	Red
FR	R_UNIT_Limit	Boundaries & units limits	Fantom	1	Red	0,35	0,35	Red
R	R_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	1	Red	0,35	0,35	Red
	R_FENCE	Fences	Capillary tubing	1	Red	0,35	0,35	Red
R	R_COTATION	Dimensioning	Continuous	1	Red	0,35	0,35	Red
	R_TEXT	Writings	Continuous	1	Red	0,35	0,35	Red

2.2.2/ Future facilities

AV	G_Axis_Struct	Construction Axis & one line struct	Axis	3	Green	0,35	0,35	Green
PV	G_Hidden_CA	Not visible (hidden) facilities	Cache	3	Green	0,35	0,35	Green
POV	G_Hidden_DO	Not visible (hidden) facilities	Dotted	3	Green	0,35	0,35	Green
DV	G_Buried	Buried items: pipes, cables etc...	Discontinuous	3	Green	0,35	0,35	Green
FV	G_UNIT_Limit	Boundaries & units limits	Fantom	3	Green	0,35	0,35	Green
V	G_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	3	Green	0,35	0,35	Green
	G_FENCE	Fences	Capillary tubing	3	Green	0,35	0,35	Green
V	G_COTATION	Dimensioning	Continuous	3	Green	0,35	0,35	Green
	G_TEXT	Writings	Continuous	3	Green	0,35	0,35	Green

2.2.3/ Other layers available

AB	B_Axis_Struct	Construction Axis & one line struct	Axis	5	Blue	0,35	0,35	Blue
PB	B_Hidden_CA	Not visible (hidden) facilities	Cache	5	Blue	0,35	0,35	Blue
POB	B_Hidden_DO	Not visible (hidden) facilities	Dotted	5	Blue	0,35	0,35	Blue
DO	B_Buried	Buried items: pipes, cables etc...	Discontinuous	5	Blue	0,35	0,35	Blue
FO	B_UNIT_Limit	Boundaries & units limits	Fantom	5	Blue	0,35	0,35	Blue
VO	B_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	5	Blue	0,35	0,35	Blue
	B_FENCE	Fences	Capillary tubing	5	Blue	0,35	0,35	Blue
VO	B_COTATION	Dimensioning	Continuous	5	Blue	0,35	0,35	Blue
	B_TEXT	Writings	Continuous	5	Blue	0,35	0,35	Blue



2.2.4/ Other layers available

ABC	BL_Axis_Struct	Construction Axis & one line struct	Axis	130	Light blue	0,35	0,35	L Blue
PBC	BL_Hidden_CA	Not visible (hidden) facilities	Cache	130	Light blue	0,35	0,35	L Blue
POBC	BL_Hidden_DO	Not visible (hidden) facilities	Dotted	130	Light blue	0,35	0,35	L Blue
DBC	BL_Buried	Buried items: pipes, cables etc...	Discontinuous	130	Light blue	0,35	0,35	L Blue
FBC	BL_UNIT_Limit	Boundaries & units limits	Fantom	130	Light blue	0,35	0,35	L Blue
VBC	BL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	130	Light blue	0,35	0,35	L Blue
	BL_FENCE	Fences	Capillary tubing	130	Light blue	0,35	0,35	L Blue
VBC	BL_COTATION	Dimensioning	Continuous	130	Light blue	0,35	0,35	L Blue
	BL_TEXT	Writings	Continuous	130	Light blue	0,35	0,35	L Blue

2.2.5/ Other layers available

AM	BR_Axis_Struct	Construction Axis & one line struct	Axis	34	Brown	0,35	0,35	Brown
PM	BR_Hidden_CA	Not visible (hidden) facilities	Cache	34	Brown	0,35	0,35	Brown
POM	BR_Hidden_DO	Not visible (hidden) facilities	Dotted	34	Brown	0,35	0,35	Brown
DM	BR_Buried	Buried items: pipes, cables etc...	Discontinuous	34	Brown	0,35	0,35	Brown
FM	BR_UNIT_Limit	Boundaries & units limits	Fantom	34	Brown	0,35	0,35	Brown
VM	BR_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	34	Brown	0,35	0,35	Brown
	BR_FENCE	Fences	Capillary tubing	34	Brown	0,35	0,35	Brown
VM	BR_COTATION	Dimensioning	Continuous	34	Brown	0,35	0,35	Brown
	BR_TEXT	Writings	Continuous	34	Brown	0,35	0,35	Brown

2.2.6/ Other layers available

	BRL_Axis_Struct	Construction Axis & one line struct	Axis	43	Light Brown	0,35	0,35	L Brown
	BRL_Hidden_CA	Not visible (hidden) facilities	Cache	43	Light Brown	0,35	0,35	L Brown
	BRL_Hidden_DO	Not visible (hidden) facilities	Dotted	43	Light Brown	0,35	0,35	L Brown
	BRL_Buried	Buried items: pipes, cables etc...	Discontinuous	43	Light Brown	0,35	0,35	L Brown
	BRL_UNIT_Limit	Boundaries & units limits	Fantom	43	Light Brown	0,35	0,35	L Brown
	BRL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	43	Light Brown	0,35	0,35	L Brown
	BR_FENCE	Fences	Capillary tubing	43	Light Brown	0,35	0,35	L Brown
	BRL_COTATION	Dimensioning	Continuous	43	Light Brown	0,35	0,35	L Brown
	BRL_TEXT	Writings	Continuous	43	Light Brown	0,35	0,35	L Brown



2.2.7/ Other layers available

	GL_Axis_Struct	Construction Axis & one line struct	Axis	60	Light Green	0,35	0,35	L Green
	GL_Hidden_CA	Not visible (hidden) facilities	Cache	60	Light Green	0,35	0,35	L Green
	GL_Hidden_DO	Not visible (hidden) facilities	Dotted	60	Light Green	0,35	0,35	L Green
	GL_Buried	Buried items: pipes, cables etc...	Discontinuous	60	Light Green	0,35	0,35	L Green
	GL_UNIT_Limit	Boundaries & units limits	Fantom	60	Light Green	0,35	0,35	L Green
	GL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	60	Light Green	0,35	0,35	L Green
	GL_FENCE	Fences	Capillary tubing	60	Light Green	0,35	0,35	L Green
	GL_COTATION	Dimensioning	Continuous	60	Light Green	0,35	0,35	L Green
	GL_TEXT	Writings	Continuous	60	Light Green	0,35	0,35	L Green

2.2.8/ Other layers available

AG	GR_Axis_Struct	Construction Axis & one line struct	Axis	255	Grey	0,35	0,35	Grey
PG	GR_Hidden_CA	Not visible (hidden) facilities	Cache	255	Grey	0,35	0,35	Grey
POG	GR_Hidden_DO	Not visible (hidden) facilities	Dotted	255	Grey	0,35	0,35	Grey
DG	GR_Buried	Buried items: pipes, cables etc...	Discontinuous	255	Grey	0,35	0,35	Grey
FG	GR_UNIT_Limit	Boundaries & units limits	Fantom	255	Grey	0,35	0,35	Grey
G	GR_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	255	Grey	0,35	0,35	Grey
	GR_FENCE	Fences	Capillary tubing	255	Grey	0,35	0,35	Grey
G	GR_COTATION	Dimensioning	Continuous	255	Grey	0,35	0,35	Grey
	GR_TEXT	Writings	Continuous	255	Grey	0,35	0,35	Grey

2.2.9/ Other layers available

	GRL_Axis_Struct	Construction Axis & one line struct	Axis	255	Light Grey	0,35	0,35	L Grey
	GRL_Hidden_CA	Not visible (hidden) facilities	Cache	255	Light Grey	0,35	0,35	L Grey
	GRL_Hidden_DO	Not visible (hidden) facilities	Dotted	255	Light Grey	0,35	0,35	L Grey
	GRL_Buried	Buried items: pipes, cables etc...	Discontinuous	255	Light Grey	0,35	0,35	L Grey
	GRL_UNIT_Limit	Boundaries & units limits	Fantom	255	Light Grey	0,35	0,35	L Grey
	GRL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	255	Light Grey	0,35	0,35	L Grey
	GRL_FENCE	Fences	Capillary tubing	255	Light Grey	0,35	0,35	L Grey
	GRL_COTATION	Dimensioning	Continuous	255	Light Grey	0,35	0,35	L Grey
	GRL_TEXT	Writings	Continuous	255	Light Grey	0,35	0,35	L Grey



2.2.10/ Other layers available

AO	O_Axis_Struct	Construction Axis & one line struct	Axis	40	Orange	0,35	0,35	Orange
PO	O_Hidden_CA	Not visible (hidden) facilities	Cache	40	Orange	0,35	0,35	Orange
POO	O_Hidden_DO	Not visible (hidden) facilities	Dotted	40	Orange	0,35	0,35	Orange
DO	O_Buried	Buried items: pipes, cables etc...	Discontinuous	40	Orange	0,35	0,35	Orange
FO	O_UNIT_Limit	Boundaries & units limits	Fantom	40	Orange	0,35	0,35	Orange
O	O_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	40	Orange	0,35	0,35	Orange
	O_FENCE	Fences	Capillary tubing	40	Orange	0,35	0,35	Orange
O	O_COTATION	Dimensioning	Continuous	40	Orange	0,35	0,35	Orange
	O_TEXT	Writings	Continuous	40	Orange	0,35	0,35	Orange

2.2.11/ Other layers available

	OD_Axis_Struct	Construction Axis & one line struct	Axis	30	Dark Orange	0,35	0,35	D Orange
	OD_Hidden_CA	Not visible (hidden) facilities	Cache	30	Dark Orange	0,35	0,35	D Orange
	OD_Hidden_DO	Not visible (hidden) facilities	Dotted	30	Dark Orange	0,35	0,35	D Orange
	OD_Buried	Buried items: pipes, cables etc...	Discontinuous	30	Dark Orange	0,35	0,35	D Orange
	OD_UNIT_Limit	Boundaries & units limits	Fantom	30	Dark Orange	0,35	0,35	D Orange
	OD_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	30	Dark Orange	0,35	0,35	D Orange
	OD_FENCE	Fences	Capillary tubing	30	Dark Orange	0,35	0,35	D Orange
	OD_COTATION	Dimensioning	Continuous	30	Dark Orange	0,35	0,35	D Orange
	OD_TEXT	Writings	Continuous	30	Dark Orange	0,35	0,35	D Orange

2.2.12/ Other Layers available

	OL_Axis_Struct	Construction Axis & one line struct	Axis	41	Light Orange	0,35	0,35	L Orange
	OL_Hidden_CA	Not visible (hidden) facilities	Cache	41	Light Orange	0,35	0,35	L Orange
	OL_Hidden_DO	Not visible (hidden) facilities	Dotted	41	Light Orange	0,35	0,35	L Orange
	OL_Buried	Buried items: pipes, cables etc...	Discontinuous	41	Light Orange	0,35	0,35	L Orange
	OL_UNIT_Limit	Boundaries & units limits	Fantom	41	Light Orange	0,35	0,35	L Orange
	OL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	41	Light Orange	0,35	0,35	L Orange
	OL_FENCE	Fences	Capillary tubing	41	Light Orange	0,35	0,35	L Orange
	OL_COTATION	Dimensioning	Continuous	41	Light Orange	0,35	0,35	L Orange
	OL_TEXT	Writings	Continuous	41	Light Orange	0,35	0,35	L Orange



2.2.13/ New facilities

	RL_Axis_Struct	Construction Axis & one line struct	Axis	241	Light Red	0,35	0,35	L Red
	RL_Hidden_CA	Not visible (hidden) facilities	Cache	241	Light Red	0,35	0,35	L Red
	RL_Hidden_DO	Not visible (hidden) facilities	Dotted	241	Light Red	0,35	0,35	L Red
	RL_Buried	Buried items: pipes, cables etc...	Discontinuous	241	Light Red	0,35	0,35	L Red
	RL_UNIT_Limit	Boundaries & units limits	Fantom	241	Light Red	0,35	0,35	L Red
	RL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	241	Light Red	0,35	0,35	L Red
	RL_FENCE	Fences	Capillary tubing	241	Light Red	0,35	0,35	L Red
	RL_COTATION	Dimensioning	Continuous	241	Light Red	0,35	0,35	L Red
	RL_TEXT	Writings	Continuous	241	Light Red	0,35	0,35	L Red

2.2.14/ Other layers available

AVI	V_Axis_Struct	Construction Axis & one line struct	Axis	200	Violet	0,35	0,35	Violet
PVI	V_Hidden_CA	Not visible (hidden) facilities	Cache	200	Violet	0,35	0,35	Violet
POVI	V_Hidden_DO	Not visible (hidden) facilities	Dotted	200	Violet	0,35	0,35	Violet
DVI	V_Buried	Buried items: pipes, cables etc...	Discontinuous	200	Violet	0,35	0,35	Violet
FVI	V_UNIT_Limit	Boundaries & units limits	Fantom	200	Violet	0,35	0,35	Violet
VI	V_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	200	Violet	0,35	0,35	Violet
	V_FENCE	Fences	Capillary tubing	200	Violet	0,35	0,35	Violet
	V_COTATION	Dimensioning	Continuous	200	Violet	0,35	0,35	Violet
	V_TEXT	Writings	Continuous	200	Violet	0,35	0,35	Violet

2.2.15/ Other layers available

	VL_Axis_Struct	Construction Axis & one line struct	Axis	211	Light Violet	0,35	0,35	L Violet
	VL_Hidden_CA	Not visible (hidden) facilities	Cache	211	Light Violet	0,35	0,35	L Violet
	VL_Hidden_DO	Not visible (hidden) facilities	Dotted	211	Light Violet	0,35	0,35	L Violet
	VL_Buried	Buried items: pipes, cables etc...	Discontinuous	211	Light Violet	0,35	0,35	L Violet
	VL_UNIT_Limit	Boundaries & units limits	Fantom	211	Light Violet	0,35	0,35	L Violet
	VL_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	211	Light Violet	0,35	0,35	L Violet
	VL_FENCE	Fences	Capillary tubing	211	Light Violet	0,35	0,35	L Violet
	VL_COTATION	Dimensioning	Continuous	211	Light Violet	0,35	0,35	L Violet
	VL_TEXT	Writings	Continuous	211	Light Violet	0,35	0,35	L Violet



2.2.16/ Other layers available

Y_Axis_Struct	Construction Axis & one line struct	Axis	Yellow	Yellow	0,35	0,35	Yellow
Y_Hidden_CA	Not visible (hidden) facilities	Cache	Yellow	Yellow	0,35	0,35	Yellow
Y_Hidden_DO	Not visible (hidden) facilities	Dotted	Yellow	Yellow	0,35	0,35	Yellow
Y_Buried	Buried items: pipes, cables etc...	Discontinuous	Yellow	Yellow	0,35	0,35	Yellow
Y_UNIT_Limit	Boundaries & units limits	Fantom	Yellow	Yellow	0,35	0,35	Yellow
Y_EQP_Misc	Visible facilities: eqpt struct piping	Continuous	Yellow	Yellow	0,35	0,35	Yellow
Y_FENCE	Fences	Capillary tubing	Yellow	Yellow	0,35	0,35	Yellow
Y_COTATION	Dimensioning	Continuous	Yellow	Yellow	0,35	0,35	Yellow
Y_TEXT	Writings	Continuous	Yellow	Yellow	0,35	0,35	Yellow

2.3/ ICS Layers colors:

These layers colors are used in accordance of the background witch can be clear or dark back-grounded:

Blue

- Shorelines & principal bathymetric lines on layouts
- Dismantled facilities in continuous line style on plot plans
- Edges of other decks in phantom line style on plot plans
- Sea levels in continuous line style on elevations.

Light Blue

- Secondary bathymetric lines on layouts.
- Cocooned facilities on plot plans.
- Sea levels shades or background on elevations.
- Indication boxes background to highlight texts.

Brown

- Primary topographic lines on onshore layouts.
- Boat access areas & Pipes corridors on offshore layouts.
- Mud line & associated shades on elevations.
- Facilities installation access during revamping.



Light Brown

- Secondary topographic lines on onshore plot plans.

Or on dark background photo reference for:

- Primary topographic lines on onshore plot plans.
- Boat access areas on offshore plot plans.
- Indication boxes background to highlight texts.

Light Green

On dark background photo reference for:

- Future Installations.
- Indication boxes background to highlight texts.

Grey

- Pipelines on onshore layouts.
- Mud line jacket impact on layouts.
- Coordinates on Dots or Axis Layer.

Light Grey

- Masking existing text or facilities (White appearance background).

Or on dark background photo reference for:

- Pipelines on onshore plot plans.
- Indication boxes background to highlight texts.
- Coordinates on Dots or Axis Layer.

Orange

- Boats or drilling facilities (Jack-up, Tender rig...) on layouts.

Orange Dark

- Escape ways on safety plot plans.
- Other Boats or drilling facilities (Jack-up, Tender rig...) on layouts



Light Orange

- Other Boats or drilling facilities (Jack-up, Tender rig...) on layouts

Or on dark background photo reference for:

- Pipelines on onshore layouts.
- Indication boxes background to highlight texts.

Light Red

- Dredging impact on layouts
- Zone 1 Hazardous areas in safety plot plans
- Indication boxes background to highlight texts.

Or on dark background photo reference for:

- Pipelines on onshore layouts.

Violet

- Safety distances.
- Flaring radiations.
- Zone 2 Hazardous areas in safety plot plans

Light Violet

- Indication boxes background to highlight texts.

Or on dark background photo reference for:

- Safety distances.
- Flaring radiations.

Yellow

- Indication boxes background to highlight texts.

Or on dark background photo reference for:

- Pipelines on onshore layouts.



Title Blocks

CART20	Line 1	Continuous	132	Sky-blue	0,20	0,17	Black
CART35	Line 2	Continuous	102	Dark green	0,35	0,20	Black
CART50	Line 3	Continuous	6	Magenta	0,50	0,30	Black
CART70	Line 4	Continuous	55	Khaki	0,70	0,40	Black
CARTEXT	Texts	Continuous	7	"White"	0,35	0,35	Black
LOGO	Logo	Continuous	7	"White"	0,35	0,35	Black

Presentation

WINDOW	Fenêtre	Continuous	254	Grey			Grey
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Writings

All writings (Except Title Blocks) shall be realized in the "Object Space", on the _TEXT layers, using the Arial style to obtain in "Paper Space" these fonts sizes:

Style name	Font		Height (mm)
Arial 1	Arial	Normal	1.0
Arial 1.7	Arial	Normal	1.7
Arial 2.5	Arial	Normal	2.5
Arial 3.5	Arial	Normal	3.5
Arial 5	Arial	Normal	5.0
Arial G 1	Arial	Bold	1.0
Arial G 1.7	Arial	Bold	1.7
Arial G 2.5	Arial	Bold	2.5
Arial G 3.5	Arial	Bold	3.5
Arial G 5	Arial	Bold	5.0



Appendix 3 Title block

Title_Block_A3_2010.dwg

XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
XX	XX/XX/XX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXX
Rev	Date	Status	Revision Memo	Issued by	Checked by	Approved by
 TOTAL Exploration Production		Project name & Logo		Contractor name & Logo		
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N° contracts/RFS: XXXXXXXXXXXXXXXXXXXX			Contractor name: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
SUBSIDIARY/CUSTOMER						
PROJECT TITLE					Study Type	
TITLE/FACILITIES DETAILS DOCUMENT TYPE						
Doc type: XXXXXX	Syst. / S-Syst.: XXXXXX	Discipline: XXXXXXXX	Electronic Filename XX_XXX_XX_XXX_XXXXXX_XX.XXX			
Company Ref:	XX_XXX_XX_XXX_XXXXXX			Revision:	Scale: 1/XXXXXX	
Contractor Ref:	XXXXXXXXXXXXXXXXXXXXXXXXXX			XX	Folio: X/Y	



Attributes” for Electronic Documents Management Software are defined as below:

0_REV_10	0_DATE_10	XXXXXX	0_LIB_10	0_FREE_9_10	0_FREE_1_10	0_FREE_2_10
0_REV_9	0_DATE_9	XXXXXX	0_LIB_9	0_FREE_9_9	0_FREE_1_9	0_FREE_2_9
0_REV_8	0_DATE_8	XXXXXX	0_LIB_8	0_FREE_9_8	0_FREE_1_8	0_FREE_2_8
0_REV_7	0_DATE_7	XXXXXX	0_LIB_7	0_FREE_9_7	0_FREE_1_7	0_FREE_2_7
0_REV_6	0_DATE_6	XXXXXX	0_LIB_6	0_FREE_9_6	0_FREE_1_6	0_FREE_2_6
0_REV_5	0_DATE_5	XXXXXX	0_LIB_5	0_FREE_9_5	0_FREE_1_5	0_FREE_2_5
0_REV_4	0_DATE_4	XXXXXX	0_LIB_4	0_FREE_9_4	0_FREE_1_4	0_FREE_2_4
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0_REV_2	0_DATE_2	XXXXXX	0_LIB_2	0_FREE_9_2	0_FREE_1_2	0_FREE_2_2
0_REV_1	0_DATE_1	XXXXXX	0_LIB_1	0_FREE_9_1	0_FREE_1_1	0_FREE_2_1
Rev	Date	Status	Revision Memo	Issued by	Checked by	Approved by
Company name & Logo			Project name & Logo		Contractor name & Logo	
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N° contracts/RFS: 0_FREE_6_[1/1]			Contractor name: 0_FREE_5_[1/1]			
0_PRO_SUBS_NAM						
0_DOC_TIT					0_DOC_STUD_TYP	
0_DOC_FACILITI						
0_DOC_DETAILS						
0_TDI_TYPE						
Doc type: 0_FREE_3_[1/1]		Syst. / S-Syst.: 0_FREE_7_[1/1]		Discipline: 0_FREE_10_[1/1]		Electronic Filename: ACAD_FILE
Company Ref: 0_PRO_COUN_COD 0_PRO_FIELD 0_TDI_ACTIVITY 0_PLAN_NUM				Revision: 0_REV_[1/1]		Scale: 0_DOC_SCALE
Contractor Ref: 0_FREE_4_[1/1]				0_REV_[1/1]		Folio: 0_NUM_FOL

Capture Field Name	Invite	Description / Format
0_FREE_6_[1/1]	N° Contract/RFS	N° Contract/RFS
0_FREE_5_[1/1]	Contractor Name	Contractor Name
0_PRO_SUBS_NAM	Customer of Field	Name of Customer (subsidiary etc..)
0_DOC_TIT	Document title	Incl. Field name or Location name
0_DOC_STUD_TYP	Type of Study	Type of study (Prospect, Preliminary, Conceptual, Pre-project)
0_DOC_FACILITI	Name of Facilities	Name of the facilities
0_DOC_DETAILS	Designation	Plan view, section etc...
0_TDI_TYPE	Type of Drawing	Type of drawing
0_FREE_3_[1/1]	Doc Type	Doc Type
0_FREE_7_[1/1]	Syst. / S-Syst.	Syst. / S-Syst.
0_FREE_10_[1/1]	Discipline	Discipline
ACAD_FILE	Company Ref	Company Ref



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Appendix 3

Capture Field Name	Invite	Description / Format
0_FREE_2_5	Approved 4	Approved by
0_REV_6	Revision 5	Revision
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(Free)	(Free)	Status
0_LIB_6	Revision Memo 5	Revision Memo
0_FREE_9_6	Issued 5	Issued by
0_FREE_1_6	Checked 5	Checked by
0_FREE_2_6	Approved 5	Approved by
0_REV_7	Revision 6	Revision
0_DATE_7	Date 6	Date
(Free)	(Free)	Status
0_LIB_7	Revision Memo 6	Revision Memo
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0_FREE_1_7	Checked 6	Checked by
0_FREE_2_7	Approved 6	Approved by
0_REV_8	Revision 7	Revision
0_DATE_8	Date 7	Date
(Free)	(Free)	Status
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0_FREE_1_8	Checked 7	Checked by
0_FREE_2_8	Approved 7	Approved by
0_REV_9	Revision 8	Revision
0_DATE_9	Date 8	Date
(Free)	(Free)	Status
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0_FREE_1_9	Checked 8	Checked by
0_FREE_2_9	Approved 8	Approved by
0_REV_10	Revision 9	Revision
0_DATE_10	Date 9	Date
(Free)	(Free)	Status
0_LIB_10	Revision Memo 9	Revision Memo
0_FREE_9_10	Issued 9	Issued by
0_FREE_1_10	Checked 9	Checked by
0_FREE_2_10	Approved 9	Approved by



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Date: 01/2012

GS EP ECI 002

Rev: 06

Appendix 3

Capture Field Name	Invite	Description / Format
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0_REV_6	Revision 5	Revision
0_DATE_6	Date 5	Date
(Free)	(Free)	Status
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0_FREE_9_6	Issued 5	Issued by
0_FREE_1_6	Checked 5	Checked by
0_FREE_2_6	Approved 5	Approved by
0_REV_7	Revision 6	Revision
0_DATE_7	Date 6	Date
(Free)	(Free)	Status
0_LIB_7	Revision Memo 6	Revision Memo
0_FREE_9_7	Issued 6	Issued by
0_FREE_1_7	Checked 6	Checked by
0_FREE_2_7	Approved 6	Approved by
0_REV_8	Revision 7	Revision
0_DATE_8	Date 7	Date
(Free)	(Free)	Status
0_LIB_8	Revision Memo 7	Revision Memo
0_FREE_9_8	Issued 7	Issued by
0_FREE_1_8	Checked 7	Checked by
0_FREE_2_8	Approved 7	Approved by
0_REV_9	Revision 8	Revision
0_DATE_9	Date 8	Date
(Free)	(Free)	Status
0_LIB_9	Revision Memo 8	Revision Memo
0_FREE_9_9	Issued 8	Issued by
0_FREE_1_9	Checked 8	Checked by
0_FREE_2_9	Approved 8	Approved by
0_REV_10	Revision 9	Revision
0_DATE_10	Date 9	Date
(Free)	(Free)	Status
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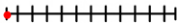


Appendix 4 PFD symbols

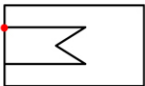
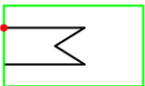
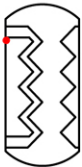
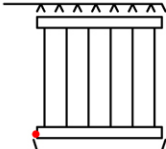
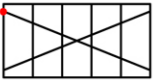
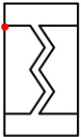
PFD - Equipment – Air coolers

EA1000	
AIR COOLER	
SCALE : 0.5	

EA1003	
AIR COOLER WITH CONTROL	
SCALE : 0.5	

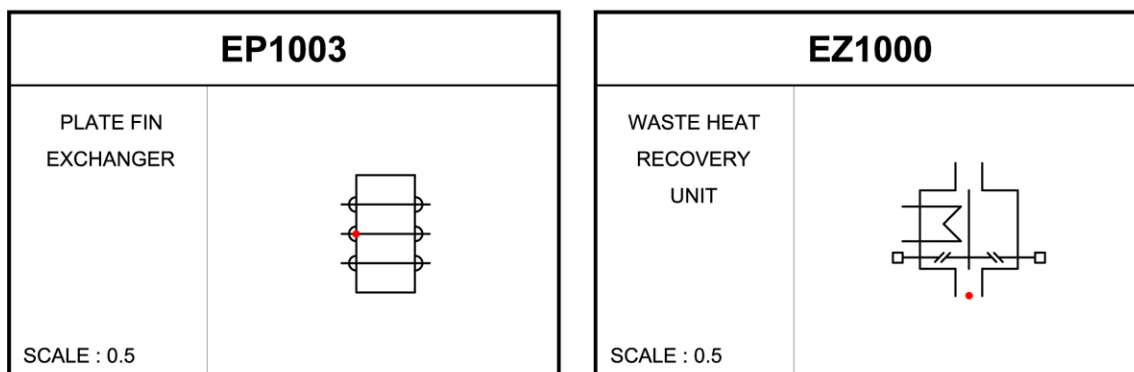
EA1005	
FINED TUBE EXCHANGER	
SCALE : 0.5	

PFD - Equipment – Heat exchangers (1/2)

EC1000 COIL IN BOX  SCALE : 0.5	EC1001 COIL  SCALE : 0.5
EM1000 SPOOL WOUND EXCHANGER  SCALE : 0.5	EM1001 OPEN RACK LNG/LPG VAPORISER  SCALE : 0.5
EM1002 SUBMERGED COMBUSTION LNG/LPG VAPORISER  SCALE : 0.5	EP1000 COMPACT TYPE HEAT EXCHANGER  SCALE : 0.5
EP1001 DOUBLE PIPE HEAT EXCHANGER  SCALE : 0.5	EP1002 PLATE FRAME TYPE  SCALE : 0.5

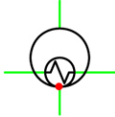
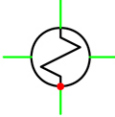


PFD - Equipment – Heat exchangers (2/2)



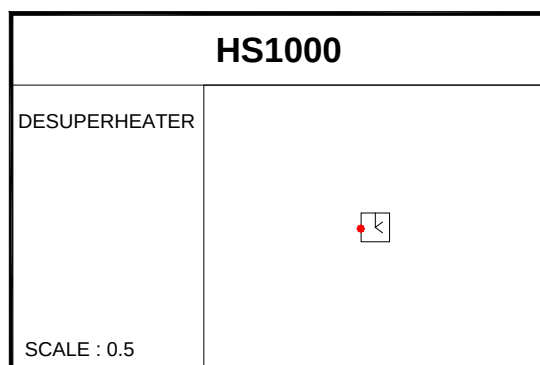
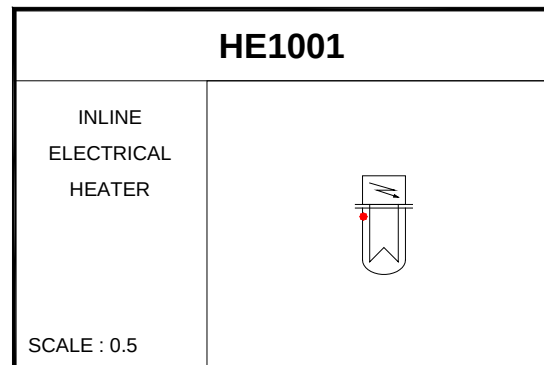
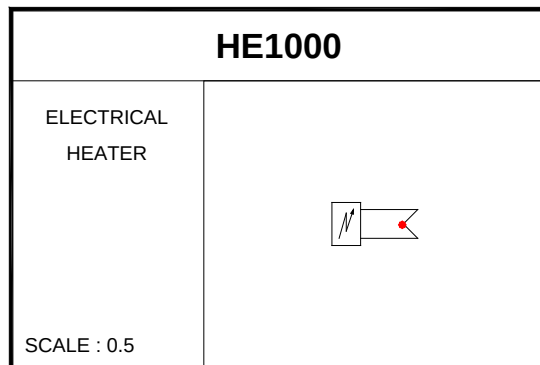
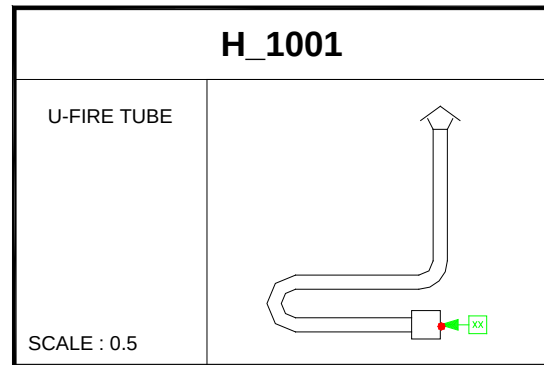
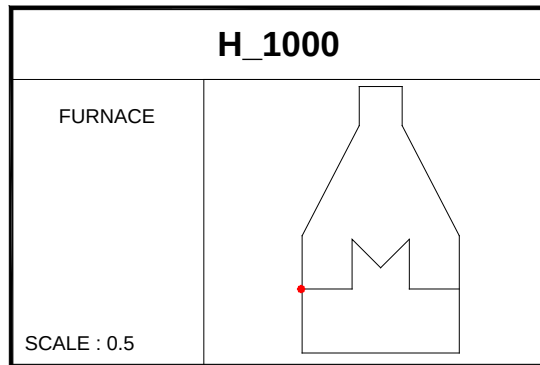


PFD - Equipment – Shell & tubes exchangers

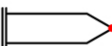
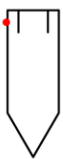
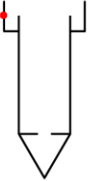
ES1000		ES1004	
SHELL AND TUBE EXCHANGER		SHELL AND TUBE "KETTLE" TYPE	
SCALE : 0.5		SCALE : 0.5	



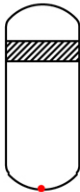
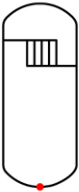
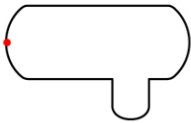
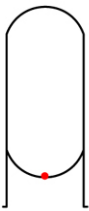
PFD - Equipment – Heaters & boilers



PFD - Equipment – Drums & separators (1/2)

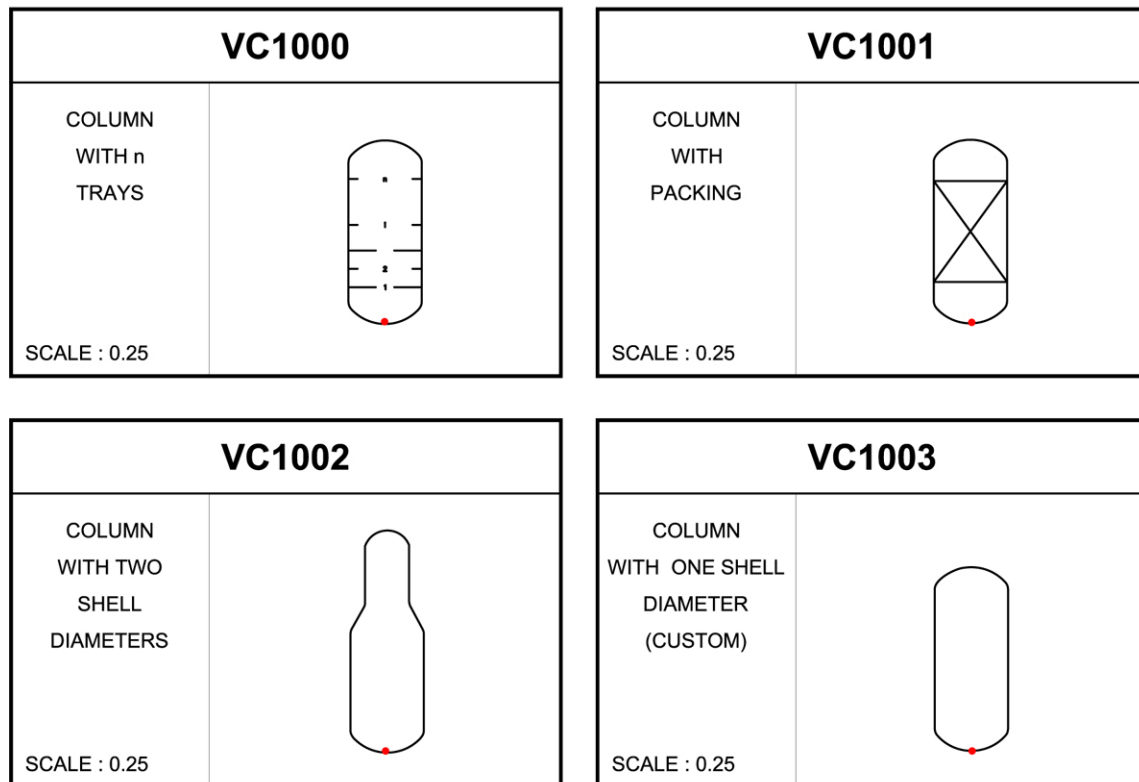
VF1000 AIR FILTER  SCALE : 0.5	VF1001 CARTRIDGE FILTER  SCALE : 0.5
VP1000 PIG TRAP  SCALE : 0.5	UF1000 HYDROCYCLONE  SCALE : 0.5
UZ1000 RESIN BACKWASH  SCALE : 0.5	UJ1000 DIESEL OIL CENTRIFUGE  SCALE : 0.5

PFD - Equipment – Drums & separators (2/2)

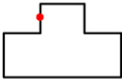
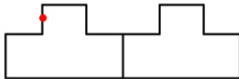
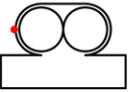
V_1000 VERTICAL TWO PHASES DRUM WITH MESH  SCALE : 0.25	V_1001 VERTICAL TWO PHASES DRUM WITH VANE PACK  SCALE : 0.25
V_1002 HORIZONTAL DRUM OR SEPARATOR TWO OR THREE PHASES  SCALE : 0.25	V_1003 HORIZONTAL DRUM OR SEPARATOR TWO OR THREE PHASES WITH BOOT  SCALE : 0.25
V_1004 FLAT TOP VESSEL  SCALE : 0.25	V_1005 DEGASSING BOOT  SCALE : 0.25



PFD - Equipment – Columns

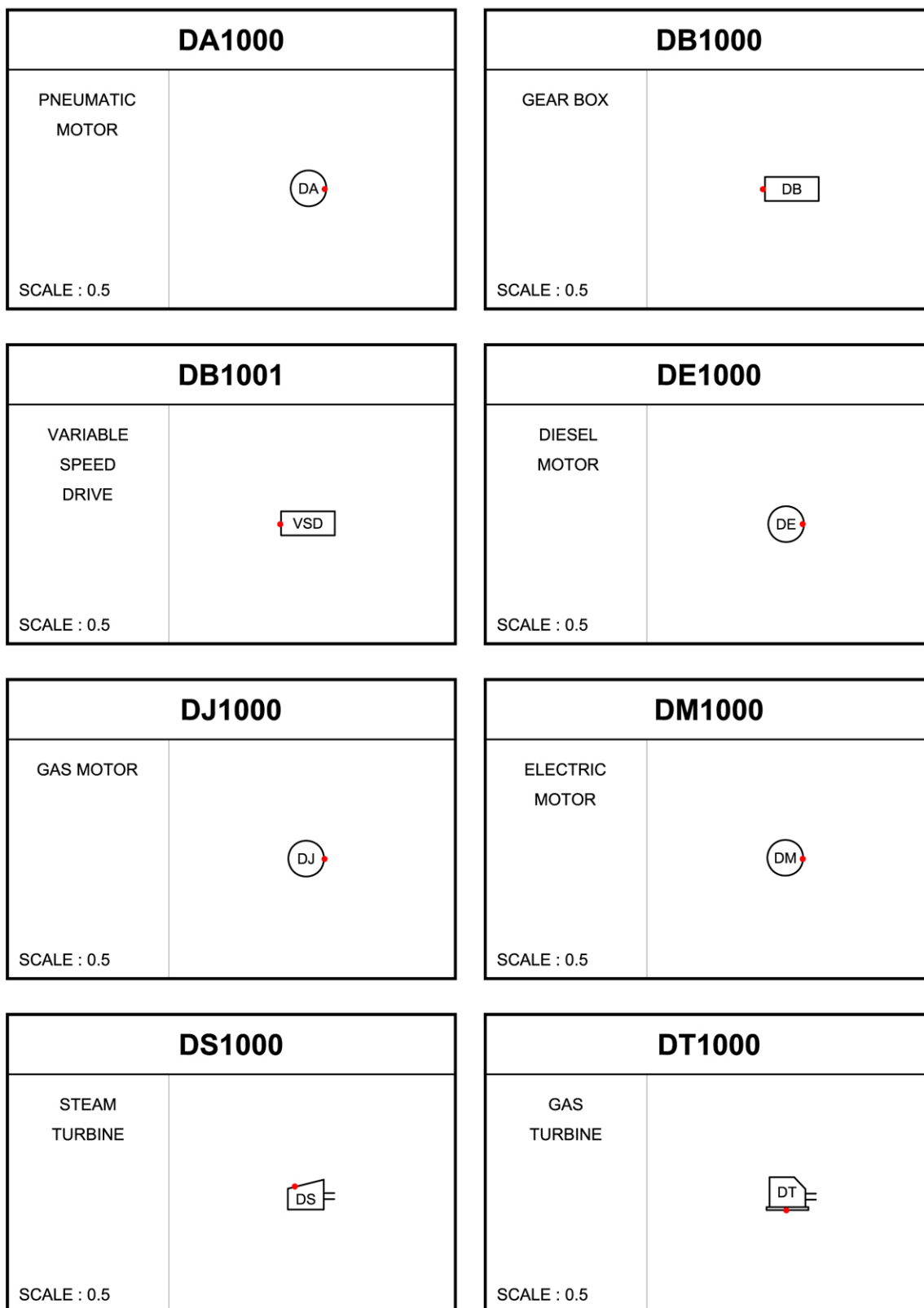


PFD - Equipment – Compressors & generators

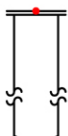
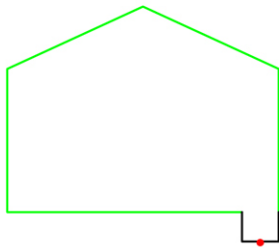
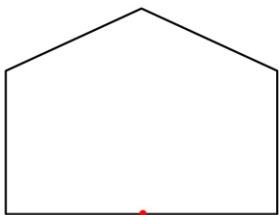
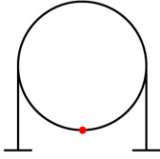
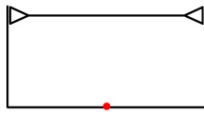
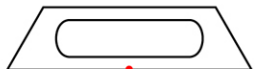
KA1000 CENTRIFUGAL COMPRESSOR  SCALE : 0.5	KA1001 AXIAL COMPRESSOR  SCALE : 0.5
KB1000 RECIPROCATING COMPRESSOR  SCALE : 0.5	KB1001 TWO STAGES RECIPROCATING COMPRESSOR  SCALE : 0.5
KC1000 SCREW COMPRESSOR  SCALE : 0.5	KE1000 BLOWER  SCALE : 0.5
KT1000 TURBO EXPANDER  SCALE : 0.5	GE1000 ELECTRICAL GENERATOR  SCALE : 0.25



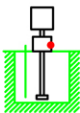
PFD - Equipment – Drivers



PFD - Equipment – Tanks

TC1000 SUMP CAISSON  SCALE : 0.5	TK1000 OPEN TANK  SCALE : 0.5
TK1001 SUMP FOR TANK  SCALE : 0.5	TM1000 SILO  SCALE : 0.5
TR1000 FIXED ROOF TANK  SCALE : 0.5	TS1000 SPHERICAL TANK  SCALE : 0.5
TF1000 FLOATING ROOF TANK  SCALE : 0.5	TZ1000 BULLET TANK  SCALE : 0.5

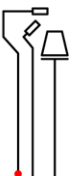
PFD - Equipment – Pumps (1/2)

PA1000 CENTRIFUGAL PUMP  SCALE : 0.5	PA1001 BARREL PUMP  SCALE : 0.5
PA1002 VERTICAL PUMP  SCALE : 0.5	PA1003 IN LINE PUMP  SCALE : 0.5
PC1000 ROTARY POSITIVE DISPLACEMENT PUMP  SCALE : 0.5	PC1001 GEAR PUMP  SCALE : 0.5
PD1000 PROPORTIONING PUMP  SCALE : 0.5	PD1001 DOUBLE CASING PROPORTIONING PUMP  SCALE : 0.5

PFD - Equipment – Pumps (2/2)

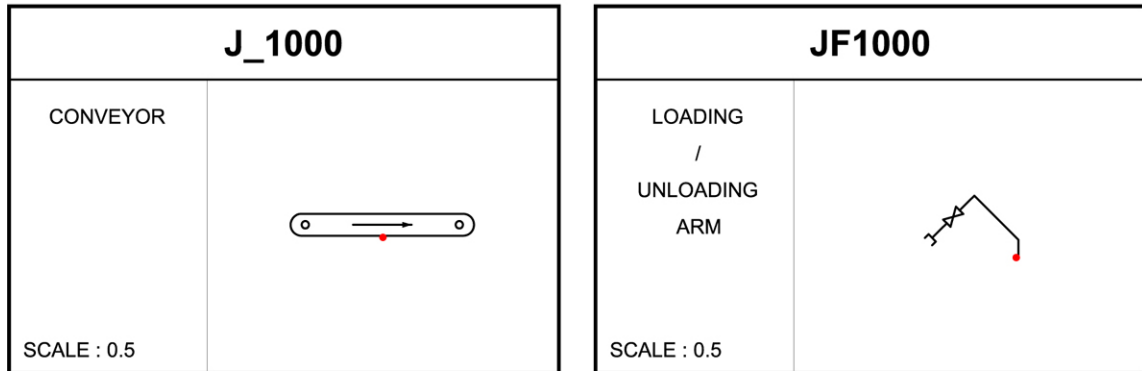
PE1000 SCREW PUMP  SCALE : 0.5	PE1001 ECCENTRIC PUMP  SCALE : 0.5
PM1000 HAND PUMP  SCALE : 0.5	PM1001 DIAPHRAGM PUMP  SCALE : 0.5
PR1000 RECIPROCATING POSITIVE DISPLACEMENT PUMP  SCALE : 0.5	PS1000 SUBMERSIBLE WITH MOTOR PUMP  SCALE : 0.5
PV1000 VACCUM PUMP  SCALE : 0.5	

PFD - Equipment – Flaring & venting facilities

F_1000 PIPE FLARE TIP  SCALE : 0.5	F_1001 SONIC FLARE TIP  SCALE : 0.5
F_1002 VENT WITH SONIC TIP  SCALE : 0.5	FA1000 FLAME ARRESTOR  SCALE : 0.5
FA1001 SPARK ARRESTOR  SCALE : 0.5	FS1000 VENT  SCALE : 0.5

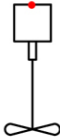


PFD - Equipment – Loading & unloading facilities



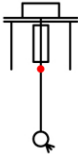


PFD - Equipment – Mixers

UL1000	
AGITATOR MIXER	
SCALE : 0.5	

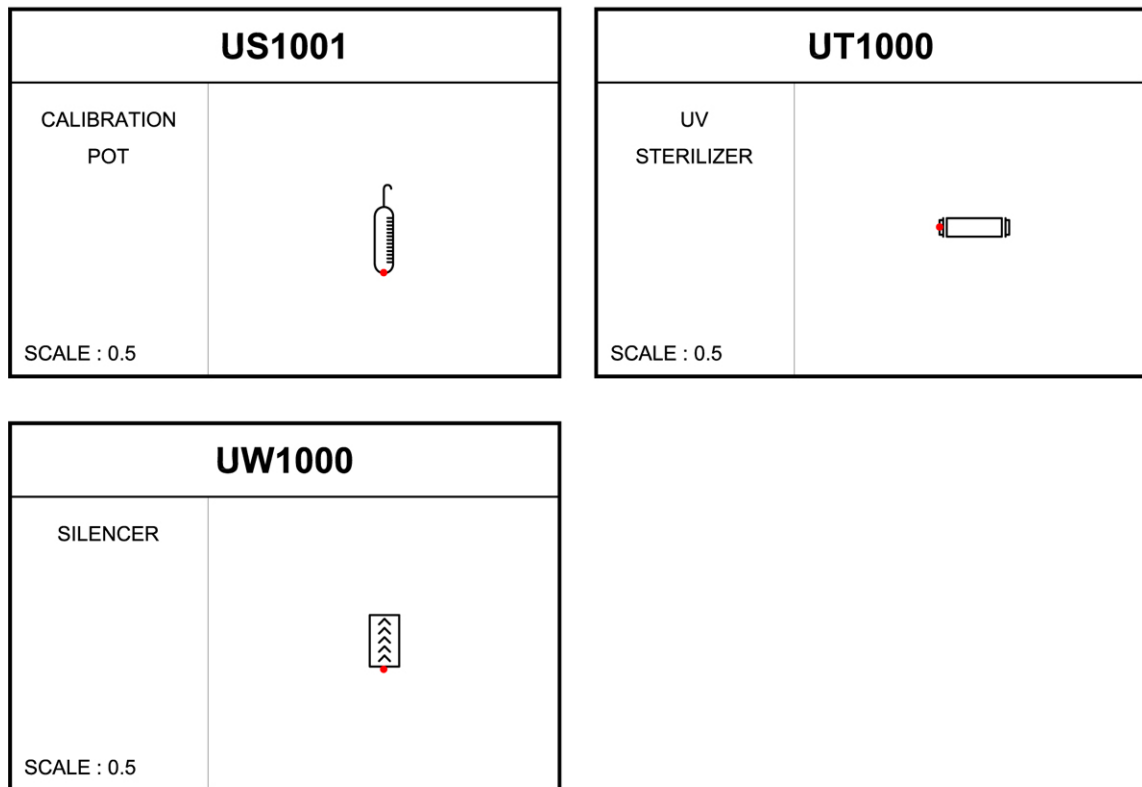
UL1001	
STATIC MIXER	
SCALE : 0.5	

UX1000	
EJECTOR INJECTOR EDUCTOR	
SCALE : 0.5	

UZ1005	
CLEANING MACHINE	
SCALE : 0.5	



PFD - Equipment – Other facilities



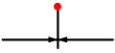
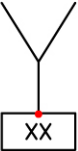
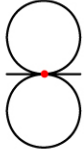


PFD - Piping – Valves

PI_V1000 GENERAL VALVE 	PI_V1002 FLOAT VALVE 	PI_V1005 BUTTERFLY VALVE 
PI_V1011 DAMPER 	PI_V1020 ANGLE VALVE 	PI_V1040 3 WAY VALVE 
PI_V1060 4 WAY VALVE 	CHKV1080 CHECK VALVE 	



PFD - Piping – Fittings

PIPCAP1000 CAP 	ZCHANGE1000 ZONE CHANGE 	PIPFUNNEL1000 FUNNEL 
PIPPLUG1000 FEMALE PLUG 	PIPPLUG1001 MALE PLUG 	PIPSTR1001 DUPLEX STRAINER 
PIPTEE1000 BARRED TEE 		



PFD - Piping – Continuations, connections & tags

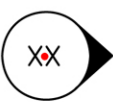
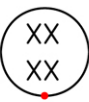
CONT1003					
CONTINUATION BETWEEN PFD' S WITH PFD NUMBER	<table border="1"><tr><td>XXX</td></tr><tr><td>YYY</td></tr><tr><td>ZZZ</td></tr><tr><td>N°PFD</td></tr></table>	XXX	YYY	ZZZ	N°PFD
XXX					
YYY					
ZZZ					
N°PFD					

CONT1006		
CONNECTION TO A PARTICULAR NETWORK	<table border="1"><tr><td>XX</td></tr></table>	XX
XX		

CONT1008	
FLOW DIRECTION ARROW	

CONT1009	
INSTRUMENTATION ARROW	

PFD - Instrumentation – Control valves

INSFLO1000 ORIFICE PLATE 	INSFLO1001 FLANGES + ORIFICE PLATE 	INSFLO1002 ORIFICE PLATE IN QUICKCHANGE FITTING (SENIOR ORIFICE) 
INSFLO1003 SINGLE PORT PITOT TUBE (OR ANNULAR) 	INSFLO1004 TURBINE TYPE PRIMARY ELEMENT 	INSFLO1005 POSITIVE DISPLACEMENT FLOW TOTALIZING INDICATOR 
INSFLO1009 VENTURI TUBE 	INSFLO1010 VORTEX SENSOR 	INSFLO1011 MAGNETIC FLOWMETER 
INSFLO1012 SONIC FLOWMETER 	INSFLO1013 ROTAMETER 	INSTG1002 FUNCTION LOCALLY MOUNTED 

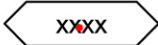


PFD - Instrumentation – Flow primary elements & other devices

INSTC1002		INSTC1008		INSTC1011	
CONTROL VALVE		SELF OPERATED VALVE		MOTORISED VALVE	

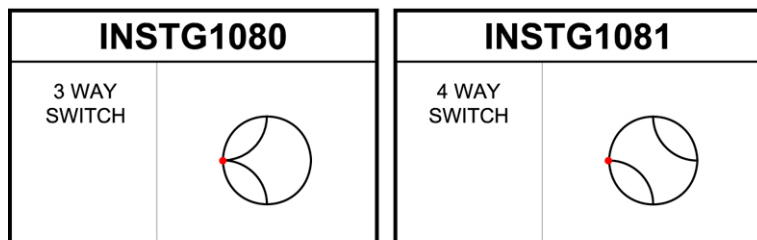


PFD - Instrumentation – Material balance

MATBAL1000 STREAM REFERENCE NUMBER 	MATBAL1001 LIQUID VOLUME FLOWRATE 	MATBAL1002 GAS VOLUME FLOWRATE 
MATBAL1003 MASS FLOWRATE 	MATBAL1004 PRESSURE 	MATBAL1005 TEMPERATURE 
MATBAL1006 DUTY OR POWER 		

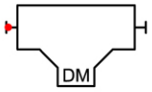
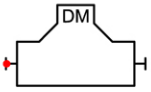
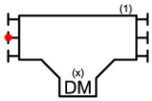
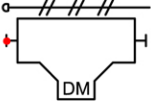
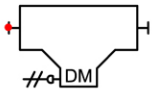
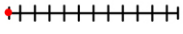


PFD - Instrumentation – Other instrumentation

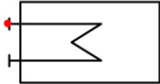
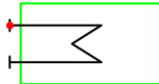
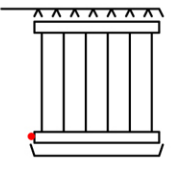
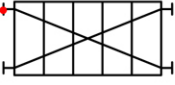
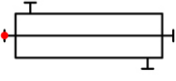
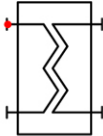


Appendix 5 PID symbols

PID - Equipment – Air coolers

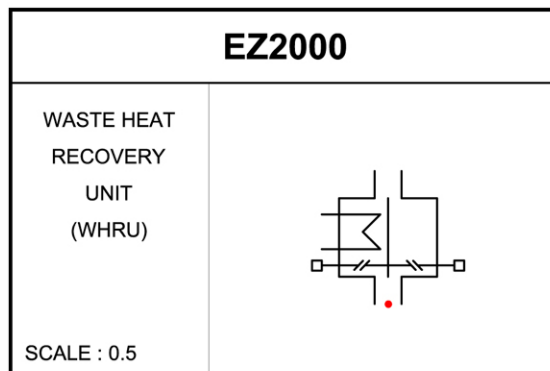
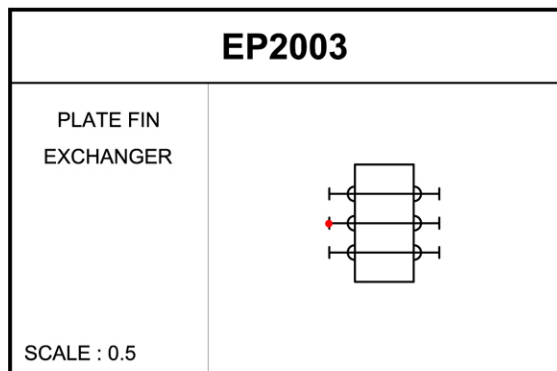
EA2000 FORCED DRAFT  SCALE : 0.5	EA2001 INDUCED DRAFT  SCALE : 0.5
EA2002 AIR COOLER WITH SEVERAL BUNDLES (1) NUMBER OF FLANGES = NUMBER OF BUNDLES (X) = NUMBER OF MOTORS  SCALE : 0.5	EA2003 AIR COOLER WITH LOUVERS CONTROL  SCALE : 0.5
EA2004 AIR COOLER WITH AUTOVARIABLE PITCH ANGLE  SCALE : 0.5	EA2005 FINED TUBE EXCHANGER  SCALE : 0.5

PID - Equipment – Heat exchangers (1/4)

EC2000 COIL IN BOX  SCALE : 0.5	EC2001 COIL  SCALE : 0.5
EM2000 SPOOL WOUND EXCHANGER  SCALE : 0.5	EM2001 OPEN RACK LNG/LPG VAPORISER  SCALE : 0.5
EM2002 SUBMERGED COMBUSTION LNG/LPG VAPORISER  SCALE : 0.5	EP2000 COMPACT TYPE HEAT EXCHANGER  SCALE : 0.5
EP2001 DOUBLE PIPE HEAT EXCHANGER  SCALE : 0.5	EP2002 PLATE FRAME TYPE  SCALE : 0.5

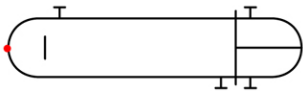


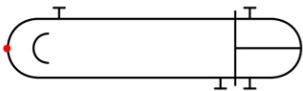
PID - Equipment – Heat exchangers (2/4)

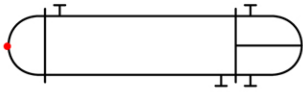


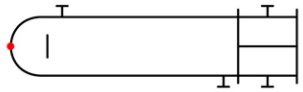


PID - Equipment – Heat exchangers (3/4)

ES2000	
FLOATING HEAD	
SCALE : 0.5	

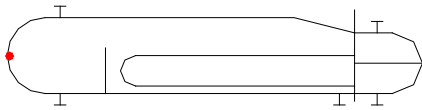
ES2001	
U-TUBE	
SCALE : 0.5	

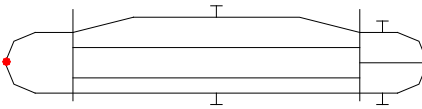
ES2002	
FIXED TUBE SHEET	
SCALE : 0.5	

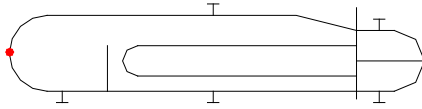
ES2003	
FLOATING HEAD AND COVER PLATE	
SCALE : 0.5	



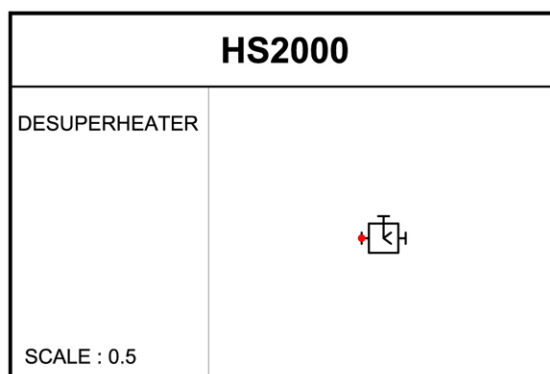
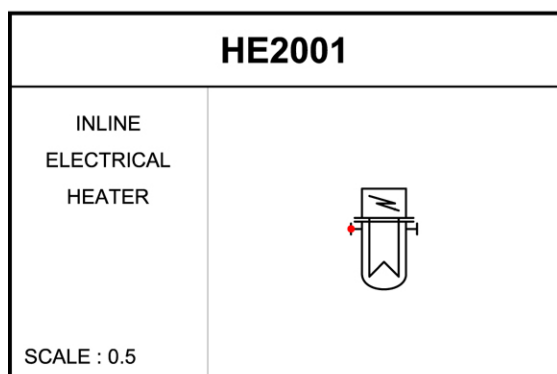
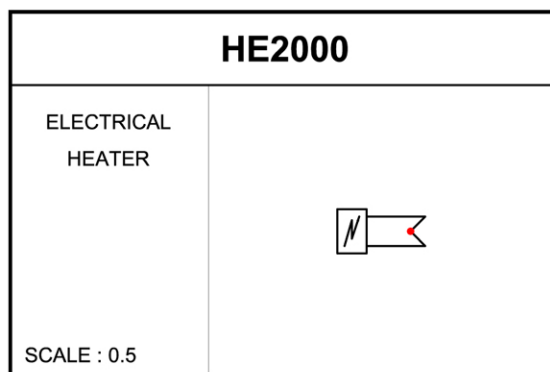
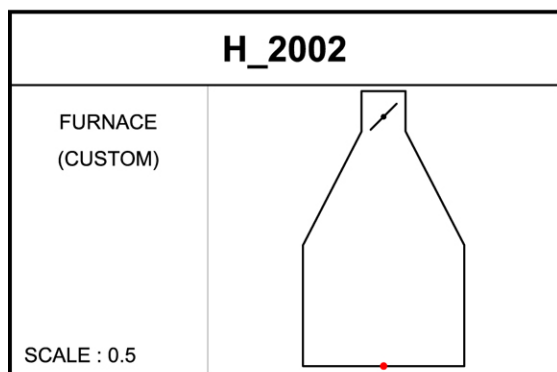
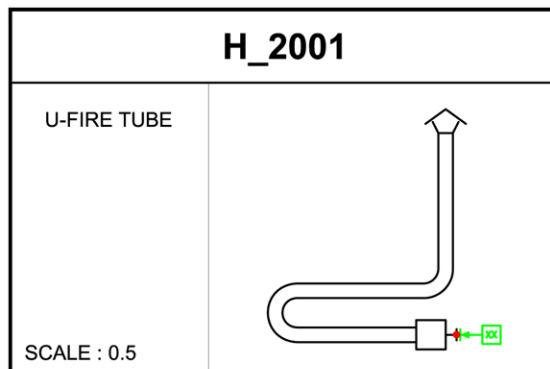
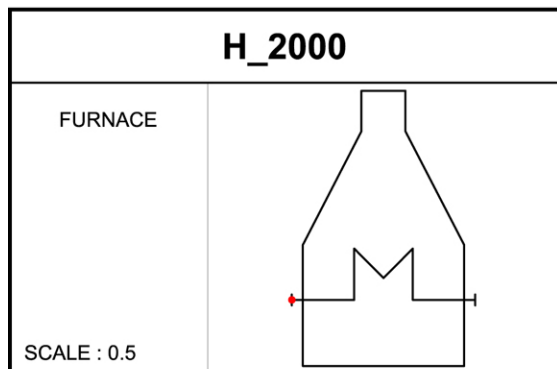
PID - Equipment – Heat exchangers (4/4)

ES2004	
"KETTLE" TYPE U-TUBE	
SCALE : 0.5	

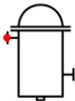
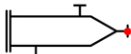
ES2005	
"KETTLE" TYPE FIXED TUBE SHEET	
SCALE : 0.5	

ES2006	
"KETTLE" TYPE FLOATING HEAD	
SCALE : 0.5	

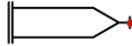
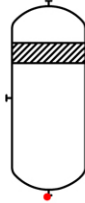
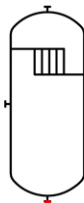
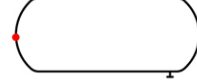
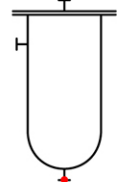
PID - Equipment – Heaters & boilers



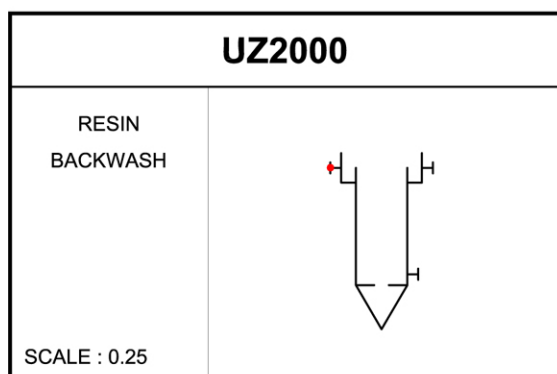
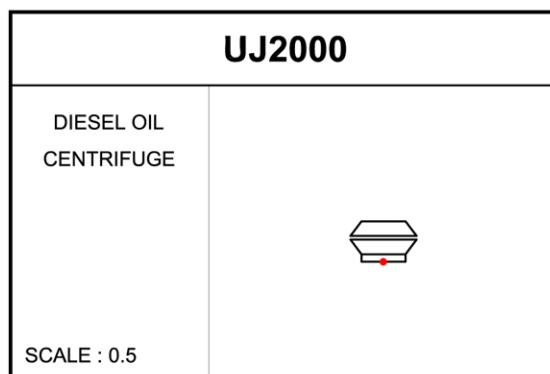
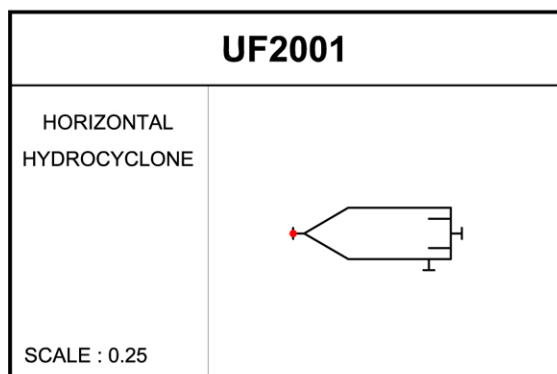
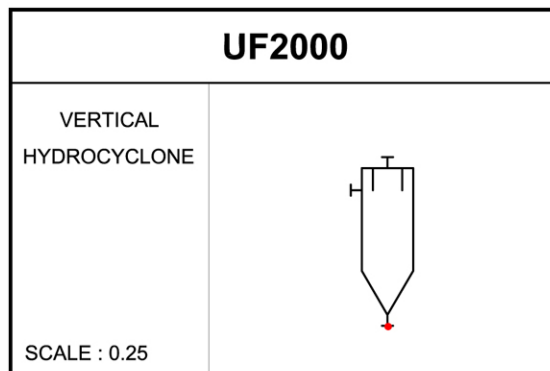
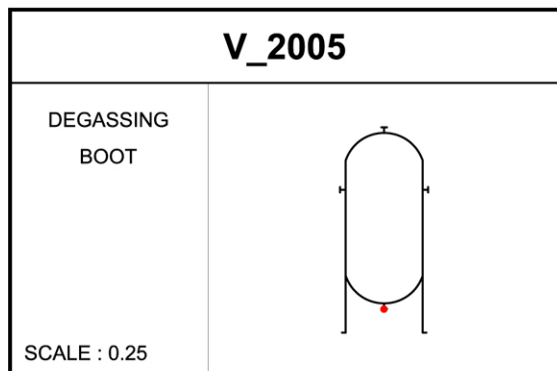
PID - Equipment – Drums & separators (1/3)

VB2000 PULSATION DAMPENER  SCALE : 0.5	VB2001 PULSATION BOTTLE  SCALE : 0.5
VF2000 AIR FILTER 	VF2001 CARTRIDGE FILTER  SCALE : 0.5
VF2002 BASKET FILTER  SCALE : 0.5	VF2004 DECHLORINATION FILTER  SCALE : 0.5
VF2005 COARSE FILTER  SCALE : 0.5	VP2000 RECEIVER PIG TRAP  SCALE : 0.5

PID - Equipment – Drums & separators (2/3)

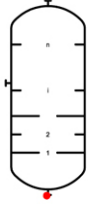
VP2001 LAUNCHER PIG TRAP  SCALE : 0.5	VP2002 LAUNCHER/ RECEIVER PIG TRAP  SCALE : 0.5
VP2003 PIG TRAP (CUSTOM)  SCALE : 0.5	V_2000 VERTICAL TWO PHASES DRUM WITH MESH  SCALE : 0.25
V_2001 VERTICAL TWO PHASES DRUM WITH VANE PACK  SCALE : 0.25	V_2002 HORIZONTAL DRUM OR SEPARATOR TWO OR THREE PHASES  SCALE : 0.25
V_2003 HORIZONTAL DRUM OR SEPARATOR TWO OR THREE PHASES WITH BOOT  SCALE : 0.25	V_2004 FLAT TOP VESSEL  SCALE : 0.5

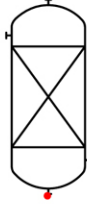
PID - Equipment – Drums & separators (3/3)

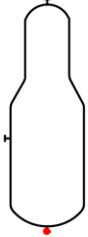




PID - Equipment – Columns

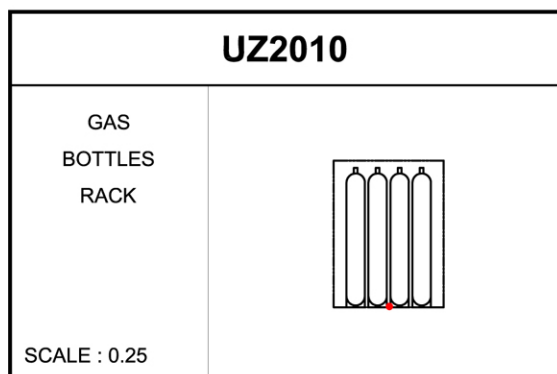
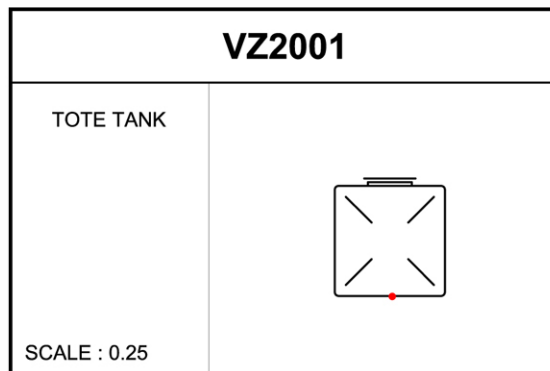
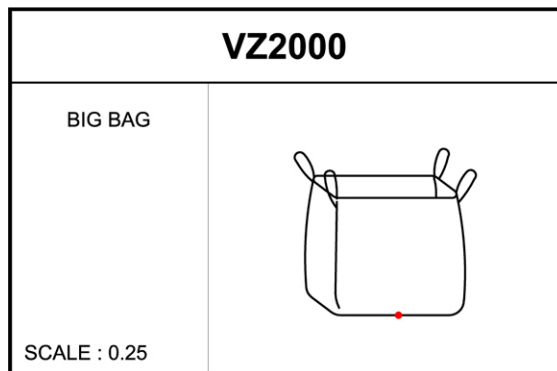
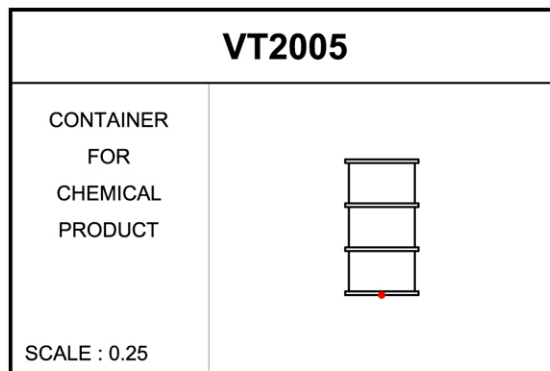
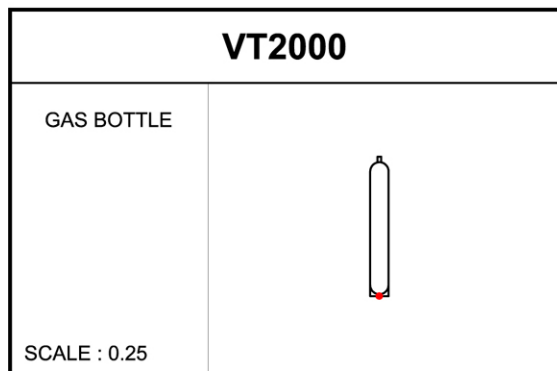
VC2000	
COLUMN WITH n TRAYS	
SCALE : 0.25	

VC2001	
COLUMN WITH PACKING	
SCALE : 0.25	

VC2002	
COLUMN WITH TWO SHELL DIAMETERS (CUSTOM)	
SCALE : 0.25	

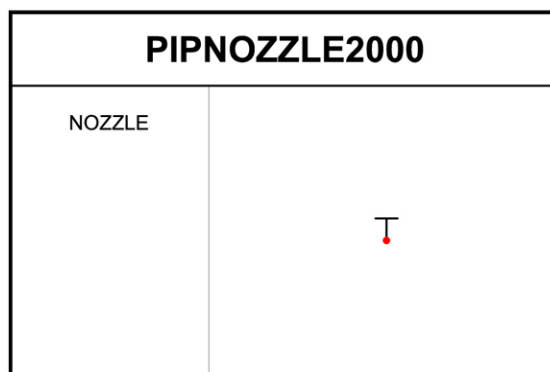
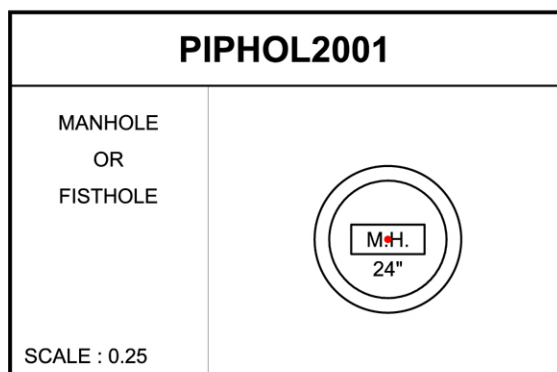
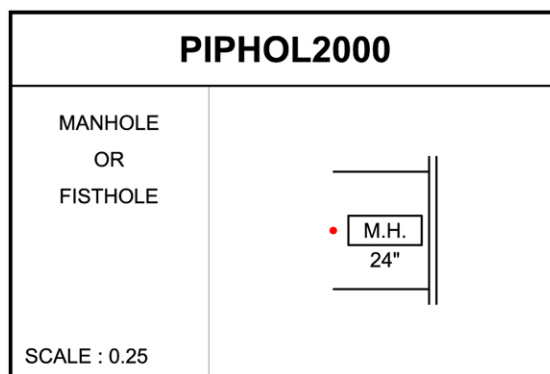
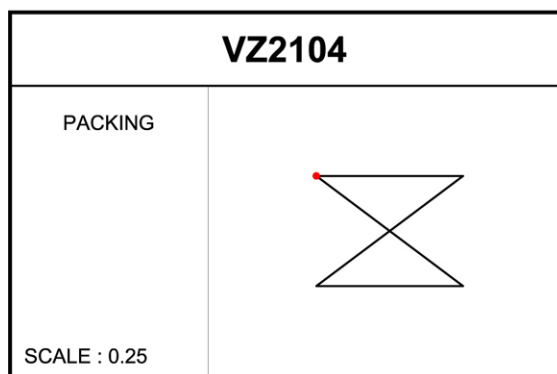
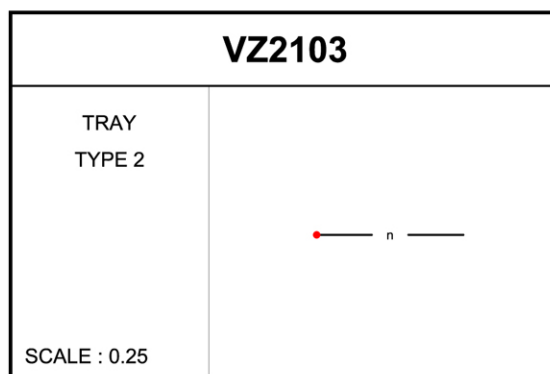
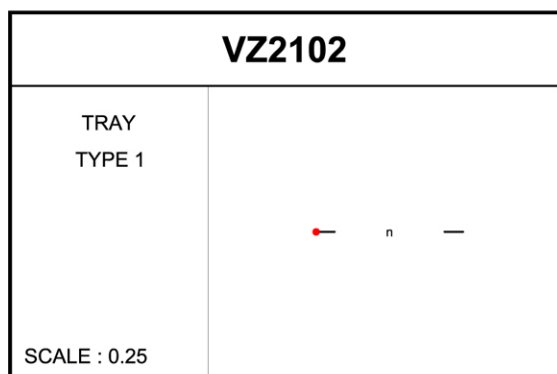
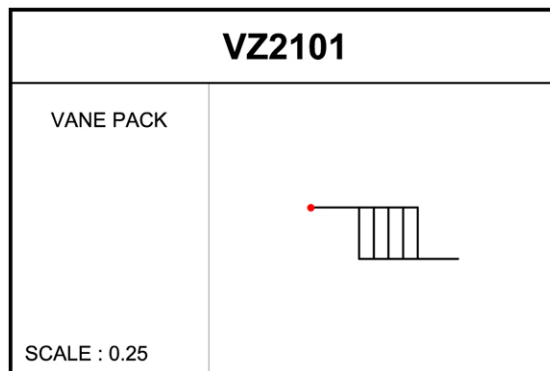
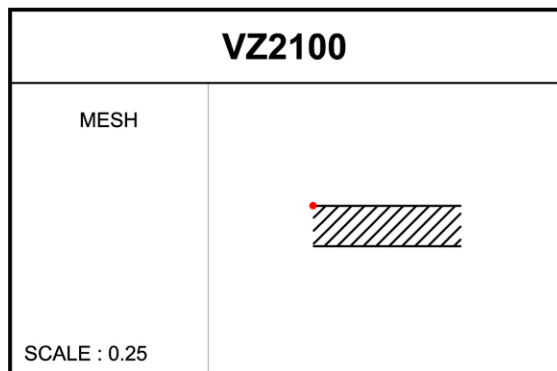
VC2003	
COLUMN WITH ONE SHELL DIAMETER (CUSTOM)	
SCALE : 0.25	

PID - Equipment – Transportable cylinders & other vessels

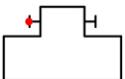
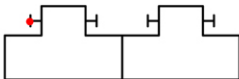
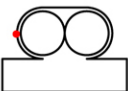
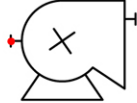




PID - Equipment – Equipment fittings



PID - Equipment – Compressors, electrical generator

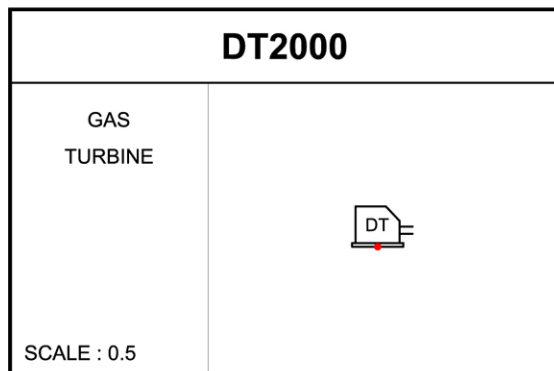
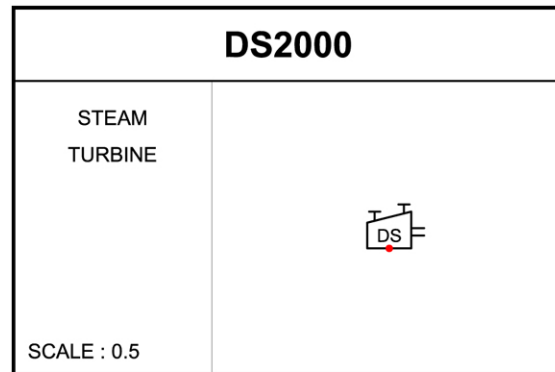
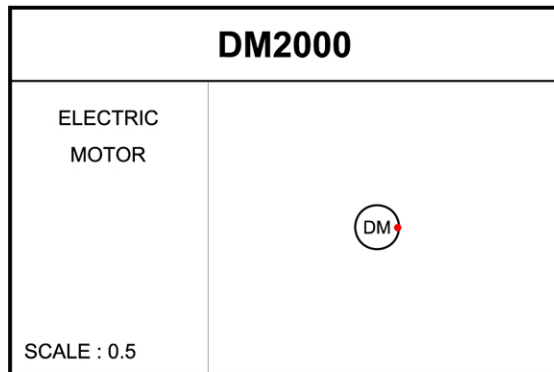
KA2000 CENTRIFUGAL COMPRESSOR  SCALE : 0.5	KA2001 AXIAL COMPRESSOR  SCALE : 0.5
KB2000 RECIPROCATING COMPRESSOR  SCALE : 0.5	KB2001 TWO STAGES RECIPROCATING COMPRESSOR  SCALE : 0.5
KC2000 SCREW COMPRESSOR  SCALE : 0.5	KE2000 BLOWER  SCALE : 0.5
KT2000 TURBO EXPANDER  SCALE : 0.5	GE2000 ELECTRICAL GENERATOR  SCALE : 0.5

**PID - Equipment – Drivers & variable speed systems**

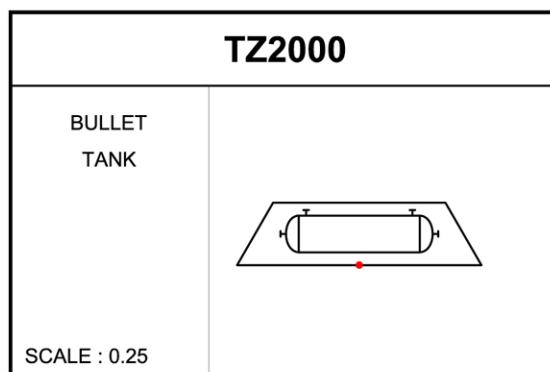
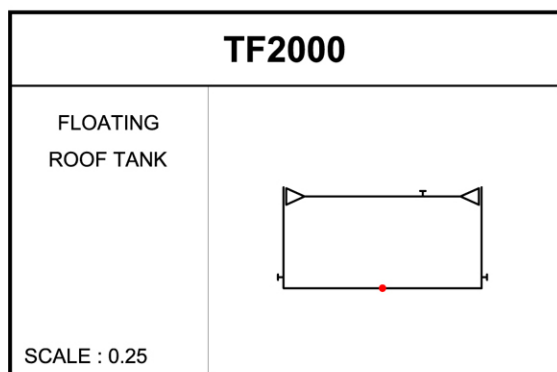
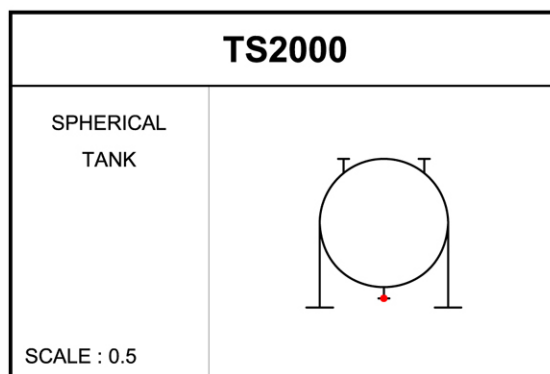
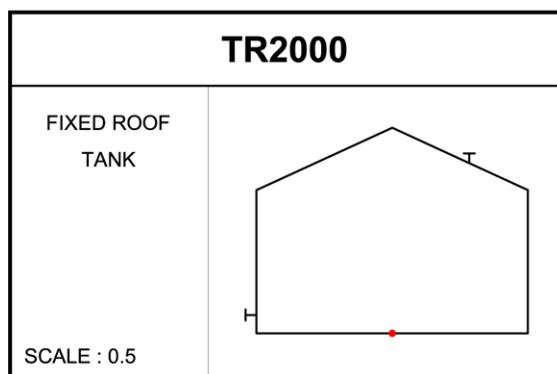
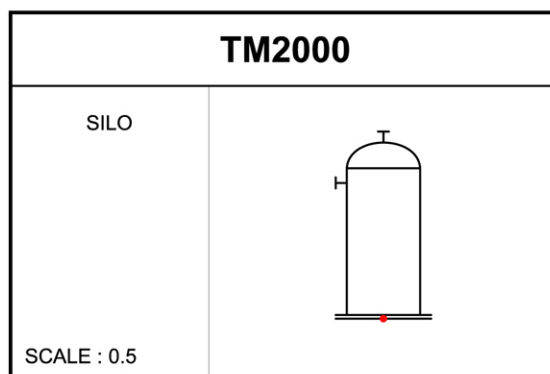
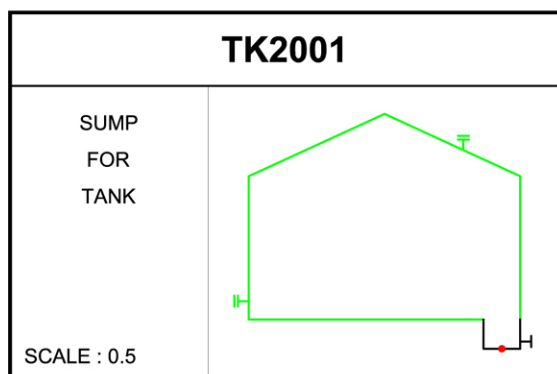
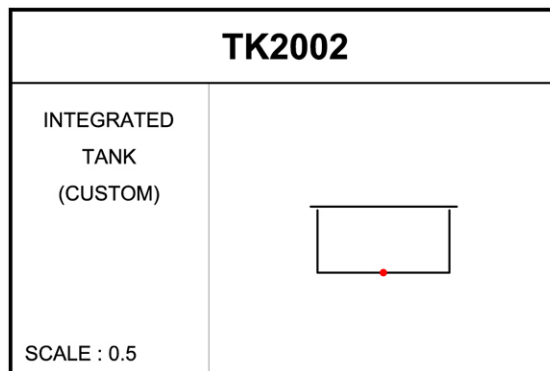
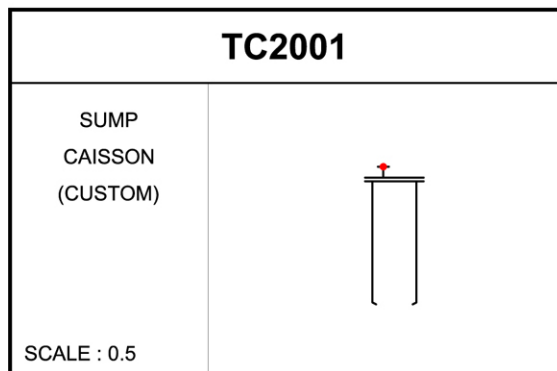
DA2000 PNEUMATIC MOTOR  SCALE : 0.5	DB2000 SPEED REDUCER GEAR BOX  SCALE : 0.5
DB2001 SPEED INCREASER GEARBOX  SCALE : 0.5	DB2002 SPEED SHIFT GEARBOX  SCALE : 0.5
DB2003 BELT VARIABLE SPEED SYSTEM  SCALE : 0.5	DB2004 HYDRAULIC VARIABLE SPEED SYSTEM  SCALE : 0.5
DE2000 DIESEL MOTOR  SCALE : 0.5	DJ2000 GAS MOTOR  SCALE : 0.5



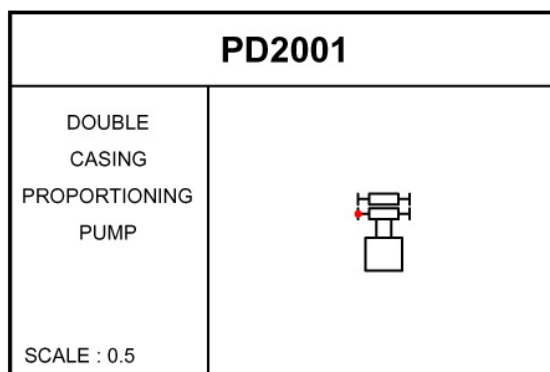
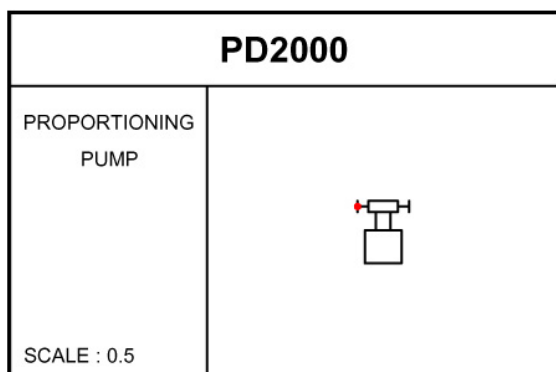
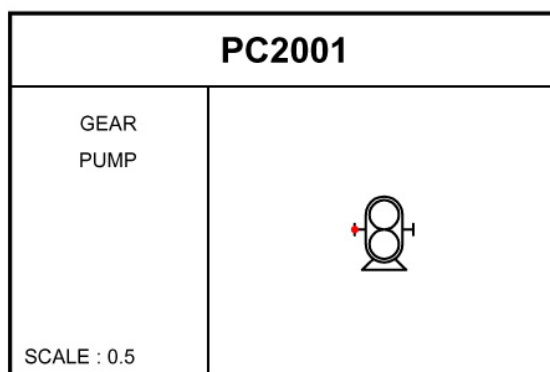
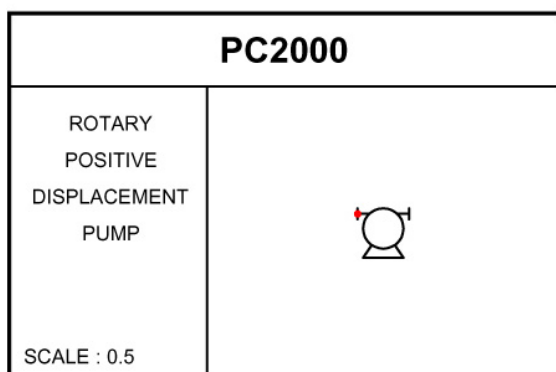
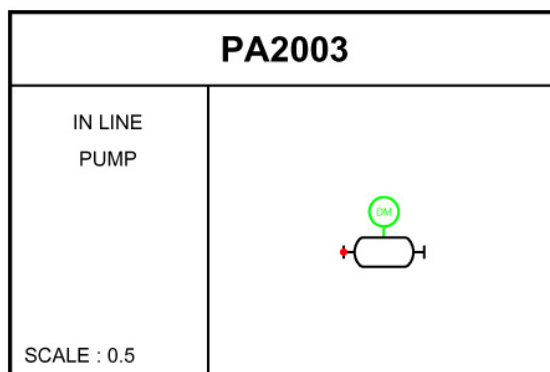
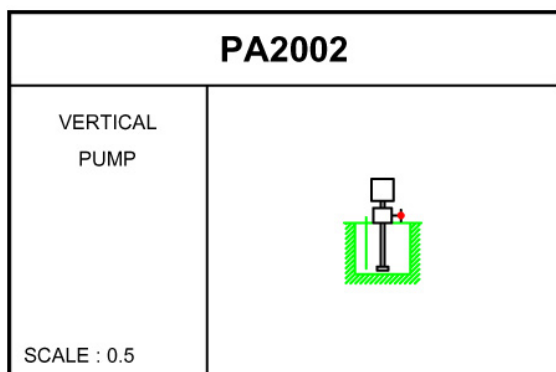
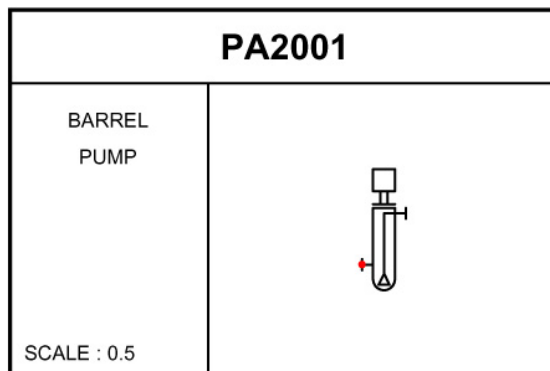
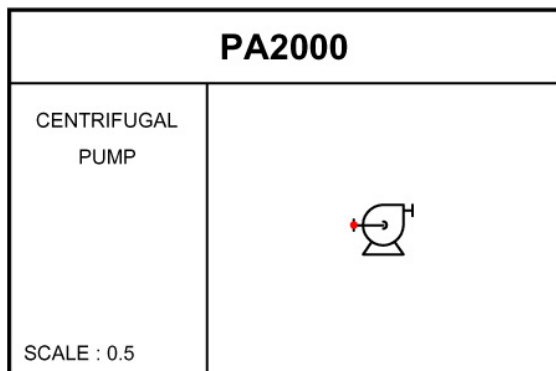
PID - Equipment – Drivers & turbines



PID - Equipment – Tanks



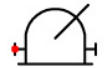
PID - Equipment – Pumps (1/2)



PID - Equipment – Pumps (2/2)

PE2000	
SCREW PUMP	
SCALE : 0.5	

PE2001	
ECCENTRIC PUMP	
SCALE : 0.5	

PM2000	
HAND PUMP	
SCALE : 0.5	

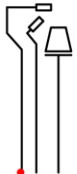
PM2001	
DIAPHRAGM PUMP	
SCALE : 0.5	

PR2000	
RECIPROCATING POSITIVE DISPLACEMENT PUMP	
SCALE : 0.5	

PS2000	
SUBMERSIBLE WITH MOTOR PUMP	
SCALE : 0.5	

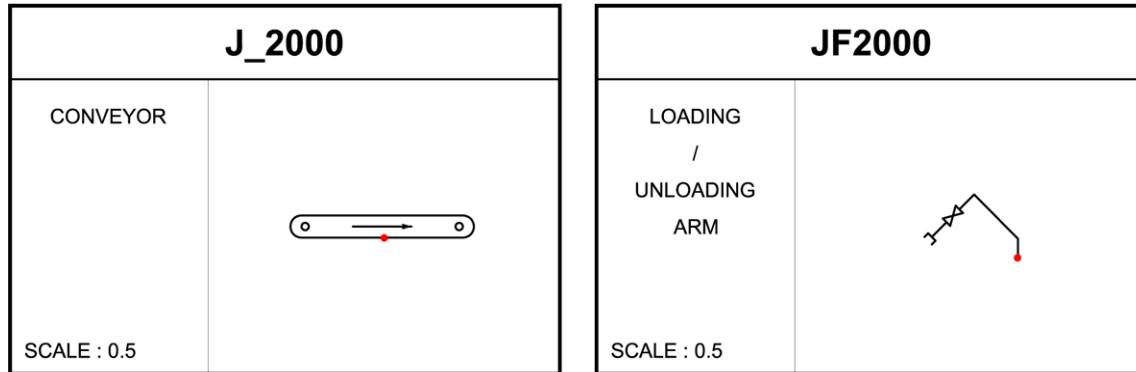
PV2000	
VACCUM PUMP	
SCALE : 0.5	

PID - Equipment – Flaring & venting facilities

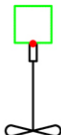
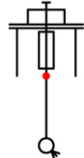
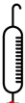
F_2000 PIPE FLARE TIP  SCALE : 0.5	F_2001 SONIC FLARE TIP  SCALE : 0.5
F_2002 VENT WITH SONIC TIP  SCALE : 0.5	F_2003 BURNER BOOM  SCALE : 0.5
FA2000 FLAME ARRESTOR  SCALE : 0.5	FA2001 SPARK ARRESTOR  SCALE : 0.5
FS2000 VENT (HOOK TYPE)  SCALE : 0.5	FS2001 VENT (WITH HOOD)  SCALE : 0.5



PID - Equipment – Loading & unloading facilities



PID - Equipment – Mixers & other facilities

UL2000 AGITATOR MIXER  SCALE : 0.5	UL2001 STATIC MIXER  SCALE : 0.5
UX2000 EJECTOR INJECTOR EDUCTOR  SCALE : 0.5	UZ2005 CLEANING MACHINE  SCALE : 0.5
US2001 CALIBRATION POT  SCALE : 0.5	UT2000 UV STERILIZER  SCALE : 0.5
UW2000 SILENCER  SCALE : 0.5	



PID - Equipment – Description tables (1/2)

TAB0010

COLUMN		
ITEM NUMBER	XX	
SERVICE	XX	
PRESSURE bar g	DESIGN	XX
	WORKING	XX
TEMPERATURE °C	DESIGN MAX. MIN.	XX
	WORKING TOP/BOTT.	XX
INTERNAL DIAMETER mm	XX	
HEIGHT (TL/TL) mm	XX	
MATERIAL	XX	
CORROSION ALLOWANCE mm	XX	
LINING/CLADDING TYPE	XX	
INSULATION TYPE/THICKNESS mm	XX	

SCALE : 0.5

TAB0020

COMPRESSOR		
ITEM NUMBER	XX	
SERVICE	XX	
TYPE	XX	
PRESSURE bar g	DESIGN	XX
	WORKING SUCT./DISCH.	XX
TEMPERATURE °C	DESIGN MAX. MIN.	XX
	TOP / BOTTOM	XX
	WORKING SUCT./DISCH.	XX
WORKING SUCT. FLOW RATE Nm ³ /hr	XX	
DESIGN SUCT. FLOW RATE Nm ³ /hr	XX	
SHAFT POWER kW	XX	
MATERIAL	XX	

SCALE : 0.5

TAB0030

DRUM/SEPARATOR		
ITEM NUMBER	XX	
SERVICE	XX	
PRESSURE bar g	DESIGN TOP/BOTT.	XX
	WORKING TOP/BOTT.	XX
TEMPERATURE °C	DESIGN MAX. MIN.	XX
	TOP / BOTTOM	XX
	WORKING TOP/BOTT.	XX
INTERNAL DIAMETER mm	XX	
HEIGHT OR LENGTH (TL/TL) mm	XX	
MATERIAL	XX	
CORROSION ALLOWANCE mm	XX	
LINING/CLADDING TYPE	XX	
INSULATION TYPE/THICKNESS mm	XX	

SCALE : 0.5

TAB0040

PUMP		
ITEM NUMBER	XX	
SERVICE	XX	
TYPE	XX	
PRESSURE bar g	DESIGN	XX
	WORKING SUCT./DISCH.	XX
TEMPERATURE °C	DESIGN MAX. MIN.	XX
	TOP / BOTTOM	XX
	WORKING SUCT./DISCH.	XX
WORKING SUCT. FLOW RATE Nm ³ /hr	XX	
DESIGN SUCT. FLOW RATE Nm ³ /hr	XX	
DIFFERENTIAL PRESSURE bar	XX	
SHAFT POWER kW	XX	
MATERIAL	XX	

SCALE : 0.5



PID - Equipment – Description tables (2/2)

TAB0050

EXCHANGER (shell and tube)			
		SHELL	TUBES
ITEM NUMBER		XX	
SERVICE		XX	
TYPE		XX	
PRESSURE bar g	DESIGN	XX	XX
	WORKING	XX	XX
TEMPERATURE °C	DESIGN MAX. MIN.	XX	XX
	WORKING	XX	XX
INTERNAL DIAMETER mm		XX	XX
LENGTH mm		XX	XX
NUMBER OF PASSES		XX	XX
DUTY MMkcal/hr		XX	
AREA m²		XX	
MATERIAL		XX	XX
CORROSION ALLOWANCE mm		XX	XX
INSULATION TYPE/THICKNESS mm		XX	

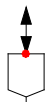
SCALE : 0.5

TAB0060

AIR COOLER		
ITEM NUMBER		
SERVICE		
TYPE		
PRESSURE bar g	DESIGN	XX
	WORKING	XX
TEMPERATURE °C	DESIGN MAX. MIN.	XX
	WORKING	XX
DUTY MMkcal/hr		XX
AREA m²		XX
MATERIAL		XX
CORROSION ALLOWANCE mm		XX
MOTOR POWER kW		XX

SCALE : 0.5

PID - Piping – Valves (1/2)

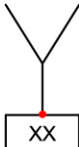
PI_V2000 GATE VALVE 	PI_V2001 BALL VALVE FULL BORE 	PI_V2002 BALL VALVE REDUCED BORE 
PI_V2003 GLOBE VALVE 	PI_V2004 NEEDLE VALVE 	PI_V2005 BUTTERFLY VALVE 
PI_V2006 DIAPHRAGM VALVE 	PI_V2007 CONICAL TAPER PLUG VALVE 	PI_V2008 MINIMUM FLOW VALVE 
PI_V2009 SLIDE GATE VALVE 	PI_V2010 VACUUM AIR RELEASE VALVE 	PI_V2011 DAMPER VALVE 
PI_V2020 ANGLE VALVE 	PI_V2022 CHOKE VALVE 	PI_V2040 3 WAY VALVE 
PI_V2060 4 WAY VALVE 		



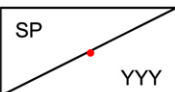
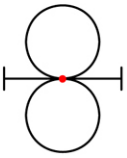
PID - Piping – Valves (2/2)

CHKV2080 TONGUE CHECK VALVE 	CHKV2081 RATED BALL CHECK VALVE 	CHKV2082 FLOAT BALL CHECK VALVE 
CHKV2083 GRAVITY BALL CHECK VALVE 	CHKV2084 PISTON CHECK VALVE 	CHKV2085 DOUBLE GATE CHECK VALVE 

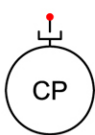
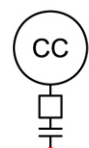
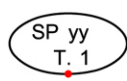
PID - Piping – Fittings (1/3)

PIPCAP2000 CAP 	ZCHANGE2000 ZONE CHANGE 	PIPCHANGE2000 PIPING CLASS SPECIFICATION BREAK 
PIPCHANGE2001 INSULATION CHANGE 	PIPCLAMP2000 CLAMPS ASSEMBLY (GRAYLOCK) 	PIPCORR2000 CORROSION SLEEVE 
PIPEXP2000 EXPANSION BELLOW 	PIPFLANG2000 FLANGE 	PIPFLANG2001 BLIND FLANGE 
PIPFLANG2002 INSULATING JOINT 	PIPFUNNEL2000 FUNNEL 	PIPOB2000 SPACER 
PIPOB2001 PAN TAIL 	PIPOB2002 SPECTACLE BLIND CLOSED 	PIPOB2003 SPECTACLE BLIND OPENED 
PIPPLUG2000 FEMALE PLUG 	PIPPLUG2001 MALE PLUG 	PIPPLUG2002 THREADED PLUG 

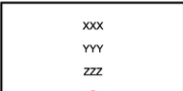
PID - Piping – Fittings (2/3)

PIPPLUG2003 MALE PLUG 	PIPPLUG2004 FEMALE PLUG 	PIPRE2006 REDUCER 
PIPRE2007 EXCENTRIC REDUCER (GAS) 	PIPRE2008 EXCENTRIC REDUCER (LIQUIDS) 	PIPSLOPE2000 SLOPING LINES (CONTINUOUS SLOPE WITH SLOPE VALUE) 
PIPSLOPE2001 GRAVITY SLOPE WITH SLOPE VALUE) 	PIPSP2000 SPECIAL PIPING ITEM 	PIPSPOOL2000 SPOOL PIECE 
PIPSPOOL2001 WELDED SPOOL 	PIPSTR2000 TEMPORARY TYPE STRAINER 	PIPSTR2001 DUPLEX STRAINER 
PIPSTR2002 CONICAL TYPE STRAINER 	PIPSTR2003 COMPRESSOR SUCTION INLINE STRAINER 	PIPSTR2004 Y STRAINER 
PIPSTR2005 T STRAINER 	PIPTEE2000 BARRED TEE 	PIPTEE2001 REDUCED TEE 

PID - Piping – Fittings (3/3)

PIPTRAP2000 LIQUID TRAP DRAIN 	PIPVOR2000 VORTEX BREAKER 	PIPX2000 ELECTRICAL RESISTANCE PROBE 
PIPX2001 UTILITY STATION GROUP 	BIRD2000 BIRD GRID 	MP2000 CORROSION PROBE AND COUPON 
MP2001 CORROSION COUPON WITH ACCESS FITTING 	US2000 SAMPLING CONNECTION (TYPE: SEE APPENDIX) 	UW2001 NOISE PRODUCTION CARTRIDGE FOR VALVE 
PIPFLEX2000 FLEXIBLE HOSE 	PIPSYPH2000 SYPHON 	PIPQC2000 QUICK COUPLING 
WELD2000 WELD 	WELD2001 "SA" TYPE WELD 	WELD2002 "SB" TYPE WELD 

PID - Piping – Continuations, connections & tags (1/2)

CONT2000 MISC. CONTINUATION 	CONT2001 TIE IN 	CONT2002 HOOK UP CONTINUATION 
CONT2004 TEXT BOX  SCALE : 0.5	CONT2006 CONNECTION TO A PARTICULAR NETWORK 	CONT2007 CONTINUATION BOX 
CONT2008 FLOW DIRECTION ARROW 	CONT2009 INSTRUMENTATION ARROW 	CONT2011 INTERRUPTION LINE 
CONT2012 SKID TIE IN 		

Connection to a particular network is indicated by a network or line abbreviation inside a square space.

Abbreviations :

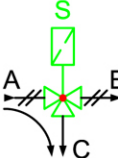
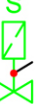
CD - Closed Drain
DA - Amine Drain
DR - Hydrocarbon Drain or Closed Drain
FH - Flare High Pressure Network
FL - Flare Low Pressure Network
HO - Hydraulic Circuit
OD - Open Drain
SP - Special Piping
V - Vent



PID - Piping – Continuations, connections & tags (2/2)

CONT2020 LEFT CONTINUATION FROM PID SCALE : 0.25	CONT2021 LOWER CONTINUATION FROM PID SCALE : 0.25	CONT2022 RIGHT CONTINUATION FROM PID SCALE : 0.25
CONT2023 UPPER CONTINUATION FROM PID SCALE : 0.25	CONT2030 LEFT CONTINUATION FROM/TO PID SCALE : 0.25	CONT2031 LOWER CONTINUATION FROM/TO PID SCALE : 0.25
CONT2032 RIGHT CONTINUATION FROM/TO PID SCALE : 0.25	CONT2033 UPPER CONTINUATION FROM/TO PID SCALE : 0.25	CONT2040 LEFT CONTINUATION TO PID SCALE : 0.25
CONT2041 LOWER CONTINUATION TO PID SCALE : 0.25	CONT2042 RIGHT CONTINUATION TO PID SCALE : 0.25	CONT2043 UPPER CONTINUATION TO PID SCALE : 0.25

PID - Instrumentation – Actuators (1/2)

ACTU2001 RATED SPRING 	ACTU2002 FLOAT LEVER 	ACTU2003 TRAVEL STOP 
ACTU2004 3 WAYS OPEN PATH WHEN DEENERGIZED 	ACTU2005 SPRING RETURN 	ACTU2101 HAND LEVER 
ACTU2102 HAND WHEEL 	ACTU2103 AUXILIARY HAND WHEEL 	ACTU2105 ROV OPERATED 
ACTU2202 ELECTRICAL ROTATING ACTUATOR 	ACTU2302 PNEUMATIC ROTATING ACTUATOR 	ACTU2402 HYDRAULIC ROTATING ACTUATOR 
ACTU3203 DIAPHRAGM 	ACTU3303 DIAPHRAGM SELF OPERATED 	ACTU3503 POSITIONER 
ACTU4204 SOLENOID 	ACTU4304 MANUAL RESET 	ACTU4404 REMOTE RESET 

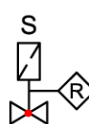
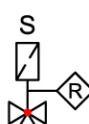


PID - Instrumentation – Actuators (2/2)

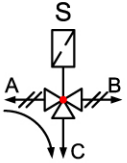
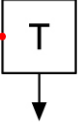
ACTU5205		ACTU5305		ACTU5405	
UNDEFINED (PNEUMATIC OR HYDRAULIC)		SINGLE ACTING		DOUBLE ACTING	

ACTU6206	
PILOT OPERATED	

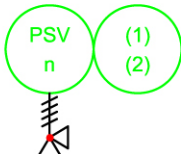
PID - Instrumentation – Control valves (1/2)

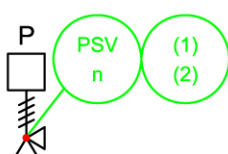
INS_C2000 MANUALLY OPERATED ANGLE CHOKE 	INS_C2001 REMOTELY OPERATED ANGLE CHOKE 	INS_C2002 CONTROL VALVE (WITH DIAPHRAGM ACTUATOR) 
INS_C2003 CONTROL VALVE WITH DIAPHRAGM ACTUATOR + MANUAL OPERATOR 	INS_C2004 CONTROL VALVE WITH DIAPHRAGM ACTUATOR AND POSITIONER 	INS_C2005 GATE VALVE WITH CYLINDER ACTUATOR SINGLE ACTING 
INS_C2006 GATE VALVE WITH CYLINDER ACTUATOR DOUBLE ACTING 	INS_C2007 CONTROL VALVE WITH DIAPHRAGM ACTUATOR AND TRAVEL STOP 	INS_C2008 SELF OPERATED VALVE 
INS_C2009 MOTORISED ANGLE VALVE 	INS_C2010 3 WAY CONTROL VALVE 	INS_C2011 MOTORISED GATE VALVE 
INS_C2012 SOLENOID VALVE 	INS_C2013 SOLENOID VALVE WITH MANUAL RESET 	INS_C2014 SOLENOID VALVE WITH REMOTE RESET 
INS_C2015 3 WAY SOLENOID VALVE 	INS_C2016 3 WAY SOLENOID VALVE WITH MANUAL RESET 	INS_C2017 3 WAY SOLENOID VALVE WITH REMOTE RESET 

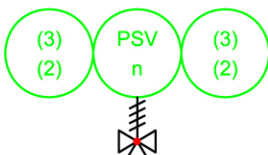
PID - Instrumentation – Control valves (2/2)

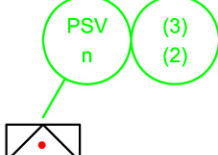
INS_C2018 3 WAY SOLENOID VALVE (OPEN PATH A TO C WHEN DEENERG). 	INS_C2019 TRAP OTHER THAN BALL-FLOAT TYPE CONTINUOUS DRAINERS 	INS_C2020 CONTINUOUS DRAINER BALL-FLOAT TYPE WITH EQUALIZING CONNECTION 
INS_C2021 BALL VALVE WITH CYLINDER ACTUATOR SINGLE ACTING 	INS_C2022 BALL VALVE WITH CYLINDER ACTUATOR DOUBLE ACTING 	INS_C2023 MOTORISED BALL VALVE 

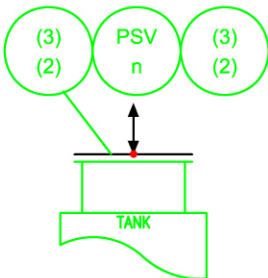
PID - Instrumentation – Relief valves, rupture disks & tags

INS_C2050		
PRESSURE OR VACUUM RELIEF VALVE		

INS_C2051		
PILOT OPERATED RELIEF VALVE		

INS_C2052		
PRESSURE AND VACUUM RELIEF VALVE		

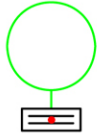
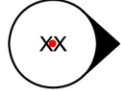
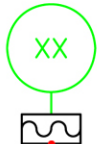
INS_C2060		
RUPTURE DISK FOR PRESSURE OR VACUUM RELIEF		

INS_C2061		
PRESSURE AND VACUUM RELIEF MANHOLE COVER		

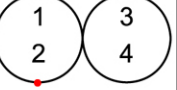
INS_C2070		
INSTRUMENT TYPE TAG		
X = PSV, PSE OR TSV n = TAG NR		

INS_C2071		
INSTRUMENT CHARACTERISTICS TAG		(1) : PSV DESCRIPTION (INLET ORIFICE DIAMETER) (ORIFICE LETTER) (OUTLET ORIFICE DIAMETER) (3) : ORIFICE DIAMETER (2) : SET PRESSURE (bar g or mb) (bar g or mb)

PID - Instrumentation – Flow primary elements & other devices

INSFLO2000 ORIFICE PLATE 	INSFLO2001 FLANGES + ORIFICE PLATE 	INSFLO2002 ORIFICE PLATE IN QUICKCHANGE FITTING (SENIOR ORIFICE) 
INSFLO2003 SINGLE PORT PITOT TUBE (OR ANNUBAR) 	INSFLO2004 TURBINE TYPE PRIMARY ELEMENT 	INSFLO2005 POSITIVE DISPLACEMENT FLOW TOTALIZING INDICATOR 
INSFLO2006 FLOW (INDICATOR) SIGHT GLASS 	INSFLO2007 FLOW SWITCH 	INSFLO2008 FLOW STRAIGHT. VANE 
INSFLO2009 VENTURI TUBE 	INSFLO2010 VORTEX SENSOR 	INSFLO2011 MAGNETIC FLOWMETER 
INSFLO2012 SONIC FLOWMETER 	INSFLO2013 ROTAMETER 	INSTG2078 PRIMARY PRESSURE ELEMENT WITH DIAPHRAGM TYPE SEPARATOR 
INSTC2079 LEVEL INDICATOR FLOAT TYPE WITH GAUGE BOARD 		

PID - Instrumentation – General instrumentation

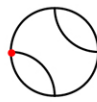
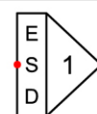
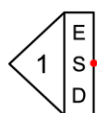
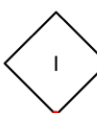
INSTG2001 INSTRUMENT MOUNTED IN MAIN CONTROL ROOM  *	INSTG2002 FIELD MOUNTED INSTRUMENT 	INSTG2003 INSTRUMENT MOUNTED IN AUXILIARY LOCATION  *	INSTG2004 INACCESSIBLE OR BEHIND THE PANEL INSTRUMENT 
INSTG2005 SHARED DISPLAY/CONTROL MOUNTED  *	INSTG2006 FIELD MOUNTED SHARED DISPLAY/CONTROL 	INSTG2007 SHARED DISPLAY/CONTROL MOUNTED IN AUXILIARY LOCATION  *	INSTG2008 INACCESSIBLE OR BEHIND THE PANEL SHARED DISPLAY/CONTROL 
INSTG2009 COMPUTING FUNCTION MOUNTED IN MAIN CONTROL ROOM  *	INSTG2010 FIELD MOUNTED COMPUTING FUNCTION 	INSTG2011 AUXILIARY LOCATION COMPUTING FUNCTION  *	INSTG2012 INACCESSIBLE OR BEHIND THE PANEL COMPUTING FUNCTION 
INSTG2013 PROGRAMMABLE LOGIC CONTROL MOUNTED IN MAIN CONTROL ROOM  *	INSTG2014 FIELD MOUNTED PROGRAMMABLE LOGIC CONTROL 	INSTG2015 AUXILIARY LOCATION PROGRAMMABLE LOGIC CONTROL  *	INSTG2016 INACCESSIBLE OR BEHIND THE PANEL PROGRAMMABLE LOGIC CONTROL 
INSTG2017 PILOT LIGHT MOUNTED IN MAIN CONTROL ROOM  *	INSTG2018 FIELD MOUNTED PILOT LIGHT 	INSTG2019 AUXILIARY LOCATION PILOT LIGHT  *	
INSTG2021 SIGNAL HARDWIRED TO UCP TRANSMIT. BY SERIAL TO PCS (FOR PACK. UNIT)  *	INSTG2023 SIGNAL HARDWIRED TO UCP (FOR PACK. UNIT)  *		
INSTG2026 FIELD MOUNTED INSTRUMENT WITH DUAL FUNCTION 			INSTG2027 INSTRUMENT TELEMETRY 

* = NORMALLY ACCESSIBLE TO OPERATOR

PID - Instrumentation – Function blocks

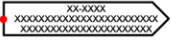
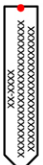
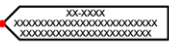
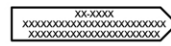
INSTG2040 SUMMING 	INSTG2041 AVERAGING 	INSTG2042 DIFFERENCE 
INSTG2043 PROPORTIONAL 	INSTG2044 INTEGRAL 	INSTG2045 DERIVATIVE 
INSTG2046 MULTIPLYING 	INSTG2047 DIVIDING 	INSTG2048 ROOT EXTRACTION 
INSTG2049 EXPONENTIAL 	INSTC2050 NON LINEAR OR UNSPECIFIED FUNCTION 	INSTG2051 TIME FUNCTION 
INSTG2052 HIGH SELECTING 	INSTG2053 LOW SELECTING 	INSTG2054 HIGH LIMITING 
INSTG2055 LOW LIMITING 	INSTG2056 REVERSE PROPORT. 	INSTG2057 VELOCITY LIMITER 
INSTG2058 BIAS (M=X+B) 	INSTG2059 BIAS (M=X-B) 	INSTG2060 BIAS (M=X±B) 
INSTG2061 CONVERT [OUTPUT = f (INPUT)]  E : VOLTAGE I : CURRENT P : PNEUMATIC A : ANALOG B : BINARY H : HYDRAULIC O : ELECTRONIC, SONIC R : RESISTANCE (ELECTRIC) D : DIGITAL		

PID - Instrumentation – Other instrumentations

INSTG2080 3 WAY SWITCH 	INSTG2081 4 WAY SWITCH 	INSTG2082 MOTOR CONTROL CENTER 
INSTG2083 HIGH INTEGRITY PROTECTION SYSTEM 	INSTG2084 KLAXON 	INSTG2085 SIGNAL TO ESD 
INSTG2086 SIGNAL FROM ESD 	INSTG2087 INTERLOCK SELECTION RELAY 	INSTG2088 PLC INTERLOCK (FOR PACKAGE UNIT) 
INSTG2089 FIRE AND GAS SYSTEM 	INSTG2090 SAND DETECTOR 	



PID - Instrumentation – Continuations

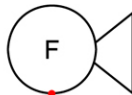
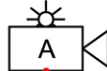
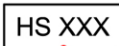
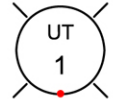
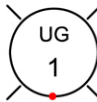
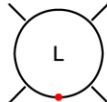
CONT2060 LEFT CONTINUATION FROM PID  SCALE : 0.25	CONT2061 LOWER CONTINUATION FROM PID  SCALE : 0.25	CONT2062 RIGHT CONTINUATION FROM PID  SCALE : 0.25
CONT2063 UPPER CONTINUATION FROM PID  SCALE : 0.25	CONT2070 LEFT CONTINUATION FROM/TO PID  SCALE : 0.25	CONT2071 LOWER CONTINUATION FROM/TO PID  SCALE : 0.25
CONT2072 RIGHT CONTINUATION FROM/TO PID  SCALE : 0.25	CONT2073 UPPER CONTINUATION FROM/TO PID  SCALE : 0.25	CONT2080 LEFT CONTINUATION TO PID  SCALE : 0.25
CONT2081 LOWER CONTINUATION TO PID  SCALE : 0.25	CONT2082 RIGHT CONTINUATION TO PID  SCALE : 0.25	CONT2083 UPPER CONTINUATION TO PID  SCALE : 0.25



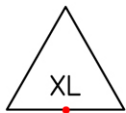
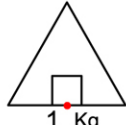
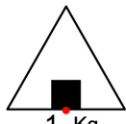
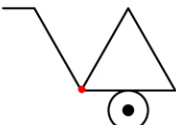
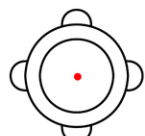
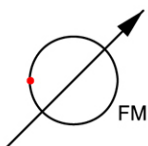
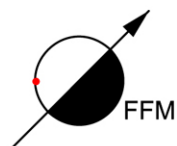
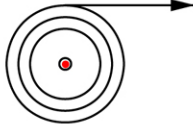
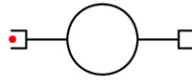
PID - Safety – Equipment (1/4)

SD2000 SMOKE OPTICAL DETECTOR 	SD2001 SMOKE IONISATION DETECTOR 	SD2002 EARLY WARNING SMOKE DETECTOR
SD2003 FLAME DETECTOR 	SD2004 CATALYTIC FLAMMABLE GAS DETECTOR 	SD2005 INFRARED POINT OR LINEAR FLAMMABLE GAS DETECTOR
SD2006 SEMI CONDUCTOR TYPE TOXIC GAS DETECTOR 	SD2007 RESISTANCE TYPE LOW TEMPERAT. DETECTOR FOR LIQUIFACTION GAS 	SD2008 BEAM GAS DETECTOR
SD2009 RATE OF RISE HEAT DETECTOR 	SD2010 THERMOSTATIC HEAT DETECTOR 	

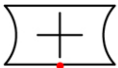
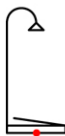
PID - Safety – Equipment (2/4)

S_2001 SPRINKLER 	S_2002 DELUGE SPRAY NOZZLES 	S_2003 FUSIBLE PLUGS 
S_2005 LIFE JACKET STORAGE BOX 	S_2006 EMERGENCY SHUTDOWN 	S_2008 FOG HORN 
S_2009 AUDIBLE ALARM 	S_2010 AUDIBLE ALARM W / LIGHT 	S_2011 MANUAL ALARM CALL POINT 
S_2012 PUSH BUTTON STATION PULL HANDLE STATION (HAND SWITCH FOR ESD, CO, RELEASE, DELUGE ETC...) 	S_2013 BEACONS 	S_2020 FLASHING LIGHT FOR TOXIC GAS 
S_2021 FLASHING LIGHT FOR FLAMMABLE GAS 	S_2022 FLASHING LIGHT FOR TOXIC GAS 	

PID - Safety – Equipment (3/4)

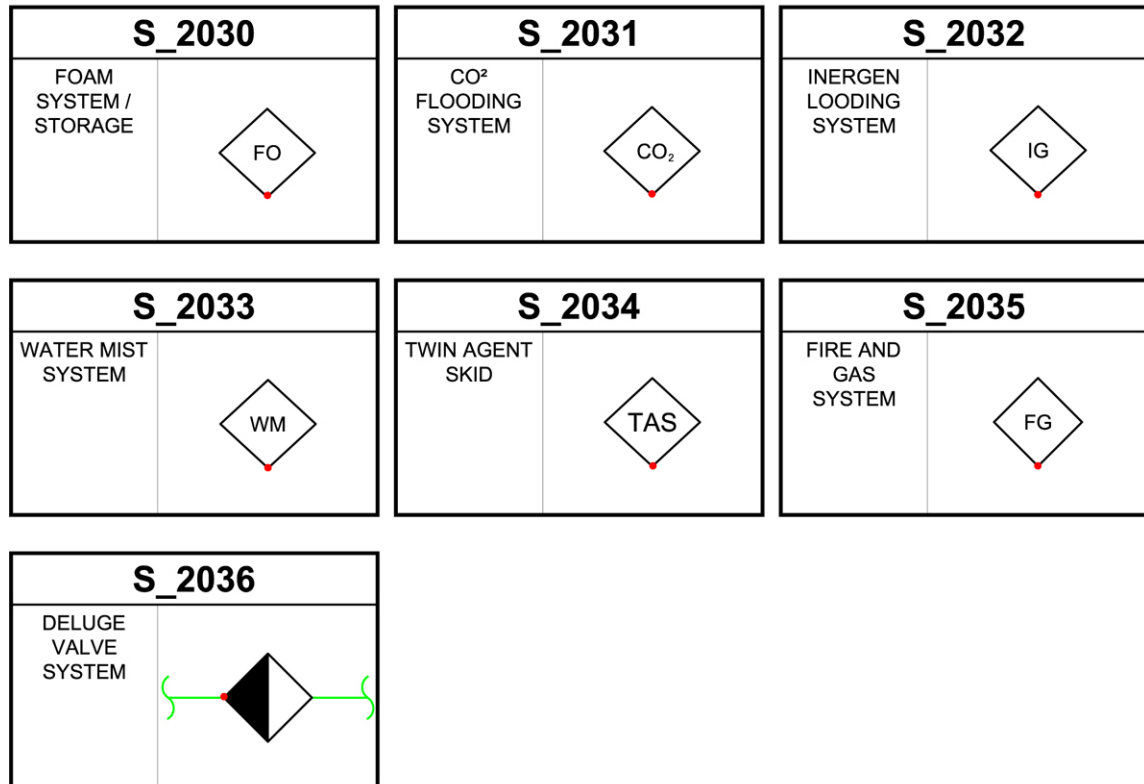
SA2000 WATER EXTINGUISHER 	SA2001 FOAM EXTINGUISHER 	SA2002 DRY CHEMICAL EXTINGUISHER (LIQUID, GAS, ELECTRICAL FIRE) 
SA2003 DRY CHIMICAL EXTINGUISHER (FOR FIRES OF ALL TYPES EXCPT METALS) 	SA2004 CO ² EXTINGUISHER 	SA2005 WHEELED EXTINGUISHER 
SB2000 LIFE RAFT 	SB2001 LIFE BOAT 	SB2002 LIFE BUDY / LB 
SH2000 FIXED WATER MONITOR 	SH2001 FIXED WATER / FOAM MONITOR 	SI2000 FIRE HOSE CABINET 
SI2001 HOSE REEL 	SJ2000 FIRE HYDRANT 	

PID - Safety – Equipment (4/4)

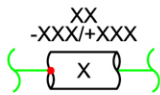
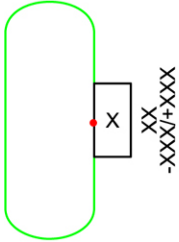
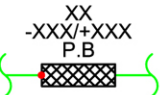
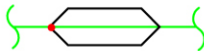
SK2001 FIRST AID KIT 	SK2002 STRETCHER 	SK2003 FIRE BLANKET 
SK2004 HELICOPTER CRASH KIT 	SK2005 TEMPORARY REFUGE 	SK2006 SAFETY SHOWER 
SK2007 EYE WASH 	SK2008 SAFETY SHOWER WITH EYE WASH 	SN2000 SCRAMBLE NET 
SN2001 WIND SOCKET 	SN2002 EMERGENCY EXIT 	SN2003 MUSTER POINT 



PID - Safety – Safety systems

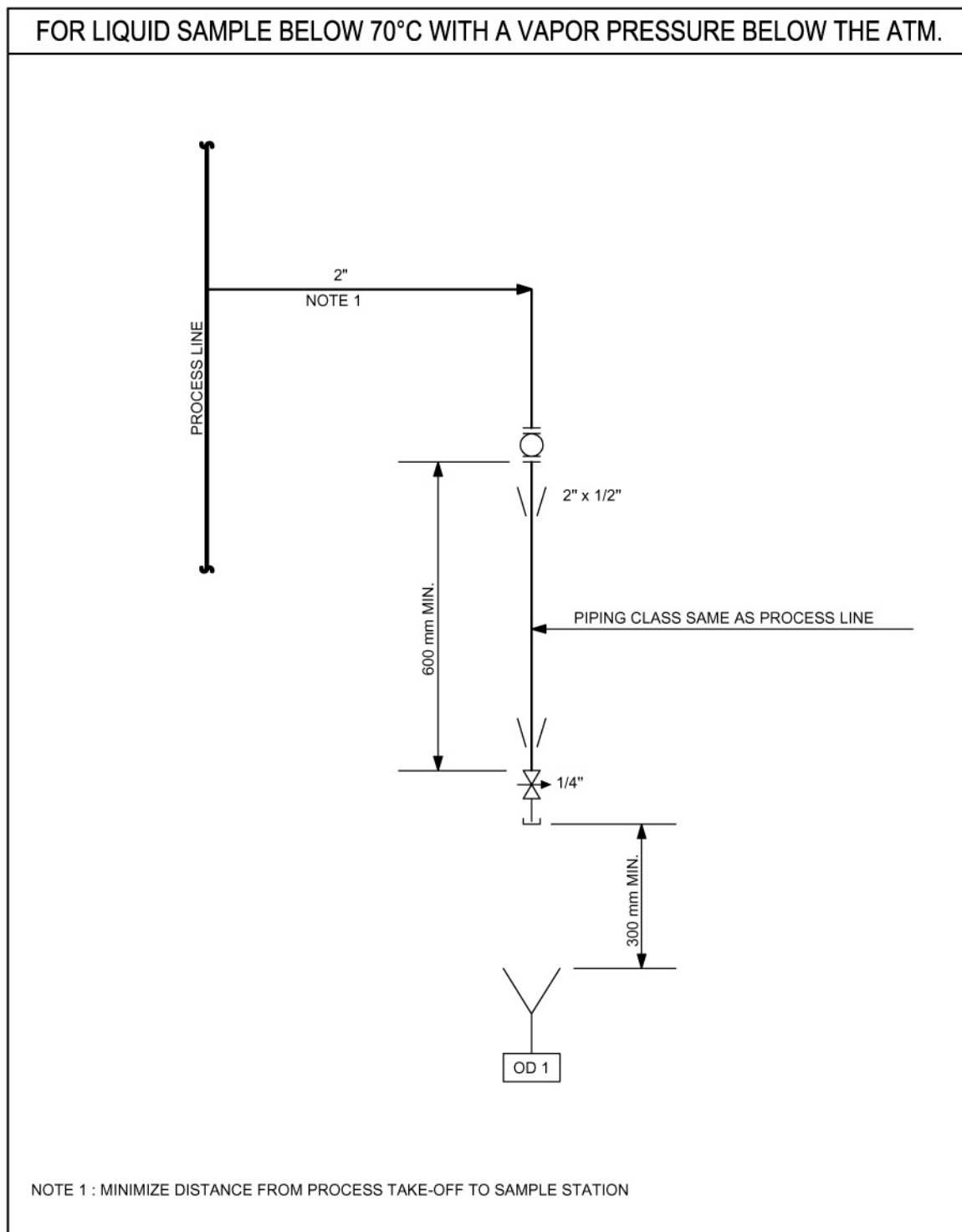


PID - Insulation & heat protection

CAL2000 INSULATED LINE (X : INSULATION CODE ; NOTE 1) 	CAL2001 INSULATED EQUIPMENT (X : INSULATION CODE ; NOTE 1) 
CAL2002 PHYSICAL BARRIER (NOTE 2) 	CAL2003 JACKETED LINE 
NOTE 1 : INSULATION CODE A : ACOUSTIC INSULATION B : SOLAR INSULATION PROTECTION C : COLD D : DUAL (COLD AND HOT) E : ELECTRICAL TRACING H : HOT I : ANTI ICING K : ANTI CONDENSATION L : COLD AND ACOUSTIC P : PERSONNEL R : LIQUID TRACING S : STEAM TRACING T : HOT AND ACOUSTIC NOTE 2 : A PHYSICAL BARRIER TO BE APPLIED TO PIPING SYSTEMS OPERATING ABOVE 70°C IN AREA WHERE THE PIPE WORK IS ACCESSIBLE TO PERSONNEL	

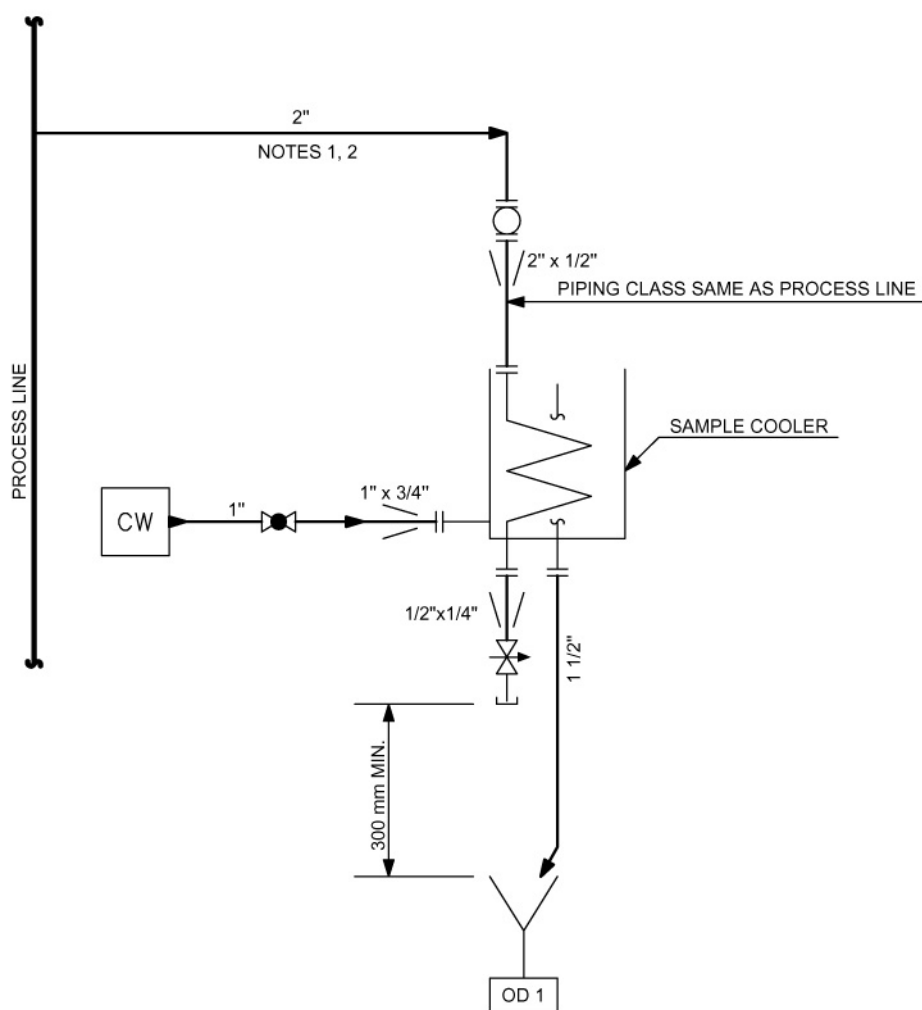
Appendix 6 Types of sample connections

Typical sample connection – Type: T1



Typical sample connection – Type: T2

FOR LIQUID SAMPLE WHICH WOULD BE ABOVE 70°C WITHOUT COOLING AND WITH A VAPOR PRESSURE BELOW THE ATM. AT THE COOLING SAMPLE TEMPERATURE

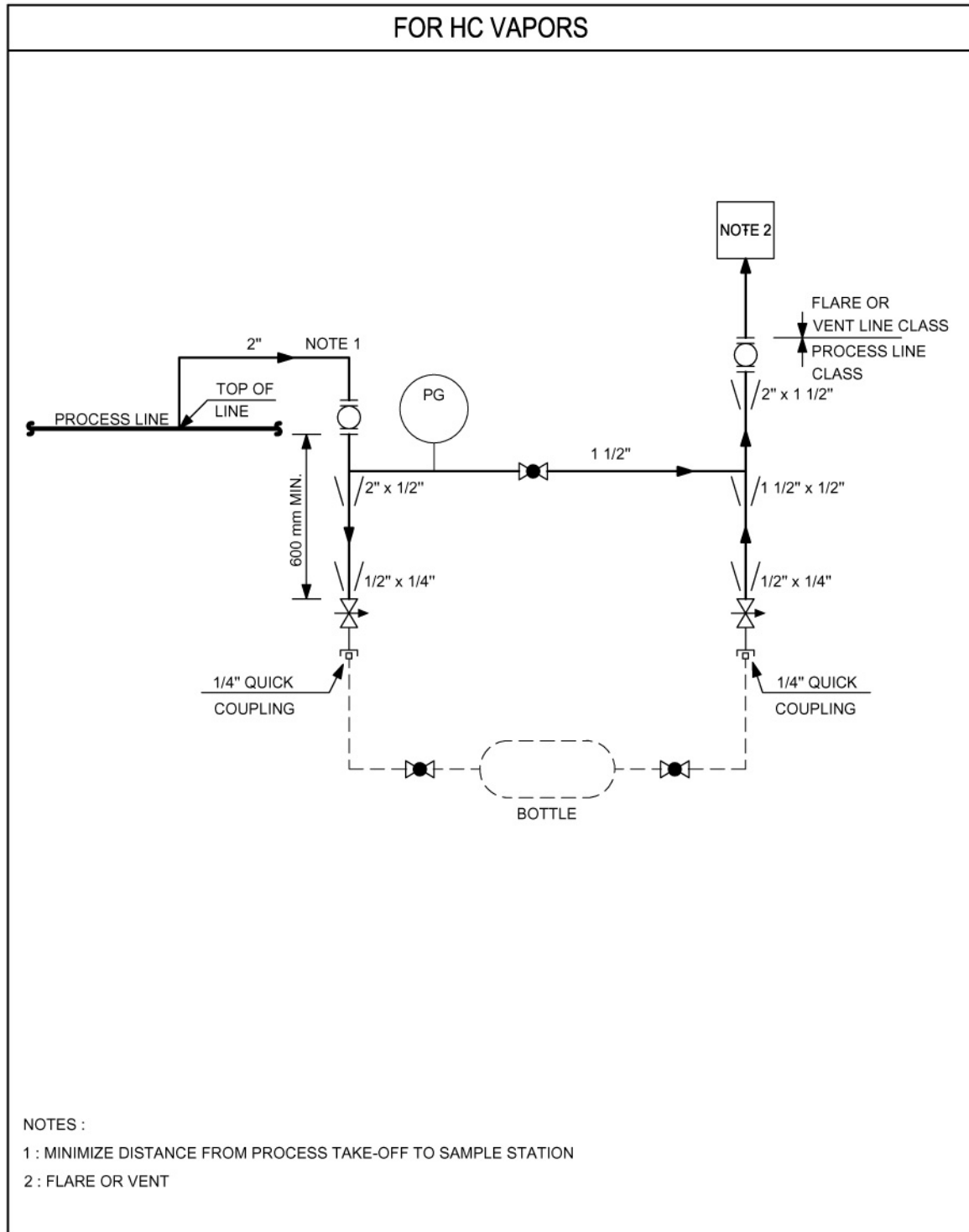


NOTES :

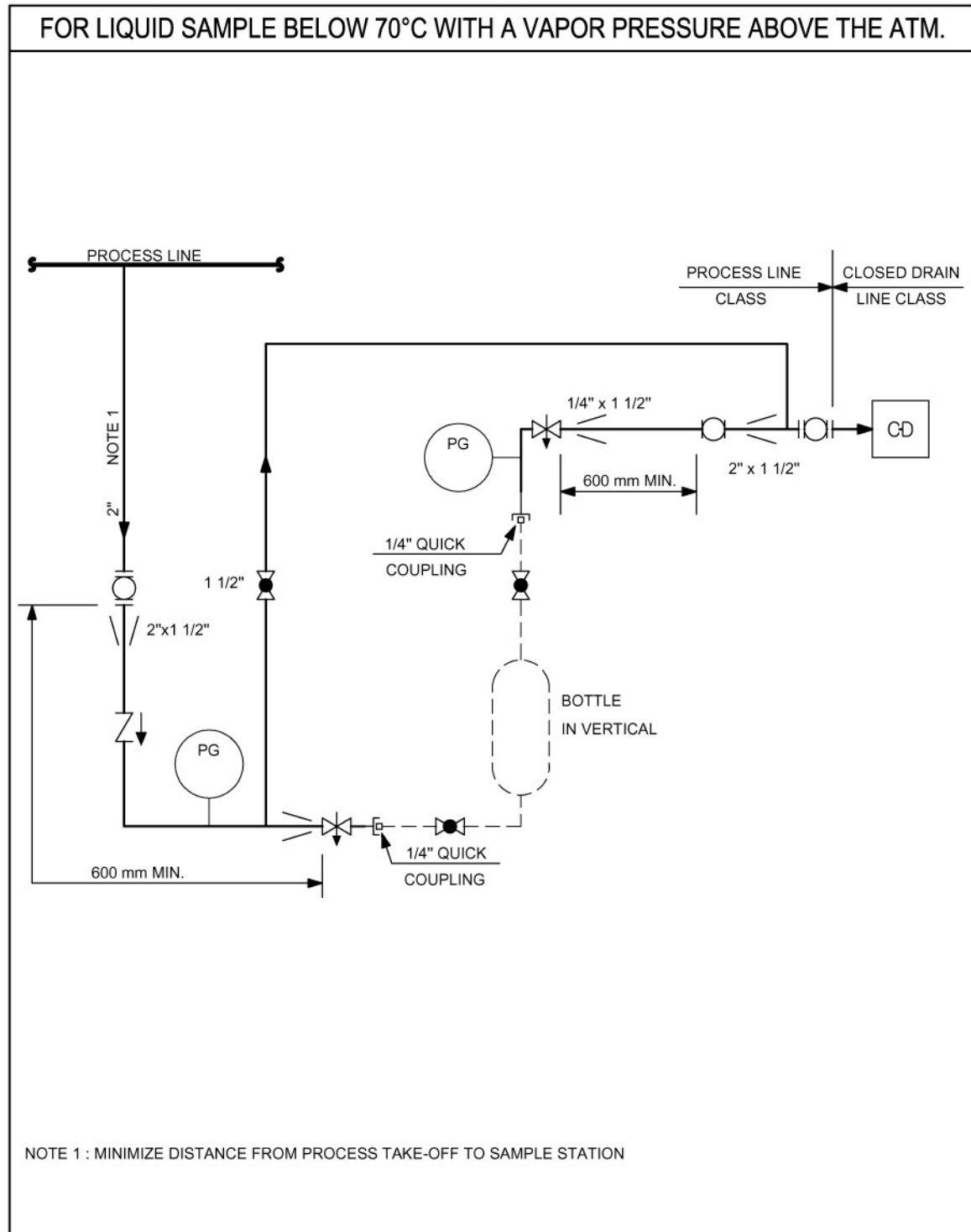
1 : MINIMIZE DISTANCE FROM PROCESS TAKE-OFF TO SAMPLE STATION.

2 : SAMPLE LINE TO BE INSULATED FOR PERSONNEL PROTECTION UPSTREAM OF COOLER.

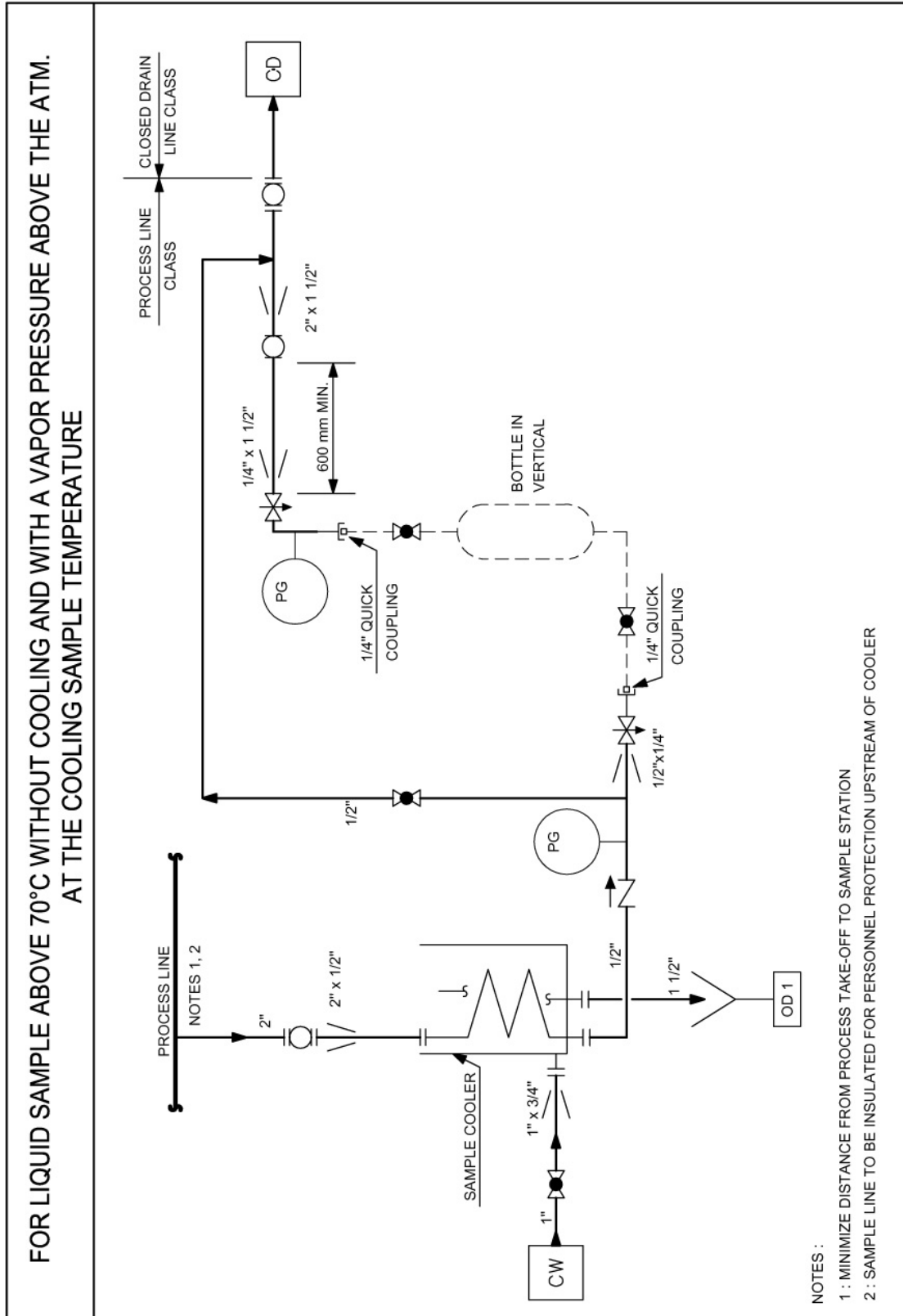
Typical sample connection – Type: T3



Typical sample connection – Type: T4



Typical sample connection – Type: T5



Typical sample connection – Type: T6

