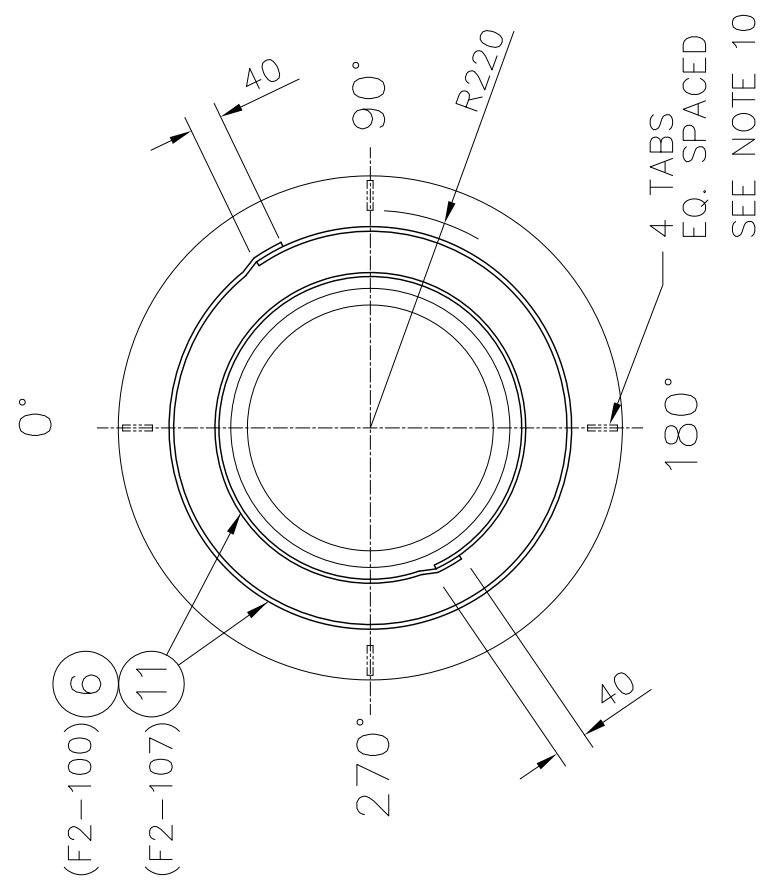
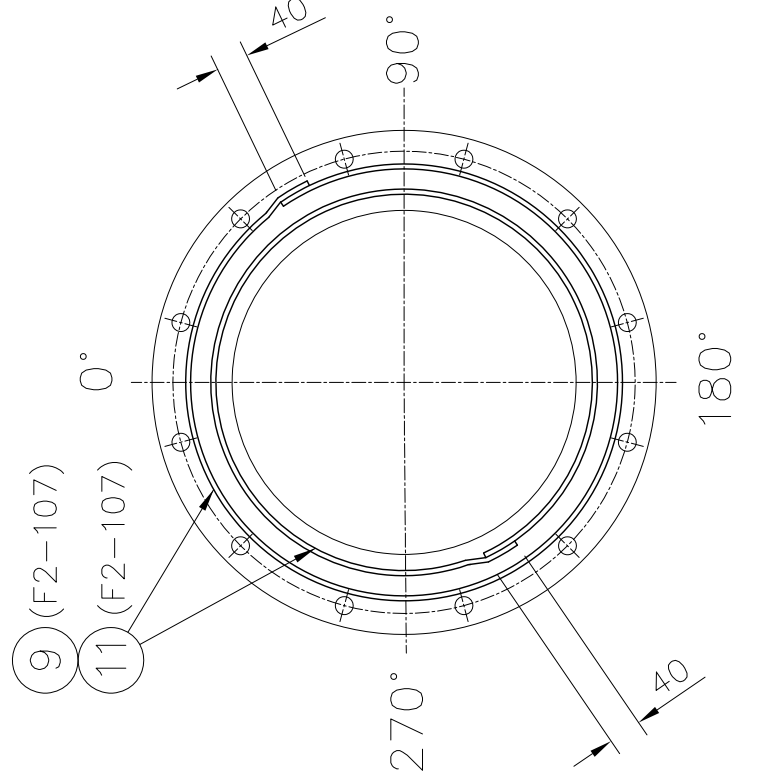


INSTALLATION OF LOWER REFORMER TUBE:

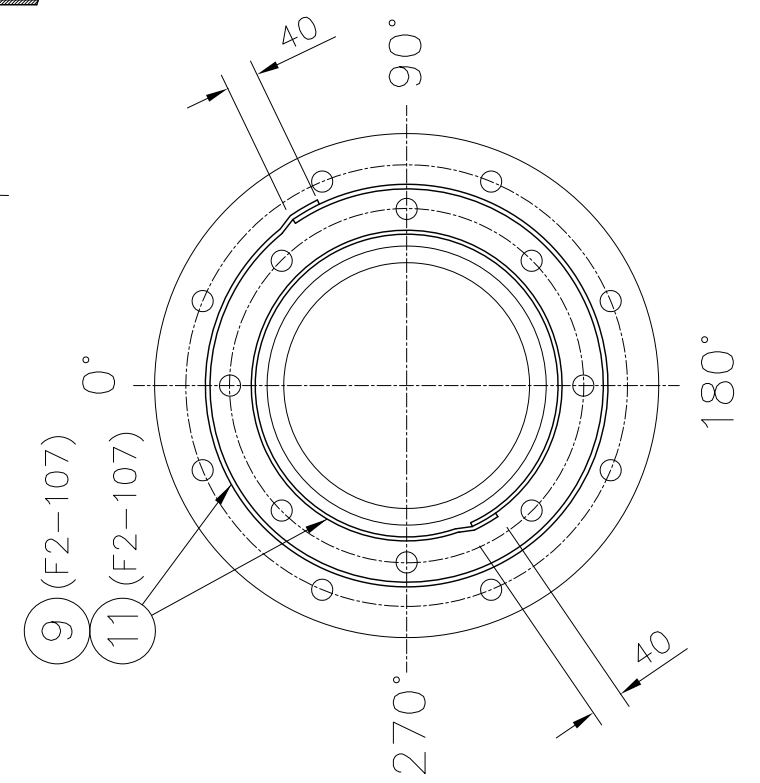
- INSTALL BELLOW (ITEM 3, F2-107) BY BOLTING IT TO THE FLANGED NOZZLE IN REFORMER FLOOR FLANGE WITH ROPE GASKET (ITEM 9, DWG F2-107) AND PERMATX (ITEM 11, DWG F2-107) PER DETAIL X AND NOTE 7. THIS DWG. SHIPPING BARS, WHICH RESTRAIN BELLOW TO SPECIFIED INSTALLATION HEIGHT SHOULD NOT BE REMOVED AT THIS TIME.
- INSTALL SPLIT RING FLANGE (ITEM 2, F2-107) IN GROOVE NEAR BOTTOM OF REFORMER TUBE (ITEM 1) WITH ROPE GASKET (ITEM 9, F2-107) AND PERMATX (ITEM 11, F2-107) PER DETAIL-Y AND NOTE 7. MAKE SURE THAT SPLIT RING FLANGES ARE ALIGNED WITH BELLOW
- INSTALL CATALYST SUPPORT TUBE (ITEM 4, F2-107), WITH VACUUM FORMED SPECIAL SHAPES, (DWG. F2-320) THRU BOTTOM OF REFORMER TUBE (ITEM 1), ALIGNING SLOTS IN CATALYST SUPPORT PLATE WITH LUGS ON I.D. OF REFORMER TUBE AND ROTATING AFTER INSERTION SO THAT CATALYST SUPPORT PLATE IS SEATED ON TOP OF LUGS.
- WITH GASKET (ITEM 10, F2-107) AND CERAMIC FIBER BLANKET (DWG. F2-320) IN PLACE, BOLT FEED GAS INLET FLG. (ITEM 1, F2-107) TO SPLIT RING FLANGE (ITEM 2, F2-107) WITH ROPE GASKET (ITEM 9, F2-107) AND PERMATX (ITEM 11, F2-107) BETWEEN FLANGES PER DETAIL-Y AND NOTE 7.
- REMOVE BELLOW SHIPPING BARS AND BOLT BELLOW (ITEM 3, F2-107) TO SPLIT RING FLANGE (ITEM 2, F2-107) AND GAS INLET FLANGE (ITEM 3).
- THREAD TUBE SUPPORT ROD (ITEM 7, F2-107) INTO SPRING ADJUSTMENT BRACKET (ITEM 6, F2-107). PLACE TUBE SPRING (ITEM 5, F2-107) OVER SPRING ADJUSTMENT BRACKET. ATTACH TO REFORMER CASING FLOOR BEAMS AS SHOWN IN DETAIL F2-107.
- FORM ROPE GASKET SEALS (ITEM 6) OR (ITEM 9 DWG F2-107) BY INSTALLING TWO (2) CONCENTRIC RINGS AND HOLD IN PLACE WITH PERMATX (ITEM 11, DWG F2-107). THE ENDS OF EACH ROPE RING SHOULD OVERLAP A MIN. OF 40mm WITH NO GAP BETWEEN TO FORM THE SEAL. INSTALL THE ROPE RINGS SO THAT THE OVERLAPS ARE ON OPPOSITE SIDES OF THE FLANGE. TYPICAL INSTALLATION FOR DETAILS "W", "X" AND "Y".
- FEED GAS FLEXIBLE HOSE (ITEM3) SHALL NOT BE INSTALLED UNTIL COMPLETION OF CATALYST LOADING PROCEDURES.
- FEED GAS FLEXIBLE HOSE (ITEM 3) TO BE WRAPPED WITH MINERAL WOOL 50mm THICK. COVERED WITH DYNEL FABRIC AND FLEXIBLE MASTIC. SEE INSULATION SPECIFICATION GSD-GN-11S. DO NOT INSTALL INSULATION AROUND FLANGE CONNECTION OF THE FLEX HOSE.
- THE SPRING ADJUSTMENT BRACKET (ITEM 6, F2-107) SHOULD BE ADJUSTED AS SHOWN ON DWG. F2-107.
- ALIGN TOP FLANGE AND TIGHTEN BOLTS PRIOR TO BOTTOM HOSE FLANGE. NEXT, ALIGN LAP JOINT FLANGE ON RISER PIPE TO BOTTOM HOSE FLANGE AND TIGHTEN BOLTS.



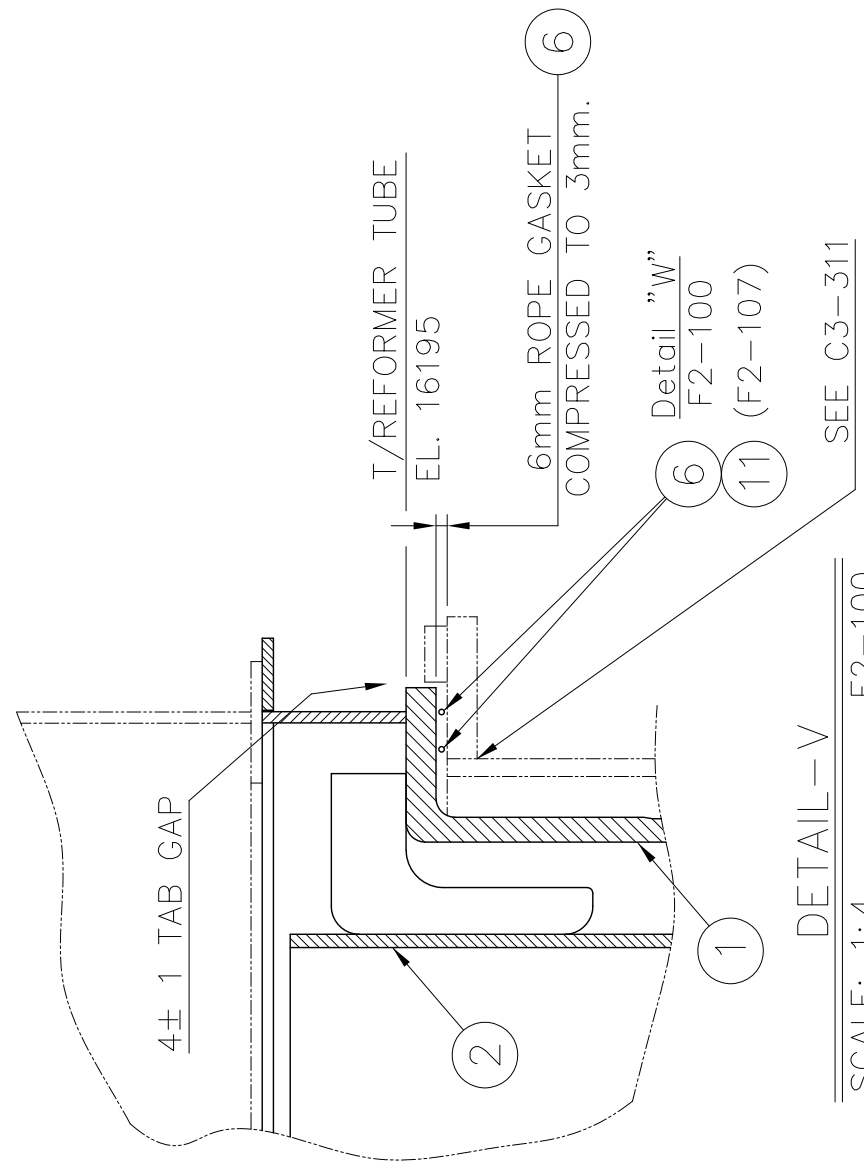
DETAIL-W
SCALE: NONE
F2-100
(TOP OF REFORMER TUBE)
(SEE NOTE 7)



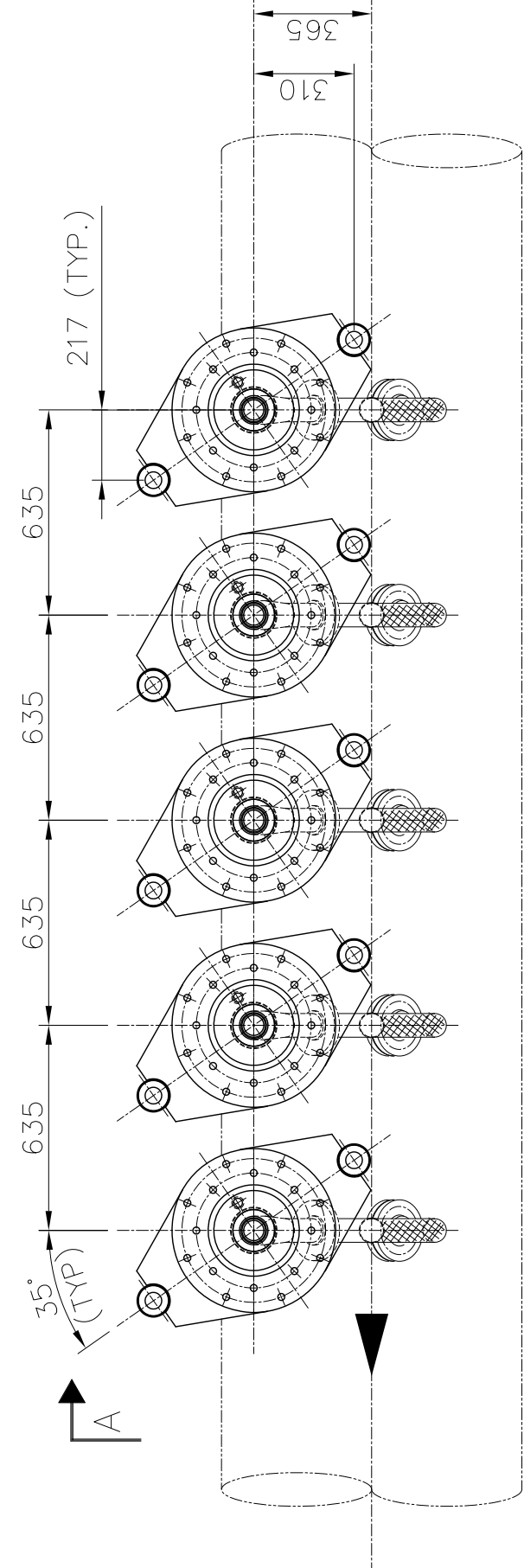
DETAIL-X
SCALE: NONE
F2-107
(BELLOW FLANGE TOP AND BOTTOM)
(SEE NOTE 7)



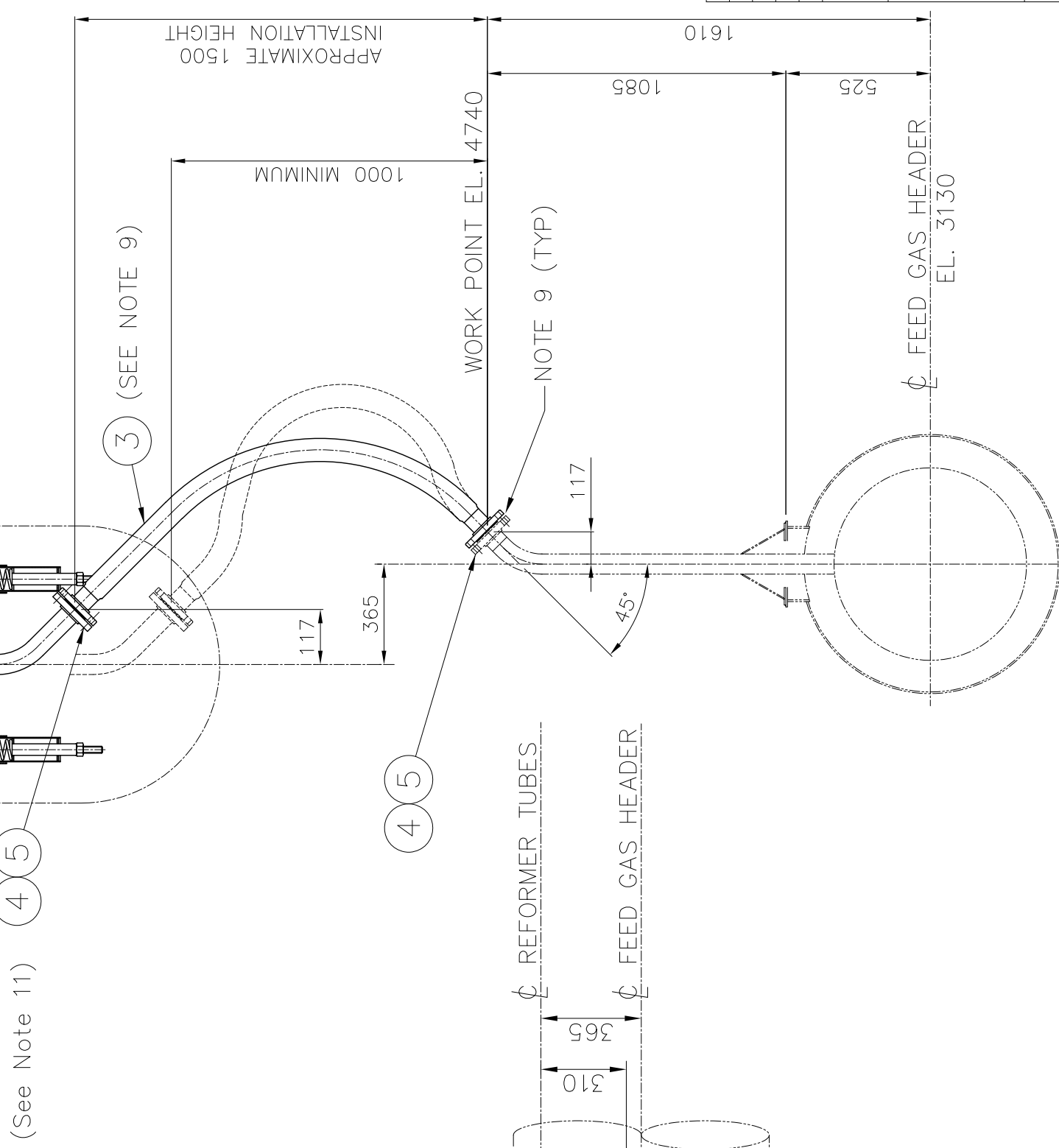
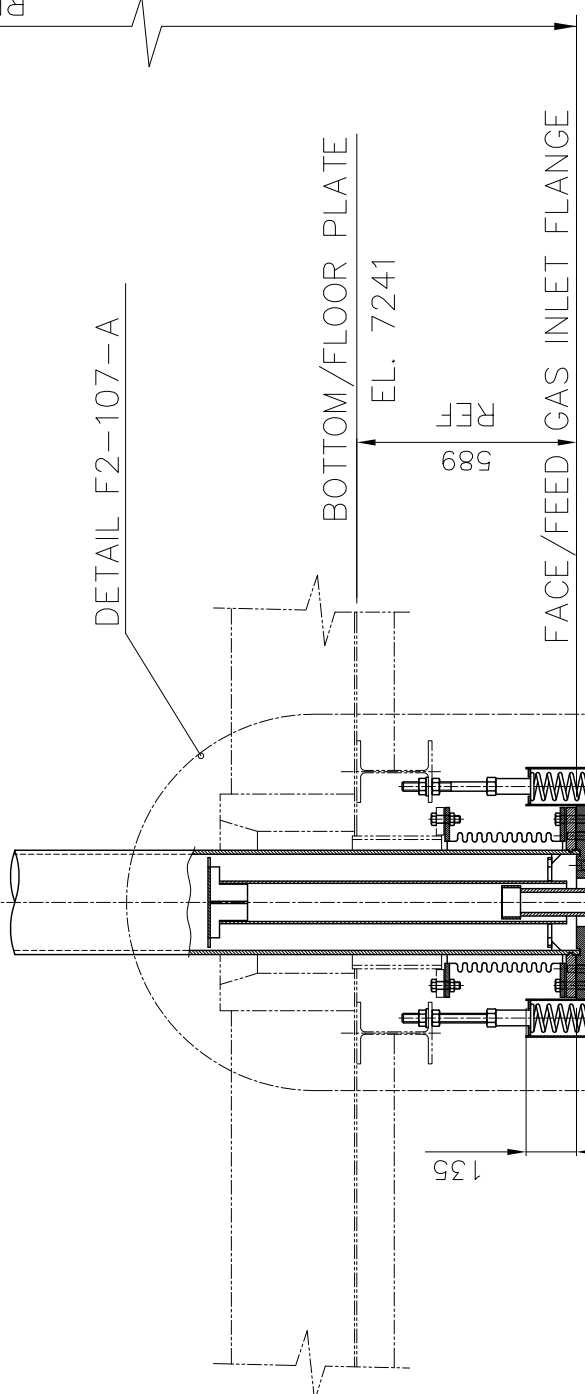
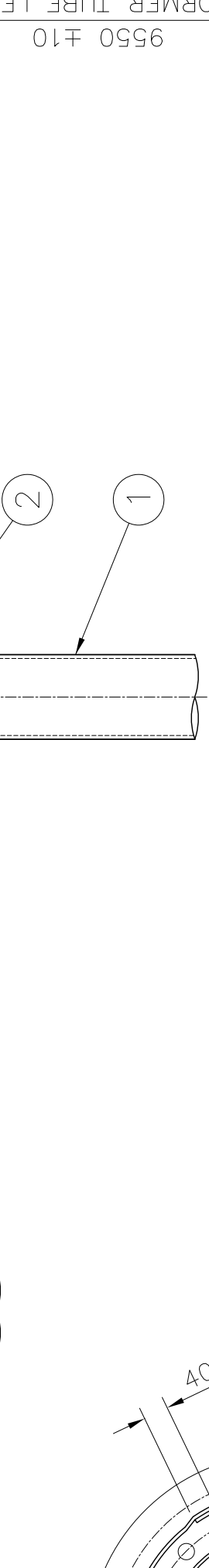
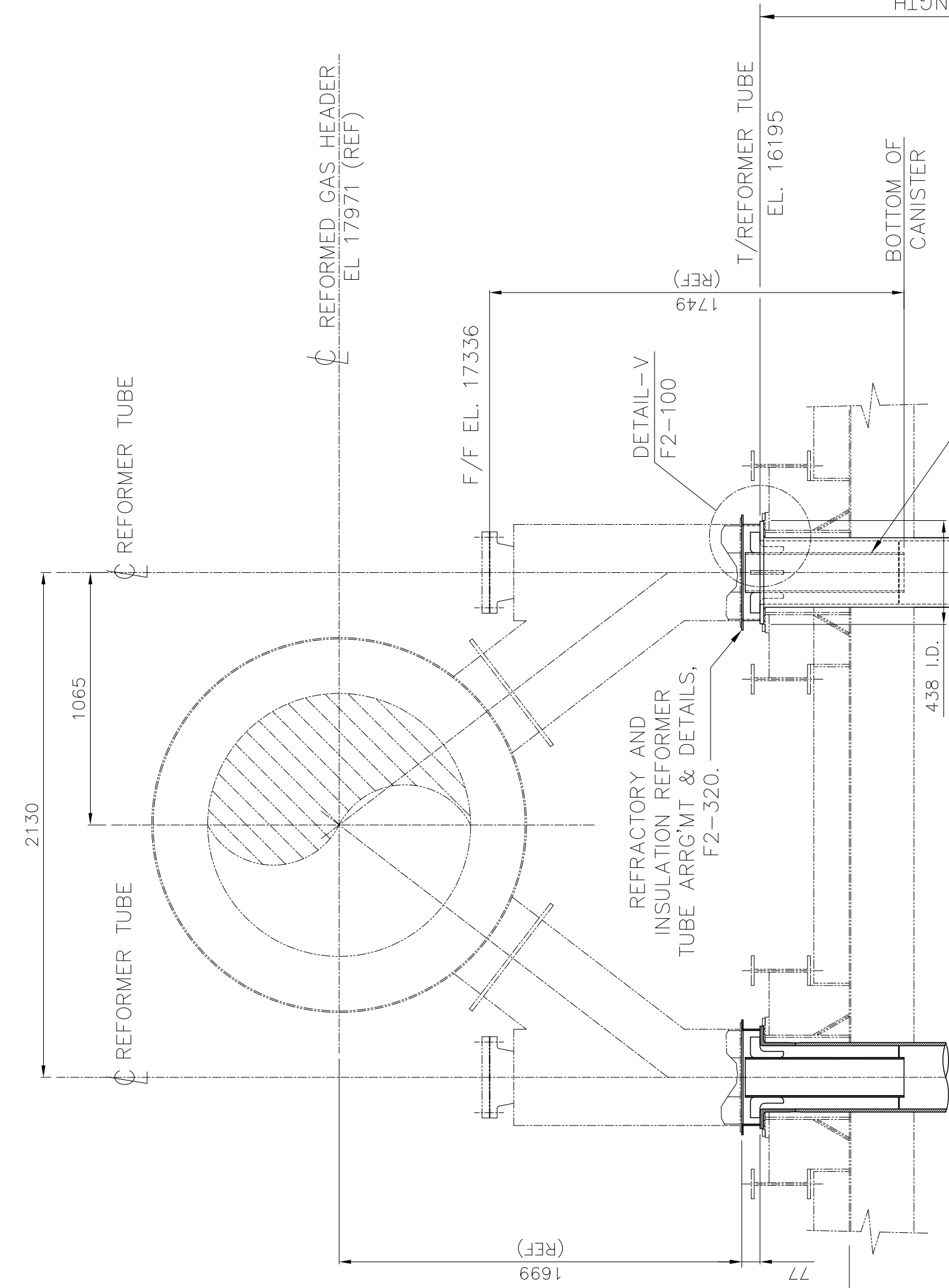
DETAIL-Y
SCALE: NONE
F2-107
(BOTTOM OF SPLIT RING)
(SEE NOTE 7)



DETAIL-V
SCALE: 1:4
F2-100



PLAN VIEW
SCALE: 1:20
F2-100
(FEED GAS INLET FLANGE ORIENTATION)



UNLESS OTHERWISE SPECIFIED		
	3RD ANGLE PROJECTION	
TOLERANCES & FITS:		
MACHINED SURFACES DIN 7168"MED"		
WELDED CONSTRUCTION ACC. TO "AWS"		
ALL DIM IN MILLIMETER		

SECTION A-A
SCALE: 1:20
F2-100
(FEED GAS INLET FLANGE ORIENTATION)

BILL OF MATERIAL

FOR: REFORMER TUBE-ASSEMBLY (540 REQ'D)

DWG: F2-100

ITEM QTY	DESCRIPTION	WEIGHT (kg)		REMARKS
		UNIT	TOTAL	
1	REFORMER TUBE	942.8	942.8	F2-101
2	TOP CANISTER	22.4	22.4	F2-106-A
3	FEED GAS HOSE	14	14	F2-102-B
4	5/8" 11UNC x 3 3/4" LG. STUD BOLT W/2 HEAVY HEX NUTS	-	2	A-93-B7 A-194-2H
5	SPIRAL WOUND GASKET FOR 2 1/2" TYPE CG, 3mm Thk. WINDING WITH GRAPHITE FILLER, 3mm Thk. OUTER RING.	-	-	304 SS ASME B16.20
6	3m 5/16" DIA. ROPE GASKET, DARCO SOUTHERN MODEL NO. 1E-15000-5	-	-	-
TOTAL APPROX. NET WEIGHT - ONE ASSY.			981.2	kg.
TOTAL APPROX. NET WEIGHT - 540 ASSY'S.			529848	kg.

NOTES:

- WORK THIS DRAWING WITH DRAWING F2-107.

REFERENCE DRAWINGS:

- C3-301 REFORMER PLAN VIEW WITH SECTIONS
- C3-302 REFORMER SOUTH SIDE WALL ELEVATION WITH SECTION
- C3-303 REFORMER END WALL ELEVATION WITH SECTION
- C3-310 REFORMER CASING ROOF PLATE ASSEMBLY PLAN AND SECTIONS
- F2-101 REFORMER TUBE, DETAILS & SECTIONS
- F2-107 REFORMER TUBE, LOWER BELLOW ASSEMBLY
- F2-300 REFORMER REFRACTORY BILL OF MATERIAL
- F2-320 REFORMER REFRACTORY, REFORMER TUBE ARRANGEMENT AND DETAILS

REV.	DATE	DESCRIPTION	PURPOSE OF ISSUE	PREPARE	CHECK	APPROVE
2	Jun. 2019	-	AS BUILT	F.K.A. Co. F.K.A. Co. F.K.A. Co.		
3	Oct. 2015	SIZE OF REFORMER TUBE CHANGED	ISSUED FOR CONSTRUCTION	AFRADI HAMPOUR RASTGAR		
2	Apr. 2014	QUANTITY WAS CORRECTED	ISSUED FOR CONSTRUCTION	MUSAVI ABEDI M.A.EHYAEI		
1	Jan. 2014	ISSUED FOR CONSTRUCTION	ISSUED FOR CONSTRUCTION	MUSAVI ABEDI M.A.EHYAEI		

Project: KOWSAR GSD MEGA MODULE PROJECT

Client's Project	Project Code	Main Contractor	Area Code	Plant Group	Equipment Type	Document Type	Eng. Discipline	Serial No.
GSD	7-2	119	1008	7	RM	04	M	100

Client's Project	Project Code	Main Contractor	Area Code	Plant Group	Equipment Type	Document Type	Eng. Discipline	Serial No.
GSD	7-2	119	1008	7	RM	04	M	100
DESIGNED	MMTE	MMTE	MMTE	MMTE	MMTE	MMTE	MMTE	MMTE
PREPARED	MUSAVI	MUSAVI	MUSAVI	MUSAVI	MUSAVI	MUSAVI	MUSAVI	MUSAVI
CHECKED	ABEDI	ABEDI	ABEDI	ABEDI	ABEDI	ABEDI	ABEDI	ABEDI
APPROVED	M.A.EHYAEI	M.A.EHYAEI	M.A.EHYAEI	M.A.EHYAEI	M.A.EHYAEI	M.A.EHYAEI	M.A.EHYAEI	M.A.EHYAEI