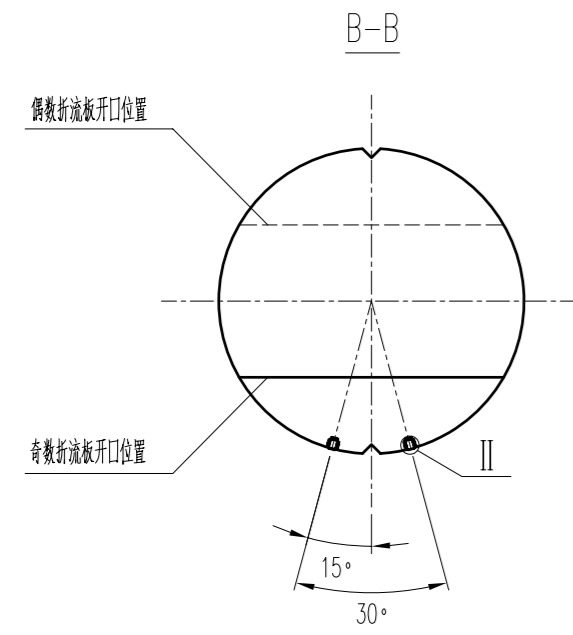
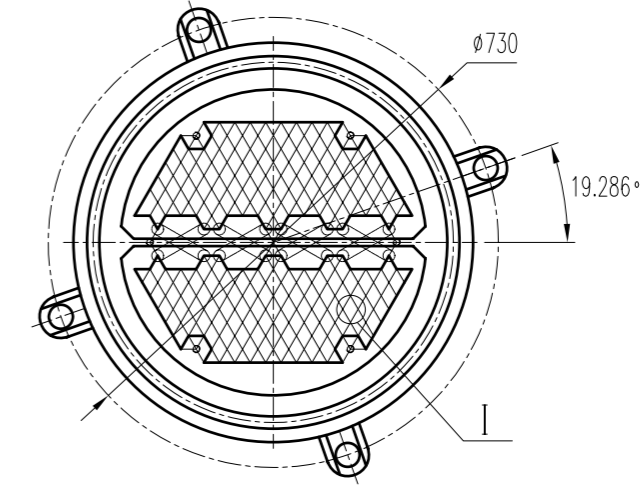
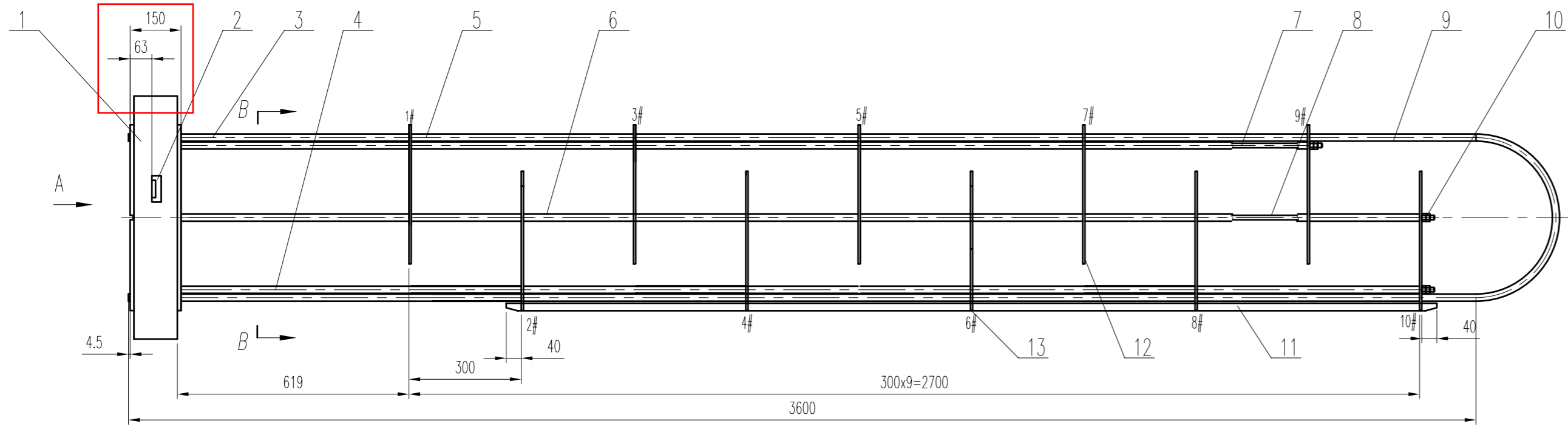


## TUBE BUNDLES FOR NASHPA PLANT

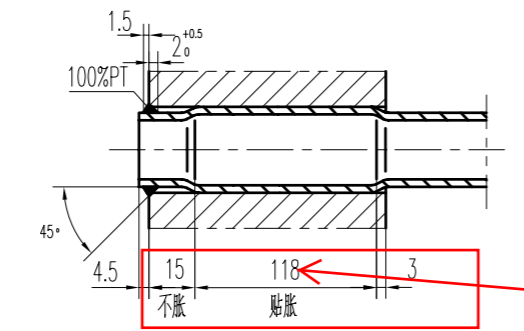
Case no. PROC/LF/PT/P&P-18126/2020

### Pre-bid Clarification No. 2

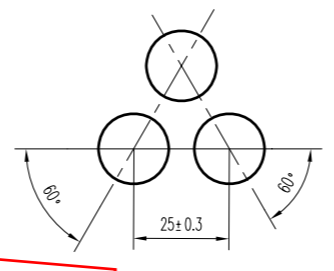
Sr.	Query	Clarification
1.	Contradicting values of thickness of tube sheet in drawings of tube bundle of E-2302	Please check the revised drawings of the item
2.	Contradicting values of thickness of tube sheet in drawings of tube bundle of E-2303	Please check the revised drawings of the item



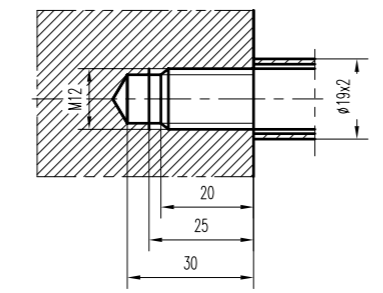
Detail of heat exchange tube and tube plate connection  
换热管与管板连接详图



Detail I  
详图 I



Detail of rod and tube plate connection  
拉杆与管板连接详图



Detail II  
详图 II

It shall be 132

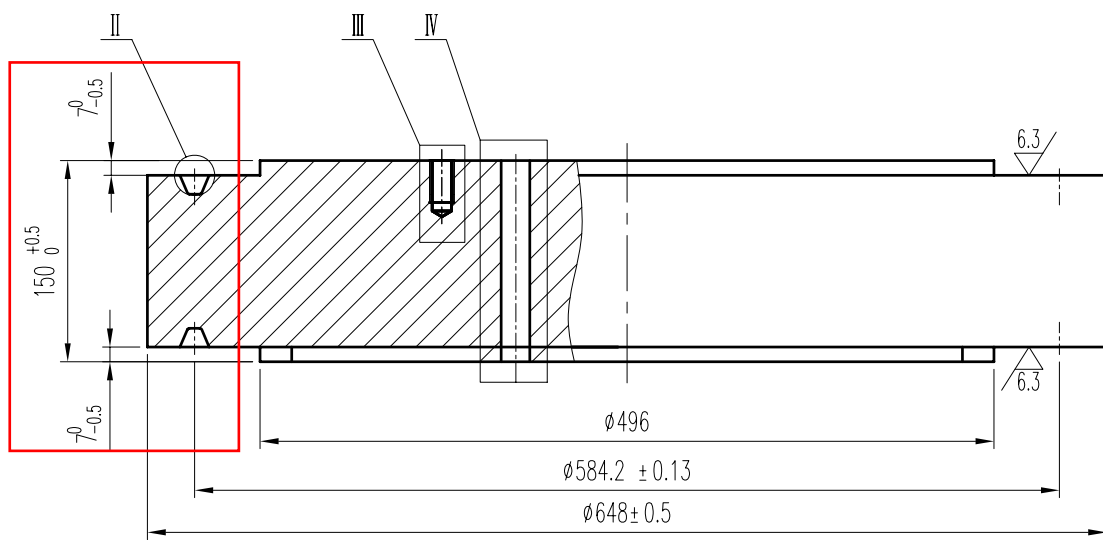
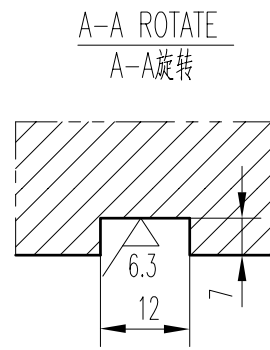
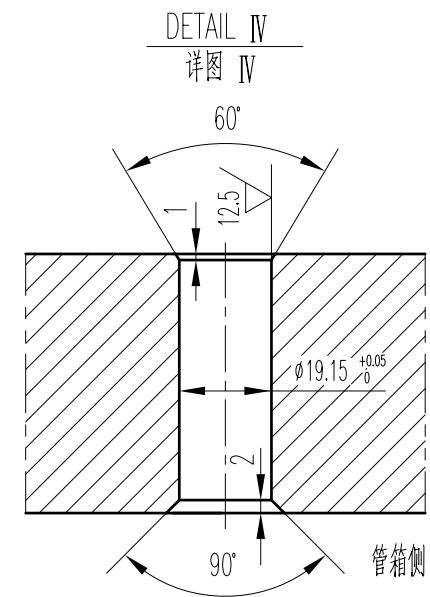
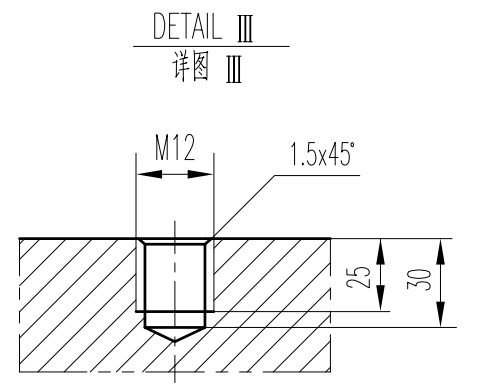
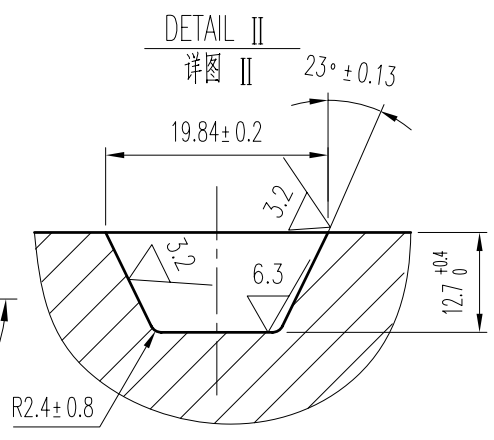
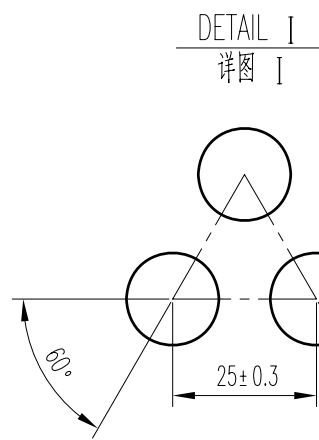
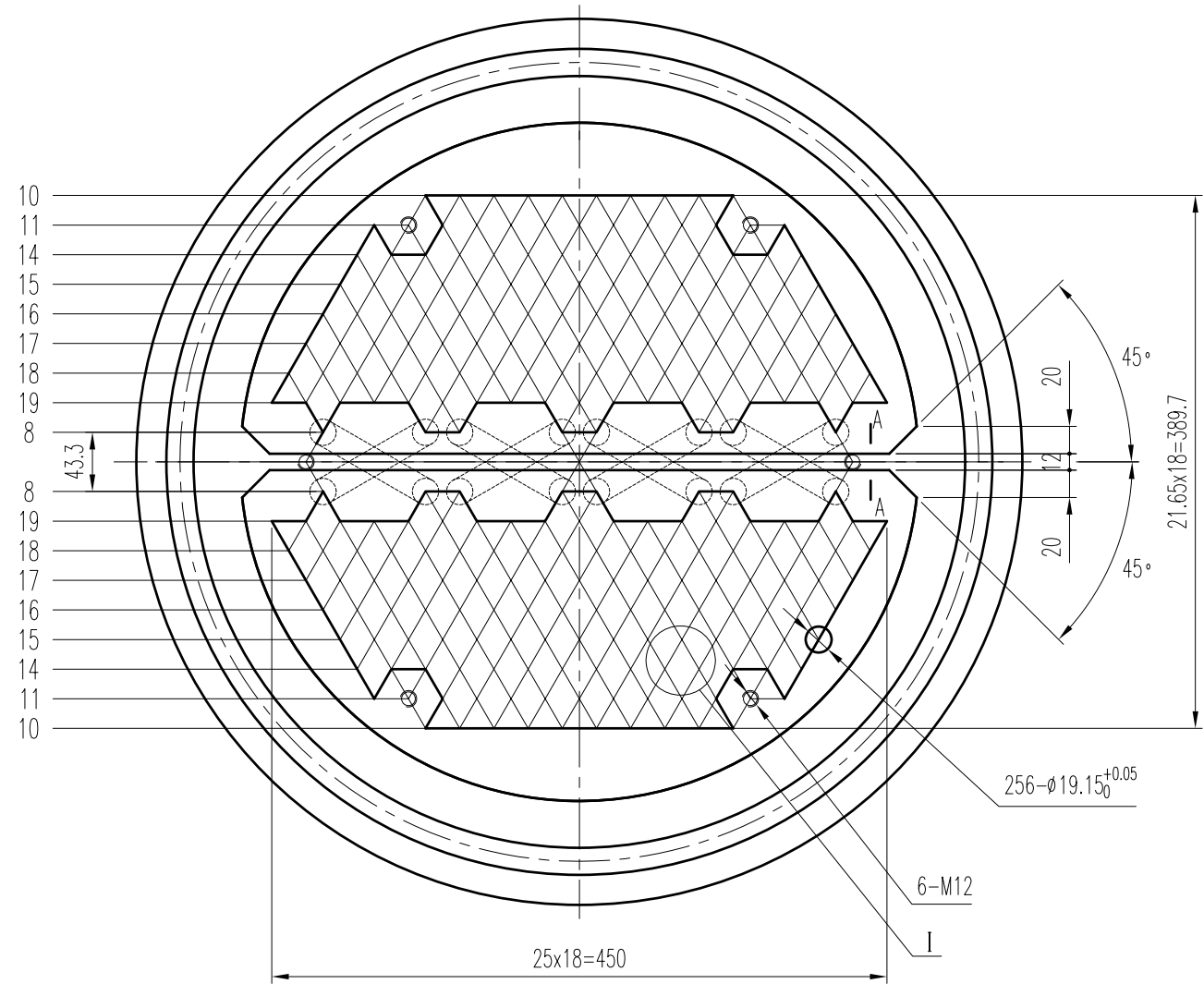
GENERAL NOTES 技术要求

1. THE DEFLECTION FOR ALL THE SPACER TUBES SHALL BE -1mm;  
所有定距管长度偏差为-1mm;
2. UNLESS OTHERWISE NOTED, LEG HEIGHT FOR ALL FILLET WELDS SHALL BE EQUALED TO THE THICKNESS OF THE THINNER ELEMENTS AND BE SEAL WELDED;  
所有未注明的角焊缝,其焊脚高度均等于较薄件厚度,且为连续焊;
3. THE WELDING JOINT OF HEAT EXCHANGING TUBE AND TUBE SHEET SHALL BE PENETRATION TESTED.  
换热管与管板焊接接头应进行渗透检测。

It shall be 150

13	U-16-14-07-08	EVEN ARC BAFFLE 偶数号形折流板	$\delta=6$	SA-516 Gr.70	5	7.1	35.5	
12	U-16-14-07-07	ODD ARC BAFFLE 奇数号形折流板	$\delta=6$	SA-516 Gr.70	5	7.1	35.5	
11	U-16-14-07-06	SLIP PLATE 滑道	$\delta=12$	SA-36	2	7.26	15.52	
10	ASME B18.2.2	NUTS 螺母	M12	SA-194 Gr.2H	12	0.019	0.23	HOT DIP GALVANIZED 热浸锌
9	U-16-14-07-05-00	TUBE 换热管组	$\phi 19 \times 2, L=3600$	SA-179	1	809	809	
8	U-16-14-07-04	TIE ROD II 拉杆 II	$\phi 12, L=3375$	SA-36	4	3	12	SEE IN DRAWING U-16-14-07-03
7	U-16-14-07-03	TIE ROD I 拉杆 I	$\phi 12, L=3075$	SA-36	2	2.73	5.46	
6		SPACERS IV 定距管 IV	$\phi 19 \times 2, L=294$	SA-179	18	0.25	4.5	SEE THIS DRAWING 本图
5		SPACERS III 定距管 III	$\phi 19 \times 2, L=594$	SA-179	16	0.5	8	SEE THIS DRAWING 本图
4		SPACERS II 定距管 II	$\phi 19 \times 2, L=909$	SA-179	2	0.76	1.52	SEE THIS DRAWING 本图
3		SPACERS I 定距管 I	$\phi 19 \times 2, L=609$	SA-179	4	0.51	2.04	SEE THIS DRAWING 本图
2	U-16-14-07-02	CLEAT 支耳	$\delta=24$	SA-516Gr.70N	4	1.4	5.6	
1	U-16-14-07-01	TUBE SHEET 管板	$\delta \geq 36$	SA-266 Gr.2	1		253.1	

ITEM NO. 序号	DWG NO. OR CODE 图号或标准	DESCRIPTION 名称及规格	MATERIAL 材料	QTY. 数量	UNIT 单位	TOTAL 合计	REMARKS 备注
上海蓝滨石化设备有限责任公司 Shanghai Lanbin Petrochemical Equipment Co., Ltd.							
Prepared 设计	2016.07.14	图名 DWG NAME	Project 项目		OED2016-06		
Approved 批准	2016.07.14	BUNDLE 管束	Sub-Title 分标题		Client 用户		
Job No. 工号	BU16-14		Scale 比例		Weight 重量	1187.5kg	
Draw 画法		Material	Assembly 组合件	DWG NO: 图号		U-16-14-07-00	
				Phase 设计阶段	Construction 施工图	Page 1 of 1 第 1 页 共 1 页	Rev. 版次

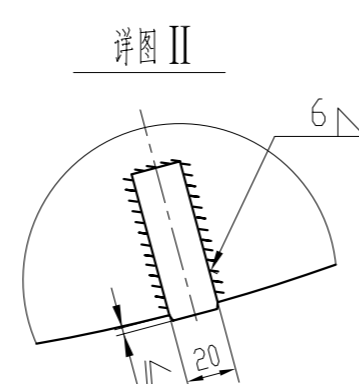
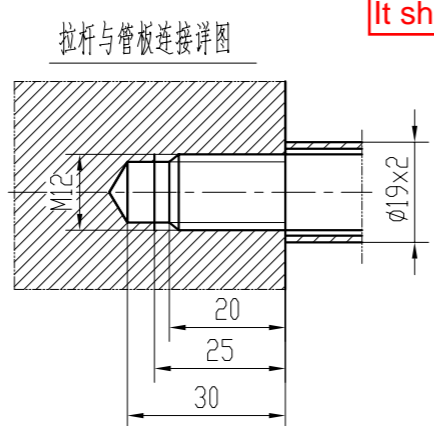
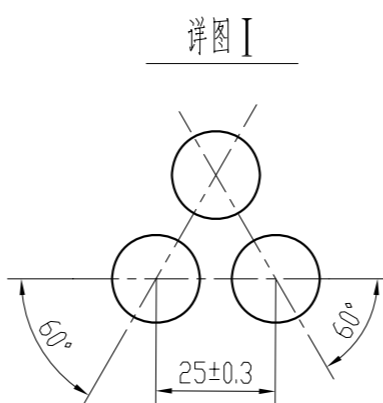
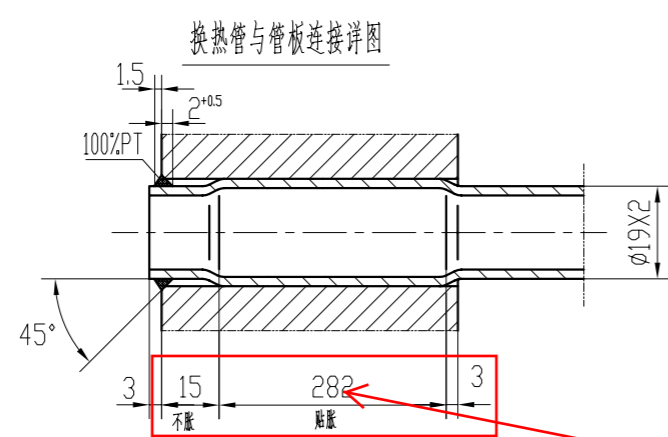
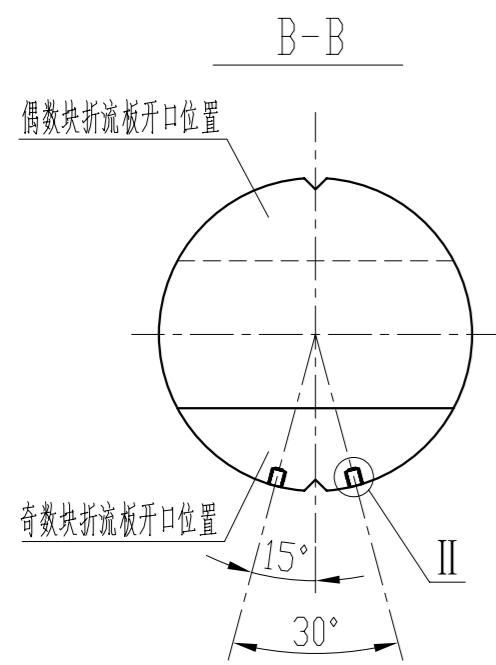
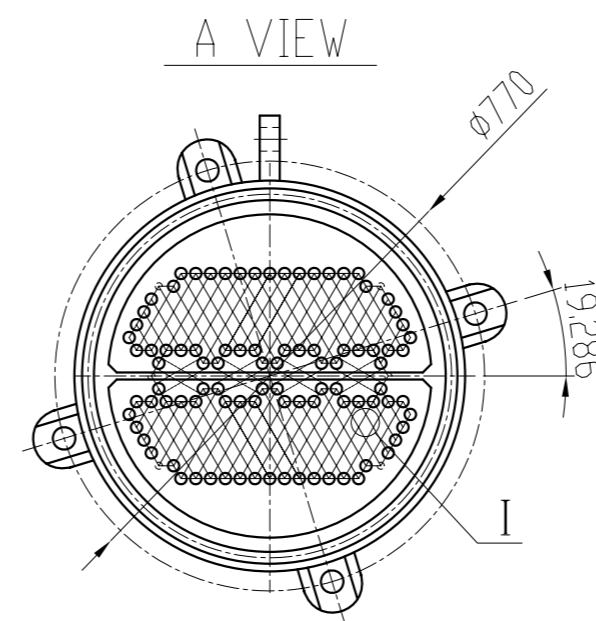
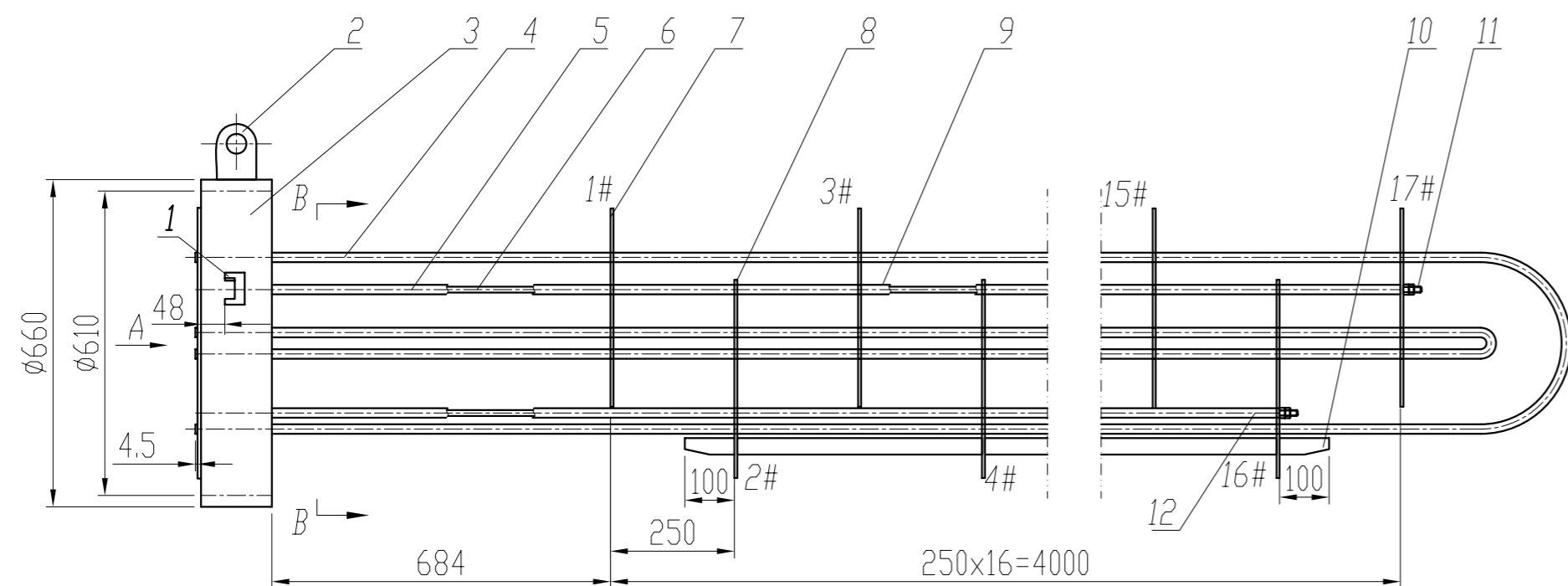


GENERAL NOTES 技术要求

- MATERIAL OF TUBESHEET SHALL BE IN ACCORDANCE WITH ASME CODE SEC. II PART A-2010; 管板材料应符合ASME CODE SEC. II PART A-2015中的规定;
- MINIMUM STD. LIGAMENTS  $B \geq 4.903\text{mm}$ , MINIMUM PERMISSIBLE LIGAMENT WIDTH OF 4%  $B \geq 3.048\text{mm}$ ; 相邻两管孔之间的孔桥宽度  $B \geq 4.903\text{mm}$ , 允许4%孔桥宽度  $B \geq 3.048\text{mm}$ ;
- PERMISSIBLE TOLERANCES OF 4% TUBE HOLE IS  $\phi 25.25_{-0}^{+0.15}$ . 允许4%管孔公差为  $\phi 25.25_{-0}^{+0.15}$ .

It shall be 150

上海蓝滨石化设备有限责任公司 Shanghai Lanbin Petrochemical Equipment Co., Ltd.									
Prepared 设计	李志	2016.07.14	图名 DWG NAME	Project 项目	OED2016-13				
Approved 批准	王群	2016.07.14	TUBE SHEET 管板 $\delta = 136$	Sub-Title 分项名称	Client 用户	Weight 质量	251.3		
Job No. 工号	BU16-14			Scale 比例	1:10				
Draw 画法			Material	SA-266 Gr.2N	DWG NO: 图号	U-16-14-07-01			
					Phase 设计阶段	Construction 施工图	Page 1 of 1 第1张共1张	Rev. 版次	0



It shall be 157

It shall be 139

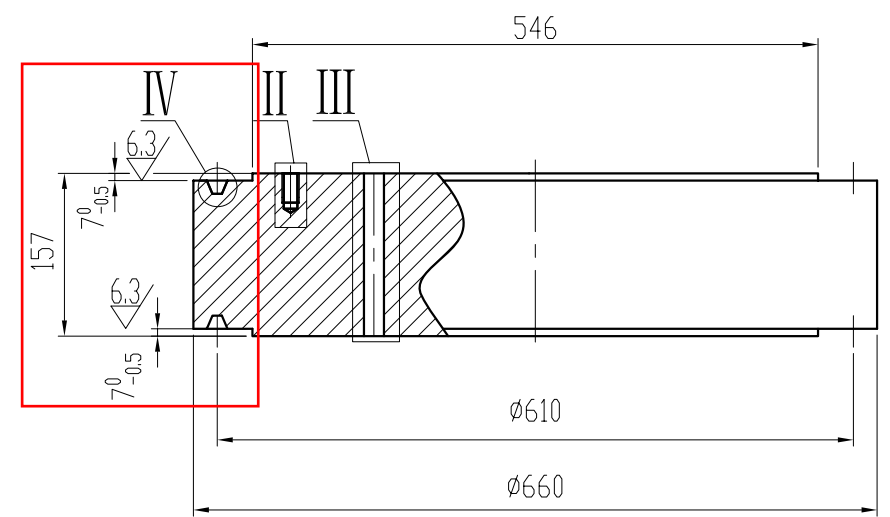
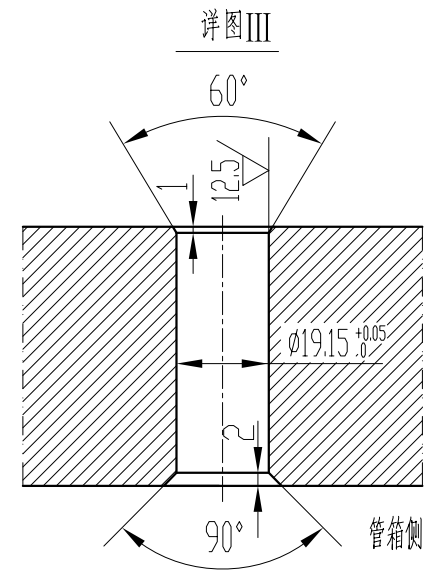
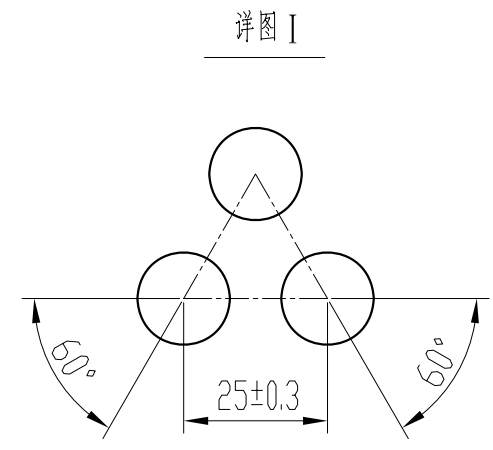
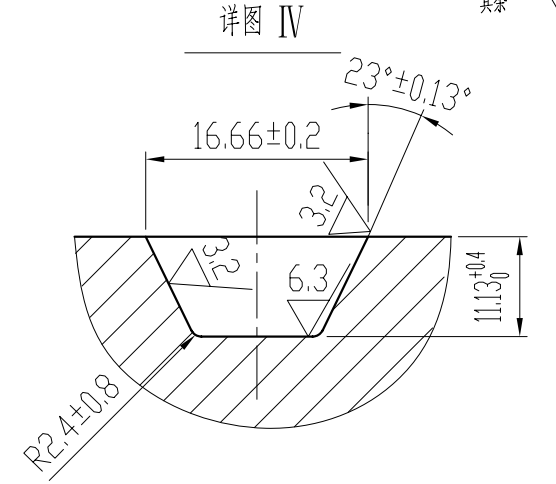
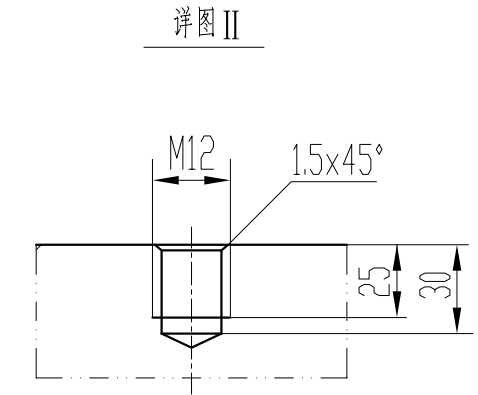
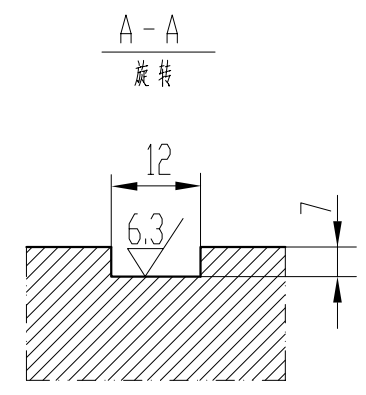
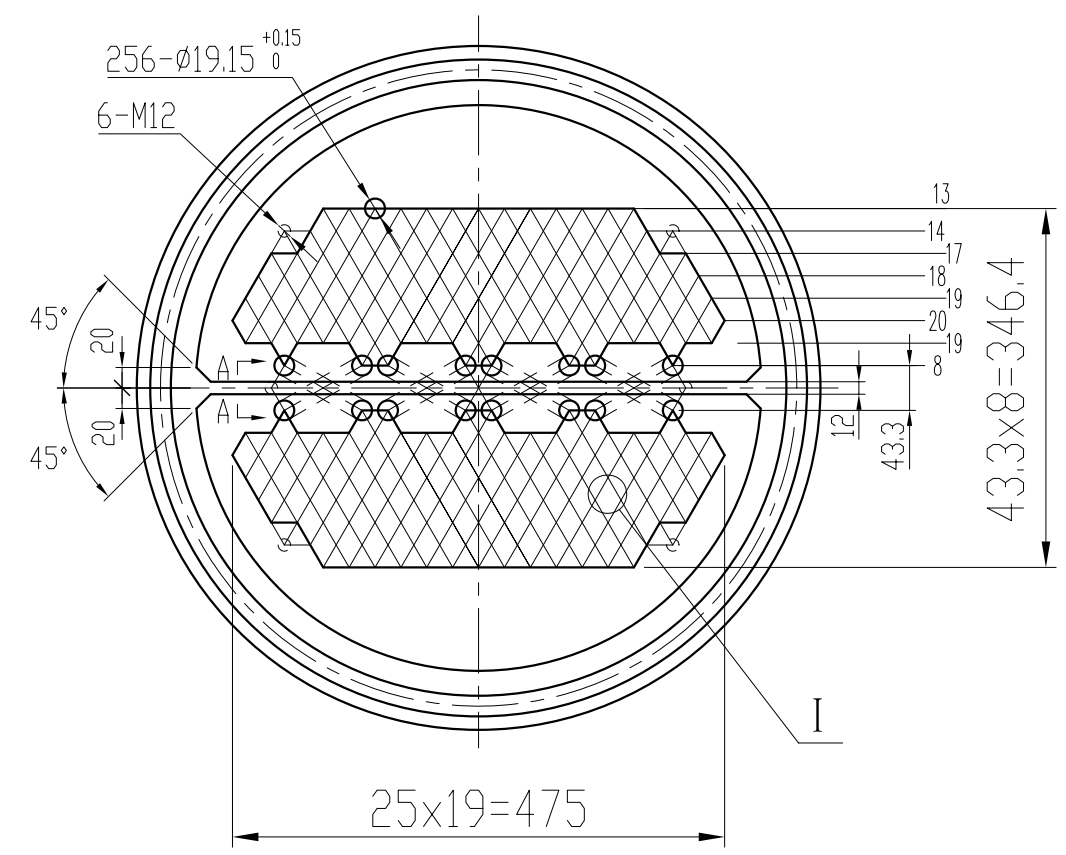
GENERAL NOTES 技术要求

1. THE DEFLECTION FOR ALL THE SPACER TUBES SHALL BE  $-1\text{mm}$ ;  
所有定距管长度偏差为 $-1\text{mm}$ ;
2. UNLESS OTHERWISE NOTED, LEG HEIGHT FOR ALL FILLET WELDS SHALL BE EQUALLED TO THE THICKNESS OF THE THINNER ELEMENTS AND BE SEAL WELDED;  
所有未注明的角焊缝,其焊脚高度均等于较薄件厚度,且为连续焊;
3. THE WELDING JOINT OF HEAT EXCHANGING TUBE AND TUBE SHEET SHALL BE PENETRATION TESTED.  
换热管与管板焊接接头应进行渗透检测。

ITEM NO. 序号	DWG NO. OR CODE 图号或标准	DESCRIPTION 名称及规格	MATERIAL 材料	QTY. 数量	UNIT 单件 WEIGHT 重量 (kg)	TOTAL 合计	REMARKS 备注
12	U-16-15-07-09	TIE ROD I I 拉杆 I I $\phi 12 \times 4506$	SA-36	2	4.23	8.46	
11	ASME B18.2.2	NUTS 螺母 M12	SA-194 Gr.2H	12	0.019	0.228	
10	U-16-15-07-08	SLIP PLATE 滑道 $\delta = 20; L = 3706$	SA-516 Gr.70N	2	28.5	57	
9		SPACERS II 定距管 II $\phi 19 \times 2, L = 244$	SA-179	64	0.21	13.44	SEE THIS DRAWING 本图
8	U-16-15-07-07	EVEN ARC BAFFLE 偶数弓形折流板 $\delta = 6$	SA-516 Gr.70	8	13.5	108	
7	U-16-15-07-06	ODD ARC BAFFLE 奇数弓形折流板 $\delta = 6$	SA-516 Gr.70	9	13.5	121.5	
6	U-16-15-07-05	TIE ROD I 拉杆 I $\phi 12 \times 4756$	SA-36	4	4.23	16.92	
5		SPACERS I 定距管 I $\phi 19 \times 2, L = 684$	SA-179	4	0.58	2.32	SEE THIS DRAWING 本图
4	U-16-15-07-04	TUBE 换热管 $\phi 19 \times 2$	SA-179	1	1095.7	1095.7	
3	U-16-15-07-03	STATIONARY TUBESHEET 固定管板 $\delta = 150$	SA-266 Gr.2N	1	402.8	402.8	
2	U-16-15-07-02	LIFTING LUG 吊耳	SA-516 Gr.70	1	7	7	
1	U-16-15-07-01	CLEAT 支耳 $\delta = 24$	SA-516 Gr.70N	4	1.7	6.8	

上海蓝滨石化设备有限责任公司  
Shanghai Lanbin Petrochemical Equipment Co., Ltd.

Prepared 设计	胡鹤	DWG NAME	Project 项目	OED2016-13	
Approved 批准	王群	BUNDLE 管束	Sub-Title 分项名称	Client 用户	
Job No. 工号	BU16-15		Scale 比例	1:20	Weight 重量 1836.3kg
Draw 画法		Material	DWG NO: 图号	U-16-15-07-00	
		Assembly 组合件	Phase 设计阶段	Construction 施工图	Page 1 of 1 第 1 页 共 1 页 Rev. 版次 0



GENERAL NOTES 技术要求

1. MATERIAL OF TUBESHEET SHALL BE IN ACCORDANCE WITH ASME CODE SEC. II PART A-2010;  
管板材料应符合ASME CODE SEC. II PART A-2015中的规定;
2. MINIMUM STD. LIGAMENTS  $B \geq 4.314\text{mm}$ , MINIMUM PERMISSIBLE LIGAMENT WIDTH OF 4%  $B \geq 3.45\text{mm}$ ;  
相邻两管孔之间的孔桥宽度  $B \geq 4.314\text{mm}$ , 允许4%孔桥宽度  $B \geq 3.45\text{mm}$ ;
3. PERMISSIBLE TOLERANCES OF 4% TUBE HOLE IS  $\phi 25.25^{+0.15}$ .  
允许4%管孔公差为  $\phi 25.25^{+0.15}$ .

Prepared 设计 贺鹤		图名 DWG NAME STATIONARY TUBESHEET 固定管板 $\delta = 157$	Project 项目 OED2016-13	
			Sub-Title 分项名称 Scale 比例 1:20	Client 用户 Weight 质量 402.8kg
Approved 批准 王祥		Job No. 工号 BU16-15	DWG NO: 图号 U-16-15-07-03	
Draw 画法 			Material SA-266 Gr.2N	Phase 设计阶段 Construction 施工图