



OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD
SCHEDULE OF REQUIREMENT

Material : **FABRICATION OF REGENERATION GAS SCRUBBER**

Due Date:

Tender Enquiry No: **PROC/LF/PT/17185/17**

Bid Bond Value : **RS.145,000/-**

EVALUATION WILL BE CARRIED OUT ON FULL

Attachment(if any) : **YES**

Sr No	Description	Quantity	Make/Brand offered	Unit	Unit Price (PKR) Inclusive Of All Taxes Except GST	Unit Price (PKR) Inclusive of GST	Total Price (PKR) Inclusive of GST	Delivery Period Offered	deviation from Tender Spec. If Any
1	REGENERATION GAS SCRUBBER, 2488 MM HEIGHT (TANGENT LINE TO WELD LINE), 700 MM ID, DESIGN PRESSURE 950 PSIG. OPERATING PRESSURE 750 PSIG, TAG. NO. V-9209, AS PER ATTCHED DRAWINGS# 165-8-MPV-001,002, 003 & 004 and TOR.	1		Number					

Special Note:- The prospective bidders also download the master set of Tender Document

- The prospective bidders may keep in touch with OGDCL web site for downloading the clarifications/amendments (if any) issued by OGDCL.
- DELIVERY TERMS AS PER CLAUSE 20 OF TOR.PAYMENT TERMS AS PER CLAUSE 21 OF TOR.

Discount (if any) shall only be entertained on Schedule of Requirement of Bidding Document (Financial Proposal). If the discount is mentioned elsewhere in the bid, the same shall not be entertained.

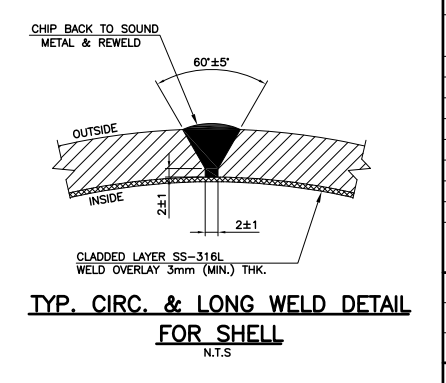
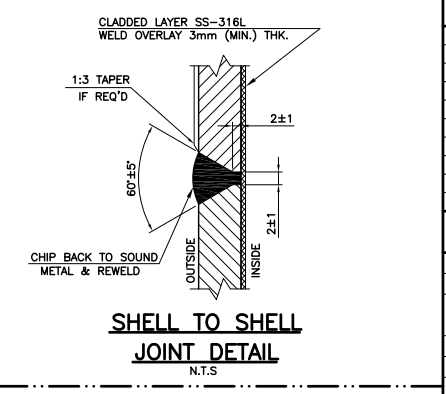
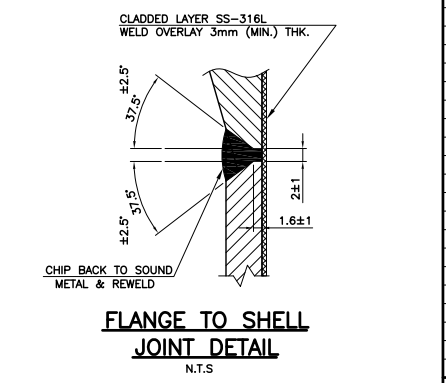
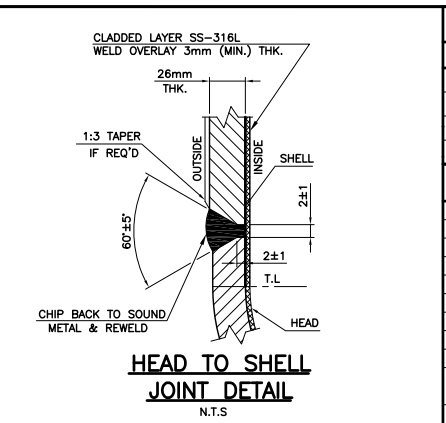
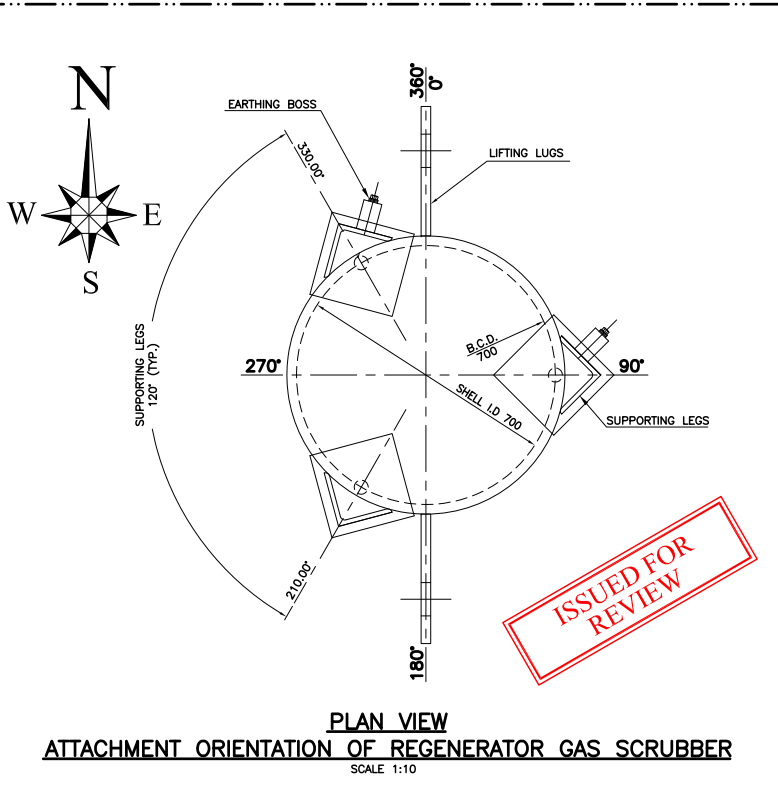
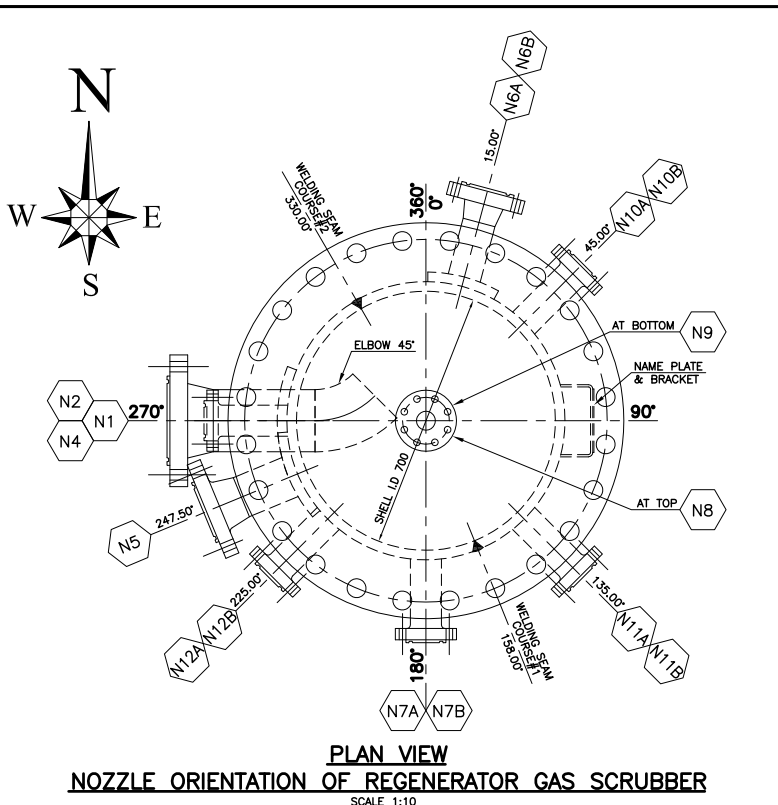
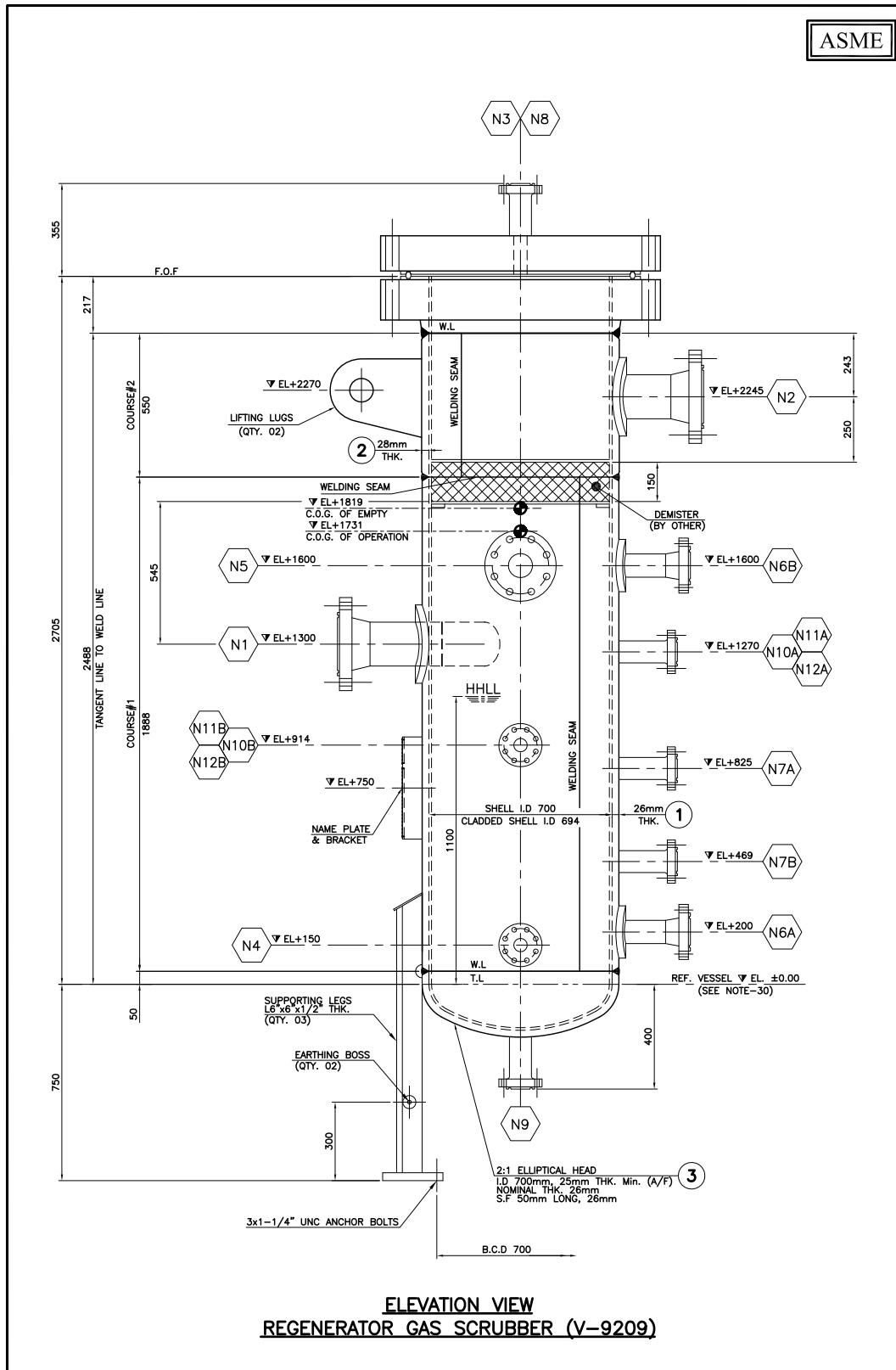
TERMS OF REFERENCE:

1. All the specifications / dimensions should be as per following drawings;

Equipment's Description	Drawing Nos.
Regeneration Gas Scrubber (V-9209)	165-8-MPV-001 165-8-MPV-002 165-8-MPV-003 165-8-MPV-004

2. Bidder review the tender drawings and submit the IFC drawing.
3. Material specifications: strictly as per drawing. Compliance of the material with NACE-MR-0175 (sour gas service).
4. Scrubber shall be furnished with internal cladding of 03 mm SS316L as per drawing 165-8-MPV-001.
5. Radiography: 100%
6. Applicable code:
 - API Specification 12J.
 - ASME Boiler and Pressure Vessel Code, Section VIII, Division I.
 - American Society for Testing and Materials (ASTM).
 - ASME IX, Welding and Brazing Qualifications.
 - ASME V, Non-Destructive Testing.
 - ASME II, Material Specifications.
 - ASME B16.5 - Pipe Flanges and Flanged Fittings.
 - ASME B31.8 Natural Gas Piping.
 - ASME B31.3 Liquid Piping.
 - ASME B16.20, Ring Joint Gaskets and Grooves for Steel Pipe Flanges.
 - N.A.C.E. Standard MR-0175 / ISO Standard 15156.
7. Only U-stamp authorized manufacturers will be considered for technical evaluation. Documents to be provided to prove validity.
8. U-stamping is required. All the scope of U-stamping i.e. Design Calculation, documentation, inspection etc will be in bidder scope.
9. Bidder should have experience of 05 years (2011~2016) for fabrication of high pressure vessels and must submit a list of his clients to whom equipment of similar nature has been supplied most recently also attach the previous purchase orders of last 05 years with technical bid.

10. Previous Experience of SS316 internal Cladded Vessel supplied of equipment in last five years. Separate list of internally cladded equipments should be attached with the bid, if not provided with the bid cannot be further evaluated.
11. Material should be of American / European / Japanese origin (valid with ISO 9001 certifications) and MTC to be provided during fabrication phase.
12. Stage inspections will be carried out at manufacturer site by OGDCL representative(s) and bidder will inform to OGDCL, at following stages;
 - a) After shipment of material.
 - b) During Manufacturing.
 - c) Hydro testing of equipment.
 - d) Before shipment after paint.
13. All the BOQ mentioned in the drawing is included in the scope of work / supply.
14. Demister Pad / other internals shall be provided with one set as spare.
15. Man-way, Inlet & Outlet Flange Gaskets with **one set spare** should be provided.
16. Bidder will supply all studs with following specifications;
 - a) Stud with 02 Nuts, Stud: SA193 (B7) Nuts: A194 (2H), Flouropolymer coated.
17. Guarantee / warrantee for the equipment for a period of 01 year after being taken into service or 18 months after shipment, whichever completes earlier.
18. Packaging and shipment procedures. Shipment in bidder scope.
19. Execution Plan of Project should be submitted.
20. Delivery period: 4 months after issuance of LPO.
21. Payment will be after Delivery at Qadirpur Store.
22. All the above terms & conditions should be clearly confirmed in technical bid and any non-compliance with the above terms and conditions should not acceptable.



REFERENCE DRAWINGS	
DESCRIPTION	DWG. Nos.
MANWAY, NOZZLES FABRICATION & WELDING DETAILS	165-8-MPV-002
SUPPORTING LEGS, LIFTING LUGS, DEMISTER SUPPORT & EARTHING BOSS DETAILS	165-8-MPV-003
NAME PLATE DETAILS	165-8-MPV-004

MECHANICAL DESIGN DATA	
DESIGN CODE	ASME SECTION VIII-DIV. 1, EDITION 2015
EQUIPMENT TAG NUMBER	V-9209
QUANTITY	01
SERVICE	REGENERATION GAS
ASME U-STAMP	YES
INSIDE DIAMETER	mm 700
TANGENT LINE TO WELD LINE LENGTH	mm 2488
DENSITY	Kg/m ³ / lb/ft ³ 683.988 / 42.7
NOMINAL CAPACITY	m ³ 1
DESIGN PRESSURE	INTERNAL psig / MPa 950 / 6.55
	EXTERNAL psig / MPa -
DESIGN TEMPERATURE	INTERNAL °F / °C 600 / 315
	EXTERNAL °F / °C -
OPERATING PRESSURE	psig / MPa 750 / 5.17
OPERATING TEMPERATURE	°F / °C 84 / 29
MDMT	°F / °C 19.4 / -7
MAWP	psig / MPa 950 / 6.55
RADIOGRAPHY (SHELL / HEAD)	FULL (RT1) / SEAMLESS
JOINT EFFICIENCY (SHELL / HEAD)	100 / 100
CORROSION ALLOWANCE	mm 0
HYDROSTATIC TEST PRESSURE	psig / MPa 1272.85 / 8.776
PIHT / STRESS RELIEVING	NO / YES (HEAD ONLY)
IMPACT TEST	NO
WIND SPEED	mph / Km/h 120 / 193.14
WIND CODE	UBC, EXPOSURE C, I=1.15
SEISMIC ZONE	2B, UBC 1997, I=1.25
INSULATION	NO
EARTHING BOSS	02
LETHAL / NON-LETHAL	NON-LETHAL
SUPPORT TYPE	VERTICAL LEGS
VESSEL EMPTY WEIGHT	Kg 3298.4
VESSEL OPERATING WEIGHT	Kg 3983.9
VESSEL TEST WEIGHT	Kg 4380.3

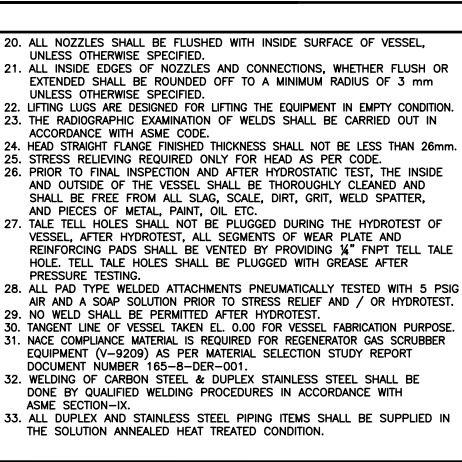
SUPPORT LOADS FOR FOUNDATION DESIGN	
TOTAL WIND SHEAR ON TOP OF ALL LEGS	N 4707
TOTAL EARTHQUAKE SHEAR ON TOP OF ALL LEGS	N 15092
TOTAL WIND MOMENT AT TOP OF ALL LEGS	N-mm 6182585
TOTAL EARTHQUAKE MOMENT AT TOP OF ALL LEGS	N-mm 33012072
MAX. WIND SHEAR ON ONE LEG (TOP & BOTTOM)	N 1569
MAX. EARTHQ. SHEAR ON ONE LEG (TOP & BOTTOM)	N 5031
MAX. WIND MOMENT AT BASE OF ONE LEG	N-mm 2040832
MAX. EARTHQUAKE MOMENT AT BASE OF ONE LEG	N-mm 6542550
MAX. VERTICAL LOAD (WT. + WIND) ON ONE LEG	N 27317
MAX. VERTICAL LOAD (WT. + EQ.) ON ONE LEG	N 91527

MATERIALS	
SHELL	SA-516 Gr. 70 (N) + NACE MR0175/ISO 15156+3mm SA-240 TP-316L CLADDING.
HEADS	SA-516 Gr. 70 (N) + NACE MR0175/ISO 15156+3mm SA-240 TP-316L CLADDING.
FLANGES (WN-RTJ)	FOR DUPLEX STAINLESS STEEL SA-182 Gr.F51 UNS S31803 + NACE MR0175/ISO 15156
FLANGES (LWN-RTJ)	FOR CARBON STEEL SA-105N (N) (FINE GRAIN) + NACE MR0175/ISO 15156
FLANGES (LWN-RTJ)	FOR DUPLEX STAINLESS STEEL SA-182 Gr.F51 UNS S31803 + NACE MR0175/ISO 15156
PIPE	FOR DUPLEX STAINLESS STEEL SA-790, UNS S31803 + NACE MR0175/ISO 15156
INTERNALS AND EXTERNAL ATTACHMENTS	REMOVEABLE SA-283 Gr.C / SA-36
	WELDED SA-516 Gr. 70 (N) + NACE MR0175/ISO 15156
BOLT / NUTS	FOR DUPLEX STAINLESS STEEL SA193 Gr.B8M CL-2 / SA-194 Gr. 8M
	FOR CARBON STEEL SA-193 Gr.B7 / SA-194 Gr.2H HEX. (CADMIUM PLATED)
FITTINGS	FOR DUPLEX STAINLESS STEEL SA-815 UNS S31803 + NACE MR0175/ISO 15156
GASKETS	OCTAGONAL RTJ SOFT IRON (ASME B16.20)
ANCHOR BOLT	SA-193 Gr.B7
SUPPORTING LEGS	SA-36
BASE PLATE	SA-283 Gr.C
LIFTING LUGS	SA-516 Gr. 70 (N)
EARTHING BOSS	SA-36
NAME PLATE	SS-304

3	BOTTOM HEAD 26mm THK.	1	SA-516 Gr. 70 (N) NACE MR0175/ISO 15156	204.1 Kg/m ²	143
2	SHELL PLATE 2287x550x28 THK.	1	SA-516 Gr. 70 (N) NACE MR0175/ISO 15156	219.8 Kg/m ²	276
1	SHELL PLATE 2281x1888x26 THK.	1	SA-516 Gr. 70 (N) NACE MR0175/ISO 15156	204.1 Kg/m ²	879
ITEM	DESCRIPTION	QTY.	MATERIAL	WT/UNIT TOTAL WT.(KG)	TOTAL(KG)
					1298

GENERAL NOTES:

- ALL DIMENSIONS IN ALL THE DRAWING ARE IN mm UNLESS OTHERWISE SPECIFIED.
- ALL FLANGE BOLT HOLES SHALL STRADDLE NORTH-SOUTH PLANT OR HORIZONTAL AND VERTICAL AXIS OF VESSEL.
- FLANGE SURFACE FINISH AS PER ASME B16.5 LATEST.
- ALL NOZZLE ATTACHMENT WELDS TO BE FULL PENETRATION.
- ALL ATTACHMENTS SHALL BE CONTINUOUSLY WELDED.
- OCTAGONAL RING PER ASME B16.20, SOFT IRON (90 BRINELL MAX.)
- SPARE PARTS : GASKET 200#, MIN. 2 SETS.
- BOLT/NUT 10%, MIN. 2 SETS.
- PAINTING & SURFACE PREPARATION (AS PER EXISTING REGENERATOR GAS SCRUBBER, SPEC. 1664-SP-A001 AND AS PER SPEC. 165-8-SPM-003).
- 100% P.T/M.T IS REQUIRED AFTER HYDROTEST.
- NO SERVICE BOLTING SHALL BE USED.
- HYDROTESTING WILL BE DONE WITH THE TEST BOLTING.
- THREAD AND MACHINED FACES TO BE LEFT UNPAINTED AND PROTECTED UNIT REQUIRED FOR EARTH CONNECTION.
- THE DESIGN, MANUFACTURE, INSPECTION, TESTING, AND ACCEPTANCE OF PRESSURE VESSEL SHOULD MEET THE REQUIREMENTS AS PER ASME BPVC SECTION VIII-DIV.1, 2015 EDITION AND AS PER SPECIFICATION 165-8-SPM-002.
- GRIND ALL SHARP EDGES, REMOVE ALL BURRS AND WELD SPATTERS.
- ALL INSIDE WELDS TO BE SMOOTH, ALL OUTSIDE WELDS TO BE WIRE BRUSHED.
- NOZZLES / EXTERNAL SUPPORTS FOR PIPING ETC SHALL NOT BE LOCATED ON WELD SEAMS.
- FLANGES ARE IN ACCORDANCE WITH ASME B16.5 LATEST.
- NOZZLE PROJECTION ARE FROM C.L./T.L OF VESSEL TO FLANGE FACE UNLESS NOTED OTHERWISE.
- ALL MATERIAL SHOULD MEET ASME SECTION II EDITION 2015. THE MATERIALS OF SHELL AND HEADS MUST MEET REQUIREMENTS OF ASME SECTION II AND SHALL BE SUPPLIED IN NORMALIZED AND FINE GRAIN CONDITION, UT EXAMINATION SHALL BE CONDUCTED ACCORDING TO SA435 FOR ALL MATERIALS.
- ALL WELDING SYMBOLS ARE AS PER AWS A2.4. WELDING PROCEDURE SHALL BE AS PER ASME SECTION-IX.
- ALL NOZZLES SHALL BE FLUSHED WITH INSIDE SURFACE OF VESSEL, UNLESS OTHERWISE SPECIFIED.
- ALL INSIDE EDGES OF NOZZLES AND CONNECTIONS, WHETHER FLUSH OR EXTENDED SHALL BE ROUNDED OFF TO A MINIMUM RADIUS OF 3 mm UNLESS OTHERWISE SPECIFIED.
- LIFTING LUGS ARE DESIGNED FOR LIFTING THE EQUIPMENT IN EMPTY CONDITION.
- THE RADIOGRAPHIC EXAMINATION OF WELDS SHALL BE CARRIED OUT IN ACCORDANCE WITH ASME CODE.
- HEAD STRAIGHT FLANGE FINISHED THICKNESS SHALL NOT BE LESS THAN 26mm.
- STRESS RELIEVING REQUIRED ONLY FOR HEAD AS PER CODE.
- PRIOR TO FINAL INSPECTION AND AFTER HYDROSTATIC TEST, THE INSIDE AND OUTSIDE OF THE VESSEL SHALL BE THOROUGHLY CLEANED AND SHALL BE FREE FROM ALL SLAG, SCALE, DIRT, GRIT, WELD SPATTER, AND PIECES OF METAL, PAINT, OIL, ETC.
- TALE TELL HOLES SHALL NOT BE PLUGGED DURING THE HYDROTEST OF VESSEL, AFTER HYDROTEST, ALL SEGMENTS OF WEAR PLATE AND REINFORCING PADS SHALL BE VENTED BY PROVIDING 1/4" FNPT TALE TELL HOLE. TALE TELL HOLES SHALL BE PLUGGED WITH GREASE AFTER PRESSURE TESTING.
- ALL PAD TYPE WELDED ATTACHMENTS PNEUMATICALLY TESTED WITH 5 PSIG AIR AND A SOAP SOLUTION PRIOR TO STRESS RELIEF AND / OR HYDROTEST.
- NO WELD SHALL BE PERMITTED AFTER HYDROTEST.
- TANGENT LINE OF VESSEL TAKEN EL. 0.00 FOR VESSEL FABRICATION PURPOSE.
- NACE COMPLIANCE MATERIAL IS REQUIRED FOR REGENERATOR GAS SCRUBBER EQUIPMENT (V-9209) AS PER MATERIAL SELECTION STUDY REPORT DOCUMENT NUMBER 165-8-DR-001.
- WELDING OF CARBON STEEL & DUPLEX STAINLESS STEEL SHALL BE DONE BY QUALIFIED WELDING PROCEDURES IN ACCORDANCE WITH ASME SECTION-IX.
- ALL DUPLEX AND STAINLESS STEEL PIPING ITEMS SHALL BE SUPPLIED IN THE SOLUTION ANNEALED HEAT TREATED CONDITION.



NOZZLE TAG	NPS	DN	Fx	Fy	Fz	Mx	My	Mz
N9	2"	50	1400	1400	1400	360	360	360
N4	2"	50	1400	1400	1400	360	360	360
N5	4"	100	4000	4000	4000	2000	2000	2000
N2	6"	150	7000	7000	7000	4000	4000	4000
N1	6"	150	7000	7000	7000	4000	4000	4000

MARK Nos.	QTY.	SIZE DN/(NPS)	RATING	STANDARD AND TYPE/FACING	PROJECTION FROM VESSEL CL.	SCHEDULE/THICKNESS	SERVICE	REMARKS
N12 A/B	2	50 (2")	600#	ASME B16.5 LWN/RTJ	600	LSHH	-	
N11 A/B	2	50 (2")	600#	ASME B16.5 LWN/RTJ	600	LSHH	-	
N10 A/B	2	50 (2")	600#	ASME B16.5 LWN/RTJ	600	LSHH	-	
N9	1	50 (2")	600#	ASME B16.5 LWN/RTJ	SEE DWG.	DRAIN	-	
N8	1	50 (2")	600#	ASME B16.5 LWN/RTJ	SEE DWG.	VENT	-	
N7 A/B	2	50 (2")	600#	ASME B16.5 LWN/RTJ	600	LSLL	-	
N6 A/B	2	75 (3")	600#	ASME B16.5 WN/RTJ	650	LG / LT	-	
N5	1	100 (4")	600#	ASME B16.5 WN/RTJ	650	PSV	-	
N4	1	50 (2")	600#	ASME B16.5 LWN/RTJ	600	OUTLET / LIQUID	-	
N3	1	I.D. 700	600#	ASME B16.47 WN/RTJ	SEE DWG.	TOP MANWAY	-	
N2	1	150 (6")	600#	ASME B16.5 WN/RTJ	700	OUTLET (GAS)	-	
N1	1	150 (6")	600#	ASME B16.5 WN/RTJ	700	INLET	-	

ISSUED FOR REVIEW

09-09-2017

ISSUED FOR REVIEW

DESCRIPTION OF REVISION

MH SMJA SAA

DRAWN CHECKED APPR.

CLIENT: **OIL & GAS DEVELOPMENT COMPANY LTD.**
OGDCL HOUSE TOWER-B, FIRST FLOOR F616, BLUE AREA, JINNAH AVENUE ISLAMABAD PAKISTAN
FAX: +92 51 2623033, PHONE: +92-51-9208959

CONSULTANT: **Zishan Engineers (Pvt.) Ltd.**
An ISO 9001-2008 certified company
47/F Block 6, PECHS, Karachi-Pakistan
Tel: (92-21) 343045-48, 3430151-54, Fax: (92-21) 3453343-30, 3430155
E-Mail: contact@zishanengineers.com, Website: www.zishanengineers.com

DWG. NO. 165-8-MPV-001

REV. A

JOB NO. 165-8

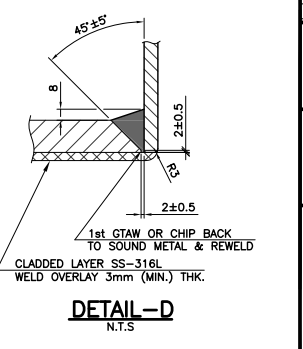
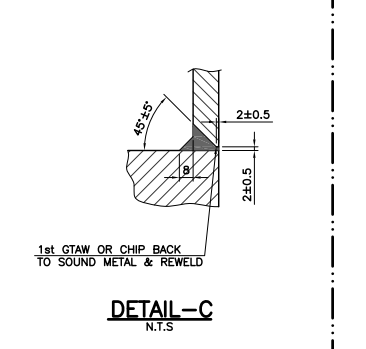
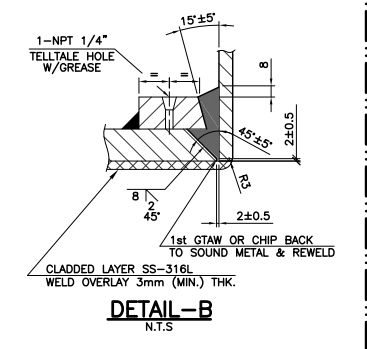
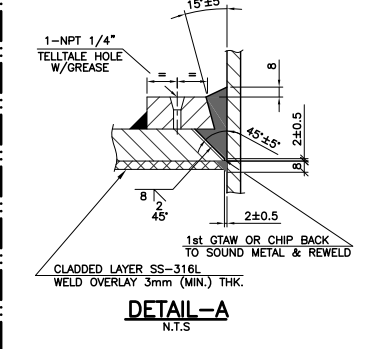
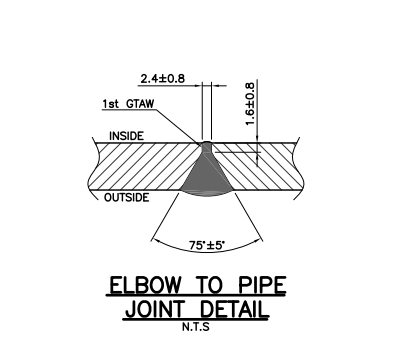
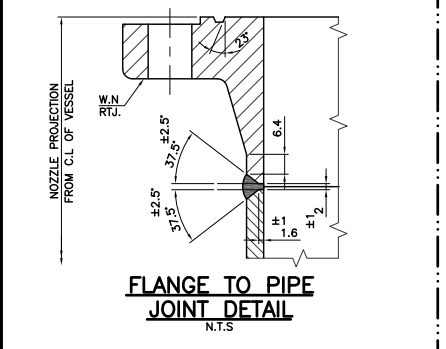
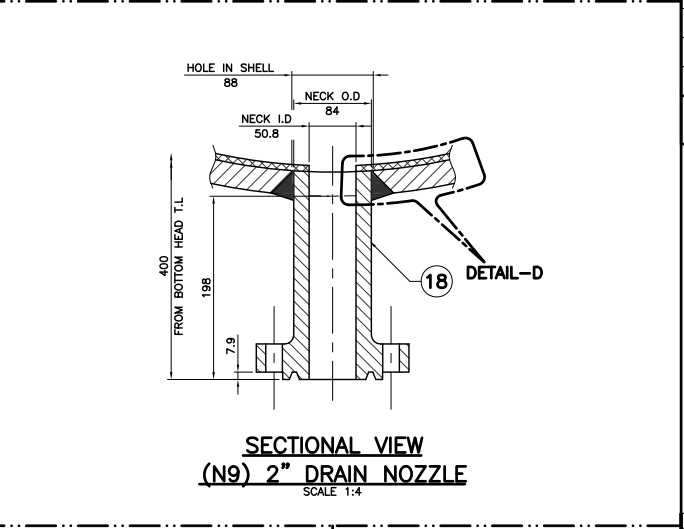
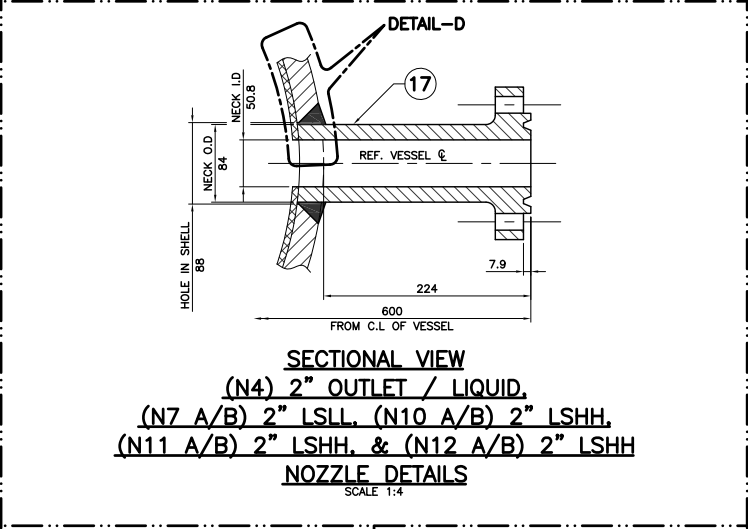
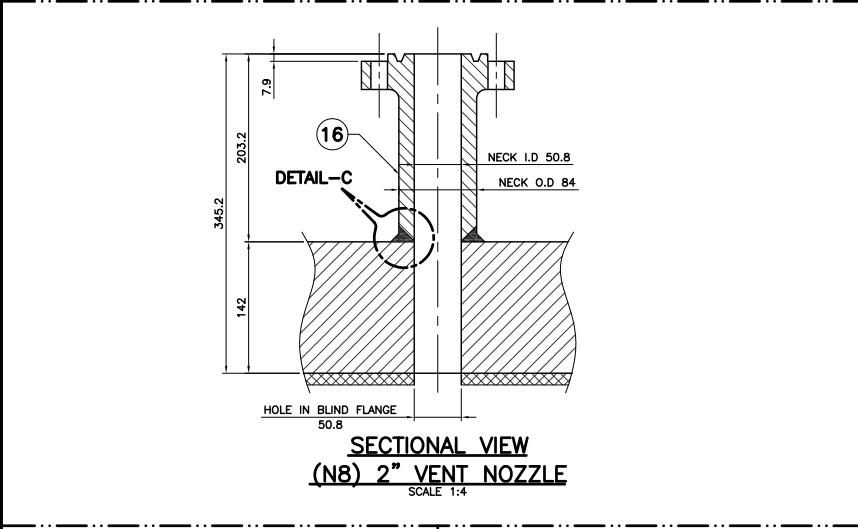
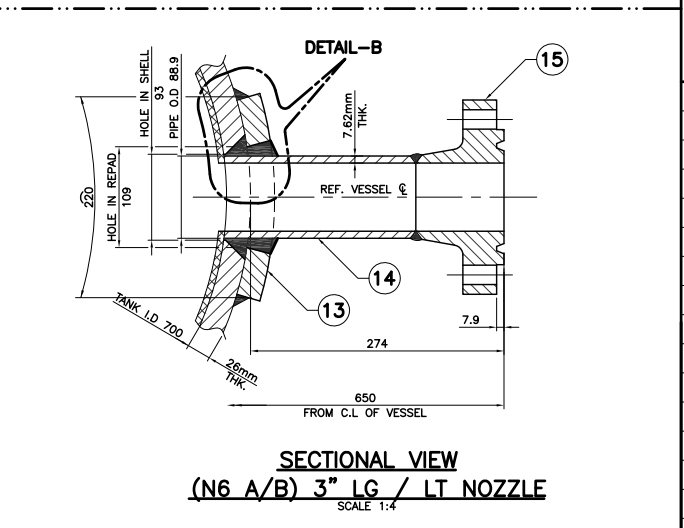
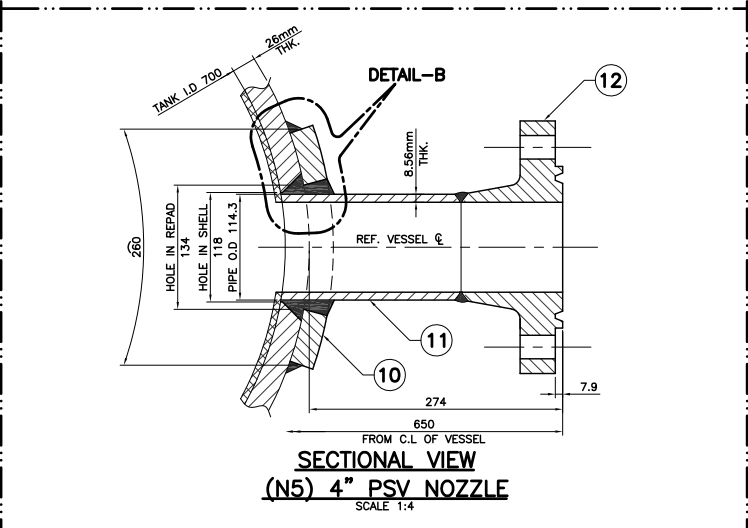
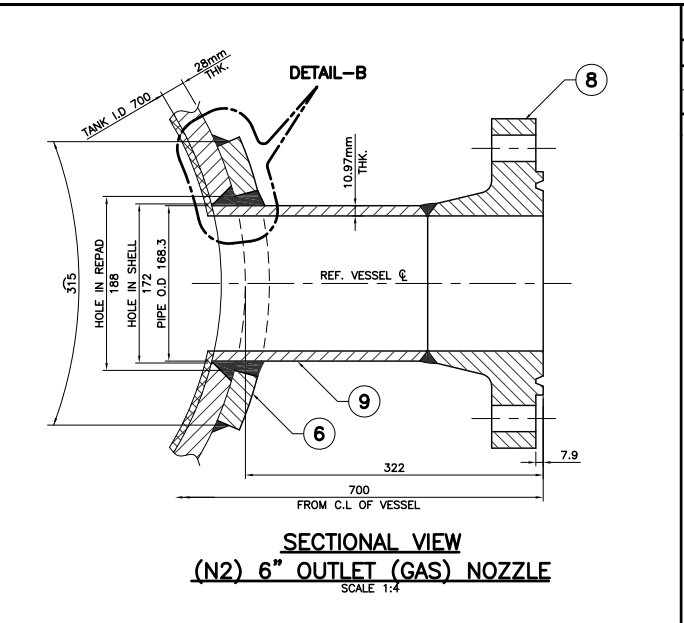
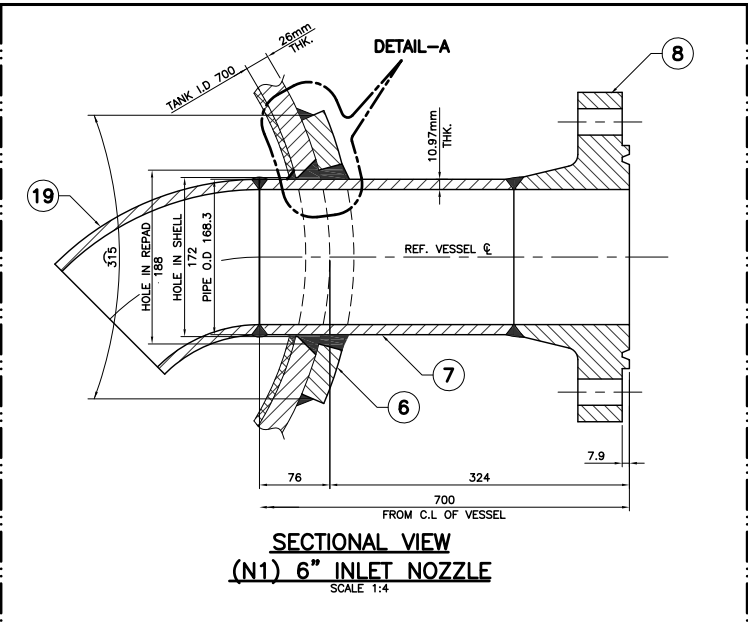
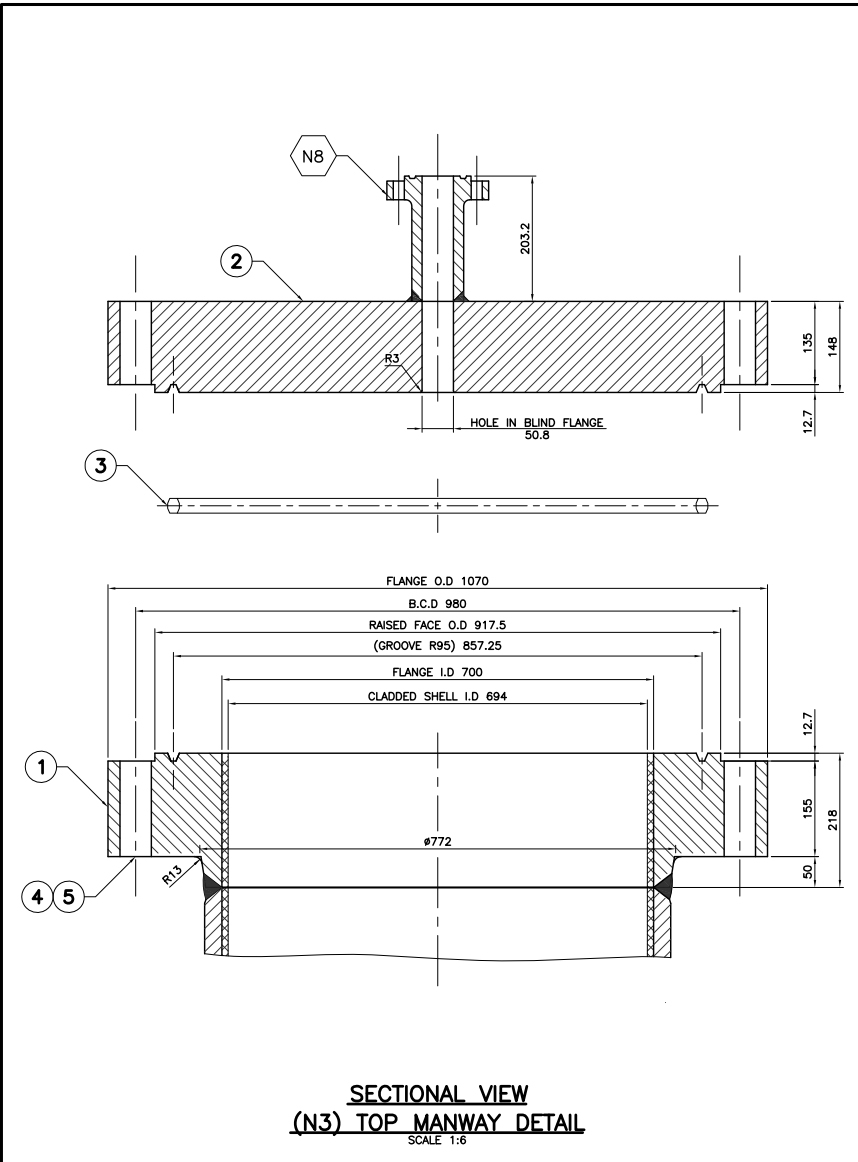
PROJECT: REGENERATOR GAS SCRUBBER V-9209 (OGDCL QADIRPUR GAS PLANT)

TITLE: GENERAL ARRANGEMENT DRAWING FOR REGENERATOR GAS SCRUBBER (V-9209)

SIZE A1

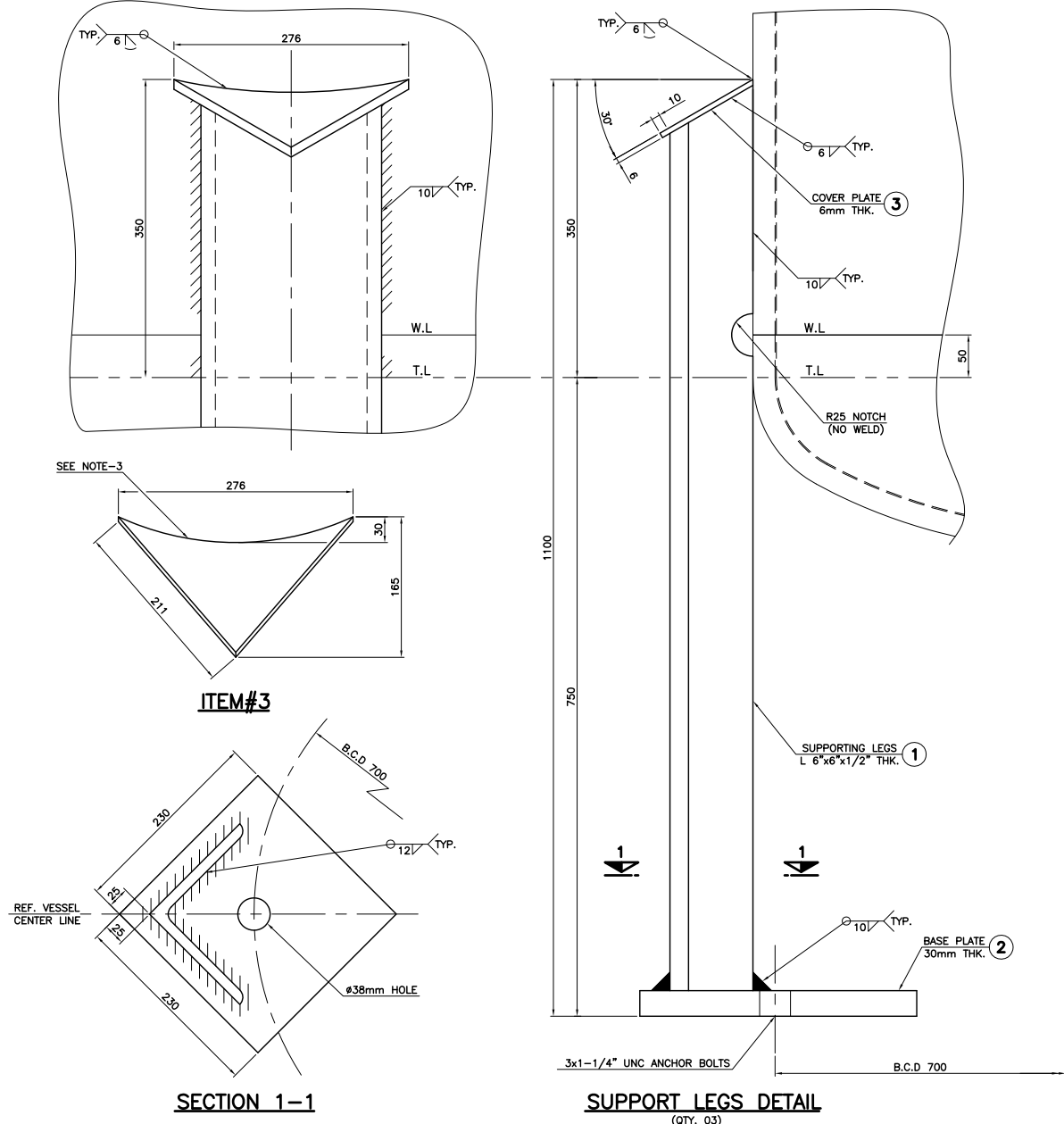
SCALE 1:12

SHEET 1 OF 1



REFERENCE DRAWINGS						
DESCRIPTION			DWG. NO.			
GENERAL ARRANGEMENT DRAWING FOR REGEN GAS SCRUBBER (V-9209)			165-8-MPV-001			
ISSUED FOR REVIEW						
19	ELBOW 6" 45° LR SCH 80S.	1	SA-815 UNS S31803 NACE MR0175/ISO 15156	8.2 Kg/PC.	8	
18	FLANGE 2" 600# L.W.N.RTJ x 226 LONG.	1	SA-182 Gr.F51 UNS S31803 NACE MR0175/ISO 15156	10.1 Kg/PC.	10	
17	FLANGE 2" 600# L.W.N.RTJ x 253 LONG.	9	SA-182 Gr.F51 UNS S31803 NACE MR0175/ISO 15156	10.8 Kg/PC.	97	
16	FLANGE 2" 600# L.W.N.RTJ x 203 LONG.	1	SA-182 Gr.F51 UNS S31803 NACE MR0175/ISO 15156	9.48 Kg/PC.	9	
15	FLANGE 3" 600# W.N.RTJ x SCH 80S.	2	SA-182 Gr.F51 UNS S31803 NACE MR0175/ISO 15156	10.5 Kg/PC.	21	
14	PIPE 3" SCH.80S x 207	2	SA-790, UNS S31803 NACE MR0175/ISO 15156	15.37 Kg/m	6	
13	REPAD O.D 220 x I.D 109 x 26mm THK.	2	SA-516 Gr. 70 (N) NACE MR0175/ISO 15156	204.1 Kg/m ³	12	
12	FLANGE 4" 600# W.N.RTJ x SCH 80S.	1	SA-182 Gr.F51 UNS S31803 NACE MR0175/ISO 15156	19 Kg/PC	19	
11	PIPE 4" SCH.80S x 195	1	SA-790, UNS S31803 NACE MR0175/ISO 15156	22.46 Kg/m	4	
10	REPAD O.D 260 x I.D 134 x 26mm THK.	1	SA-516 Gr. 70 (N) NACE MR0175/ISO 15156	204.1 Kg/m ³	8	
9	PIPE 6" SCH.80S x 235	1	SA-790, UNS S31803 NACE MR0175/ISO 15156	42.83 Kg/m	10	
8	FLANGE 6" 600# W.N.RTJ x SCH 80S.	2	SA-182 Gr.F51 UNS S31803 NACE MR0175/ISO 15156	37 Kg/PC	74	
7	PIPE 6" SCH.80S x 275	1	SA-790, UNS S31803 NACE MR0175/ISO 15156	42.83 Kg/m	12	
6	REPAD O.D 315 x I.D 188 x 26mm THK.	2	SA-516 Gr. 70 (N) NACE MR0175/ISO 15156	204.1 Kg/m ³	20	
5	WASHER FOR 1 7/8" BOLTS.	24	SA-36	28.4 Kg/100 Pcs.	7	
4	STUD BOLT 1 7/8" x 450mm LONG WITH TWO NUTS	24	SA-193 Gr.B7 SA-194 Gr.2H HEX.	793.5 Kg/100 Pcs.	190	
3	OCTAGONAL RING R-95 (SEE NOTE-3)	1	SS-304	-	-	
2	FABRICATED BLIND FLANGE 600# RTJ (AS SHOWN)	1	SA-105N NACE MR0175/ISO 15156	1015 Kg/PC	1015	
1	FABRICATED FLANGE 600# W.N.RTJ (AS SHOWN)	1	SA-105N NACE MR0175/ISO 15156	676.7 Kg/PC	677	
ITEM	DESCRIPTION	QTY.	MATERIAL	WT./UNIT	TOTAL(Kg.)	
				TOTAL WT.(Kg.)	2199	
NOTES:						
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.						
2. ALL MACHINED SURFACE OF THE FORGING SHALL BE NO CRACKS AND FLAWS OF WEAKEN PROPERTY.						
3. OCTAGONAL RING PER ASME B16.20, SOFT IRON (90 BRINELL MAX.)						
4. FOR ALL NOZZLES ELEVATION SEE IN GENERAL ARRANGEMENT DRAWING.						
5. WELDING OF CARBON STEEL & DUPLEX STAINLESS STEEL SHALL BE DONE BY QUALIFIED WELDING PROCEDURES IN ACCORDANCE WITH ASME SECTION-IX.						
A	09-09-2017	ISSUED FOR REVIEW		MH	SMUA	SAA
REV.	DATE	DESCRIPTION OF REVISION		DRAWN	CHECKED	APPR.
CLIENT: OIL & GAS DEVELOPMENT COMPANY LTD. OGDCL HOUSE TOWER-B, FIRST FLOOR F6/G6, BLUE AREA, JINNAH AVENUE ISLAMABAD PAKISTAN FAX: +92 51 2623033, PHONE: +92-51-9209859						
CONSULTANT: Zishan Engineers (Pvt.) Ltd. An ISO 9001-2008 certified company 47/F Block 6, PECHS, Karachi-Pakistan Tel: (92-21) 3439345-46 & 34310151-54, Fax: (92-21) 3453343 & 34310156 E-Mail: contact@zishanengineers.com Website: www.zishanengineers.com						
PROJECT: REGENERATOR GAS SCRUBBER V-9209 (OGDCL QADIRPUR GAS PLANT)				DWG. NO. 165-8-MPV-002		
TITLE: MANWAY, NOZZLES FABRICATION & WELDING DETAILS				REV. A		
				JOB NO. 165-8		
SIZE A1		SCALE 1:12		SHEET 1 OF 1		

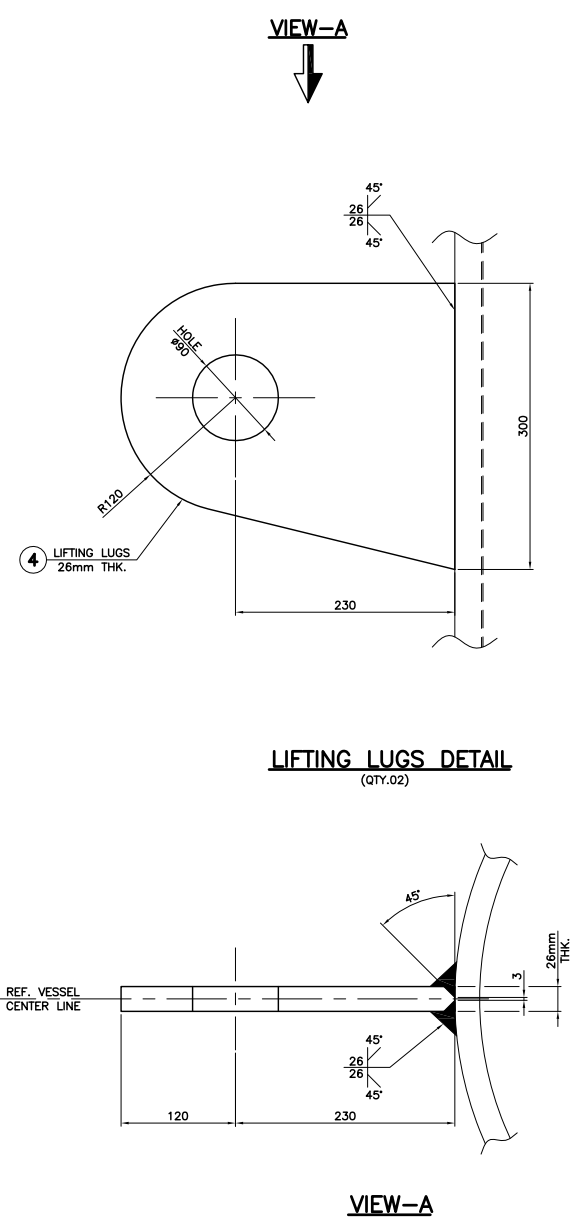
REFERENCE DRAWINGS	
DESCRIPTION	DWG. NO.
GENERAL ARRANGEMENT DRAWING FOR REGEN GAS SCRUBBER (V-9209)	165-8-MPV-001



ITEM#3

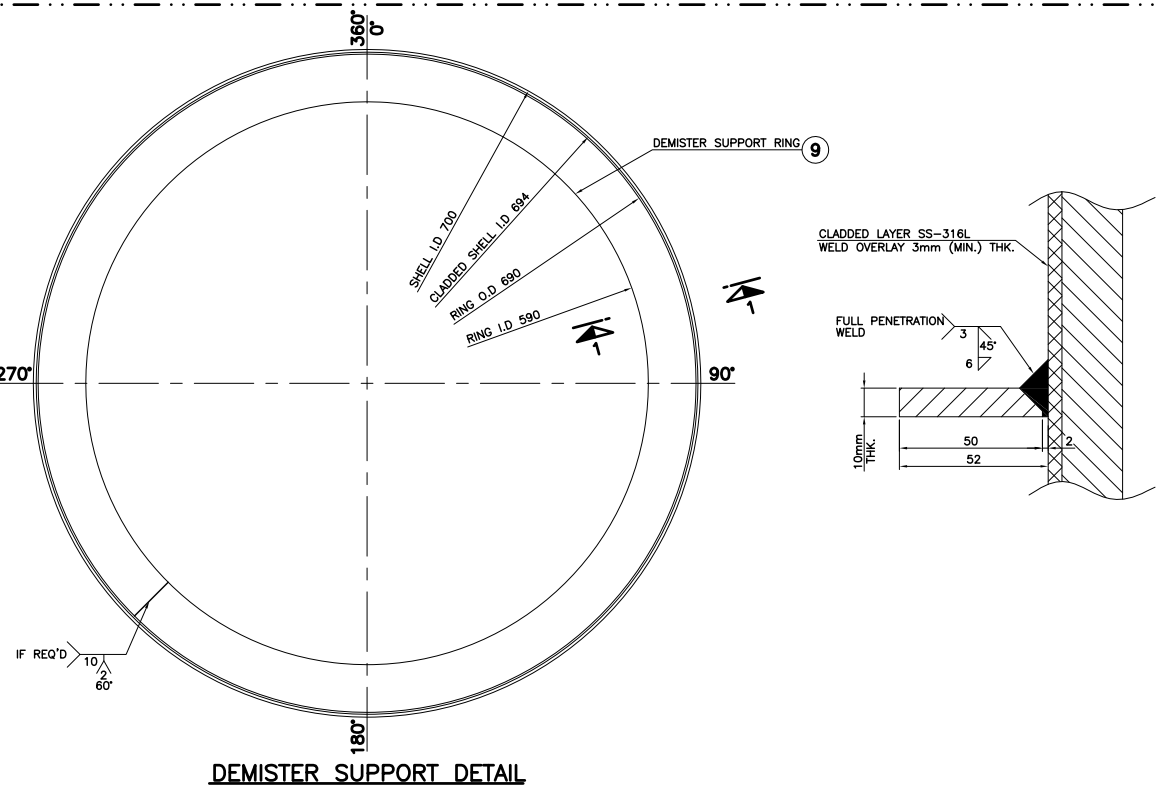
SECTION 1-1

SUPPORT LEGS DETAIL (QTY. 03)

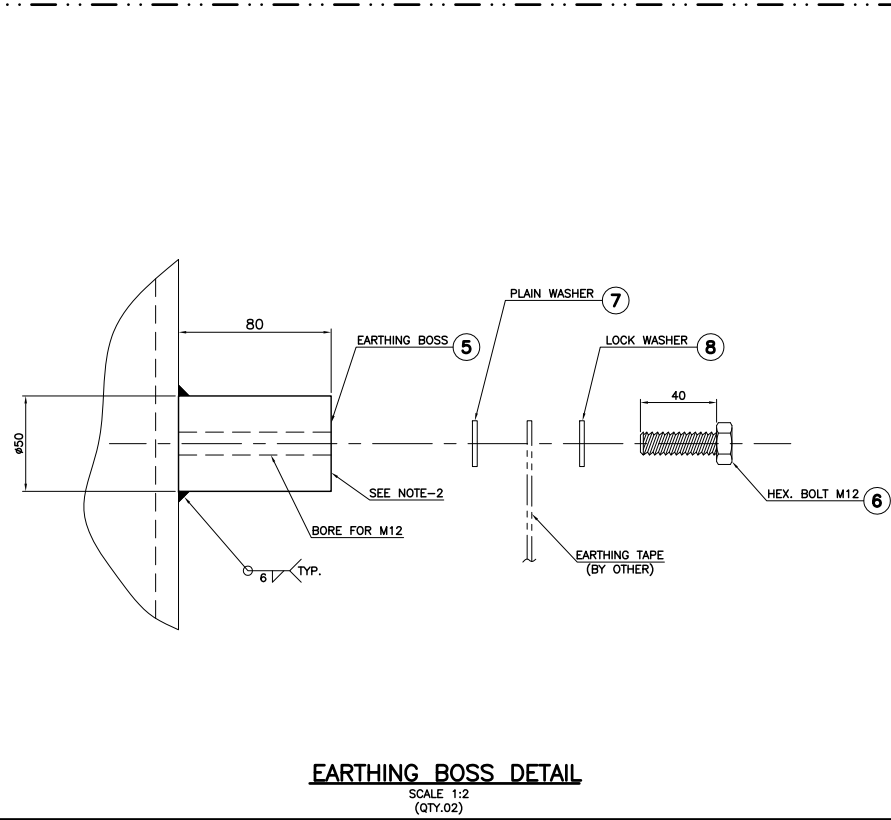


LIFTING LUGS DETAIL (QTY.02)

VIEW-A



DEMISTER SUPPORT DETAIL



EARTHING BOSS DETAIL (QTY.02)

SCALE 1:2

ITEM	DESCRIPTION	QTY.	MATERIAL	WT./UNIT	TOTAL(Kg.)
9	DEMISTER SUPPORT RING O.D 690 x I.D 590 x 10mm THK	1	SA-240 316L	80.3 Kg/m ²	8
8	LOCK WASHER FOR M12	2	304 S.S	5.85 Kg/1000 Pcs.	-
7	PLAIN WASHER FOR M12	2	304 S.S	5.85 Kg/1000 Pcs.	-
6	HEX. BOLT FOR M12 x 40 LONG. (FULL THREADED)	2	304 S.S	68.5 Kg/1000 Pcs.	-
5	EARTHING BOSS O.D 50 x I.D 12 x 80 LONG.	2	SA-36	1.16 Kg/PC.	2
4	LIFTING LUGS 26mm THK. (AS SHOWN)	2	SA-516 GR. 70 (N)	204.1 Kg/m ²	32
3	COVER PLATE 6mm THK. (AS SHOWN)	3	SA-516 GR. 70 (N)	47.1 Kg/m ²	3
2	BASE PLATE 230x230x30mm THK.	3	SA-283 Gr.C	235.5 Kg/m ²	37
1	SUPPORTING LEGS L 6"x6"x1/2" THK. 1063 LONG.	3	SA-36	27.3 Kg/m	87
				TOTAL WT.(Kg.)	169

ISSUED FOR REVIEW

- NOTES:**
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
 - THREAD AND MACHINED FACES TO BE LEFT UNPAINTED AND PROTECTED UNIT REQUIRED FOR EARTH CONNECTION.
 - COVER PLATE PROFILE AT WELD POINT (VESSEL SHELL) TO BE ADJUSTED AS PER SITE.
 - DEMISTER IS A VENDOR ITEM.
 - WELDING OF DEMISTER INTERNAL SUPPORT RING SHALL BE DONE BY QUALIFIED WELDING PROCEDURES IN ACCORDANCE WITH ASME SECTION-IX.

REV.	DATE	DESCRIPTION OF REVISION	MH DRAWN	SMUA CHECKED	SAA APPR.
A	09-09-2017	ISSUED FOR REVIEW			

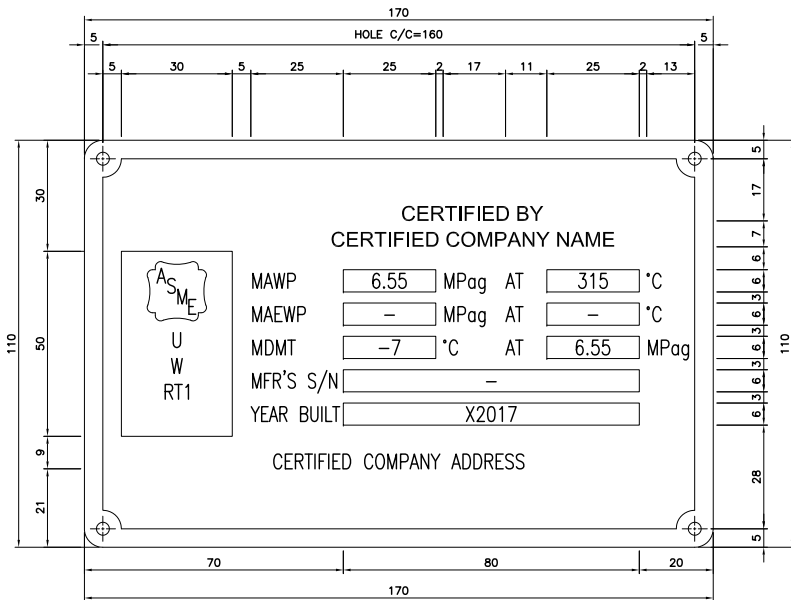
CLIENT: **OIL & GAS DEVELOPMENT COMPANY LTD.**
 OGDCL HOUSE TOWER-8, FIRST FLOOR FRIAR, BLUE AREA, JINNAH AVENUE ISLAMABAD PAKISTAN
 FAX: +92 51 2823033, PHONE: +92 51 5020850

CONSULTANT: **Zishan Engineers (Pvt.) Ltd.**
 An ISO 9001-2008 certified company
 4/F, Block 6, PECHS, Karachi-Pakistan
 Tel: (92-21) 3439045-48, & 34310151-54, Fax: (92-21) 3453340 & 34310156
 E-Mail: contact@zishanengineers.com Website: www.zishanengineers.com

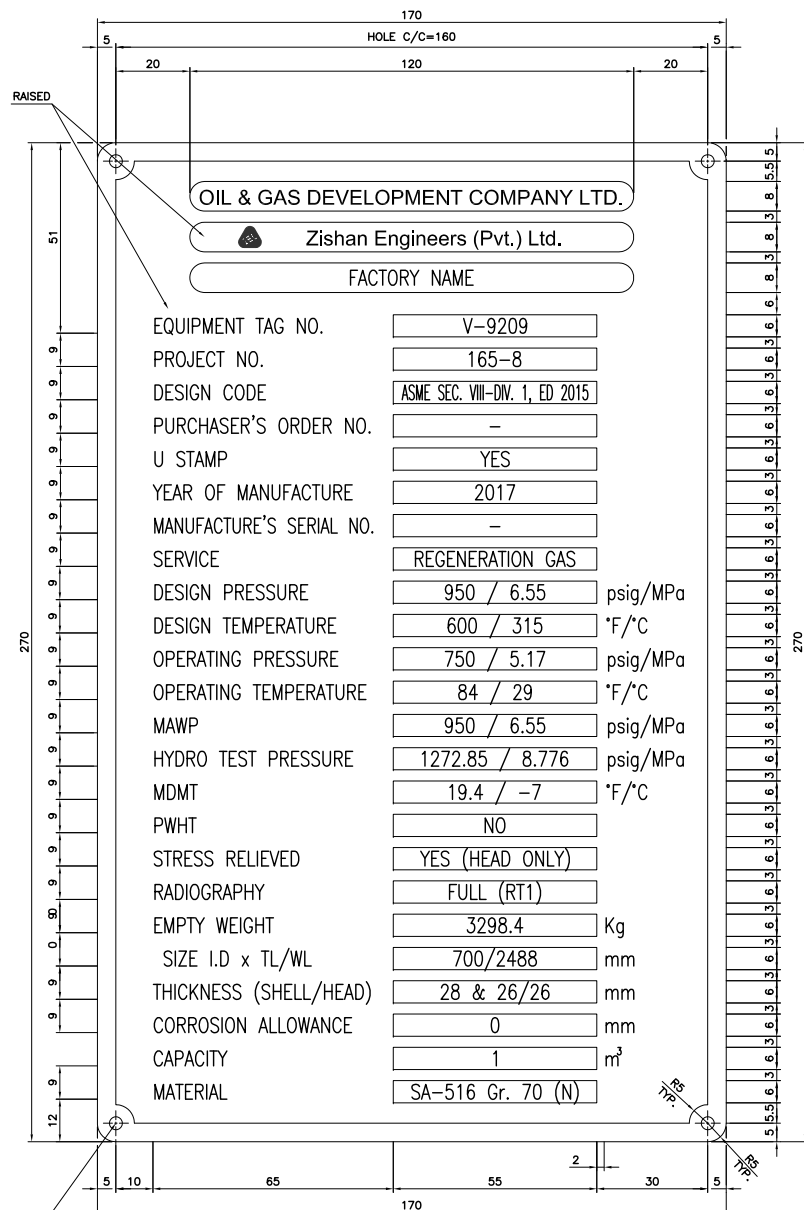
PROJECT : **REGENERATOR GAS SCRUBBER V-9209 (OGDCL QADIRPUR GAS PLANT)**

TITLE : **SUPPORTING LEGS, LIFTING LUGS, DEMISTER SUPPORT & EARTHING BOSS DETAILS**

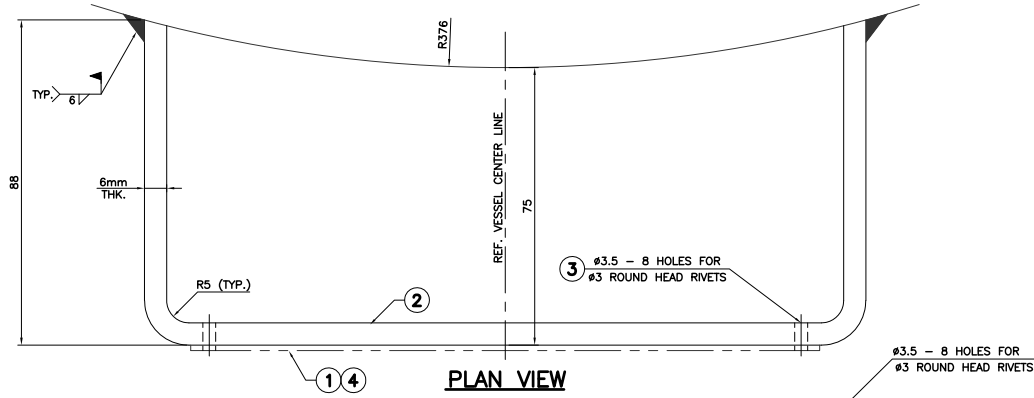
DWG. NO. 165-8-MPV-003
 REV. A
 JOB NO. 165-8
 SIZE A1
 SCALE 1:4
 SHEET 1 OF 1



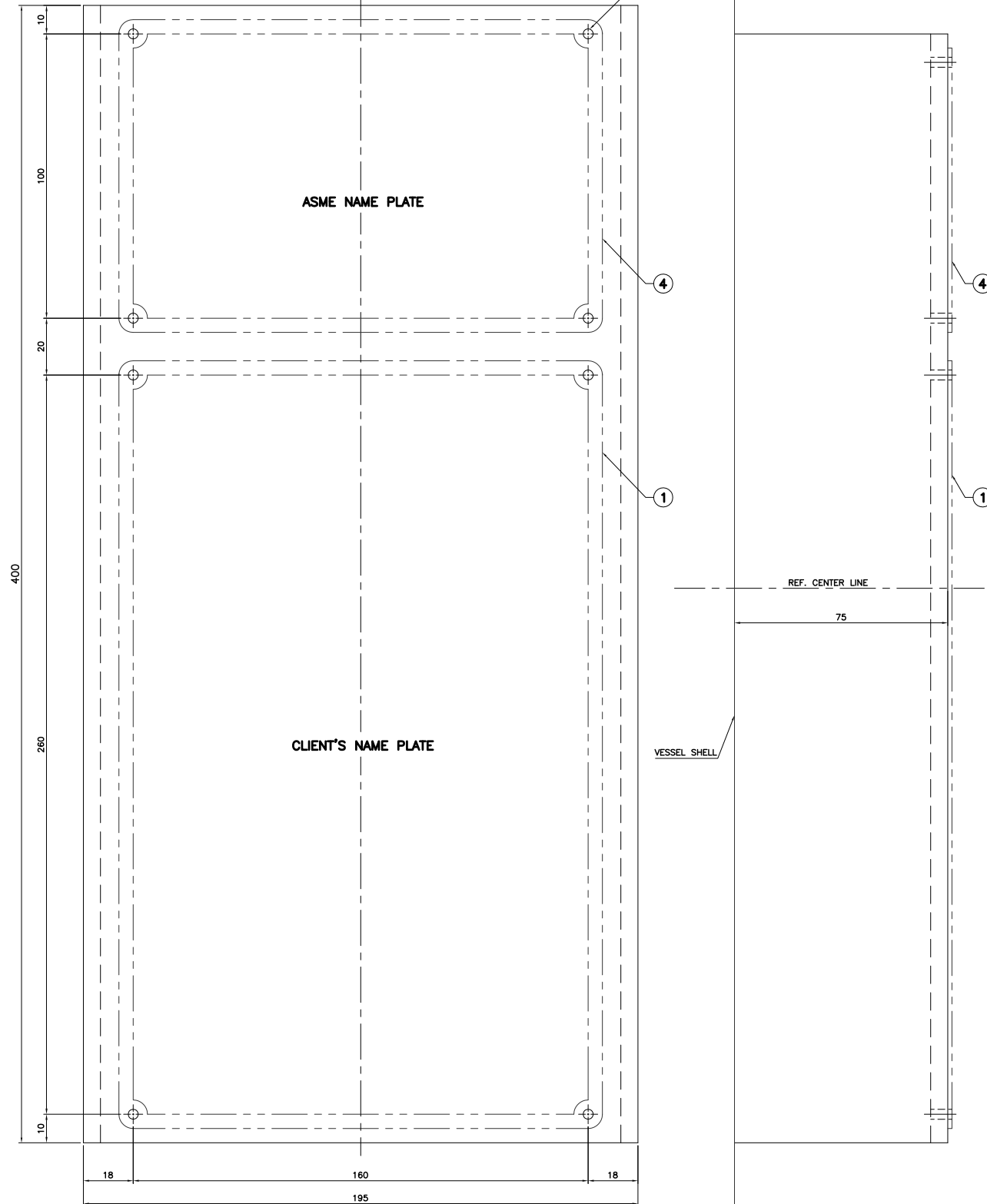
ASME NAME PLATE



CLIENT'S NAME PLATE



PLAN VIEW



CLIENT'S NAME PLATE

ELEVATION VIEW

SIDE VIEW

NAME PLATE BRACKET DETAIL

REFERENCE DRAWINGS	
DESCRIPTION	DWG. NO.
GENERAL ARRANGEMENT DRAWING FOR REGEN GAS SCRUBBER (V-9209)	078-15-MPV-001

ISSUED FOR REVIEW

ITEM	DESCRIPTION	QTY.	MATERIAL	WT./UNIT TOTAL WT.(Kg.)	TOTAL(Kg.)
4	PLATE 110 x 170 x 3mm THK.	1	SS-304	23.55 Kg/m²	1
3	ROUND HEAD RIVET M3	8	SS 316L	-	-
2	PLATE 400 x 350 x 6mm THK.	1	SA-516 Gr.70 (N)	47.1 Kg/m²	7
1	PLATE 270 x 170 x 3mm THK.	1	SS-304	23.55 Kg/m²	1
				TOTAL WT.(Kg.)	9

- NOTES:**
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
 - ALL LETTERS/NUMBERS ENGRAVED UP TO 0.3mm DEPTH AND FILLED WITH BLACK ENAMEL & BACKGROUND FULLY POLISHED.
 - LETTERING/NUMBERS IN BOXES IS 4mm HEIGHT.
 - LETTERING IN ROMAND VERTICAL BLOCK TYPE.
 - TYPE OF CONSTRUCTION PRINTING: CHEMICALLY ENGRAVED.
 - YEAR PUNCHED AFTER VESSEL HYDROTEST/FINAL INSPECTION IN "YEAR COMPLETED" COLUMN.

REV.	DATE	DESCRIPTION OF REVISION	MH DRAWN	SMJA CHECKED	SAA APPR.
A	09-09-2017	ISSUED FOR REVIEW			

CLIENT:
OIL & GAS DEVELOPMENT COMPANY LTD.
 OGDCL HOUSE TOWER-B, FIRST FLOOR F6/G6, BLUE AREA, JINNAH AVENUE ISLAMABAD PAKISTAN
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PROJECT: REGENERATOR GAS SCRUBBER V-9209 (OGDCL QADIRPUR GAS PLANT)

TITLE: NAME PLATE DETAILS

DWG. NO. 165-8-MPV-004
REV. A
JOB NO. 165-8
SIZE A1
SCALE 1:1
SHEET 1 OF 1