



Toase-ehe Park Sanati Gohar Ofoh
Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**



Document Title: Condenser Outline Drawing

Document No.: EI027-HSE-VD- ME-DWG-005-R1

Rev. R1

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STYRENE PARK OFFSITE

Document Title:
Condenser Outline Drawing

| Rev. | Issued Date | DESCRIPTION | PREPARED | CHECKED | APPROVED |
|------|-------------|-------------|----------|---------|----------|
| R2 | 19-01-2025 | FI | F.SH | M.O | A.M |
| R1 | 15-09-2024 | IFA | F.SH | M.O | A.M |
| R0 | 04-07-2024 | IFA | F.SH | M.O | A.M |



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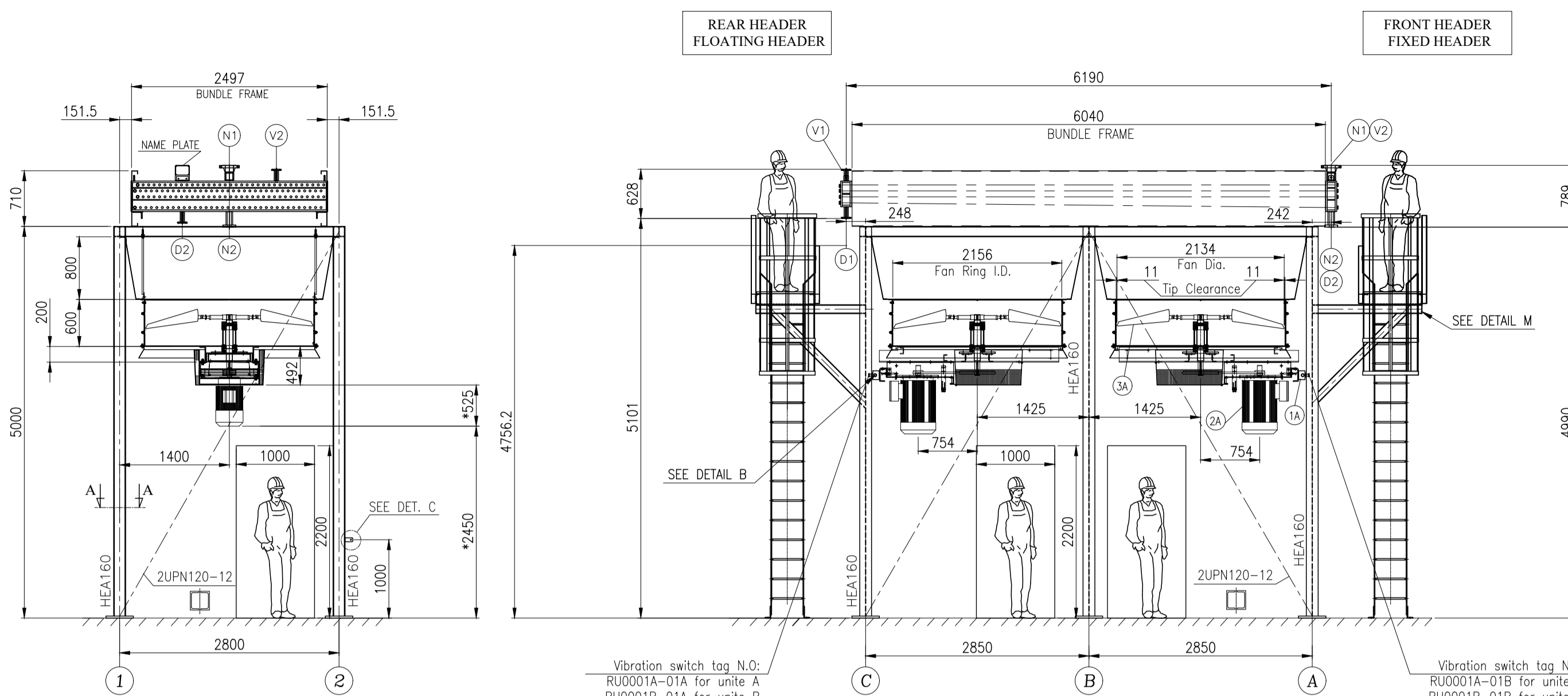
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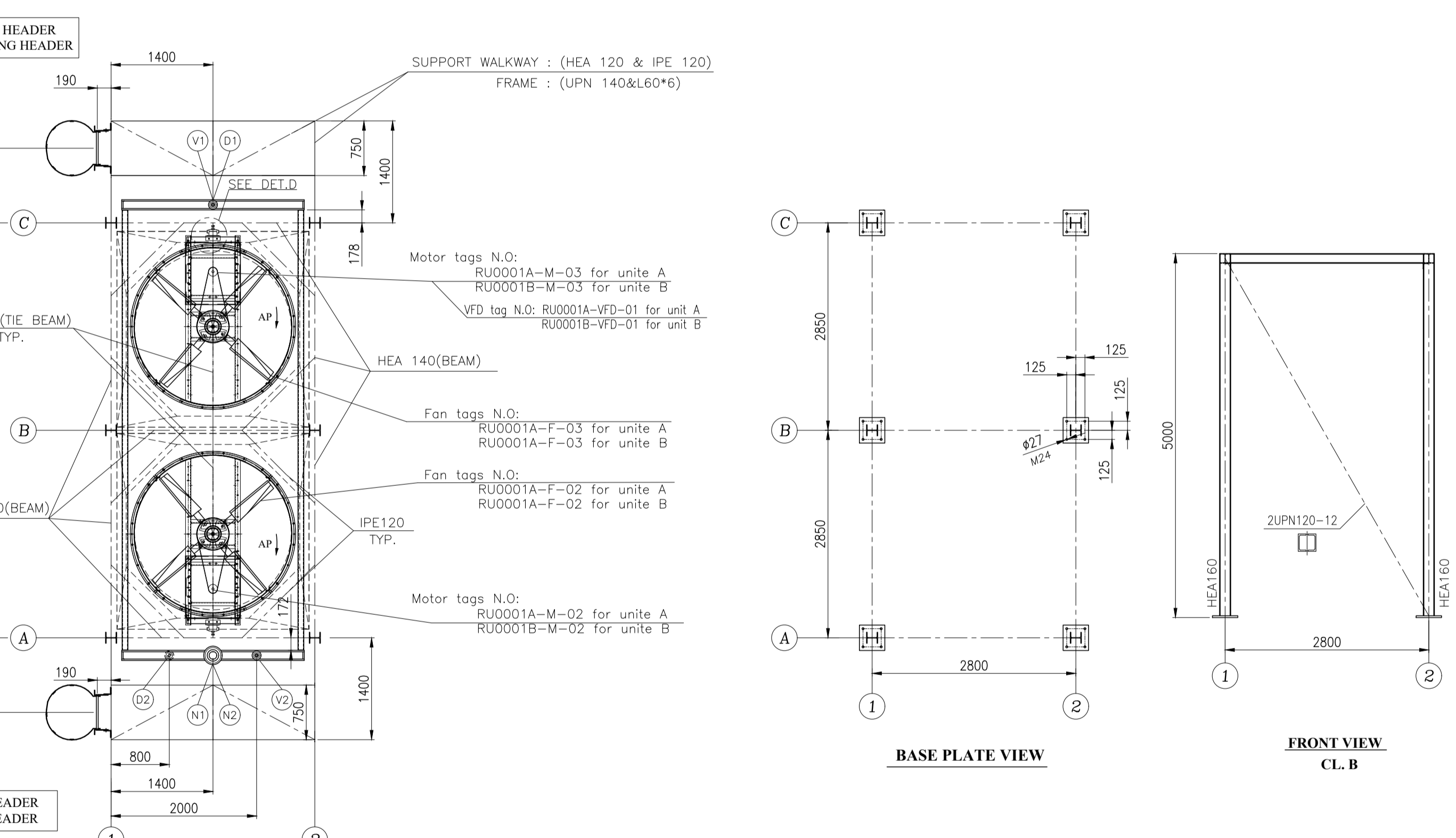
REVISION RECORD SHEET

| Page Page | Revisions | | | | | | | Page | Revisions | | | | | | |
|--------------|-----------|----|----|----|----|----|----|------|-----------|----|----|----|----|----|----|
| | R0 | R1 | R2 | R3 | R4 | R5 | R6 | | R0 | R1 | R2 | R3 | R4 | R5 | R6 |
| 1 | X | X | X | | | | | 41 | | | | | | | |
| 2 | X | X | X | | | | | 42 | | | | | | | |
| 3 | X | X | X | | | | | 43 | | | | | | | |
| 4 | X | X | X | | | | | 44 | | | | | | | |
| 5 | | | X | | | | | 45 | | | | | | | |
| 6 | | | X | | | | | 46 | | | | | | | |
| 7 | | | X | | | | | 47 | | | | | | | |
| 8 | | | X | | | | | 48 | | | | | | | |
| 9 | | | X | | | | | 49 | | | | | | | |
| 10 | | | X | | | | | 50 | | | | | | | |
| 11 | | | X | | | | | 51 | | | | | | | |
| 12 | | | X | | | | | 52 | | | | | | | |
| 13 | | | X | | | | | 53 | | | | | | | |
| 14 | | | X | | | | | 54 | | | | | | | |
| 15 | | | X | | | | | 55 | | | | | | | |
| 16 | | | X | | | | | 56 | | | | | | | |
| 17 | | | | | | | | 57 | | | | | | | |
| 18 | | | | | | | | 58 | | | | | | | |
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| 21 | | | | | | | | 61 | | | | | | | |
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| 23 | | | | | | | | 63 | | | | | | | |
| 24 | | | | | | | | 64 | | | | | | | |
| 25 | | | | | | | | 65 | | | | | | | |
| 26 | | | | | | | | 66 | | | | | | | |
| 27 | | | | | | | | 67 | | | | | | | |
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| 29 | | | | | | | | 69 | | | | | | | |
| 30 | | | | | | | | 70 | | | | | | | |
| 31 | | | | | | | | 71 | | | | | | | |
| 32 | | | | | | | | 72 | | | | | | | |
| 33 | | | | | | | | 73 | | | | | | | |
| 34 | | | | | | | | 74 | | | | | | | |
| 35 | | | | | | | | 75 | | | | | | | |
| 36 | | | | | | | | 76 | | | | | | | |
| 37 | | | | | | | | 77 | | | | | | | |
| 38 | | | | | | | | 78 | | | | | | | |
| 39 | | | | | | | | 79 | | | | | | | |



FRONT VIEW CL. A-C
* THIS DIMENSION WILL BE FINALIZED AFTER APPROVED OF MOTOR DATA SHEET

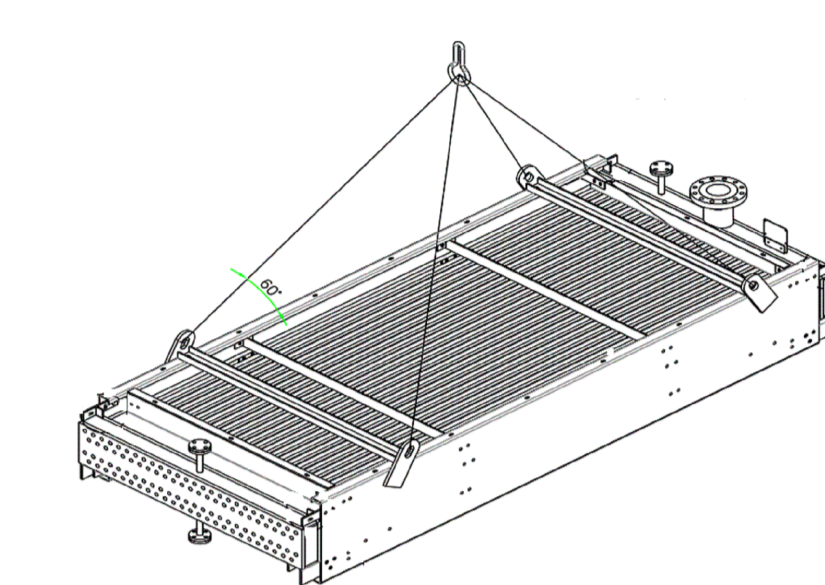
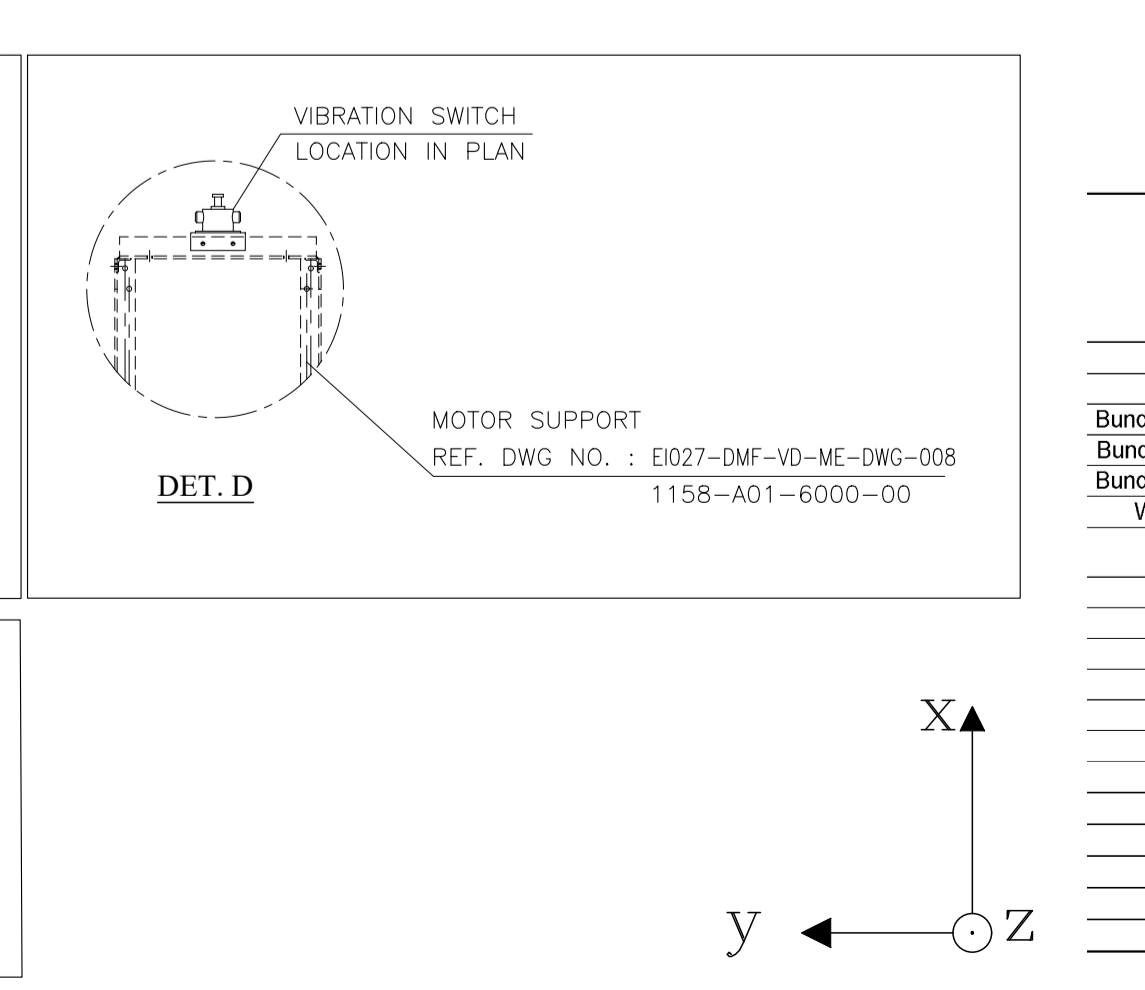
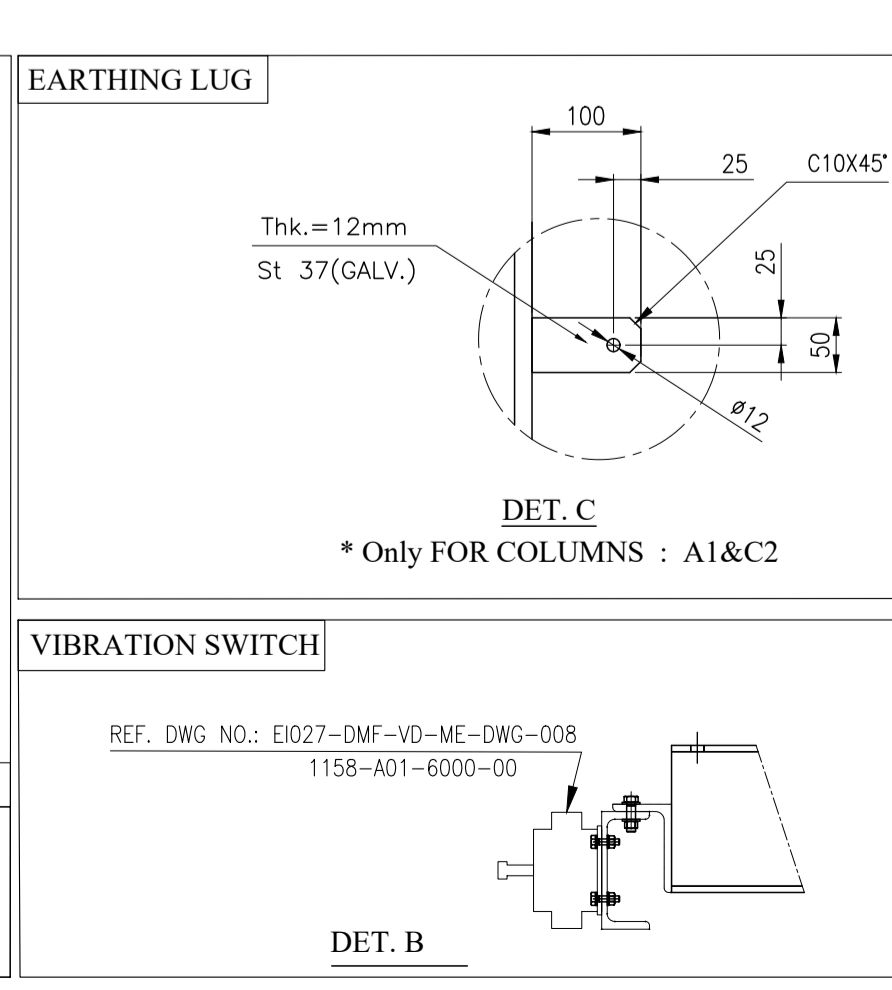
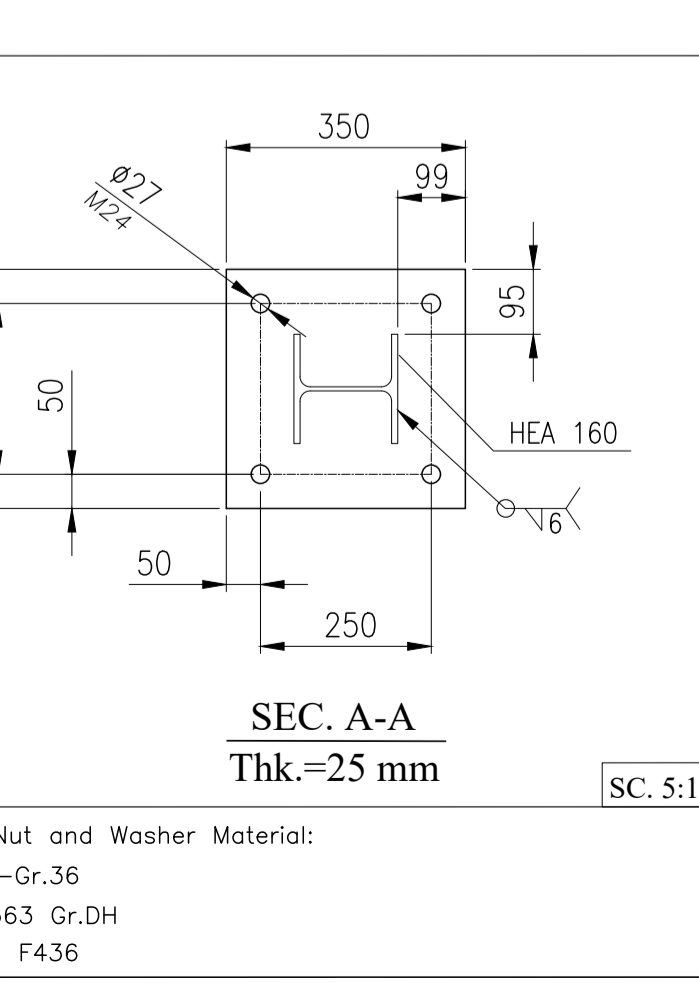
SIDE VIEW



TOP VIEW

BASE PLATE VIEW

FRONT VIEW CL. B



SCHEMATIC OF BUNDLE LIFTING

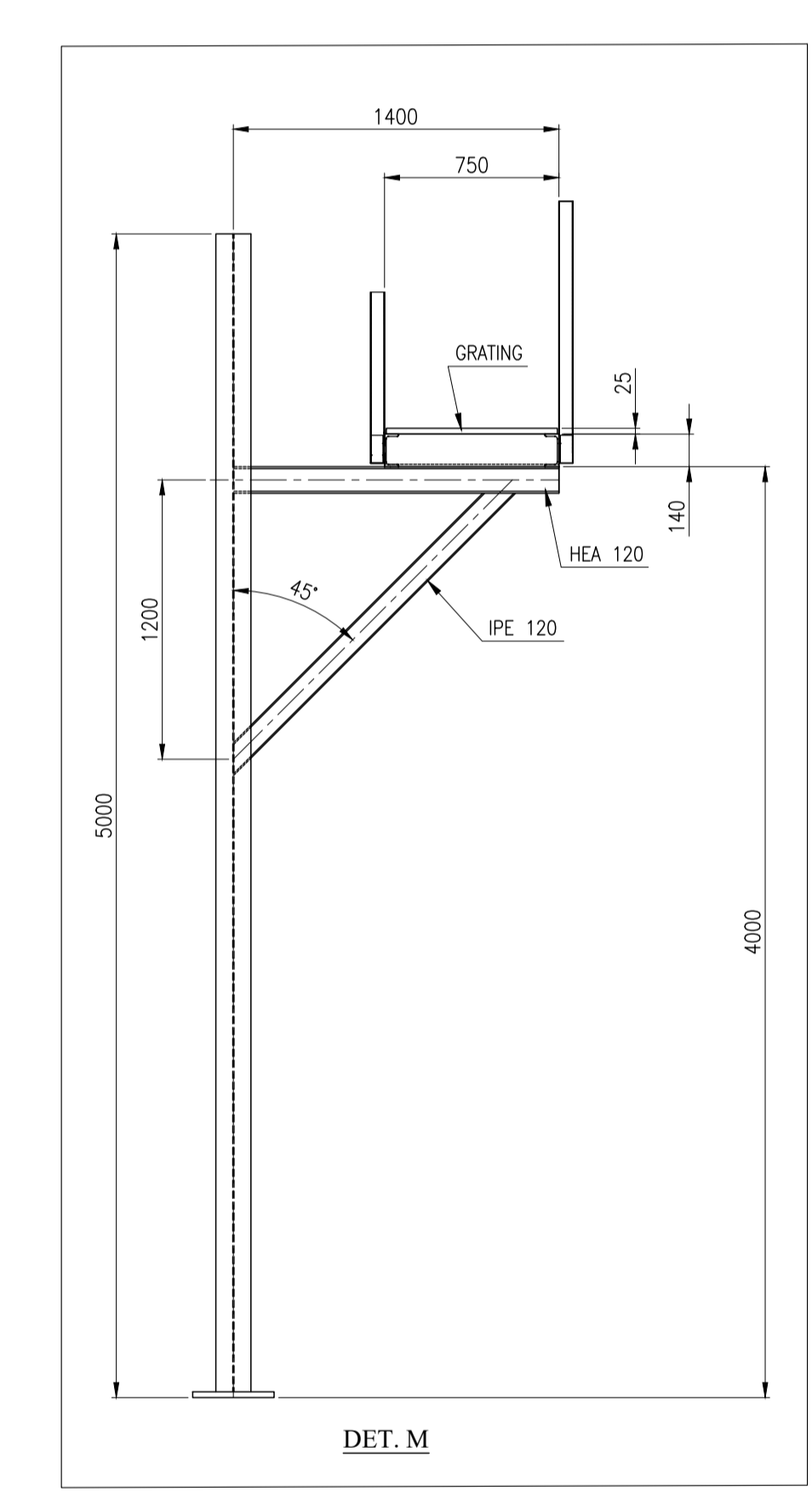


Table 1. Weight of equipments For 1 Units (Total Units = 2)

| Equipment | Total No in one Unit | Unit Weight (tonf) | Total No. for one Bay | Weight for One Bay (kgf) |
|--|----------------------|--------------------|-----------------------|--------------------------|
| Bundle Frame | 1 | 1.091 | 1 | 1091 |
| Tube Bundle & Headers | 1 | 2.922 | 1 | 2922 |
| Bundle frame & tube bundle(DRY) | 1 | 4.013 | 1 | 4013 |
| Bundle frame & tube bundle (OP) | 1 | 4.222 | 1 | 4222 |
| Bundle frame & tube bundle(HYD) | 1 | 4.493 | 1 | 4493 |
| Water in Tubes & Headers | 1 | 0.48 | 1 | 480 |
| Plenum | 2 | 0.262 | 2 | 524 |
| Fan Ring | 2 | 0.13 | 2 | 260 |
| Motor | 2 | 0.07 | 2 | 140 |
| Fan | 2 | 0.0275 | 2 | 55 |
| Speed Reducer | 2 | 0.25 | 2 | 500 |
| Machinery Mount | 2 | 0.32 | 2 | 640 |
| Fan Guard | 2 | 0.0325 | 2 | 65 |
| sum | | | | 2184 |
| Fabrication Weight For 1 Units | | | | 11167 |
| Operation Weight For 1 Units | | | | 11376 |
| Hydrotest Weight For 1 Units | | | | 11647 |
| Total Weight of Main structure, Ladder for 1 Units | | | | 4970 |

TABLE: Joint Reactions

| Joint Text | Output Case | Fx Kgf | Fy Kgf | Fz Kgf |
|------------|-------------|------------|-------------|------------|
| A-1 | DEAD | 16.65 | -45 | 861.98 |
| A-1 | DEAD | 49.34 | -158.83 | 1640.14 |
| A-1 | DEAD_OP | 4.08 | -14.37 | 92.37 |
| A-1 | DEAD_N | -1631.93 | 429.16 | -2881.5 |
| A-1 | LIVE | 3.34 | 25.54 | 1383.73 |
| A-1 | WX | 31.57 | 329.34 | 352.72 |
| A-1 | WY | -387.76 | 93.94 | -669.09 |
| A-1 | SNOW | 9.74 | -24.99 | 547.61 |
| A-1 | EQX | 106.43 | 1146.34 | -1764.17 |
| A-1 | EQY | -1561.76 | 337 | -3289.21 |
| A-1 | EQO | 210.24 | 2295.43 | -3528.78 |
| A-1 | EQVO | -3123.79 | 673.24 | -6571.39 |
| A-2 | DEAD | -20.6 | 1.599E-13 | 380.54 |
| A-2 | DEAD | -33.06 | -0.00000289 | 811.07 |
| A-2 | DEAD_OP | -10.59 | -1.13 | 55.27 |
| A-2 | DEAD_N | -76.47 | 6.353E-13 | 402.18 |
| A-2 | LIVE | -76.47 | 6.353E-13 | 402.18 |
| A-2 | WX | 1.165E-12 | 49.87 | 8.288E-13 |
| A-2 | WY | -54.91 | -1.269E-13 | -353.83 |
| A-2 | SNOW | -19.58 | -8.635E-07 | 221.21 |
| A-2 | EQX | 0.004107 | 45.8 | 0.09216 |
| A-2 | EQY | -48.82 | -0.38 | -1465.12 |
| A-2 | EQO | 0.00889 | 92.7 | 0.18 |
| A-2 | EQVO | -98.54 | -0.78 | -2927.34 |
| A-2 | DEAD | 16.65 | 45 | 861.98 |
| A-2 | DEAD | 49.34 | 158.83 | 1640.17 |
| A-2 | DEAD_OP | 4.08 | 14.37 | 92.37 |
| A-2 | DEAD_N | 39.17 | 235.02 | 482.86 |
| A-2 | LIVE | 3.34 | -25.54 | 1383.73 |
| A-2 | WX | -31.57 | 329.34 | 352.72 |
| A-2 | WY | -387.76 | -93.94 | -669.09 |
| A-2 | SNOW | 9.74 | 24.99 | 547.61 |
| A-2 | EQX | -106.49 | 1146.49 | 1764.07 |
| A-2 | EQY | -1071.77 | -428.48 | -2570.23 |
| A-2 | EQO | -210.36 | 2295.75 | 3529.6 |
| A-2 | EQVO | -2144 | -856.2 | -5134.3 |
| B-1 | DEAD | 34.11 | -3.44 | 482.68 |
| B-1 | DEAD | 174.23 | -2.24 | 983.92 |
| B-1 | DEAD_OP | 16.3 | 0.03128 | 81.45 |
| B-1 | DEAD_N | -670.87 | 1.33 | 2555.04 |
| B-1 | LIVE | -43.74 | -6.51 | 64.14 |
| B-1 | WX | -255.25 | 0.99 | -374.63 |
| B-1 | WY | -1.33 | -70.96 | 504.74 |
| B-1 | SNOW | 24.65 | -1.56 | 193.87 |
| B-1 | EQX | -985.73 | 4.1 | -1834.5 |
| B-1 | EQY | -51.12 | -2.8 | 2619.38 |
| B-1 | EQO | -1968.03 | 8.38 | -3558.39 |
| B-1 | EQVO | -102.38 | -57.85 | 5233.15 |
| B-2 | DEAD | -3.76E-15 | -9.82 | 342.79 |
| B-2 | DEAD | -1.168E-10 | -61.15 | 847.79 |
| B-2 | DEAD_OP | -1.602E-11 | -8.01 | 77.09 |
| B-2 | DEAD_N | -0.0003857 | -403.24 | 720.08 |
| B-2 | LIVE | 8.844E-15 | 82.81 | -147.91 |
| B-2 | WX | -56.07 | 3.583E-12 | -6.399E-12 |
| B-2 | WY | -8.004E-14 | -439.42 | 682.53 |
| B-2 | SNOW | -3.498E-11 | 3.21 | 131.34 |
| B-2 | EQX | 0.02819 | 0.04229 | -0.07544 |
| B-2 | EQY | 0.006383 | -1570.51 | 2804.88 |
| B-2 | EQO | 0.2 | 0.08416 | 0.15 |
| B-2 | EQVO | 0.0007535 | -3138.25 | 5603.81 |
| B-3 | DEAD | -34.11 | -1.44 | 482.68 |
| B-3 | DEAD | -174.23 | -2.24 | 983.92 |
| B-3 | DEAD_OP | -16.3 | 0.03128 | 81.45 |
| B-3 | DEAD_N | -670.07 | 1.26 | 1104.47 |
| B-3 | LIVE | 43.74 | -6.51 | 64.14 |
| B-3 | WX | -255.25 | -0.99 | 374.63 |
| B-3 | WY | 1.33 | -70.96 | 504.74 |
| B-3 | SNOW | -24.65 | -1.56 | 193.87 |
| B-3 | EQX | -985.73 | -4.09 | 1834.58 |
| B-3 | EQY | -40.75 | -28.68 | 1903.29 |
| B-3 | EQO | -1968.16 | -8.15 | 3558.54 |
| B-3 | EQVO | -81.36 | -57.83 | 3796.07 |

GENERAL DATA

| | |
|---|---|
| ITEM NO. | - |
| DESIGN CODE BUNDLE/STRUCTURE | ASME SEC.VIII DIV.1(2019), API 661-7th EDITION R2018 |
| INLET PRESSURE/PRESSURE DRG. (ALLOWABLE/CALC) | 19.8 Bar / (0.1/0.016) Bar |
| DESIGN PRESSURE | 22+F.V. (barg) |
| HYDROSTATIC TEST PRESSURE | 28.6 (bar) |
| TEMPERATURE IN/OUT(TUBE SIDE) | 73.5°C/56.3°C |
| DESIGN TEMPERATURE | 120 °C |
| MINIMUM DESIGN METAL TEMPERATURE | -45°C |
| AIR INLET/OUTLET TEMPERATURE (AIR SIDE) | 48 / 62.28 °C |
| MINIMUM DESIGN AMBIENT TEMPERATURE | 5 °C |
| CORROSION ALLOWANCE | 3 mm |
| ULTRASONIC TEST | YES(Full)[See note 8] |
| RADIOGRAPHY | YES(Full)[See note 8] |
| STRESS RELIEVING | YES |
| BARE/FINNED SURFACE PER UNIT | 68101/1579.2 m ² |
| NUMBER OF BUNDLE PER BAY | 1 |
| NUMBER OF UNIT | 2 |
| NUMBER OF BAY PER UNIT | 1 |
| NOZZLE SIZE(INLET/OUTLET/RATING/TYP) | 1x4"/1x2"/SCH.160/#300 |
| PROCESS FLUID NAME | PROPANE |
| SERVICE | PROPANE |
| PASSES PER BUNDLE | 4 |
| FINNED-TUBES/BUNDLE | NO.140 TUBES OD=25.4,SEAMLESS MIN.W.BWG16,THK.=1.65,L=6096 mm |
| Tube to tube sheet joint | STRENGTH WELD + EXPANDED |
| Fin (Type,material, OD,PPI) | EXTRUDE.AL 1060,57,15,11 |
| STEAM COIL | NO |
| LOUVER/TYP | NO/- |
| PLENUM / FAN RING | FORCED TYPE/CONICAL L/D=0.05 |
| VIBRATION SWITCH | YES,(FOR EACHFAN) MANUAL & ELECTRIC RESET,Exd IC TS Gb,IP65 |
| FAN SPECIFICATION RPM/DIAMETER | 362/7 Ft |
| Pitch angle (for fan) | 6.6° |
| BLADE NO./ MATERIAL | 4/ALUMINIUM |
| AIR QUANTITY FOR FAN | 26.879 m ³ /S |
| STATIC PRESSURE | 102.95 Pa |
| AIR TEMPERATURE IN/OUT | 48°C/52.28°C |
| SPEED REDUCER TYPE | V BELT |
| REDUCTION RATIO | 3.76 |
| MOTOR TYPE | ELECTRIC-Exhb.IIB-T4-IP55 |
| VOLTAGE/Freq./PHASES | 400/50/3 |
| RPM/KW | 1500/7.5 Kw |
| Motor VFD per unit | 50% |
| VFD POWER | YES/11 Kw |
| S.P.L. 1m all side of fan: | <85 dB(A)1m all sides |

NOTES:

- Loading Data
WIND :ASCE7-16,VELOCITY :125Km/h, EXPOSURE : C
Earthquake: Standard No. 2800,A=0.3,B=2.75,I=1.4,R=3.5,SOIL TYPE=IV
- Fans
-100% AP(Adjustable pitch-manual)
- Miscellaneous
- The Inlet Header Boxes Are Fixed In The Direction Of Fin Tubes, Refer To Table For The Lateral Displacement In Y Direction
- Flange Face Detail : ASME ANSI B16.5
- All Dimensions Are In Millimeter Unless Otherwise Specified.
- All Dimensions Tolerances Are According to API 661.(Figure 10)
- Bolts which are used for fixing headers to side frame , on sliding side should be removed after erection.
- PROTECTION(SEE Galvanizing Specification and Inspection Procedure: E1027-DMF-VD-QC-PRO-024
- RADIOGRAPHIC TEST (FULL/SPOT) SHALL BE IN COMPLIANCE WITH THE NDT PROCEDURE & WELD/NDT MAP E1027-DMF-VD-QC-PRO-023
- 50% motors per unit to be VFD.

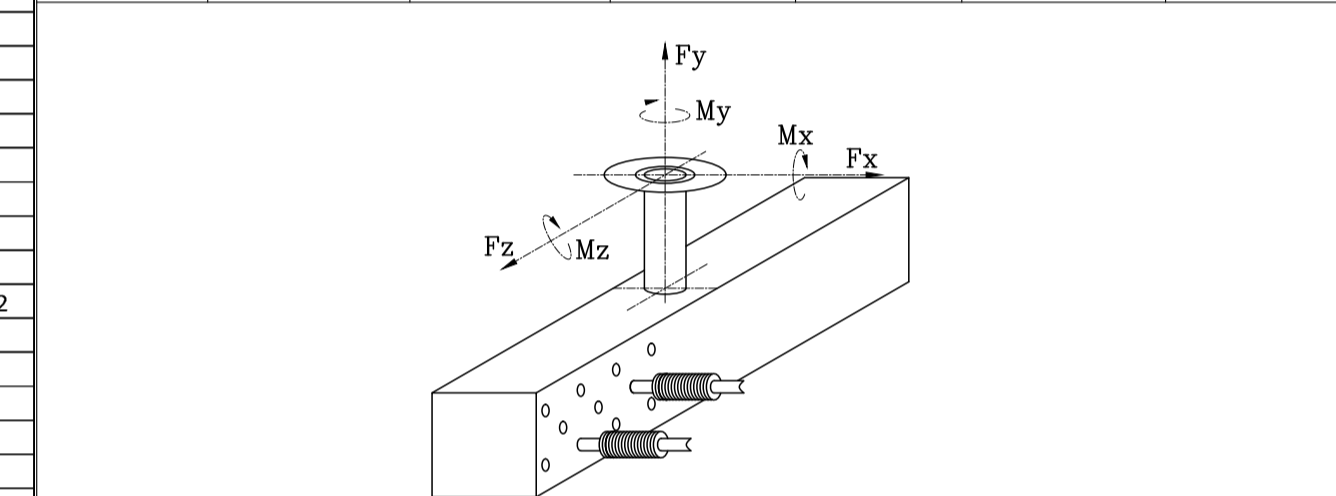
LOAD DEFINITION*

| | |
|---------|--|
| DEAD | DEAD LOAD(PLENUMS+FAN RINGS+FAN GUARDS+FAN+MOTOR+SPEED REDUCERS+GRATING+TUBE BUNDLE EMPTY)+HEADER WALK WAY |
| DEAD OP | WEIGHT OF LIQUID WITHIN EACH TUBE BUNDLE& STEAM COIL(WATER) |
| DEADS | SELF WEIGHT OF STRUCTURE |
| DEADN | NOZZEL LOAD |
| LIVE | WALKWAY LOAD 250 Kg/m ² |
| EQX | SEISMIC LOAD DIR.X |
| EQY | SEISMIC LOAD DIR.Y |
| WX | WIND LOAD DIR.X |
| WY | WIND LOAD DIR.Y |
| SNOW | 66 Kg/m ² |

* Further Definition Check the Steel Structure Calculation.Doc No.: E1027-DMF-VD-ST-CAL-004 1158-A01-0030-00

THE MAXIMUM ALLOWABLE MOMENTS AND FORCES PER EACH NOZZLE (IF LOADS ARE DIVIDED EQUALLY FOR NOZZLES ACCORDING TO 3xAPI 661(7.1.10.1)

| SIZE | Fx(N) | Fy(N) | Fz(N) | Mx(N.m) | My(N.m) | Mz(N.m) |
|------|-------|-------|-------|---------|---------|---------|
| 4" | 10020 | 8010 | 10020 | 2430 | 3660 | 2430 |
| 2" | 3060 | 3990 | 3060 | 450 | 720 | 450 |



CONNECTIONS

| NO. | REP. | QTY. PER BAY/UNIT | DIA | DESIGNATION |
|-------|----------------------|-------------------|-----|---|
| N1 | INLET NOZZLE/FLANGE | 1/2 | 4" | FLANGE ANSI B16.5,#300,WNF,SCH.160,SA-313 G/6 /SA-350 LF2 CL.N,THK.=13.49 |
| N2 | OUTLET NOZZLE/FLANGE | 1/2 | 2" | FLANGE ANSI B16.5,#300,LWN,SA-350 LF2 CL.N,THK.=16.6 |
| V1&V2 | VENT | 2/4 | 1" | FLANGE ANSI B16.5,#300,LWN,SA-350 LF2 CL1 N,THK.=14.3 |
| D1&D2 | DRAIN | 2/4 | 1" | FLANGE ANSI B16.5,#300,LWN,SA-350 LF2 CL1 N,THK.=14.3 |
| 1A | VIBRATION SWITCH | 2/4 | - | SEE FAN DRIVE ASSEMBLY DRAWING |
| 2A | MOTOR(7.5Kw) | 2/4 | - | SEE FAN DRIVE ASSEMBLY DRAWING |
| 3A | FAN | 2/4 | 7ft | SEE FAN DRIVE ASSEMBLY DRAWING |

LATERAL DISPLACEMENT OF HEADERS (DIRECTION X) INSIDE BUNDLE FRAME IN RELATION WITH EXPANSION FORCES ON NOZZLES (mm) (ACCORDING TO API661 7-1-1-2)

MAXIMUM DISPLACEMENT INLET/OUTLET : ±9

* FOR MORE DETAILS FOR EACH COMPONENT OF AIR COOLER REFER TO BELOW DRAWING & DOCUMENTS.

REFERENCED DWG&DOC.

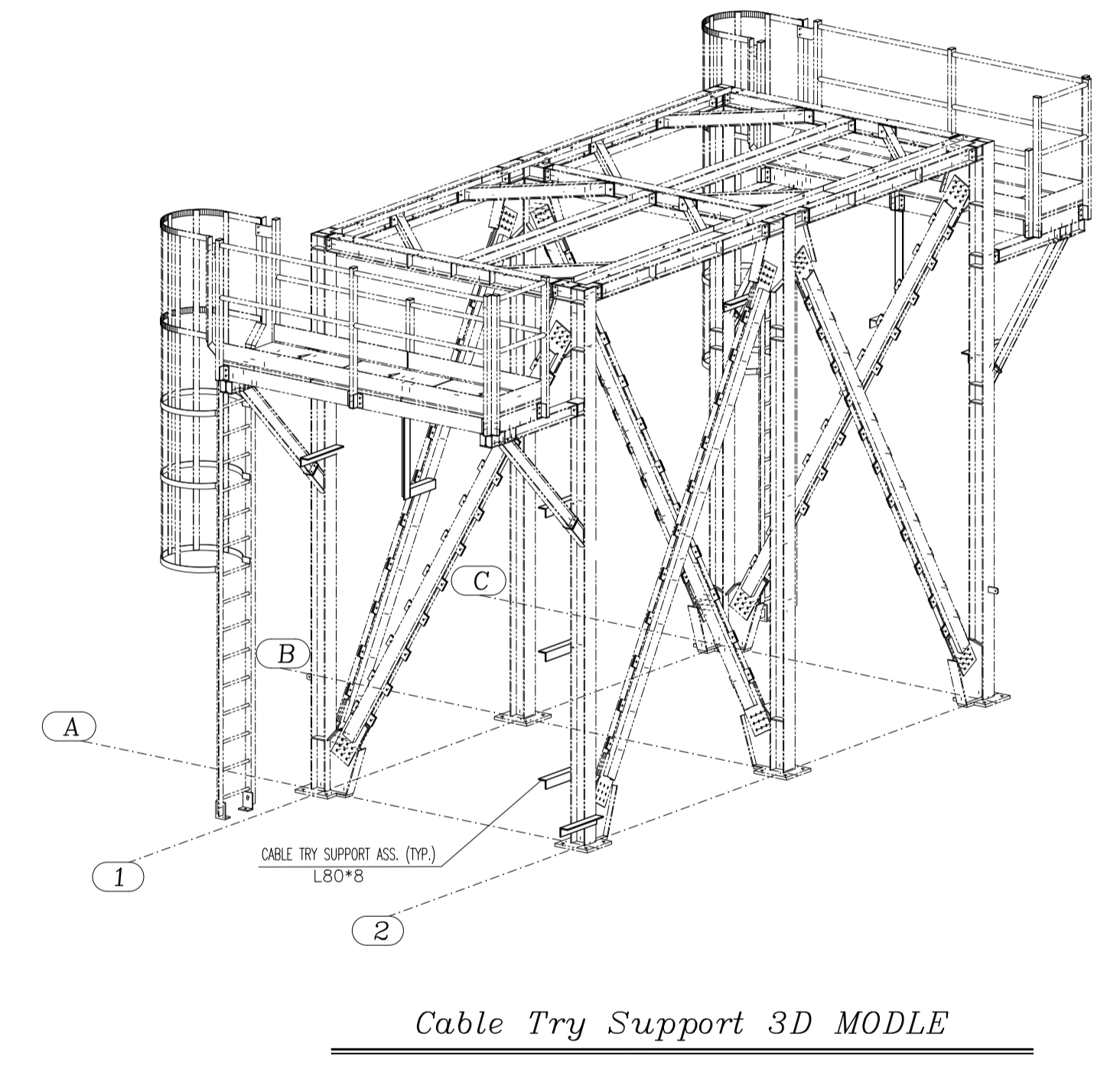
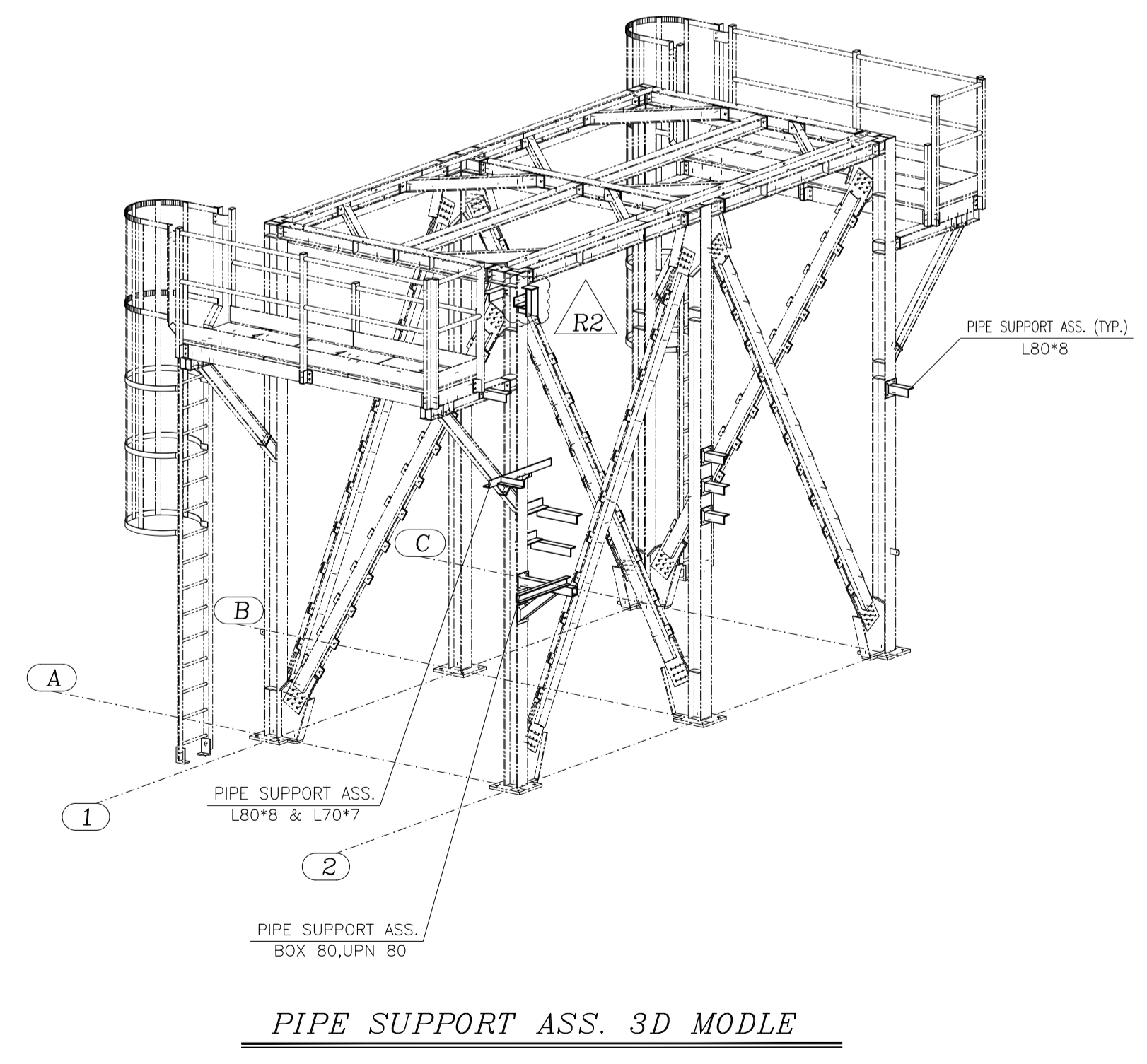
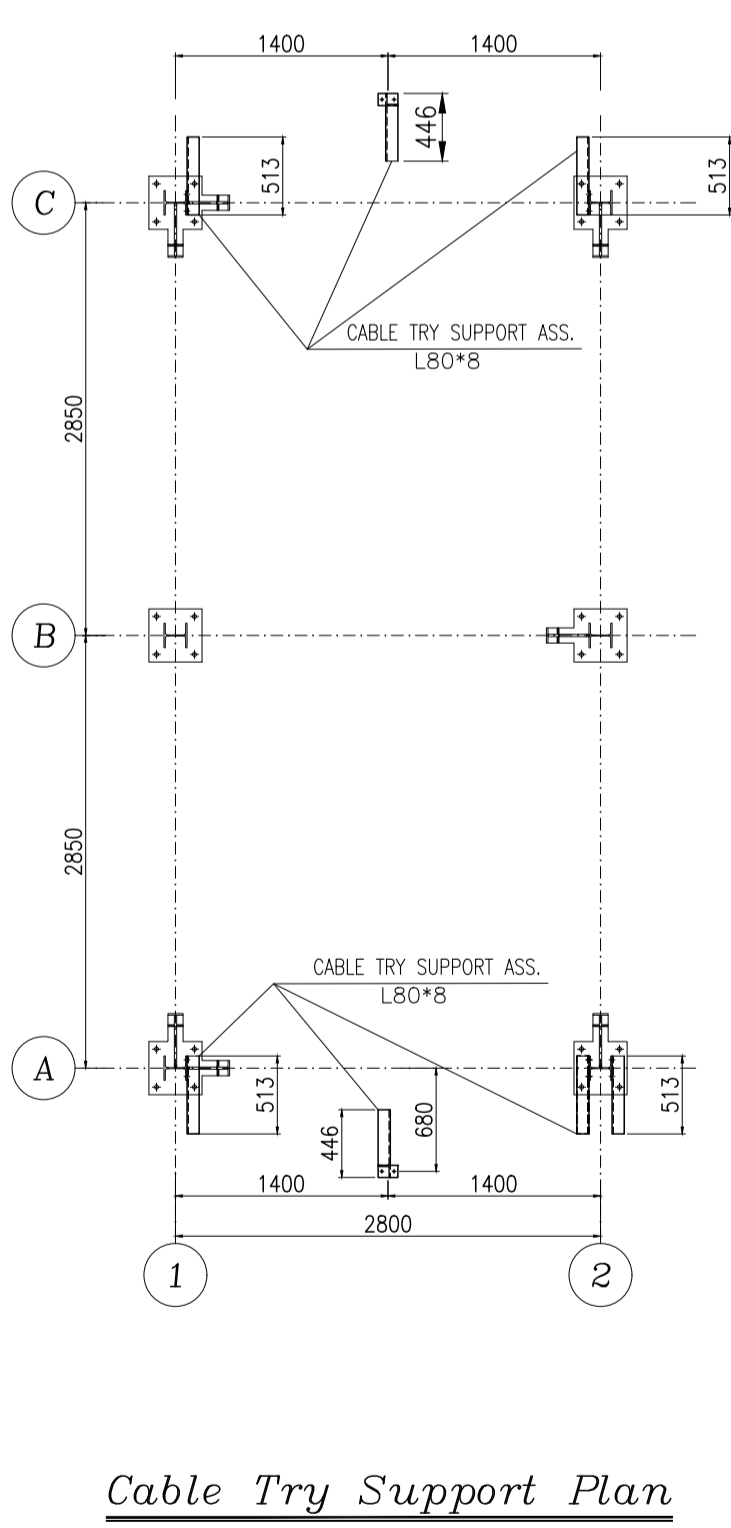
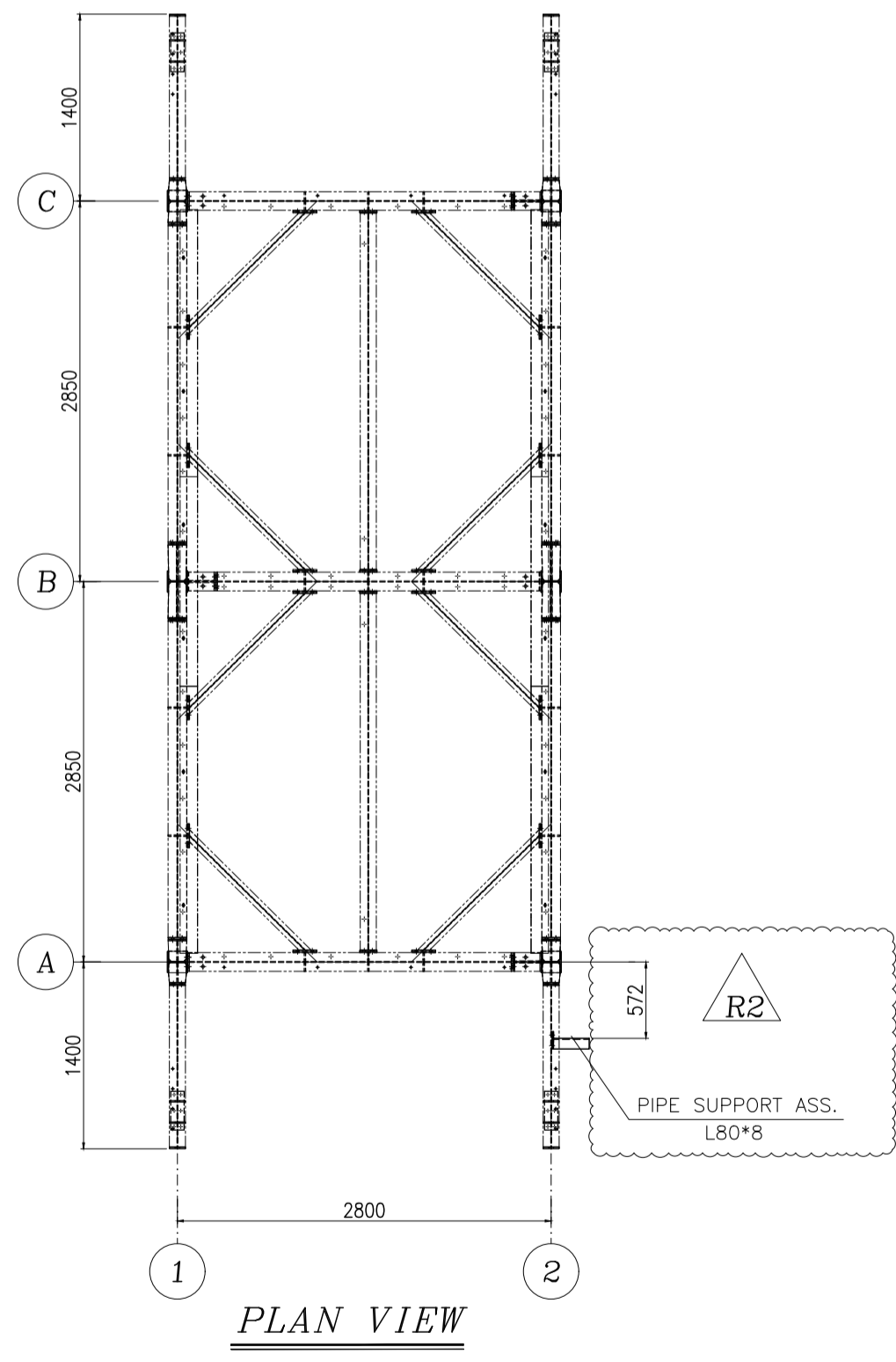
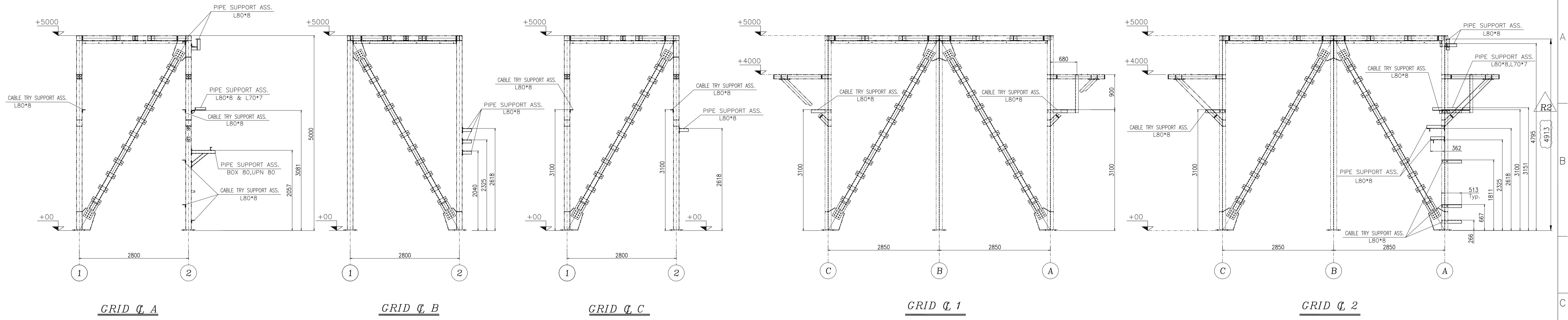
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| Tube Bundle Drawing | 1158-A01-2000-00 | E1027-DMF-VD-ME-DWG-005 |
| Bundle Frame Drawing | 1158-A01-2400-00 | E1027-DMF-VD-ME-DWG-007 |
| Fan Drive Assembly Drawing | 1158-A01-6000-00 | E1027-DMF-VD-ME-DWG-008 |
| Fan Ring Drawing | 1158-A01-5087-00 | E1027-DMF-VD-ME-DWG-009 |
| Support Mechanism Drawing | 1158-A01-5167-00 | E1027-DMF-VD-ME-DWG-010 |
| Plenum Drawing | 1158-A01-5110-00 | E1027-DMF-VD-ME-DWG-011 |
| Steel Structure Drawing | 1158-A01-1100-00 | E1027-DMF-VD-ME-DWG-013 |
| Header Walkway Drawing | 1158-A01-1200-00 | E1027-DMF-VD-ME-DWG-014 |
| Ladder Drawing | 1158-A01-1520-00 | E1027-DMF-VD-ME-DWG-015 |
| Surface Preparation and Painting Procedure for Air Cooler | 1158-A01-GS01-00 | E1027-DMF-VD-QC-PRO-024 |

| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
|-----|------------|---------------------|----------|------------|-------------|-------------------|
| R7 | 12/30/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| R6 | 12/28/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| R5 | 11/13/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
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| R3 | 08/21/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| R2 | 08/10/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| R1 | 07/22/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
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CLIENT:

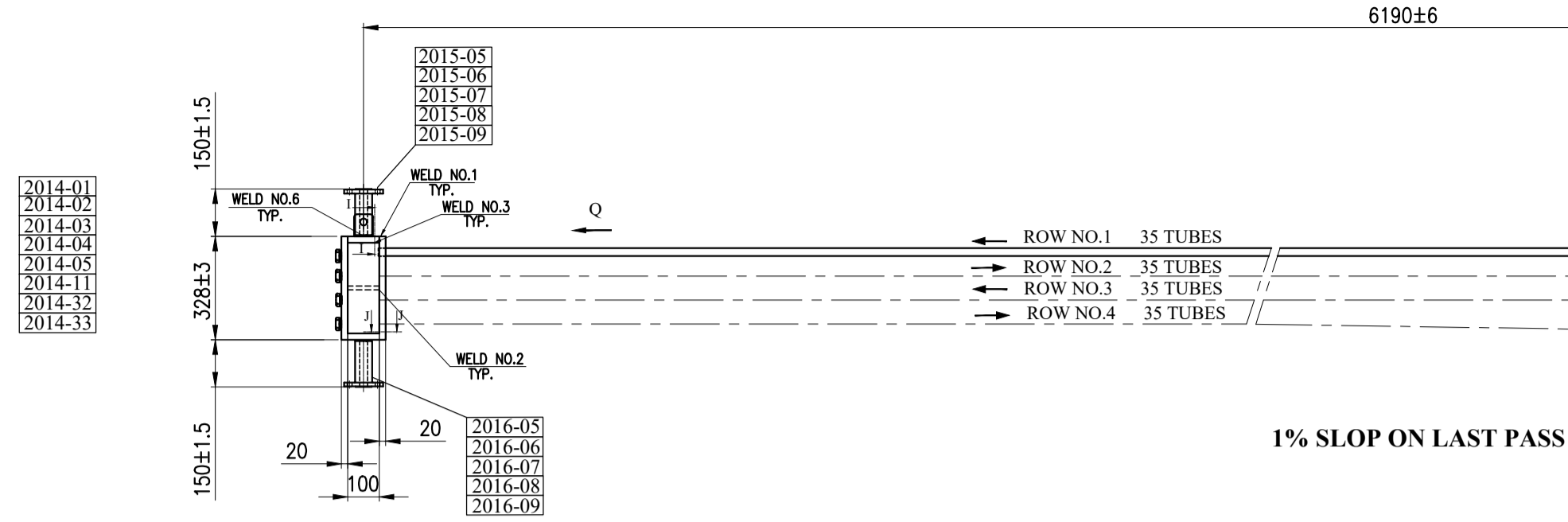
PROJECT :
AIR COOLER FOR
Toase-che Park Sanati Gohar Ofogh Petrochemical Co.
General Arrangement Drawing
1158-A01-1000-00
(Sheet 1 of 2)

DWG. NO. E1027-DMF-VD-ME-DWG-003
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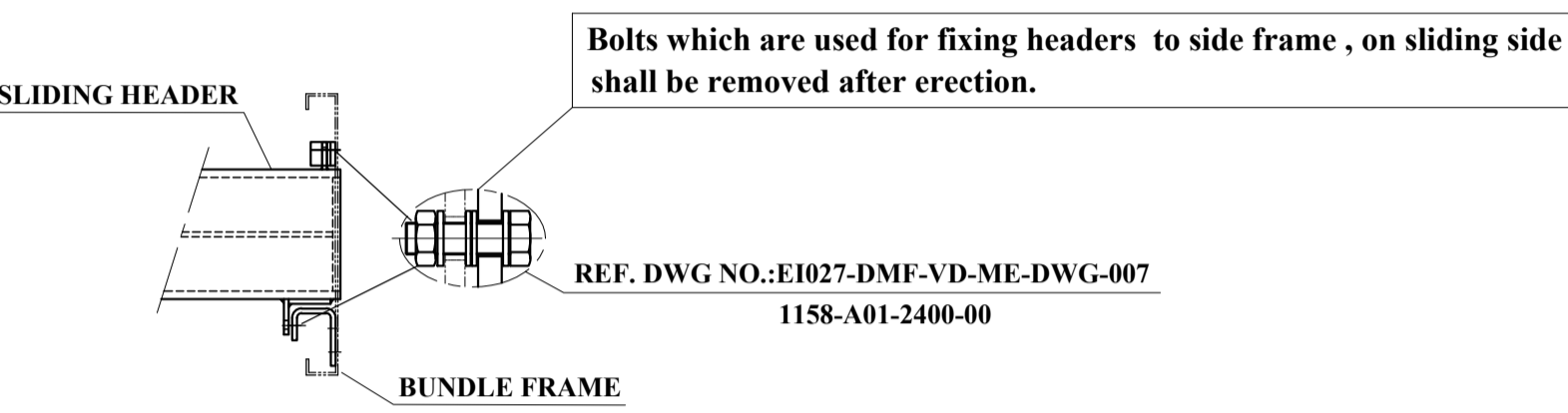
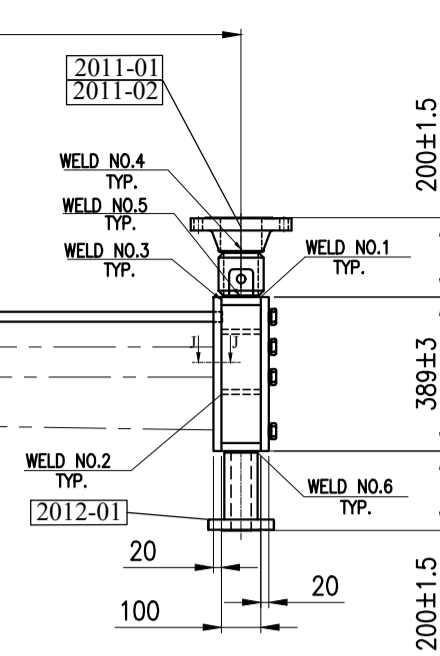


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| R2 | 12/30/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| R1 | 12/28/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| R0 | 11/13/2024 | ISSUED FOR APPROVAL | F.SZ | J.M. | J.B.L | A.GHZ |
| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
| CLIENT: | | | CONTRACTOR: | | | |
| | | | | | | |
| PROJECT : AIR COOLER FOR Toase-che Park Sanati Gohar Ofogh Petrochemical Co. General Arrangement Drawing 1158-A01-1000-00 (Sheet 2 of 2) | | | | | | |
| DWG. NO. | EI027-DMF-VD-ME-DWG-003 | | | | | |
| SCALE: | N.T.S. | SIZE: | A1 | REV.: | R2 | |
| THIS DOCUMENT OF A CONFIDENTIAL NATURE IS THE PROPERTY OF DAMAFIN AND SHALL NOT BE REPRODUCED IN ANY MANNER, NOR USED FOR ANY PURPOSE WHAT SO EVER, EXCEPT BY WRITTEN PERMISSION OF DAMAFIN. | | | | | | |

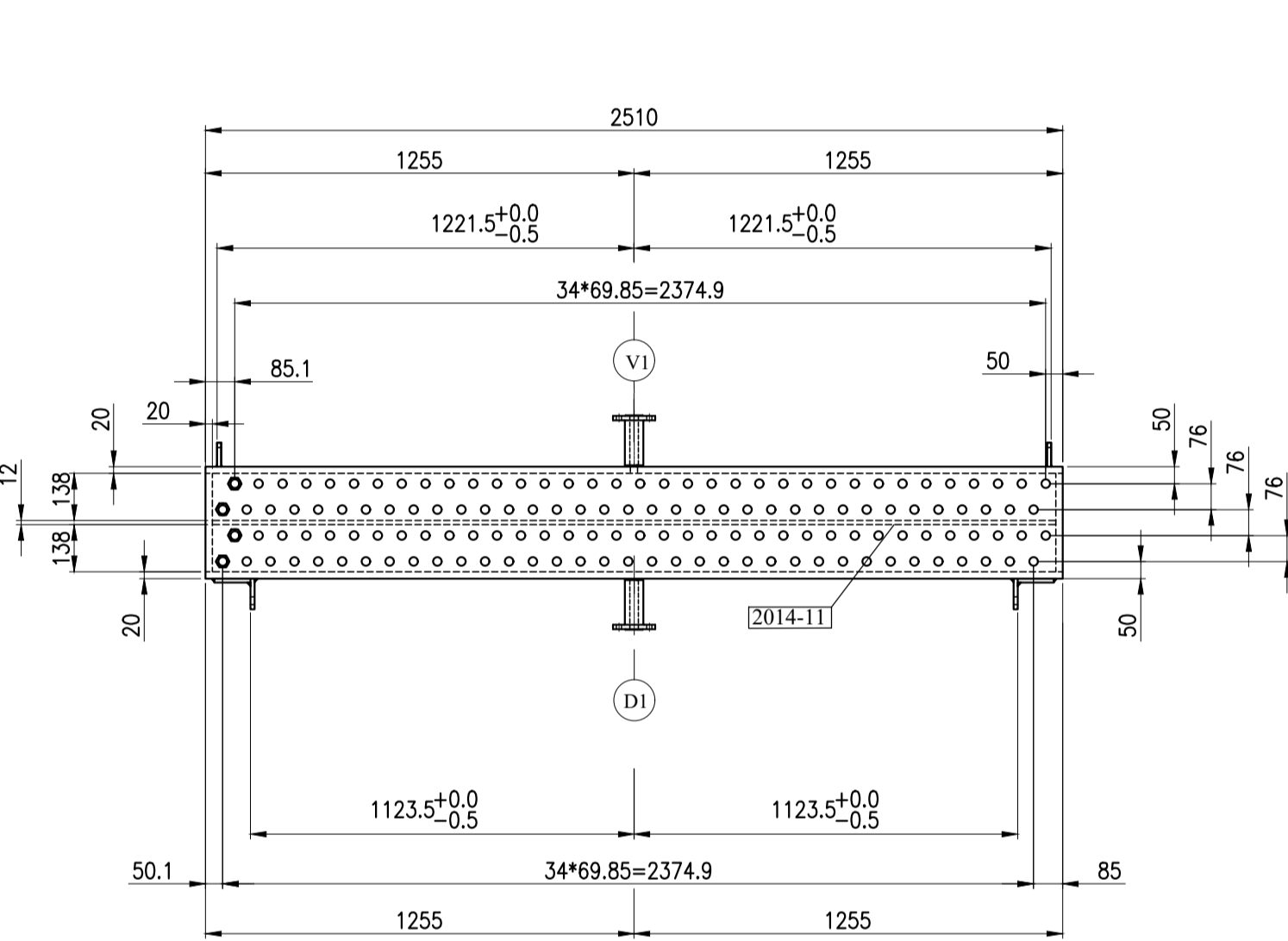
REAR HEADER (SLIDING HEADER)



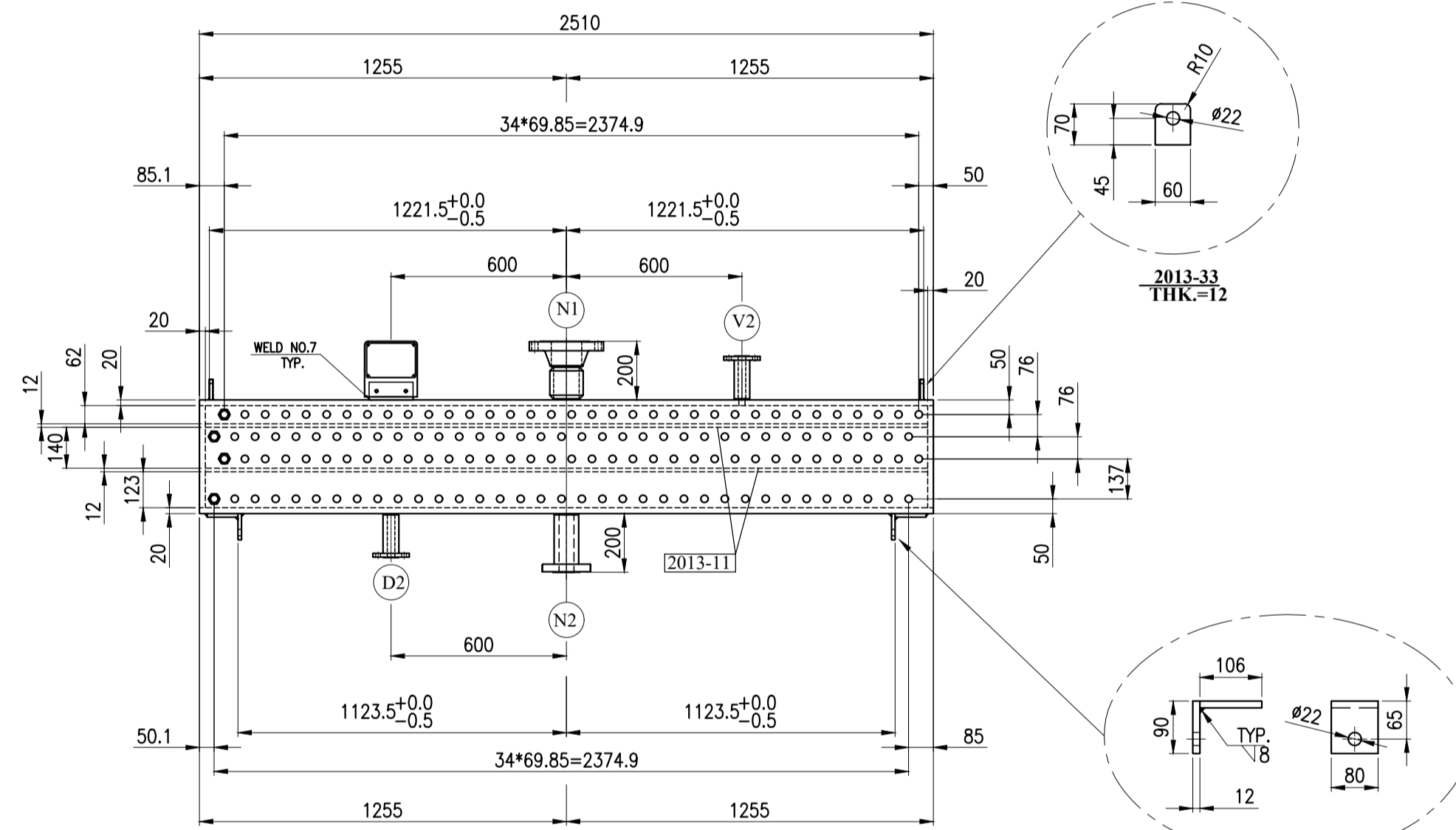
FRONT HEADER (FIXED HEADER)



DETAIL OF BOLTS FOR FIXING HEADER & TRANSPORTATION



VIEW FROM "Q" REAR HEADER

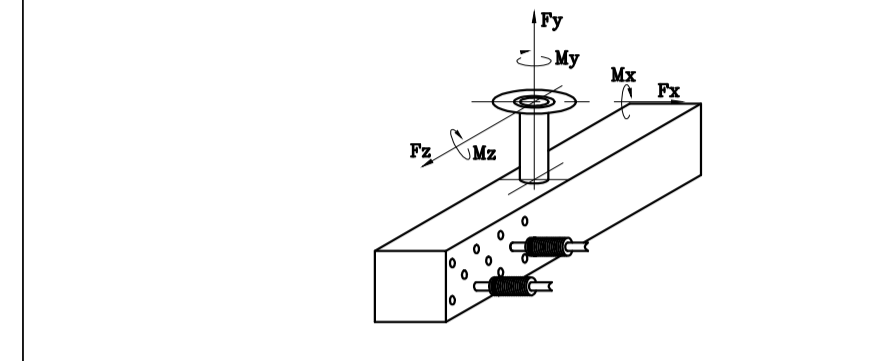


VIEW FROM "P" FRONT HEADER

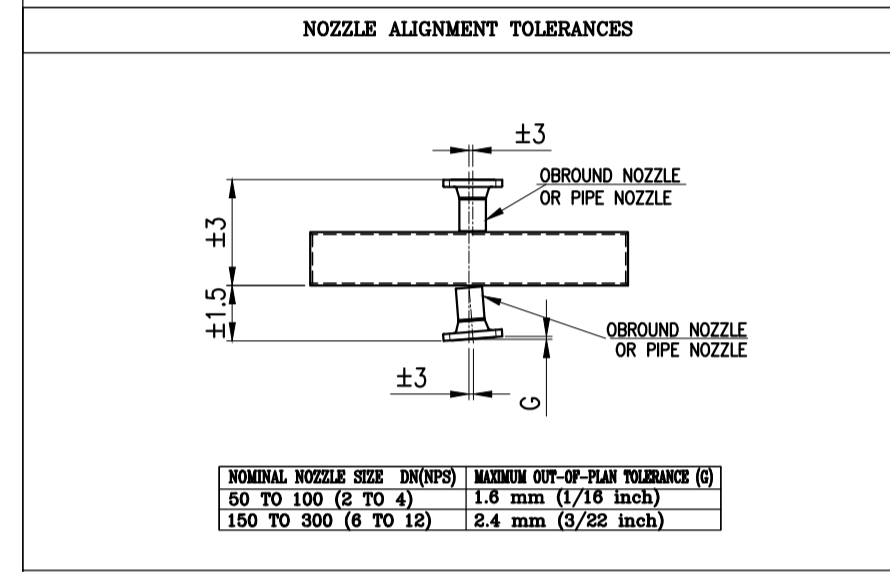
NOTES:
 1- ALL DIMENSIONS ARE IN MILLIMETERS.
 2- ALL NOZZLE FACINGS SHALL BE PROTECTED BY COVER AND 4 BOLTS.
 3- FLANGE CONTACT FACES SHALL BE COATED WITH GREASE.
 4- ALL FLANGE BOLTS SHALL STRADDLE MAIN AXES.
 5- ALL ENGINEERING AND MANUFACTURING CHARACTERISTICS NOT MENTIONED ON THIS DRAWING ARE INDICATED ON THE FOLLOWING APPLICABLE DOCUMENTS:
 A- CALCULATION BOOK
 B- WELDING PROCEDURE SPECIFICATION (W.P.S.)
 C- NON DESTRUCTIVE TEST CHECK LIST (N.D.T.)
 D- PAINTING & GALVANIZING SPECIFICATION SHEETS
 6- HEADER PLUG THREADS SHALL BE COVERED BY ANTISEIZE GREASE PROPER FOR 200°C TEMPERATURE.
 7- THE MATERIAL OF THE SLIDING PAD BETWEEN THE BUNDLE FRAME AND THE HEADER IS TEFLO/PTFE. FOR MORE INFORMATION, REFER TO DWG. NO. EI027-DMF-VD-ME-DWG-007.
 8- MATERIAL FOR PLATE(S) FOR PRESSURE PART) TO BE IMPACT TESTED.

THE MAXIMUM ALLOWABLE MOMENTS AND FORCES PER EACH NOZZLE (IF LOADS ARE DIVIDED EQUALLY FOR NOZZLES ACCORDING TO 3xAPI 661(7.1.10.1))

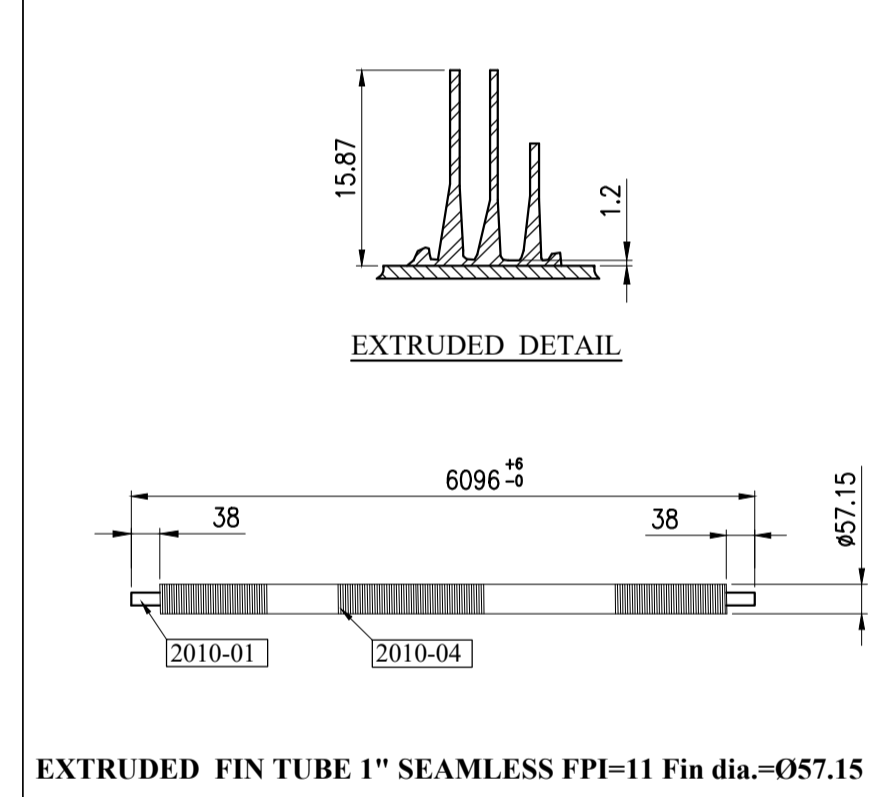
| SIZE | Fx(N) | Fy(N) | Fz(N) | Mx(N.m) | My(N.m) | Mz(N.m) |
|------|-------|-------|-------|---------|---------|---------|
| 4" | 10020 | 8010 | 10020 | 2430 | 3660 | 2430 |
| 2" | 3060 | 3990 | 3060 | 450 | 720 | 450 |



LATERAL DISPLACEMENT OF HEADERS (DIRECTION Z) INSIDE BUNDLE FRAME IN RELATION WITH EXPANSION FORCES ON NOZZLES (mm) (ACCORDING TO API661 7-1-1-2)
 MAXIMUM DISPLACEMENT OF FRONT AND REAR HEADER(Z DIRECTION) INLET/OUTLET : ±9



FIN TUBE DETAIL



| PART NO. | DESCRIPTION | DIMENSIONS | | | MATERIAL | QTY. | UNIT WEIGHT (Kg) | TOTAL WEIGHT (Kg) | STD DWG | REV. |
|----------|---------------------------------------|------------|-------------|----------|--|------|------------------|-------------------|---------|------|
| | | DIA (mm) | LENGTH (mm) | THK (mm) | | | | | | |
| 2000-00 | TUBE BUNDLE INCLUDING : | - | - | - | - | 2 | 2927.9 | 5844 | - | - |
| 2010-00 | EXTRUDED FINNED TUBE INCLUDING : | - | - | - | - | - | 2010.7 | - | - | - |
| 2010-01 | BASE TUBE 1" (SEAMLESS-MN WALL-BWG16) | 25.4 | 6096 | 1.65 | SA-334 Gr.6 | 140 | 6.5 | 913.2 | - | - |
| 2010-04 | ALUMINIUM TUBE | 35.75 | 5212.08 | 4.9 | AL-1060 | 140 | 7.8 | 1097.5 | - | - |
| 2011-00 | INLET NOZZLE INCLUDING : | - | - | - | - | - | 11.0 | - | - | - |
| 2011-01 | PIPE NOZZLE 4", SCH 160 (SEAMLESS) | 107 | - | 13.49 | SA-333 Gr.6 | 1 | 3.9 | 3.9 | - | - |
| 2011-02 | FLANGE 4" (ANSI B16.5, 300# W.N.R.F) | 254 | 86 | - | SA-350 LF2 CL.1N | 1 | 7.1 | 7.1 | - | - |
| 2012-00 | OUTLET NOZZLE INCLUDING : | - | - | - | - | - | 3.5 | - | - | - |
| 2012-01 | NOZZLE 2" (ANSI B16.5, 300# W.N.R.F) | 165 | 196 | 16.6 | SA-300 LF2 CL.1N | 1 | 3.5 | 3.5 | - | - |
| 2013-00 | FRONT HEADER INCLUDING : | - | - | - | - | - | 448.8 | - | - | - |
| 2013-01 | TUBE SHEET | - | 2510 | 389 | 20 | - | 1 | 153.3 | 153.3 | R3 |
| 2013-02 | PLUG SHEET | - | 2510 | 389 | 20 | - | 1 | 153.3 | 153.3 | R3 |
| 2013-03 | TOP PLATE | - | 2510 | 100 | 20 | - | 1 | 39.4 | 39.4 | R3 |
| 2013-04 | BOTTOM PLATE | - | 2510 | 100 | 20 | - | 1 | 39.4 | 39.4 | R3 |
| 2013-05 | END PLATE | - | 349 | 100 | 20 | - | 2 | 5.5 | 11.0 | R3 |
| 2013-11 | PARTITION | - | 2470 | 100 | 12 | - | 2 | 23.3 | 46.5 | - |
| 2013-32 | SLIDING PAD | - | 10560 | 80 | 12 | - | 2 | 1.6 | 3.1 | - |
| 2013-33 | FIXING | - | 70 | 60 | 12 | - | 2 | 0.4 | 0.8 | - |
| 2014-00 | REAR HEADER INCLUDING : | - | - | - | - | - | 374.6 | - | - | - |
| 2014-01 | TUBE SHEET | - | 2510 | 328 | 20 | - | 1 | 129.3 | 129.3 | R3 |
| 2014-02 | PLUG SHEET | - | 2510 | 328 | 20 | - | 1 | 129.3 | 129.3 | R3 |
| 2014-03 | TOP PLATE | - | 2510 | 100 | 20 | - | 1 | 39.4 | 39.4 | R3 |
| 2014-04 | BOTTOM PLATE | - | 2510 | 100 | 20 | - | 1 | 39.4 | 39.4 | R3 |
| 2014-05 | END PLATE | - | 288 | 100 | 20 | - | 2 | 4.5 | 9.0 | R3 |
| 2014-11 | PARTITION | - | 2470 | 100 | 12 | - | 1 | 23.3 | 23.3 | - |
| 2014-32 | SLIDING PAD | - | 10660 | 80 | 12 | - | 2 | 1.6 | 3.1 | - |
| 2014-33 | FIXING | - | 70 | 80 | 12 | - | 2 | 0.4 | 0.8 | - |
| 2015-00 | VENT INCLUDING : | - | - | - | - | - | 7.0 | - | - | - |
| 2015-01 | FLANGE LWN 1" 300# R.F | 124 | 146 | 14.3 | SA-350 LF2 CL.1N | 2 | 2.0 | 4.0 | - | - |
| 2015-02 | BLIND FOR FLANGE LWN 1" 300# R.F | - | - | - | SA-350 LF2 CL.1N | 2 | 1.5 | 3.0 | - | - |
| 2015-03 | GASKET FOR FLANGE LWN 1" 300# R.F | - | - | - | SPRAL WOUND INNER: S304 OUTER: C.S GRAPHITE FILLED | 2 | - | - | - | - |
| 2015-04 | STUD BOLT FOR FLANGE LWN 1" 300# R.F | M16 | 80 | - | SA-320 Gr.7(Dacromet) | 8 | - | - | - | - |
| 2015-05 | NUT | M16 | - | - | SA-194 Gr.7(Dacromet) | 16 | - | - | - | - |
| 2016-00 | DRAIN INCLUDING : | - | - | - | - | - | 7.0 | - | - | - |
| 2016-01 | FLANGE LWN 1" 300# R.F | 124 | 146 | 14.3 | SA-350 LF2 CL.1N | 2 | 2.0 | 4.0 | - | - |
| 2016-02 | BLIND FOR FLANGE LWN 1" 300# R.F | - | - | - | SA-350 LF2 CL.1N | 2 | 1.5 | 3.0 | - | - |
| 2016-03 | GASKET FOR FLANGE LWN 1" 300# R.F | - | - | - | SPRAL WOUND INNER: S304 OUTER: C.S GRAPHITE FILLED | 2 | - | - | - | - |
| 2016-04 | STUD BOLT FOR FLANGE LWN 1" 300# R.F | M16 | 80 | - | SA-320 Gr.7(Dacromet) | 8 | - | - | - | - |
| 2016-05 | NUT | M16 | - | - | SA-194 Gr.7(Dacromet) | 16 | - | - | - | - |
| 2020-00 | MISCELLANEOUS PARTS INCLUDING : | - | - | - | - | - | 62.2 | - | - | - |
| 2020-01 | PLUG (1 1/8" 12 UNF CL.2A) | - | - | - | SA-350 LF2 CL.1N | 200 | 0.22 | 61.6 | 2201 | - |
| 2020-02 | PLUG GASKET | 2605.5 | - | 1.5 | SOFT IRON | 200 | - | - | 2200 | - |
| 2020-03 | STAND FOR BRACKET | 150 | 60 | 5 | C.S | 1 | 0.35 | 0.7 | - | - |

NOZZLES TABLE

| MARK NO. | SERVICE | SIZE | NOZZLE MATERIAL | FLANGE MATERIAL | RATING | TYPE | FACING | SCH. THK. | FLANGE FACE FINISHING | QTY. PER BUNDLE ITEM |
|----------|---------------------------|------|------------------|------------------|--------|------|--------|-----------|-----------------------|----------------------|
| N1 | INLET NOZZLE | 4" | SA-333 Gr.6 | SA-350 LF2 CL.1N | 300# | W.N | R.F | 160 | 125-250 µH | 1 2 |
| N2 | OUTLET NOZZLE | 2" | SA-350 LF2 CL.1N | SA-350 LF2 CL.1N | 300# | LWN | R.F | 16.6 | 125-250 µH | 1 2 |
| V1, V2 | VENT WITH BLIND & GASKET | 1" | SA-350 LF2 CL.1N | SA-350 LF2 CL.1N | 300# | LWN | - | - | - | 2 4 |
| D1, D2 | DRAIN WITH BLIND & GASKET | 1" | SA-350 LF2 CL.1N | SA-350 LF2 CL.1N | 300# | LWN | - | - | - | 2 4 |

APPLICABLE CODES AND STANDARDS
 ASME VIII-DIV.1 2019, API 661

| SERVICE | PROPANE |
|---|--|
| MAXIMUM DESIGN TEMPERATURE (°C) | 120 |
| MINIMUM AMBIENT TEMPERATURE (°C) | 5 |
| MINIMUM DESIGN METAL TEMPERATURE (°C) | -45 |
| DESIGN PRESSURE (barg) | 22± F.V. |
| TEST PRESSURE (barg) | 28.6 |
| CORROSION ALLOWANCE | 3 |
| WELD JOINT EFFICIENCY | 0.6 FOR PARTITION / 0.85 FOR OTHER PARTS |
| HYDROTEST | YES |
| POST WELD HEAT TREATMENT | YES |
| N.D.T. EXAMINATION OF WELDED JOINTS | SEE NDT CHECK LIST |
| TUBE TO TUBE SHEET JOINT | STRENGTH WELD + EXPANDED |
| BUNDLE CAPACITY (m ³) | 0.480 |
| BUNDLE WEIGHT WITH FRAME (EMPTY) (Kg) | 2920 |
| BUNDLE WEIGHT WITH FRAME (FULL OF WATER) (Kg) | 3400 |
| ULTRASONIC TEST(NOZZLE TO HEADER) | YES |

REFERENCE DOCUMENTS

| TITLE | VENDOR DOCUMENT NO. | CLIENT DOCUMENT NO. |
|--|---------------------|-------------------------|
| GENERAL ARRANGEMENT | 1158-A01-1000-00 | EI027-DMF-VD-ME-DWG-003 |
| BUNDLE FRAME | 1158-A01-2400-00 | EI027-DMF-VD-ME-DWG-007 |
| AIR COOLER DATA SHEET | 1158-A01-0010-00 | EI027-DMF-VD-ME-DSH-002 |
| MECHANICAL CALCULATION | 1158-A01-0020-00 | EI027-DMF-VD-ME-CAL-006 |
| WELDING PROCEDURE SPECIFICATION (W.P.S.) | 1158-A01-0060-00 | EI027-DMF-VD-QC-WPS-021 |
| NON DESTRUCTIVE TEST CHECK LIST (N.D.T) | 1158-A01-0070-00 | EI027-DMF-VD-QC-PRO-022 |

| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
|-----|------------|---------------------|----------|------------|-------------|-------------------|
| R3 | 07/31/2024 | ISSUED FOR APPROVAL | F.SZ | S.S | J.B.L | A.GHZ |
| R2 | 07/22/2024 | ISSUED FOR APPROVAL | F.SZ | S.S | J.B.L | A.GHZ |
| R1 | 06/26/2024 | ISSUED FOR APPROVAL | F.SZ | S.S | J.B.L | A.GHZ |
| R0 | 06/02/2024 | ISSUED FOR APPROVAL | F.SZ | S.S | J.B.L | A.GHZ |

CLIENT:

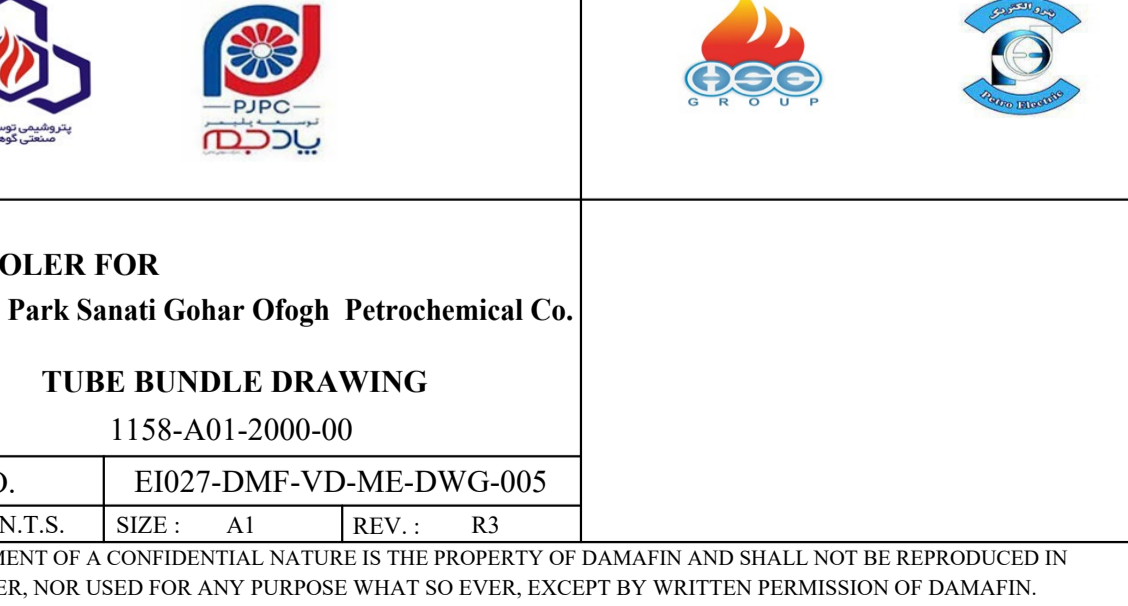
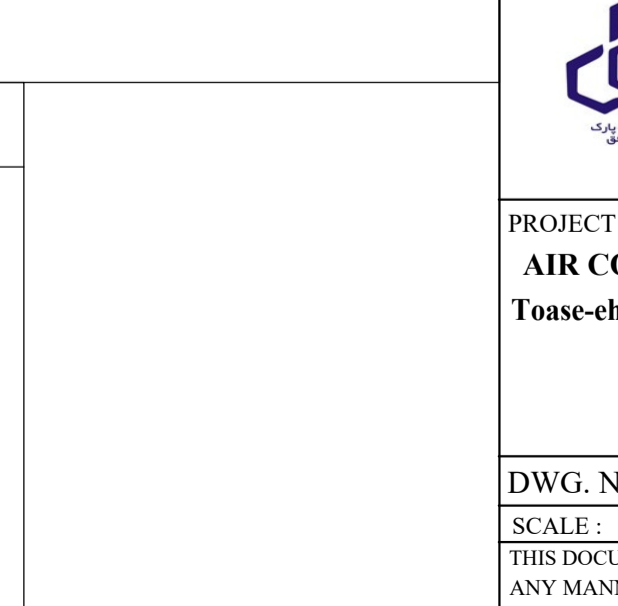
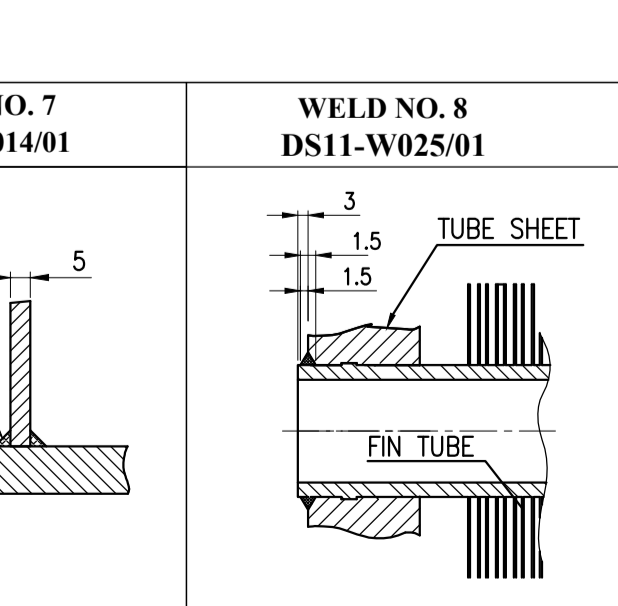
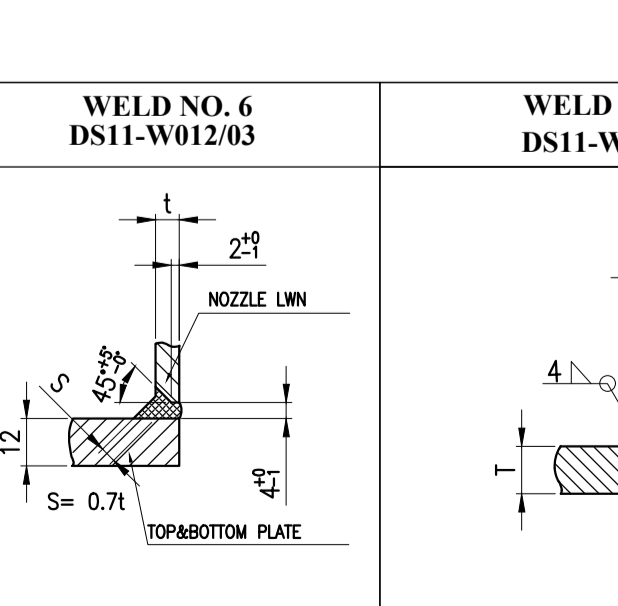
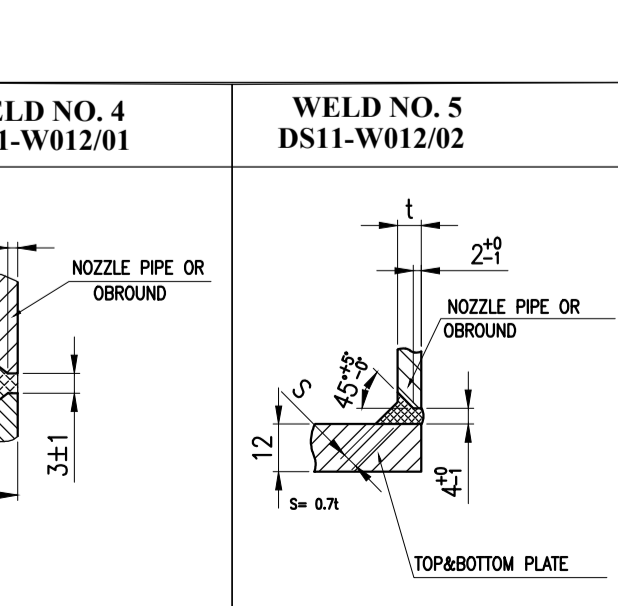
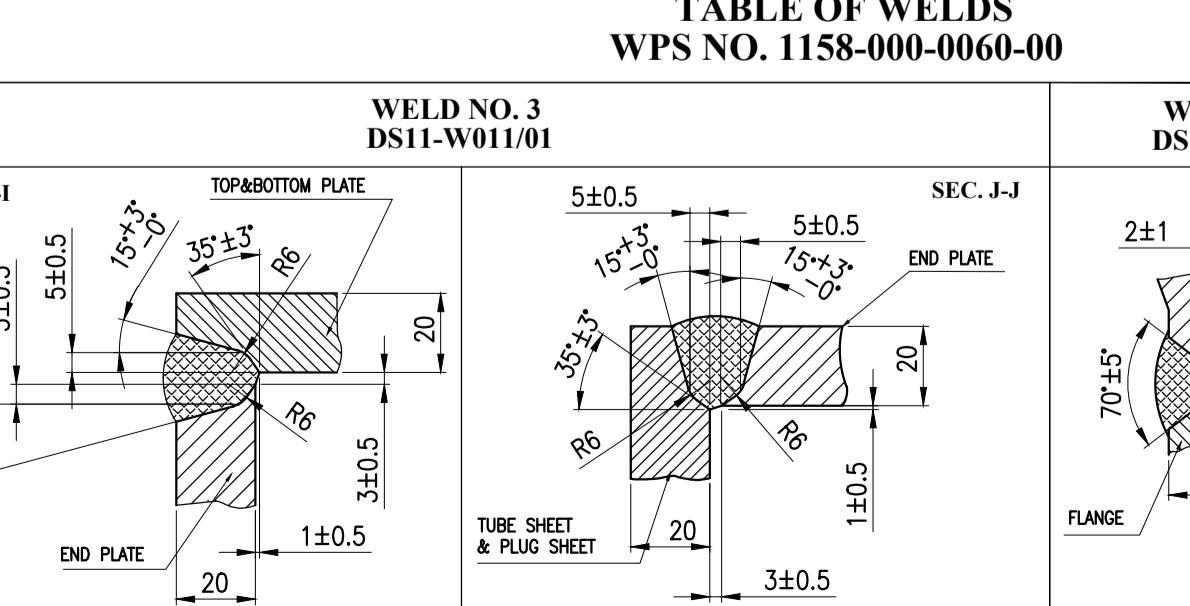
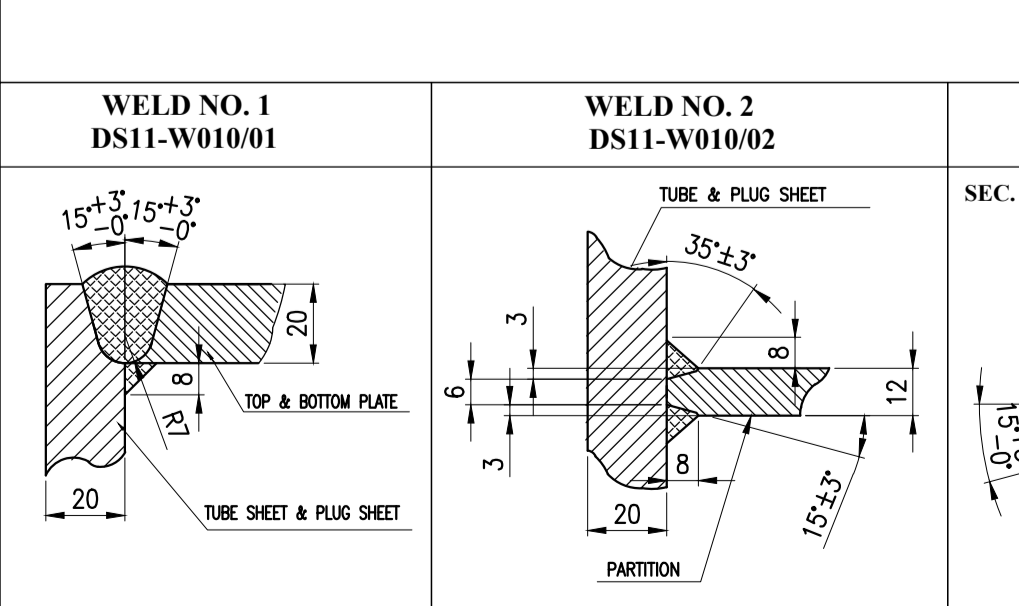
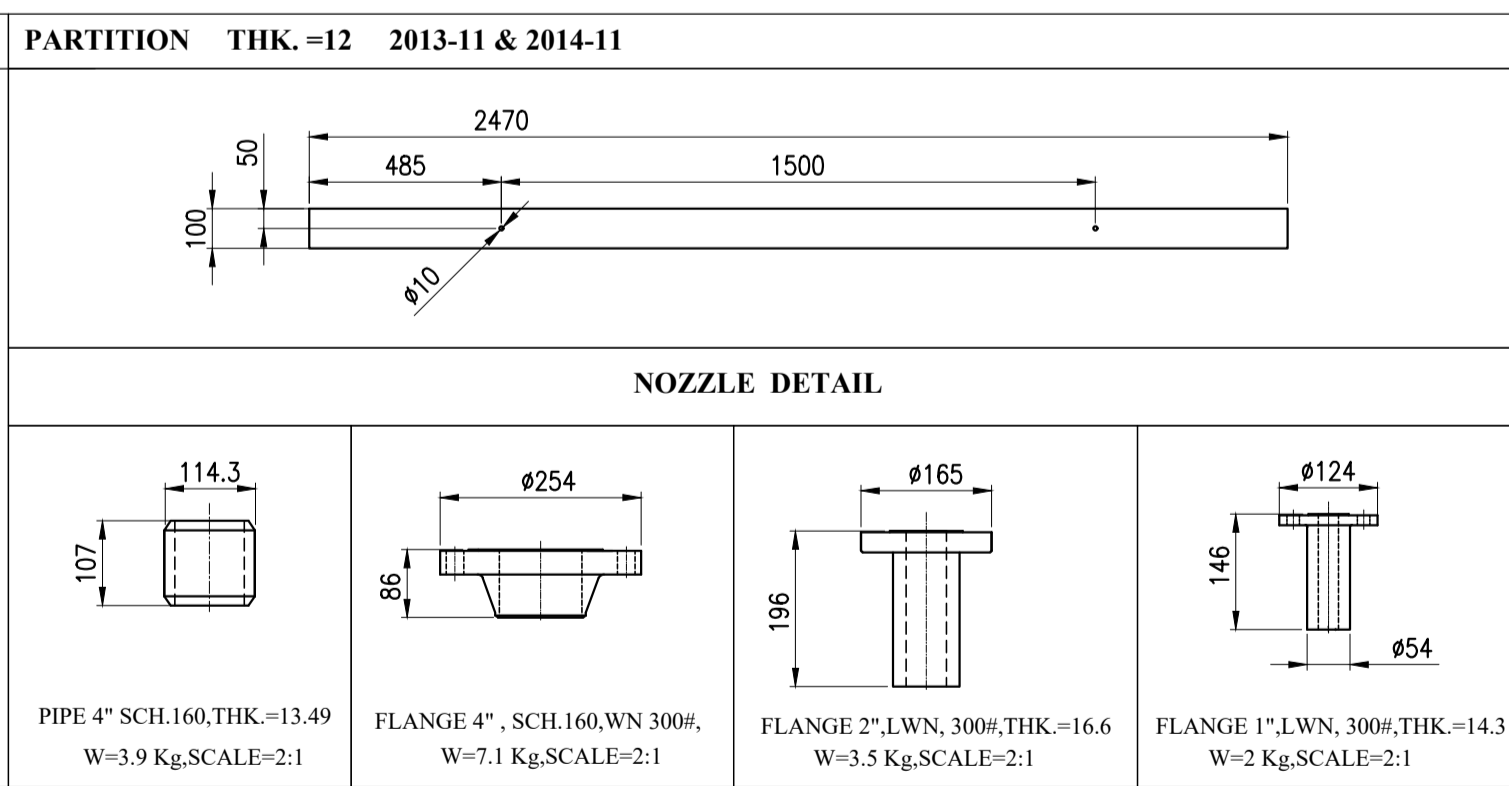
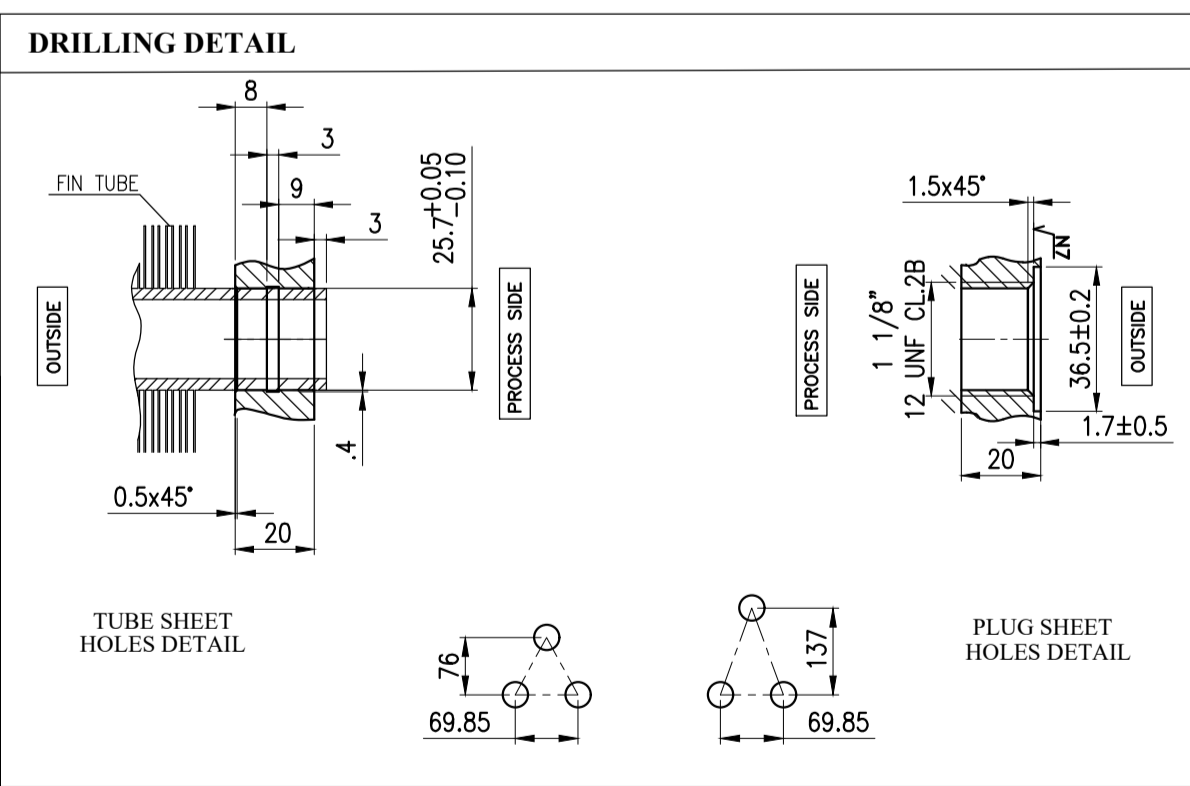
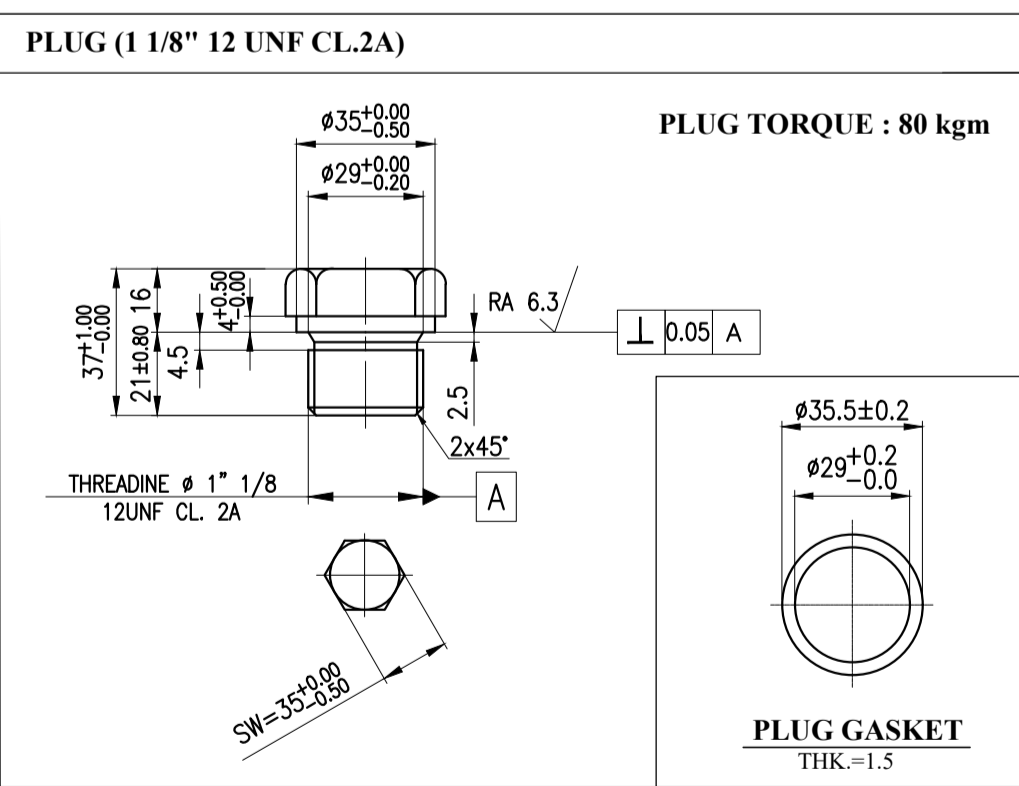
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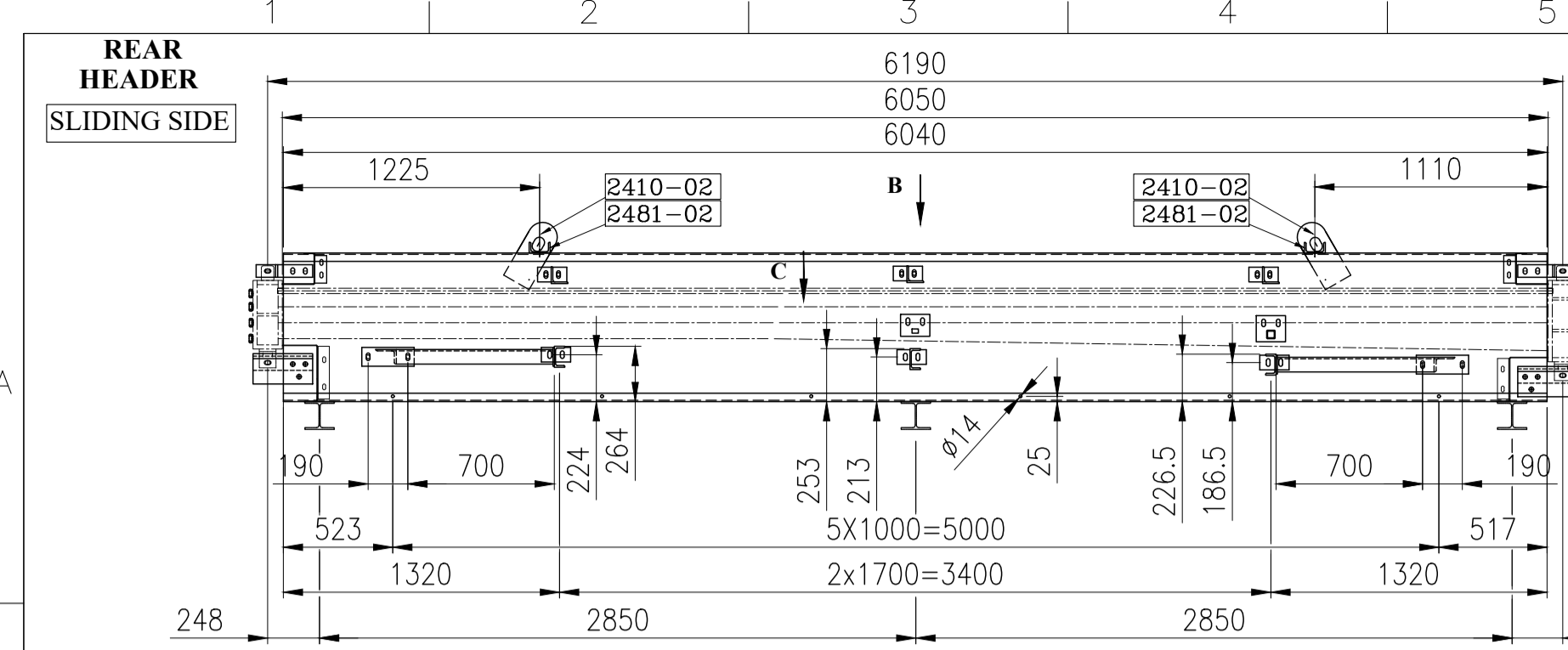
PROJECT:
AIR COOLER FOR
Toase-che Park Sanati Gohar Ofogh Petrochemical Co.

TUBE BUNDLE DRAWING
 1158-A01-2000-00

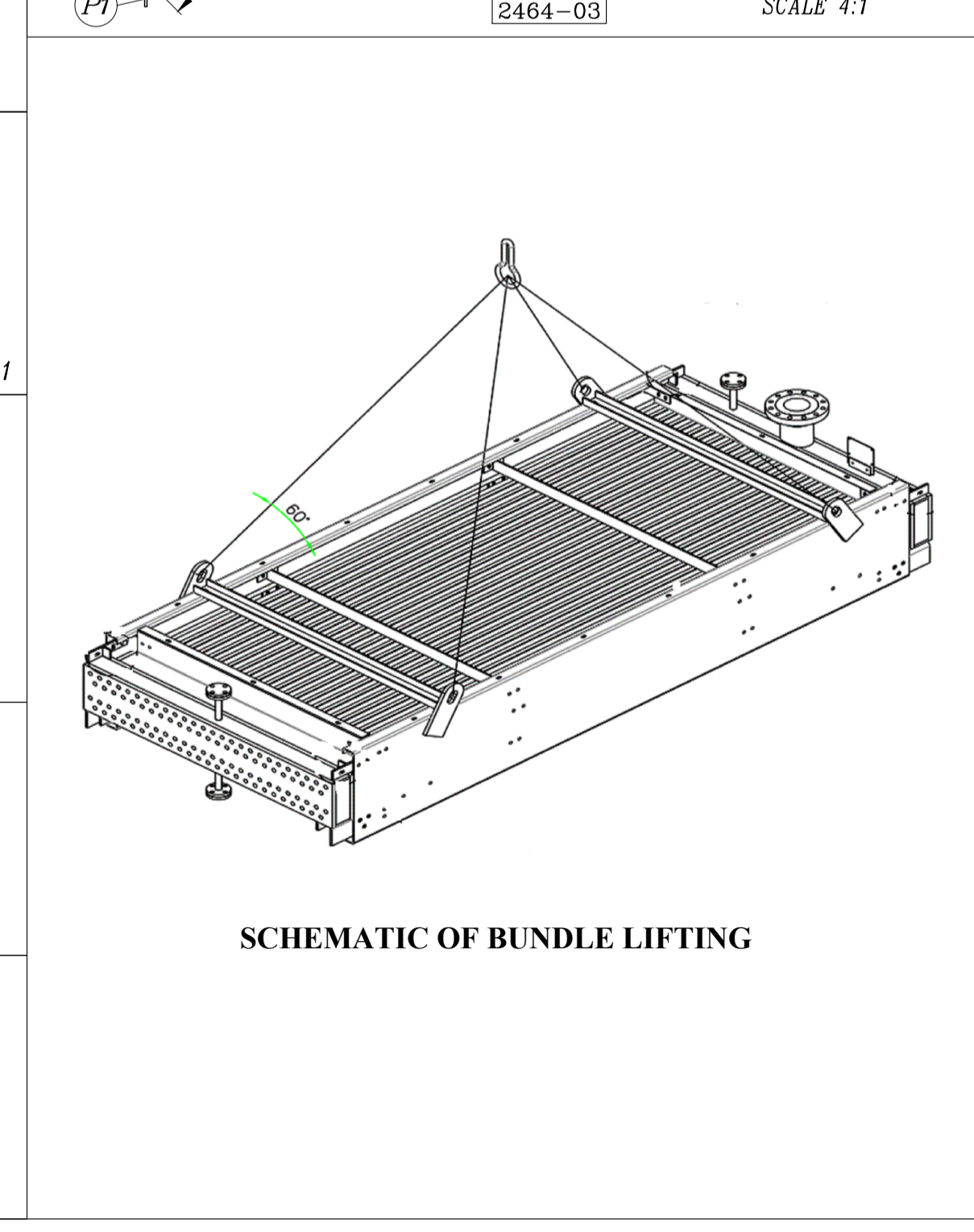
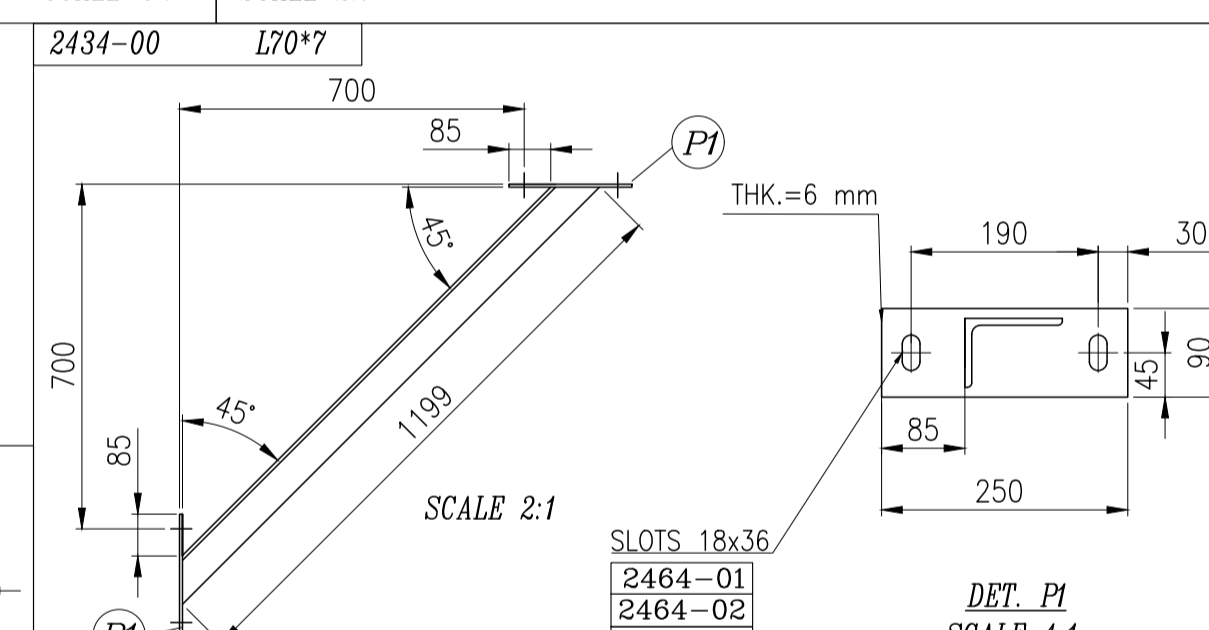
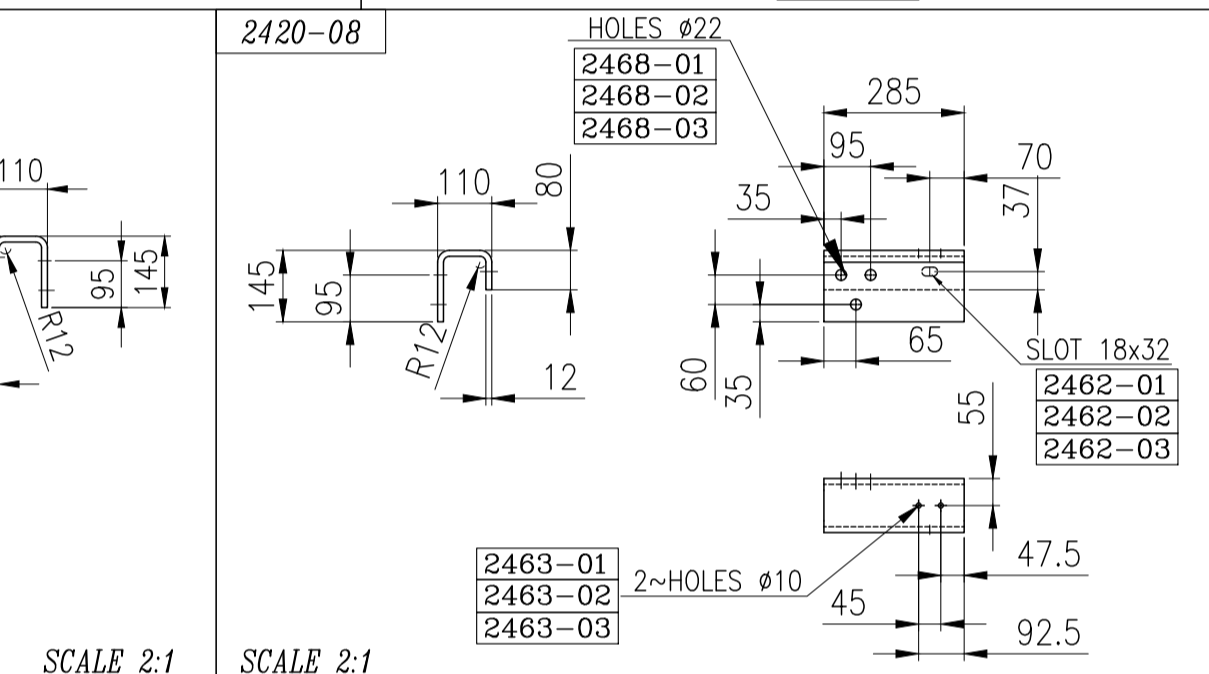
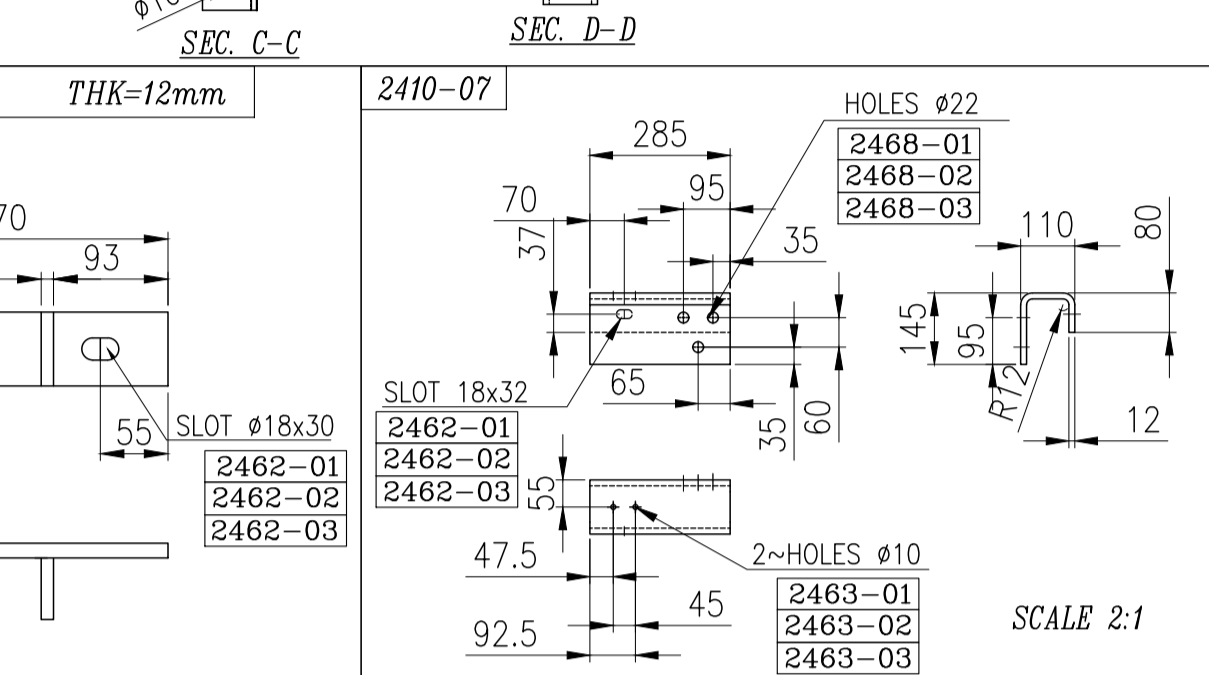
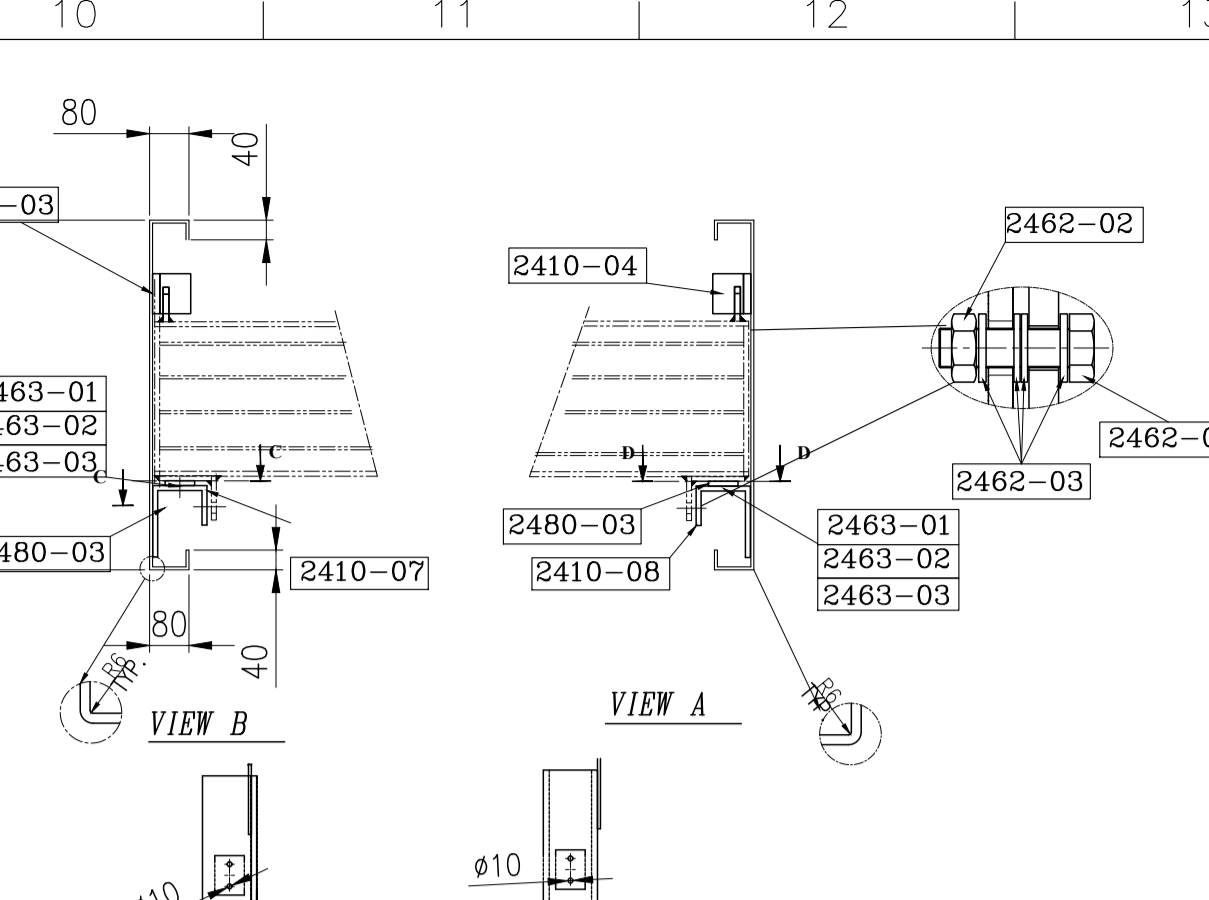
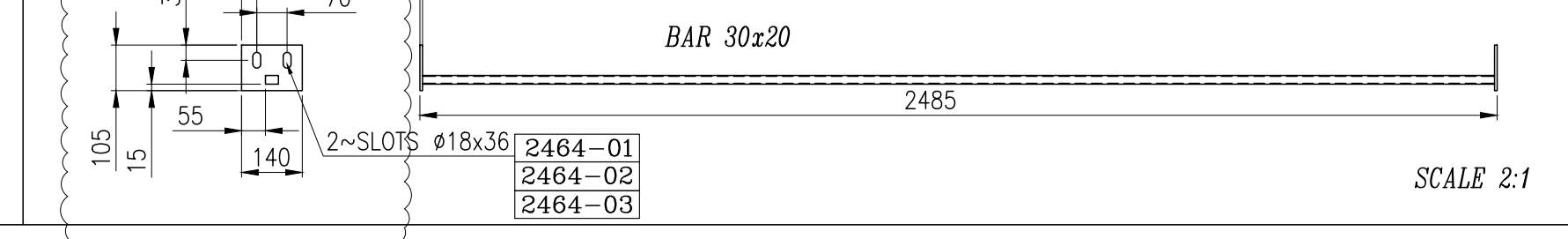
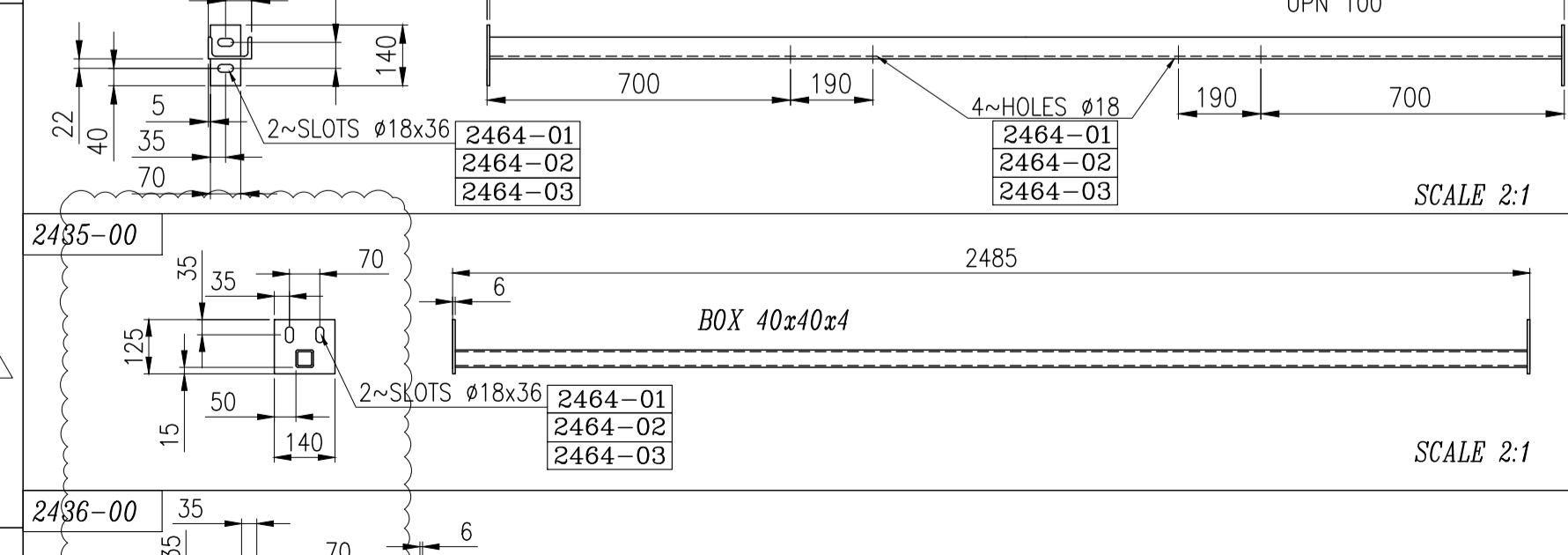
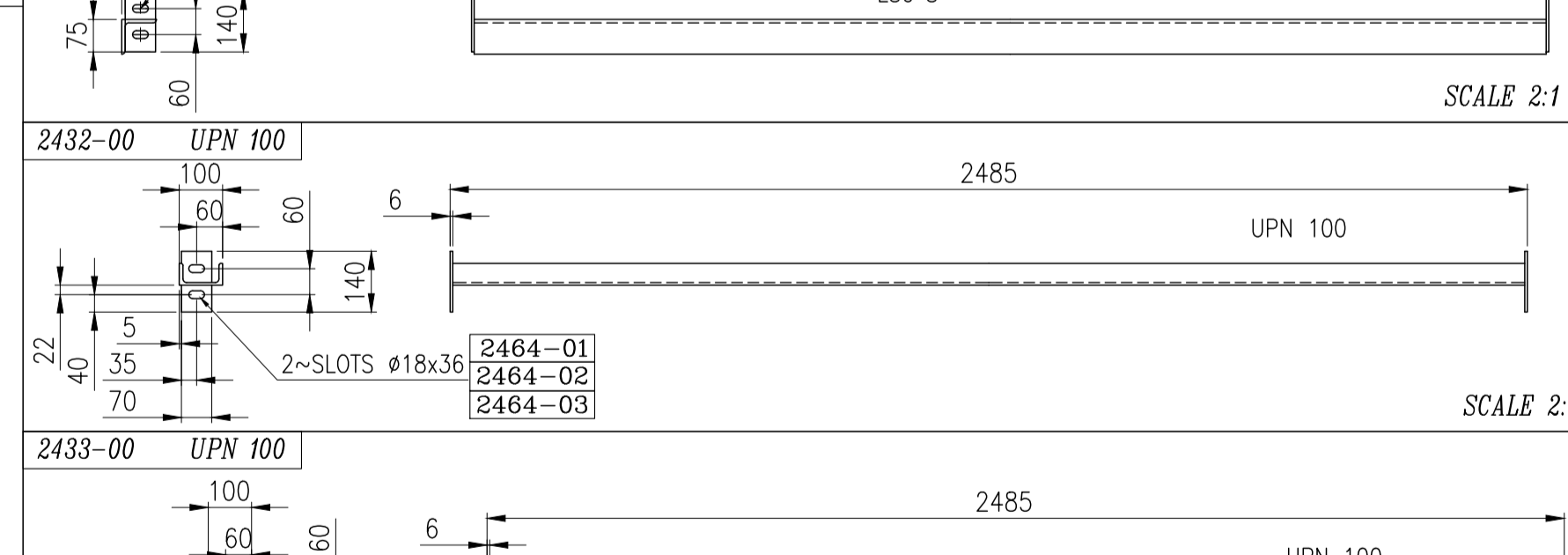
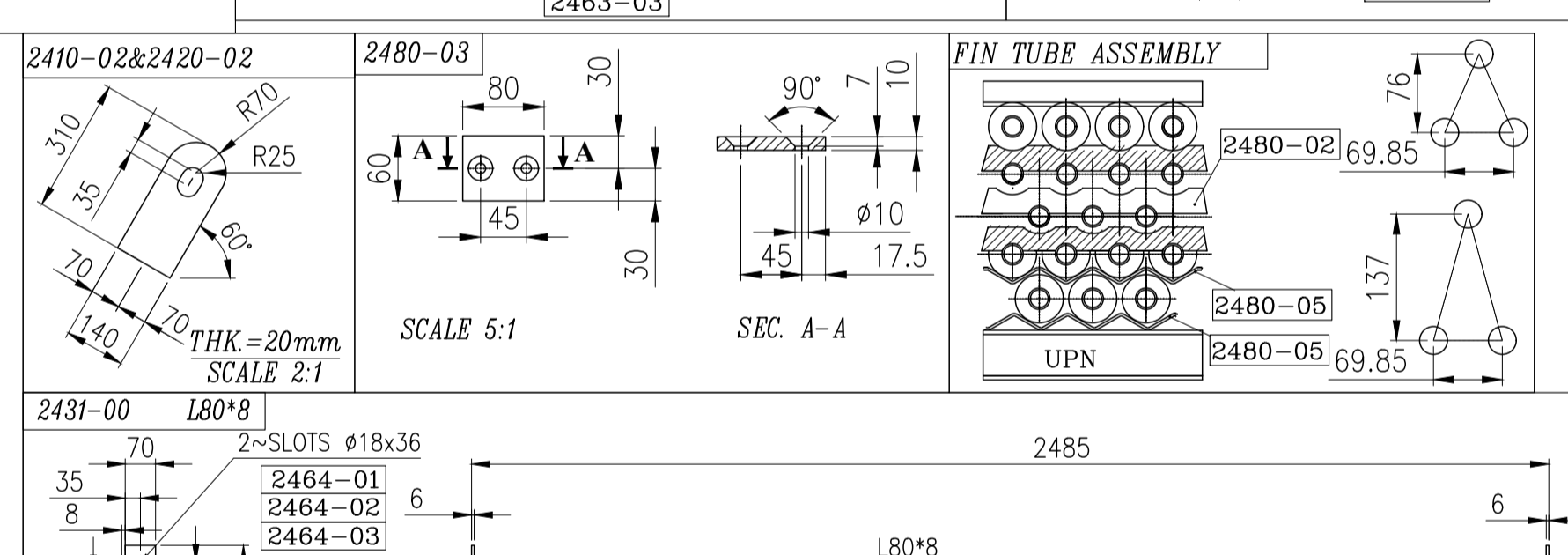
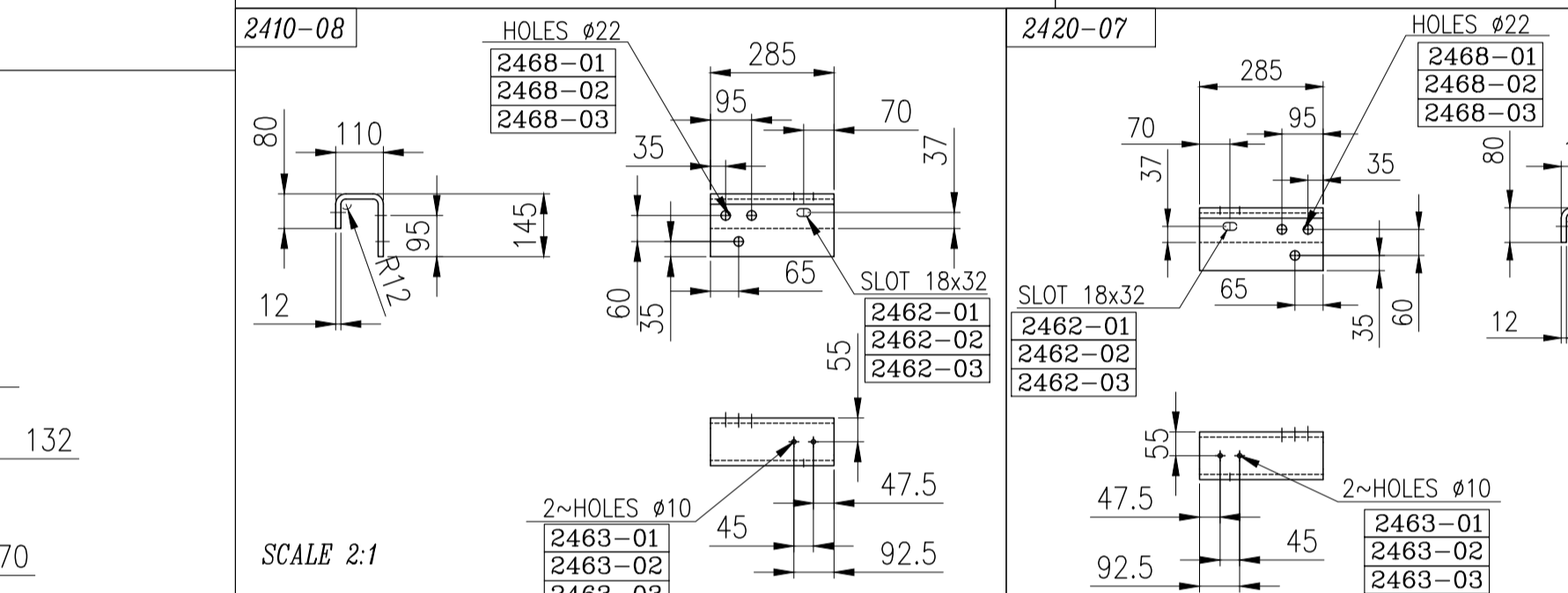
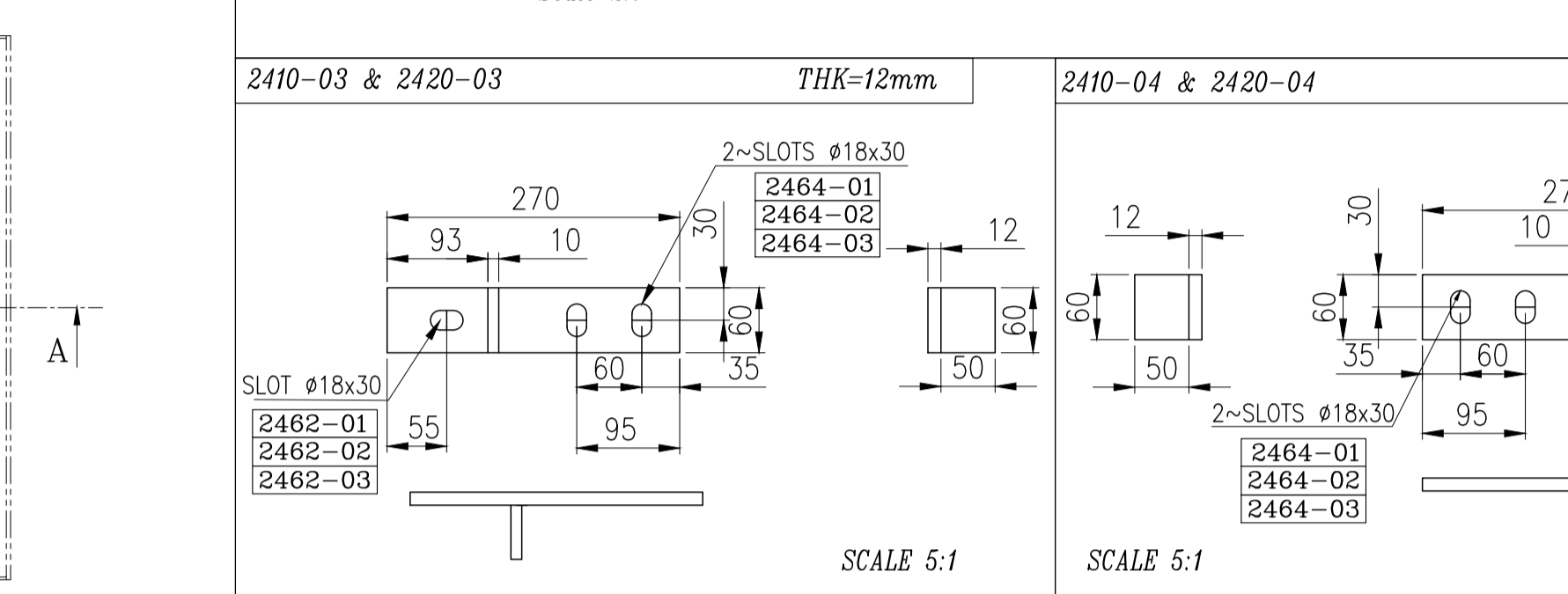
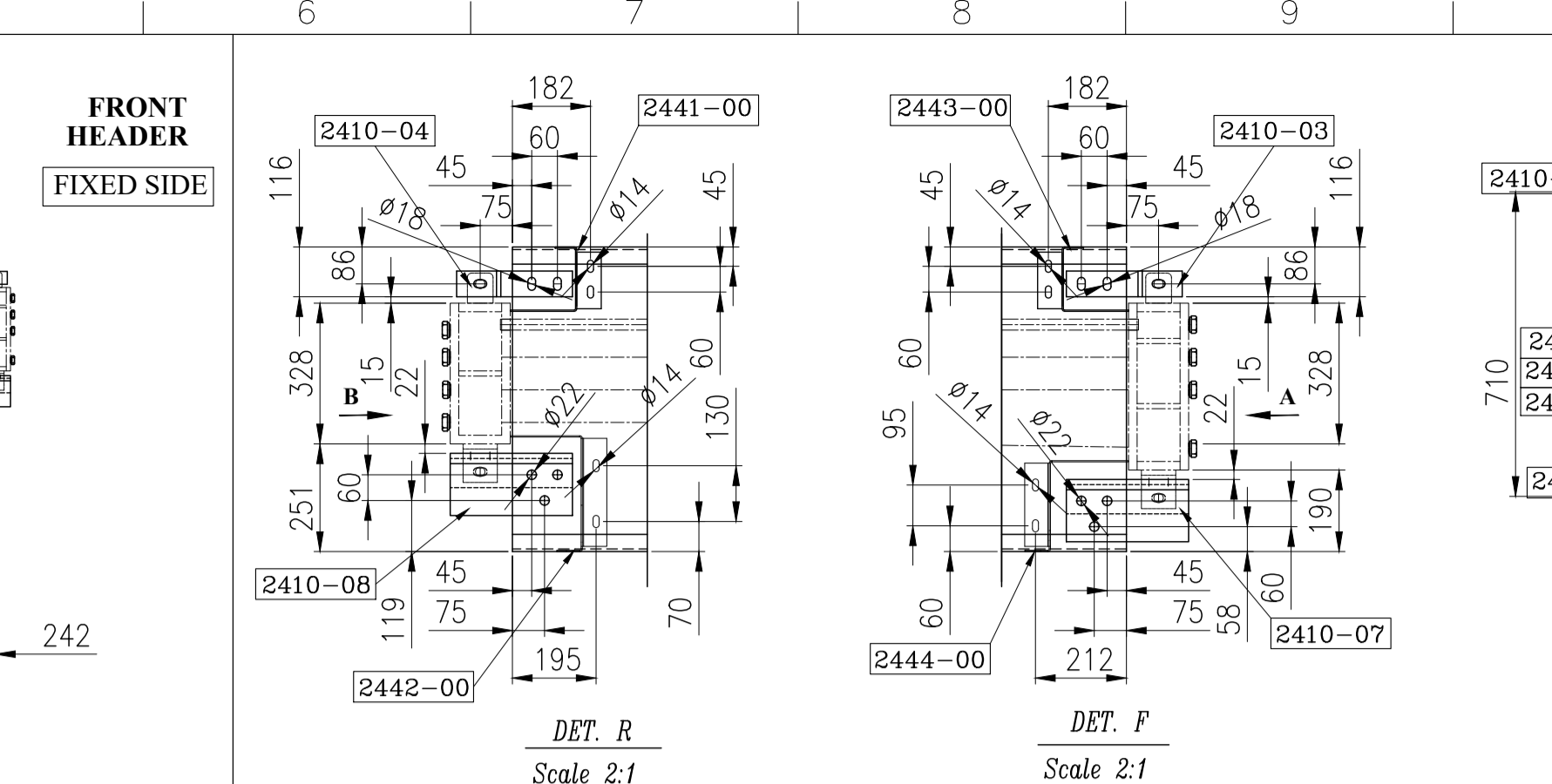
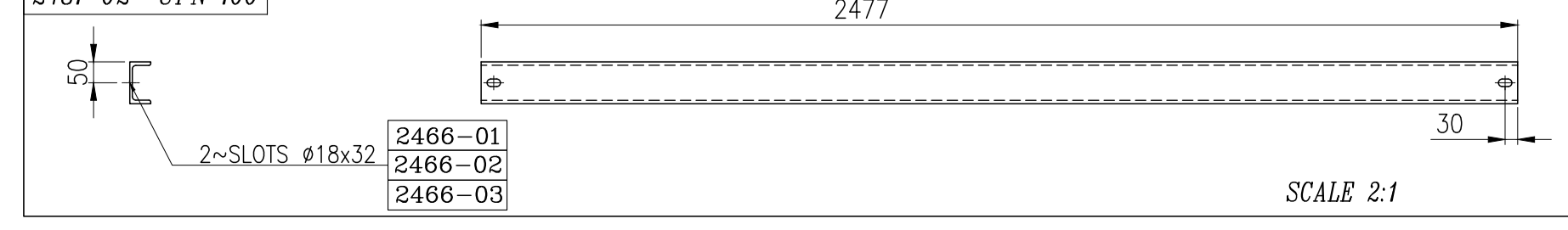
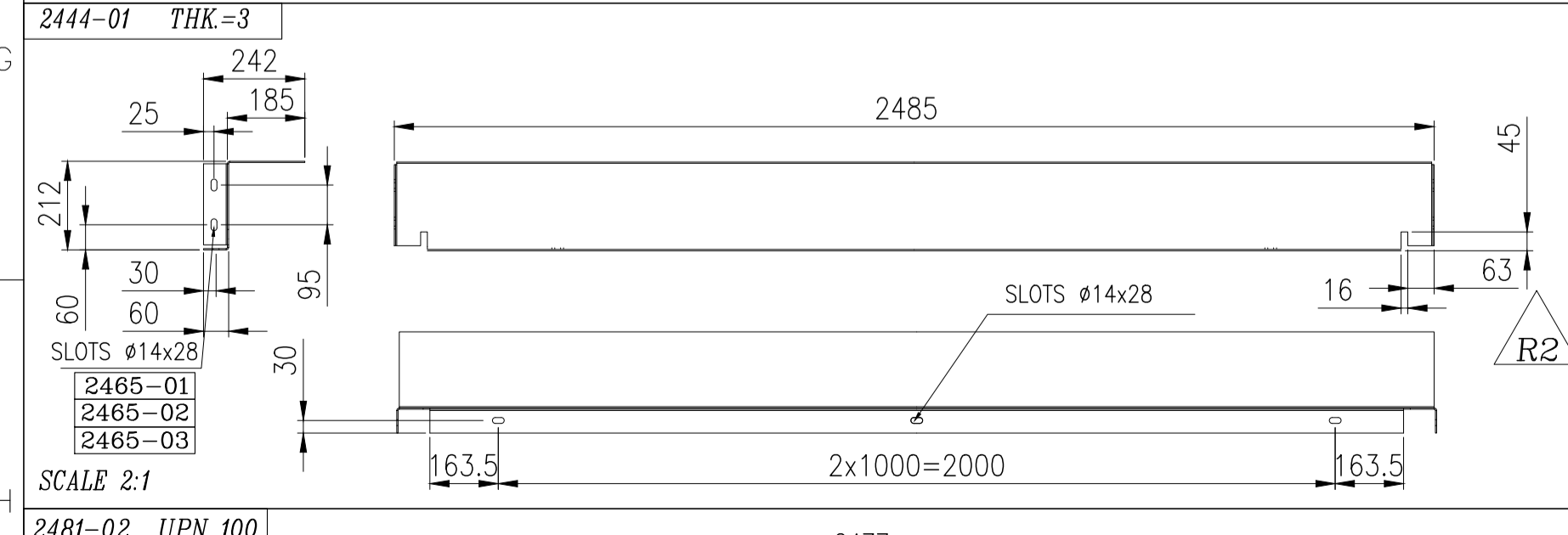
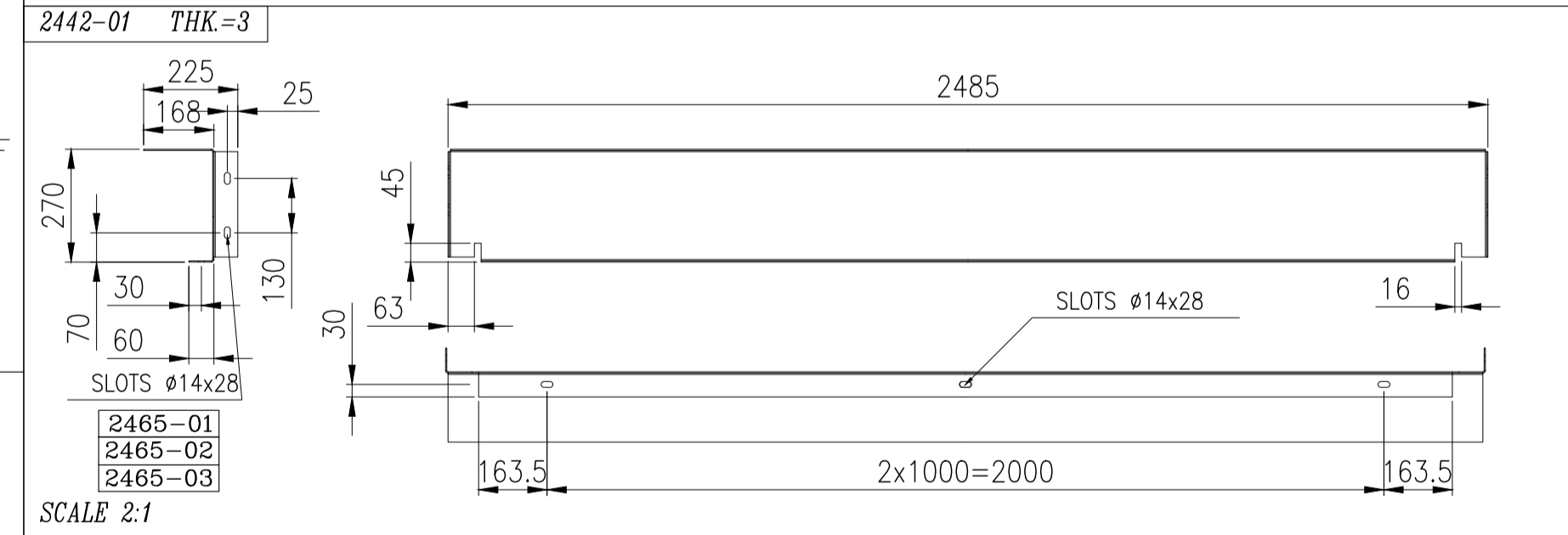
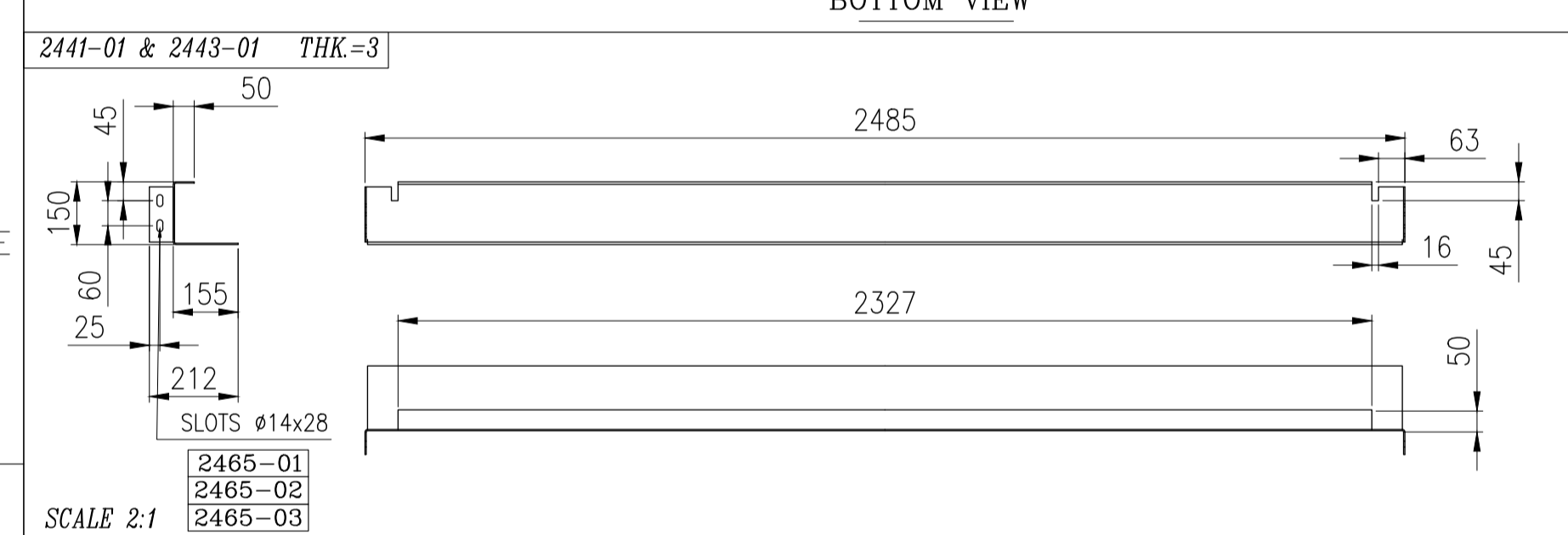
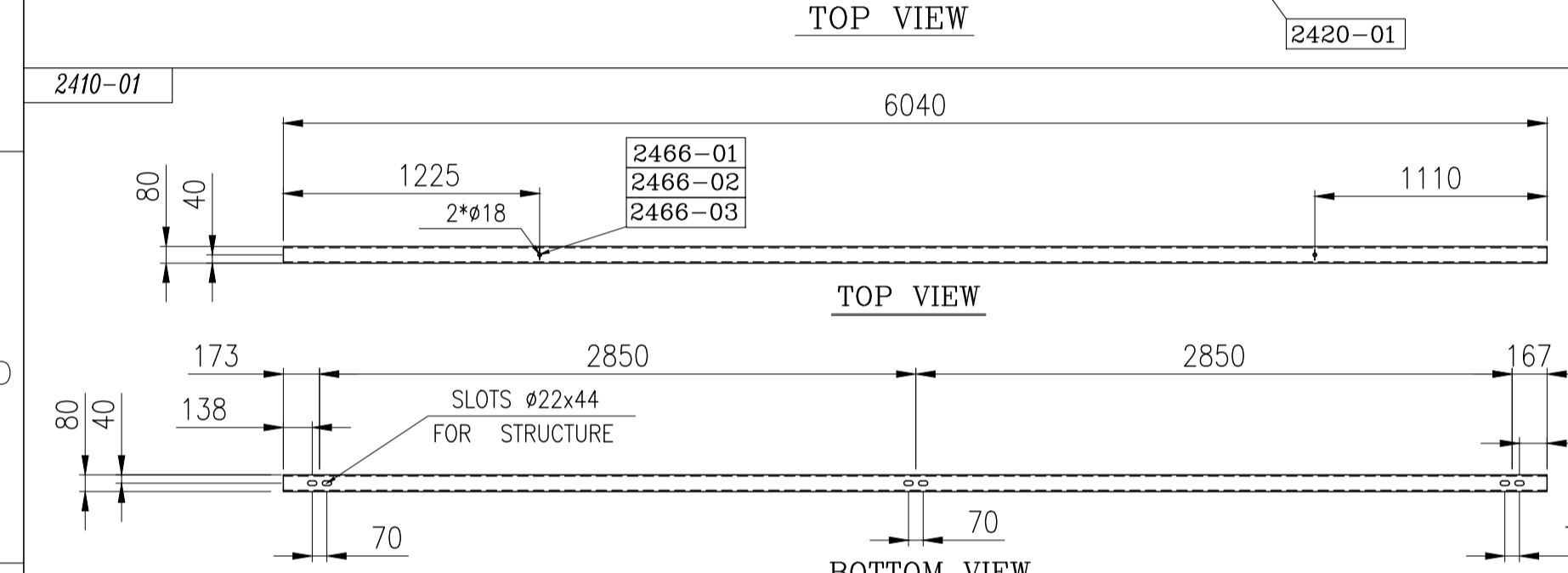
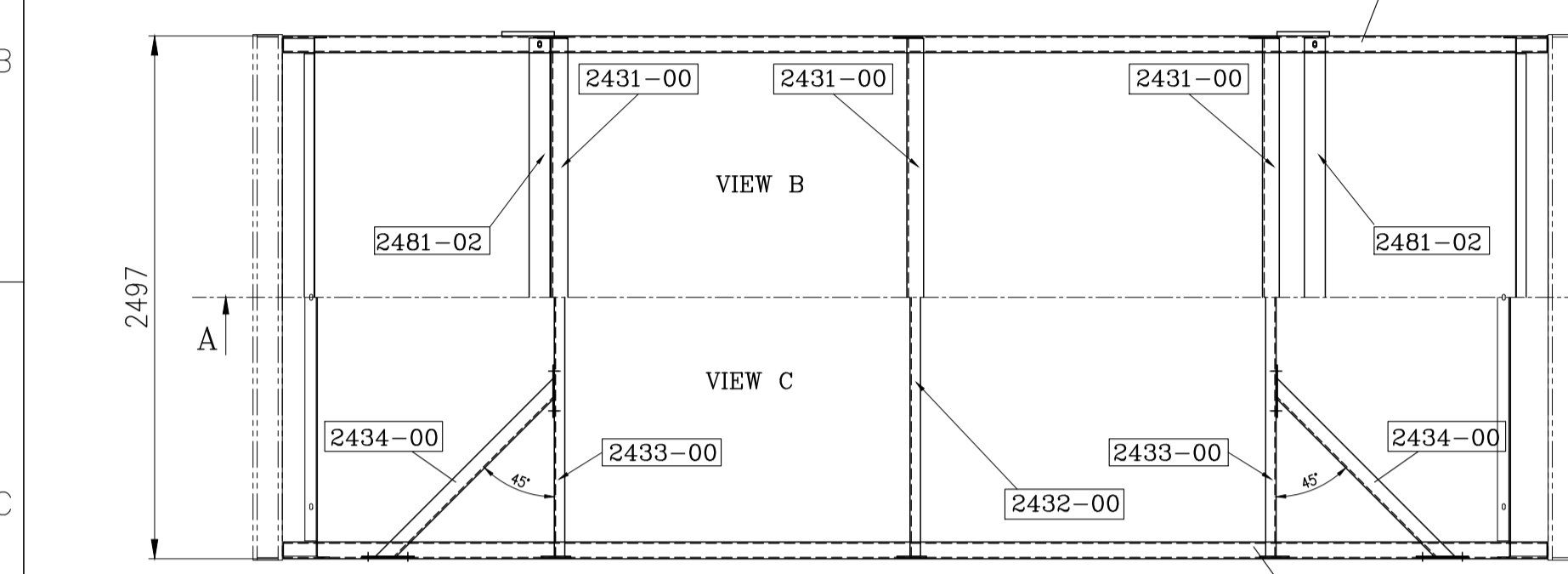
DWG. NO. EI027-DMF-VD-ME-DWG-005
 SCALE: N.T.S. SIZE: A1 REV.: R3

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1% SLOP ON LAST PASS
SEC. A-A



| PART NO. | DESCRIPTION | DIMENSIONS | | | MATERIAL | QTY. | UNIT WEIGHT | TOTAL WEIGHT | STD. DWG. | REV. |
|----------|---|------------|-------|------|-------------------------------|------|-------------|--------------|-----------|------|
| | | LENTH | WIDTH | THK. | | | | | | |
| 2400-00 | BUNDLE FRAME INCLUDING : | - | - | - | - | 2 | 1091 | 2182 | - | - |
| 2410-00 | LEFT SIDE INCLUDING : | - | - | - | - | 2 | 289 | 578 | - | - |
| 2410-01 | PLATE | 6040 | 902 | 6 | ST-37(GALV.) | 1 | 257 | 257 | - | - |
| 2410-02 | PLATE (LIFTING LUG) | 310 | 140 | 20 | ST-37(GALV.) | 2 | 7 | 14 | - | - |
| 2410-03 | FRONT TRANSPORTATION HEADER SUPPORT (ASSEMBLY) | 270 | 60 | 12 | ST-37(GALV.) | 1 | 2 | 2 | - | - |
| 2410-04 | REAR TRANSPORTATION HEADER SUPPORT (ASSEMBLY) | 270 | 60 | 12 | ST-37(GALV.) | 1 | 2 | 2 | - | - |
| 2410-05 | FRONT HEADER SUPPORT | 285 | 287 | 12 | ST-37(GALV.) | 1 | 8 | 8 | - | - |
| 2410-06 | REAR HEADER SUPPORT | 285 | 287 | 12 | ST-37(GALV.) | 1 | 8 | 8 | - | - |
| 2420-00 | RIGHT SIDE INCLUDING : | - | - | - | - | 2 | 289 | 578 | - | - |
| 2420-01 | PLATE | 6040 | 902 | 6 | ST-37(GALV.) | 1 | 257 | 257 | - | - |
| 2420-02 | PLATE (LIFTING LUG) | 310 | 140 | 20 | ST-37(GALV.) | 2 | 7 | 14 | - | - |
| 2420-03 | FRONT TRANSPORTATION HEADER SUPPORT (ASSEMBLY) | 270 | 60 | 12 | ST-37(GALV.) | 1 | 2 | 2 | - | - |
| 2420-04 | REAR TRANSPORTATION HEADER SUPPORT (ASSEMBLY) | 270 | 60 | 12 | ST-37(GALV.) | 1 | 2 | 2 | - | - |
| 2420-05 | FRONT HEADER SUPPORT | 285 | 287 | 12 | ST-37(GALV.) | 1 | 8 | 8 | - | - |
| 2420-06 | REAR HEADER SUPPORT | 285 | 287 | 12 | ST-37(GALV.) | 1 | 8 | 8 | - | - |
| 2430-00 | CROSSPIECES INCLUDING : | - | - | - | - | 4 | 125 | 500 | - | - |
| 2430-01 | BRACED SUPPORT ANGLE(ASSEMBLY)(L80x8) | 2485 | - | - | ST-37(GALV.) | 3 | 25 | 75 | - | - |
| 2430-02 | UPN 100 (ASSEMBLY) | 270 | 60 | 12 | ST-37(GALV.) | 1 | 62 | 125 | - | - |
| 2430-03 | UPN 100 (ASSEMBLY) | 270 | 60 | 12 | ST-37(GALV.) | 1 | 62 | 125 | - | - |
| 2430-04 | L TROT (ASSEMBLY) | 1199 | - | - | ST-37(GALV.) | 4 | 14 | 56 | - | - |
| 2440-00 | AIR SEAL INCLUDING : | - | - | - | - | 4 | 125 | 500 | - | - |
| 2440-01 | REAR UPPER AIR SEAL | 2593 | 343 | 3 | ST-37(GALV.) | 1 | 21 | 21 | - | - |
| 2440-02 | REAR LOWER AIR SEAL | 2593 | 406 | 3 | ST-37(GALV.) | 1 | 30 | 30 | - | - |
| 2440-03 | FRONT UPPER AIR SEAL | 2593 | 343 | 3 | ST-37(GALV.) | 1 | 21 | 21 | - | - |
| 2440-04 | FRONT LOWER AIR SEAL | 2593 | 445 | 3 | ST-37(GALV.) | 1 | 27 | 27 | - | - |
| 2445-00 | BOX 40x40x4 | 2593 | - | - | ST-37(GALV.) | 1 | 14 | 14 | - | - |
| 2448-00 | FLAT 30x50 | 2593 | - | - | ST-37(GALV.) | 1 | 12 | 12 | - | - |
| 2460-00 | BOLTS & NUTS FOR FIXING HEADER & TRANSPORTATION : | - | - | - | - | - | - | - | - | - |
| 2462-01 | BOLT | M16 | 70 | - | DIN933-8.8 (DACROMET) | 8 | - | - | - | - |
| 2462-02 | NUT | M16 | - | - | DIN934-8 (DACROMET) | 8 | - | - | - | - |
| 2462-03 | WASHER FOR BOLT | A17 | - | - | DIN125-SE (DACROMET) | 32 | - | - | - | - |
| 2463-00 | SCREWS & NUTS FOR TEFLON CALE : | - | - | - | - | - | - | - | - | - |
| 2463-01 | SCREW | M8 | 40 | - | DIN7991-8.8 / 15.9 (DACROMET) | 8 | - | - | - | R2 |
| 2463-02 | NUT | M8 | - | - | DIN934-8 (DACROMET) | 8 | - | - | - | - |
| 2463-03 | WASHER FOR BOLT | A8.4 | - | - | DIN125-SE (DACROMET) | 8 | - | - | - | - |
| 2464-00 | BOLTS & NUTS FOR CROSS PIECE TO BUNDLE FRAME : | - | - | - | - | - | - | - | - | - |
| 2464-01 | BOLT | M16 | 80 | - | DIN933-8.8 (DACROMET) | 56 | - | - | - | - |
| 2464-02 | NUT | M16 | - | - | DIN934-8 (DACROMET) | 56 | - | - | - | - |
| 2464-03 | WASHER FOR BOLT | A17 | - | - | DIN125-SE (DACROMET) | 112 | - | - | - | - |
| 2465-00 | BOLTS & NUTS FOR AIR SEAL : | - | - | - | - | - | - | - | - | - |
| 2465-01 | BOLT | M12 | 40 | - | DIN933-8.8 (DACROMET) | 22 | - | - | - | - |
| 2465-02 | NUT | M12 | 40 | - | DIN934-8 (DACROMET) | 22 | - | - | - | - |
| 2465-03 | WASHER FOR BOLT | A13 | 40 | - | DIN125-SE (DACROMET) | 44 | - | - | - | - |
| 2466-00 | BOLTS & NUTS FOR FIXING BRACE TO BUNDLE FRAME : | - | - | - | - | - | - | - | - | - |
| 2466-01 | BOLT | M16 | 40 | - | DIN933-8.8 (DACROMET) | 24 | - | - | - | - |
| 2466-02 | NUT | M16 | 40 | - | DIN934-8 (DACROMET) | 24 | - | - | - | - |
| 2466-03 | WASHER FOR BOLT | A17 | 40 | - | DIN125-SE (DACROMET) | 48 | - | - | - | - |
| 2467-00 | BOLTS & NUTS FOR BUNDLE FRAMETO STRUCTURE : | - | - | - | - | - | - | - | - | - |
| 2467-01 | BOLT | M20 | 50 | - | DIN933-8.8 (DACROMET) | 12 | - | - | - | R2 |
| 2467-02 | NUT | M20 | 50 | - | DIN934-8 (DACROMET) | 12 | - | - | - | R2 |
| 2467-03 | WASHER FOR BOLT | A21 | 50 | - | DIN125-SE (DACROMET) | 24 | - | - | - | R2 |
| 2468-00 | BOLTS & NUTS FOR HEADER SUPPORT TO BUNDLE FRAME : | - | - | - | - | - | - | - | - | - |
| 2468-01 | BOLT | M20 | 50 | - | DIN933-8.8 (DACROMET) | 12 | - | - | - | - |
| 2468-02 | NUT | M20 | 50 | - | DIN934-8 (DACROMET) | 12 | - | - | - | - |
| 2468-03 | WASHER FOR BOLT | A21 | 50 | - | DIN125-SE (DACROMET) | 24 | - | - | - | - |
| 2469-00 | BOLTS & NUTS FOR BUNDLE TO STRUCTURE SEALING : | - | - | - | - | - | - | - | - | - |
| 2469-01 | BOLT | M12 | 40 | - | DIN933-8.8 (DACROMET) | 12 | - | - | - | R2 |
| 2469-02 | NUT | M12 | 40 | - | DIN934-8 (DACROMET) | 12 | - | - | - | R2 |
| 2469-03 | WASHER FOR BOLT | A13 | 40 | - | DIN125-ST (DACROMET) | 24 | - | - | - | R2 |
| 2480-02 | FIN TUBE SPACER FOR TUBE (TYPE 4) | 143 | 32.5 | - | ST-37(GALV.) | 18 | 0.467 | 8.406 | 9 | 2849 |
| 2480-03 | SLIDING PAD | 80 | 60 | 10 | TEFLON WITH 25% GLASS | 4 | 0.3768 | 1.507 | 2 | 2845 |
| 2480-05 | CORRUGATEDB STRIP(TYPE1) | 2477 | 45 | - | ALUMINUM | 9 | 1 | 9 | 5 | 2810 |
| 2481-02 | UPN 100 | 2477 | - | - | ST-37(GALV.) | 2 | 28 | 53 | - | - |



- NOTES :
- All dimensions are in millimeters unless otherwise specified.
 - All parts shall be hot dipped galvanized in accordance with ASTM-123
 - Red Color Bolts which are used for fixing headers to side frame , on sliding side shall be removed after erection.
 - Weld: Continuous weld.
Min. Height of fillet for thk.> 7mm to be welded = 0.8 thk.min
Min. Height of fillet for thk.< 7mm to be welded = 3.5mm.

TOLERANCES

THE FOLLOWING VALUES ARE APPLICABLE TO THE DIMENSIONS THAT ARE NOT PROVIDED WITH TOLERANCES ON DRAWINGS

| NOMINAL DIMENSIONS PER MILLIMETER STEPS | 800 | 801 | 5001 |
|---|-----|-----|------|
| TOLERANCES ± | 1 | 2 | 3 |

TOLERANCE ON CENTER DISTANCES ± 0.5
THE TOLERANCES SHOWN HERE ARE NOT CUMULATIVE

REFERENCE DOCUMENTS

| TITLE | VENDOR DOCUMENT NO. | CLIENT DOCUMENT NO. |
|---|---------------------|-------------------------|
| GENERAL ARRANGEMENT | 1158-A01-1000-00 | E1027-DMF-VD-ME-DWG-003 |
| TUBE BUNDLE DRAWING | 1158-A01-2000-00 | E1027-DMF-VD-ME-DWG-005 |
| Steel Structure Drawing | 1158-A01-1100-00 | E1027-DMF-VD-ST-DWG-013 |
| WELDING PROCEDURE SPECIFICATION (W.P.S.) | 1158-A01-0060-00 | E1027-DMF-VD-QC-WPS-021 |
| NON DESTRUCTIVE TEST CHECK LIST (N.D.T.) | 1158-A01-0070-00 | E1027-DMF-VD-QC-PRO-022 |
| Surface Blasting & Painting & Galvanizing Specification & InspectionProcedure | 1158-A01-0070-00 | E1027-DMF-VD-QC-PRO-024 |

| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
|-----|------------|---------------------|----------|------------|-------------|-------------------|
| R2 | 01/04/2025 | ISSUED FOR APPROVAL | SH.S | S.S | J.B.L | A.GHZ |
| R1 | 10/07/2024 | ISSUED FOR APPROVAL | SH.S | S.S | J.B.L | A.GHZ |
| R0 | 08/11/2024 | ISSUED FOR APPROVAL | SH.S | S.S | J.B.L | A.GHZ |

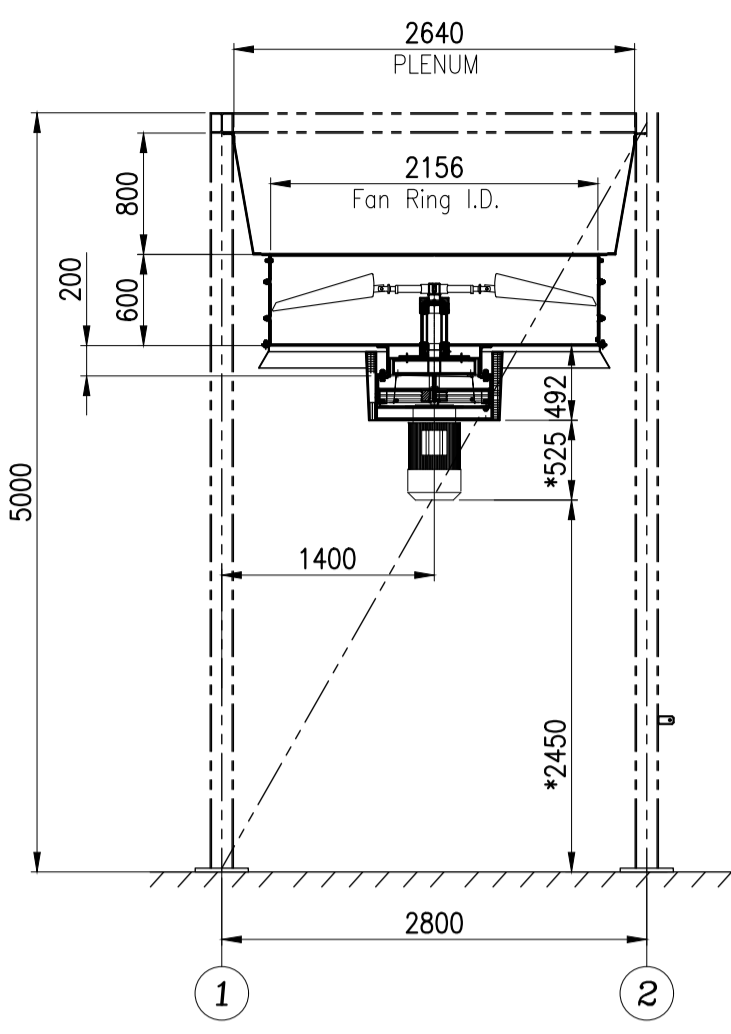
CLIENT: _____ CONTRACTOR: _____

PROJECT :
AIR COOLER FOR
Toase-eh Park Sanati Gohar Ofogh Petrochemical Co.

BUNDLE FRAME DRAWING
1158-A01-2400-00

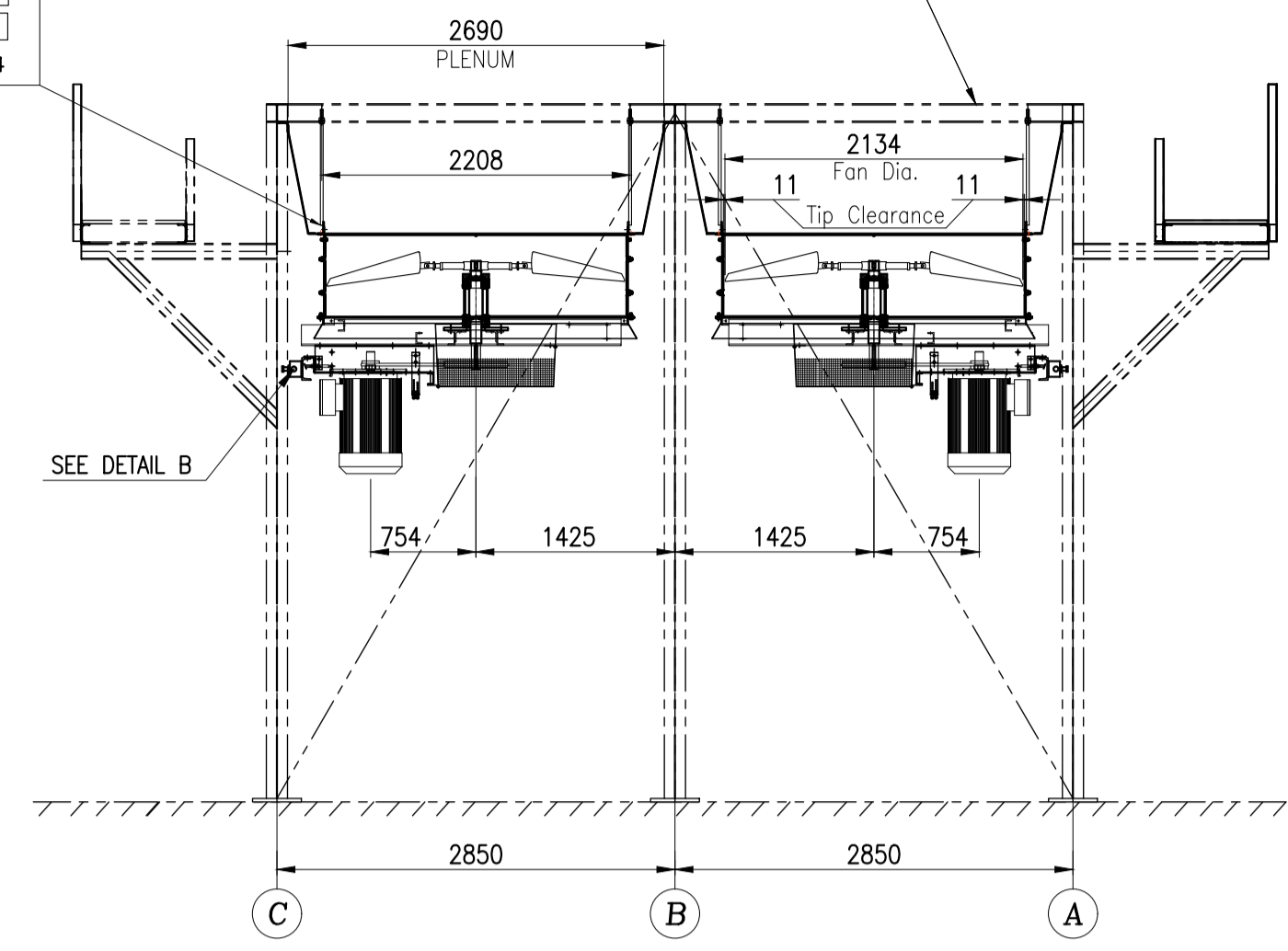
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SCALE: N.T.S. SIZE: A1 REV.: R2

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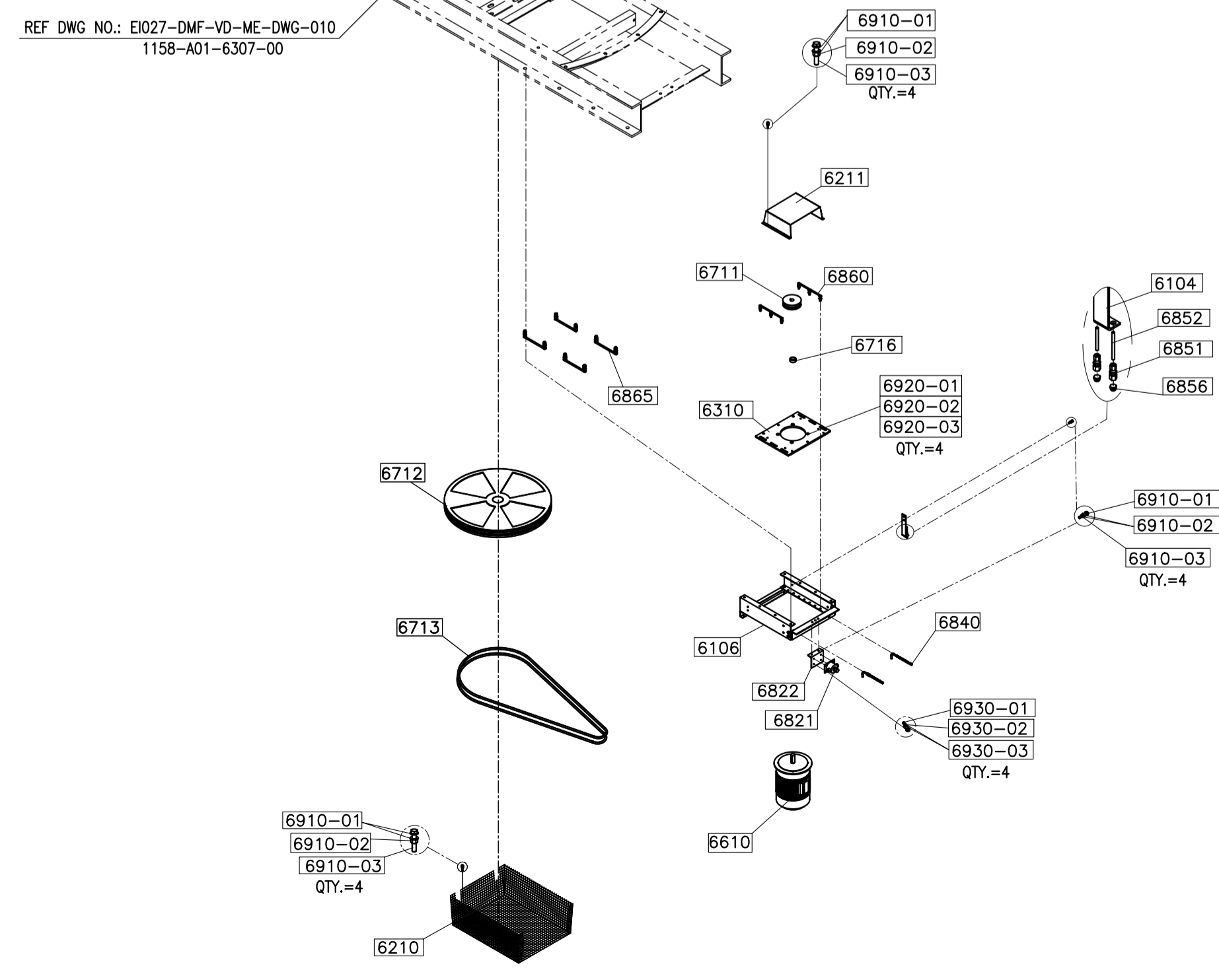
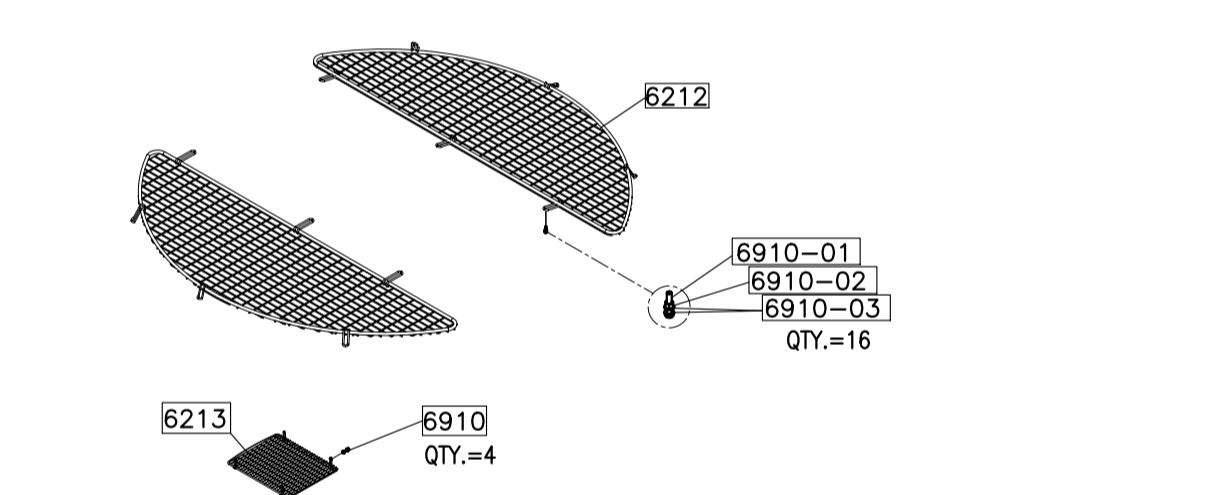
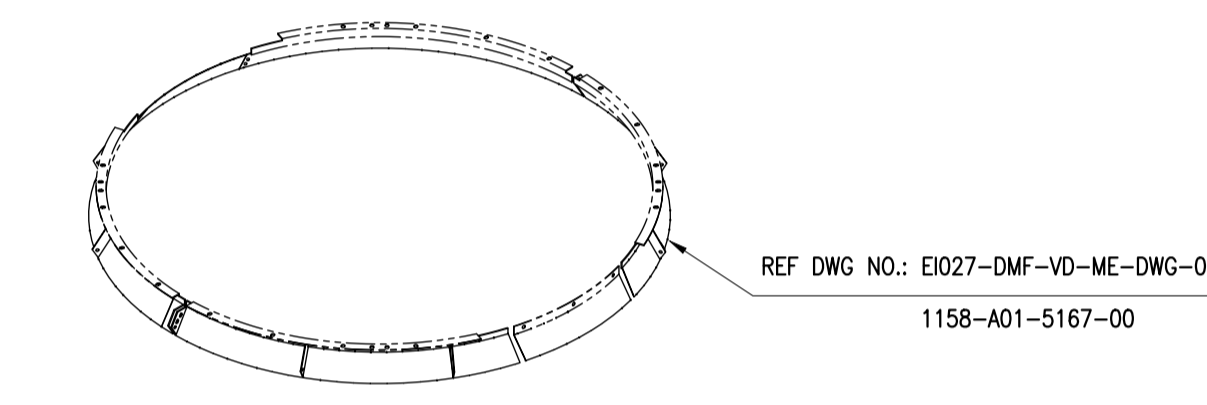
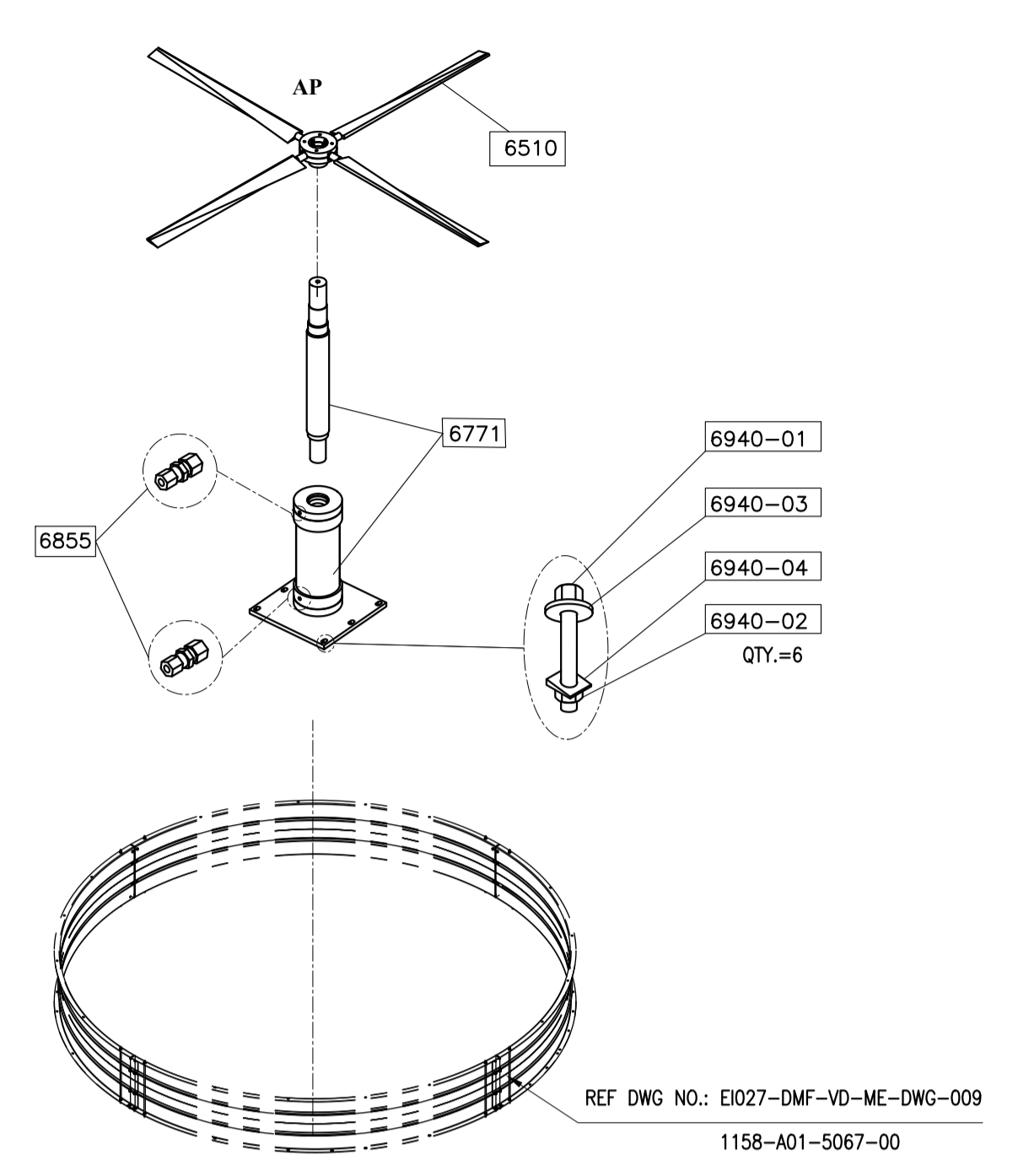
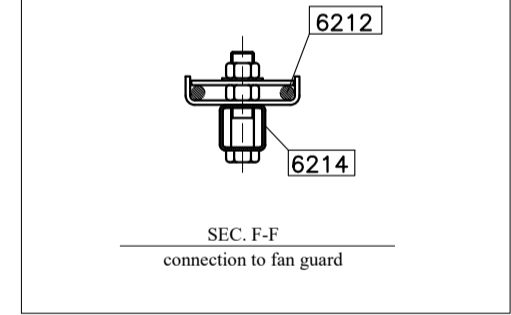
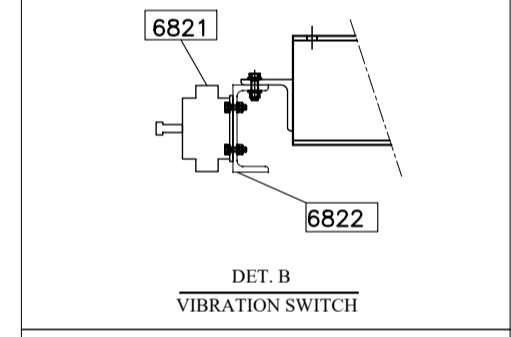
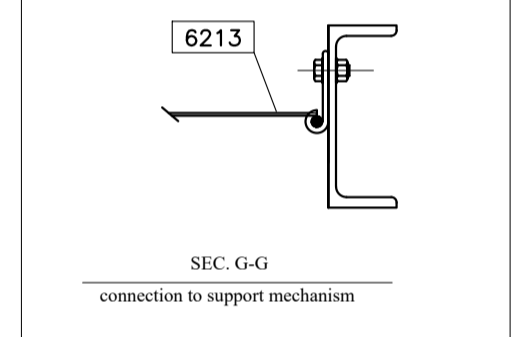
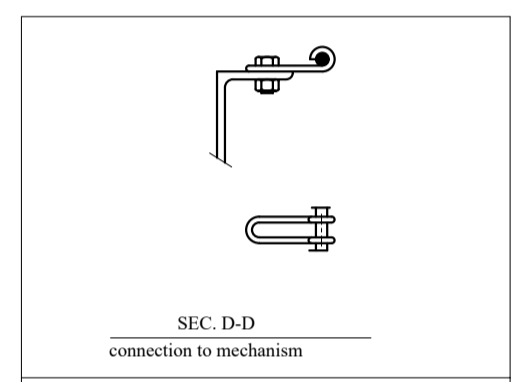
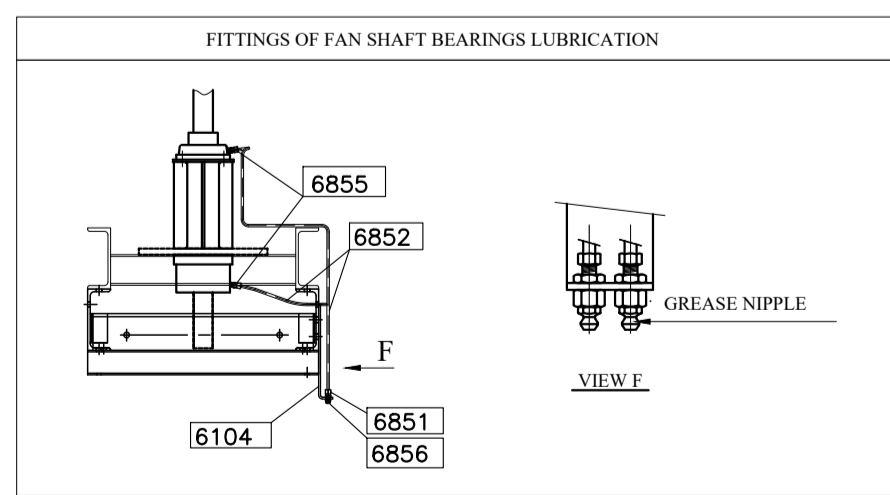
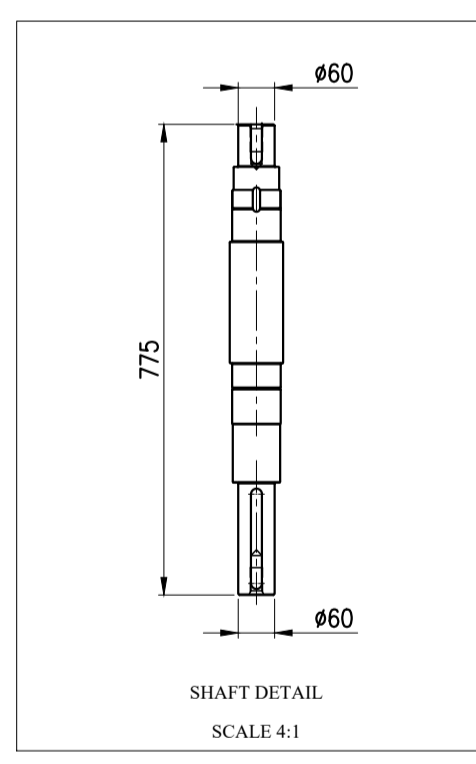
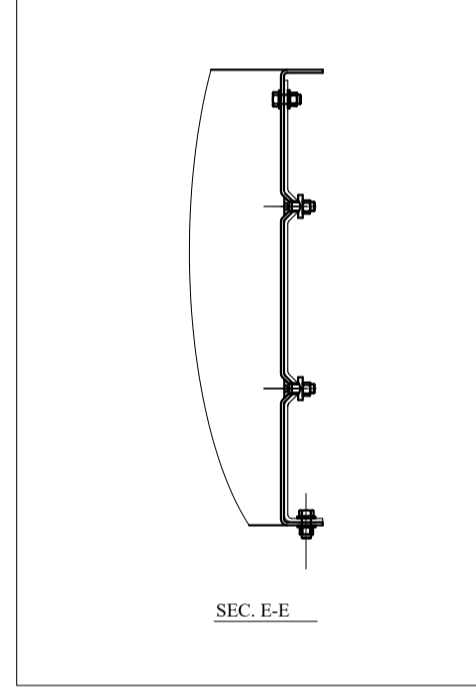
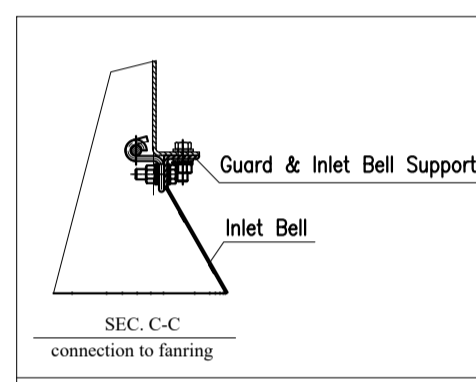
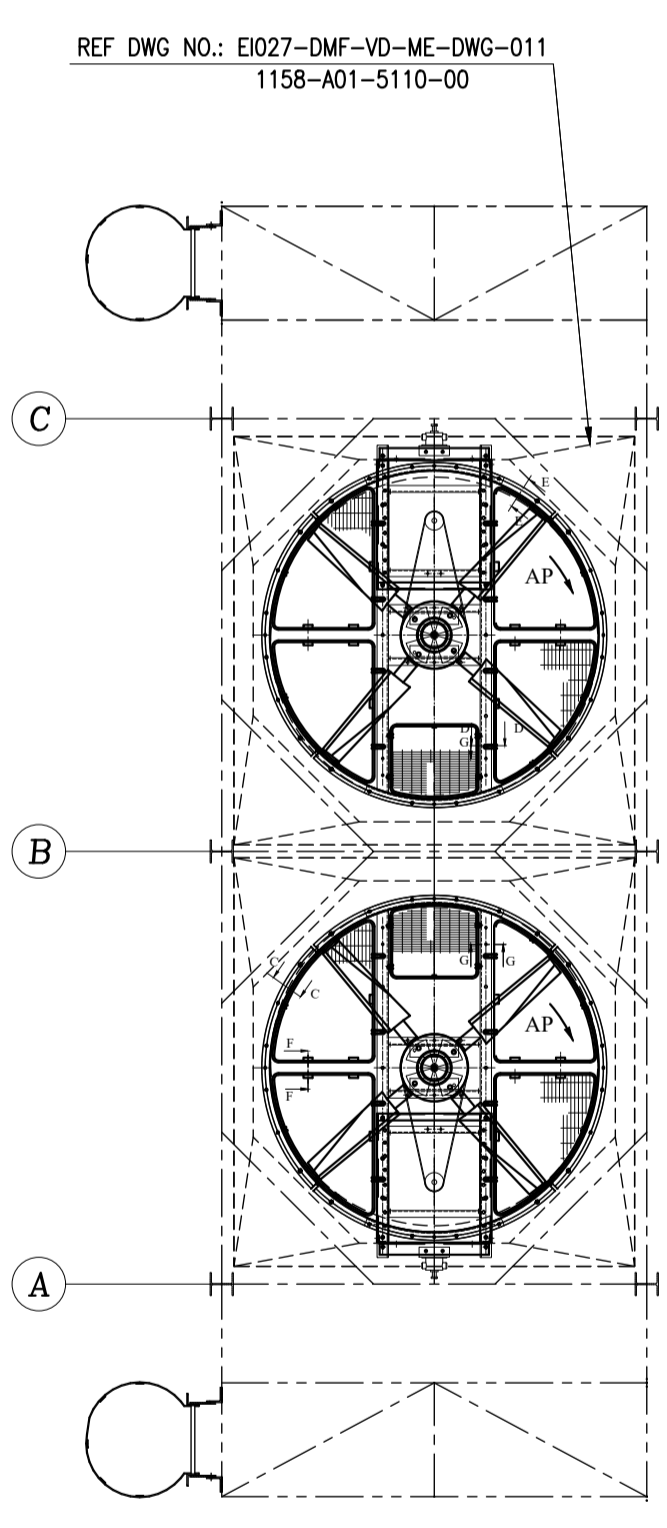


FRONT VIEW
CL. A-C

* THIS DIMENSION WILL BE FINALIZED AFTER APPROVED OF MOTOR DATA SHEET



SIDE VIEW



NOTE :
 1- ALL DIMENSION ARE IN MILLIMETERS.
 2- HOT DIP GALVANIZING SHALL BE DONE AS PER ASTM-123/ISO 1461.
 3- BOLTS, NUTS, WASHERS, THREADS, PARTS INCLUDES THREADS SHALL BE PROJECT SPECIFICATION DOC. NO. E1027-DMF-VD-QC-PRO-024
 4- DETAILS OF THE PARTS NO. 6822-00 & 6310-00 & 6716-00 WILL BE ADDED AFTER THE MANUFACTURER HAS FINALIZED.

* FOR MORE DETAILS FOR EACH COMPONENT OF AIR COOLER REFER TO BELOW DRAWING & DOCUMENTS.

| REFERENCED DWG&DOC. | | |
|--|---------------------|-------------------------|
| TITLE | VENDOR DOCUMENT NO. | CLIENT DOCUMENT NO. |
| General Arrangement Drawing | 1158-A01-1000-00 | E1027-DMF-VD-ME-DSH-016 |
| Plenum Drawing | 1158-A01-5110-00 | E1027-DMF-VD-ME-DWG-011 |
| Fan Ring Drawing | 1158-A01-5067-00 | E1027-DMF-VD-ME-DWG-009 |
| Support Mechanism Drawing | 1158-A01-6307-00 | E1027-DMF-VD-ME-DWG-010 |
| Steel Structure Drawing | 1158-A01-1100-00 | E1027-DMF-VD-ST-DWG-013 |
| Surface Preparation and Painting Procedure | 1158-A01-QS01-00 | E1027-DMF-VD-QC-PRO-024 |

| REFERENCE DSH | | |
|-----------------------------|---------------------|-------------------------|
| TITLE | VENDOR DOCUMENT NO. | CLIENT DOCUMENT NO. |
| Axial Fan Data Sheet | 1158-A01-6510-00 | E1027-DMF-VD-ME-DSH-016 |
| Electrical Motor Data Sheet | 1158-A01-6610-00 | E1027-DMF-VD-EL-DSH-017 |
| Belt & Pulley Data Sheet | 1158-A01-6710-00 | E1027-DMF-VD-ME-DSH-018 |
| Vibration Switch Data Sheet | 1158-A01-6800-00 | E1027-DMF-VD-IN-DSH-019 |

| PART NO. | DESCRIPTION | DIMENTION | MATERIAL | QTY. | UNIT WEIGHT (Kg) | TOTAL WEIGHT (Kg) | REV. |
|---|---|--------------|-----------------------------|------|------------------|-------------------|------|
| 6000-00 | FAN DRIVE ASSEMBLY FOR TWO UNITS | - | - | 4 | - | 906 | |
| 6000-00 | FAN DRIVE ASSEMBLY FOR ONE UNITS | - | - | 2 | - | 453 | |
| EACH FAN DRIVE WITH AP FAN FOR ONE SET INCLUDES : | | | | 1AP | 226.5 | 226.5 | |
| 6103-00 | TIE BEAM | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 2 | 2.5 | 5 | |
| 6104-00 | LUBRICATION PIPING SUPPORT | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 1 | 1 | |
| 6106-00 | MOTOR SUPPORTING STRUCTURE | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 61 | 61 | |
| 6210-00 | DRIVEN PULLEY GUARD | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 10 | 10 | |
| 6211-00 | DRIVER PULLEY GUARD | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 8 | 8 | |
| 6212-00 | FAN GUARD, 7(Ft) | | | 20 | - | - | |
| 6212-001 | TRIANGULAR MESH | | | 1 | 5 | 5 | |
| 6212-002 | TRIANGULAR MESH | | | 1 | 5 | 5 | |
| 6212-003 | TRIANGULAR MESH | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 5 | 5 | |
| 6212-004 | TRIANGULAR MESH | | | 1 | 5 | 5 | |
| 6213-00 | DRIVE SUPPORTING STRUCTURE GUARD, 7(Ft) | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 3 | 3 | |
| 6214-00 | FAN GUARD SUPPORT | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 2 | 3 | 5 | |
| 6310-00 | MOTOR PLATE | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | - | - | |
| 6510-00 | FAN UNIT DIA (7 Ft) BLADE NO=4 | REF. DSH. | Manufacturer standard | 1 | - | - | |
| 6610-00 | MOTOR (7.5 KW -ELECTRIC-Exd, JB-T4-IP55) | REF. DSH. | Manufacturer standard | 1 | - | - | R4 |
| 6711-00 | DRIVER PULLEY PT106SPA2/PB1106SPA2 | REF. DSH. | G20/ ASTM A48-94a | 1 | - | - | |
| 6712-00 | DRIVEN PULLEY PT400SPA2/PB1400SPA2 | REF. DSH. | G20/ ASTM A48-94a | 1 | - | - | |
| 6713-00 | BELT CAPXPA2332 CD-754.3 | REF. DSH. | Manufacturer standard | 2 | - | - | |
| 6716-00 | SPACER BETWEEN MOTOR&PULLEY | REF. SHEET 2 | ST-37(Galv.) | 1 | 0.3 | 0.3 | |
| 6771-00 | SHAFT & BEARING BLOCK | REF. DSH. | Manufacturer standard | 1 | 103 | 103 | |
| 6821-00 | VIBRATION SWITCH(SAM) | REF. DSH. | Manufacturer standard | 1 | - | - | R4 |
| 6822-00 | VIBRATION SWITCH SUPPORT (L. 100*10) | REF. SHEET 2 | ST-37(Hot Dip Galv.) | 1 | 2 | 2 | R4 |
| 6840-00 | TENSIONING BOLT | M16 | C.S CL. 8.8(GALV J/A36) | 2 | 1 | 2 | |
| 6851-00 | UNION FEMALE CONECTOR(1/8" NPT-8mm(TUBE)) | REF. SHEET 2 | S.S/304L | 2 | 0.1 | 0.2 | |
| 6852-00 | TUBE (OD=8 mm, ID=6) | 4000 | S.S/304L | 1 | - | - | |
| 6855-00 | UNION MALE CONECTOR(1/4" NPT-8mm(TUBE)) | REF. DSH. | S.S/304L | 2 | - | - | |
| 6856-00 | GREASE NIPPLE (1/8" NPT) | REF. DSH. | S.S/304L | 2 | - | - | |
| 6860-00 | CLAMP | REF. SHEET 2 | C.S(GALV J/A36) | 2 | 1 | 2 | |
| 6865-00 | CLAMP | REF. SHEET 2 | C.S(GALV J/A36) | 4 | 1 | 4 | |
| BOLT & NUT & WASHER FOR ASSEMBLY PARTS AP FAN: | | | | 1SET | 4SET | | |
| 6103-03 | NUT FOR TIE BEAM | M16 | DN 934 CL. 8 (Dacromet.) | 4 | 16 | | |
| 6103-04 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 4 | 16 | | |
| 6106-05 | BOLT FOR FAN GUARD SUPPORT | M16x40 | DN 933 CL. 8.8 (Dacromet.) | 6 | 24 | | |
| 6106-06 | NUT | M16 | DN 934 CL. 8 (Dacromet.) | 12 | 48 | | |
| 6106-07 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 6 | 24 | | |
| 6840-02 | NUT FOR TENSIONING BOLT | M16 | DN 934 CL. 8 (Dacromet.) | 4 | 16 | | |
| 6840-03 | WASHER | A17 | DN434-18-ST(8%) (Dacromet.) | 2 | 8 | | |
| 6840-04 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 2 | 8 | | |
| 6860-02 | BOLT FOR CLAMP | M16x55 | DN 933 CL. 8.8 (Dacromet.) | 6 | 24 | | |
| 6860-03 | NUT | M16 | DN 934 CL. 8 (Dacromet.) | 6 | 24 | | |
| 6860-04 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 12 | 48 | | |
| 6865-02 | BOLT FOR CLAMP | M16x55 | DN 933 CL. 8.8 (Dacromet.) | 8 | 32 | | |
| 6865-03 | NUT | M16 | DN 934 CL. 8 (Dacromet.) | 16 | 64 | | |
| 6865-04 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 16 | 64 | | |
| BOLT & NUT & WASHER FOR ASSEMBLY PART (FAN DRIVE TO PROJECT LACATION) | | | | 1SET | 4SET | | |
| 6910-01 | BOLT | M12x40 | DN 933 CL. 8.8 (Dacromet.) | 36 | 144 | | |
| 6910-02 | NUT | M12 | DN 934 CL. 8 (Dacromet.) | 36 | 144 | | |
| 6910-03 | WASHER | A13 | DN 125 A17 S1 (Dacromet.) | 72 | 288 | | |
| 6920-01 | BOLT FOR MOTOR TO MOTOR PLATE | M16*70 | DN 933 CL. 8.8 (Dacromet.) | 4 | 16 | | |
| 6920-02 | NUT | M16 | DN 934 CL. 8 (Dacromet.) | 4 | 16 | | |
| 6920-03 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 4 | 16 | | |
| 6930-01 | BOLT FOR VIBRATION SWITCH SUPPORT | M8*30 | DN 933 CL. 8.8 (Dacromet.) | 4 | 16 | | |
| 6930-02 | NUT | M8 | DN 934 CL. 8 (Dacromet.) | 4 | 16 | | |
| 6930-03 | WASHER | A9 | DN 125 A17 S1 (Dacromet.) | 8 | 32 | | |
| 6940-01 | BOLT FOR BEARING BLOCK TO SUPPORT MECHANISM | M16x65 | DN 933 CL. 8.8 (Dacromet.) | 6 | 24 | | |
| 6940-02 | NUT | M16 | DN 934 CL. 8 (Dacromet.) | 6 | 24 | | |
| 6940-03 | WASHER | A17 | DN 125 A17 S1 (Dacromet.) | 6 | 24 | | |
| 6940-04 | WASHER | A17 | DN434-18-ST(8%) (Dacromet.) | 6 | 24 | | |

| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
|-----|------------|---------------------|----------|------------|-------------|-------------------|
| R4 | 10/13/2024 | ISSUED FOR APPROVAL | F.SZ | F.A | J.B.L | A.GHZ |
| R3 | 09/07/2024 | ISSUED FOR APPROVAL | F.SZ | F.A | J.B.L | A.GHZ |
| R2 | 08/31/2024 | ISSUED FOR APPROVAL | F.SZ | F.A | J.B.L | A.GHZ |
| R1 | 08/20/2024 | ISSUED FOR APPROVAL | F.SZ | F.A | J.B.L | A.GHZ |
| R0 | 08/07/2024 | ISSUED FOR APPROVAL | F.SZ | F.A | J.B.L | A.GHZ |

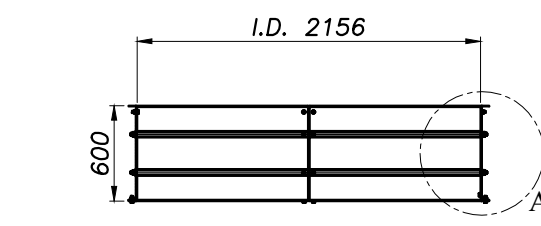
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CONTRACTOR:

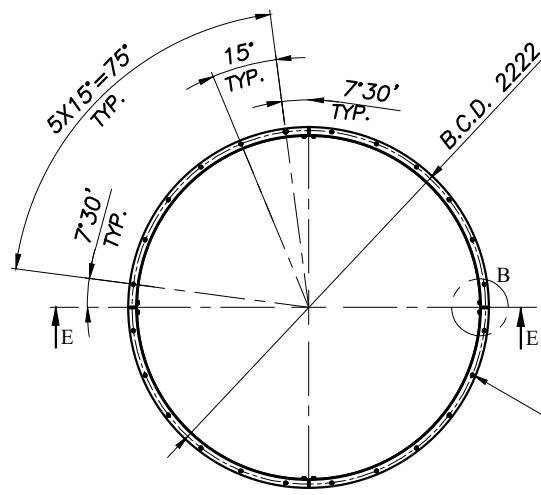
PROJECT :
AIR COOLER FOR
Toase-che Park Sanati Gohar Ofogh Petrochemical Co.
Fan Drive Assembly Drawing
1158-A01-6000-00
(SHEET 1 OF 2)

DWG. NO. E1027-DMF-VD-ME-DWG-008
 SCALE: N.T.S. SIZE: A1 REV.: R4

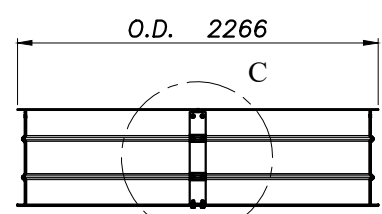
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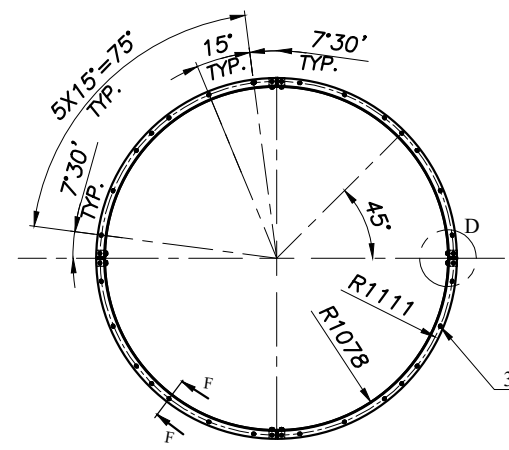
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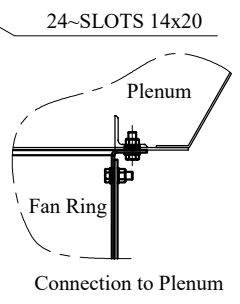
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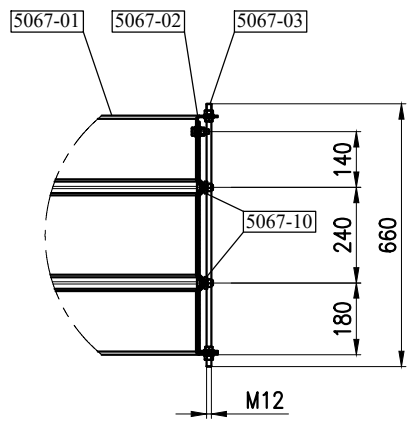
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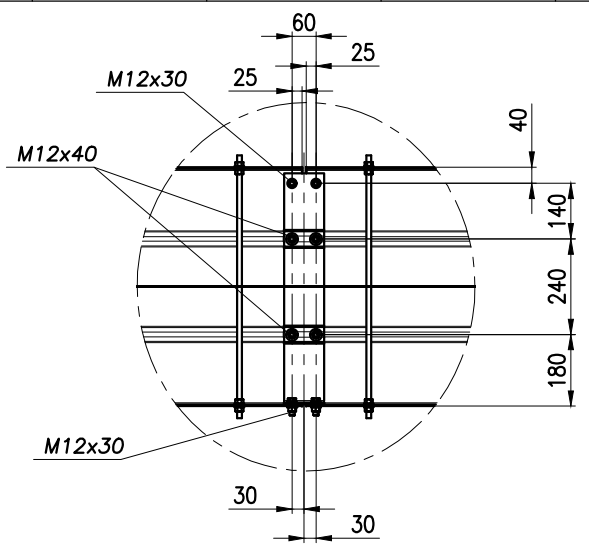
BOTTOM VIEW



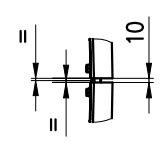
Connection to Plenum



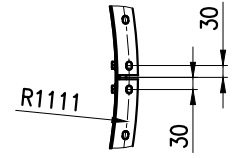
DET. A
SCALE 2.5 : 1



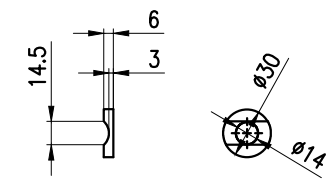
DET. C
SCALE 2.5 : 1



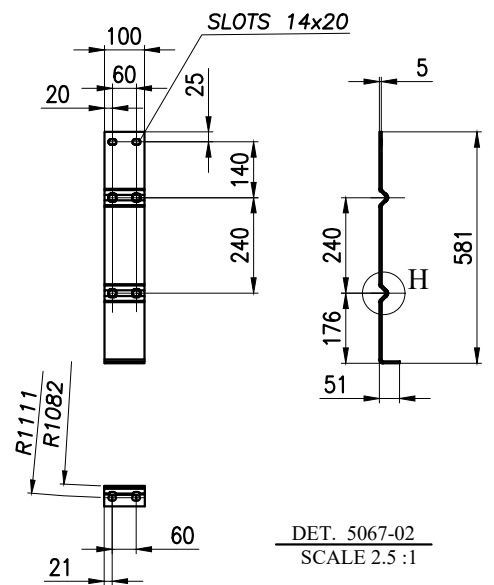
DET. B
SCALE 2.5 : 1



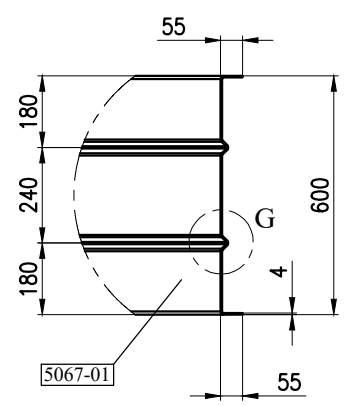
DET. D
SCALE 2.5 : 1



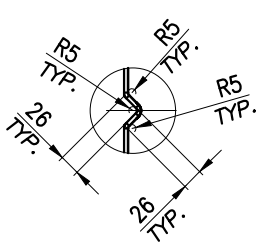
DET. 5067-10
SCALE 10 : 1



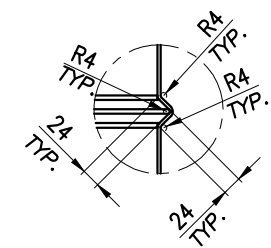
DET. 5067-02
SCALE 2.5 : 1



SEC. F-F
SCALE 2.5 : 1

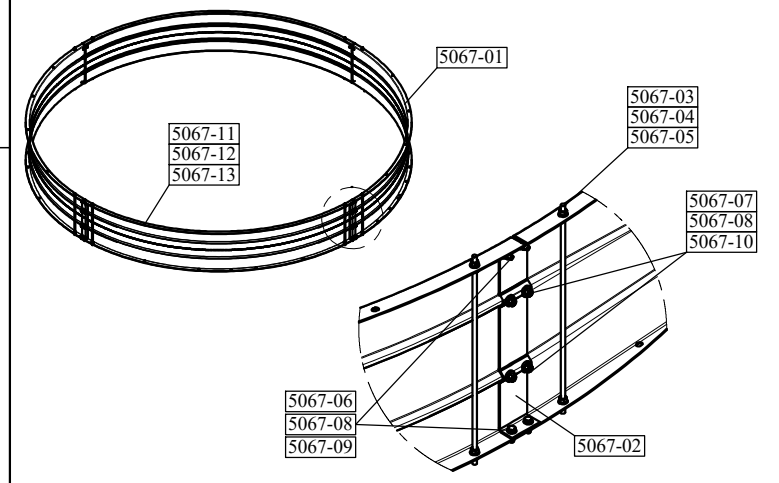


DET. H
SCALE 5 : 1



DET. G
SCALE 5 : 1

| PART LIST | | | | | | | | | | |
|-----------|--|-----|--------|-------|------|------------------------|------|-------------|--------------|------|
| PART NO. | DESCRIPTION | DA | LENGTH | WIDTH | THK. | MATERIAL | QTY. | Unit Weight | Total Weight | REV. |
| 5067-00 | FAN RING INCLUDING: | - | - | - | - | - | 4 | 168 | 670 | |
| 5067-01 | SHEET 1/4 RING | - | 1690 | 714 | 4 | St-37(Hot Dip Galv.) | 4 | 38 | 152 | R2 |
| 5067-02 | FIXING PLATE (BRACKET) | - | 648 | 100 | 5 | St-37(Hot Dip Galv.) | 4 | 2 | 8 | R2 |
| 5067-03 | BOLT FOR TIE ROD | M12 | 680 | - | - | DIN-976-1(Dacromet) | 8 | 1 | 8 | |
| 5067-04 | NUT FOR TIE ROD | M12 | - | - | - | DIN-934-CL.8(Dacromet) | 32 | | | |
| 5067-05 | WASHER FOR TIE ROD | A13 | - | - | - | DIN-125A-ST(Dacromet) | 32 | | | |
| 5067-06 | BOLT FOR FIXING PLATE | M12 | 30 | - | - | DIN-933-CL.8(Dacromet) | 18 | | | |
| 5067-07 | BOLT FOR FIXING PLATE | M12 | 40 | - | - | DIN-7991(Dacromet) | 18 | | | |
| 5067-08 | NUT FOR FIXING PLATE | M12 | - | - | - | DIN-934-CL.8(Dacromet) | 32 | | | |
| 5067-09 | WASHER FIXING PLATE | A13 | - | - | - | DIN-125A-ST(Dacromet) | 32 | | | |
| 5067-10 | WASHER FIXING PLATE | 30 | - | - | 6 | St-37(Hot Dip Galv.) | 18 | | | R2 |
| 5067-11 | BOLT FOR CONNECTION FAN RING TO PLENUM | M12 | 40 | - | - | DIN-933-CL.8(Dacromet) | 24 | | | |
| 5067-12 | NUT | M12 | - | - | - | DIN-934-CL.8(Dacromet) | 24 | | | |
| 5067-13 | WASHER | A13 | - | - | - | DIN-125A-ST(Dacromet) | 48 | | | |



* FOR MORE DETAILS FOR EACH COMPONENT OF AIR COOLER REFER TO BELOW DRAWING & DOCUMENTS.

REFERENCED DWG&DOC.

| TITLE | VENDOR DOCUMENT NO. | CLIENT DOCUMENT NO. |
|---|---------------------|-------------------------|
| General Arrangement Drawing | 1158-A01-1000-00 | EI027-DMF-VD-ME-DWG-003 |
| Fan Drive Assembly Drawing | 1158-A01-6000-00 | EI027-DMF-VD-ME-DWG-008 |
| Plenum Drawing | 1158-A01-5110-00 | EI027-DMF-VD-ME-DWG-011 |
| Support Mechanism Drawing | 1158-A01-6307-00 | EI027-DMF-VD-ME-DWG-010 |
| Axial Fan Data Sheet | 1158-A01-6510-00 | EI027-DMF-VD-ME-DSH-016 |
| Surface Preparation and Painting Procedure for Air Cooler | 1158-000-QS01-00 | EI027-DMF-VD-QC-PRO-024 |

- NOTES:
- ALL DIMENSION ARE IN MILLIMETERS.
 - BOLTS, NUTS, WASHERS, THREADS, PARTS INCLUDES THREADS SHALL BE AS PER PROJECT SPECIFICATION DOC. NO. EI027-DMF-VD-QC-PRO-024
 - ALL PARTS HOT DIP GALVANIZING SHALL BE DONE AS PER ASTM-123/ISO 1461.
 - THIS DRAWING IS COMPATIBLE WITH FAN DATA SHEET DOCUMENT NUMBER EI027-DMF-VD-DSH-016 AND IT SHALL BE READ IN CONJUNCTION WITH RELEVANT DATA SHEET.

| GENERAL DATA | |
|---------------|------------------|
| FAN DIA. | 2134 |
| FAN RING TYPE | CONICAL L/D=0.05 |
| TIP CLEARANCE | 11 mm |

| TOLERANCES | |
|--|-------------------------|
| THE FOLLOWING VALUES ARE APPLICABLE TO THE DIMENSIONS THAT ARE NOT PROVIDED WITH TOLERANCES ON DRAWING | |
| MINIMAL DIMENSIONS FOR MILLIMETER SIZES | 0 0.01 0.001 0.005 0.01 |
| TOLERANCES | 1 2 3 |
| TOLERANCE ON CENTER DISTANCES | ± 0.05 |
| THE TOLERANCES SHOWN HERE ARE NOT CUMULATIVE | |

| REV. | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
|------|------------|---------------------|----------|------------|-------------|-------------------|
| R2 | 08/31/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |
| R1 | 08/20/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |
| R0 | 08/10/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |

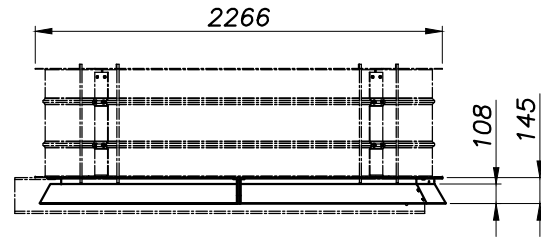
CLIENT:

CONTRACTOR:

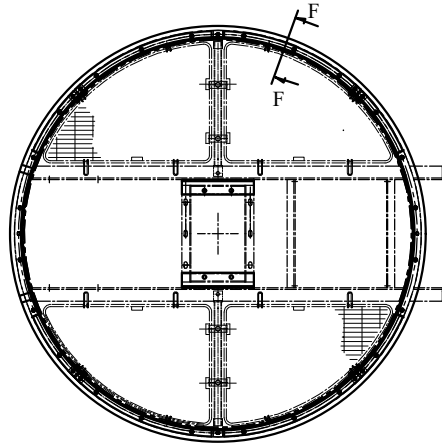
PROJECT: AIR COOLER FOR Toase-eh Park Sanati Gohar Ofogh Petrochemical Co.
 Fan Ring & Conical Drawing
 1158-A01-5067-00
 (Sheet 1 of 2)

DWG. NO. EI027-DMF-VD-ME-DWG-009
 SCALE: N.T.S. SIZE: A3 REV.: R2

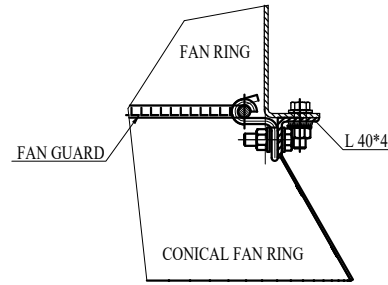
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FRONT VIEW

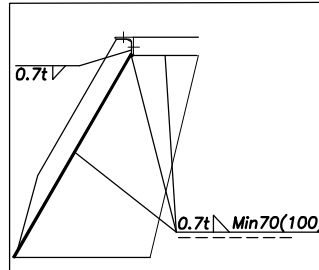


TOP VIEW



SEC. F-F

Connection Fan Guard to Conical Fan Ring(L40*4)



A

B

C

D

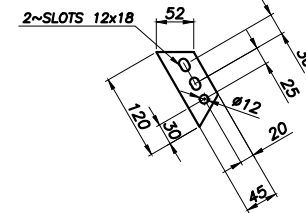
E

F

G

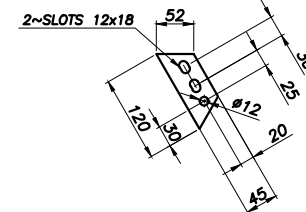
H

5167-09 THK.=10mm



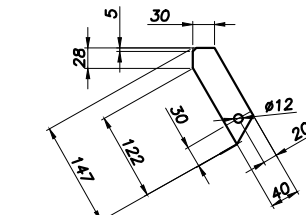
SC. 4:1

5167-08 THK.=5mm



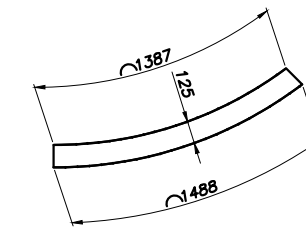
SC. 4:1

5167-07 THK.=3mm



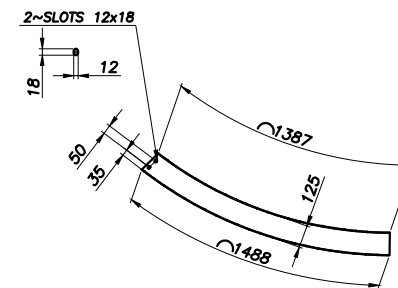
SC. 4:1

5167-03 THK.=2mm

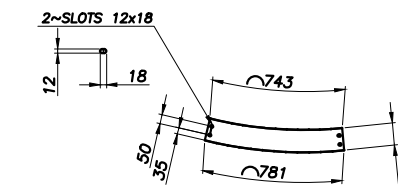


FLAT PATTERN

5167-04 THK.=2mm



5167-05 THK.=2mm



5167-10
5167-11
5167-12

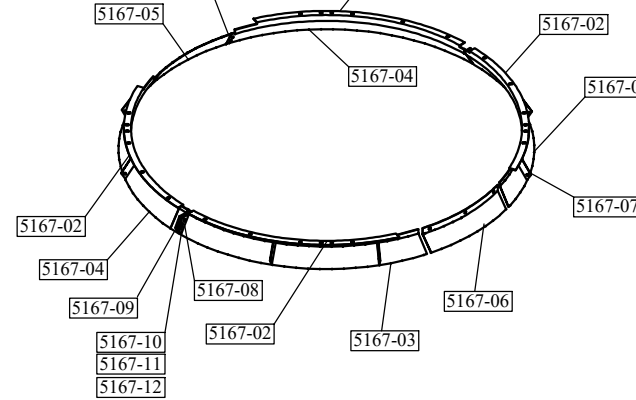
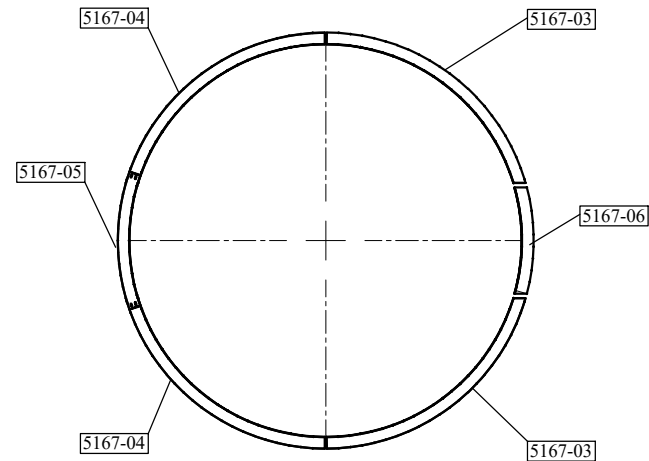
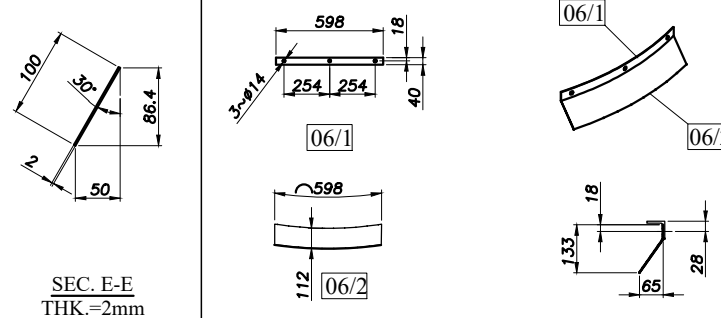


PLATE THK.=2mm



5167-06 THK.=2mm



SEC. E-E
THK.=2mm

| PART LIST | | | | | | | | | | |
|--------------------------------|--|-----|--------|-------|------|---------------------|-----|-------------|--------------|------|
| PART NO. | DESCRIPTION | DA | LENGTH | WIDTH | THK. | MATERIAL | QTY | Unit Weight | Total Weight | REV. |
| 5167-01 | CONICAL FAN RING FOR ONE SET INCLUDING | - | - | - | - | - | 4 | 29 | 115 | |
| 5167-02 | L40*4 | - | 1300 | - | - | SL-370x4(Dp.Galv) | 2 | 3 | 6.7 | R3 |
| 5167-03 | PLATE | - | - | - | 2 | SL-370x4(Dp.Galv) | 2 | 2.8 | 5.6 | R3 |
| 5167-04 | PLATE | - | - | - | 2 | SL-370x4(Dp.Galv) | 2 | 2.7 | 4.0 | R3 |
| 5167-05 | PLATE | - | - | - | 2 | SL-370x4(Dp.Galv) | 1 | 1.5 | 1.5 | R3 |
| 5167-000 PLATE ASSEMBLY | | | | | | | | | | |
| 5167-001 | PLATE | - | - | - | 2 | SL-370x4(Dp.Galv) | 1 | 0.39 | 0.4 | R3 |
| 5167-002 | PLATE | - | - | - | 2 | SL-370x4(Dp.Galv) | 1 | 1 | 1.0 | R3 |
| 5167-07 | PLATE | - | 147 | 40 | 3 | SL-370x4(Dp.Galv) | 6 | 6.1 | 1.1 | R3 |
| 5167-08 | PLATE | - | 120 | 45 | 5 | SL-370x4(Dp.Galv) | 4 | 6.2 | 9.8 | R3 |
| 5167-09 | PLATE | - | 120 | 45 | 10 | DIN125A-ST04crNiMo | 2 | 6.4 | 9.8 | |
| 5167-10 | BOLT | M10 | 30 | - | - | DIN934-CL8.8Dacromb | 6 | | | |
| 5167-11 | NUT | M10 | - | - | - | DIN934-CL8.8Dacromb | 6 | | | |
| 5167-12 | WASHER | A11 | - | - | - | DIN125A-ST04crNiMo | 18 | | | |
| 5167-13 | BOLT FOR CONNECTING TO SUPPORT MECHANISM | M12 | 30 | - | - | DIN934-CL8.8Dacromb | 3 | | | |
| 5167-14 | NUT | M12 | - | - | - | DIN934-CL8.8Dacromb | 3 | | | |
| 5167-15 | WASHER | A13 | - | - | - | DIN125A-ST04crNiMo | 6 | | | |
| 5167-16 | BOLT FOR CONNECTING TO FAN RING | M12 | 40 | - | - | DIN934-CL8.8Dacromb | 24 | | | |
| 5167-17 | NUT | M12 | - | - | - | DIN934-CL8.8Dacromb | 24 | | | |
| 5167-18 | WASHER | A13 | - | - | - | DIN125A-ST04crNiMo | 48 | | | |

A

B

C

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| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
|-----|------------|---------------------|----------|------------|-------------|-------------------|
| R2 | 08/31/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |
| R1 | 08/20/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |
| R0 | 08/10/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |

CLIENT:

CONTRACTOR:

PROJECT: AIR COOLER FOR
Toase-eh Park Sanati Gohar Ofogh Petrochemical Co.
Fan Ring & Conical Drawing
1158-A01-5167-00
(Sheet 2 of 2)

DWG. NO. E1027-DMF-VD-ME-DWG-009
SCALE: N.T.S. SIZE: A3 REV.: R2
THIS DOCUMENT OF A CONFIDENTIAL NATURE IS THE PROPERTY OF DAMAFIN AND SHALL NOT BE REPRODUCED IN ANY MANNER, NOR USED FOR ANY PURPOSE WHATSOEVER, EXCEPT BY WRITTEN PERMISSION OF DAMAFIN.

THE UPPER FACE OF THESE BRACKET PARTS SHOULD BE FINISHED TO BE A PLANE PARALLEL TO THE UPPER FACE OF THE PIPES BEARING ON THE FRONT PART. (SEE DET. C)
(MAX. DEVIATION ± 1 mm)

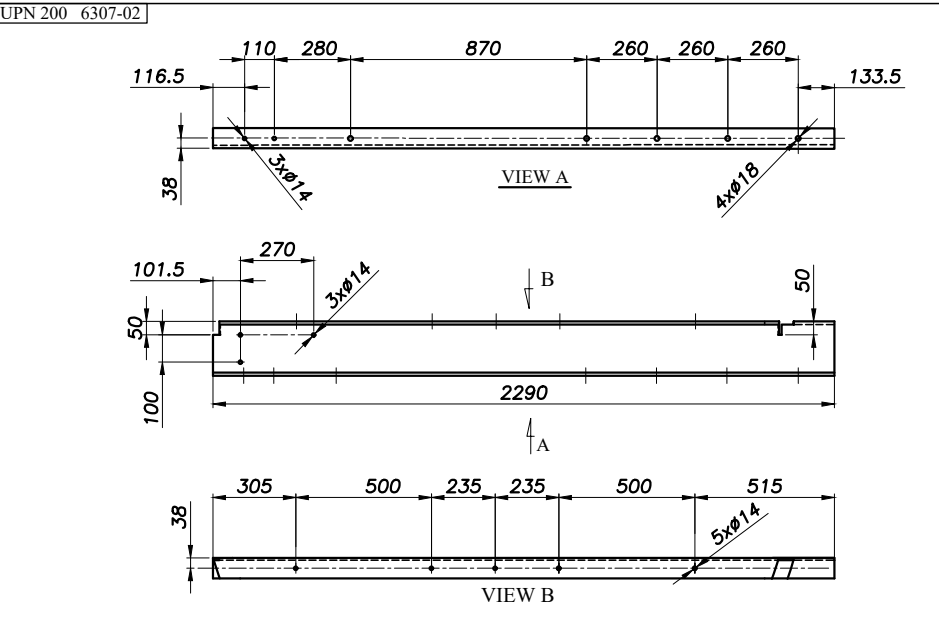
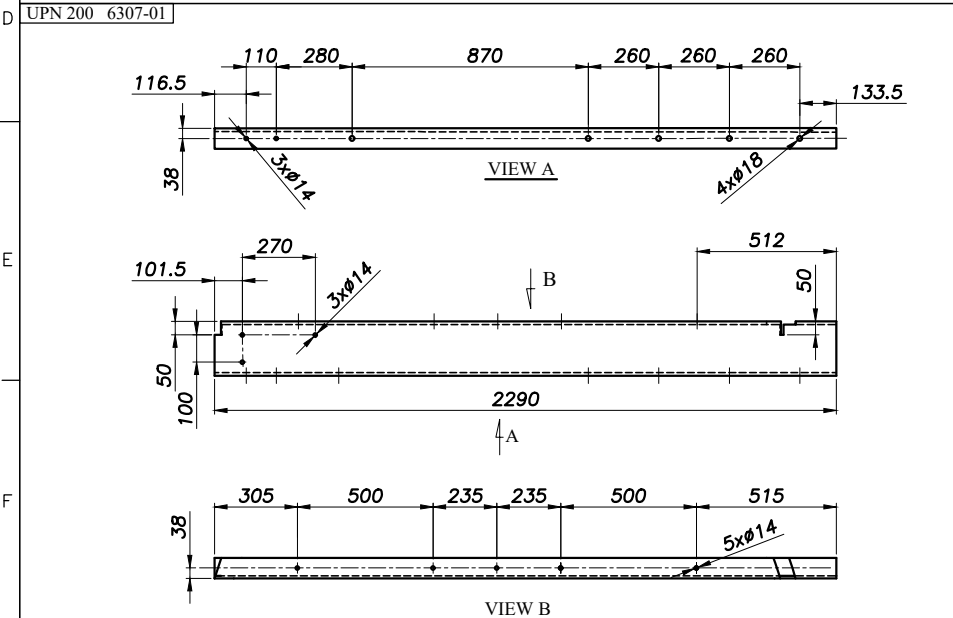
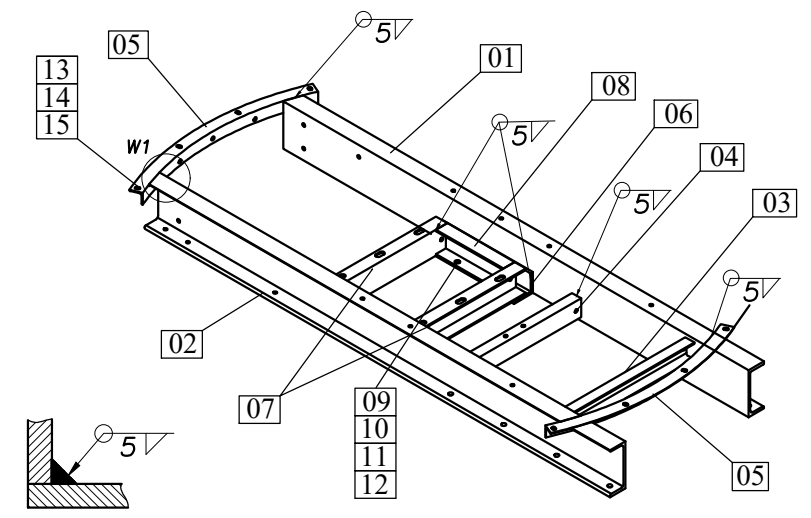
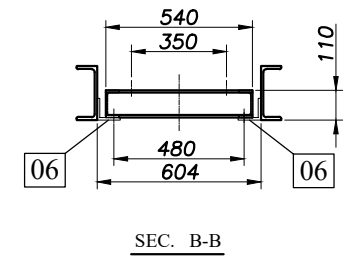
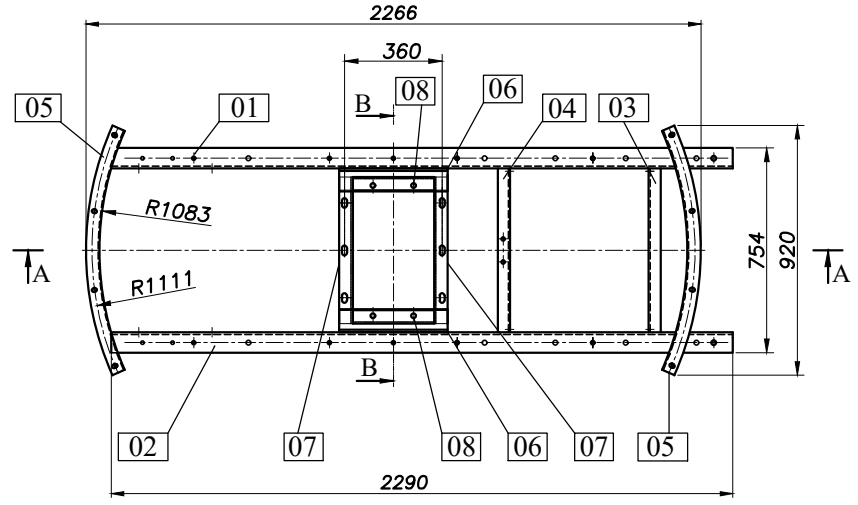
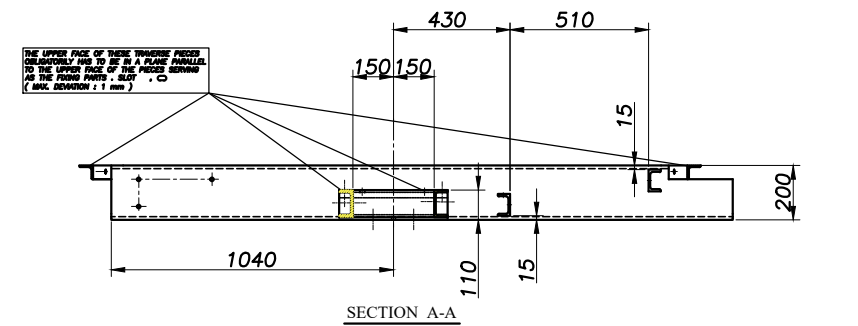
NOTES :
1- ALL DIMENSIONS ARE IN MILLIMETERS.
2- BOLTS, NUTS, WASHERS, THREADS, PARTS INCLUDES THREADS SHALL BE AS PER PROJECT SPECIFICATION DOC. NO. EI027-DMF-VD-QC-PRO-024
3- COATING SHALL BE AS PER PROJECT SPECIFICATION.
4- MIN HEIGHT OF FILLET WELD=0.7*MIN THK.

TOLERANCES
THE FOLLOWING VALUES ARE APPLICABLE TO THE DIMENSIONS THAT ARE NOT PROVIDED WITH TOLERANCES ON DRAWING

| NOMINAL DIMENSIONS FOR MILLIMETER STEPS | 0 | 801 | 5001 |
|---|-----|-----|------|
| TOLERANCES ± | 1 | 2 | 3 |
| TOLERANCE ON CENTER DISTANCES ± | 0.5 | | |

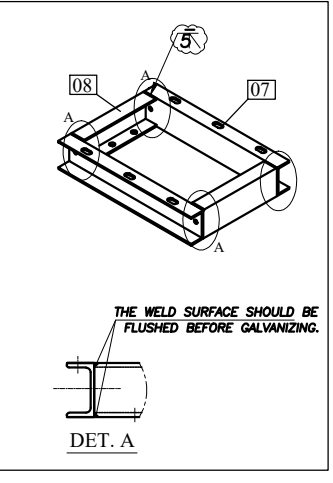
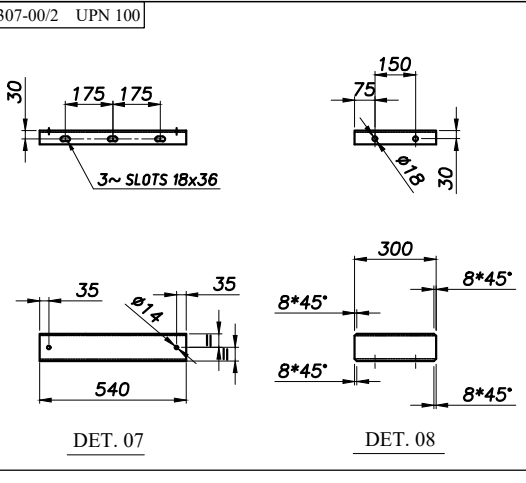
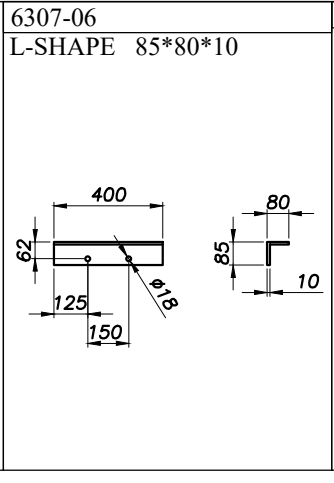
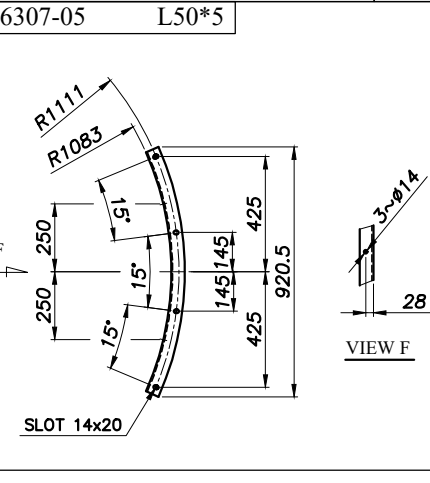
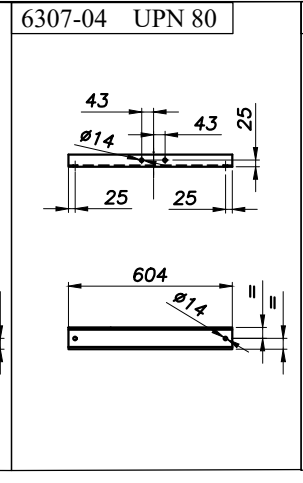
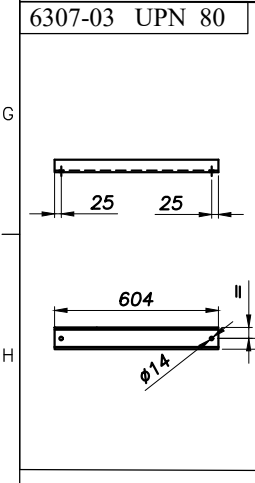
THE TOLERANCES SHOWN HERE ARE NOT CUMULATIVE

| PART LIST | | | | | | | | | | |
|---------------------------------|---|-----------|-------------|------------|-----------|----------------------------|------|-------------|--------------|------|
| PART NO | DESCRIPTION | DIA. (mm) | LENGTH (mm) | WIDTH (mm) | THK. (mm) | MATERIAL | QTY. | Unit Weight | Total Weight | REV. |
| 6307-00 | SUPPORT MECHANISM INCLUDING: | - | - | - | - | - | 4 | 151 | 606 | |
| 6307-00/1 | SUPPORT MECHANISM FRAME ASSEMBLY: | - | - | - | - | - | 1 | 142 | 142 | |
| 6307-01 | UPN 200 | - | 2290 | - | - | SI-37(Hot Dip Galv.) | 1 | 58 | 58 | |
| 6307-02 | UPN 200 | - | 2290 | - | - | SI-37(Hot Dip Galv.) | 1 | 58 | 58 | |
| 6307-03 | UPN 80 | - | 604 | - | - | SI-37(Hot Dip Galv.) | 1 | 5 | 5 | |
| 6307-04 | UPN 80 | - | 604 | - | - | SI-37(Hot Dip Galv.) | 1 | 5 | 5 | |
| 6307-05 | L50*5 | - | 920 | - | - | SI-37(Hot Dip Galv.) | 2 | 3 | 7 | |
| 6307-06 | L- SHAPE 85*80*10 | - | 400 | - | 10 | SI-37(Hot Dip Galv.) | 2 | 5 | 9 | |
| 6307-00/2 | BEARING BLOCK SUPPORT ASSEMBLY: | - | - | - | - | - | 1 | 18 | 18 | |
| 6307-07 | UPN 100 | - | 540 | - | - | SI-37(Hot Dip Galv.) | 2 | 6 | 11 | |
| 6307-08 | UPN 100 | - | 300 | - | - | SI-37(Hot Dip Galv.) | 2 | 3 | 6 | |
| BOLT & NUT & WASHER INCLUDING : | | | | | | | | | | |
| 6307-09 | BOLT FOR CONNECTING B.B. SUPPORT TO SUPPORT MECHA | M16 | 50 | - | - | DIN-933-CL.8.8(Dacromet) | 4 | | | |
| 6307-10 | NUT | M16 | - | - | - | DIN-934-CL.8(Dacromet) | 4 | | | |
| 6307-11 | WASHER | A17 | - | - | - | DIN-125A-ST(Dacromet) | 4 | | | |
| 6307-12 | TAPER WASHER | - | - | - | - | DIN-434-18-ST-8%(Dacromet) | 4 | | | |
| 6307-13 | BOLT FOR CONNECTING SUPPORT MECHANISM TO FAN RING | M12 | 40 | - | - | DIN-933-CL.8.8(Dacromet) | 8 | | | |
| 6307-14 | NUT | M12 | - | - | - | DIN-934-CL.8(Dacromet) | 8 | | | |
| 6307-15 | WASHER | A13 | - | - | - | DIN-125A-ST(Dacromet) | 16 | | | |

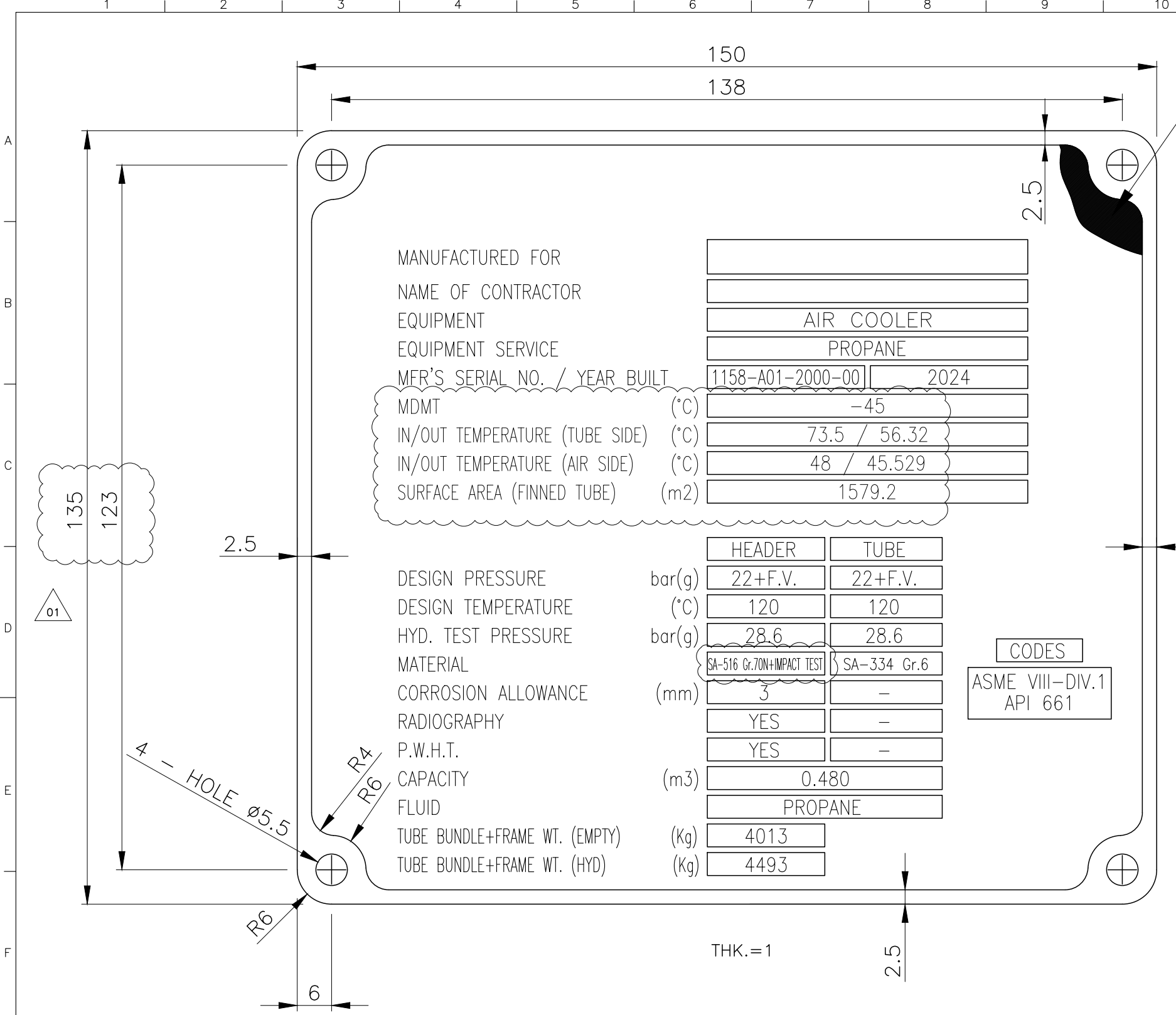


* FOR MORE DETAILS FOR EACH COMPONENT OF AIR COOLER REFER TO BELOW DRAWING & DOCUMENTS.

| REFERENCED DWG&DOC. | | |
|---|---------------------|-------------------------|
| TITLE | VENDOR DOCUMENT NO. | CLIENT DOCUMENT NO. |
| General Arrangement Drawing | 1158-A01-1000-00 | EI027-DMF-VD-ME-DWG-003 |
| Fan Drive Assembly Drawing | 1158-A01-6000-00 | EI027-DMF-VD-ME-DWG-008 |
| Plenum Drawing | 1158-A01-5110-00 | EI027-DMF-VD-ME-DWG-011 |
| Fan Ring Drawing | 1158-A01-5067-00 | EI027-DMF-VD-ME-DWG-009 |
| Surface Preparation and Painting Procedure for Air Cooler | 1158-A01-QS01-00 | EI027-DMF-VD-QC-PRO-024 |



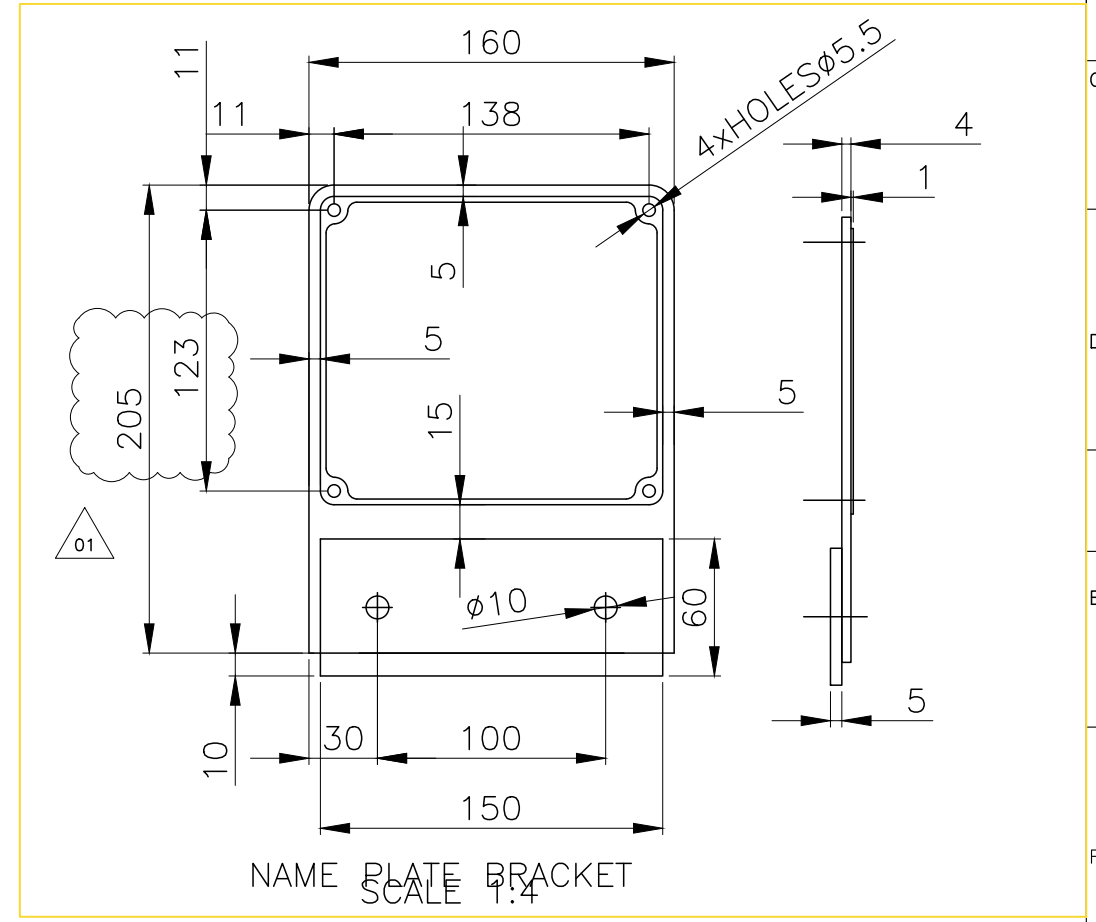
| | | | | | | |
|--|------------|---------------------|-------------|------------|-------------|-------------------|
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| R1 | 08/20/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |
| R0 | 08/10/2024 | ISSUED FOR APPROVAL | F.SZ | F.A. | J.B.L | A.GHZ |
| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
| CLIENT: | | | CONTRACTOR: | | | |
| | | | | | | |
| PROJECT : AIR COOLER FOR Toase-che Park Sanati Gohar Ofogh Petrochemical Co. Support Mechanism Drawing 1158-A01-6037-00 | | | | | | |
| DWG. NO. EI027-DMF-VD-ME-DWG-010 SCALE : N.T.S. SIZE : A3 REV. : R2 | | | | | | |
| THIS DOCUMENT OF A CONFIDENTIAL NATURE IS THE PROPERTY OF DAMAFIN AND SHALL NOT BE REPRODUCED IN ANY MANNER, NOR USED FOR ANY PURPOSE WHAT SO EVER, EXCEPT BY WRITTEN PERMISSION OF DAMAFIN. | | | | | | |



| PART NO. | DESCRIPTION | DIMENSIONS | | | | MATERIAL | QTY. | UNIT WEIGHT (Kg) | TOTAL WEIGHT (Kg) |
|----------|----------------------|------------|-------------|------------|-----------|-----------------------|------|------------------|-------------------|
| | | DIA. (mm) | LENGTH (mm) | WIDTH (mm) | THK. (mm) | | | | |
| 2020-01 | NAME PLATE | - | 150 | 135 | 1 | S.S.304 | 2 | 0.16 | 0.3 |
| 2020-03 | NAME PLATE BRACKET | - | 160 | 205 | 4 | C.S | 2 | 1.03 | 2.1 |
| 2020-04 | RIVET FOR NAME PLATE | 5 | 11 | - | - | AL-S.S | 8 | - | - |
| 2020-06 | BOLT | - | M8 | 22 | - | DIN-933-CL.8.8(GALV.) | 4 | - | - |
| 2020-07 | NUT | - | M8 | - | - | DIN-934-CL.8(GALV.) | 4 | - | - |
| 2020-08 | WASHER | - | A9 | - | - | DIN-128A-ST(GALV.) | 8 | - | - |

NOTE

- 1-ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2-ALL LETTERS , BLOCKS , AS WELL AS EDGES , SHALL HAVE RAISED POLISHED FACE - RELIEF 0.5mm APPROX.
- 3-BLACK BACKGROUND



| | | | | | | |
|-----|------------|---------------------|----------|------------|-------------|-------------------|
| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |
| R1 | 10/15/2024 | ISSUED FOR APPROVAL | SH.S | J.B.L | J.B.L | A.GHZ |
| R0 | 10/07/2024 | ISSUED FOR APPROVAL | F.SZ | F.A | J.B.L | A.GHZ |

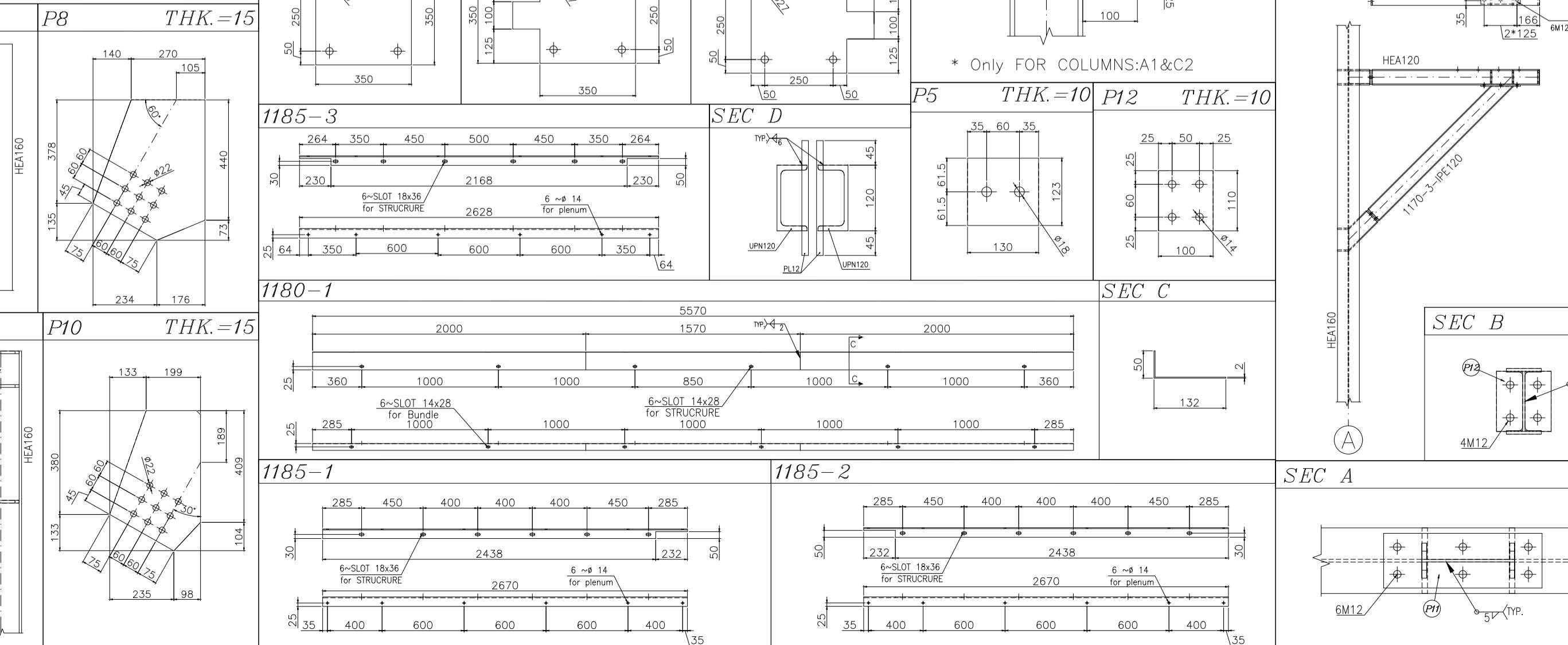
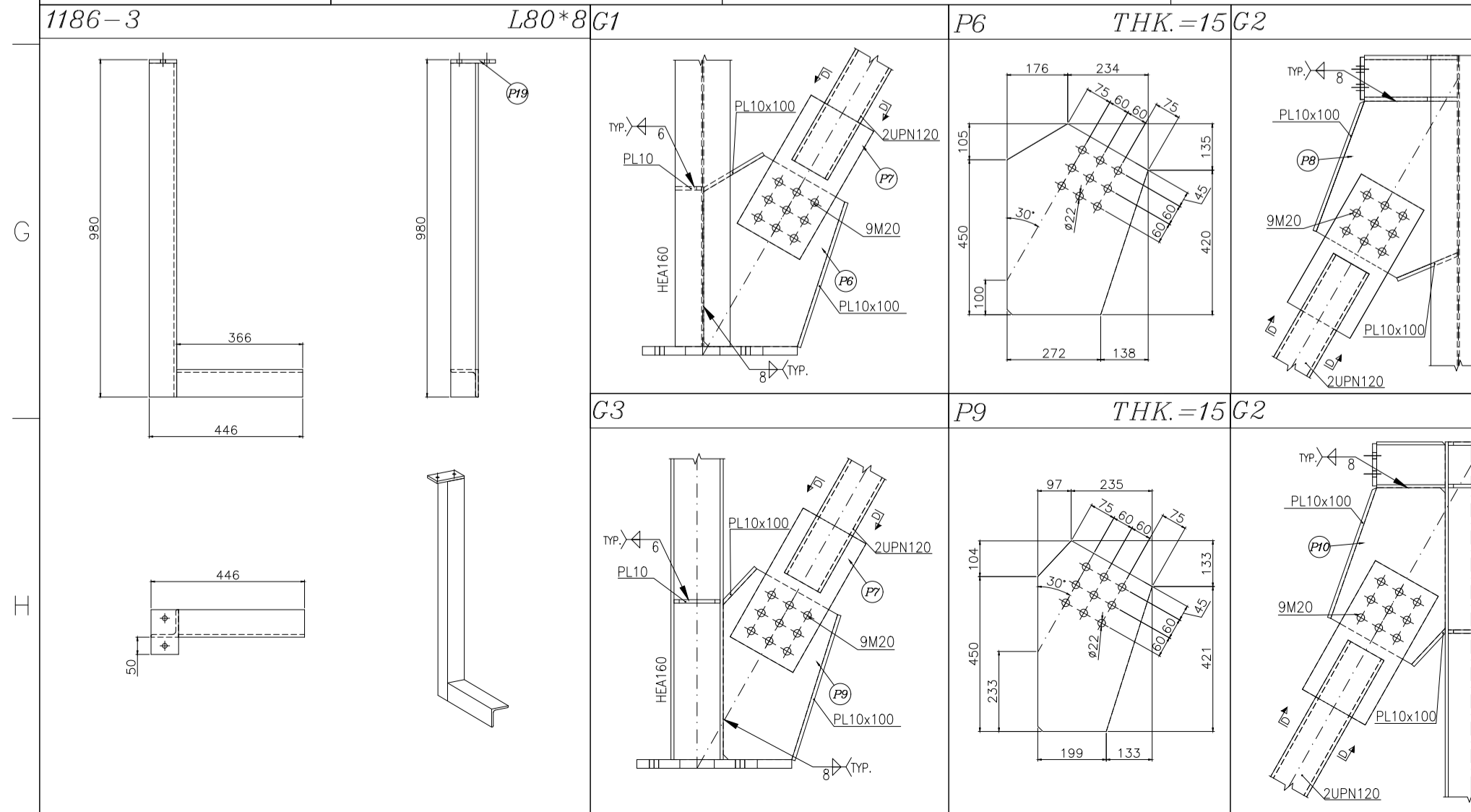
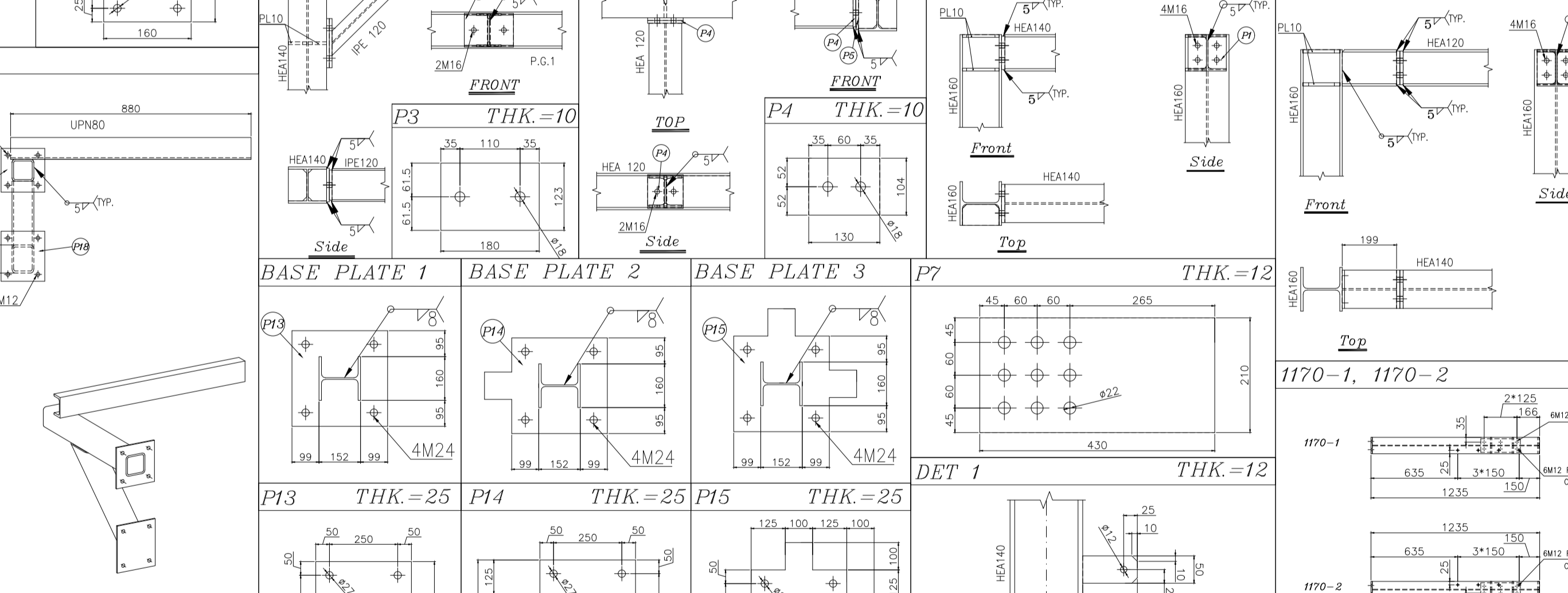
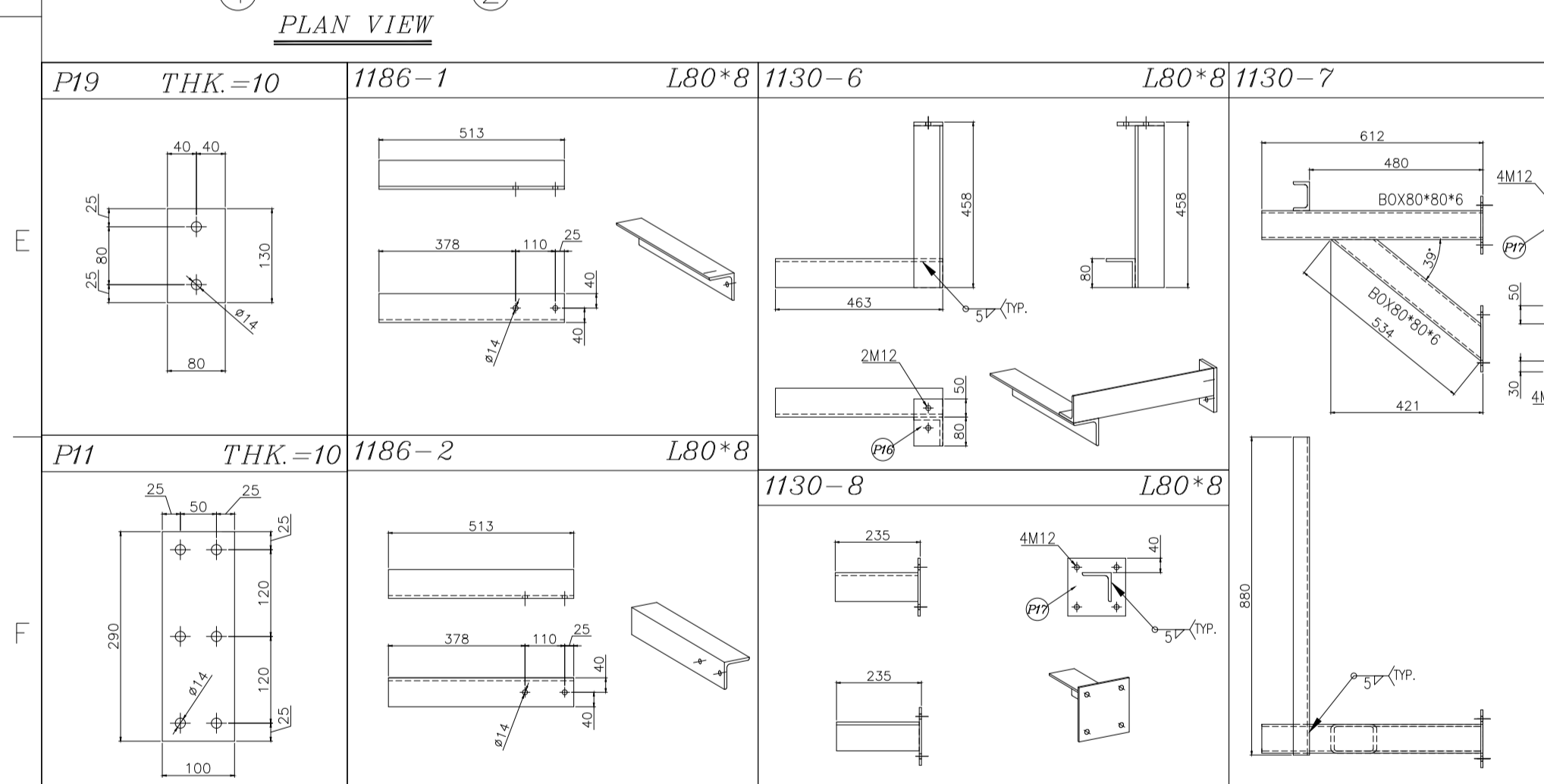
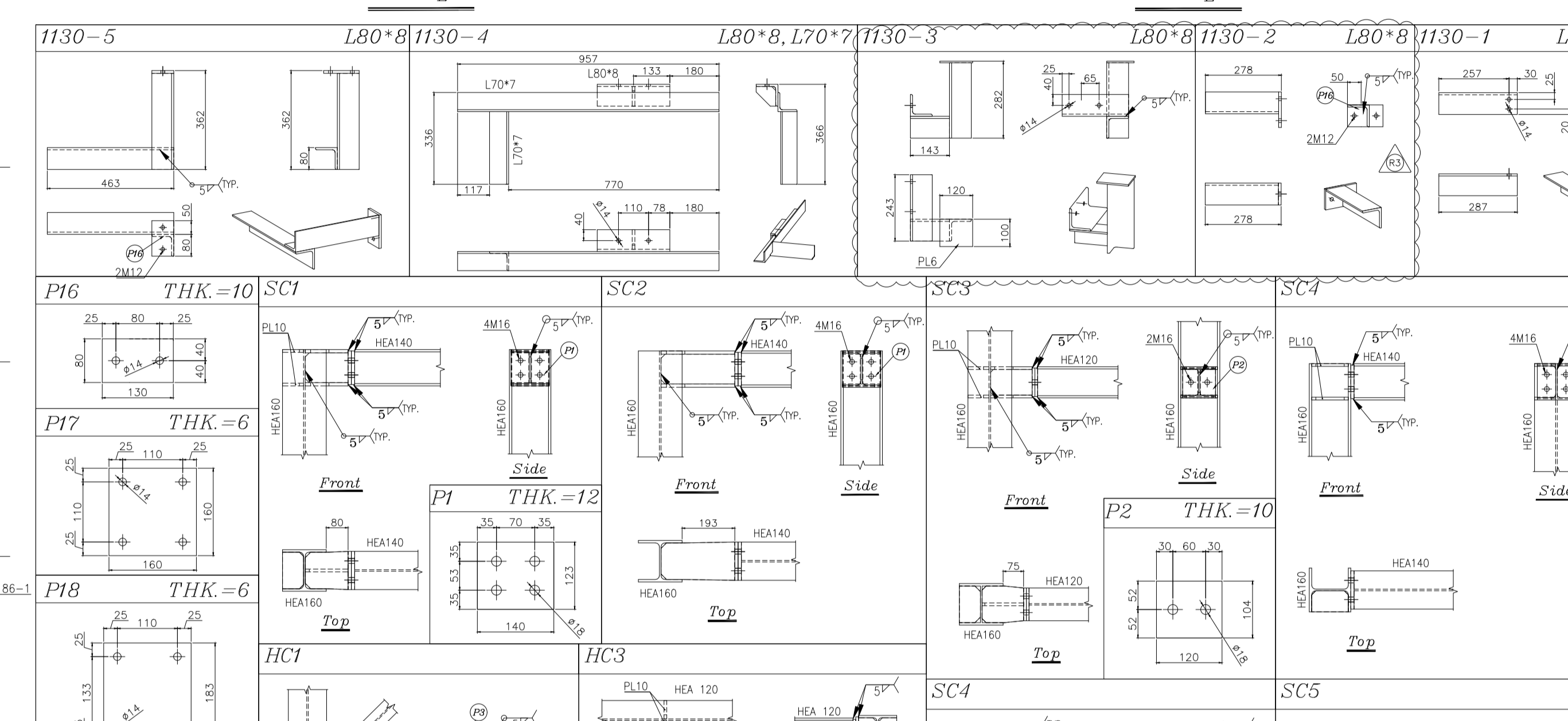
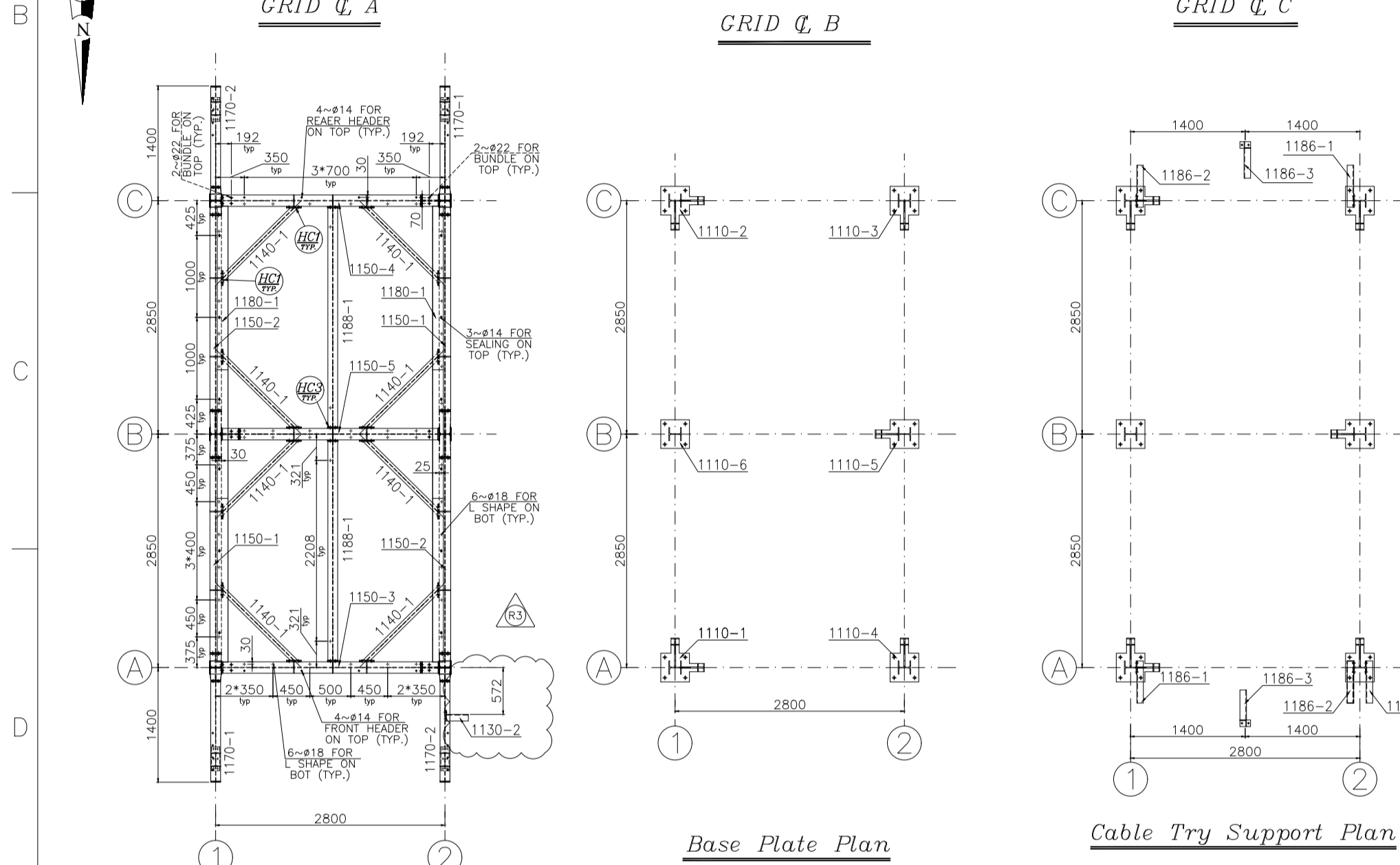
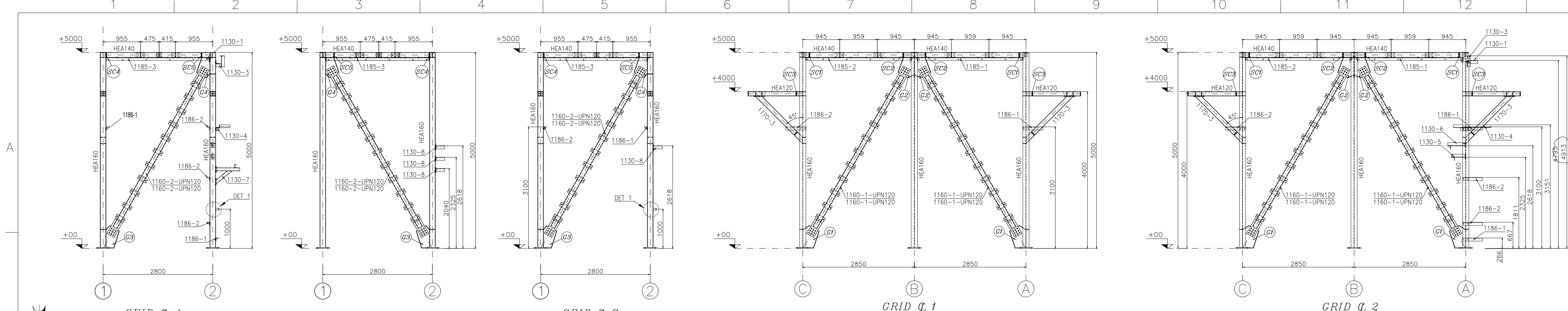
CLIENT:

CONTRACTOR:

PROJECT : **AIR COOLER FOR**
Toase-eh Park Sanati Gohar Ofogh Petrochemical Co.
Name Plate Drawing
 1158-A01-2403-00

DWG. NO. EI027-DMF-VD-ME-DWG-012
 SCALE: N.T.S. SIZE: A3 REV: R1

THIS DOCUMENT IS A CONFIDENTIAL NATURE IS THE PROPERTY OF DAMAFIN AND SHALL NOT BE REPRODUCED IN ANY MANNER, NOR USED FOR ANY PURPOSE WHAT SO EVER, EXCEPT BY WRITTEN PERMISSION OF DAMAFIN.



| TOTAL UNITS - 2 | | | | | | | | | | |
|--------------------|-------------------------|------------|-----------|-------------|------------|----------|-----------------|------|------------------|-------------------|
| PART LIST FOR UNIT | | | | | | | | | | |
| PART NO. | DESCRIPTION | PROFILE | DIAM (mm) | LENGTH (mm) | WIDTH (mm) | THK (mm) | MATERIAL | QTY. | UNIT WEIGHT (kg) | TOTAL WEIGHT (kg) |
| 1110.1 | COLUMN ASS. | HEA140 | 140 | 5000 | - | - | ST.370(PAINTED) | 1 | 247.3 | 247.3 |
| 1110.2 | COLUMN ASS. | HEA160 | 160 | 5000 | - | - | ST.370(PAINTED) | 1 | 248.8 | 248.8 |
| 1110.3 | COLUMN ASS. | HEA160 | 160 | 5000 | - | - | ST.370(PAINTED) | 1 | 251.8 | 251.8 |
| 1110.4 | COLUMN ASS. | HEA160 | 160 | 5000 | - | - | ST.370(PAINTED) | 1 | 249.8 | 249.8 |
| 1110.5 | COLUMN ASS. | HEA160 | 160 | 5000 | - | - | ST.370(PAINTED) | 1 | 271.4 | 271.4 |
| 1110.6 | COLUMN ASS. | HEA160 | 160 | 5000 | - | - | ST.370(PAINTED) | 1 | 209.6 | 209.6 |
| 1110.7 | PIPE SUPPORT ASS. | L80*8 | 257 | - | - | - | ST.370(PAINTED) | 1 | 2.8 | 2.8 |
| 1110.8 | PIPE SUPPORT ASS. | L80*8 | 278 | - | - | - | ST.370(PAINTED) | 1 | 3.4 | 3.4 |
| 1110.9 | PIPE SUPPORT ASS. | L80*8 | 282 | 233 | - | - | ST.370(PAINTED) | 1 | 6.9 | 6.9 |
| 1110.10 | PIPE SUPPORT ASS. | L80*8 | 297 | 236 | - | - | ST.370(PAINTED) | 1 | 11.9 | 11.9 |
| 1110.11 | PIPE SUPPORT ASS. | L80*8 | 465 | 262 | - | - | ST.370(PAINTED) | 1 | 8.7 | 8.7 |
| 1110.12 | PIPE SUPPORT ASS. | L80*8 | 445 | 408 | - | - | ST.370(PAINTED) | 1 | 9.6 | 9.6 |
| 1110.13 | PIPE SUPPORT ASS. | BOX80*80*6 | 80 | 612 | - | - | ST.370(PAINTED) | 1 | 25.2 | 25.2 |
| 1110.14 | PIPE SUPPORT ASS. | L80*8 | 235 | - | - | - | ST.370(PAINTED) | 4 | 3.4 | 13.6 |
| 1110.15 | HORIZONTAL BRACING ASS. | HEA120 | 120 | 1588 | - | - | ST.370(PAINTED) | 8 | 16.4 | 131.2 |
| 1110.16 | BEAM ASS. | HEA140 | 203 | - | - | - | ST.370(PAINTED) | 2 | 47.5 | 95 |
| 1110.17 | BEAM ASS. | HEA140 | 203 | - | - | - | ST.370(PAINTED) | 2 | 47.5 | 95 |
| 1110.18 | BEAM ASS. | HEA140 | 247 | - | - | - | ST.370(PAINTED) | 1 | 71.1 | 71.1 |
| 1110.19 | BEAM ASS. | HEA140 | 247 | - | - | - | ST.370(PAINTED) | 1 | 71.1 | 71.1 |
| 1110.20 | BEAM ASS. | HEA140 | 247 | - | - | - | ST.370(PAINTED) | 1 | 75.8 | 75.8 |
| 1110.21 | BRACING ASS. | UPN120 | 120 | 4034 | - | - | ST.370(PAINTED) | 8 | 97.2 | 777.6 |
| 1110.22 | BRACING ASS. | UPN120 | 120 | 4034 | - | - | ST.370(PAINTED) | 8 | 96.9 | 788.4 |
| 1110.23 | WALKWAY SUPPORT ASS. | HEA120 | 120 | 1235 | - | - | ST.370(PAINTED) | 2 | 27.9 | 55.8 |
| 1110.24 | WALKWAY SUPPORT ASS. | HEA120 | 120 | 1235 | - | - | ST.370(PAINTED) | 2 | 27.9 | 55.8 |
| 1110.25 | WALKWAY SUPPORT ASS. | HEA120 | 120 | 1439 | - | - | ST.370(PAINTED) | 4 | 17.5 | 70 |
| 1110.26 | SEALING ASS. | PLATE | 870 | 182 | 2 | - | ST.370(PAINTED) | 2 | 15.7 | 31.4 |
| 1110.27 | L-SHAPE PLENUM | L70*7 | 2670 | - | - | - | ST.370(PAINTED) | 4 | 19.7 | 78.8 |
| 1110.28 | L-SHAPE PLENUM | L70*7 | 2670 | - | - | - | ST.370(PAINTED) | 2 | 19.7 | 39.4 |
| 1110.29 | L-SHAPE PLENUM | L70*7 | 2628 | - | - | - | ST.370(PAINTED) | 4 | 19.4 | 77.6 |
| 1110.30 | CABLE TRY SUPPORT ASS. | L80*8 | 513 | - | - | - | ST.370(PAINTED) | 3 | 5 | 15 |
| 1110.31 | CABLE TRY SUPPORT ASS. | L80*8 | 513 | - | - | - | ST.370(PAINTED) | 4 | 5 | 20 |
| 1110.32 | CABLE TRY SUPPORT ASS. | L80*8 | 500 | 446 | - | - | ST.370(PAINTED) | 2 | 13.7 | 27.4 |
| 1110.33 | TR ROD BEAM ASS. | HEA120 | 209 | - | - | - | ST.370(PAINTED) | 2 | 55.2 | 110.4 |

| TOTAL WEIGHTS AND LIST OF BOLTS, NUTS & WASHERS FOR UNIT | | | | | | | | | | |
|--|-------------|---------|-----------|-------------|------------|----------|---------------------|------|------------------|-------------------|
| PART NO. | DESCRIPTION | PROFILE | DIAM (mm) | LENGTH (mm) | WIDTH (mm) | THK (mm) | MATERIAL | QTY. | UNIT WEIGHT (kg) | TOTAL WEIGHT (kg) |
| 1110.1 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 56 | - | - |
| 1110.2 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 56 | - | - |
| 1110.3 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 112 | - | - |
| 1110.4 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 112 | - | - |
| 1110.5 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 112 | - | - |
| 1110.6 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 252 | - | - |
| 1110.7 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 154 | - | - |
| 1110.8 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 154 | - | - |
| 1110.9 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 200 | - | - |
| 1110.10 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 32 | - | - |
| 1110.11 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 32 | - | - |
| 1110.12 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 64 | - | - |
| 1110.13 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 8 | - | - |
| 1110.14 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 8 | - | - |
| 1110.15 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 16 | - | - |
| 1110.16 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 40 | - | - |
| 1110.17 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 40 | - | - |
| 1110.18 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 80 | - | - |
| 1110.19 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 8 | - | - |
| 1110.20 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 16 | - | - |
| 1110.21 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 36 | - | - |
| 1110.22 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 36 | - | - |
| 1110.23 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 36 | - | - |
| 1110.24 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 72 | - | - |
| 1110.25 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 18 | - | - |
| 1110.26 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 18 | - | - |
| 1110.27 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 12 | - | - |
| 1110.28 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 48 | - | - |
| 1110.29 | BEAM ASS. | M16 | 16 | 50 | - | - | DN 534.8 (DACROMET) | 48 | - | - |
| 1110.30 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 96 | - | - |
| 1110.31 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 12 | - | - |
| 1110.32 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 12 | - | - |
| 1110.33 | BEAM ASS. | M12 | 12 | 40 | - | - | DN 534.8 (DACROMET) | 24 | - | - |

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETER.
- ALL PARTS SHALL PAINTED ACCORDING TO EI027-DMF-VQ-PRO-024
- BOLTS & NUTS & WASHERS SHALL BE DACROMET IN ACCORDANCE WITH ASTM - A153 OR EN ISO 1461
- WELD: CONTINUOUS WELD.
MIN. HEIGHT OF FILLET WELD = 0.7 x MIN. THK.
< MAX. THK. , IF MAX. THK. < 7mm
< MAX. THK. -1.5 , IF MAX. THK. > 7mm

| TOLERANCES | | | |
|--|-------|-------|-------|
| THE FOLLOWING VALUES ARE APPLICABLE TO THE DIMENSIONS THAT ARE NOT PROVIDED WITH TOLERANCES ON DRAWING | | | |
| NOMINAL DIMENSIONS | 0 | 201 | 801 |
| PER MILLIMETER STEPS | 200 | 800 | 2000 |
| TOLERANCES | ± 0.2 | ± 0.3 | ± 0.5 |
| | ± 0.5 | ± 0.6 | ± 0.7 |
| TOLERANCE ON CENTER DISTANCES ± 1.5 | | | |
| THE TOLERANCES SHOWN HERE ARE NOT CUMULATIVE | | | |

| General Arrangement Drawing | 1158-A01-1000-00 | EI027-DMF-VQ-ME-DWG-003 |
|-----------------------------|------------------|-------------------------|
| Bundle Frame Drawing | 1158-A01-2400-00 | EI027-DMF-VQ-ME-DWG-007 |
| Plenum Drawing | 1158-A01-5110-00 | EI027-DMF-VQ-ME-DWG-011 |
| Header Walkway Drawing | 1158-A01-1200-00 | EI027-DMF-VQ-ST-DWG-014 |
| Ladder Drawing | 1158-A01-1520-00 | EI027-DMF-VQ-ST-DWG-015 |

| R3 | 12/30/2024 | ISSUED FOR APPROVAL | J.M. | J.B.L | J.B.L | AGHZ |
|-----|------------|---------------------|---|-------------------------------------|---------------------|-------------------|
| R2 | 12/28/2024 | ISSUED FOR APPROVAL | J.M. <td>J.B.L <td>J.B.L <td>AGHZ</td> </td></td> | J.B.L <td>J.B.L <td>AGHZ</td> </td> | J.B.L <td>AGHZ</td> | AGHZ |
| RI | 11/13/2024 | ISSUED FOR APPROVAL | J.M. <td>J.B.L <td>J.B.L <td>AGHZ</td> </td></td> | J.B.L <td>J.B.L <td>AGHZ</td> </td> | J.B.L <td>AGHZ</td> | AGHZ |
| R0 | 09/01/2024 | ISSUED FOR APPROVAL | J.M. <td>J.B.L <td>J.B.L <td>AGHZ</td> </td></td> | J.B.L <td>J.B.L <td>AGHZ</td> </td> | J.B.L <td>AGHZ</td> | AGHZ |
| REV | DATE | DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY | FINAL APPROVED BY |

CLIENT:

PROJECT: AIR COOLER FOR Toase-eh Park Sanati Gohar Ofogh Petrochemical Co.

Structural Drawing
1158-A01-100-00

DWG. NO. EI027-DMF-VQ-ST-DWG-013
SCALE: NTS SIZE: A1 REV: R3

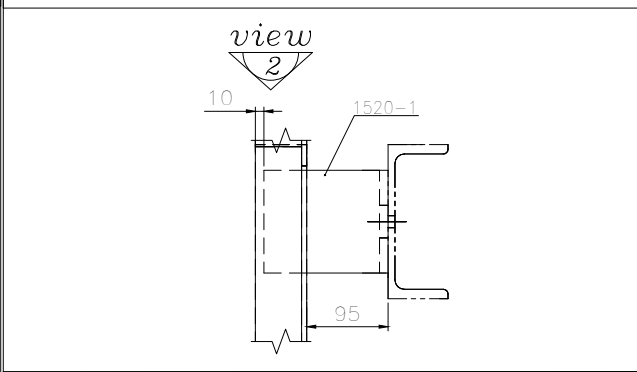
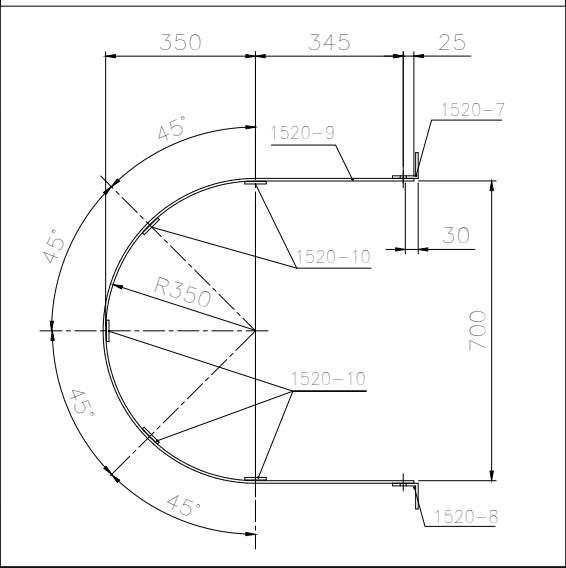
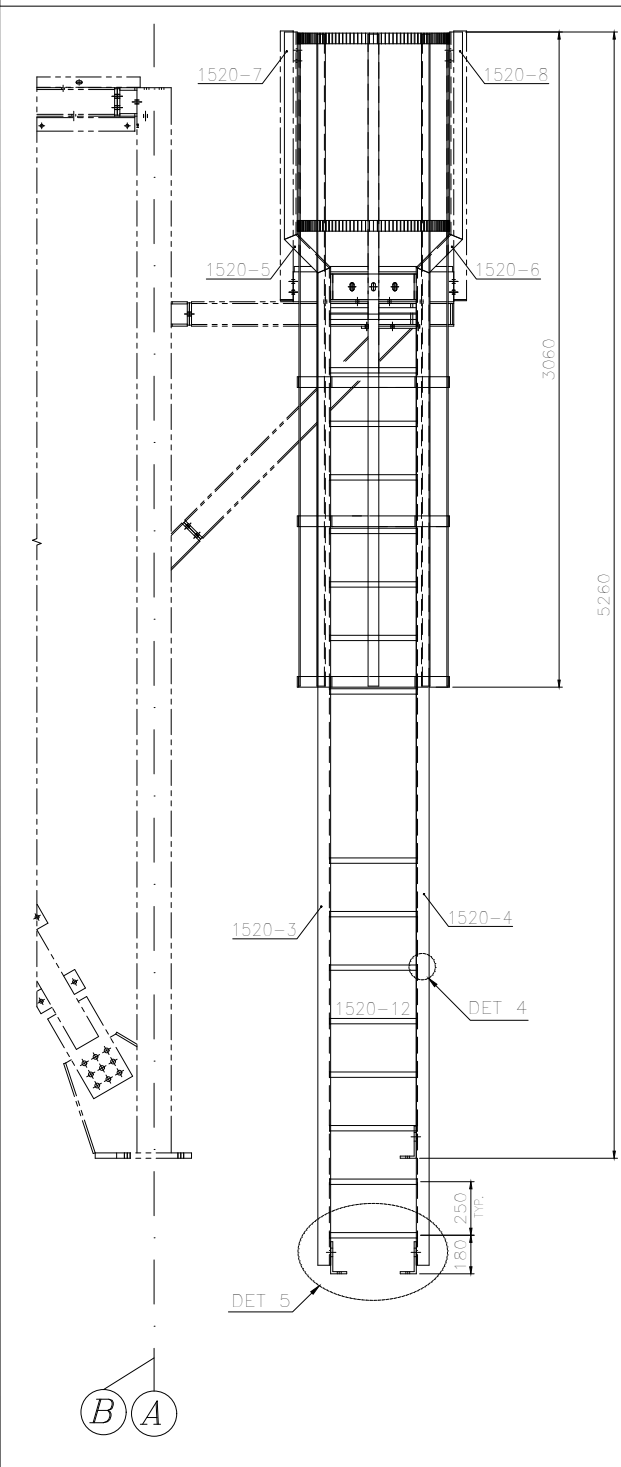
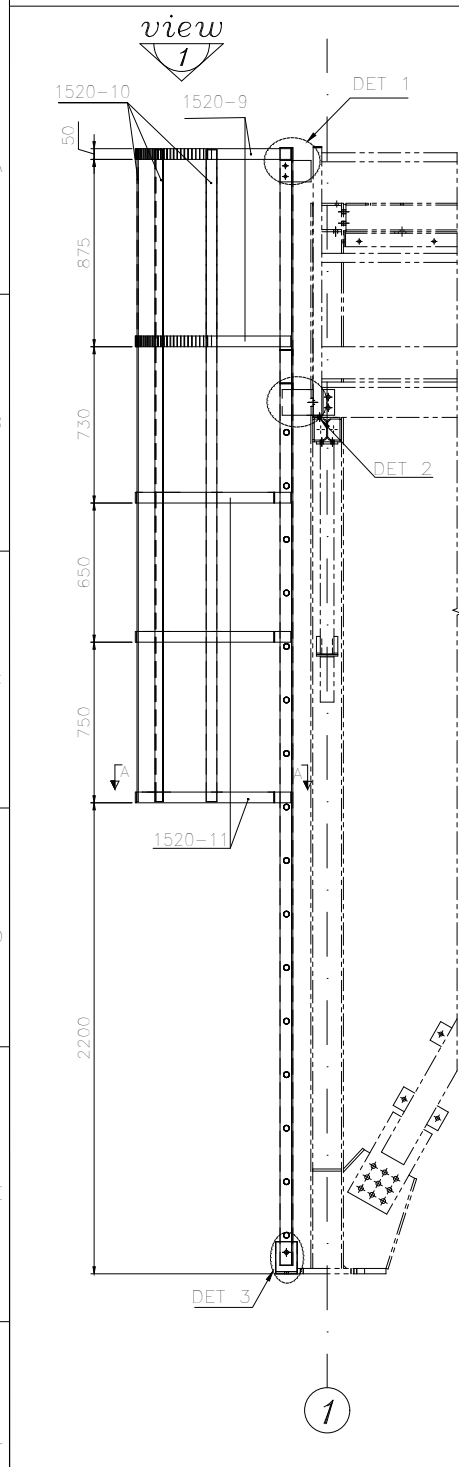
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FRONT VIEW

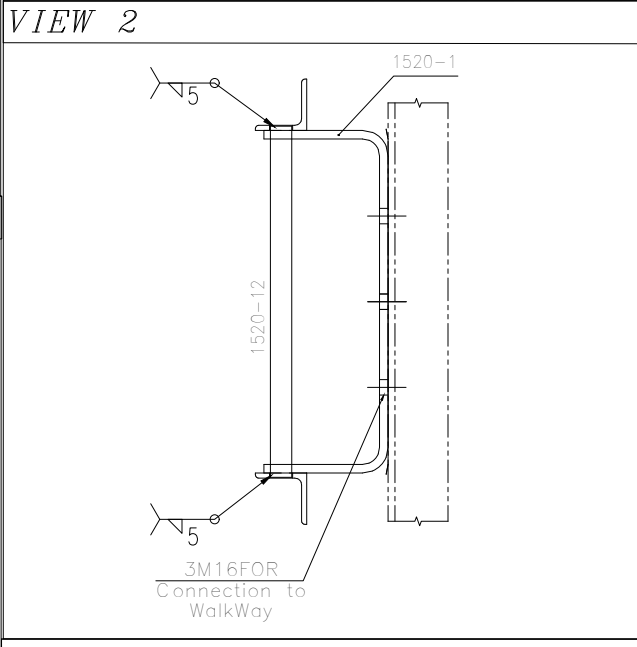
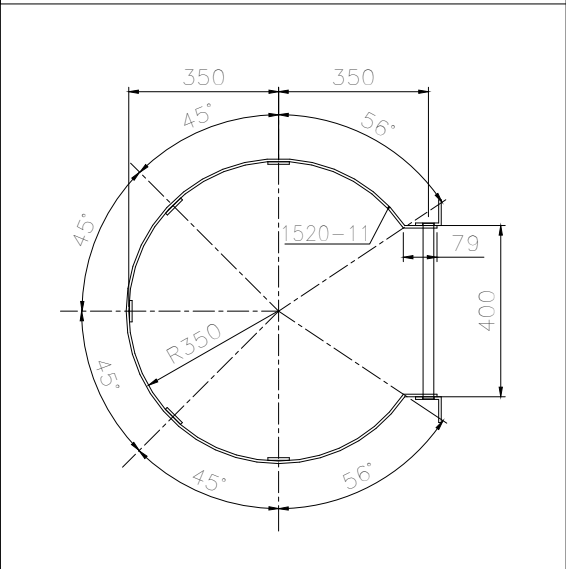
SIDE VIEW

VIEW 1

DET 2

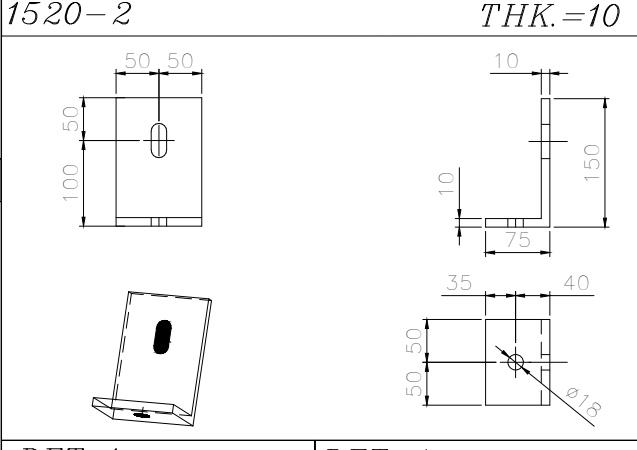
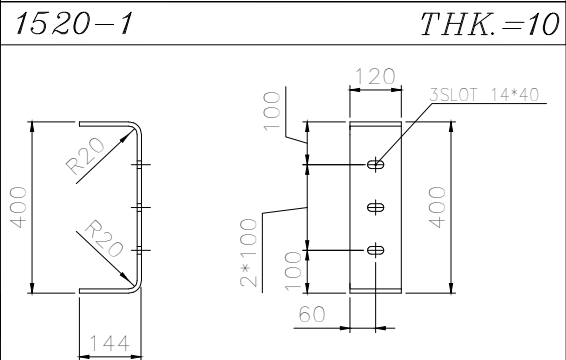
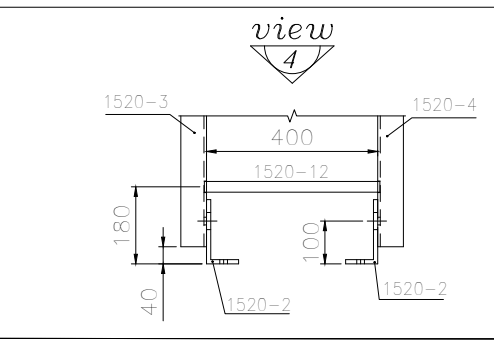
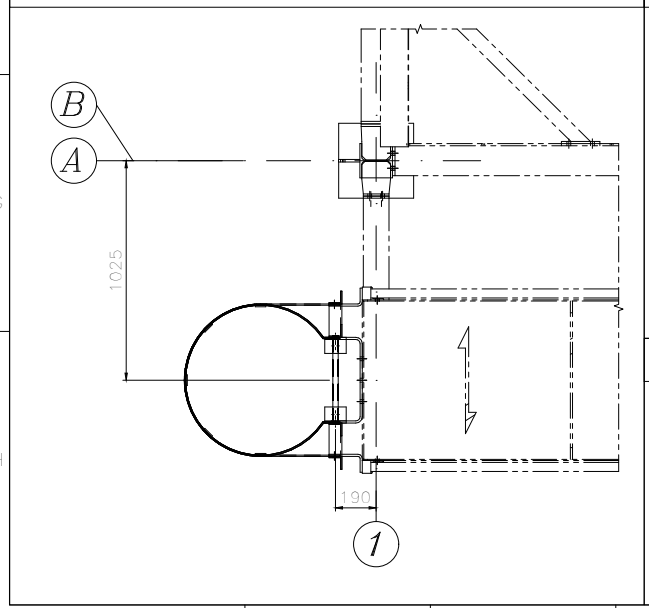


SEC A



TOP VIEW

DET 5

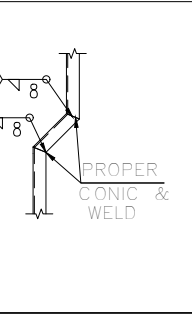
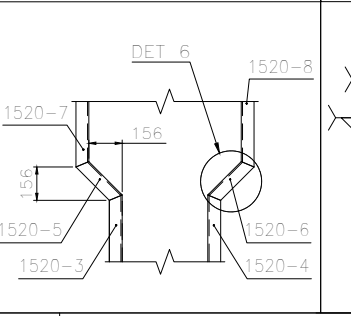
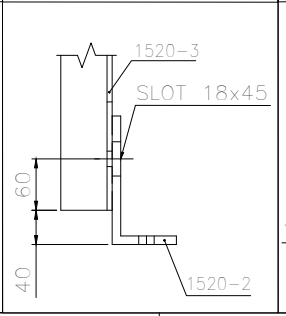
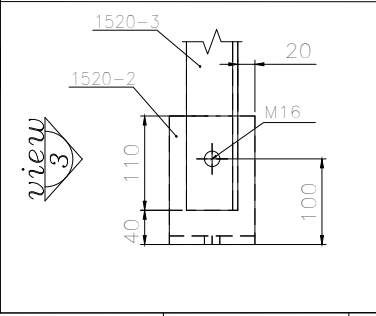


DET 3

VIEW 3

VIEW OF STRINGER

DET 6



total ladder : 4
PART LIST For 1 ladder

| PART NO | DESCRIPTION | PROFILE | DIMENSION | | | | MATERIAL | QTY. | UNIT WEIGHT (kg) | TOTAL WEIGHT (kg) | REV. |
|-------------------------|---------------------|---------|-----------|--------------|------------|----------------|----------|------|------------------|-------------------|------|
| | | | DIA (mm) | LENGT H (mm) | WIDTH (mm) | THK (mm) | | | | | |
| 1520-1 | CONCTION TO WALKWAY | PLATE | 633 | 120 | 10 | ST-37(Painted) | 1 | 6.1 | 6.1 | | |
| 1520-2 | EARTH SUPPORT | PLATE | 215 | 100 | 10 | ST-37(Painted) | 2 | 1.7 | 3.4 | | |
| 1520-3 | STRINGER | PLATE | 4120 | - | - | ST-37(Painted) | 1 | 22.3 | 22.3 | | |
| 1520-4 | STRINGER | PLATE | 4120 | - | - | ST-37(Painted) | 1 | 22.3 | 22.3 | | |
| 1520-5 | STRINGER | PLATE | 245 | - | - | ST-37(Painted) | 1 | 1.3 | 1.3 | | |
| 1520-6 | STRINGER | PLATE | 245 | - | - | ST-37(Painted) | 1 | 1.3 | 1.3 | | |
| 1520-7 | STRINGER | PLATE | 969 | - | - | ST-37(Painted) | 1 | 5.3 | 5.3 | | |
| 1520-8 | STRINGER | PLATE | 969 | - | - | ST-37(Painted) | 1 | 5.3 | 5.3 | | |
| 1520-9 | TOP HOOP | PLATE | 1849 | 50 | 6 | ST-37(Painted) | 2 | 4.4 | 8.8 | | |
| 1520-10 | VERTICAL BAR | PLATE | 3045 | 50 | 6 | ST-37(Painted) | 5 | 7.2 | 36 | | |
| 1520-11 | BOT HOOP | PLATE | 1939 | 50 | 6 | ST-37(Painted) | 3 | 4.6 | 13.8 | | |
| 1520-12 | RUNG | ROD25 | 25 | 410 | - | ST-37(Painted) | 16 | 1.5 | 24 | | |
| Total weight(kg) | | | | | | | | | 149.9 | | |

LIST of bolts & nuts washer For 1 ladder

| DESCRIPTION | PROFILE | DIMENSION | | | | MATERIAL | QTY. | UNIT WEIGHT (kg) | TOTAL WEIGHT (kg) | REV. |
|-------------|---------------------------------|-----------|--------------|------------|----------|-----------------------|------|------------------|-------------------|------|
| | | DIA (mm) | LENGT H (mm) | WIDTH (mm) | THK (mm) | | | | | |
| 1590-1 | - | M12 | 40 | - | - | DIN 934-8 (Chromet) | 4 | - | - | |
| 1590-2 | for HANDRAIL CONNECTION | M12 | - | - | - | DIN 934-8 (Chromet) | 4 | - | - | |
| 1590-3 | - | A13 | - | - | - | DIN 125 A5T (Chromet) | 8 | - | - | |
| 1590-4 | - | M16 | 45 | - | - | DIN 934-8 (Chromet) | 3 | - | - | |
| 1590-5 | for WALKWAY FRAME CONNECTION | M16 | - | - | - | DIN 934-8 (Chromet) | 3 | - | - | |
| 1590-6 | - | A17 | - | - | - | DIN 125 A5T (Chromet) | 6 | - | - | |
| 1590-7 | - | M16 | 45 | - | - | DIN 934-8 (Chromet) | 2 | - | - | |
| 1590-8 | for CONNECTION to EARTH SUPPORT | M16 | - | - | - | DIN 934-8 (Chromet) | 2 | - | - | |
| 1590-9 | - | A17 | - | - | - | DIN 125 A5T (Chromet) | 4 | - | - | |

NOTES:
 1- ALL DIMENSIONS ARE IN MILLIMETER.
 2- ALL PARTS SHALL PAINTED ACCORDING TO EIQ27-DMF-VD-QC-PRO-024
 3- BOLTS & NUTS & WASHERS SHALL BE DACROMENT IN ACCORDANCE WITH ASTM - A153 OR EN ISO 1461
 4- WELD: CONTINUOUS WELD.
 MIN. HEIGHT OF FILLET WELD = 0.7 x MIN. THK.
 < MAX. THK. , IF MAX. THK. < 7mm
 < MAX. THK. x 1.5 , IF MAX. THK. > 7mm

TOLERANCES
 THE FOLLOWING VALUES ARE APPLICABLE TO THE DIMENSIONS THAT ARE NOT PROVIDED WITH TOLERANCES ON DRAWING

| NOMINAL DIMENSIONS PER MILLIMETER STEPS | 0 | 201 | 801 | 2001 | 5001 |
|---|-----|-----|-----|------|------|
| TOLERANCES | ± 2 | ± 3 | ± 5 | ± 6 | ± 7 |

TOLERANCE ON CENTER DISTANCES
 THE TOLERANCES SHOWN HERE ARE NOT CUMULATIVE

| | | |
|-----------------------------|------------------|-------------------------|
| General Arrangement Drawing | 1158-A01-1000-00 | EIQ27-DMF-VD-ME-DWG-003 |
| Steel Structure Drawing | 1158-A01-1100-00 | EIQ27-DMF-VD-ST-DWG-013 |
| Header Walkway Drawing | 1158-A01-1210-00 | EIQ27-DMF-VD-ST-DWG-014 |

| | | | | | | |
|-----|------------|---------------------|---|--------|--------|------|
| RI | 11/13/2024 | ISSUED FOR APPROVAL | J.M. | J.R.L. | J.R.L. | AGHZ |
| RD | 10/06/2024 | ISSUED FOR APPROVAL | J.M. | J.R.L. | J.R.L. | AGHZ |
| REV | DATE | DESCRIPTION | DRAWN BY CHECKED BY APPROVED BY FINAL APPROVED BY | | | |

CLIENT:

CONTRACTOR:

PROJECT :
 AIR COOLER FOR
 Toase-ehe Park Sanati Goh
 Ladder Drawin
 1158-A01-

DWG. NO.: EIQ27-
SCALE : NTS **SIZE :** A3 **REV. :** RI

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