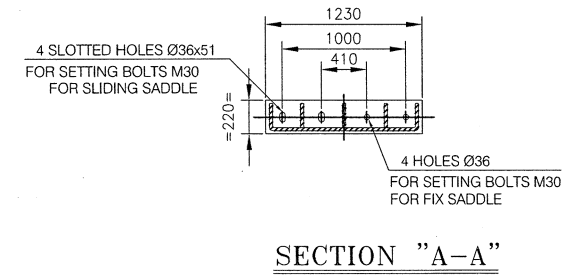
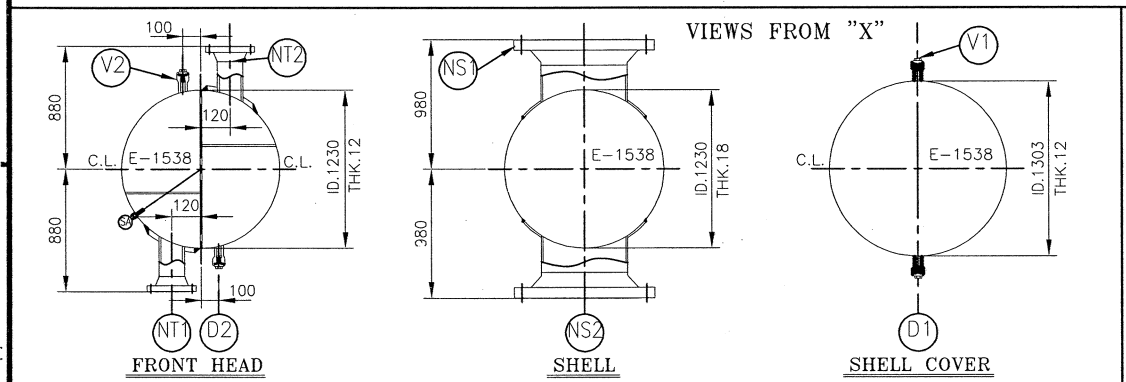
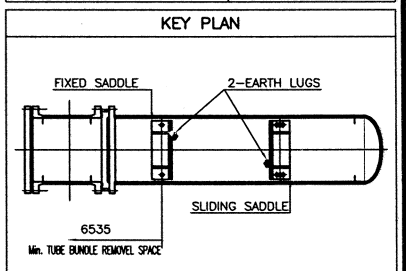


- GENERAL NOTES**
- UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETERS.
  - UNLESS OTHERWISE NOTED OUTSIDE PROJECTION OF NOZZLES ARE MEASURED FROM C.L. OF EXCHANGER TO THE EXTREME FACE OF NOZZLE.
  - STATED THICKNESS IS MINIMUM AFTER FORMING. THICKNESS OF STRAIGHT FLANGE OF ELLIPTICAL/TORISPHERICAL HEADS SHALL BE IN NO CASE SMALLER THAN THE REQUIRED BARREL THICKNESS.
  - THE INDICATED WEIGHTS & LOADS TO BE CHECKED/CONFIRMED BY MANUFACTURER.
  - THE MECHANICAL DATA SPECIFIED ON DRAWINGS ARE MINIMUM PROJECT REQUIREMENTS. ADEQUACY AND COMPLIANCE OF DESIGN WITH CODE AND PROJECT SPECIFICATIONS IS MANUFACTURER'S RESPONSIBILITY.
  - FLANGE FACING TO BE IN ACCORDANCE WITH ASME B.16.5, SURFACE FINISH ROUGHNESS: 3.2 TO 6.3µm.
  - DRILLING AND TOLERANCES OF TUBESHEET PER TEMA STANDARD FT.
  - NOZZLE LOCATION WILL BE FINALIZED LATER.
  - BOTH END OF THE RODS SHALL BE UNC THREADED ON 50mm.
  - THREADED HOLES IN TUBESHEET MUST NOT BE COMPLETELY DRILLED.
  - DIAMETER OF HOLES FOR THE RODS IN BAFFLES = Ø TIE RODS +0.5mm.
  - EDGES OF HOLES IN BAFFLES SHALL BE ROUNDED (R=2mm) OR BEVELED.



REFERENCE DRAWINGS	DWG No.
PROCESS DATA SHEET	ME-3-3-0550-0-CA-066



H2S service has considered.

SHELL		GENERAL		NOZZLE SCHEDULE										DESIGN DATA	
ITEM	QTY	SIZE (mm)	SCH.	THK.	RATING	TYPE	FACING	SERVICE	PROJ.	REINFORCING PAD	REMARKS	CALCULAT. CODES	ASME VIII DIV.1 - TEMA R		
BARREL	SA 516 GR.60N	SLIDING BAR/ROD	NAVAL BRASS									WIND/EARTHQUAKE	UBC 1997 / UBC 1997		
FLANGES	SA 266 GR.2N	SEALING STRIP	NAVAL BRASS	NS1A/E	2	22	STD	9.52	300	WN	RF	TEMPERATURE	AJ21S / HORIZONTAL		
NOZZLE FROM PIPE	SA 106 GR.B	DUMMY TUBE/SEAL ROD		NS2	1	20	40	15.09	300	WN	RF	SPECIFICATIONS			
NOZZLE FROM PLATE		BURNED NOZZLE BOLT/WUT		NT1	1	6	80	10.97	150	WN	RF	WIND SPEED/WEBAC ZONE	120 Km/h @10m / 4		
NOZZLE FLANGES	SA 105N	BURNED NOZZLE GASKET		NT2	1	6	80	10.97	150	WN	RF	FLUID ALLOCATION	SHELL SIDE		
COUPLERS & FLUGS	SA 105N	TEST RING		D1	1	1						SHELL SIDE	TUBE SIDE		
NOZZLE REIN.PAD	SA 516 GR.60N	TEST RING		D2	1	1						FLUID	HCBN, HYDROGEN & WATER		
EXCHANGER SUPPORTS	SA 285 GR.C	GASKETS										DESIGN PRESSURE	3.5		
SUPPORT WEAR PLATE	SA 516 GR.60N	SHELL/COVER	DMJKTD Soft Iron	V1	1	1						DESIGN TEMPERATURE	120		
STIFFENING RINGS		SHELL/TUBESHEET	DMJKTD Brass	V2	1	1						TEST PRESSURE	4.6		
EXPANSION JOINT		CHANNEL/TUBESHEET	DMJKTD Brass	PG1	1	3/4						EXTERNAL PRESS.			
LINING		CHANNEL/COVER	DMJKTD Soft Iron	PG2	1	3/4						WORK. TEMP. (IN)	55		
		FLOATING HEAD	DMJKTD Brass	PG3	1	3/4						WORK. TEMP. (OUT)	40		
		FLOATING HEAD	DMJKTD Brass	PG4	1	3/4						FLUID DENSITY	756.4 IN/760 OUT		
		COVER	SA 516 GR.60N	TW1	1	1						CORROSION	5		
		FLANGES	SA 266 GR.2N	TW2	1	1						J.E. CATEGORY A/B	0.85		
		SPLIT RING	SA 266 GR.2N	TW3	1	1						NO. OF PASSES	1		
			SA 193 GR.B7, SA 194 GR.2H	TW4	1	1						R.T. CATEGORY A/B	SPOT/SPOT		
			SA 193 GR.B7, SA 194 GR.2H	SA	1	1/2						STRESS BELIEVING	PWHT FOR SHELL COVER		
			SA 193 GR.B7, SA 194 GR.2H									FLAT/HEAD STRESS RE.	YES		

WEIGHTS (APPROX.)		LEGEND	
TUBE BUNDLE	9927.13	B.L. = BASE LINE	
TOTAL DRY	17050	C.L. = CENTER LINE	
FULL OF WATER	24902.2	F.O.T.S. = FACE OF TUBESHEET	
		M.D.M.T. = MIN. DESIGN METAL	
		M.A.T. = MIN. AMBIENT TEMPERATURE	
		O.T.L. = OUTER TUBE LIMIT	
		T.O.G. = TOP OF GROUND	

TUBE BUNDLE DATA			
NOZZLES	1430	O.D.	19.05
THK.	2.11 (MIN)	LENGTH	6100
PITCH	25.4	LAYOUT	45°
SURFACE/UNIT(CORROSION/EFFECTIVE)	4176.32/4098.55	JOINT	Expand / Groove, seal weld
SECT. IN. PAIR.	8	SECT. IN. REEL.	1
BAFFLE CUT	30%	LEAKAGE CLASS	

REGULATION TYPE/DENSITY/THK.	mm	mm	mm

SEC. Code	Unit	Req. No.
27025	15	2260-PO-1E-3-3-0550-0

NO. OF PASSES	SPOT/SPOT	SPOT/SPOT
1		

REVISION	DATE	DESCRIPTION	PREP'D	DESIGNED & CHECKED	APPROVED
01	Aug.20.06	FOR APPROVAL	A.Shahidkhoda	V.Ranjbaran	M.Khavanin
00	Jul.16.06	ORIGINAL ISSUE	H.Abbasi	V.Ranjbaran	M.Khavanin

NATIONAL IRANIAN OIL REFINING & DISTRIBUTION COMPANY  
**NATIONAL IRANIAN OIL**  
 ENGINEERING & CONSTRUCTION CO.  
**SHAZAD ARAK REFINERY EXPANSION AND UPGRADING PROJECT**

**GENERAL ARRANGEMENT DRAWING**

Vendor Job No.: 27025 Vendor Doc No.: STHE.457.01.00  
 Ram No.: E-1538 A-H Designation: 2 (Support Column) MAIN COLUMN TRIM CONDENSER  
 NOEC PROJ. No.: 2260 Requirement No.: 2260-IR-ME-3-3-0550-0

NOEC DWG. No.: 2260-PO-1E-3-3-0550-0  
 Scale: A3