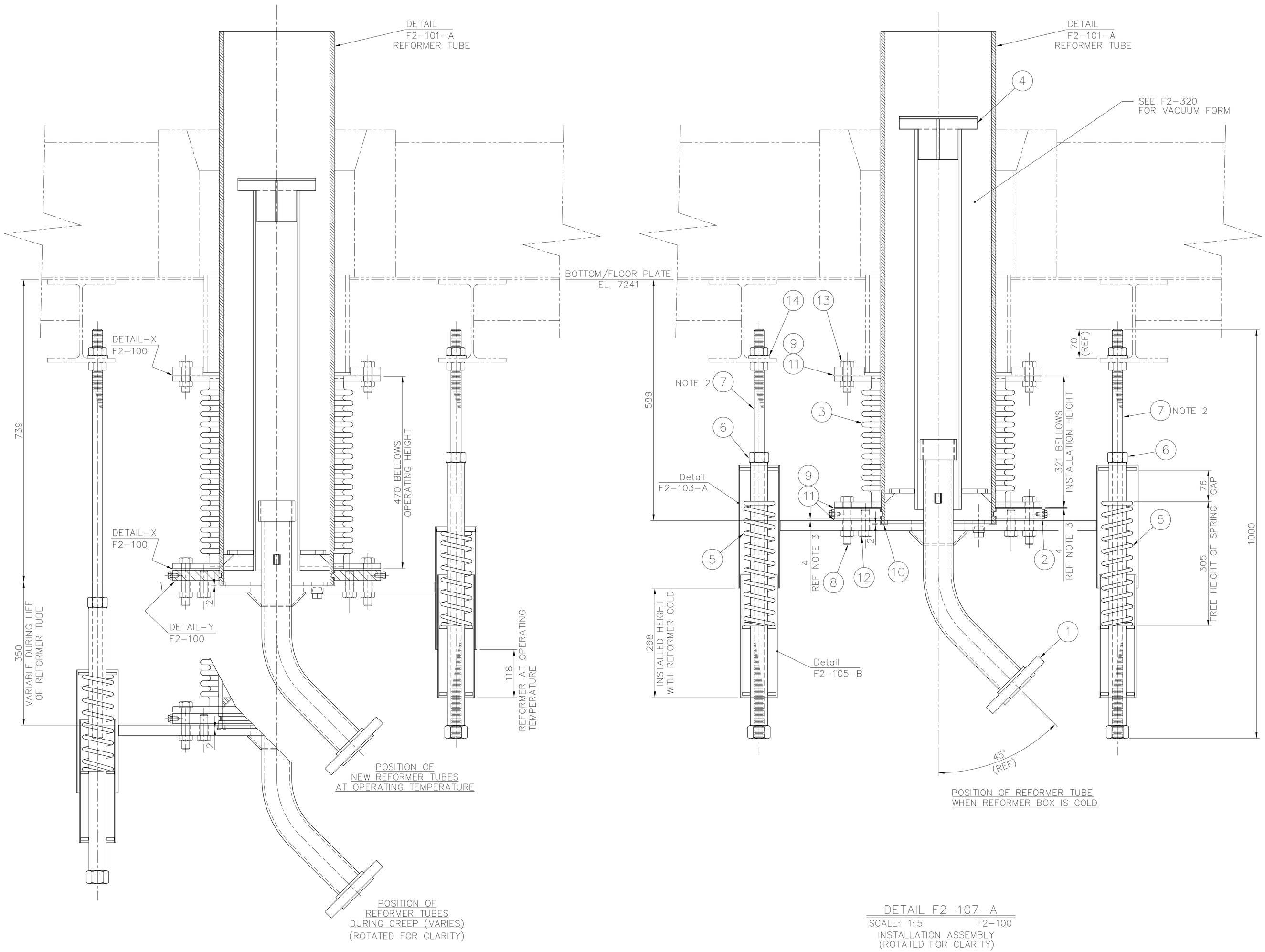


DETAIL F2-107-A
SCALE: 1:5 F2-100
INSTALLATION ASSEMBLY
(ROTATED FOR CLARITY)

## BILL OF MATERIAL

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

DWG: F2-107

DETAIL F2-107-A (540-REQ'D)

| ITEM | QTY | DESCRIPTION | WEIGHT (kg) UNIT | WEIGHT (kg) TOTAL | MAT'L | REMARKS OR PART NO. |
|---|---|---|---|---|---|---|
| 1 | 1 | FEED GAS INLET FLANGE | 51 | 51 | – | F2-103-A |
| 2 | 1 | SPLIT RING FLANGE | 29 | 29 | – | F2-104-B |
| 3 | 1 | BELLOWS | 34 | 34 | – | F2-102-A |
| 4 | 1 | CATALYST SUPPORT TUBE | 25 | 25 | – | F2-104-A |
| 5 | 2 | TUBE SUPPORT SPRING | 16 | 32 | – | F2-105-A |
| 6 | 2 | SPRING ADJUSTMENT BRACKET | – | – | – | F2-105-B |
| 7 | 2 | TUBE SUPPORT ROD | 4 | 8 | – | F2-105-C |
| 8 | 8 | 3/4"-10 UNC x 4" LG., H/HEX. HD. BOLT W/HVY. HEX. NUT | – | 3 | A-193-B7 A-194-2H | ASME B18.2.1 ASME B18.2.2 |
| 9 | 8m | 5/16" DIA. ROPE GASKET, DARCO SOUTHERN MODEL NO. TE-15000-5 | – | – | – | – |
| 10 | 1 | 281 O.D. x 249 I.D. GASKET 5 THK. | – | – | F104 | GARLOCK 3200 OR EQL. |
| 11 | 1 | PERMATEX HIGH TEMPERATURE, RED RTV SILICONE GASKET (.3L CARTRIDGE)ITEM NO. 81409 P/N 26BR | – | – | – | OR EQUAL |
| 12 | 8 | 3/4"-10 UNC x 2" LG. H/HEX. HD. BOLT | – | 2 | A-193-B7 | ASME B18.2.1 |
| 13 | 8 | 3/4"-10 UNC x 2 1/2" LG. HVY. HEX BOLT W/HVY. HEX NUT | – | 2 | A-193-B7 A-194-2H | ASME B18.2.1 ASME B18.2.2 |
| 14 | 2 | TUBE SUPPORT ROD MOUNT | 2.8 | 5.6 | – | F2-105-D |
| TOTAL APPROX. NET WEIGHT – ONE ASSY. 191.6 kg. | | | | | | |
| TOTAL APPROX. NET WEIGHT – 540 ASSY'S. 103464 kg. | | | | | | |

## REFERENCE DRAWINGS:

SEE DRAWING F2-100 FOR REFERENCE DRAWINGS

## NOTES:

1. SEE F2-100 FOR INSTALLATION NOTES.
2. FIELD TO COAT ENTIRE LENGTH OF ITEM 7 WITH NEVER-SEEZ REGULAR GRADE BEFORE INSTALLATION.
3. COMPRESSED THICKNESS OF GASKET

| UNLESS OTHERWISE SPECIFIED | |
|---|---|
| SURFACE FINISH DIN 3141 RANGE 2 | 3RD ANGLE PROJECTION |
| TOLERANCES & FITS: MACHINED SURFACES DIN 7168"MED" WELDED CONSTRUCTION ACC. TO "AWS" | BREAK ALL MACHINED SHARP EDGES BY 1x45° ALL DIM IN MILLIMETER |

| REV. | DATE | DESCRIPTION | PURPOSE OF ISSUE | PREPARE | CHECK | APPROVE |
|---|---|---|---|---|---|---|
| Z | Jun. 2019 | TO-45 | 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 | FAHIMPOUR | RASTEGAR |
| 2 | Mar. 2014 | QUANTITY WAS CORRECTED | ISSUED FOR CONSTRUCTION | MUSAVI | FARSHDMAN | M.A.EHYAE |
| 1 | Jan. 2014 | | ISSUED FOR CONSTRUCTION | MUSAVI | ABEDI | M.A.EHYAE |

Project: KOWSAR GISD MEGA MODULE PROJECT

Client: شرکت توسعه آهن و فولاد گل گهر G.I.S.D.Co.

Contractor: شرکت مهندسی فلز آوران صنعتی و فناوران MMTE MINES & METALS TECHNOLOGICAL ENGINEERING CO.

| Client's Project | Project Code | Main Contractor | Area Code | Plant Group | Equipment Code | Document Type | Eng. Discipline | Serial No. |
|---|---|---|---|---|---|---|---|---|
| GISD | 7-2 | 119 | 1008 | 7 | RM | 04 | M | 107 |

| | SIGNATURE | DATE |
|---|---|---|
| DESIGNED | MMTE | Jan. 2014 |
| PREPARED | MUSAVI | Jan. 2014 |
| CHECKED | ABEDI | Jan. 2014 |
| APPROVED | M.A.EHYAEI | Jan. 2014 |

designation: REFORMER TUBE LOWER BELLOWS ASSEMBLY

drawing-No.: KGMMMR27F2107

repl. for: repl. by :

SCALE: 1:5 REV.: Z

SIZE: A1 SHEET: 1/1

CONT. & PROJ. NO: 92-5499

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