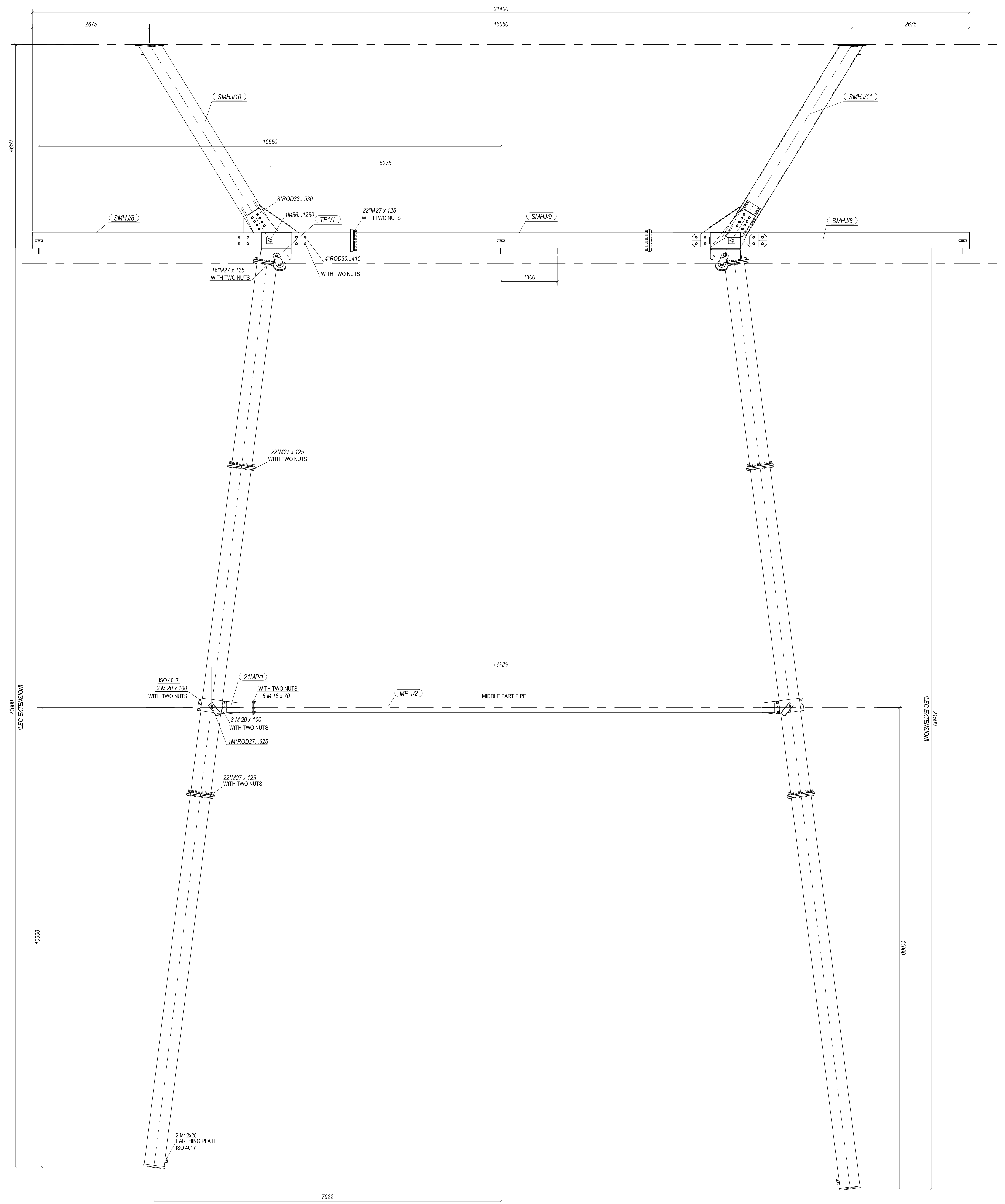




NOTES

Threaded rods and connection bolts shall have washer and two nuts.

All dimensions are given in mm and angles in grades [gr] (0-400gr for full circle) unless otherwise noted.

These drawings are production drawings

Use of alternative principal solutions in design are subjected to approval by client.

Towers shall include steel bearings, stay wheels, droppers for attachment of conductor.  
Guy wires are not part of tower delivery.

Guy wires are not part of tower delivery.

## MATERIAL SPECIFICATION

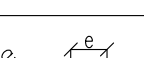
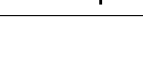
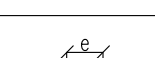
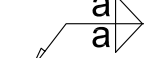
|                                        |                                                                                                                   |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| HOLLOW SECTION STEEL PROFILES          | S355J2H EN 10025* and Profiles are now cold formed acc. to EN 10219 not EN 10210                                  |
| STEEL PLATES                           | S355J2 EN 10025                                                                                                   |
| STEEL FLANGE CONNECTION PLATES         | S355J2 EN 10025 WITH MIN Z25 ACC. TO EN 10164                                                                     |
| STEEL PLATES FOR HOT BENDING           | S355J2 EN 10025                                                                                                   |
| STEEL BEARING AND STAY WHEELS          | S355J2                                                                                                            |
| THREADED STEEL RODS (CONNECTION BOLTS) | 8.8 EN 20898                                                                                                      |
| HEXAGON BOLTS EN ISO 4014              | 8.8 EN 20898                                                                                                      |
| HEXAGON NUTS EN ISO 4032               | 8 EN 24034                                                                                                        |
| WASHERS                                | DIN 7989                                                                                                          |
| *S355J2H EN 10025*                     | All profiles have chemical composition<br>C ≤ 0.18 %, P ≤ 0.020 % and S ≤ 0.012 % and fully aluminum killed steel |

HOT DIP GALVANIZING ACC. TO  
EN ISO 14713 AND EN ISO 1461

| MATERIAL                                                | THICKNESS    | ZINC THICKNESS, micrometers |         |
|---------------------------------------------------------|--------------|-----------------------------|---------|
|                                                         |              | Minimum                     | Average |
| Hot rolled steel and cold formed                        | 3 < t ≤ 6 mm | 85                          | 95      |
|                                                         | t ≥ 6 mm     | 100                         | 115     |
| Bolts, nuts and washers                                 |              | 45                          | 55      |
| Special parts: stay wheel steel bearings, dropper, etc. |              | 115                         | 115     |

|                       |                   | Class 8.8      |
|-----------------------|-------------------|----------------|
| BOLT DIAMETER<br>(mm) | BOLT HOLE<br>(mm) | TORQUE<br>(Nm) |
| 12                    | 13,5              | 70 ± 10        |
| 16                    | 17,5              | 170 ± 10       |
| 20                    | 21,5              | 330 ± 20       |
| 24                    | 26                | 550 ± 20       |
| 27                    | 29                | 800 ± 20       |
| 30                    | 32                | 1100 ± 30      |
| 33                    | 35                | 1400 ± 30      |
| 36                    | 38                | 1800 ± 30      |
| 39                    | 42                | 2300 ± 30      |

## WELDINGS

| Fillet weld                                                                         |                                                                                     | Full penetration weld                                                               |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| Full penetration weld                                                               |                                                                                     |                                                                                     |                                                                                     |
|  |  |                                                                                     |                                                                                     |

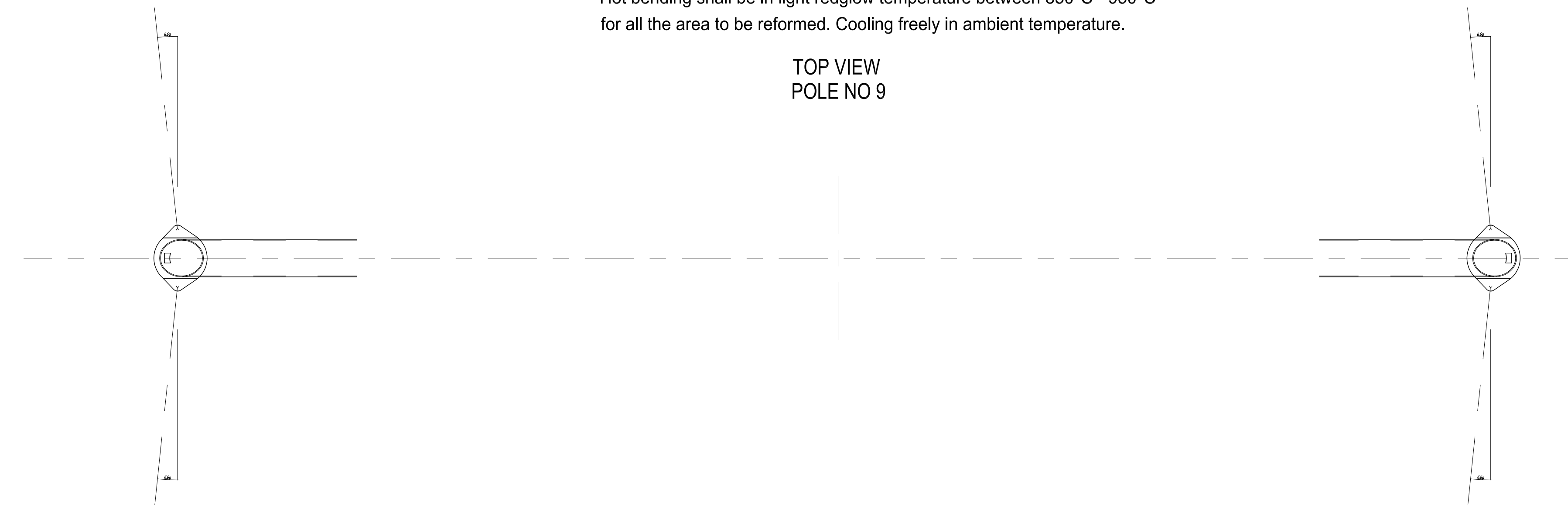
| BOLT SYMBOL     |                                                                                     |        |
|-----------------|-------------------------------------------------------------------------------------|--------|
|                 | SYMBOL                                                                              | HOLE   |
| BOLT M16        |  | Ø 17.5 |
| BOLT M20        |  | Ø 21.5 |
| BOLT M24        |  | Ø 26   |
| STEP BOLT (M20) |  | Ø 21.5 |
| OTHER           |  |        |

## BENDING

Special parts include droppers, U-bolts or other parts defined by Engineer. Hot bending shall be in light redglow temperature between 850°C - 950°C for all the area to be reformed. Cooling freely in ambient temperature.

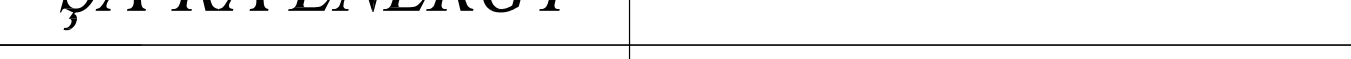
Hot bending shall be in light redglow temperature between 850°C - 950°C for all the area to be reformed. Cooling freely in ambient temperature.

for all the area to be reformed. Cooling freely in ambient temperature.



| LEG HEIGHT (m)<br>(L1) | PROFILE        | MODULES ( ASSEMBLY NAME ) |      |        |        |        |        |         |         |                            |                |                |
|------------------------|----------------|---------------------------|------|--------|--------|--------|--------|---------|---------|----------------------------|----------------|----------------|
|                        |                | 4.5(m)                    | 7(m) | 7.5(m) | 8.5(m) | 9.0(m) | 9.5(m) | 10.5(m) | 11.5(m) | TOP PART / EARTH WIRE PEAK | MIDDL. PIPE -1 | MIDDL. PIPE -2 |
| 21                     | CHS 457.0 x 10 | 21M3                      |      | 21M1   | 21M2   |        |        |         |         | LEFT-SMHJ/10-RIGHTSMHJ/11  | 21MP/1         | MP1/2          |
| 21.5                   | CHS 457.0 x 10 | 21.5M3                    |      | 21.5M1 |        | 21.5M2 |        |         |         | LEFT-SMHJ/10-RIGHTSMHJ/11  | 21MP/1         | MP1/2          |

|                                         |        |        |
|-----------------------------------------|--------|--------|
| SMHJ CROSSARMS (PROFILE 350 x 250 x 10) |        |        |
| MODULES (ASSEMBLY NAME)                 |        |        |
| SMHJ/8                                  | SMHJ/9 | SMHJ/8 |

|       |              |        |           |          |           |                                                                                                              |                                                                                       |                                 |                                   |                                                                                     |                                  |                |
|-------|--------------|--------|-----------|----------|-----------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|-----------------------------------|-------------------------------------------------------------------------------------|----------------------------------|----------------|
|       |              |        |           |          |           | <br><i>ŞA-RA ENERGY</i> |  | DATE:<br>27.03.2023             | DRAWING TYPE:<br>ASSEMBLY_DRAWING | ASSEMBLY_DRAWING<br>SMHJ<br>GUYED_MEDIUM_ANGLE_TENSION_TOWER<br>WITH_EARTHWIRE_PEAK | SHEET:<br>1                      |                |
|       |              |        |           |          |           |                                                                                                              |                                                                                       | PAPER SIZE:<br>A0               | DESIGNED:<br>GMH                  |                                                                                     | GENERAL_LAYOUT<br>&_LEG_ERECTION | REVISION:<br>0 |
|       |              |        |           |          |           |                                                                                                              |                                                                                       | SCALE:<br>1:40                  | DRAWN:<br>H.C.                    |                                                                                     |                                  |                |
|       |              |        |           |          |           |                                                                                                              |                                                                                       | PROJECT NUMBER:<br>KH1/KLA-04   | CHECKED:<br>SY                    |                                                                                     |                                  |                |
| REV.: | DESCRIPTION: | DATE.: | DESIGNED: | CHECKED: | APPROVED: |                         |  | DRAWING NUMBER:<br>687-02-IM-01 | APPROVED:<br>LANDSNET             |                                                                                     |                                  |                |

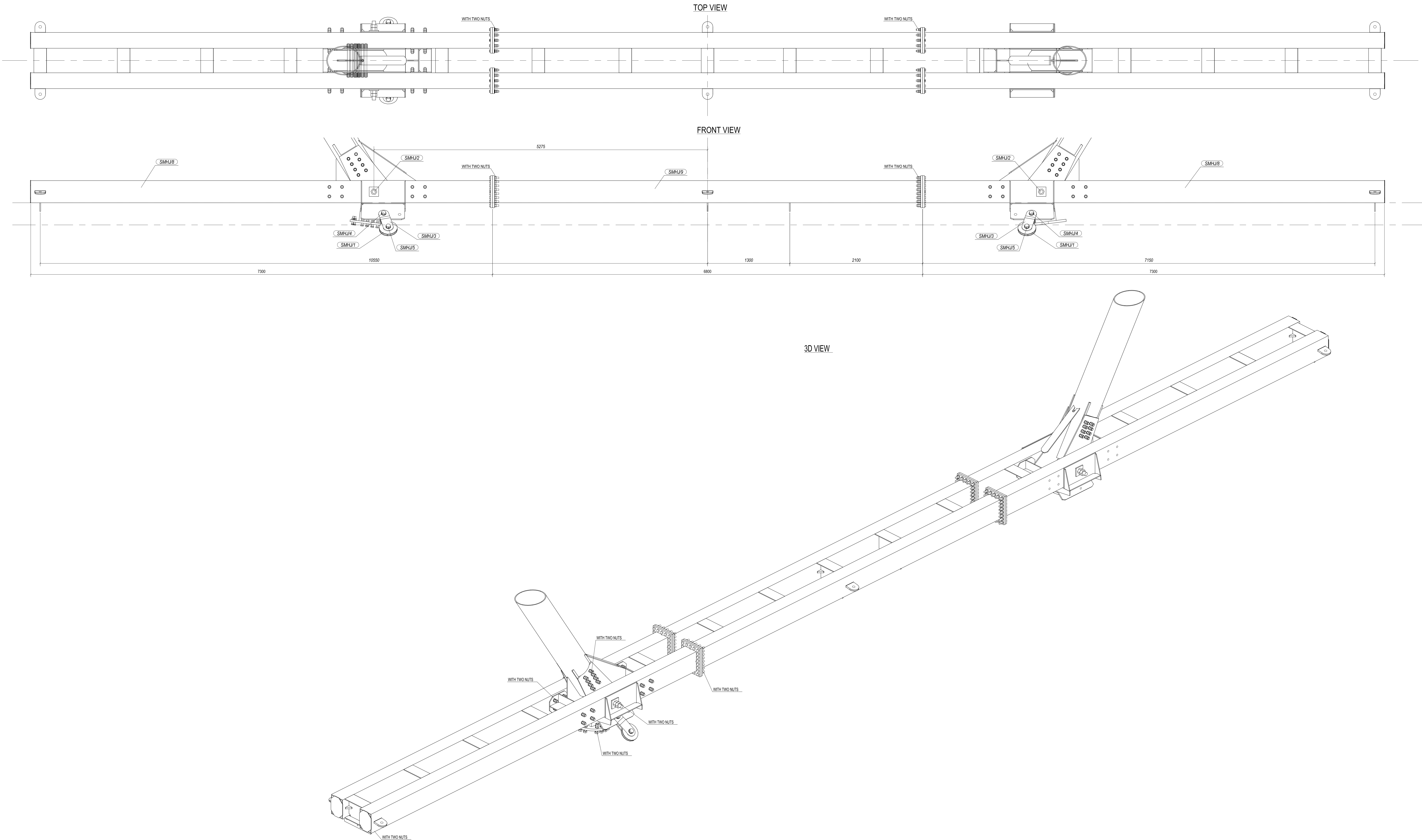
F

E

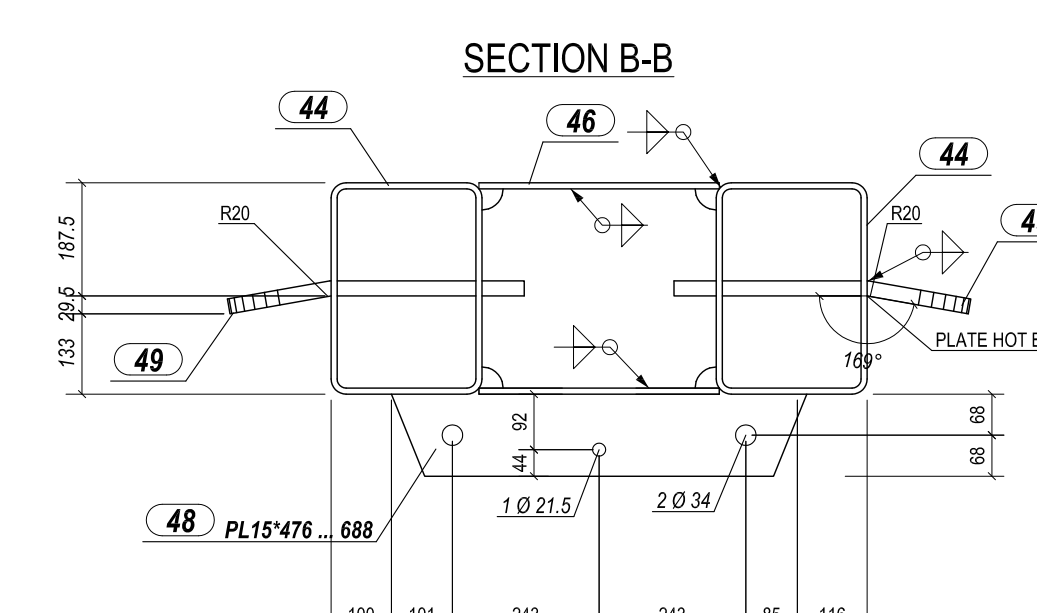
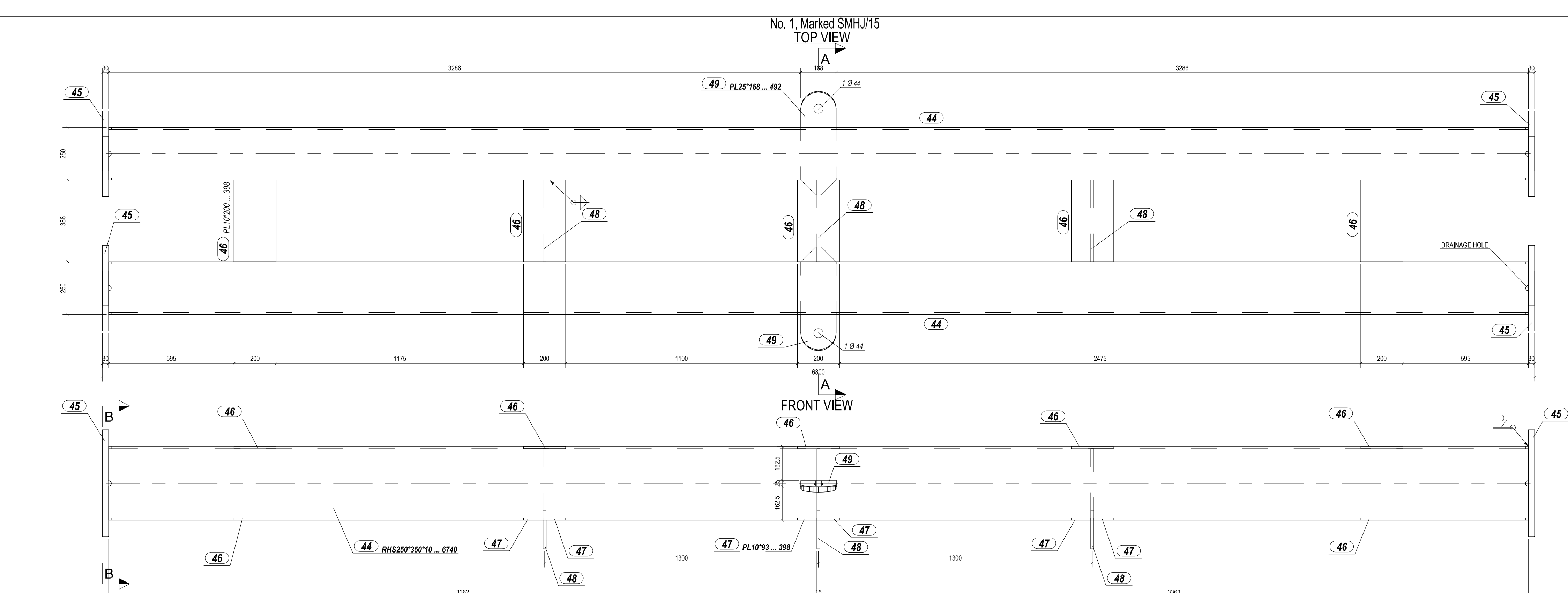
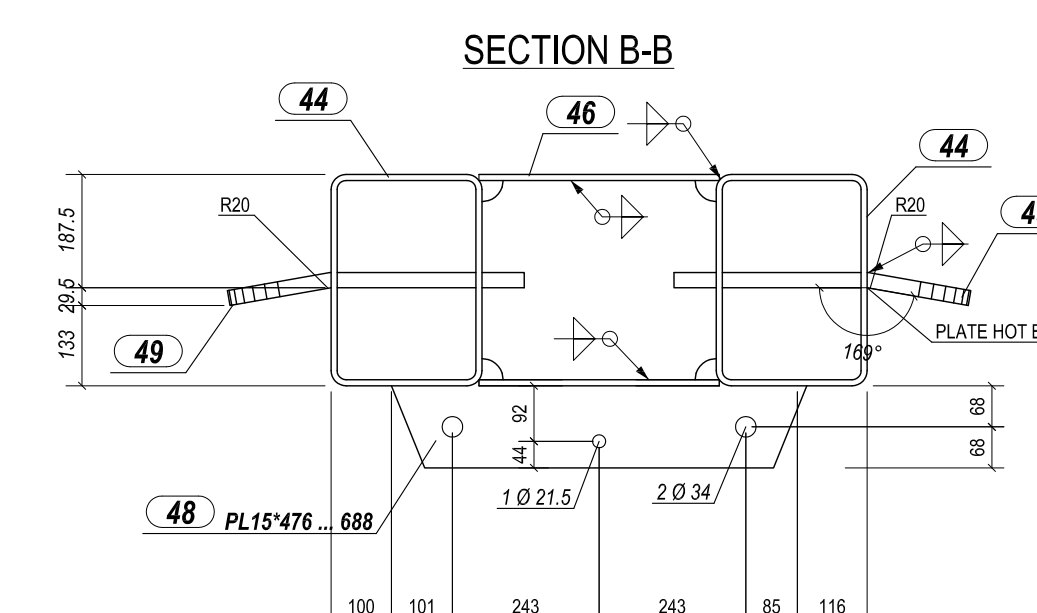
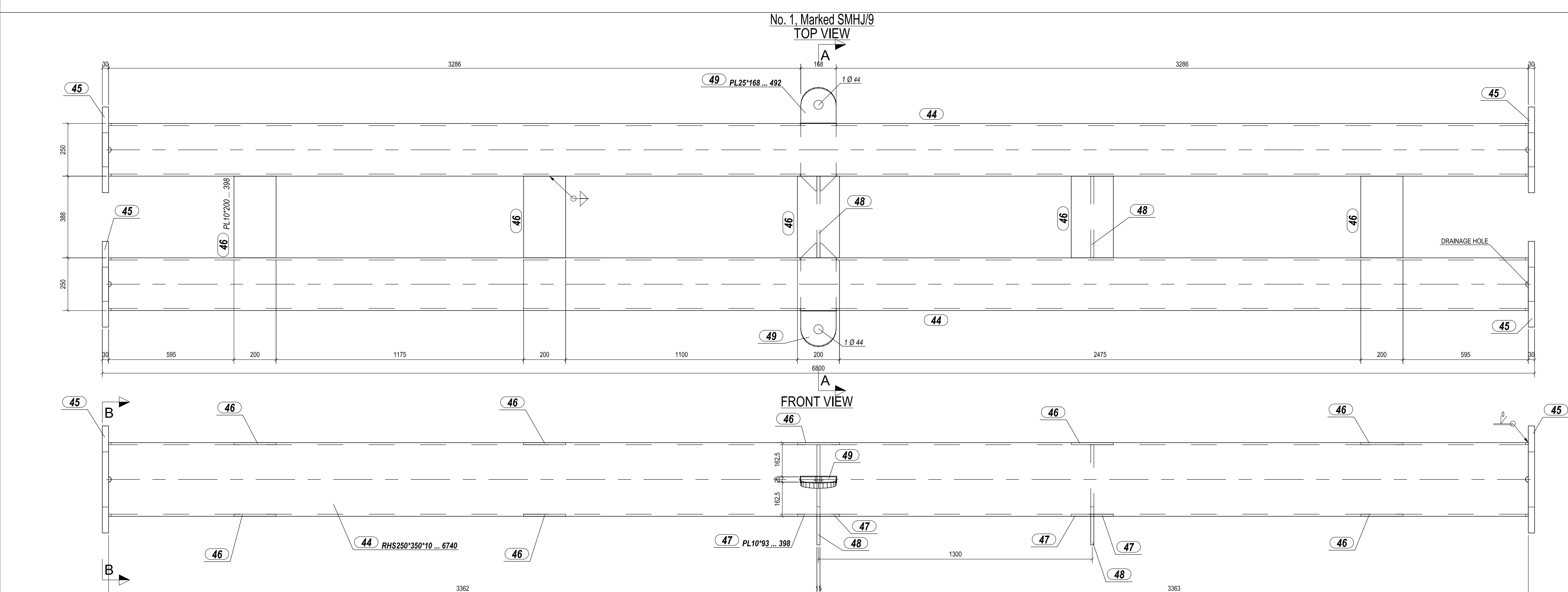
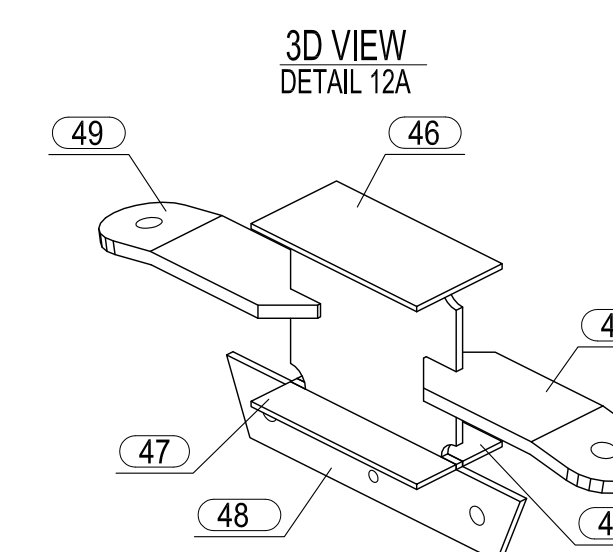
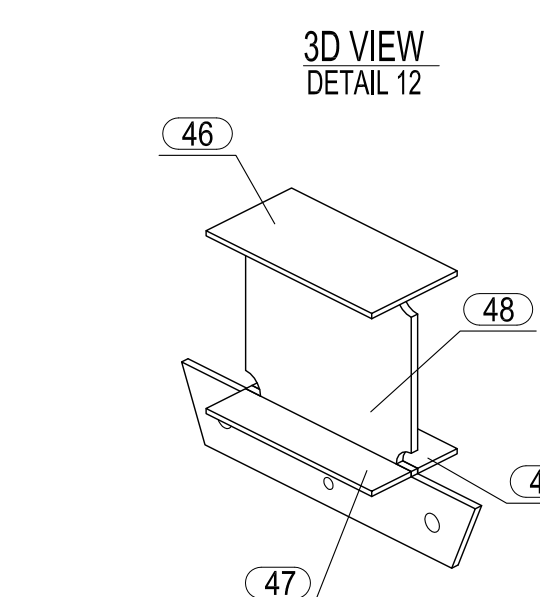
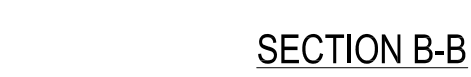
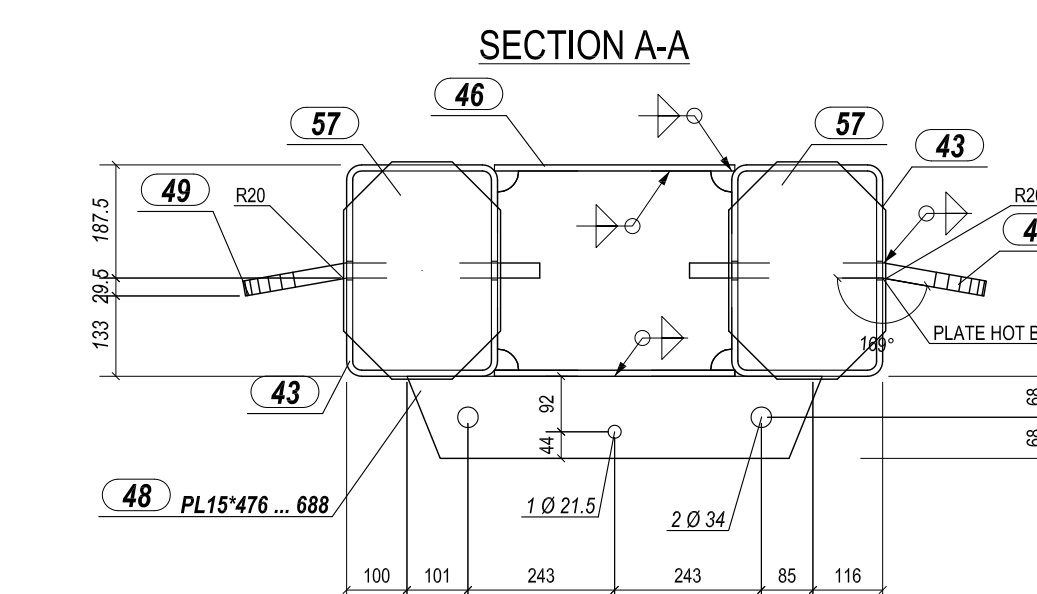
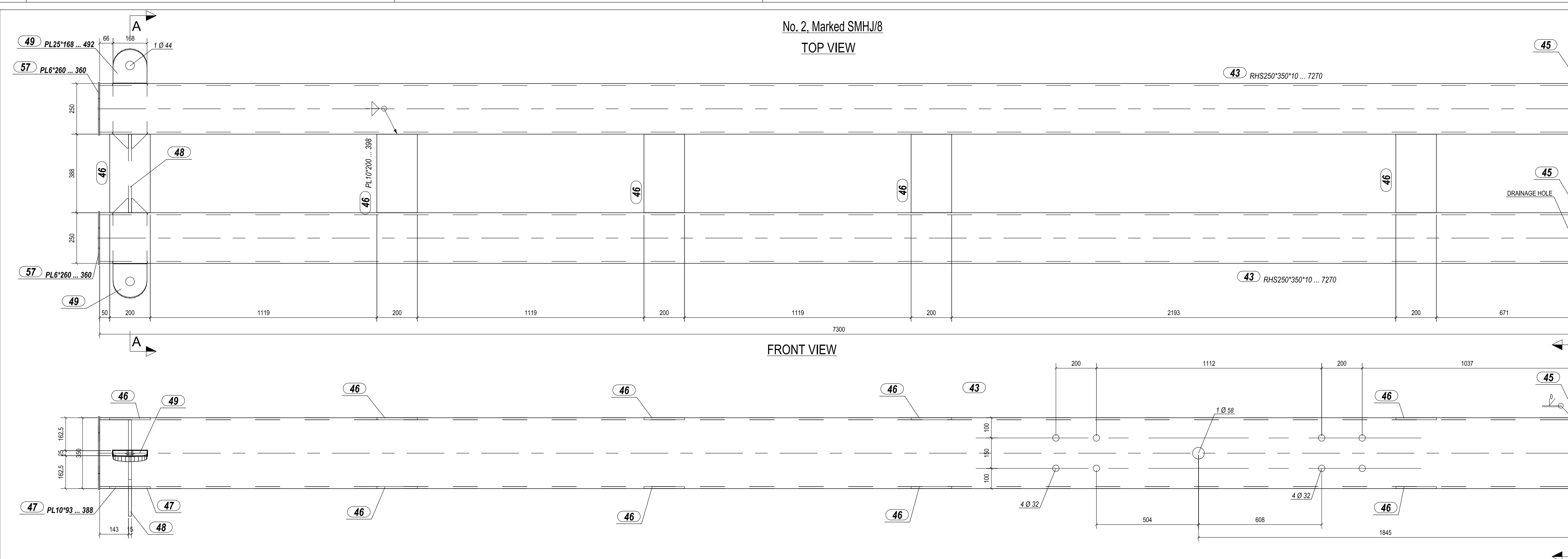
D

C

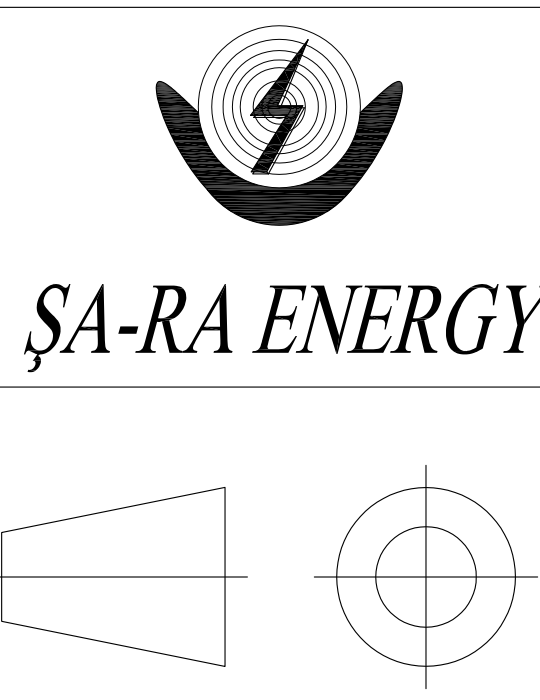
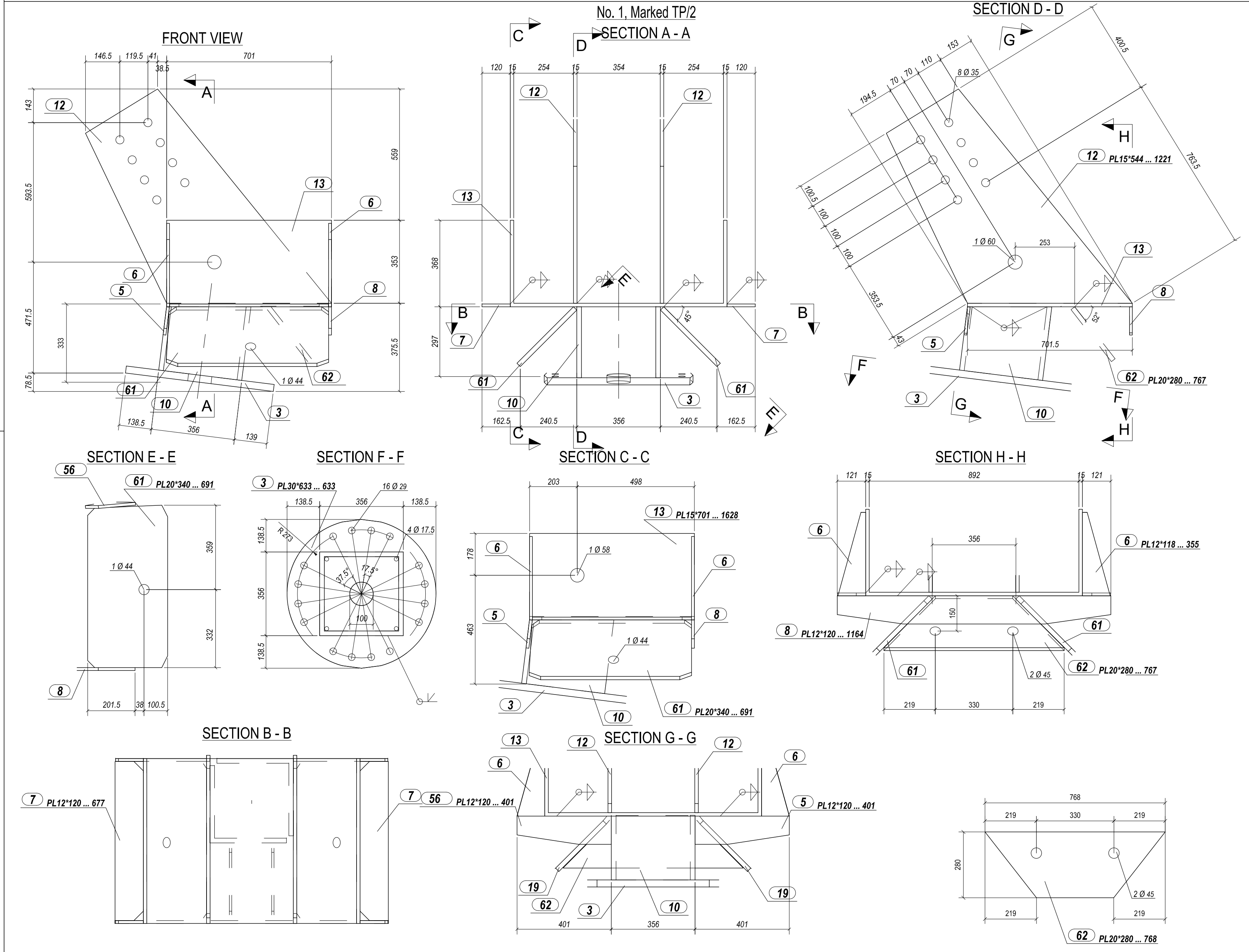
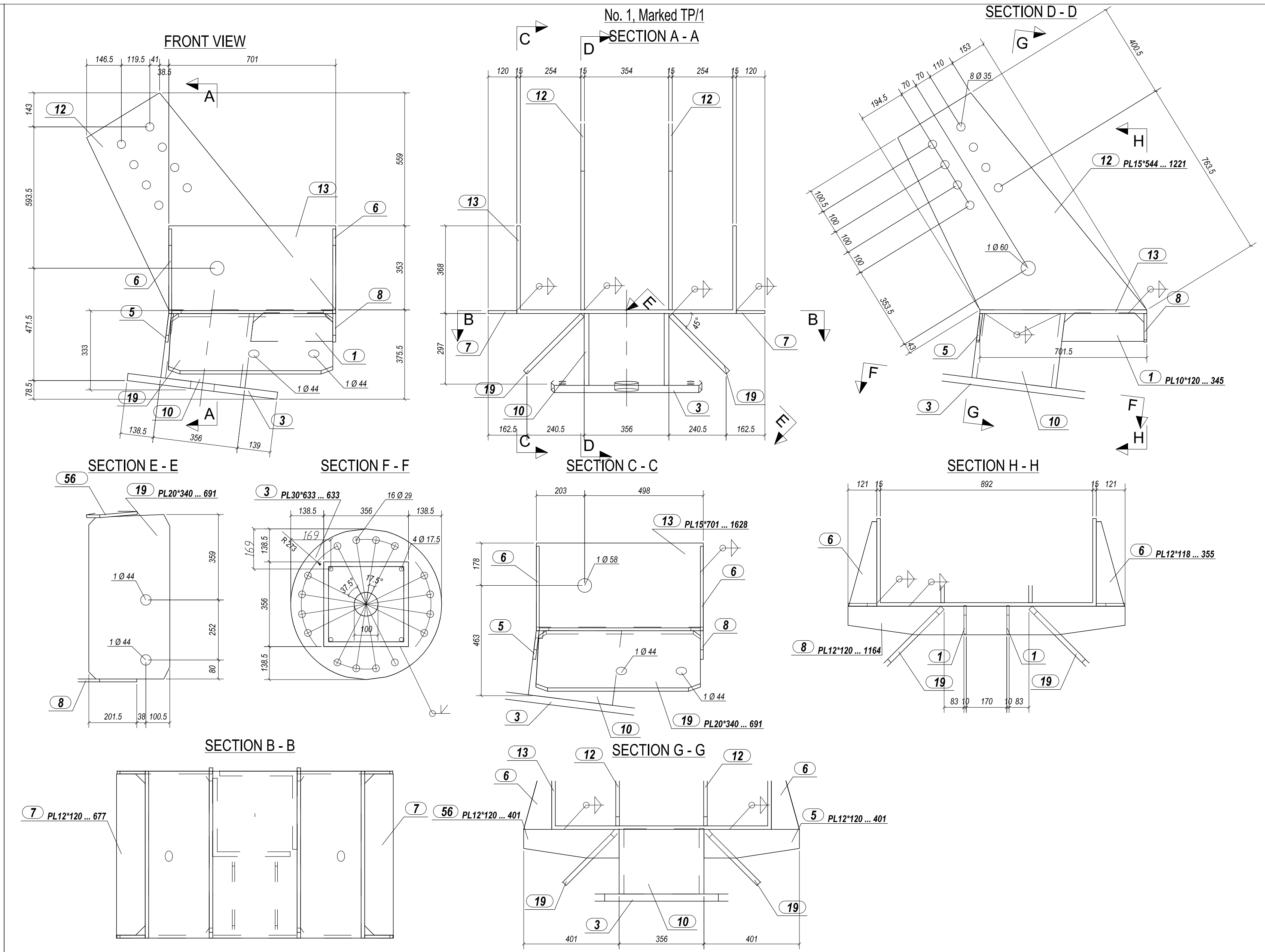
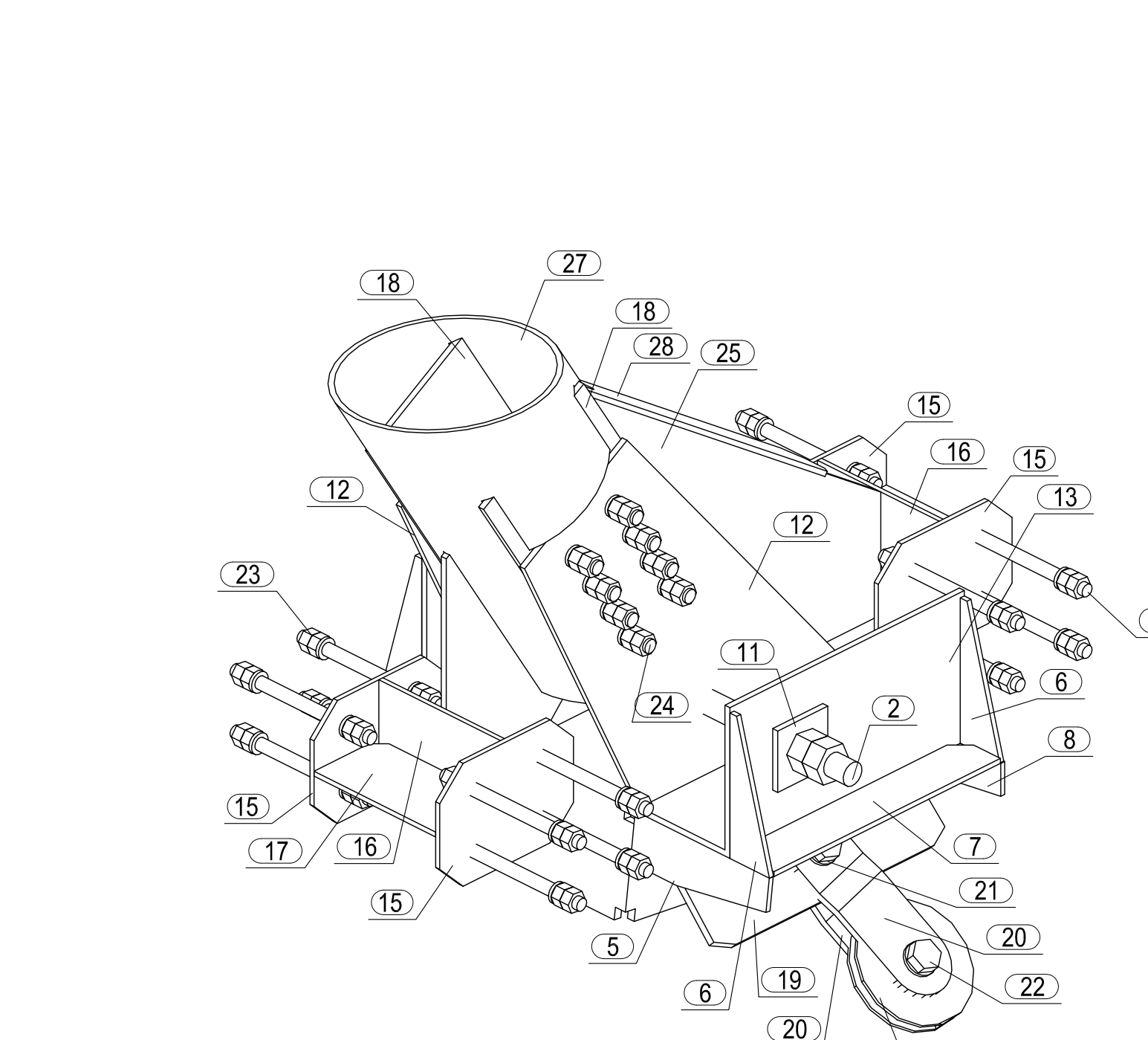
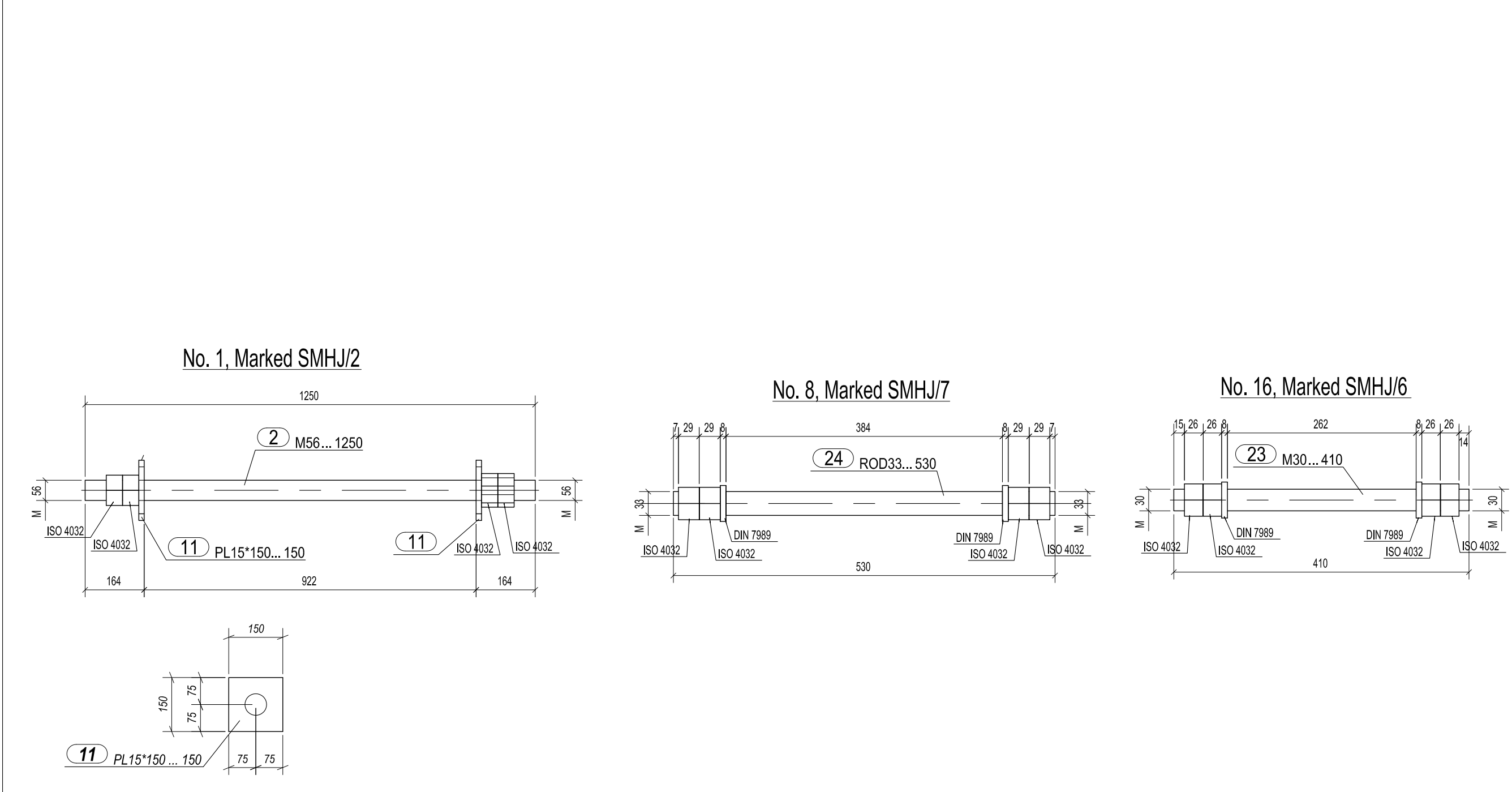
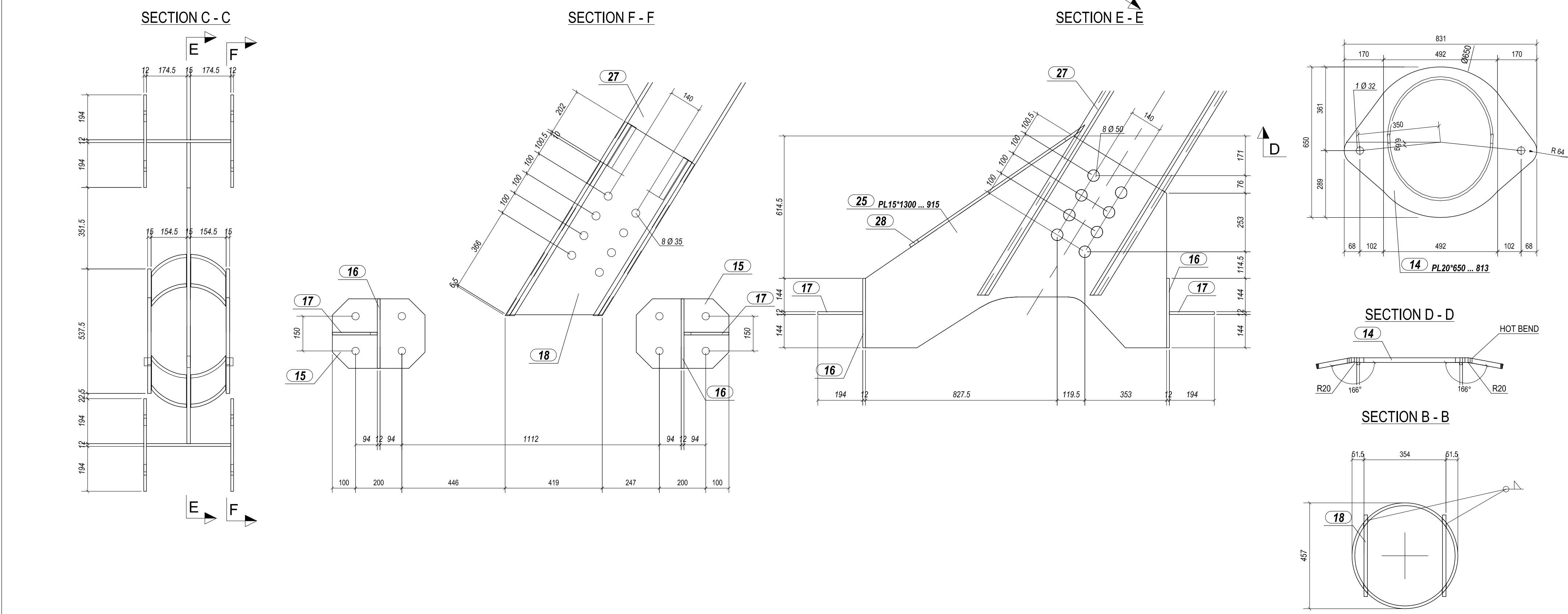
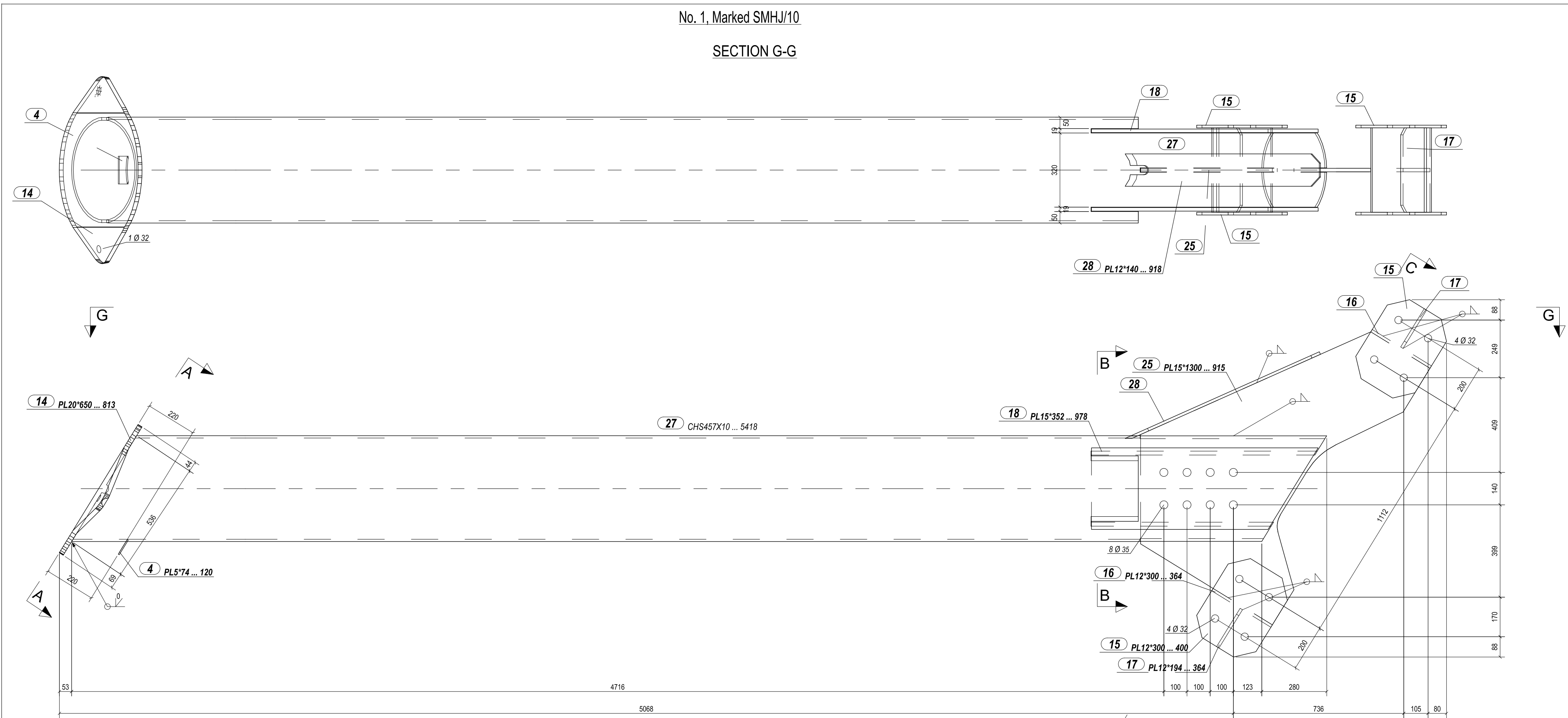
B



|       |              |  |  |  |  |                                                                                       |                                                                                       |                                 |                                   |                                                                                     |                |
|-------|--------------|--|--|--|--|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|-----------------------------------|-------------------------------------------------------------------------------------|----------------|
|       |              |  |  |  |  |  |  | DATE:<br>27.03.2023             | DRAWING TYPE:<br>ERECTION_DRAWING | ERECTION_DRAWING<br>SMHJ<br>GUYED_MEDIUM_ANGLE_TENSION_TOWER<br>WITH_EARTHWIRE_PEAK | SHEET:<br>2    |
|       |              |  |  |  |  |                                                                                       |                                                                                       | PAPER SIZE:<br>A0               | DESIGNED:<br>GMH                  |                                                                                     |                |
|       |              |  |  |  |  |                                                                                       |                                                                                       | SCALE:<br>1:20                  | DRAWN:<br>H.C.                    | CROSSARM_ERECTION                                                                   | REVISION:<br>0 |
|       |              |  |  |  |  |                                                                                       |                                                                                       | PROJECT NUMBER:<br>KH1/KLA-04   | CHECKED:<br>SY                    |                                                                                     |                |
| REV.: | DESCRIPTION: |  |  |  |  |                                                                                       |                                                                                       | DRAWING NUMBER:<br>687-02-IM-02 | APPROVED:<br>LANDSNET             |                                                                                     |                |



|       |  |              |        |           |          |                                                                                                       |                                                                                       |                                 |                                   |                                                                                           |                    |
|-------|--|--------------|--------|-----------|----------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------|--------------------|
|       |  |              |        |           |          | <br>ŞA-RA ENERGY |  | DATE:<br>27.03.2023             | DRAWING TYPE:<br>ASSEMBLY_DRAWING | ASSEMBLY_DRAWING<br>SMHJ_SMHJ2<br>GUYED_MEDIUM_ANGLE_TENSION_TOWER<br>WITH_EARTHWIRE_PEAK | SHEET:<br><br>3    |
|       |  |              |        |           |          |                                                                                                       |                                                                                       | PAPER SIZE:<br>A0               | DESIGNED:<br>GMH                  |                                                                                           |                    |
|       |  |              |        |           |          |                                                                                                       |                                                                                       | SCALE:<br>1:5-1:10              | DRAWN:<br>HC                      |                                                                                           |                    |
|       |  |              |        |           |          |                                                                                                       |                                                                                       | PROJECT NUMBER:<br>KH1/KLA-04   | CHECKED:<br>SY                    |                                                                                           |                    |
|       |  |              |        |           |          |                  |  | DRAWING NUMBER:<br>687-02-IM-03 | APPROVED:<br>LANDSNET             | CROSSARM_ASSEMBLY                                                                         | REVISION:<br><br>0 |
| REV.: |  | DESCRIPTION: | DATE.: | DESIGNED: | CHECKED: |                                                                                                       |                                                                                       | APPROVED:                       |                                   |                                                                                           |                    |



DATE: 27.03.2023

PAPER SIZE: A0

SCALE: 1:5-1:10

PROJECT NUMBER: KH1/KLA-04

DRAWING NUMBER: 687-02-IM-04

DRAWING TYPE: ASSEMBLY\_DRAWING

DESIGNED: GMH

DRAWN: HC

CHECKED: SY

APPROVED: LANDSNET

ASSEMBLY\_DRAWING

SMHJ&SMHJ2

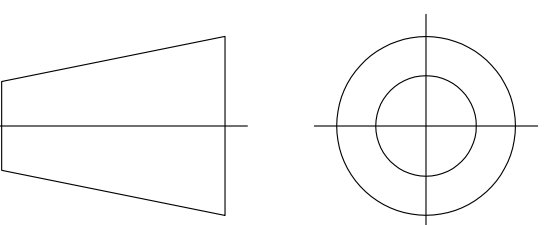
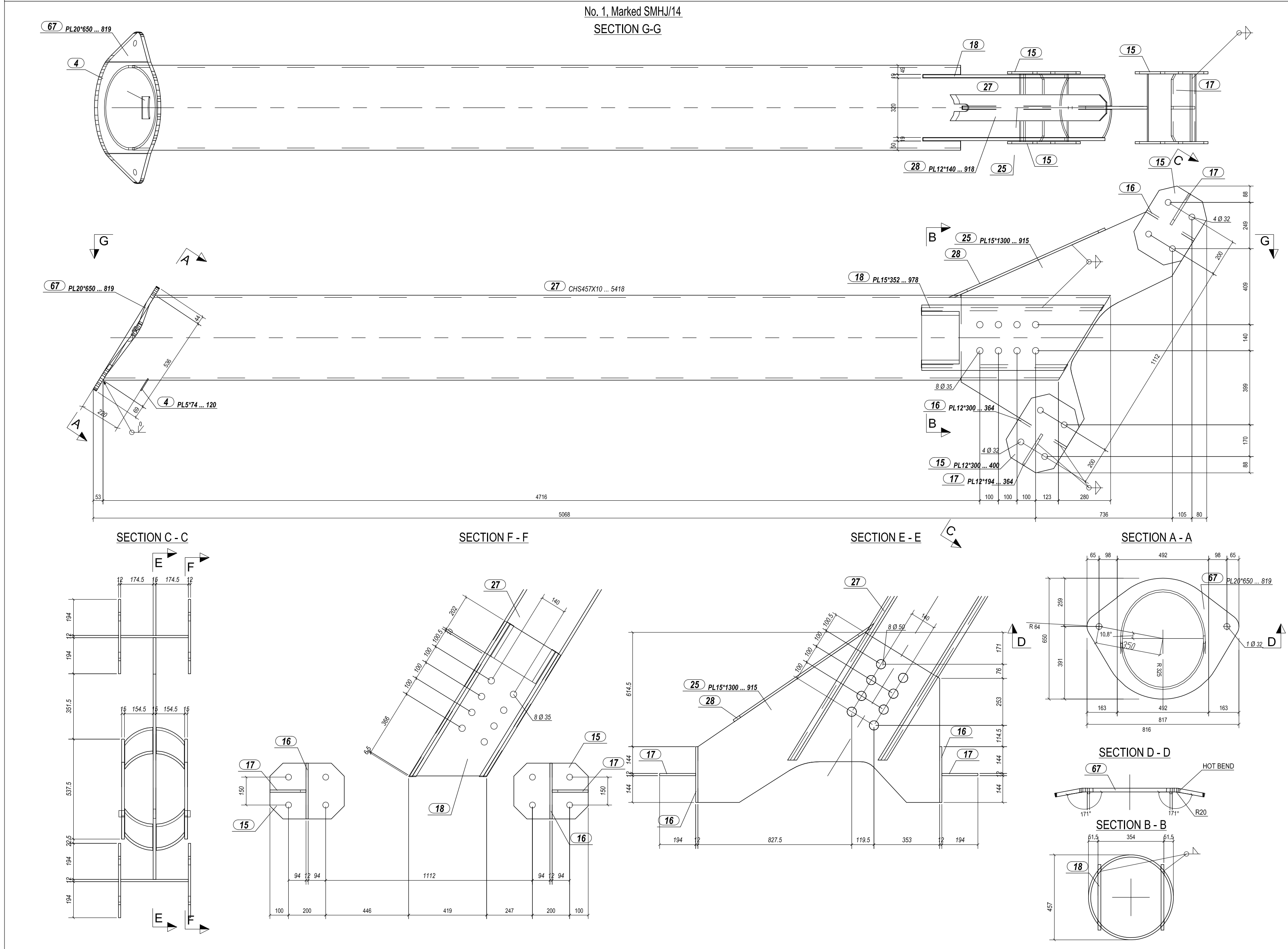
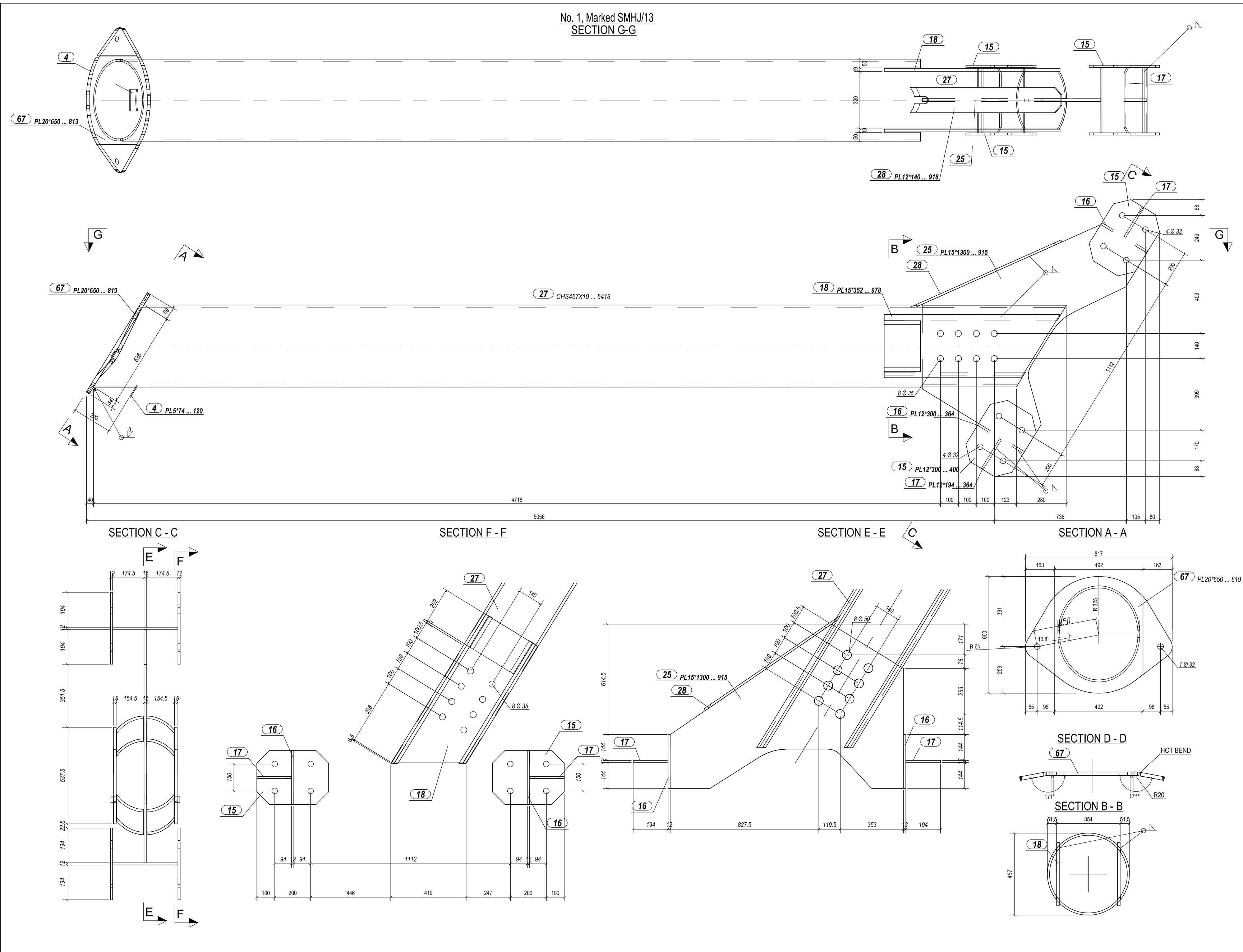
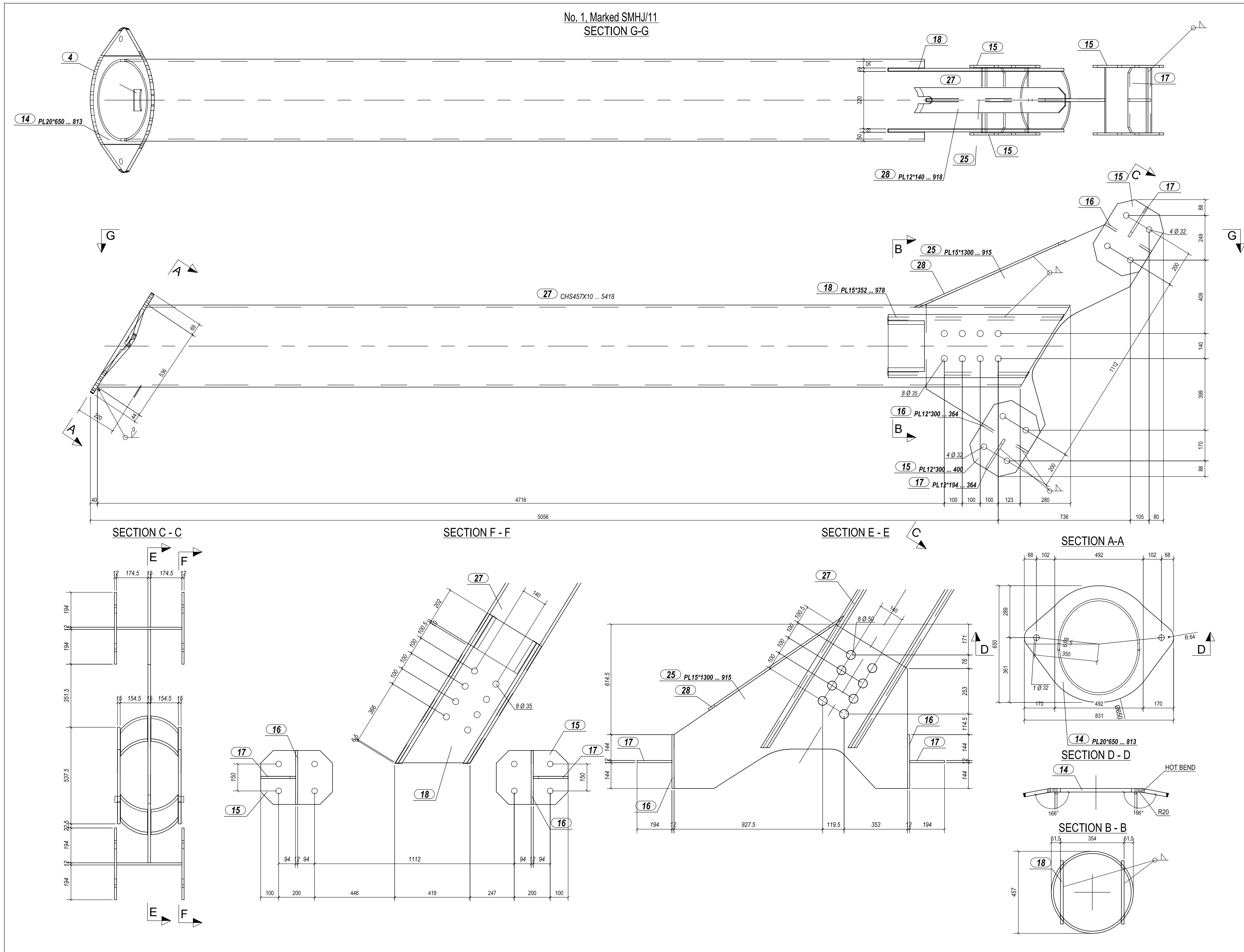
GUYED\_MEDIUM\_ANGLE\_TENSION\_TOWER

WITH\_EARTHWIRE\_PEAK

EARTH\_WIRE\_PEAK

SHEET: 4

REVISION: 0



LANDSNET



DATE:  
27.03.2023

PAPER SIZE:  
A0

SCALE:  
1:5-1:10

PROJECT NUMBER:  
KH1/KLA-04

DRAWING NUMBER:  
687-02-IM-05

DRAWING TYPE:  
ASSEMBLY\_DRAWING

DESIGNED:  
GMH

DRAWN:  
HC

CHECKED:  
SY

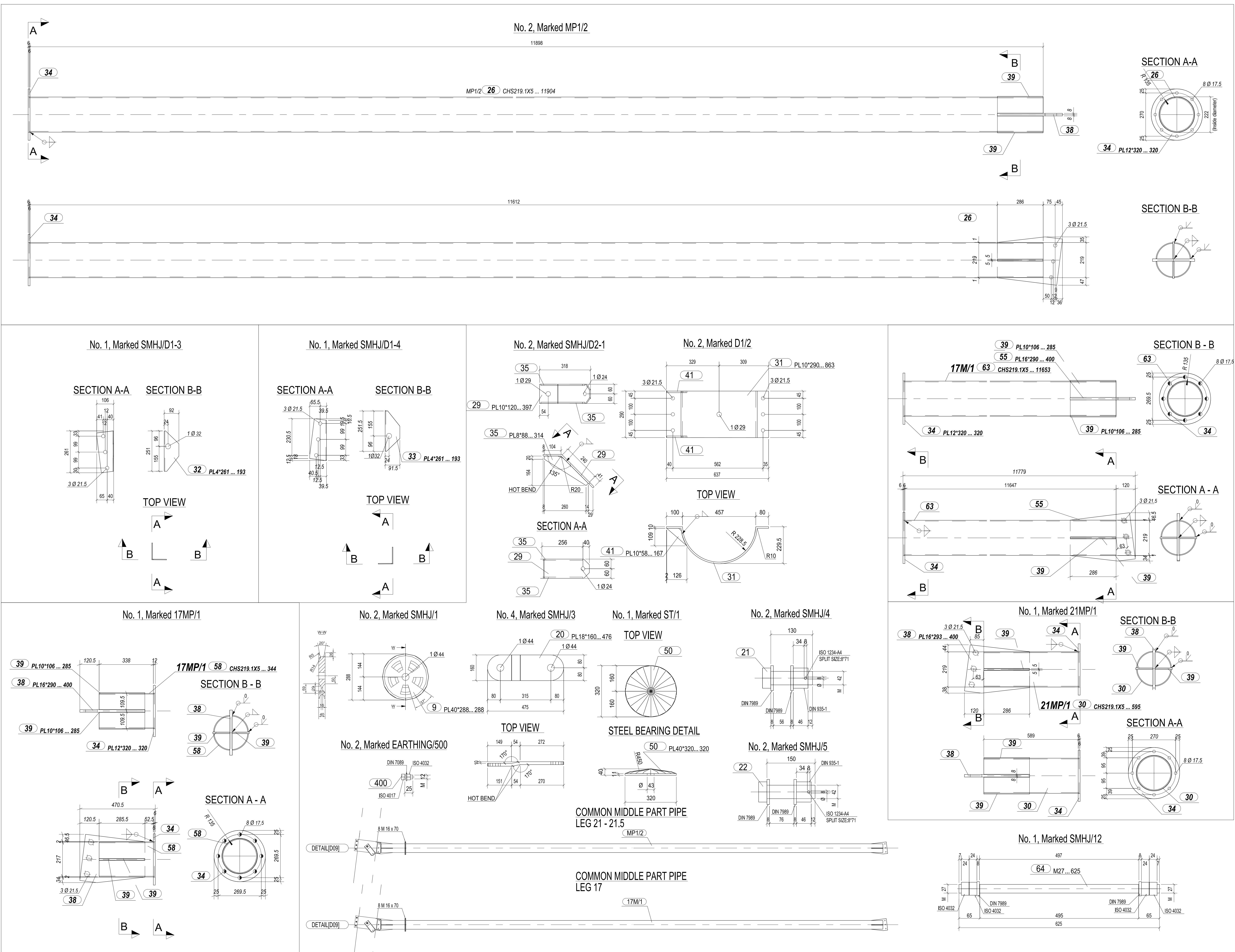
APPROVED:  
LANDSNET

ASSEMBLY\_DRAWING  
SMHJ&SMHJ2  
GUYED\_MEDIUM\_ANGLE\_TENSION\_TOWER  
WITH\_EARTHWIRE\_PEAK  
EARTH\_WIRE\_PEAK\_II

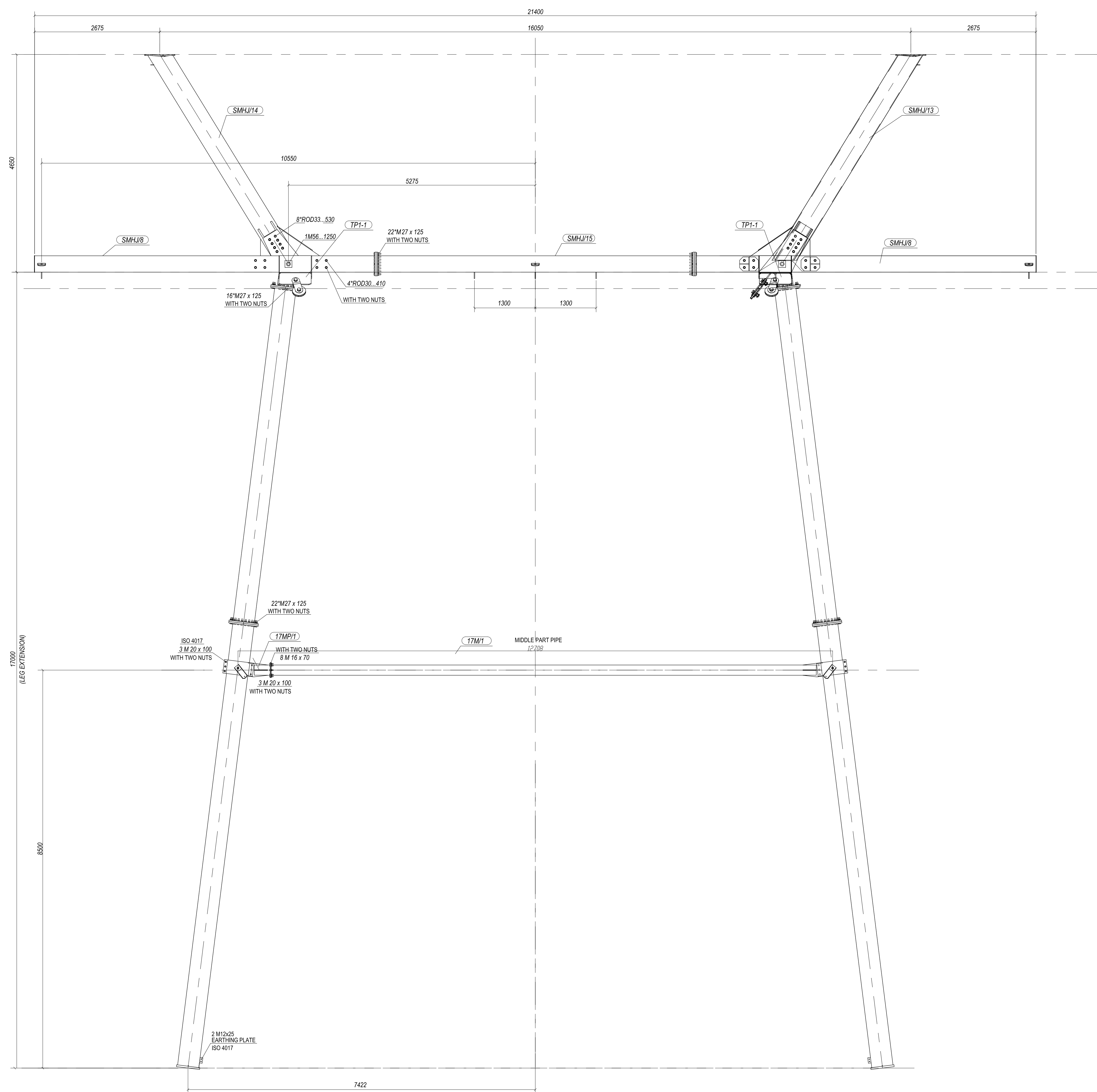
SHEET:  
5

REVISION:  
0

REV.: DESCRIPTION: DATE.: DESIGNED: CHECKED: APPROVED:



|       |              |        |           |          |           |                                                                                       |                                 |                                                                                       |                     |                                   |                                                                                           |                  |                    |
|-------|--------------|--------|-----------|----------|-----------|---------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------------|---------------------|-----------------------------------|-------------------------------------------------------------------------------------------|------------------|--------------------|
|       |              |        |           |          |           |  | LANDSNET                        |  | DATE:<br>27.03.2023 | DRAWING TYPE:<br>ASSEMBLY_DRAWING | ASSEMBLY_DRAWING<br>SMHJ&SMHJ2<br>GUYED_MEDIUM_ANGLE_TENSION_TOWER<br>WITH_EARTHWIRE_PEAK | SHEET:<br><br>6  |                    |
|       |              |        |           |          |           |                                                                                       |                                 |                                                                                       |                     | PAPER SIZE:<br>A0                 |                                                                                           | DESIGNED:<br>GMH | REVISION:<br><br>0 |
|       |              |        |           |          |           |                                                                                       |                                 |                                                                                       |                     | SCALE:<br>1:5-1:10-1:30-1:40      |                                                                                           | DRAWN:<br>HC     |                    |
|       |              |        |           |          |           |                                                                                       | PROJECT NUMBER:<br>KH1/KLA-04   | CHECKED:<br>SY                                                                        |                     |                                   |                                                                                           |                  |                    |
|       |              |        |           |          |           |                                                                                       | DRAWING NUMBER:<br>687-02-IM-06 | APPROVED:<br>LANDSNET                                                                 |                     |                                   |                                                                                           |                  |                    |
| REV.: | DESCRIPTION: | DATE.: | DESIGNED: | CHECKED: | APPROVED: |  |                                 |                                                                                       |                     |                                   | SECTION_AND_DETAIL                                                                        |                  |                    |



NOTES

Threaded rods and connection bolts shall have washer and two nuts.

All dimensions are given in mm and angles in grades [gr] (0-400gr for full circle) unless otherwise noted.

These drawings are production drawings

Use of alternative principal solutions in design are subjected to approval by client.

Towers shall include steel bearings, stay wheels, droppers for attachment of conductor.  
Guy wires are not part of tower delivery.

## MATERIAL SPECIFICATION

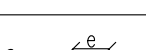
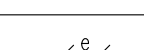
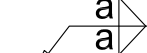
|                                        |                                                                                                                    |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| HOLLOW SECTION STEEL PROFILES          | S355J2H EN 10025* and Profiles are now cold formed acc. to EN 10219 not EN 10210                                   |
| STEEL PLATES                           | S355J2 EN 10025                                                                                                    |
| STEEL FLANGE CONNECTION PLATES         | S355J2 EN 10025 WITH MIN Z25 ACC. TO EN 10164                                                                      |
| STEEL PLATES FOR HOT BENDING           | S355J2 EN 10025                                                                                                    |
| STEEL BEARING AND STAY WHEELS          | S355J2                                                                                                             |
| THREADED STEEL RODS (CONNECTION BOLTS) | 8.8 EN 20898                                                                                                       |
| HEXAGON BOLTS EN ISO 4014              | 8.8 EN 20898                                                                                                       |
| HEXAGON NUTS EN ISO 4032               | 8 EN 24034                                                                                                         |
| WASHERS                                | DIN 7989                                                                                                           |
| *S355J2H EN 10025*                     | All profiles have chemical composition<br>C ≤ 0.18 %, P ≤ 0.020 % and S ≤ 0.012 % and fully aluminium killed steel |

HOT DIP GALVANIZING ACC. TO  
EN ISO 14713 AND EN ISO 1461

| MATERIAL                                                        | THICKNESS    | ZINC THICKNESS, micrometers |         |
|-----------------------------------------------------------------|--------------|-----------------------------|---------|
|                                                                 |              | Minimum                     | Average |
| Hot rolled steel and cold formed                                | 3 < t ≤ 6 mm | 85                          | 95      |
|                                                                 | t > 6 mm     | 100                         | 115     |
| Bolts, nuts and washers                                         |              | 45                          | 55      |
| Special parts: stay<br>wheeled steel bearings,<br>dropper, etc. |              | 115                         | 115     |

|                       |                   | Class 8.8      |
|-----------------------|-------------------|----------------|
| BOLT DIAMETER<br>(mm) | BOLT HOLE<br>(mm) | TORQUE<br>(Nm) |
| 12                    | 13,5              | 70 ± 10        |
| 16                    | 17,5              | 170 ± 10       |
| 20                    | 21,5              | 330 ± 20       |
| 24                    | 26                | 550 ± 20       |
| 27                    | 29                | 800 ± 20       |
| 30                    | 32                | 1100 ± 30      |
| 33                    | 35                | 1400 ± 30      |
| 36                    | 38                | 1800 ± 30      |
| 39                    | 42                | 2300 ± 30      |

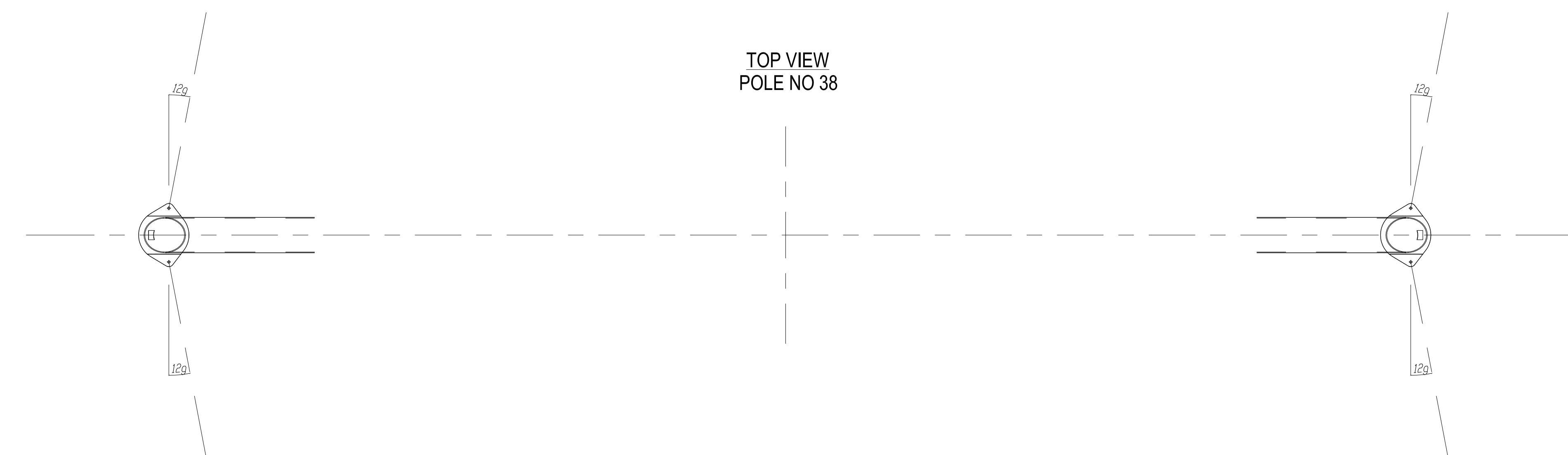
## WELDINGS

| Fillet weld                                                                         |                                                                                     | Full penetration weld                                                               |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| Full penetration weld                                                               |                                                                                     |                                                                                     |                                                                                     |
|  |  |                                                                                     |                                                                                     |

|                 | BOLT SYMBOL                                                                         |        |
|-----------------|-------------------------------------------------------------------------------------|--------|
|                 | SYMBOL                                                                              | HOLE   |
| BOLT M16        |  | Ø 17.5 |
| BOLT M20        |  | Ø 21.5 |
| BOLT M24        |  | Ø 26   |
| STEP BOLT (M20) |  | Ø 21.5 |
| OTHER           |  |        |

BENDING

Special parts include droppers, U-bolts or other parts defined by Engineer. Hot bending shall be in light redglow temperature between 850°C - 950°C for all the area to be reformed. Cooling freely in ambient temperature.

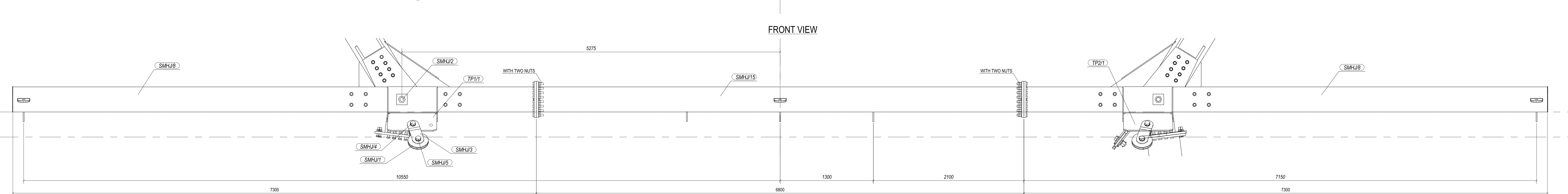


| LEG HEIGHT (m)<br>(L1) | PROFILE        | MODULES (ASSEMBLY NAME) |      |        |        |        |         |         |                            |                |                |
|------------------------|----------------|-------------------------|------|--------|--------|--------|---------|---------|----------------------------|----------------|----------------|
|                        |                | 4.5(m)                  | 7(m) | 7.5(m) | 8.5(m) | 9.5(m) | 10.5(m) | 11.5(m) | TOP PART / EARTH WIRE PEAK | MIDDL. PIPE -1 | MIDDL. PIPE -2 |
| 17                     | CHS 457.0 x 10 |                         |      | 17M3   |        | 17M2   |         |         | LEFT-SMH/14-RIGHTSMH/13    | 17MP/1         | 17M/1          |

|                                          |        |        |
|------------------------------------------|--------|--------|
| SMHJ2 CROSSARMS (PROFILE 350 x 250 x 10) |        |        |
| MODULES ( ASSEMBLY NAME )                |        |        |
| SMHJ/8                                   | SMHJ/9 | SMHJ/8 |

|       |   |              |   |        |                 |                                                                                                       |                                                                                       |                 |              |               |                  |                                                                                      |           |   |   |  |   |
|-------|---|--------------|---|--------|-----------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------|--------------|---------------|------------------|--------------------------------------------------------------------------------------|-----------|---|---|--|---|
|       |   |              |   |        |                 | <br>ŞA-RA ENERGY |  | DATE:           | 27.03.2023   | DRAWING TYPE: | ASSEMBLY_DRAWING | ASSEMBLY_DRAWING<br>SMHJ2<br>GUYED_MEDIUM_ANGLE_TENSION_TOWER<br>WITH_EARTHWIRE_PEAK | SHEET:    | 7 |   |  |   |
|       |   |              |   |        | PAPER SIZE:     |                                                                                                       |                                                                                       | A0              | DESIGNED:    | GMH           |                  |                                                                                      |           |   |   |  |   |
|       |   |              |   |        | SCALE:          |                                                                                                       |                                                                                       | 1:40            | DRAWN:       | H.C.          |                  |                                                                                      |           |   |   |  |   |
|       |   |              |   |        | PROJECT NUMBER: |                                                                                                       |                                                                                       | KH1/KLA-04      | CHECKED:     | SY            |                  |                                                                                      |           |   |   |  |   |
|       |   |              |   |        |                 |                                                                                                       |                                                                                       | DRAWING NUMBER: | 687-02-İM-07 | APPROVED:     | LANDSNET         | GENERAL_LAYOUT<br>&_LEG_ERECTION_17M                                                 | REVISION: | 0 |   |  |   |
| REV.: |   | DESCRIPTION: |   | DATE.: | DESIGNED:       | CHECKED:                                                                                              | APPROVED:                                                                             |                 |              |               |                  |                                                                                      |           |   |   |  |   |
|       | 8 |              | 7 |        | 6               |                                                                                                       |                                                                                       |                 | 5            |               | 4                |                                                                                      | 3         |   | 2 |  | 1 |





|       |  |              |        |           |                               |                                                                                                              |                                                                                                                                                                                |                                 |                                   |                                                                                      |                    |   |  |   |  |
|-------|--|--------------|--------|-----------|-------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------|--------------------------------------------------------------------------------------|--------------------|---|--|---|--|
|       |  |              |        |           |                               | <br><i>SA-RA ENERGY</i> |                                                                                           | DATE:<br>27.03.2023             | DRAWING TYPE:<br>ERECTION_DRAWING | ERECTION_DRAWING<br>SMHJ2<br>GUYED_MEDIUM_ANGLE_TENSION_TOWER<br>WITH_EARTHWIRE_PEAK | SHEET:<br><br>9    |   |  |   |  |
|       |  |              |        |           | PAPER SIZE:<br>A0             |                                                                                                              |                                                                                                                                                                                | DESIGNED:<br>GMH                |                                   |                                                                                      |                    |   |  |   |  |
|       |  |              |        |           | SCALE:<br>1:20                |                                                                                                              |                                                                                                                                                                                | DRAWN:<br>H.C.                  |                                   |                                                                                      |                    |   |  |   |  |
|       |  |              |        |           | PROJECT NUMBER:<br>KH1/KLA-04 |                                                                                                              |                                                                                                                                                                                | CHECKED:<br>SY                  |                                   |                                                                                      |                    |   |  |   |  |
| REV.: |  | DESCRIPTION: | DATE.: | DESIGNED: | CHECKED:                      | APPROVED:                                                                                                    | <br> | DRAWING NUMBER:<br>687-02-IM-09 | APPROVED:<br>LANDSNET             | CROSSARM_ERECTION_II                                                                 | REVISION:<br><br>0 |   |  |   |  |
|       |  |              |        |           |                               |                                                                                                              |                                                                                                                                                                                |                                 |                                   |                                                                                      |                    |   |  |   |  |
| 8     |  | 7            |        | 6         |                               | 5                                                                                                            |                                                                                                                                                                                | 4                               |                                   | 3                                                                                    |                    | 2 |  | 1 |  |