

DEP SPECIFICATION

STANDARD DRAWINGS INDEX

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DESIGN AND ENGINEERING PRACTICE



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1. INTRODUCTION

1.1 SCOPE

This index lists all DEP Standard Drawings which are currently active. The drawings are listed in numerical order within subject groups.

The year of issue of the current revision of each drawing is shown. The initial issue of a drawing is identified by the capital letter "O", the first revision is identified by the capital letter "A", and subsequent revisions by the capital letters "B", "C", etc.

This index replaces the previous index dated September 2013; see (1.4) regarding the main changes.

1.2 STANDARD DRAWING NUMBERS

With a few exceptions, Standard Drawings have the prefix "S" (which is not shown in the numerical index). A few drawings with "T" or "Tc" prefixes were placed in the Standard Drawing system many years ago, and these drawings will be given a prefix "S" when they are next revised.

1.3 STANDARD DRAWING DISTRIBUTION

Shell companies are provided access to the DEP Standard Drawings through "Shell DEPs Online" at <https://www.shelldeps.com>.

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1.4 SUMMARY OF MAIN CHANGES

This DEP is a full revision of the DEP of the same number dated September 2013.

A vertical line in the margin (|) identifies all new drawings and revised drawings.

1.5 CUSTODIANSHIP

The Custodian of each Standard Drawing is identified in the 5th column of the index.

1.6 COMMENTS ON THIS DEP

Comments on this DEP may be submitted to the Administrator using one of the following options:

Shell DEPs Online (Users with access to Shell DEPs Online)	Enter the Shell DEPs Online system at https://www.shelldeps.com Select a DEP and then go to the details screen for that DEP. Click on the "Give feedback" link, fill in the online form and submit.
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DEP Standard Form (Other users)	Use DEP Standard Form 00.00.05.80-Gen. to record feedback and email the form to the Administrator at standards@shell.com .

Feedback that has been registered in the DEP Feedback System by using one of the above options will be reviewed by the DEP Custodian for potential improvements to the DEP.

2. NUMERICAL INDEX BY GROUP**S 01 SCHEMES, DIAGRAMS AND SYSTEMS**

Drawing Number	Issue Year	Rev	Title	Custodian
01.001	1997	C	Refinery fuel gas system+	Paul, Debnath SEPL-PTE/PUHT
01.002	1997	D	Refinery fuel gas system (incl. Off-spec. LPG disposal)	Paul, Debnath SEPL-PTE/PUHT
01.003	1997	D	Refinery fuel oil system	Paul, Debnath SEPL-PTE/PUHT
01.004	1997	D	Refinery asphalt system	Paul, Debnath SEPL-PTE/PUHT
01.005	2006	E	Heat-transfer fluid system	Paul, Debnath SEPL-PTE/PUHT
01.006	1997	B	Refinery LBF/liq butane system	Paul, Debnath SEPL-PTE/PUHT
01.007	1997	B	System for burning waste gas from high vacuum units and vacuum driers	Paul, Debnath SEPL-PTE/PUHT
01.008	1997	B	System for burning waste gas from sour water stripper	Paul, Debnath SEPL-PTE/PUHT
01.009	1997	B	System for burning waste gas from bitumen blowing units	Paul, Debnath SEPL-PTE/PUHT
01.010	1997	B	System for burning low-pressure gas	Paul, Debnath SEPL-PTE/PUHT

S 02 MECHANICAL SYMBOLS

Drawing Number	Issue Year	Rev	Title	Custodian
02.001	1998	O	Mechanical symbols for isometric drawings	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-001	2012	A	Mechanical symbols for use on flow schemes: sheet 1 - pipe symbols and pipe indicator	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-002	2012	A	Mechanical symbols for use on flow schemes: sheet 2 - general and valves	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-003	2012	A	Mechanical symbols for use on flow schemes: sheet 3 - vessels and tanks	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-004	2012	A	Mechanical symbols for use on flow schemes: sheet 4 - columns and internals	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-005	2012	A	Mechanical symbols for use on flow schemes: sheet 5 - pumps, compressors, blowers and fans	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-006	2012	A	Mechanical symbols for use on flow schemes: sheet 6 - separators and filters	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-007	2012	A	Mechanical symbols for use on flow schemes: sheet 7 - mixers	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-008	2012	A	Mechanical symbols for use on flow schemes: sheet 8 - heat transfer equipment	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-009	2012	A	Mechanical symbols for use on flow schemes: sheet 9 - drying equipment	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-010	2012	A	Mechanical symbols for use on flow schemes: sheet 10 - furnaces	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-011	2012	B	Mechanical symbols for use on flow schemes: sheet 11 - miscellaneous equipment	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-012	2012	A	Mechanical symbols for use on flow schemes: sheet 12 - data identification (SI units)	Kruijer, Alfred A GSNL-PTE/EMMI
02.002-013	2012	O	Mechanical symbols for use on flow schemes: sheet 13 - data identification (US customary units)	Kruijer, Alfred A GSNL-PTE/EMMI

S 10 UNIVERSAL CONSTRUCTIONS FOR COLUMNS, VESSELS, TUBULARS, ETC.

Drawing Number	Issue Year	Rev	Title	Custodian
10.010	2009	G	Vortex breakers	Nooijen, Hans L GSNL-PTD/TRD
10.016	2013	F	Flanges for non-pressure pipe connections inside vessels	Yuen, Simon SCAN- PTE/AMMI
10.030	1996	B	Lifting lug for top covers (material: carbon steel, low-alloy steel or stainless steel)	Yuen, Simon SCAN- PTE/AMMI
10.031	1995	D	Hatch way covers	Yuen, Simon SCAN- PTE/AMMI
10.035	1995	F	Bolting non-standard flanges with unified inch screw threads	Yuen, Simon SCAN- PTE/AMMI
10.039	1995	B	Pad-type hand holes with cover flange ANS class 150 and 300 for unfired carbon steel, low alloy steel and stainless steel pressure vessels	Yuen, Simon SCAN- PTE/AMMI
10.040	1976	A	Explosion cover	Yuen, Simon SCAN- PTE/AMMI
10.041	1981	B	Typical drawing of bitumen catcher on top of a blowing tower	Yuen, Simon SCAN- PTE/AMMI
10.046	1995	B	Stilling well for displacement type level instruments	Yuen, Simon SCAN- PTE/AMMI
10.050	2012	B	Wall type gauge glass with reflex or transparent glass.	Yuen, Simon SCAN- PTE/AMMI
10.053	1995	A	Pad-type hand holes, carbon steel	Yuen, Simon SCAN- PTE/AMMI
10.054	1995	A	Pad-type hand holes, carbon steel with lining	Yuen, Simon SCAN- PTE/AMMI
10.056	2004	B	Typical details of insulation collar for carbon, low-alloy steel and stainless steel apparatus	Kruijsen, Ton ATJMM GSNL-PTE/ECSO
10.057	1996	A	Typical details of 1/2 inch spray nozzle for sight and light glasses	Yuen, Simon SCAN- PTE/AMMI
10.060	1996	A	Pad flange for circular sight or light glass - carbon steel and alloy steel (incl. stainless steel)	Yuen, Simon SCAN- PTE/AMMI
10.061	1996	A	Pad flange for circular sight or light glass - clad carbon steel	Yuen, Simon SCAN- PTE/AMMI
10.062	2007	C	Replaceable glass/flange unit for circular sight or light glass (single glass type)	Yuen, Simon SCAN- PTE/AMMI
10.063	2007	C	Replaceable glass/flange unit for circular sight or light glass (double glass type)	Yuen, Simon SCAN- PTE/AMMI
10.070	1995	B	Davit for ANS or BS blind flanges nom. size 12-24 inch incl., classes 150-600 incl.	Yuen, Simon SCAN- PTE/AMMI
10.071	2009	O	Bolt length and make-up requirements for tensioning tools	Yuen, Simon SCAN- PTE/AMMI
10.101	1998	E	Equipment nozzles	Yuen, Simon SCAN- PTE/AMMI
10.103-001	2013	E	Typical details of bush-lined, overlay welded and clad steel nozzles	Yuen, Simon SCAN- PTE/AMMI
10.103-002	2009	O	Typical details for solid alloy nozzle in clad vessel	Yuen, Simon SCAN- PTE/AMMI
10.107	2009	D	Flanged thermowell nozzle DN 40 mm on equipment	Yuen, Simon SCAN- PTE/AMMI
10.108	1995	B	Strip lining details	Yuen, Simon SCAN- PTE/AMMI
10.109	1995	B	Cleat and sleeve for surface-mounted thermometer assembly	Yuen, Simon SCAN- PTE/AMMI
10.114-001	2013	D	Nameplate with bracket for vessel and heat exchange equipment	Madsen, Eric SCAI- PTE/AMMI
10.114-002	2013	D	Nameplate with bracket for vessel and heat exchange equipment (USC units)	Madsen, Eric SCAI- PTE/AMMI
10.115	1995	B	Typical detail of lifting trunnion for vertical vessels	Yuen, Simon SCAN- PTE/AMMI
10.116	1995	A	Bolting for non-standard flanges with metric screw threads	Yuen, Simon SCAN- PTE/AMMI
10.118	2009	O	Reference points for survey of steel vessels (general layout)	Yuen, Simon SCAN- PTE/AMMI
10.119	2009	O	Grab rungs and steps for manways	Yuen, Simon SCAN- PTE/AMMI

S 12 CIVIL ENGINEERING - BUND WALLS, TANK PITS, RETAINING WALLS, DITCHES, ETC.

Drawing Number	Issue Year	Rev	Title	Custodian
12.001	2006	E	General tank foundation without leak detection	den Hertog, Dick PD GSLN-PTE/ECSSO
12.002-001	2012	E	Bundwall - typical details	den Hertog, Dick PD GSLN-PTE/ECSSO
12.002-002	2012	A	Bundwall - typical details	den Hertog, Dick PD GSLN-PTE/ECSSO
12.003	2011	C	Conceptual tank foundation with tank leak detection and management system for new tanks	den Hertog, Dick PD GSLN-PTE/ECSSO
12.004	2005	O	Conceptual concrete tank foundation	den Hertog, Dick PD GSLN-PTE/ECSSO
12.005	2005	O	Typical tank foundation with tank leak detection v management system for existing tanks	den Hertog, Dick PD GSLN-PTE/ECSSO

S 13 ROADS AND FENCING

Drawing Number	Issue Year	Rev	Title	Custodian
13.001	2011	B	Fence construction type "A" with reinforced concrete posts	den Hertog, Dick PD GSLN-PTE/ECSSO
13.002	2011	B	Fence construction type "B" with tee posts and horizontal tubing	den Hertog, Dick PD GSLN-PTE/ECSSO
13.003	2011	B	Fence construction type "C" with tee posts	den Hertog, Dick PD GSLN-PTE/ECSSO
13.004	2011	B	Fence construction type "D" with tubular posts	den Hertog, Dick PD GSLN-PTE/ECSSO
13.005	1996	A	Typical sections of heavy duty roads (flexible and rigid paving)	den Hertog, Dick PD GSLN-PTE/ECSSO
13.006	1996	A	Typical sections of plant roads (heavy duty and rigid paving)	den Hertog, Dick PD GSLN-PTE/ECSSO
13.007	1996	A	Typical sections of light duty roads and patrol roads (flexible and rigid paving)	den Hertog, Dick PD GSLN-PTE/ECSSO
13.008	1996	A	Traffic barrier for hydrant	den Hertog, Dick PD GSLN-PTE/ECSSO

S 14 DRAINAGE AND SEWERAGE FACILITIES

Drawing Number	Issue Year	Rev	Title	Custodian
14.021-001	1995	C	Typical 2-bay corrugated plate interceptor. Sheet 1 of 2 - design, start-up, operation and maintenance instructions	den Hertog, Dick PD GSLN-PTE/ECSSO
14.021-002	1995	C	Typical 2-bay corrugated plate interceptor. Sheet 2 of 2 - general arrangement	den Hertog, Dick PD GSLN-PTE/ECSSO
14.050	2011	O	Masterplan for hydrocarbon facility effluent/water treatment (typical)	den Hertog, Dick PD GSLN-PTE/ECSSO
14.051	2011	O	Tank compound drainage	den Hertog, Dick PD GSLN-PTE/ECSSO
14.052	2011	O	Tank bottom drain funnel	den Hertog, Dick PD GSLN-PTE/ECSSO
14.053	2011	O	Pipetrack drainage/sand trap/fire trap details	den Hertog, Dick PD GSLN-PTE/ECSSO
14.054	2011	O	Process water surface area drainage and open drip/drain system	den Hertog, Dick PD GSLN-PTE/ECSSO
14.055	2014	A	Oil drip/rain collection system	den Hertog, Dick PD GSLN-PTE/ECSSO
14.056	2011	O	Sump/manhole details (typical)	den Hertog, Dick PD GSLN-PTE/ECSSO
14.057	2011	O	Self-skimming sumps	den Hertog, Dick PD GSLN-PTE/ECSSO
14.058	2011	O	Flow diversion sump	den Hertog, Dick PD GSLN-PTE/ECSSO
14.060	2011	O	Typical plant drainage system, gravity flow via CDF	den Hertog, Dick PD GSLN-PTE/ECSSO
14.061	2011	O	Layout of pre-separator	den Hertog, Dick PD GSLN-PTE/ECSSO

Drawing Number	Issue Year	Rev	Title	Custodian
14.063	2011	O	Controlled discharge facility	den Hertog, Dick PD GSNL-PTE/EC SO
14.064	2011	O	Handwheel operated rotating through skimmer	den Hertog, Dick PD GSNL-PTE/EC SO
14.065	2011	O	Arrangement of vertical centrifugal pumps at oil sump	den Hertog, Dick PD GSNL-PTE/EC SO
14.066	2011	O	Drainage layout of liquefied gas process areas	den Hertog, Dick PD GSNL-PTE/EC SO
14.067	2011	O	Drainage layout of LPG storage areas	den Hertog, Dick PD GSNL-PTE/EC SO
14.068	2011	O	Drainage layout of well site and gas treatment facility (typical)	den Hertog, Dick PD GSNL-PTE/EC SO
14.069	2011	O	Liquid gas trap	den Hertog, Dick PD GSNL-PTE/EC SO

S 17 BUILDINGS

Drawing Number	Issue Year	Rev	Title	Custodian
17.001	1995	O	Typical analyser house for tropical areas	den Hertog, Dick PD GSNL-PTE/EC SO
17.002	1995	O	Typical analyser house for non-tropical areas	den Hertog, Dick PD GSNL-PTE/EC SO

S 19 CONCRETE FOUNDATIONS AND STRUCTURES, PLANT PAVING, TRENCHES, TRENCH COVERS, ETC.

Drawing Number	Issue Year	Rev	Title	Custodian
19.001	1996	B	Electrical and instrument cable trenches in concrete paved areas	den Hertog, Dick PD GSNL-PTE/EC SO
19.002	1996	B	Cable routing in unpaved, brick-paved or tiled areas and crossing roads	den Hertog, Dick PD GSNL-PTE/EC SO
19.003	1995	A	Typical lay-out plans of paving	den Hertog, Dick PD GSNL-PTE/EC SO
19.004	1996	A	Light-duty concrete paving and footpaths - typical details	den Hertog, Dick PD GSNL-PTE/EC SO
19.005	1996	A	Heavy-duty concrete paving - typical details	den Hertog, Dick PD GSNL-PTE/EC SO
19.006	1996	A	Reinforced concrete foundations on or through paving	den Hertog, Dick PD GSNL-PTE/EC SO
19.011	2006	B	Liquid tight floor with sub-base treatment system	den Hertog, Dick PD GSNL-PTE/EC SO
19.012	2011	O	Standard detail for ties/stirrups	den Hertog, Dick PD GSNL-PTE/EC SO
19.014	2011	A	Standard detail for ties/stirrups	den Hertog, Dick PD GSNL-PTE/EC SO
19.050	1996	B	Octagon foundation drain details	den Hertog, Dick PD GSNL-PTE/EC SO
19.051-001	1996	B	Chemical resistant brick linings for concrete structures - flooring	den Hertog, Dick PD GSNL-PTE/EC SO
19.051-002	1996	B	Chemical resistant brick linings for concrete structures - expansion joint for (limited) multidirectional movement - details of expansion joint in floors. (sheet 1 of 2)	den Hertog, Dick PD GSNL-PTE/EC SO
19.052	1996	B	Chemical resistant brick linings for concrete structures - expansion joint for (limited) multidirectional movement - details of expansion joint in floors. (sheet 2 of 2)	den Hertog, Dick PD GSNL-PTE/EC SO
19.055	1991	A	Chemical resistant brick linings for concrete structures - expansion joint for (limited) multidirectional movement - detail of expansion joint between floor and wall	Kruijer, Alfred A GSNL-PTE/EMMI
19.060	1996	B	Drain constructions in floors	den Hertog, Dick PD GSNL-PTE/EC SO
19.062	1996	B	Chemical resistant brick linings for concrete structures - trench construction	den Hertog, Dick PD GSNL-PTE/EC SO

Drawing Number	Issue Year	Rev	Title	Custodian
19.065	1996	B	Chemical resistant brick linings for concrete structures - trench construction with gres split tiles and half gres pipe elements (Fodder trough)	den Hertog, Dick PD GSNL-PTE/ECSC
19.071	1996	B	Chemical resistant brick linings for concrete structures - details of open trench construction lined with bricks or tiles only	den Hertog, Dick PD GSNL-PTE/ECSC

S 20 COLUMNS

Drawing Number	Issue Year	Rev	Title	Custodian
20.001	2013	L	Skirts, cylindrical and conical	Yuen, Simon SCAN-PTE/AMMI
20.002-001	2009	H	Fire proof protection of skirts	den Hertog, Dick PD GSNL-PTE/ECSC
20.002-002	2009	O	Sphere support legs fireproofing and insulation	den Hertog, Dick PD GSNL-PTE/ECSC
20.003-001	2013	E	Support rings for insulation on vessels and heat exchangers	Yuen, Simon SCAN-PTE/AMMI
20.003-002	2011	O	Support rings for insulation on vessels and heat exchangers	Yuen, Simon SCAN-PTE/AMMI
20.003-003	2011	O	Support rings for insulation on vessels and heat exchangers	Yuen, Simon SCAN-PTE/AMMI
20.003-004	2011	O	Support rings for insulation on vessels and heat exchangers	Yuen, Simon SCAN-PTE/AMMI
20.004	2002	H	Anchor bolt ring or lugs and base plate for columns	Yuen, Simon SCAN-PTE/AMMI
20.015	2009	C	Typical details of schoepentoeter (vane feed inlet) (type II)	Nooijen, Hans L GSNL-PTD/TRD
20.016	2009	C	Typical details of schoepentoeter (vane feed inlet) (type III)	Nooijen, Hans L GSNL-PTD/TRD
20.017	2009	C	Typical details of schoepentoeter (vane feed inlet) (type IV)	Nooijen, Hans L GSNL-PTD/TRD
20.019	2012	F	Typical details of schoepentoeter (vane feed inlet) vane ladder - supports and general notes	Nooijen, Hans L GSNL-PTD/TRD
20.020	2009	C	Typical details of schoepentoeter (vane feed inlet) with single section vane ladder, max. Height 800 mm (type 1a)	Nooijen, Hans L GSNL-PTD/TRD
20.021	1996	A	Typical details of schoepentoeter (vane feed inlet) with catcher cap (type 1B)	Nooijen, Hans L GSNL-PTD/TRD
20.022	2009	C	Typical details of schoepentoeter (vane feed inlet) with multiple section vane ladder (type 1C)	Nooijen, Hans L GSNL-PTD/TRD
20.025	1996	A	Typical details of schoepentoeter (vane feed inlet) (type Hi Fi)	Nooijen, Hans L GSNL-PTD/TRD
20.026	1996	A	Typical details of schoepentoeter (vane feed inlet) (type Hi Fi) vane distribution and general notes	Nooijen, Hans L GSNL-PTD/TRD
20.028	2010	C	Typical details of demisters	Nooijen, Hans L GSNL-PTD/TRD
20.029	2010	B	Typical details of demister attachments	Nooijen, Hans L GSNL-PTD/TRD
20.030	2013	C	Typical details of demister supports	Nooijen, Hans L GSNL-PTD/TRD

S 21 UNFIRED HEAT TRANSFER EQUIPMENT AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian
21.017	Withdrawn	C	Brackets for standard vertical reboilers. Nom. Dia. 350 mm up/incl. 1100 mm	
21.071	2014	D	Warning nameplate material: stainless steel	Stomierowski, Scott E GSUSI-PTE/AUHT
21.072	2014	D	Sacrificial anodes for tubular	Stomierowski, Scott E GSUSI-PTE/AUHT
21.073	2014	D	Steel sacrificial plates for tubulars 350 mm nom. dia. and larger	Stomierowski, Scott E GSUSI-PTE/AUHT
21.074	Withdrawn	A	Transport frame for air-cooled heat exchanger (forced draught)	

Drawing Number	Issue Year	Rev	Title	Custodian
21.075	Withdrawn	A	Transport frame for air-cooled heat exchanger (induced draught)	
21.076-001	2014	O	Two-piece plug with gasket compressor for air-cooled exchanger (SI units)	Stomierowski, Scott E GSUSI-PTE/AUHT
21.076-002	2014	O	Two-piece plug with gasket compressor for air-cooled exchanger (USC units)	Stomierowski, Scott E GSUSI-PTE/AUHT
21.081	Withdrawn	O	Bottom part for 14" - 16" and 18" dia. Reboiler with floating head, with 100 mm diameter joint	
21.082	Withdrawn	O	Bottom part for 20" - 24" and 26" dia. Reboiler with floating head, with 100 mm diameter joint	
21.083	Withdrawn	O	Bottom part for 24" - 26" - 30" - 32" and 36" dia. Reboiler with floating head, with 200 mm diameter joint	
21.084	Withdrawn	O	Bottom part for 30" - 32" - 36" - 40" and 44" dia. Reboiler with floating head, with 300 mm diameter joint	
21.085-001	2014	O	Acceptable single pass floating head designs (sheet 1)	Stomierowski, Scott E GSUSI-PTE/AUHT
21.085-002	2014	O	Acceptable single pass floating head designs (sheet 2)	Stomierowski, Scott E GSUSI-PTE/AUHT

S 22 VESSELS, INCLUDING INTERNALS AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian
22.001	1996	J	Saddles for horizontal vessels - shell dia. Nom. 150 up to and incl. 1000 mm OD	Yuen, Simon SCAN-PTE/AMMI
22.002	1996	G	Saddles for horizontal vessels - shell dia. 1050 mm OD up to and incl. 3600 mm OD	Yuen, Simon SCAN-PTE/AMMI
22.003	1996	G	Sliding plate for saddles of horizontal vessels	Yuen, Simon SCAN-PTE/AMMI
22.005	1999	J	Supports for vertical vessels shell dia. 350 mm OD up to and incl. 1500 mm OD (half skirts)	Yuen, Simon SCAN-PTE/AMMI
22.007-001	1999	B	Twin flange' coalescer (TFC): sheet 1 - typical drawing	Yuen, Simon SCAN-PTE/AMMI
22.007-002	1999	B	Twin flange' coalescer (TFC): sheet 2 - design data for coalescing bed	Yuen, Simon SCAN-PTE/AMMI
22.008	1979	A	Typical construction detail of connection for intermediate head of pressure vessels	Yuen, Simon SCAN-PTE/AMMI
22.009-001	1981	O	Typical drawing of non-flanged coalescer (NFC) (sheet 1 of 2)	Yuen, Simon SCAN-PTE/AMMI
22.009-002	1981	O	Typical drawing of non-flanged coalescer (NFC) (sheet 2 of 2)	Yuen, Simon SCAN-PTE/AMMI
22.010-001	2013	O	Vessel manway hinges (SI units)	Yuen, Simon SCAN-PTE/AMMI
22.010-002	2013	O	Vessel manway hinges (USC units)	Yuen, Simon SCAN-PTE/AMMI
22.030-001	2013	O	Typical detail of FCCU units (Two vessel configuration)	Chakrabarti, Sujit PTIN-PTE/PMMI
22.030-002	2013	O	Typical detail of FCCU units (Three vessel configuration)	Chakrabarti, Sujit PTIN-PTE/PMMI
22.030-003	2013	O	Typical detail of FCCU units (External riser configuration)	Chakrabarti, Sujit PTIN-PTE/PMMI
22.030-004	2013	O	Typical detail of FCCU units (Square catalyst return configuration)	Chakrabarti, Sujit PTIN-PTE/PMMI
22.031	2013	O	Typical details of hexmesh anchor	Chakrabarti, Sujit PTIN-PTE/PMMI
22.032-001	2013	O	Typical details of trademark anchor	Chakrabarti, Sujit PTIN-PTE/PMMI
22.032-002	2013	O	Typical details of trademark anchor	Chakrabarti, Sujit PTIN-PTE/PMMI
22.032-003	2013	O	Typical details of trademark anchor	Chakrabarti, Sujit PTIN-PTE/PMMI
22.032-004	2013	O	Typical arrangement of trademark anchor	Chakrabarti, Sujit PTIN-PTE/PMMI
22.033	2013	O	Typical arrangement of hexmesh and trademark anchor combination	Chakrabarti, Sujit PTIN-PTE/PMMI