



OIL & GAS DEVELOPMENT COMPANY LIMITED
KPD-TAY PLANT.

Phone#022-2789200 & Fax#022-2761410



Annexure-A

Schedule of Requirement

Tender Enquiry No. TE/MECH/WT/KPD-0001/TRD/2022

**“Web Tender for Fabrication & Supply of Test Rings for Shell & Tube Heat Exchangers
Installed At Dehydration Unit of KPD-TAY Plant”**

Sr #	Description	QTY	UOM
1	Regeneration gas Pre-Heater Stationary Tube sheet Test Ring Assembly (E-4501)	01	No
2	Regeneration gas Pre-Heater Floating Tube sheet assembly (E-4501)	01	Set
3	Regeneration Gas Heater Stationary Tube sheet Test Ring Assembly (E-4502)	01	No

TERMS AND CONDITIONS (TECHNICAL):-

- All the specifications / dimensions of Test Ring Assemblies should be as per attached drawings of related Heat Exchanger / TOR.
- Only U-stamp & R-Stamp authorized manufacturers will be considered for technical evaluation, valid certificate to be provided in the technical bid.
- Minimum Test Ring Flange area thicknesses of test rings should be as follows:

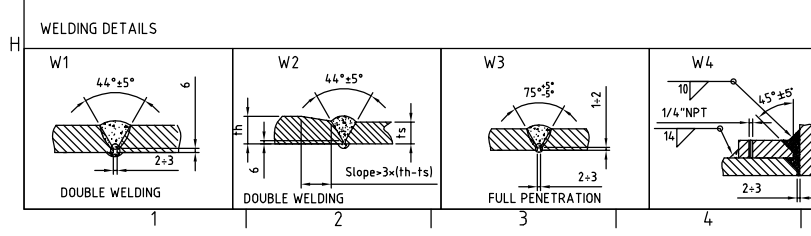
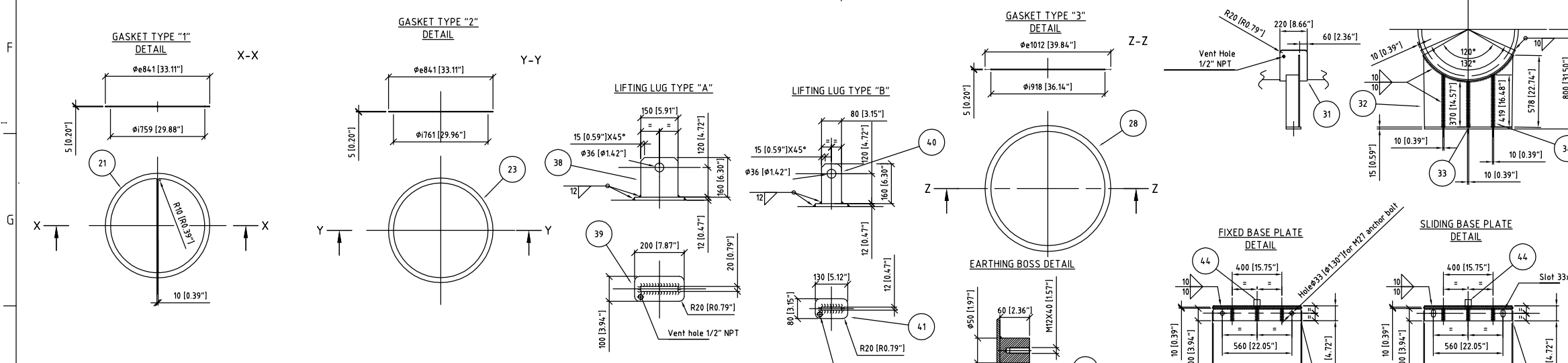
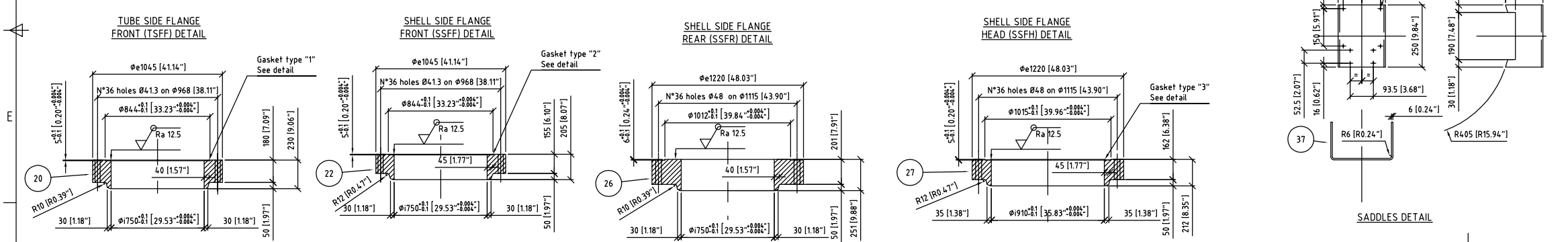
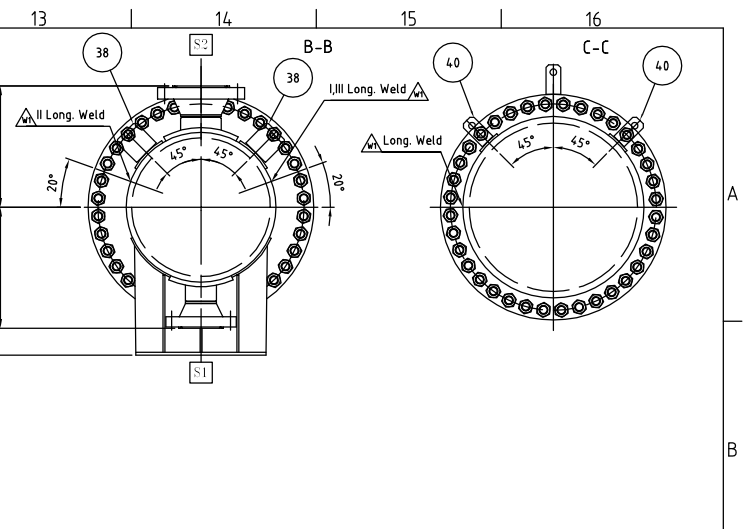
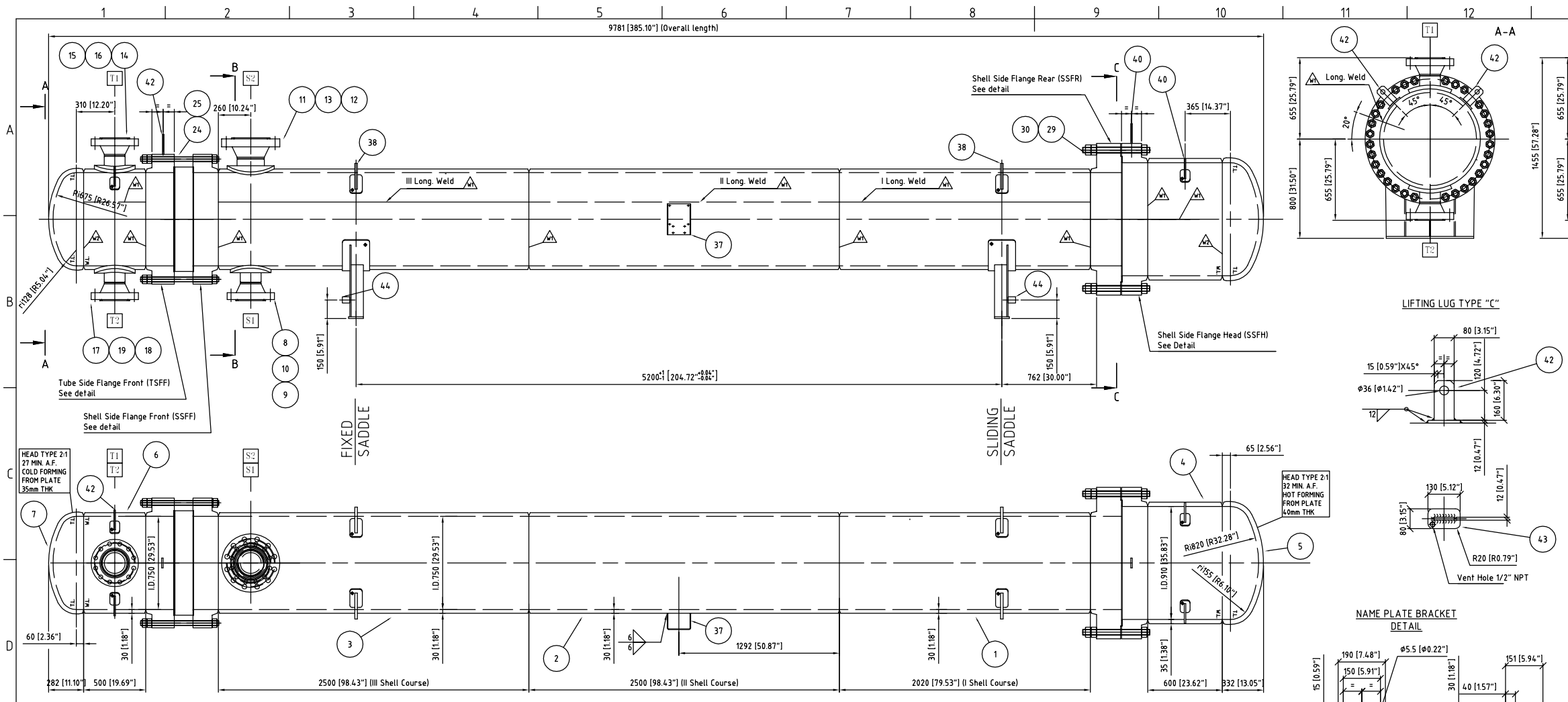
Sr #	Description	Minimum Flange Area Thicknesses
1	Regeneration gas Pre-Heater Stationary Tube sheet Test Ring Assembly (E-4501)	180mm
2	Regeneration gas Pre-Heater Floating Tube sheet assembly (E-4501)	195 mm
3	Regeneration Gas Heater Stationary Tube sheet Test Ring Assembly (E-4502)	95 mm

- Contractor shall be responsible for verifying provided Heat Exchanger drawings as per site so that test ring assembly can be manufactured accordingly.
- Material of the test ring assembly should be SA-105 or equivalent.
- Test Ring assembly material should be of foreign well known manufacturer having experience of at least 10 years, MTC of material must be provided before start of fabrication.
- Bidder shall prepare his own drawings for fabrication & same shall be handed over to OGDCL along with delivery of Test Ring assembly.
- The contractor shall be responsible for arrangement of all material, consumables required for fabrication of the Test Ring assemblies.
- The contractor shall be responsible for arrangement of all resources for fabrication, NDT / inspection required for the Test Ring Assemblies.

- j. The contractor shall be responsible for safe transportation of the Test Ring Assemblies to the KPD-TAY Plant.
- k. In case of any non-conformance observed during installation for hydro testing, Contractor shall immediately rectify / replace the same.
- l. Delivery of material is to be completed in 90-120 days from the date of receipt of firm purchase order.
- m. The master set of tender documents (Local) available on OGDCL website (www.ogdcl.com) is the integral part of this tender.

GENERAL TERMS AND CONDITIONS:

- A. BIDS MUST BE SUBMITTED UNDER **SINGLE STAGE TWO ENVELOPES BIDDING SYSTEM** i.e. TECHNICAL & FINANCIAL BID SEPARATELY ON DUE DATE.
- B. FINANCIAL BIDS OF ONLY TECHNICALLY RESPONSIVE BIDDERS WILL BE OPENED PUBLICLY.
- C. AFTER TENDER OPENING "TECHNICAL BIDS" WILL BE REVIEWED. THE BIDS WILL BE BROUGHT TECHNICALLY AT PAR BY SEEKING CLARIFICATIONS. THE BIDDERS WILL **NOT** BE ASKED FOR ANY PRICE CHANGE IN THEIR FINANCIAL BIDS DUE TO CERTAIN CLARIFICATIONS AND SUBSEQUENT CHANGE IN THEIR TECHNICAL PROPOSALS. THE BIDDERS WILL **NOT** BE ALLOWED TO SUBMIT SUPPLEMENTARY PRICE PROPOSALS IN A SEPARATE SEALED ENVELOPE TO MAKE IT A PART OF THE ALREADY SUBMITTED UNOPENED FINANCIAL BIDS AND TO ADJUST THEIR QUOTED PRICE SUBSEQUENTLY AFFECTED DUE TO CHANGE IN TECHNICAL PROPOSALS.
- D. SEALED FINANCIAL BIDS OF TECHNICALLY NON-RESPONSIVE BIDDERS WILL BE RETURNED UN-OPENED.
- E. OGDCL RESERVES THE RIGHT TO REJECT ANY OR ALL THE BIDS WITHOUT ASSIGNING ANY REASON.
- F. PRICES MUST BE QUOTED IN PKR INCLUSIVE OF ALL TAXES AND DUTIES, INDICATING UNIT PRICE AND TOTAL BID PRICES. GST MUST BE QUOTED SEPARATELY ALONG WITH COPY OF GST CERTIFICATE.
- G. QUOTED PRICES SHALL BE VALID FOR **90 DAYS** FROM THE OPENING DATE OF THE TECHNICAL BID.
- H. OGDCL RESERVES THE RIGHT TO EVALUATE THE BID(S) EITHER ITEM-WISE OR FULL PASKAGE BASIS WITHOUT ASSIGNING ANY REASON. TO QOUTE COMPETITIVE PRICES FOR ALL OR ANY ITEMS ENABLE COMPANY TO DECIDE PURCHASE.
- I. THE MAXIMUM DELIVERY TIME FOR SUPPLY ITEMS IS **90-120 DAYS** FROM THE DATE OF RECEIPT OF FIRM PURCHASE ORDER.
- J. BIDDERS TO SUBMIT THEIR COMPANY PROFILES, EXPERIENCE OF SIMILAR SUPPLIES IN PAKISTAN ALONG WITH TECHNICAL BIDS.



BOLT TENSION VALUE [KN]				BOLT TORQUE VALUE [KNxm]					
ITEM	NOMINAL DIAMETER	1ST. PASS	2ND. PASS	3THD. PASS	ITEM	NOMINAL DIAMETER	1ST. PASS	2ND. PASS	3THD. PASS
24	1 1/2	63	126	211	24	1 1/2	0.5	1.0	1.5
30	1 3/4	84	168	280	30	1 3/4	0.7	1.4	2.3

CONNECTIONS										
TAG	NPS	RATING	FLANGES TYPE	FAC.	NECK THK.	NOZZLE SCH.	PAD WIDTHXTHK.	SERVICE	WELDING DETAIL	NOTES
S1	6	900#	WN	RJ	10.97	80	80X25	COLD GAS INLET	W3-W4	-
S2	6	900#	WN	RJ	12.7	80	80X25	COLD GAS OUTLET	W3-W4	-
T1	6	900#	WN	RJ	10.97	80S	80X30	HOT GAS INLET	W3-W4	-
T2	6	900#	WN	RJ	10.97	80S	80X30	HOT GAS OUTLET	W3-W4	-

Det.	Item	Qty	Description	Standard	Material	Impct.	Cert.	Tolerance	Note
44	2	Earthing Boss	See Detail	AISI 304	-	-	-	-	-
43	3	Pad	130x80x12 thk.	SA240 304/304L	-	3.1	SA480	Dual Grade	-
42	3	Lifting Lug Type "C"	80X160X12 thk.	SA240 304/304L	-	2.2	SA480	Dual Grade	-
41	3	Pad	130x80x12 thk.	SA516 Gr.70N	-	3.1	SA20	-	-
40	3	Lifting Lug Type "B"	80X160X12 thk.	SA516 Gr.70N	-	2.2	SA20	-	-
39	4	Pad	100x200x12 thk.	SA516 Gr.70N	-	3.1	SA20	-	-
38	4	Lifting Lug Type "A"	150X160X20 thk.	SA516 Gr.70N	-	2.2	SA20	-	-
37	1	Name Plate Bracket	See Detail	SA516 Gr.70N	-	3.1	SA20	-	-
36	1	Sliding Base Plate	705x120x15 thk.	S275JR EN 10025	-	2.2	-	-	-
35	1	Fixed Base Plate	705x120x15 thk.	S275JR EN 10025	-	2.2	-	-	-
34	4	Rib	10x4.19x100	SA516 Gr.70N	-	2.2	-	-	-
33	2	Rib	10x3.70x100	SA516 Gr.70N	-	2.2	-	-	-
32	2	Plate	10x7.19x578	SA516 Gr.70N	-	2.2	-	-	-
31	2	Pad	220x94.5x10 thk.	SA516 Gr.70N	-	3.1	SA20	-	-
30	108	Nut	1 3/4, Thread 8UN-2B	SA194 Gr.2H	-	-	B1.1	Zinc Yellow Bichromated	-
29	36	Stud Bolt	1 3/4x540, Thread 8UN-2A	SA193 Gr.B7	-	3.1	B1.1	Zinc Yellow Bichromated	-
28	1	Gasket Type "3"	See Detail	Kamprufite NSI 304, filled with Graphite	-	3.1	-	m=2, y=27.6 MPa	-
27	1	Shell Side Flange Head (SSFH)	See Detail	SA350 LF2 CL1	-	3.1	See Detail	-	-
26	1	Shell Side Flange Rear (SSFR)	See Detail	SA350 LF2 CL1	-	3.1	See Detail	-	-
25	108	Nut	1 1/2, Thread 8UN-2B	SA194 Gr.2H	-	-	B1.1	Zinc Yellow Bichromated	-
24	36	Stud Bolt	1 1/2x530, Thread 8UN-2A	SA193 Gr.B7	-	3.1	B1.1	Zinc Yellow Bichromated	-
23	1	Gasket Type "2"	See Detail	Kamprufite NSI 304, filled with Graphite	-	3.1	-	m=2, y=27.6 MPa	-
22	1	Shell Side Flange Front (SSFF)	See Detail	SA350 LF2 CL1	-	3.1	See Detail	-	-
21	1	Gasket Type "1"	See Detail	Kamprufite NSI 304, filled with Graphite	-	3.1	-	m=2, y=27.6 MPa	-
20	1	Tube Side Flange Front (TSFF)	See Detail	SA182 F304/304L	-	3.1	See Detail	Dual Grade	-
T2	19	1	Pad	80x30 thk.	SA240 304/304L	-	3.1	SA480	Dual Grade
T2	18	1	Nozzle	Øe168.3x10.97 thk.	SA312 TP304/304L	-	3.1	-12.5K	Dual Grade
T2	17	1	Flange	6" WN-RJ 900#, neck thk. 19.97	SA182 F304/304L	-	3.1	B16.5	Dual Grade
T1	16	1	Pad	80x30 thk.	SA240 304/304L	-	3.1	SA480	Dual Grade
T1	15	1	Nozzle	Øe168.3x10.97 thk.	SA312 TP304/304L	-	3.1	-12.5K	Dual Grade
T1	14	1	Flange	6" WN-RJ 900#, neck thk. 19.97	SA182 F304/304L	-	3.1	B16.5	Dual Grade
S2	13	1	Pad	80x25 thk.	SA516 Gr.70N	-	3.1	SA20	-
S2	12	1	Nozzle	Øe219.1x12.7 thk.	SA333 Gr.6	-	3.1	-12.5K	-
S2	11	1	Flange	8" WN-RJ 900#, neck thk. 12.7	SA350 LF2 CL1	-	3.1	B16.5	-
S1	10	1	Pad	80x25 thk.	SA516 Gr.70N	-	3.1	SA20	-
S1	9	1	Nozzle	Øe168.3x10.97 thk.	SA333 Gr.6	-	3.1	-12.5K	-
S1	8	1	Flange	6" WN-RJ 900#, neck thk. 19.97	SA350 LF2 CL1	-	3.1	B16.5	-
7	1	Front Head type 2:1	Ø750x35 thk.	SA240 304/304L	-	3.1	-8	Dual Grade	-
6	1	Front Channel	30x500x24.50	SA240 304/304L	-	3.1	SA480	Dual grade	-
5	1	Rear Head type 2:1	Ø750x35 thk.	SA516 Gr.70N	-	3.1	-8	-	-
4	1	Rear Channel	35x600x29.69	SA516 Gr.70N	-	3.1	SA20	-	-
3	1	III Shell Course	30x2500x24.50	SA516 Gr.70N	-	3.1	SA20	-	-
2	1	II Shell Course	30x2500x24.50	SA516 Gr.70N	-	3.1	SA20	-	-
1	1	I Shell Course	30x2020x24.50	SA516 Gr.70N	-	3.1	SA20	-	-

BOM			
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1	04/06/14	Revised as per BE comments	
0	14/05/14	Issued for Approval	

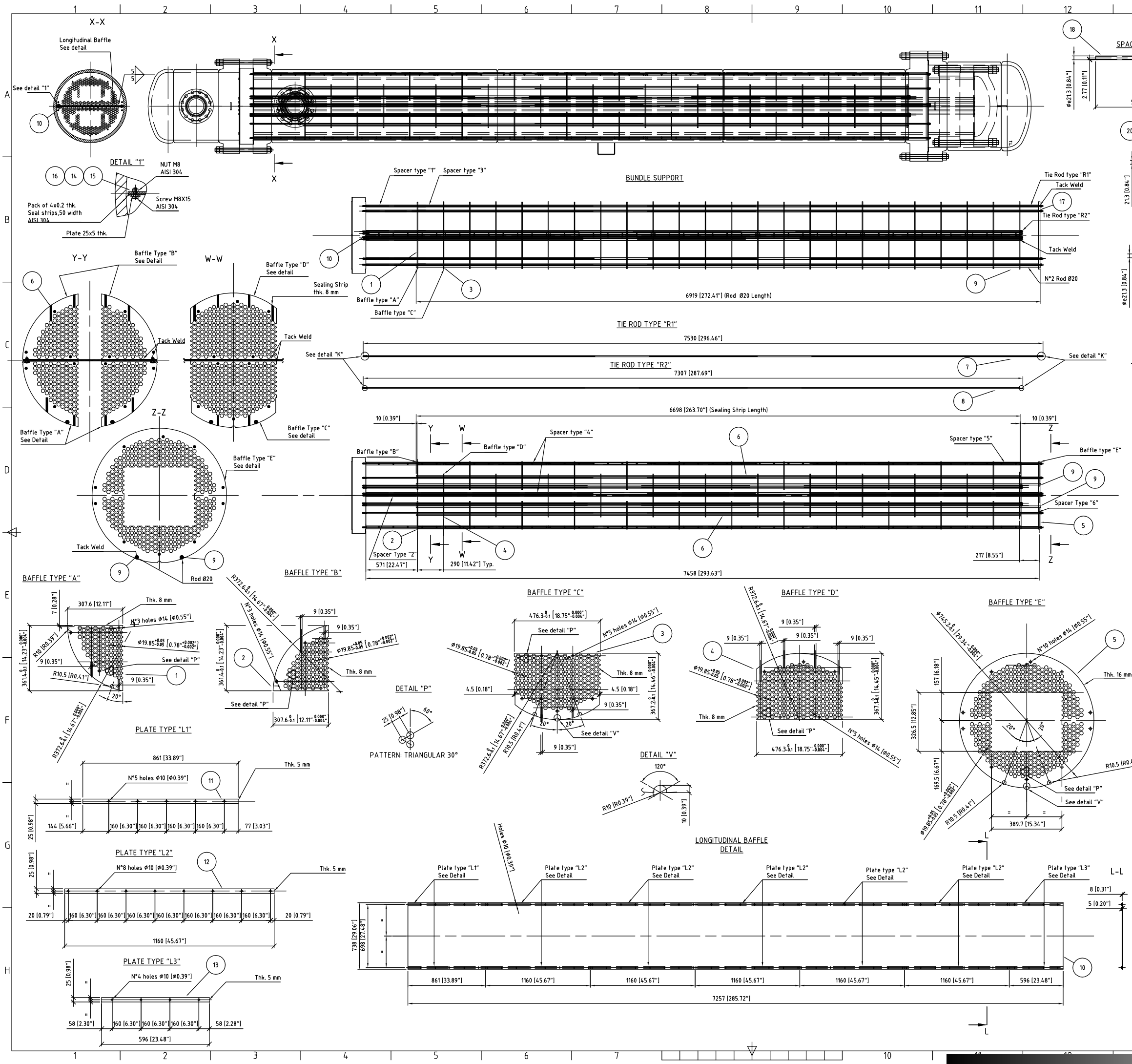
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Description-Description		N. Dwg.		N. Rev.	
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ITEMS: E-4501; E-5501		Data-Date		07/05/2014	
File		14.094-2-R2.dwg		A1	

OIL & GAS DEVELOPMENT COMPANY Ltd
 TEL: 051 2623141 ISLAMABAD-PAKISTAN

DOCUMENT TYPE				DOCUMENT NUMBER			
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00	ISSUED FOR APPROVAL	CC	-	04.06.2014			
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE		

CONSTRUCTION DRAWING FOR REGENERATION GAS PRE HEATER				DOCUMENT NUMBER			
E-4501; E-5501				2307-E4-501/5501-ME-DW-30210			
LOCATION	PLANT	SCALE	SHEET	REV No.			
PAKISTAN	GAS DEHYDRATION UNITS	1:40	1 of 4	01			

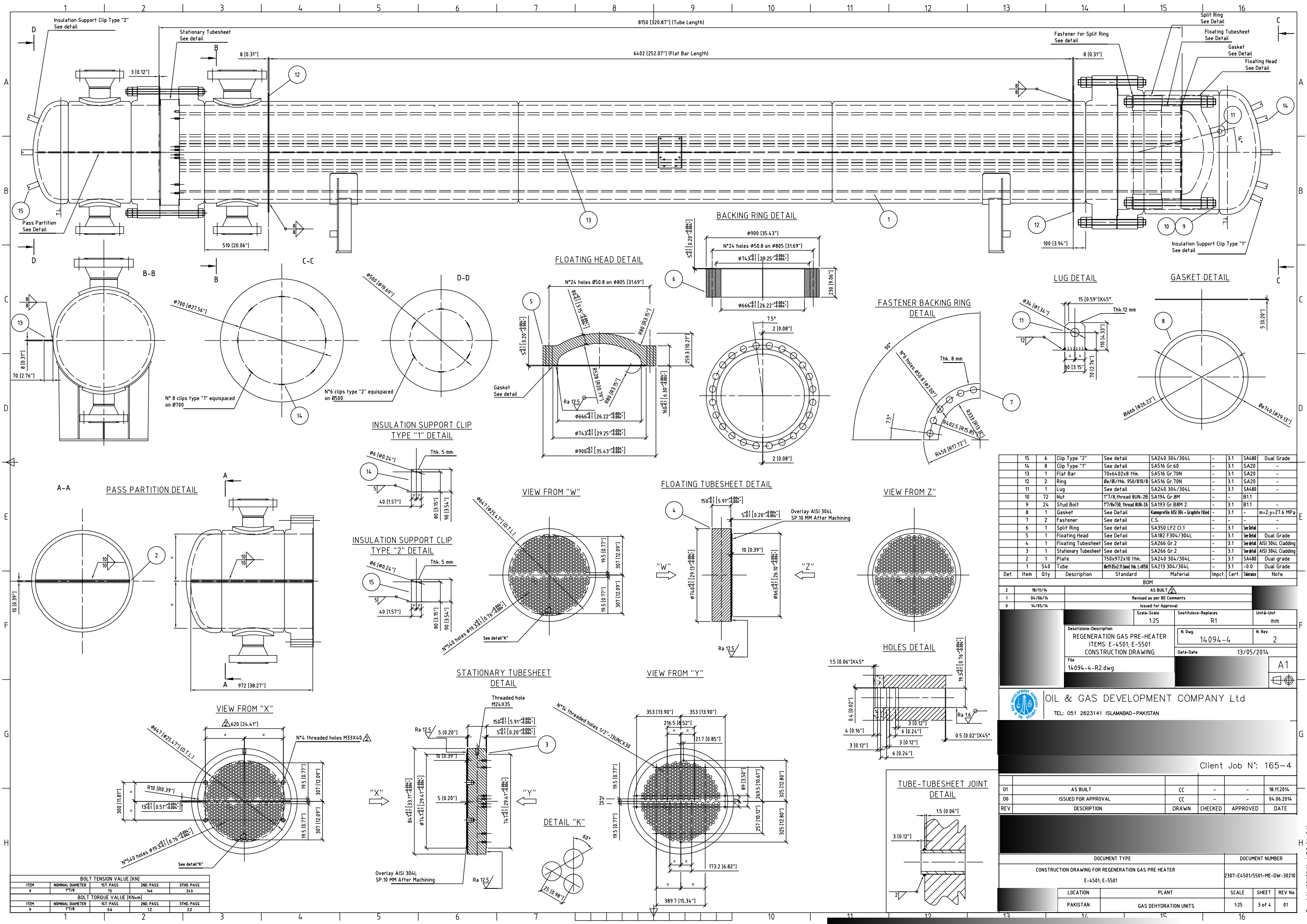


Det.	Item	Qty	Description	Standard	Material	Impact	Cert.	Tolerance	Note
23	6	Spacer Type "6"	Ø213x2.77 thk.	SA106 Gr.B	-	-	-	-12.5%	-
22	4	Spacer Type "5"	Ø213x2.77 thk.	SA106 Gr.B	-	-	-	-12.5%	-
21	66	Spacer Type "4"	Ø213x2.77 thk.	SA106 Gr.B	-	-	-	-12.5%	-
20	184	Spacer Type "3"	Ø213x2.77 thk.	SA106 Gr.B	-	-	-	-12.5%	-
19	2	Spacer Type "2"	Ø213x2.77 thk.	SA106 Gr.B	-	-	-	-12.5%	-
18	12	Spacer Type "1"	Ø213x2.77 thk.	SA106 Gr.B	-	-	-	-12.5%	-
17	28	Nut	1/2" thread 13UNC-2B	CL65	-	-	-	-	-
16	2	Seal Strip	Pack 4x0.2 thk 50 width	AISI 304	-	-	-	-	-
15	98	Nut	M8	AISI 304	-	-	-	-	-
14	98	Screw	M8X25	AISI 304	-	-	-	-	-
13	2	Plate Type "L3"	See detail	SA516 Gr.60	-	-	-	-	SA20
12	10	Plate Type "L2"	See detail	SA516 Gr.60	-	-	-	-	SA20
11	2	Plate Type "L1"	See detail	SA516 Gr.60	-	-	-	-	SA20
10	1	Longitudinal Baffle	See detail	SA516 Gr.70N	-	-	-	-	3.1 SA20
9	2	Rod	Ø20 L=6919	S275JR EN 10025	-	-	-	-	-
8	4	Tie Rod Type "R2"	Ø13	S275JR EN 10025	-	-	-	-	-
7	10	Tie Rod Type "R1"	Ø13	S275JR EN 10025	-	-	-	-	-
6	8	Sealing Strip	Thk 8 L=6698	SA516 Gr.70N	-	-	-	-	3.1 SA20
5	1	Baffle Type "E"	See detail	SA516 Gr.70N	-	-	-	-	3.1 SA20
4	12	Baffle Type "D"	See detail	SA516 Gr.70N	-	-	-	-	3.1 SA20
3	12	Baffle Type "C"	See detail	SA516 Gr.70N	-	-	-	-	3.1 SA20
2	24	Baffle Type "B"	See detail	SA516 Gr.70N	-	-	-	-	3.1 SA20
1	24	Baffle Type "A"	See detail	SA516 Gr.70N	-	-	-	-	3.1 SA20

BOM			
2	18/11/14	AS BUILT	
1	04/06/14	Revised as per BE Comments	
0	14/05/14	Issued for Approval	
Description-Description		Scale-Scale	Substitute-Replaces
REGENERATION GAS PRE-HEATER		1:40	R1
ITEMS: E-4501; E-5501			
CONSTRUCTION DRAWING			
File		N. Dwg.	N. Rev.
14094-3-R2.dwg		14094-3	2
		Date-Date	
		07/05/2014	
			A1

OIL & GAS DEVELOPMENT COMPANY Ltd			
TEL: 051 2623141 ISLAMABAD-PAKISTAN			
01	AS BUILT	CC	18.11.2014
00	ISSUED FOR APPROVAL	CC	04.06.2014
REV	DESCRIPTION	DRAWN	CHECKED
		APPROVED	DATE
DOCUMENT TYPE		DOCUMENT NUMBER	
CONSTRUCTION DRAWING FOR REGENERATION GAS PRE HEATER		2307-E4-501/5501-ME-DW-30210	
E-4501; E-5501			
LOCATION	PLANT	SCALE	SHEET
PAKISTAN	GAS DEHYDRATION UNITS	1:40	2 of 4
			REV No.
			01

Rev.14/09/99 Mod.PQ.04-2/1



Det.	Item	Qty	Description	Standard	Material	Impact	Cert.	Tolerance	Note
15	6	Clip Type "2"	See detail	SA240 304/304L	-	3.1	SA480	Dual Grade	
14	8	Clip Type "1"	See detail	SA516 Gr.60	-	3.1	SA20	-	
13	1	Flat Bar	70x6402x8 thk.	SA516 Gr.70N	-	3.1	SA20	-	
12	2	Ring	Øe/Øi/thk. 950/810/8	SA516 Gr.70N	-	3.1	SA20	-	
11	1	Lug	See detail	SA240 304/304L	-	3.1	SA480	-	
10	72	Nut	1"7/8 Thread 8UN-2B	SA194 Gr.8M	-	-	B1.1	-	
9	24	Stud Bolt	1"7/8 Thread 8UN-2B	SA193 Gr.8M 2	-	3.1	B1.1	-	
8	1	Gasket	See Detail	Kamproffite AISI 304 + Graphite filled	-	3.1	-	m=2;y=27.6 MPa	
7	2	Fastener	See detail	C.S.	-	-	-	-	
6	1	Split Ring	See detail	SA350 LF2 CL1	-	3.1	See Detail	-	
5	1	Floating Head	See Detail	SA182 F304/304L	-	3.1	See Detail	Dual Grade	
4	1	Floating Tubesheet	See detail	SA266 Gr.2	-	3.1	See Detail	AISI 304L Cladding	
3	1	Stationary Tubesheet	See detail	SA266 Gr.2	-	3.1	See Detail	AISI 304L Cladding	
2	1	Plate	750x972x10 thk.	SA240 304/304L	-	3.1	SA480	Dual grade	
1	540	Tube	Øe/Øi x L (mm) thk. L-Ø50	SA213 304/304L	-	3.1	-0.0	Dual Grade	

AS BUILT			
Revised as per BE Comments			
Issued for Approval			
Scale	Scale	Substitute-Replaces	Unit & Unit
1:25	1:25	R1	mm
Description-Description		N. Dwg.	N. Rev.
REGENERATION GAS PRE-HEATER		14094-4	2
ITEMS: E-4501; E-5501		Date-Date	13/05/2014
CONSTRUCTION DRAWING		File	14094-4-R2.dwg
A1			

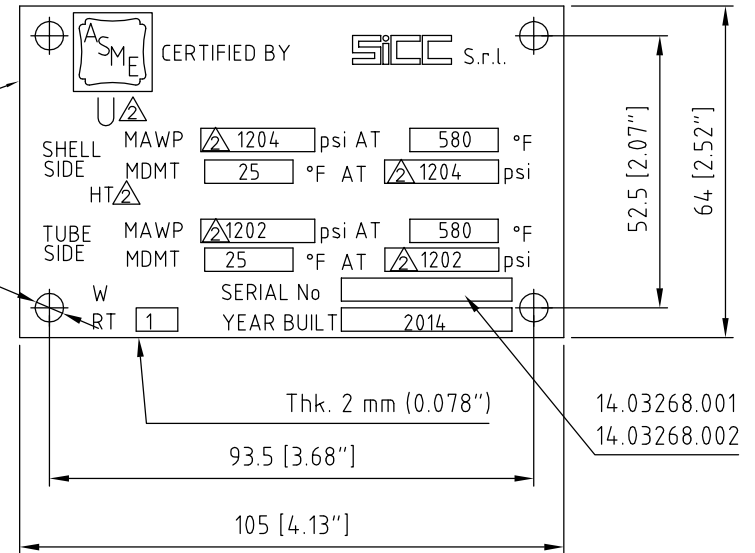
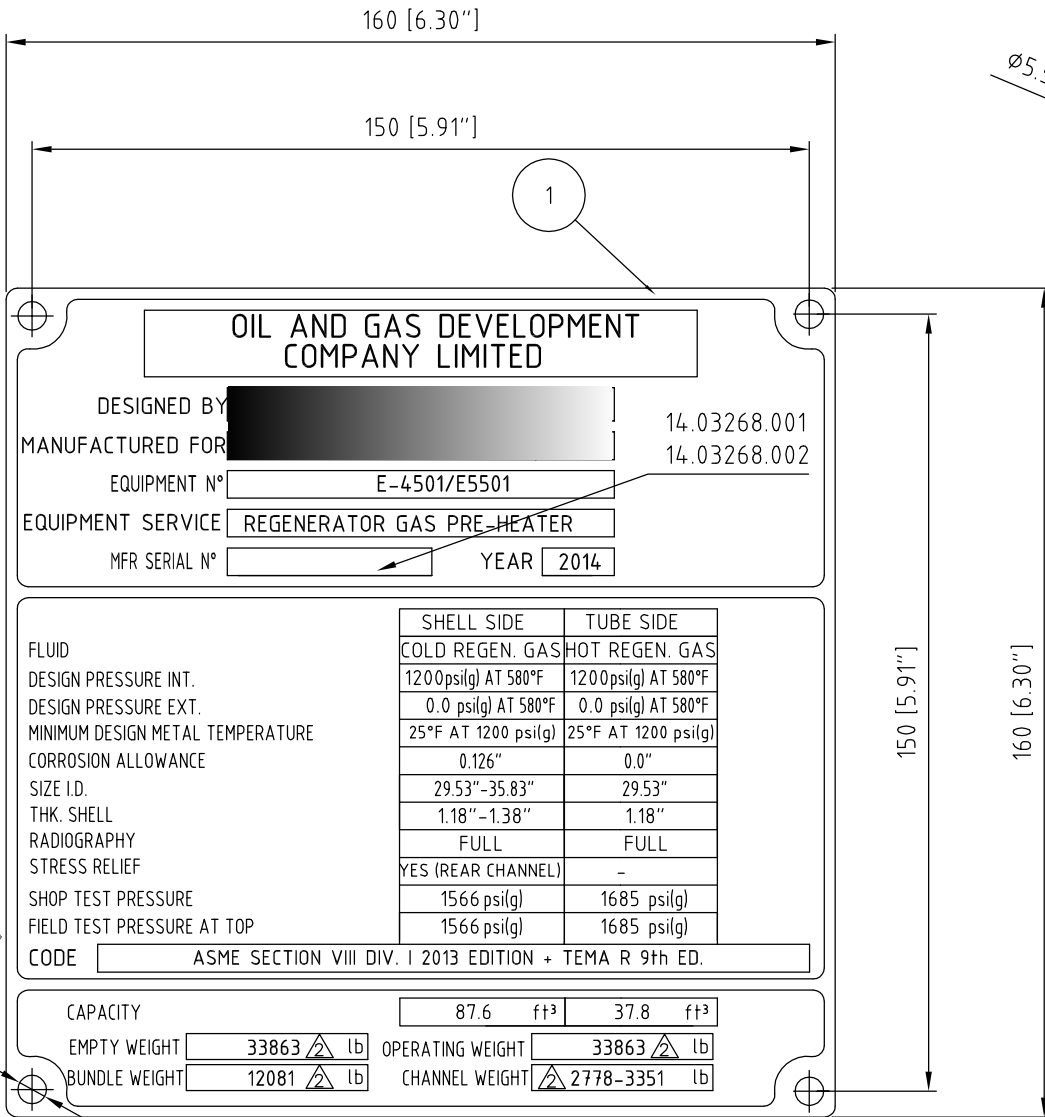
OIL & GAS DEVELOPMENT COMPANY Ltd						
TEL: 051 2623141 ISLAMABAD-PAKISTAN						
Client Job N': 165-4						
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00	ISSUED FOR APPROVAL	CC	-	04.06.2014		
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE	
DOCUMENT TYPE		DOCUMENT NUMBER				
CONSTRUCTION DRAWING FOR REGENERATION GAS PRE HEATER		2307-E4-501/5501-ME-DW-30210				
E-4501; E-5501		LOCATION	PLANT	SCALE	SHEET	REV No.
		PAKISTAN	GAS DEHYDRATION UNITS	1:25	3 of 4	01

BOLT TENSION VALUE [KN]			
ITEM	NOMINAL DIAMETER	1ST. PASS	2ND. PASS
9	1"7/8	73	146
BOLT TORQUE VALUE [KN-m]			
ITEM	NOMINAL DIAMETER	1ST. PASS	2ND. PASS
9	1"7/8	6.6	2.2

Rev.1 14/09/99 Mod. PQ. 04-2/1

CUSTOMER NAME PLATE DETAIL

ASME NAME PLATE DETAIL



OIL AND GAS DEVELOPMENT COMPANY LIMITED

DESIGNED BY [REDACTED] 14.03268.001
 MANUFACTURED FOR [REDACTED] 14.03268.002

EQUIPMENT N° E-4501/E5501
 EQUIPMENT SERVICE REGENERATOR GAS PRE-HEATER
 MFR SERIAL N° [REDACTED] YEAR 2014

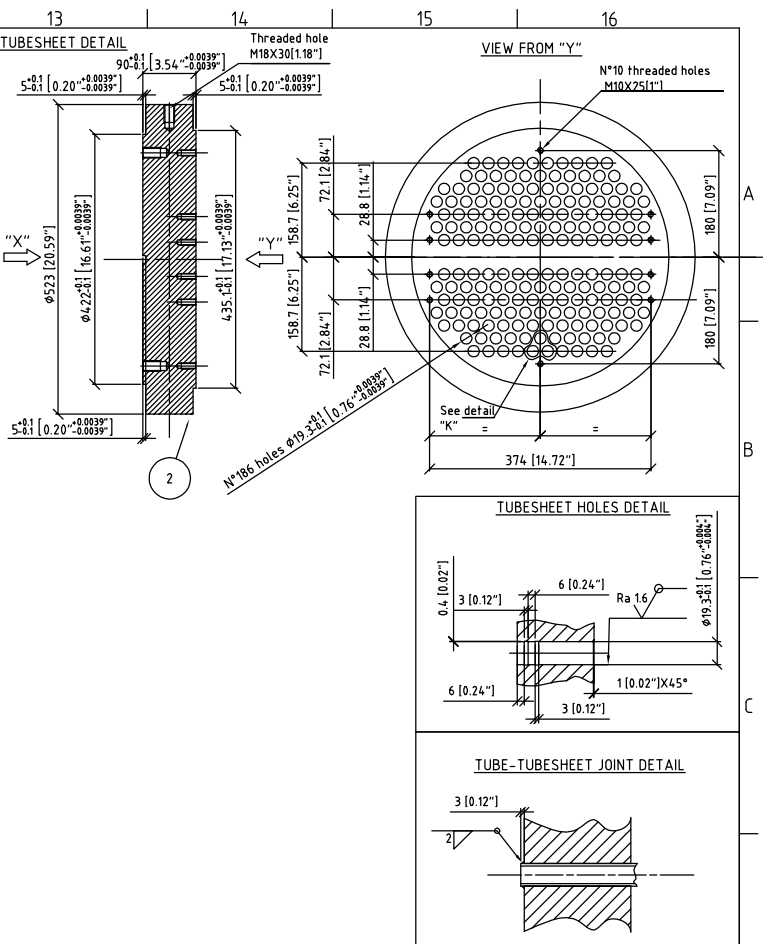
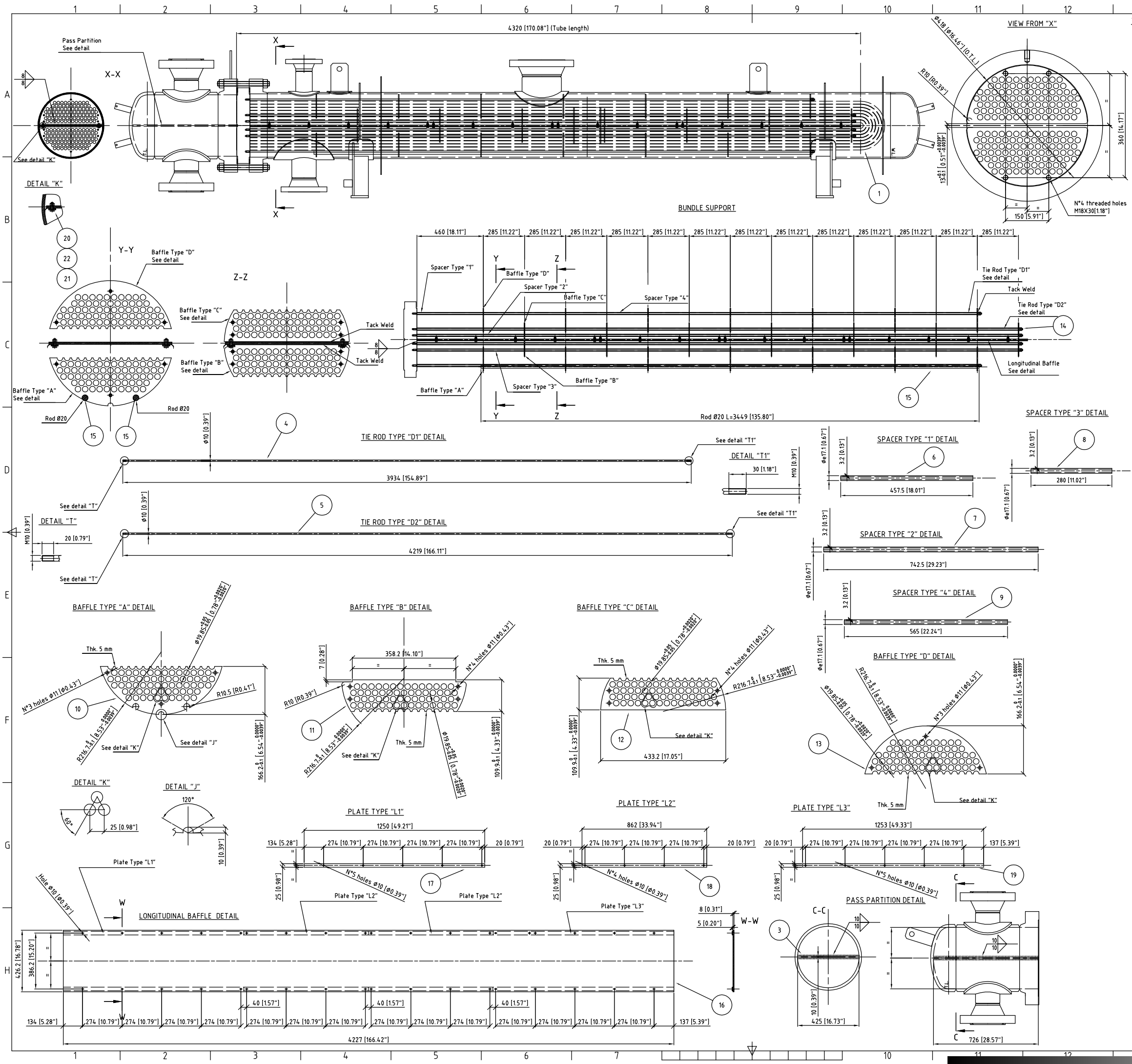
	SHELL SIDE	TUBE SIDE
FLUID	COLD REGEN. GAS	HOT REGEN. GAS
DESIGN PRESSURE INT.	1200 psi(g) AT 580°F	1200 psi(g) AT 580°F
DESIGN PRESSURE EXT.	0.0 psi(g) AT 580°F	0.0 psi(g) AT 580°F
MINIMUM DESIGN METAL TEMPERATURE	25°F AT 1200 psi(g)	25°F AT 1200 psi(g)
CORROSION ALLOWANCE	0.126"	0.0"
SIZE I.D.	29.53"-35.83"	29.53"
THK. SHELL	1.18"-1.38"	1.18"
RADIOGRAPHY	FULL	FULL
STRESS RELIEF	YES (REAR CHANNEL)	-
SHOP TEST PRESSURE	1566 psi(g)	1685 psi(g)
FIELD TEST PRESSURE AT TOP	1566 psi(g)	1685 psi(g)
CODE	ASME SECTION VIII DIV. I 2013 EDITION + TEMA R 9th ED.	

CAPACITY 87.6 ft³ 37.8 ft³

EMPTY WEIGHT 33863 lb OPERATING WEIGHT 33863 lb

BUNDLE WEIGHT 12081 lb CHANNEL WEIGHT 2778-3351 lb

2	1	ASME name plate	See detail	ASME B31.3					
1	1	Customer name plate	See detail	ASME B31.3					
Def.	Item	Qty	Description	Standard	Material	Impact	Cert.	Minus	Note
Elenco parti									
2	1		AS BUILT						
1	1		Revised as per BE Comments						
1	1		Issue for Approval						
1	1		Issue for Approval						
Code/Code			Scale/Scale	1:5	Seal/Seal-Replaces		R1	Unit/Unit	
Description-Description			REGENERATOR GAS PRE-HEATER			ITEMS: E-4501/E5501		NAME PLATE	
I. N. Dwg.			14.094-5			R. Rev.		2	
Date-Date			14/05/2014						
File			14.094-5-R2.dwg					A1	
OIL & GAS DEVELOPMENT COMPANY Ltd TEL: 051 2623141 ISLAMABAD-PAKISTAN									
01			AS BUILT	CC	-	-	-	-	18.11.2014
02			ISSUED FOR APPROVAL	CC	-	-	-	-	04.06.2014
REV			DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE		
DOCUMENT TYPE				DOCUMENT NUMBER					
CONSTRUCTION FOR REGENERATION GAS PRE HEATER				2307-E4501/E5501-ME-0W-3220					
E-4501, E-5501									
LOCATION		PLANT		SCALE		SHEET		REV No.	
PAKISTAN		GAS DEHYDRATION UNITS		1:5		4 of 4		01	



Det.	Item	Qty	Description	Standard	Material	Impact	Cert.	Tolerance	Note
22	2	Seal Strip	Pack 4x0.2 Thk 50 width	AISI 304					
21	36	Nut	M8	AISI 304					
20	36	Screw	M8X25	AISI 304					
19	2	Plate Type "L3"	Thk.5 See detail	SA516 GR.70N					SA20
18	4	Plate Type "L2"	Thk.5 See detail	SA516 GR.70N					SA20
17	2	Plate Type "L1"	Thk.5 See detail	SA516 GR.70N					SA20
16	1	Longitudinal Baffle	426x4227x8 thk.	SA516 GR.70N			3.1		SA20
15	2	Rod	Ø20 L=344.9	S275JR EN 10025					
14	20	Nut	M10	Cl.6S					
13	7	Baffle Type "D"	See detail	SA516 GR.70N					See detail
12	7	Baffle Type "C"	See detail	SA516 GR.70N					See detail
11	7	Baffle Type "B"	See detail	SA516 GR.70N					See detail
10	7	Baffle Type "A"	See detail	SA516 GR.70N					See detail
9	36	Spacer Type "4"	See detail	SA106 Gr.B					-12.5%
8	52	Spacer Type "3"	See detail	SA106 Gr.B					-12.5%
7	4	Spacer Type "2"	See detail	SA106 Gr.B					-12.5%
6	6	Spacer Type "1"	See detail	SA106 Gr.B					-12.5%
5	8	Tie Rod Type "D2"	See detail	S275JR EN 10025					
4	2	Tie Rod Type "D1"	See detail	S275JR EN 10025					
3	1	Pass partition	425x726x10 thk.	SA516 GR.70N			3.1		SA20
2	1	Tubesheet	See detail	SA266 Gr.2			3.1		See detail
1	93	U-TUBE	Ø19.05x2.11 (avg.)	SA179			3.1		-12.5%

BOM			
2	26/09/14	AS BUILT	
1	09/06/14	Revised as per BE Comments	
0	27/05/14	Issued for Approval	

Scale	Scale	Scale	Scale
1:25	1:25	R1	mm

Description-Description	N. Dwg.	N. Rev.
MOLECULAR SIEVE REGENERATION HEATER ITEMS: E-4502; E-5502 CONSTRUCTION DRAWING	14095-3	2

File	Date
14095-3-R2.dwg	26/05/2014

OIL & GAS DEVELOPMENT COMPANY Ltd
 TEL: 051 2623141 ISLAMABAD-PAKISTAN

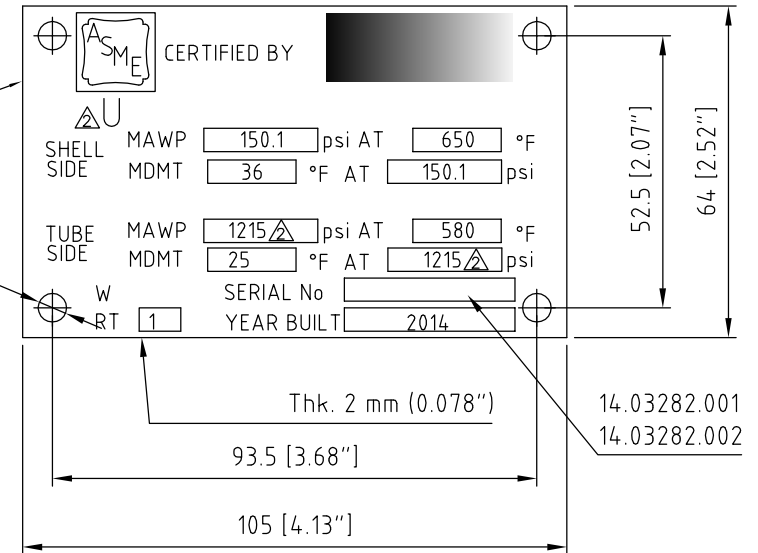
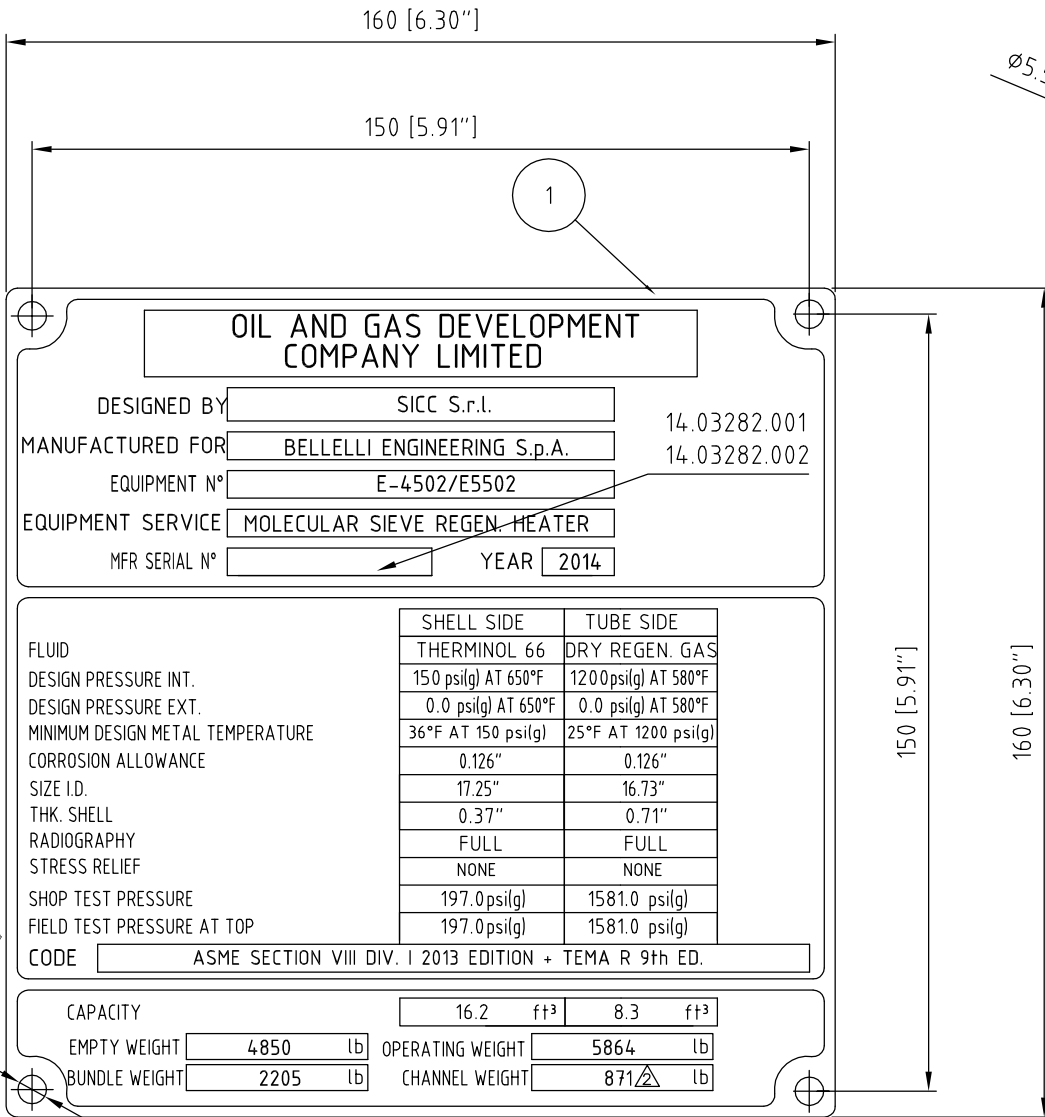
Rev	Description	Drawn	Checked	Approved	Date
01	AS BUILT	CC	-	-	26.09.2014
00	ISSUED FOR APPROVAL	CC	-	-	09.06.2014

DOCUMENT TYPE		DOCUMENT NUMBER	
CONSTRUCTION DRAWING FOR MOLECULAR SIEVE REGENERATION HEATER E-4502; E-5502		2307-E4502/5502-ME-DW-30240	

Location	Plant	Scale	Sheet	Rev No.
PAKISTAN	GAS DEHYDRATION UNITS	1:25	2 of 3	01

CUSTOMER NAME PLATE DETAIL

ASME NAME PLATE DETAIL



FLUID DESIGN PRESSURE INT. DESIGN PRESSURE EXT. MINIMUM DESIGN METAL TEMPERATURE CORROSION ALLOWANCE SIZE I.D. THK. SHELL RADIOGRAPHY STRESS RELIEF SHOP TEST PRESSURE FIELD TEST PRESSURE AT TOP CODE	SHELL SIDE	TUBE SIDE
	THERMINOL 66	DRY REGEN. GAS
	150 psi(g) AT 650°F	1200 psi(g) AT 580°F
	0.0 psi(g) AT 650°F	0.0 psi(g) AT 580°F
	36°F AT 150 psi(g)	25°F AT 1200 psi(g)
	0.126"	0.126"
	17.25"	16.73"
	0.37"	0.71"
	FULL	FULL
	NONE	NONE
197.0 psi(g)	1581.0 psi(g)	
197.0 psi(g)	1581.0 psi(g)	
ASME SECTION VIII DIV. 1 2013 EDITION + TEMA R 9th ED.		

CAPACITY	16.2	ft ³	8.3	ft ³
EMPTY WEIGHT	4850	lb	OPERATING WEIGHT	5864
BUNDLE WEIGHT	2205	lb	CHANNEL WEIGHT	871

2	1	ASME name plate	See detail	AISI 316					
1	1	Customer name plate	See detail	AISI 316					
Def.	Item	Qty	Description	Standard	Material	Impact	Cert.	Minax	Note
Issue for Approval AS BUILT Revised as per BE Comments Issue for Approval Code-Code Scale-Scale Seal/Police-Replaces Unit-Unit Description-Description MOLECULAR SIEVE REGENERATION HEATER ITEMS: E-4502/E5502 NAME PLATE H. Dwg 14,095-4 R. Rev. 2 Date-Date 27/05/2014 File 14,095-4-R2.dwg A1									
OIL & GAS DEVELOPMENT COMPANY Ltd TEL: 051 2623141 ISLAMABAD-PAKISTAN									
01			AS BUILT	CC	-	-	-	26.09.2014	
02			ISSUED FOR APPROVAL	CC	-	-	-	09.06.2014	
REV			DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE		
DOCUMENT TYPE				DOCUMENT NUMBER					
CONSTRUCTION DRAWING FOR MOLECULAR SIEVE REGENERATION HEATER				2307-E4502/5502-ME-DW-30244					
E-4502, E-5502									
LOCATION		PLANT		SCALE		SHEET		REV No	
PAKISTAN		GAS DEHYDRATION UNITS		15		3 of 3		01	