



CONNECT 60

**REPORT OF ASSESSMENT OF PERFORMANCE
NO.755200134 / 2022**

Notified Body No. 1023

**INSTITUTE FOR TESTING
AND
CERTIFICATION**

Třída Tomáše Bati 299
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Division CSI - Centre of Civil Engineering

CE



Assessed by
Ing. Vratislav Glos

26.05.2022

MANAGING DIRECTOR
Mr. Miroslav Cais

A handwritten signature in black ink, appearing to read "M. Cais", located below the name of the Managing Director.



INSTITUTE FOR TESTING AND CERTIFICATION

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Division CSI - Centre of Civil Engineering



REPORT OF ASSESSMENT OF PERFORMANCE

NO. 755200134 / 2022

Notified Body No. 1023

Product: Sliding single-leaf self-supporting door of type designation CANTIELVER with type series S (variants S, SE, SK), series Connect 60 (variants Connect 60, S, SK) series M (variants M, ME, MEK) and series M max 14 (variants M max 14, MK max 14), with 4 variants of infill design, in dimensional variants of design and always with manual

Applicant: CAIS s.r.o.
Přehradní 199
763 16 Fryšták - Dolní Ves
Česká republika

Producent: CAIS s.r.o.
Přehradní 199
763 16 Fryšták - Dolní Ves
Česká republika

Assessed by: Ing. Vratislav Glos

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of annexes:** 1

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Mgr. Jiří Heš

Representative of the Notified Body No. 1023



Introduction

Gates as construction products have to be assessed on the basis of relevant clauses of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (hereafter CPR; Construction Products Regulation). European standards after their becoming available are subsequently adopted as national standards. All the EN standards cited in this report were issued with the same number as the Czech standards designated EN 13241:2003+A2:2016, etc. with equal requirements.

1. Product specification

Sliding single-leaf self-supporting door type designation CANTILEVER

Products are manufactured by company:
CAIS s.r.o., Přehradní 199, 763 16 Fryšták-dolní Ves, Czech Republic

It serves as a single-leaf infill to close construction passages for vehicles accompanied by persons and for the passage of persons into the premises (near the buildings). The design of the specific dimensional design for individual gates is carried out according to the requirements of the operation and there are no special requirements for the installation of the gates in relation to possible nearby building. The gates are not part of the structure of any building.

The gate as a construction product is assembled on site from prepared parts according to the assembly instructions using the specified and documented components listed below or referenced in this protocol. The assembly of the assembly shall only be done in the exterior outside the building by specialized personnel to a location with adequate construction readiness.

Design of gates of all the series are based on static calculations made on the basis of the conditions for their installation.

2. Assessment and Verification of Constancy of Performance

2.1 Harmonized technical specification and the attestation of conformity system

For the assessment and verification of constancy of performance (AVCP) of the gates with the essential requirements of the CPR the harmonized standard (ČSN) EN 13241:2003+A2:2016 – Industrial, commercial and garage doors and gates – Product standard, performance characteristics, was adopted.

For this product the system 3 of the AVCP is laid down, which corresponds to Annex V, Section 1.4, of the Regulation (EU) No 305/2011. In this system, the initial type testing shall be performed by Notified Body, in compliance with the Annex ZA of the above mentioned standard („Clauses of this European Standard addressing the provisions of the Regulation (EU) No 305/2011”).

The AVCP shall be based on the clauses ZA.2 (Table ZA.2) of the mentioned standard.



2.2 Properties specifying the essential requirements

The conformity of the horizontal sliding gates with the essential requirements of Annex ZA of EN 13241:2003+A2:2016 has been assessed by evaluating the following characteristics (Notified Body Task):

- Resistance to wind load
- Air permeability
- Watertightness
- Thermal resistance
- Release of dangerous substances
- Durability of watertightness, thermal resistance and air permeability against degradation
- Safe opening (for vertically moving doors)
- Operating forces (for power operated doors)

3. Product type description and identification

3.1 Basic description of the product assembly and its functions according to the documentations cited in Chapter 7

The CANTILEVER self-supporting sliding gates have a main steel truss frame which has a lower guide C-profile with carriages. The gate is stabilised at the top by a top guide. The gates have 4 types of infill - wooden slats 95/18 mm, yakl infill (yakl 20/20/1,5), tension metal with a permeability of 30% (S235 grade steel, mesh 45 x 13,5 x 1,5 mm) and solid steel plate 2 mm thick. Depending on the width and height, four series are produced with the designations S, Connect 60, M and M max 14.

The S/SE/SK series has a main welded frame with three bays, where the main frame is TR HR 60/40/2, the bottom profile is TR HR 50/70/3 and the diagonal infills are TR HR 30/40/3. The S series is divided into variants (SPEED S type trolleys used), SE (SPEED SE type trolleys used) and SK (SPEED SK type trolleys used).

The Connect 60/Connect 60 S/Connect 60 SK series is a set of 3 frames that are assembled together using M 10 10.9 screws and is completed with a stiffening profile L 70/38/3. The upper profile is TR HR 60/40/2, the lower profile is TR HR 50/70/3 and the diagonal infills and vertical elements are TR HR 30/40/3. In addition, the door is supplemented with a tensioner Ø 20 (diagon 60). The Connect 60 range is divided into Connect 60 (SPEED SE trolleys used), Connect 60 S (SPEED S trolleys used) and Connect 60 SK (SPEED SK trolleys used).

The M/ME/MEK series has a five bay welded main frame, where the main frame is TR HR 80/60/3, the bottom profile is TR HR 80/100/4 and the diagonal fillers are TR HR 60/60/3. The M series is divided into M (SPEED M trolleys used), ME (SPEED ME trolleys used) and MEK (SPEED MEK trolleys used).

The M Max 14/MK Max 14 series has a main welded frame with six bays, where the main frame is TR HR 80/60/3, the bottom profile is TR HR 80/100/4 and the diagonal fillers are TR HR 60/60/3. The M Max 14 series is divided into M max 14 (SPEED M trolleys used) and MK max 14 (SPEED MK Max 14 trolleys used).

3.2 Design characteristics, assembly layout and identification of individual parts

Table 1 – Description and identification of the product type according to the documentations cited in Chapter 7

Design, construction principle of the gate	Sliding single-leaf self-supporting door with horizontal movement of the main closing edge.
Max. dimensions and weight of the gate leaf	Max. width 10 m, max. height 2,2 m Declarated in the documentation of chap. 7 / 3 and 4
Design and composition of the gate leaf, transparent elements, built-in doors, side construction	Steel construction with four variants of leaf panels. Without windows and without integrated doors. Declarated in the documentation of chap. 7 / 3 and 4
Guide rails horizontal	C-shaped lower steel guide profile. Declarated in the documentation of chap. 7 / 3 and 4
Leaf weight balancing	Horizontally sliding door, i.e. without leaf balancing.
Non-rigid load-bearing elements	Without rigid supporting elements.
Mechanical security	Horizontally sliding, i.e. without leaf fall protection.
Locks, handles	Without specification of manual control elements
Drive	Always manual operation

Note: more detailed descriptions and design details of the product type are given in the technical documents and documents cited later in Chapter 7.

4. The summary of results of an assessment of the performance of the product

The assessment of the characteristics of the product type has been carried out by the notified body no. 1023 – ITC, a.s. Zlín on the basis of the documents listed in Chapter 7 below.

The summary of results is given in the following table no. 2.

Table 2 – The summary of results of an assessment of the performance of the product

Characteristic	Testing or calculation standard	Classification standard	Assessment results
1 Watertightness	EN 12489	EN 12425	NPD
2 Release of dangerous substances	EN 13241+A2, art. 4.2.9	EN 13241+A2, art. 4.2.9	Pass
3 Resistance to wind load	EN 12444 EN 12604	EN 12424	Pass
4 Thermal resistance	EN 12428 EN 13241+A2, Annex B	EN 13241+A2 art. 4.4.5	NPD
5 Air permeability	EN 12427	EN 12426	NPD
6 Safe opening (for vertically moving doors)	EN 12604 EN 12605	EN 12604	NPD
7 Operating forces (for power operated doors)	EN 12453 EN 12445	EN 12453	NPD
8 Durability of watertightness, thermal resistance and air permeability against degradation	EN 12605	EN 13241+A2, art. 4.4.7	NPD

Note: see Annex 1 for a summary of the wind resistance results achieved.

5. Conclusion

Assessment of and Verification of Constancy of Performance of the applied product horizontal sliding gate - CANTILEVER, with the essential requirements of Regulation (EU) No 305/2011 was carried out in accordance with the harmonized technical specification (ČSN) EN 13241:2003+A2:2016 – Industrial, commercial and garage doors and gates – Product standard, performance characteristic, annex ZA.

This Technical Specification specifies the use of the AVCP procedure (module) 3 according to Annex V, Section 1.4, of the Regulation (EU) No 305/2011 - Test type (initial testing of the product) by a Notified test laboratory.



6. Validity of the report of assessment of performance of the product

Report of assessment of performance is issued for definite specific constructional alternatives of the product arising during the production and assembly, provided the production processes and other productive technical documentations were complied with and under assumption that the quality of the production will be constant. This report is valid for the product made according to the given documentation. The report has unlimited time validity, more precisely, the report applies only to the time when a change occurs in some of the evaluated characteristics given by a change in documentation drawing for product construction, if there is a change of some of the used components in accordance with catalogues of suppliers, if the existing technical documentation validity is terminated, if there is a change of technologic process or material structure and up to the moment of the change of lawful requirements for product evaluation, or up to the moment when a further report updating the survey of the produced alternatives in accordance with newly expressed numerical values of relevant technical parameters and physical quantities is issued. This report shall not be reproduced except in full, without written approval of the NB 1023.

The validity of the protocol is limited only to the product types and design variants that are assessed and evaluated in a professional static wind resistance assessment by an authorised engineer, see /3/ in chapter 7 - List of documentation, below.

7. List of the documents used for the Report of assessment of performance elaborating

1. Application for the execution of the Notified Body activity No. 753200134
2. CAIS: Declaration of release of hazardous substances; 05.05.2022
3. Ing. M. Bezruč: Assessment of the load capacity of the single-leaf self-supporting gate type designation CANTILEVER, including definitions and descriptions of the gate series and design variants and including lists of CAIS manufacturer's technical documentation for each design variant; 05.2022
4. CAIS: Technical description of type product and technical documentation for individual series and design variants in electronic form; delivered 04.05.2022



Annex no. 1

Overview of the achieved results of the resistance to wind load of the individual gate series and variants according to a professional static assessment of the resistance to wind load by an authorised engineer, see /3/, in chapter 7.

FULL INFILLING (SHEET 2 mm); weight 16 kg/m ²								
Height ≤ 1 000 mm	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 3	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 1 500 mm	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 3	X	X	X	X
Connect 60/S/SK	Class 3	Class 3	Class 2	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 3
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 3

Height ≤ 2 000 mm	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 3	Class 2	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 2
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 2

Height ≤ 2 200 mm	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 3	Class 3	Class 2	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 2
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 3	Class 2



EXPANDED METAL INFILLING, air permeability 30 %, weight 9 kg/m²

Height ≤ 1 000	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 3	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 1 500	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 3	Class 3	Class 2	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 2 000	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 3	X	X	X	X
Connect 60/S/SK	Class 3	Class 3	Class 2	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 3
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 2

Height ≤ 2 200	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 3	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 3	Class 4	Class 4	Class 4	Class 2
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 2



STEEL PROFILE (JAKL) INFILLING 20 x 20 x 1,5 GAP 100 mm; weight 0,85/running meter

Height ≤ 1 000	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 1 500	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 2 000	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 2 200	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4



WOODEN PLANK INFILLING 95 x 18 GAP 50 mm; weight 0,9 kg/1 running meter

Height ≤ 1 000	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 3	Class 3	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 4

Height ≤ 1 500	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
Connect 60/S/SK	Class 3	Class 3	Class 2	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 3
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 3

Height ≤ 2 000	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 4	Class 3	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 3
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 3

Height ≤ 2 200	Width ≤ 3 000	Width ≤ 3 500	Width ≤ 4 000	Width ≤ 4 500	Width ≤ 5 000	Width ≤ 6 000	Width ≤ 8 000	Width ≤ 10 000
Series S/SE/SK	Class 4	Class 4	Class 3	Class 2	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
Series M/ME/MEK	X	X	Class 4	Class 4	Class 4	Class 4	Class 4	Class 3
Series M MAX 14/ MK MAX 14	X	X	X	X	Class 4	Class 4	Class 4	Class 3

1) Technical report for static calculation

Introduction

The static calculation demonstrates the mechanical resistance and stability for the SLIDING SINGLE-LEAF SELF-SUPPORTING GATE, type designated CANTILEVER, with type series Connect 60 (in variants S, SK and basic version without variant designation), with 4 variants of cladding design and in dimensional design variants, always with manual control. The gate was manufactured by fy Cais s.r.o. in Fryšták.

a) Description of design solution

The Cantilever self-supporting gates have a main steel truss frame that has a lower C guide profile and carriages.

In the upper part, the gate is stabilized by an upper guide. The gates have 4 types of cladding – wooden bars 95/18 mm, hexagonal cladding (JAKL 20/20/1.5 mm), 30% permeable expanded metal (class S235 steel 45×13.5×1.5 mm) and full steel sheet 2 mm thick. Depending on the width and height, 4 types are produced with the designations S, Connect 60, M and M max 14.

The Connect 60 / Connect 60 S / Connect 60 SK series is a set of 3 frames mounted together with M 10 10.9 bolts and has a reinforcing profile L 70/38/3. The upper profile is made of TR HR 60/40/2, the lower profile is TR HR 50/70/3 and the diagonal claddings and vertical elements are made of TR HR 30/40/3. In addition, the gate is supplemented with a tensioner Ø20 (called diagon 60). The Connect 60 series is divided into the Connect 60 variants (SPEED SE carriages used), Connect 60 S (SPEED S carriages used) and Connect 60 SK (SPEED SK carriages used).

b) Evaluation of gate resistance to wind load

Resistance of self-supporting gates to wind loads – wooden planks

WOODEN PLANK CLADDING 95×18 50 mm gap; weight 0.9 kg/1 bm								
Height ≤ 1000	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 3	Class 3	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Height ≤ 1500	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 3	Class 3	Class 2	Class 1	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Height ≤ 2000	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Height ≤ 2200	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 3	Class 2	Class 1	Class 1	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Resistance of self-supporting gates to wind loads – rectangular tube 20/20/1.5

CLADDING FOR RECTANGULAR TUBE 20×20×1.5 GAP 100 mm; weight 0.85/bm								
Height ≤ 1000	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Height ≤ 1500	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Height ≤ 2000	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

Height ≤ 2200	Width ≤ 3000	Width ≤ 3500	Width ≤ 4000	Width ≤ 4500	Width ≤ 5000	Width ≤ 6000	Width ≤ 8000	Width ≤ 10000
	X	X	X	X	X	X	X	X
Connect 60/S/SK	Class 4	Class 4	Class 4	Class 4	X	X	X	X
	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X

(c) Specific requirements for content and scope of documentation

This assesses the main support frame for the given wind load classes in combination with various claddings. Furthermore, individual details of connections and attachments are assessed. Manual control is considered for all gate types. The load is entered in the design values, where it is then multiplied by a safety factor of 1.5 (see ČSN EN 13241+A2, appendix C), i.e. internal forces are determined using calculation values. The report includes the load data and input data for the calculation and the resulting assessment result. Detailed results can be documented on request from the author.

(d) Documents and literature used

STANDARDS:

- ČSN EN 1991-1-1 Actions on structures – Part 1-1: Densities, self-weight, imposed loads for buildings
- ČSN EN 1991-1-4 Actions on structures – Part 1-4: Wind load
- ČSN EN 1993-1-1 Design of steel structures – Part 1: General rules and rules of ČSN
- ČSN EN 12 444 Gates – Resistance to wind load – Testing and calculation
- ČSN EN 12 424 Gates – Resistance to wind load – Classification
- ČSN EN 13241+A2 – Gates – Product standard, functional properties

4. CANTILEVER GATE SERIES: CONNECT 60_CONNECT 60_S_CONNECT 60 SK

4.1. 220305CAGCO6001_CANTILEVER GATE CONNECT 60_S_SK_FRAME

4.1.1. CAGCO60_FRAME_COMPLETE

4.1.1.1. CAGCO60_FRAME_1 4.1.1.2. CAGCO60_FRAME_2

4.1.1.3. CAGCO60_FRAME_3

4.1.1.1.1. CAGCO60_Connector

4.1.1.1.2. CAGCO60_Connection_L

4.1.1.1.3. CAGCO60_Connection_plate

4.1.1.1.4. CAGCO60_FRAME_3_SIKMINA01_70×50×3_1600

4.1.1.1.5. CAGCO60_FRAME_3_SIKMINA02

4.1.1.1.6. CAGCO60_FRAME_3_SIKMINA03_70×50×3_1550

4.1.1.1.7. CAGCO60_Connection_tail

4.1.1.1.8. CAGCO50_Connection+tail

4.2. 220305CAGCO6002_CANTILEVER GATE CONNECT 60_S_SK_RECTANGULAR_TUBE_CLADDING

4.2.1. 220305CAGCO6002_CANTILEVER GATE CONNECT 60_S_SK_RECTANGULAR_TUBE_CLADDING

(inventory of material used)

4.3. 220305CAGCO6003_CANTILEVER GATE CONNECT 60_S_SK_EXTENDED METAL

4.3.1. 220305CAGCO6003_CANTILEVER GATE CONNECT 60_S_SK_EXTENDED METAL (inventory of material used)

4.4. 220305CAGCO6004_CANTILEVER GATE CONNECT 60_S_SK_LAT_95×18

4.4.1. 220305CAGCO6004_CANTILEVER GATE CONNECT 60_S_SK_LAT_95×18 (inventory of material used)

4.5. 220305CAGCO6005_CANTILEVER GATE CONNECT 60_S_SK_SHEET_2mm

4.5.1. 220305CAGCO6005_CANTILEVER GATE CONNECT 60_S_SK_SHEET_2mm (inventory of material used)

PRODUCTS:

DIAGON 60

DOCKER O

DRIVER L 38 (1300, 1400, 1500)

FINISH S

FRS 2

JRS 30

LAST S

PADDOCK 2

PADDOCK 4

PADDOCK SM

PARK

PARK 240

PARK CSM

PILOT SM

RUN S

SPEED S

SPEED SE

SPEED SK

STAGE S

2) Static calculation

a) Wind load

Wind load class	design (Pa)	γ	computational (Pa)
1	300	1.5	450
2	450	1.5	675
3	700	1.5	1050
4	1000	1.5	1500

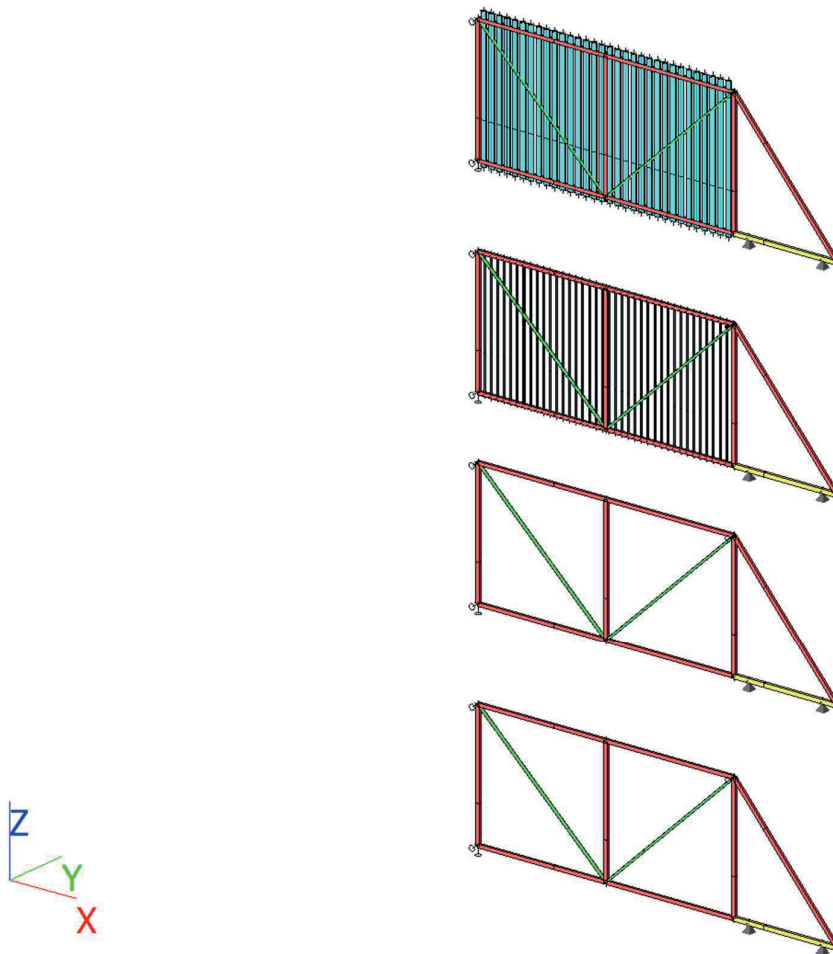
Fullness factor for sheet steel $\varphi = 1.00$

Fullness factor for expanded metal and wood cladding $\varphi = 0.80$

Fullness factor for rectangular tube cladding $\varphi = 0.25$

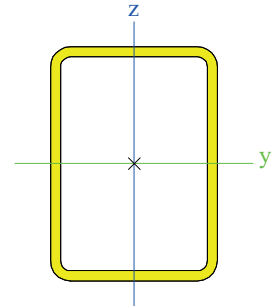
b) Calculation model for main load-bearing frame

i) Calculation model for series S, SE, SK frame

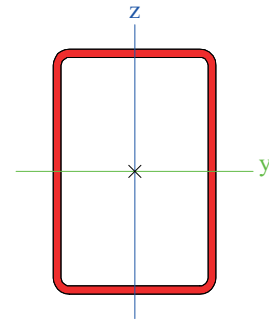


Cross-sections

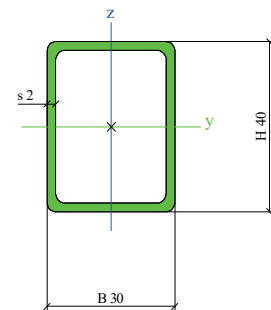
CS1		
Type	VHP70/50×3.0	
Material	S 235	
Production	cold formed	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	6,6100e-04	
A _y [m ²], A _z [m ²]	2,7516e-04	3,8523e-04
I _y [m ⁴], I _z [m ⁴]	4,4100e-07	2,6100e-07
W _{el,y} [m ³], W _{el,z} [m ³]	1,2600e-05	1,0400e-05
W _{pl,y} [m ³], W _{pl,z} [m ³]	1,5333e-05	1,2167e-05
I _w [m ⁶], I _t [m ⁴]	1,8375e-10	5,3400e-07
d _y [mm], d _z [mm]	0	0
C _{y,UCS} [mm], C _{z,UCS} [mm]	25	35
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	3.61e+03	3.61e+03
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	2.87e+03	2.87e+03
A _t [m ² /m], A _b [m ² /m]	2,3000e-01	4,4048e-01



CS2		
Type	VHP60/40×2.0	
Material	S 235	
Production	cold formed	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	3,7400e-04	
A _y [m ²], A _z [m ²]	1,4940e-04	2,2410e-04
I _y [m ⁴], I _z [m ⁴]	1,8400e-07	9,8300e-08
W _{el,y} [m ³], W _{el,z} [m ³]	6,1400e-06	4,9200e-06
W _{pl,y} [m ³], W _{pl,z} [m ³]	7,4583e-06	5,6250e-06
I _w [m ⁶], I _t [m ⁴]	4,8000e-11	2,0700e-07
d _y [mm], d _z [mm]	0	0
C _{y,UCS} [mm], C _{z,UCS} [mm]	20	30
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1.75e+03	1.75e+03
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	1.33e+03	1.33e+03
A _t [m ² /m], A _b [m ² /m]	1,9300e-01	3,7365e-01

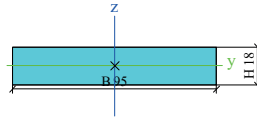


CS3		
Type	Rectangular pipes	
Detailed	40; 30; 2; 2	
Material	S 235	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	a	a
A [m ²]	2,6513e-04	
A _y [m ²], A _z [m ²]	1,1363e-04	1,5150e-04
I _y [m ⁴], I _z [m ⁴]	5,8989e-08	3,7253e-08
W _{el,y} [m ³], W _{el,z} [m ³]	2,9495e-06	2,4835e-06
W _{pl,y} [m ³], W _{pl,z} [m ³]	3,5885e-06	2,9228e-06
I _w [m ⁶], I _t [m ⁴]	8,4000e-12	6,8964e-08
d _y [mm], d _z [mm]	0	0

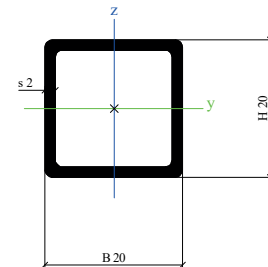


$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	15	20
α [deg]	0.00	
$M_{pl,y,+}$ [Nm], $M_{pl,y,-}$ [Nm]	8,43e+02	8,43e+02
$M_{pl,z,+}$ [Nm], $M_{pl,z,-}$ [Nm]	6,87e+02	6,87e+02
A_y [m ² /m], A_z [m ² /m]	1,3655e-01	2,5658e-01

CS4		
Type	RECT	
Detailed	95; 18	
Material	C24	
Production	wood	
A [m ²]	1,7100e-03	
A_y [m ²], A_z [m ²]	1,4253e-03	1,4324e-03
I_y [m ⁴], I_z [m ⁴]	4,6170e-08	1,2861e-06
$W_{el,y}$ [m ³], $W_{el,z}$ [m ³]	5,1300e-06	2,7075e-05
$W_{pl,y}$ [m ³], $W_{pl,z}$ [m ³]	6,1560e-06	3,2490e-05
I_w [m ⁶], I_t [m ⁴]	2,9184e-11	1,6208e-07
d_y [mm], d_z [mm]	0	0
$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	48	9
α [deg]	0.00	
$M_{pl,y,+}$ [Nm], $M_{pl,y,-}$ [Nm]	1,29e+02	1,29e+02
$M_{pl,z,+}$ [Nm], $M_{pl,z,-}$ [Nm]	6,82e+02	6,82e+02
A_y [m ² /m], A_z [m ² /m]	2,2600e-01	2,2600e-



CS5		
Type	Rectangular pipes	
Detailed	20; 20; 2; 1; 1	
Material	S 235	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	a	a
A [m ²]	1,1100e-04	
A_y [m ²], A_z [m ²]	5,5500e-05	5,5500e-05
I_y [m ⁴], I_z [m ⁴]	6,3496e-09	6,3496e-09
$W_{el,y}$ [m ³], $W_{el,z}$ [m ³]	6,3496e-07	6,3496e-07
$W_{pl,y}$ [m ³], $W_{pl,z}$ [m ³]	7,7044e-07	7,7044e-07
I_w [m ⁶], I_t [m ⁴]	4,0000e-13	9,5807e-09
d_y [mm], d_z [mm]	0	0
$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	10	10
α [deg]	0.00	
$M_{pl,y,+}$ [Nm], $M_{pl,y,-}$ [Nm]	1,81e+02	1,81e+02
$M_{pl,z,+}$ [Nm], $M_{pl,z,-}$ [Nm]	1,81e+02	1,81e+02
A_y [m ² /m], A_z [m ² /m]	7,8275e-02	1,4455e-01



Load statuses

Load statuses - LC1

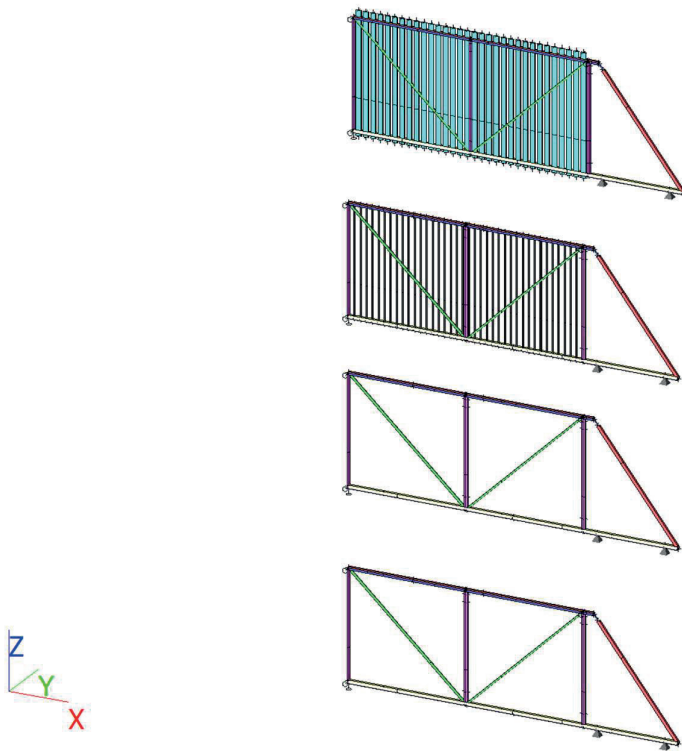
Name	Description	Action type	Load group	Load type	Direction
LC1	tare weight	Continuous	LG1	Tare weight	-Z

Load statuses - LC2

Name	Description	Action type	Load group	Load type
LC2	composition	Continuous	LG1	Standard

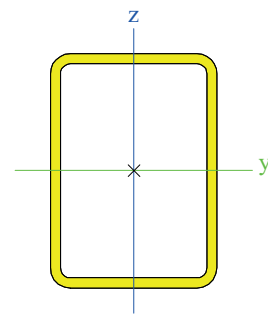
II) Calculation model for Connect 60 frame

Computational model



Cross-sections

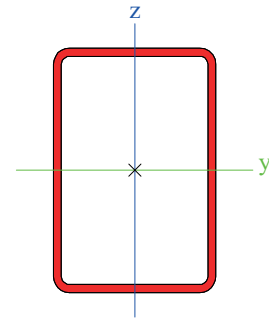
CS1		
Type	VHP70/50×3.0	
Material	S 235	
Production	cold formed	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	6,6100e-04	
A _y [m ²], A _z [m ²]	2,7516e-04	3,8523e-04
I _y [m ⁴], I _z [m ⁴]	4,4100e-07	2,6100e-07
W _{el,y} [m ³], W _{el,z} [m ³]	1,2600e-05	1,0400e-05
W _{pl,y} [m ³], W _{pl,z} [m ³]	1,5333e-05	1,2167e-05
I _w [m ⁶], I _t [m ⁴]	1,8375e-10	5,3400e-07
d _y [mm], d _z [mm]	0	0
c _{y,UCS} [mm], c _{z,UCS} [mm]	25	35
α [deg]	0.00	
M _{pl,y,+} [Nm], M _{pl,y,-} [Nm]	3.61e+03	3.61e+03
M _{pl,z,+} [Nm], M _{pl,z,-} [Nm]	2.87e+03	2.87e+03
A ₁ [m ² /m], A ₀ [m ² /m]	2,3000e-01	4,4048e-01



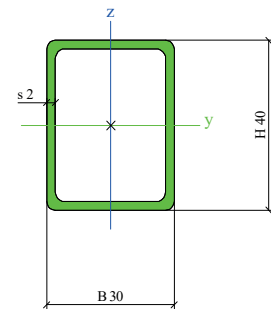
CS2		
Type	VHP60/40×2.0	
Material	S 235	
Production	cold formed	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	3,7400e-04	

order number:	structure: Assessment of load capacity of Cantilever gate	appendix number: D1.2.01	page number:
210503	building: Technical report with static calculation	revision number:	16

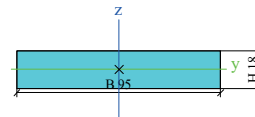
A_y [m ²], A_z [m ²]	1,4940e-04	2,2410e-04
I_y [m ⁴], I_z [m ⁴]	1,8400e-07	9,8300e-08
$W_{el,y}$ [m ³], $W_{el,z}$ [m ³]	6,1400e-06	4,9200e-06
$W_{pl,y}$ [m ³], $W_{pl,z}$ [m ³]	7,4583e-06	5,6250e-06
I_w [m ⁶], I_t [m ⁴]	4,8000e-11	2,0700e-07
d_y [mm], d_z [mm]	0	0
$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	20	30
α [deg]	0.00	
$M_{pl,y+}$ [Nm], $M_{pl,y-}$ [Nm]	1.75e+03	1.75e+03
$M_{pl,z+}$ [Nm], $M_{pl,z-}$ [Nm]	1.33e+03	1.33e+03
A_1 [m ² /m], A_b [m ² /m]	1,9300e-01	3,7365e-01



CS3		
Type	Rectangular pipes	
Detailed	40; 30; 2; 2; 2	
Material	S 235	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	a	a
A [m ²]	2,6513e-04	
A_y [m ²], A_z [m ²]	1,1363e-04	1,5150e-04
I_y [m ⁴], I_z [m ⁴]	5,8989e-08	3,7253e-08
$W_{el,y}$ [m ³], $W_{el,z}$ [m ³]	2,9495e-06	2,4835e-06
$W_{pl,y}$ [m ³], $W_{pl,z}$ [m ³]	3,5885e-06	2,9228e-06
I_w [m ⁶], I_t [m ⁴]	8,4000e-12	6,8964e-08
d_y [mm], d_z [mm]	0	0
$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	15	20
α [deg]	0.00	
$M_{pl,y+}$ [Nm], $M_{pl,y-}$ [Nm]	8,43e+02	8,43e+02
$M_{pl,z+}$ [Nm], $M_{pl,z-}$ [Nm]	6,87e+02	6,87e+02
A_1 [m ² /m], A_b [m ² /m]	1,3655e-01	2,5658e-01

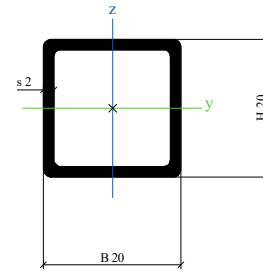


CS4		
Type	RECT	
Detailed	95; 18	
Material	C24	
Production	wood	
A [m ²]	1,7100e-03	
A_y [m ²], A_z [m ²]	1,4253e-03	1,4324e-03
I_y [m ⁴], I_z [m ⁴]	4,6170e-08	1,2861e-06
$W_{el,y}$ [m ³], $W_{el,z}$ [m ³]	5,1300e-06	2,7075e-05
$W_{pl,y}$ [m ³], $W_{pl,z}$ [m ³]	6,1560e-06	3,2490e-05
I_w [m ⁶], I_t [m ⁴]	2,9184e-11	1,6208e-07
d_y [mm], d_z [mm]	0	0
$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	48	9
α [deg]	0.00	
$M_{pl,y+}$ [Nm], $M_{pl,y-}$ [Nm]	1,29e+02	1,29e+02
$M_{pl,z+}$ [Nm], $M_{pl,z-}$ [Nm]	6,82e+02	6,82e+02
A_1 [m ² /m], A_b [m ² /m]	2,2600e-01	2,2600e-01

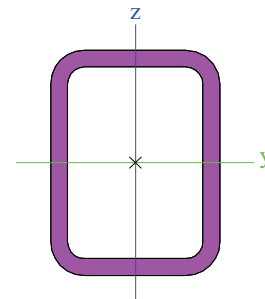


CS5		
Type	Rectangular pipes	
Detailed	20; 20; 2; 1; 1	

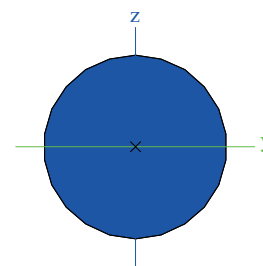
Material	S 235	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	a	a
A [m ²]	1,1100e-04	
A _y [m ²], A _z [m ²]	5,5500e-05	5,5500e-05
I _y [m ⁴], I _z [m ⁴]	6,3496e-09	6,3496e-09
W _{el,y} [m ³], W _{el,z} [m ³]	6,3496e-07	6,3496e-07
W _{pl,y} [m ³], W _{pl,z} [m ³]	7,7044e-07	7,7044e-07
I _w [m ⁶], I _t [m ⁴]	4,0000e-13	9,5807e-09
d _y [mm], d _z [mm]	0	0
c _{y,UCS} [mm], c _{z,UCS} [mm]	10	10
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1,81e+02	1,81e+02
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	1,81e+02	1,81e+02
A ₁ [m ² /m], A _p [m ² /m]	7,8275e-02	1,4455e-01



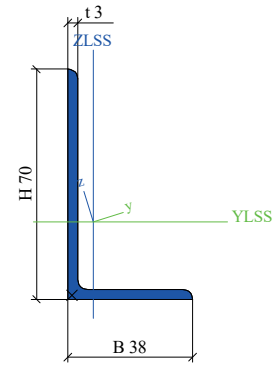
CS6		
Type	VHP40/30×3.0	
Material	S 235	
Production	cold formed	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	3,6100e-04	
A _y [m ²], A _z [m ²]	1,5445e-04	2,0594e-04
I _y [m ⁴], I _z [m ⁴]	7,2700e-08	4,6000e-08
W _{el,y} [m ³], W _{el,z} [m ³]	3,6300e-06	3,0700e-06
W _{pl,y} [m ³], W _{pl,z} [m ³]	4,5833e-06	3,7500e-06
I _w [m ⁶], I _t [m ⁴]	1,2600e-11	9,6100e-08
d _y [mm], d _z [mm]	0	0
c _{y,UCS} [mm], c _{z,UCS} [mm]	15	20
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1,08e+03	1,08e+03
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	8,84e+02	8,84e+02
A ₁ [m ² /m], A _p [m ² /m]	1,3000e-01	2,4048e-01



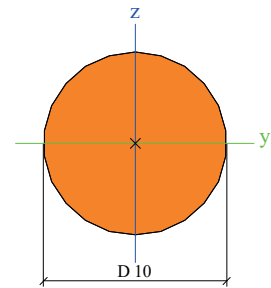
CS7		
Type	RD17	
Material	stainless steel 1.4305	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	2,2687e-04	
A _y [m ²], A _z [m ²]	2,0469e-04	2,0469e-04
I _y [m ⁴], I _z [m ⁴]	4,0139e-09	4,0139e-09
W _{el,y} [m ³], W _{el,z} [m ³]	4,7223e-07	4,7223e-07
W _{pl,y} [m ³], W _{pl,z} [m ³]	8,0592e-07	8,0592e-07
I _w [m ⁶], I _t [m ⁴]	1,4725e-23	8,2140e-09
d _y [mm], d _z [mm]	0	0
c _{y,UCS} [mm], c _{z,UCS} [mm]	9	9
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1,56e+02	1,56e+02
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	1,56e+02	1,56e+02
A ₁ [m ² /m], A _p [m ² /m]	5,3266e-02	5,3404e-02



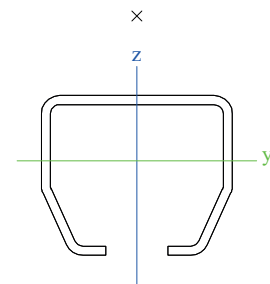
CS9		
Type	Angle	
Detailed	70; 38; 3; 3; 3	
Material	S 235	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	b	b
A [m ²]	3,1303e-04	
A _y [m ²], A _z [m ²]	2,5341e-04	2,1505e-04
I _y [m ⁴], I _z [m ⁴]	1,7329e-07	2,1293e-08
W _{el,y} [m ³], W _{el,z} [m ³]	3,7150e-06	9,5843e-07
W _{pl,y} [m ³], W _{pl,z} [m ³]	6,4639e-06	2,0860e-06
I _w [m ⁶], I _t [m ⁴]	1,6045e-41	9,4500e-10
d _y [mm], d _z [mm]	-13	-19
c _{y,UCS} [mm], c _{z,UCS} [mm]	8	24
α [deg]	17.08	
I _{yZLCS} [m ⁴]	-4,2664e-08	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1,52e+03	1,52e+03
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	4,90e+02	4,90e+02
A _t [m ² /m], A _b [m ² /m]	2,1212e-01	2,1212e-01



CS10		
Type	Full circle	
Detailed	10	
Material	S 960 Q (EN 10025-6)	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	7,8540e-05	
A _y [m ²], A _z [m ²]	7,0577e-05	7,0577e-05
I _y [m ⁴], I _z [m ⁴]	4,9087e-10	4,9087e-10
W _{el,y} [m ³], W _{el,z} [m ³]	9,8175e-08	9,8175e-08
W _{pl,y} [m ³], W _{pl,z} [m ³]	1,6667e-07	1,6667e-07
I _w [m ⁶], I _t [m ⁴]	6,1003e-25	9,8309e-10
d _y [mm], d _z [mm]	0	0
c _{y,UCS} [mm], c _{z,UCS} [mm]	5	5
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1,60e+02	1,60e+02
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	1,60e+02	1,60e+02
A _t [m ² /m], A _b [m ² /m]	3,1414e-02	3,1414e-02



CS11		
Type	General cross-section	
Material	S 275	
Production	cold formed	
Assessment of planar strut y-y, assessment of planar strut z-z	c	c
A [m ²]	7,2419e-04	
A _y [m ²], A _z [m ²]	1,7300e-04	9,0746e-05
I _y [m ⁴], I _z [m ⁴]	3,4634e-07	5,4772e-07
W _{el,y} [m ³], W _{el,z} [m ³]	9,6089e-06	1,5006e-05
W _{pl,y} [m ³], W _{pl,z} [m ³]	1,4200e-05	1,8602e-05
I _w [m ⁶], I _t [m ⁴]	0,0000e+00	2,8535e-09
d _y [mm], d _z [mm]	0	55



$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	0	6
α [deg]	0.00	
$M_{pl,y,+}$ [Nm], $M_{pl,y,-}$ [Nm]	0,00e+00	0,00e+00
$M_{pl,z,+}$ [Nm], $M_{pl,z,-}$ [Nm]	0,00e+00	0,00e+00
A_x [m ² /m], A_y [m ² /m]	4,2077e-01	4,2077e-01

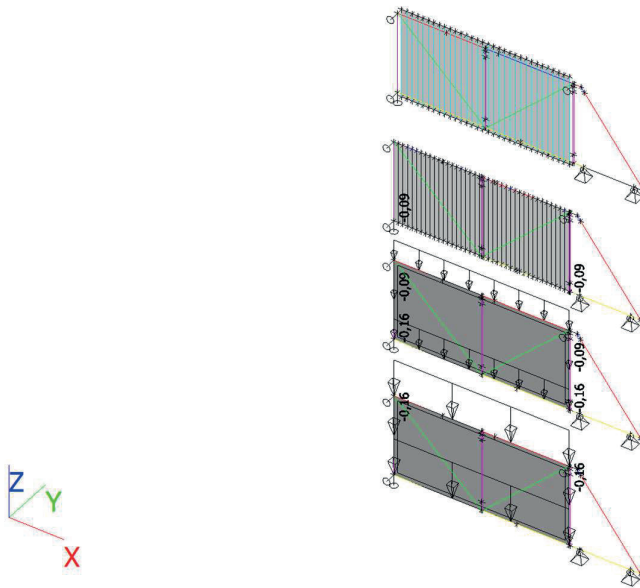
Load statuses

Load statuses - LC1

Name	Description	Action type	Load group	Load type	Direction
LC1	tare weight	Continuous	LG1	Tare weight	-Z

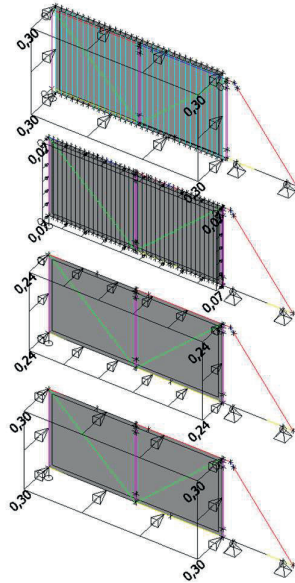
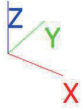
Load statuses - LC2

Name	Description	Action type	Load group	Load type
LC2	composition	Continuous	LG1	Standard



Load statuses - LC3

Name	Description	Action type	Load group	Load type	Spec.	Activity	Control load status
LC3	wind	Variable	LG2	Static	Standard	Short-term	None



Combination

Name	Description	Type	Load statuses	Total [-]
CO1	MSU	Cover - load capacity	LC1 - tare weight	1.35
			LC2 - composition	1.35
			LC3 - wind	1.00

c) **Assessment of welded joints of diagonal frame**

l) **Connect 60 series**

Maximum load is complete cladding with sheet thickness 2 mm, wind load class 4, height 2.2 m, width 4.5 m
 $N_{ed} = 2.01 \text{ kN}$

Steel	S 235	
Sheet thickness	3 mm	
$L_w =$	30 mm	
$a_w =$	3 mm	
$\theta =$	0 °	
$f_u =$	360 Mpa	
$\beta_w =$	0,8	
$\gamma_{Mw} =$	1,5	

$$\sqrt{\sigma_{\perp}^2 + 3(\tau_{\perp}^2 + \tau_{\parallel}^2)} \leq \frac{f_u}{\beta_w \cdot \gamma_{Mw}}$$

$$\sigma_{\perp} \leq \frac{f_u}{\gamma_{Mw}}$$

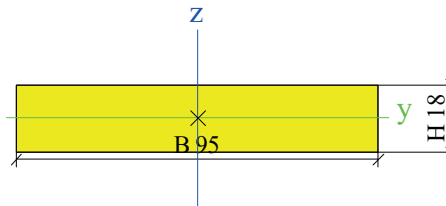
156 kN

b) **Assessment of cladding and cladding connection to frame**

l) **Wood materials**

Cross-sections

CS2		
Type	RECT	
Detailed	95; 18	
Material	C24	
Production	wood	
A [m ²]	1,7100e-03	
A_y [m ²], A_z [m ²]	1,4275e-03	1,4251e-03
I_y [m ⁴], I_z [m ⁴]	4,6170e-08	1,2861e-06
$W_{el,y}$ [m ³], $W_{el,z}$ [m ³]	5,1300e-06	2,7075e-05



$W_{pl,y}$ [m ³], $W_{pl,z}$ [m ³]	6,1560e-06	3,2490e-05
I_w [m ⁶], I_l [m ⁴]	2,9829e-11	1,6268e-07
d_y [mm], d_z [mm]	0	0
$c_{y,UCS}$ [mm], $c_{z,UCS}$ [mm]	48	9
α [deg]	0.00	
$M_{pl,y,+}$ [Nm], $M_{pl,y,-}$ [Nm]	1,29e+02	1,29e+02
$M_{pl,z,+}$ [Nm], $M_{pl,z,-}$ [Nm]	6,82e+02	6,82e+02
A_x [m ² /m], A_y [m ² /m]	2,2600e-01	2,2600e-01

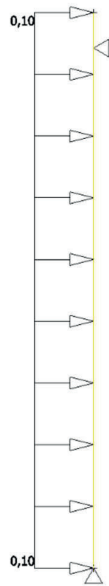
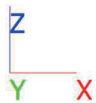
Load statuses

Load statuses - LC1

Name	Description	Action type	Load group	Load type	Direction
LC1	tare weight	Continuous	LG1	Tare weight	-Z

Load statuses - LC2

Name	Description	Action type	Load group	Load type	Spec.	Activity	Control load status
LC2	wind	Variable	LG2	Static	Standard	Short-term	None



Combination

Name	Description	Type	Load statuses	Total [-]
CO1	MSU	Cover - load capacity	LC1 - tare weight	1.35
			LC2 - wind	1.50

Wood assessment per MSÚ

Linear calculation, Extreme: Global

Selection: All

Combination: CO1

EN 1995-1-1 assessment

Support B1	2.350 m	CS2 - SQUARE (95;18)	C24	CO1	0.98 -
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Basic data	
Partial reliability factor γ_M for grown wood	1.30

Data on material		
Bend ($f_{m,k}$)	24.0	MPa
Pull ($f_{t,0,k}$)	14.0	MPa
Pull ($f_{t,90,k}$)	0.4	MPa
Pressure ($f_{c,0,k}$)	21.0	MPa
Pressure ($f_{c,90,k}$)	2.5	MPa
Slide ($f_{v,k}$)	4.0	MPa
Wood type	Solid	

Critical assessment is at location of **1,000 m**.

Internal forces		
NEd	-0.01	kN
V _{y,Ed}	0.01	kN
V _{z,Ed}	0.00	kN
TEd	0.00	kNm
M _{y,Ed}	0.00	kNm
M _{z,Ed}	0.08	kNm

Modification factor	
Humidity class	3
Load duration time	Short-term
Modification factor k_{mod}	0.70

...: ASSESSMENT OF CUTAWAY...:

Bend

According to EN 1995-1-1 clause 6.1.6 and equation (6.11), (6.12)

$\sigma_{m,z,d}$	16.5	MPa
$k_{h,z}$	1.30	
$f_{m,z,d}$	16.8	MPa
k_m	0.70	

Unit assessment (6.11) = $0.00 + 0.69 = 0.69$ -

Unit assessment (6.12) = $0.00 + 0.98 = 0.98$ -

Slide

According to EN 1995-1-1 clause 6.1.7 and equation (6.13)

k_{cr}	0.67	
$\tau_{y,d}$	0.0	MPa
$f_{v,d}$	2.2	MPa
Unit assessment τ_y	0.01	-

Combined bending and axial pressure

According to EN 1995-1-1 clause 6.2.4 and equation (6.19), (6.20)

$f_{c,0,d}$	11.3	MPa
$f_{m,z,d}$	16.8	MPa
k_m	0.70	

Unit assessment (6.19) = $0.00 + 0.00 + 0.69 = 0.69$ -

Unit assessment (6.20) = $0.00 + 0.00 + 0.98 = 0.98$ -

Element meets cross-sectional assessment conditions.

Tensile force on connection of wood material to frame: 0.16 kN

Bolt M 8 Shaft surface A= 50 mm² Bolt diameter d= 8 mm
Bolt material 8.8 Core surface As= 37 mm² Hole diameter d0= 9 mm
Sheet material S 235 Bolt strength limit fub= 800 MPa

Tensile strength

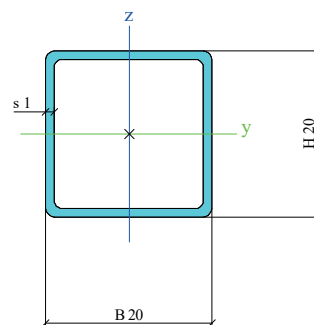
Resulting tensile strength in thread Ft.Rd=18.2 kN

18.2 kN ≥ 0.16 kN => **Passed**

II) Steel cladding

Cross-sections

CS3		
Type	Rectangular pipes	
Detailed	20; 20; 1; 1; 1	
Material	S 235	
Production	rolled	
Assessment of planar strut y-y, assessment of planar strut z-z	a	a
A [m ²]	7,6000e-05	
A _y [m ²], A _z [m ²]	3,9192e-05	3,9192e-05
I _y [m ⁴], I _z [m ⁴]	4,5691e-09	4,5691e-09
W _{el,y} [m ³], W _{el,z} [m ³]	4,5691e-07	4,5691e-07
W _{pl,y} [m ³], W _{pl,z} [m ³]	5,4113e-07	5,4113e-07
I _w [m ⁶], I _t [m ⁴]	5,1061e-16	6,9082e-09
d _y [mm], d _z [mm]	0	0
c _{y,UCS} [mm], c _{z,UCS} [mm]	10	10
α [deg]	0.00	
M _{pl,y+} [Nm], M _{pl,y-} [Nm]	1,27e+02	1,27e+02
M _{pl,z+} [Nm], M _{pl,z-} [Nm]	1,27e+02	1,27e+02
A _y [m ² /m], A _z [m ² /m]	7,8275e-02	1,4855e-01



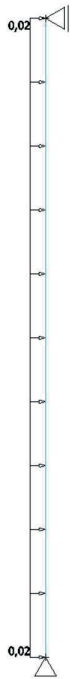
Load statuses

Load statuses - LC1

Name	Description	Action type	Load group	Load type	Direction
LC1	tare weight	Continuous	LG1	Tare weight	-Z

Load statuses - LC2

Name	Description	Action type	Load group	Load type	Spec.	Activity	Control load status
LC2	wind	Variable	LG2	Static	Standard	Short-term	None



Combination

Name	Description	Type	Load statuses	Total [-]
CO1	MSU	Cover - load capacity	LC1 - tare weight	1.35
			LC2 - wind	1.50

Assessment of steel elements per MSÚ EC-EN 1993

Linear calculation
 Combination: CO1
 Coordinate system: Main
 Extreme 1D: Global
 Selection: All

Assessment per EN 1993-1-1
 National appendix: Czech CSN-EN NA

Part B2	1.000 / 2.200 m	Rectangular tubes (20; 20; 1; 1)	S 235	CO1	0.14 -
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Rod data	
Production	Rolled
Bracing group	Default

N_{Ed} [kN]	$V_{y,Ed}$ [kN]	$V_{z,Ed}$ [kN]	T_{Ed} [kNm]	$M_{y,Ed}$ [kNm]	$M_{z,Ed}$ [kNm]
-0.01	0.00	0.00	0.00	0.02	0.00

Assessment of cutaway	
Cross-section classification	1
Assessment of pressure	0.00 -
Assessment of bending torque for M_y	0.14 -
Skid assessment for V_z	0.00 -
Assessment of combination of bending, axial and shear forces	0.14 -

Assessment of cutaway	
Conclusion – Assessment of cutaway	0.14 -

Bracing axis	k	L [m]	N_{cr} [kN]	M_{cr} [kNm]	λ_{rel}	χ
y-y	1.00	2.200	1.96		3.02	1.00
z-z	1.00	2.200	1.96		3.02	1.00
LTB	1.00	2.200		1.18	0.33	1.00

Stability assessment	
Stability classification	1
Assessment of bending and axial pressure	0.14 -
Conclusion – Stability assessment	0.14 -

III) Expanded metal

The most stressed cladding is in series S, SE, SK; wind load class 4, gate span 4.5 m, height 2.2 m.

The assessment is done on a section with a width of 1 m, height 2.2 m.

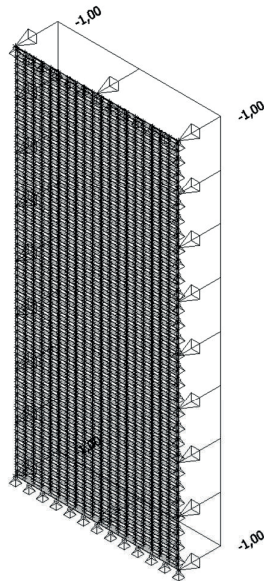
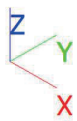
Load statuses

Load statuses - LC1

Name	Description	Action type	Load group	Load type	Direction
LC1	tare weight	Continuous	LG1	Tare weight	-Z

Load statuses - LC2

Name	Description	Action type	Load group	Load type	Spec.	Activity	Control load status
LC2	wind	Variable	LG2	Static	Standard	Short-term	None

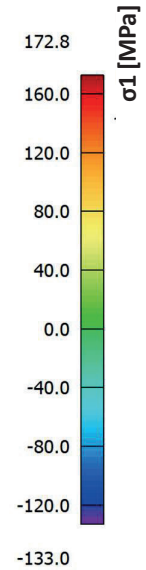
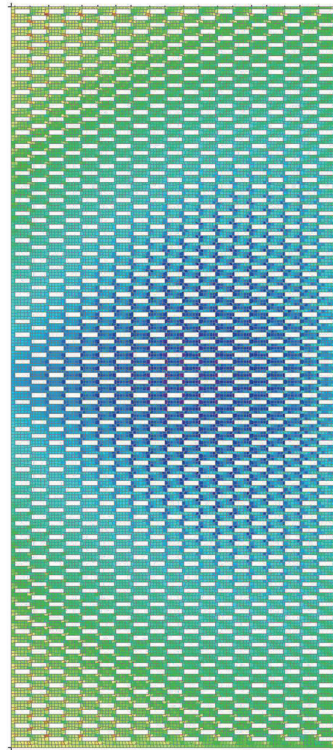
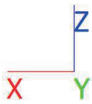


Combination

Name	Description	Type	Load statuses	Total [-]
CO1	MSU	Cover - load capacity	LC1 - tare weight	1.35
			LC2 - wind	1.50

3D tension; σ_1

Values: σ_1
 Linear calculation
 Combination: CO1
 Selection: All
 Position: In the centres (for 2D only).
 System: LSS network element
 Main quantities



Maximum permissible tension $f_{yd} = 235/1.15 = 205 \text{ MPa} \geq 173 \text{ MPa} \Rightarrow$ **Passed**

Assessment of anchoring the cladding to the frame, see full sheet 2 mm thick (ch. IV)

IV) Full sheet metal 2 mm thick

The most stressed cladding is in series S, SE, SK; wind load class 4, gate span 4.5 m, height 2.2 m.

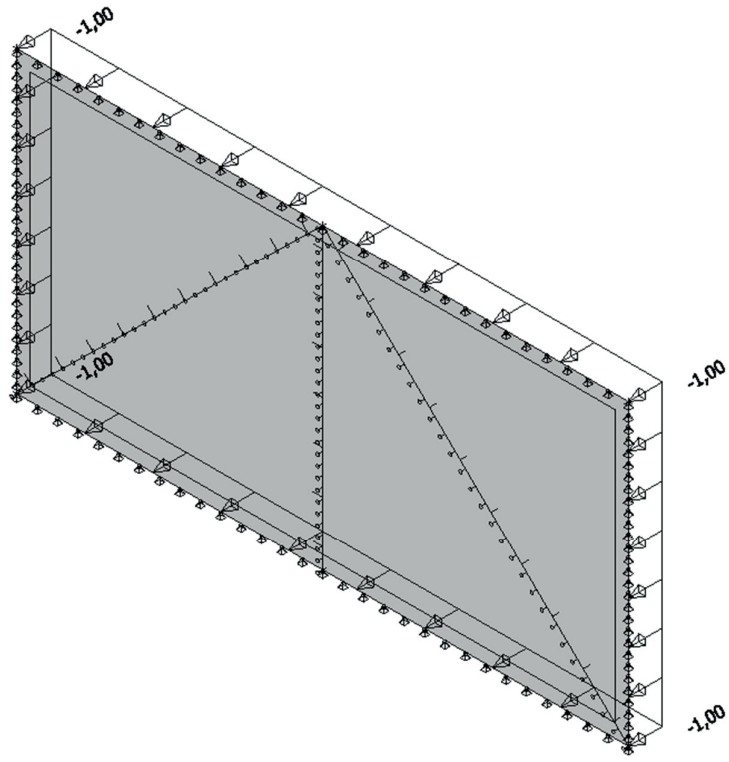
Load statuses

Load statuses - LC1

Name	Description	Action type	Load group	Load type	Direction
LC1	tare weight	Continuous	LG1	Tare weight	-Z

Load statuses - LC2

Name	Description	Action type	Load group	Load type	Spec.	Activity	Control load status
LC2	wind	Variable	LG2	Static	Standard	Short-term	None

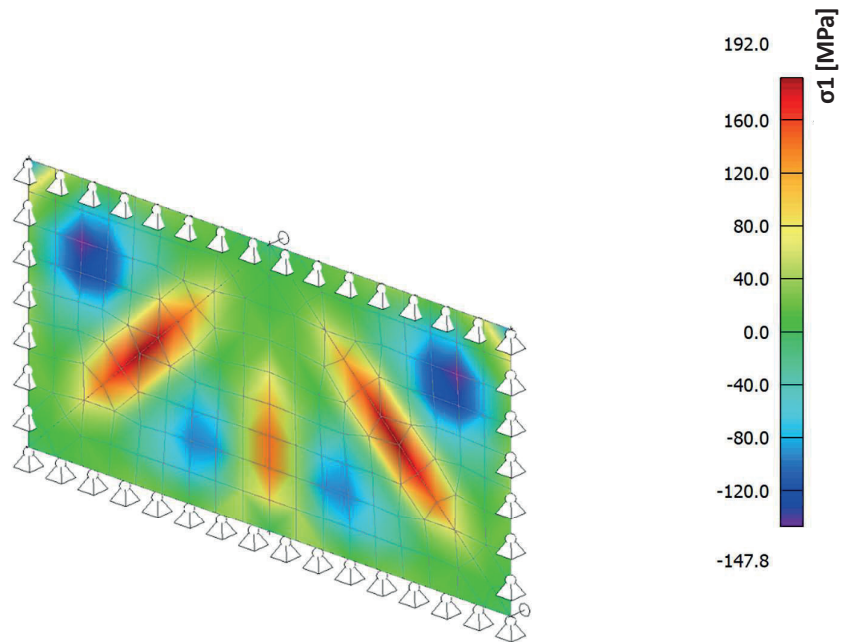


Combination

Name	Description	Type	Load statuses	Total [-]
CO1	MSU	Cover - load capacity	LC1 - tare weight	1.35
			LC2 - wind	1.50

3D tension; σ_1 – main tension

Values: σ_1
 Linear calculation
 Combination: CO1
 Selection: All
 Position: In bundles with averaging.
 System: LSS network element
 Main quantities



Maximum permissible tension $f_{yd} = 235/1.15 = 205 \text{ MPa} \geq 192 \text{ MPa} \Rightarrow$ **Passed**

Tensile force on connection of sheet to frame: 1.65 kN/m total 4 units M8 8.8 per 1 m \Rightarrow 0.42 kN per 1 bolt

Bolt	M 8	Shaft surface A=	50 mm ²	Bolt diameter d=	8 mm
Bolt material	8.8	Core surface A _s =	37 mm ²	Hole diameter d ₀ =	9 mm
Sheet material	S 235	Bolt strength limit f _{ub} =	800 MPa		
Sheet thickness	2 mm	Sheet strength limit f _u =	360 MPa		

Tensile strength

Resulting tensile strength in thread Ft.Rd=18.2 kN

11.0 kN \geq 0.42 kN \Rightarrow **Passed**

(c) **Assessment of the installation of the lower guide (detail B)**

l) **Series S, SE, SK, Connect 60**

The most stressed are bolts for sheet cladding; wind load class 4, gate span 4.5 m, height 2.2 m.

Max. load per bolt is 2.17 kN

Bolt	M 10	Shaft surface A=	79 mm ²	Bolt diameter d=	10 mm
Bolt material	8.8	Core surface A _s =	58 mm ²	Hole diameter d ₀ =	11 mm
Sheet material	S 235	Bolt strength limit f _{ub} =	800 MPa		
Sheet thickness	4 mm	Sheet strength limit f _u =	360 MPa		

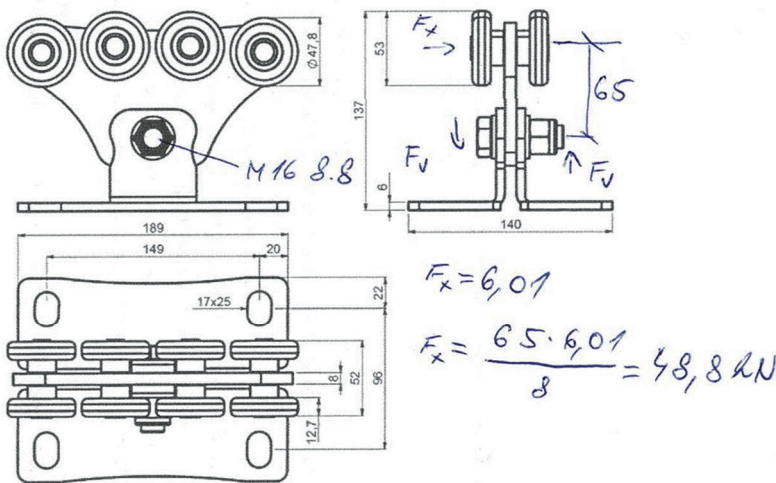
Load capacity in shear	
For 1 shear plane passing through the thread Fv.Rd=	19.2 kN
For 1 shear plane passing through the shaft Fv.Rd=	26.0 kN
Number of shear planes passing through the thread:	0
Number of shear planes passing through the shaft:	1
<u>Resulting load capacity in shear Fv.Rd= 26.0 kN</u>	
Compression strength <input type="checkbox"/> I want to enter other pitches	
Ordinary distance	p1= 40 mm α = 0.61
	p2= 40 mm
	e1= 20 mm
	e2= 20 mm
<u>Resulting compression strength Fb.Rd= 15.0 kN</u>	

15.0 kN ≥ 2.17 kN => **Passed**

d) **Assessment of lower guide (detail D)**

1) **Series S, SE, SK, Connect 60**

The most stressed are bolts for sheet cladding; wind load class 4, gate span 4.5 m, height 2.2 m.
Max. load per bolt is $R_x = 6.01$ kN, $R_z = 0.79$ kN



Bolt	M 16
Bolt material	8.8
Sheet material	S 235
Sheet thickness	8 mm

Shaft surface A=	201 mm ²	Bolt diameter d=	16 mm
Core surface As=	157 mm ²	Hole diameter d0=	18 mm
Bolt strength limit fub=	800 MPa		
Sheet strength limit fu=	360 MPa		

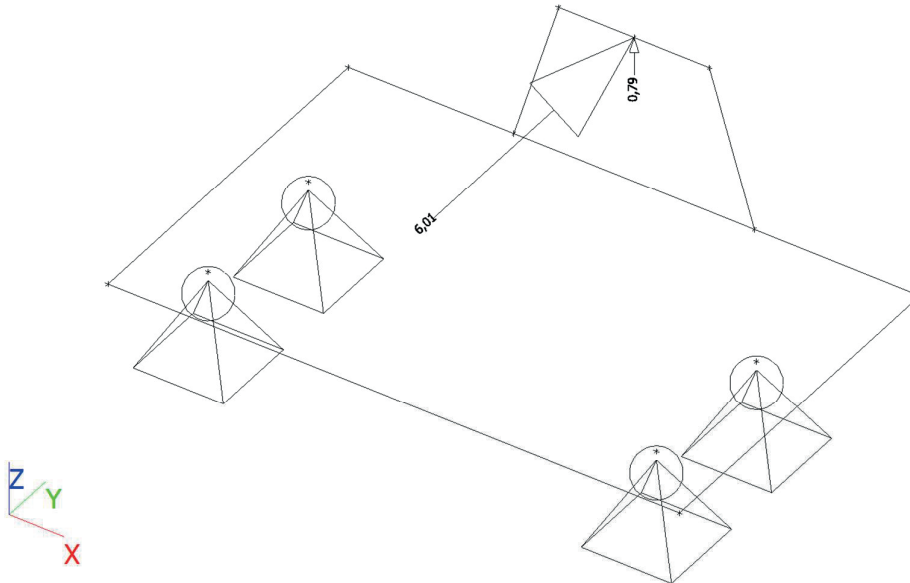
Load capacity in shear	
For 1 shear plane passing through the thread Fv.Rd=	52.0 kN
For 1 shear plane passing through the shaft Fv.Rd=	66.6 kN
Number of shear planes passing through the thread:	1
Number of shear planes passing through the shaft:	0
<u>Resulting load capacity in shear Fv.Rd= 52.0 kN</u>	
Compression strength <input type="checkbox"/> I want to enter other pitches	
Ordinary distance	p1= 60 mm α = 0.65
	p2= 60 mm
	e1= 35 mm
	e2= 25 mm
<u>Resulting compression strength Fb.Rd= 51.5 kN</u>	

51.5 kN ≥ 48.8+0.8=49.6 kN => **Passed**

II) Assessment of anchoring of SK series plate

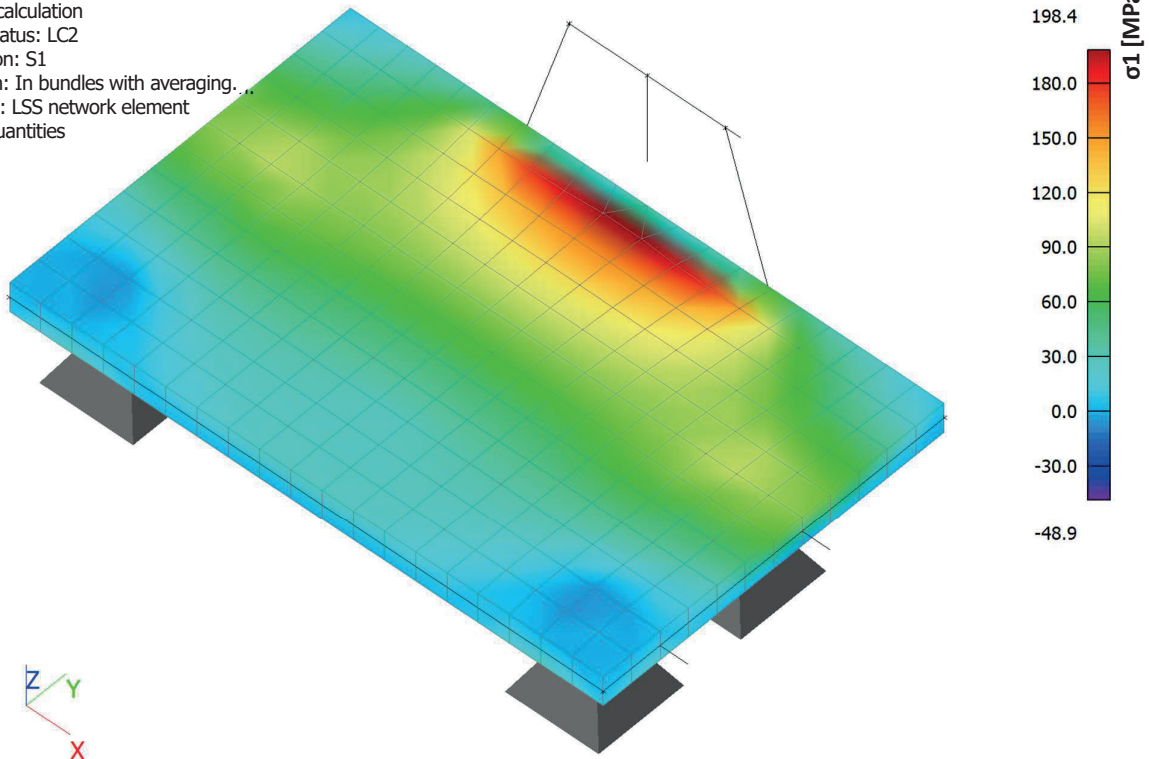
Load statuses - LC2

Name	Description	Action type	Load group	Load type
LC2	reaction	Continuous	LG1	Standard



3D tension; σ_1

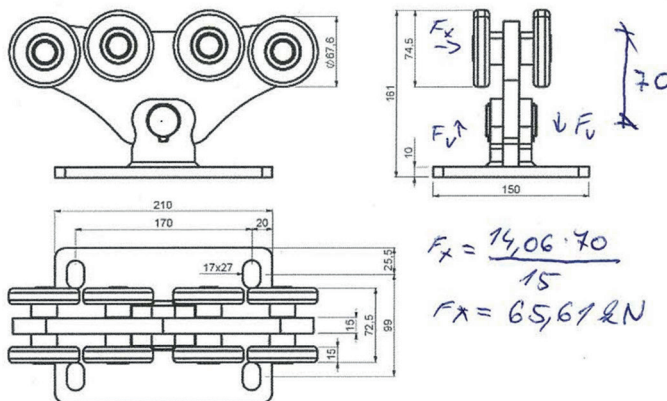
Values: σ_1
 Linear calculation
 Load status: LC2
 Selection: S1
 Position: In bundles with averaging...
 System: LSS network element
 Main quantities



$$f_{vd} = 235/1.15 = 204.3 \text{ MPa} \geq 198.4 \text{ MPa} \Rightarrow \text{Passed}$$

III) Series M, ME, MEK

The most stressed are for bolts for sheet cladding; wind load class 4, gate span 10.0 m, height 2.2 m.
 Max. load per bolt is $R_x = 14.06 \text{ kN}$, $R_z = 3.06 \text{ kN}$



Bolt M 30 Shaft surface A= 707 mm² Bolt diameter d= 30 mm
Bolt material 11SMr Core surface As= 561 mm² Hole diameter d0= 33 mm
Sheet material S 235 Bolt strength limit fub= 550 MPa
Sheet thickness 12 mm Sheet strength limit fu= 360 MPa

Load capacity in shear

For 1 shear plane passing through the thread Fv.Rd= 106.4 kN
 For 1 shear plane passing through the shaft Fv.Rd= 160.9 kN

Number of shear planes passing through the thread: 0
 Number of shear planes passing through the shaft: 1

Resulting load capacity in shear Fv.Rd= 160.9 kN

Compression strength I want to enter other pitches

Ordinary distance p1= 100 mm α = 0.35
 p2= 100 mm
 e1= 35 mm
 e2= 35 mm

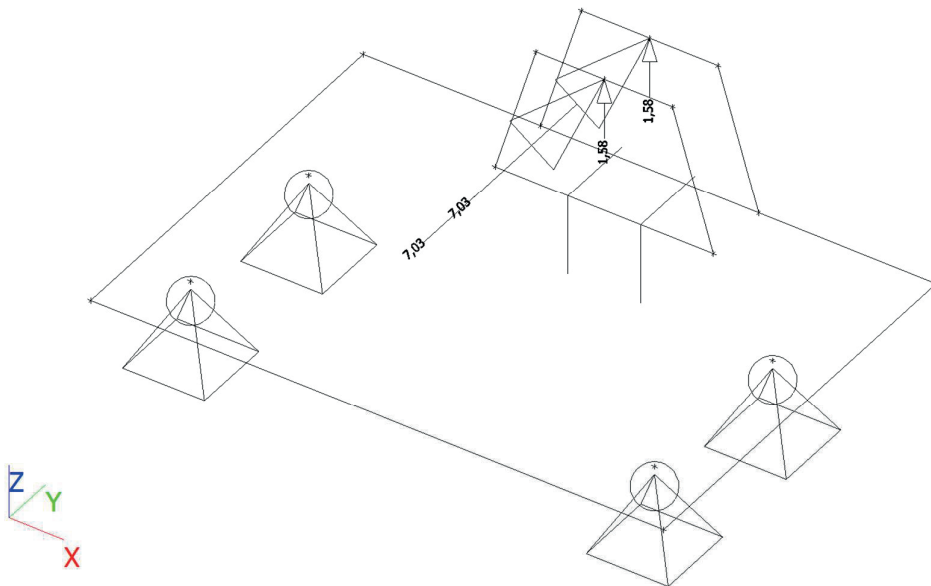
Resulting compression strength Fb.R 79.0 kN

79.0 kN ≥ 65.6+3.1=68.7 kN => **Passed**

IV) Assessment of anchoring of MEK series plate

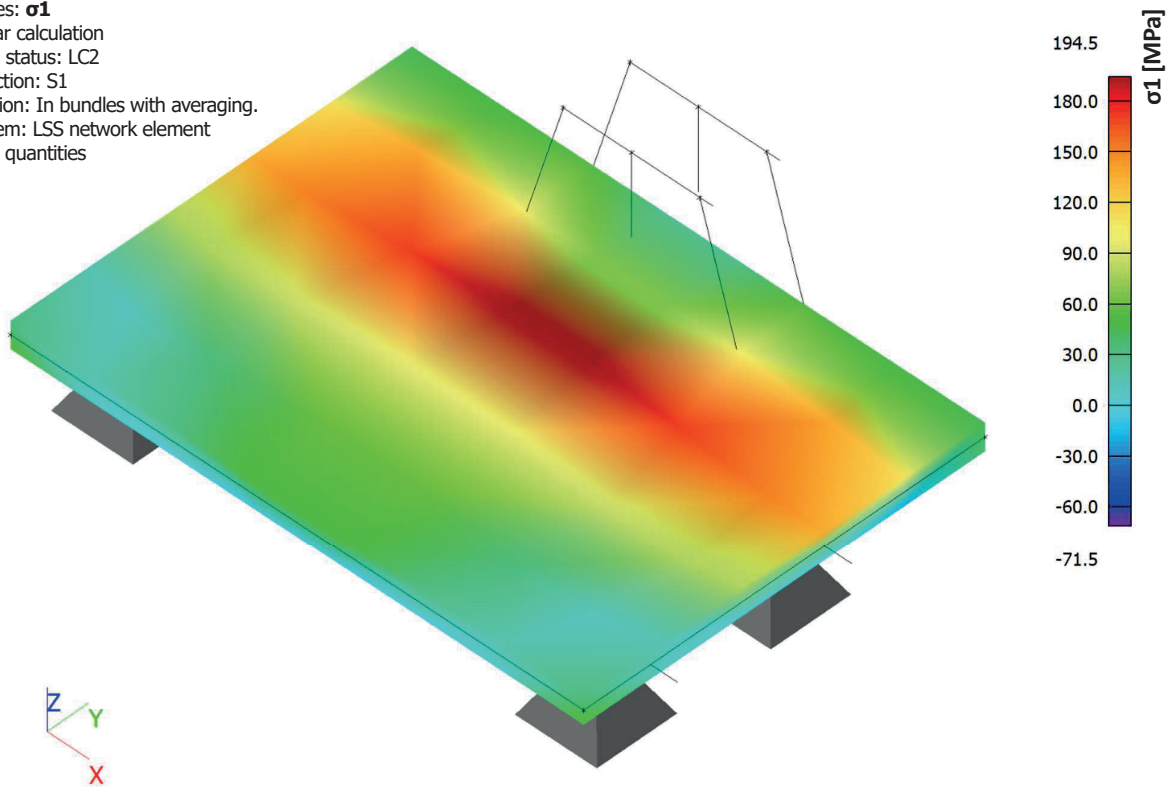
Load statuses - LC2

Name	Description	Action type	Load group	Load type
LC2	reaction	Continuous	LG1	Standard



3D tension; σ_1

Values: σ_1
Linear calculation
Load status: LC2
Selection: S1
Position: In bundles with averaging.
System: LSS network element
Main quantities



$f_{yd} = 235/1.15 = 204.3 \text{ MPa} \geq 194.5 \text{ MPa} \Rightarrow$ **Passed**

Bolt	M 10	Shaft surface A= 79 mm ²	Bolt diameter d= 10 mm
Bolt material	8.8	Core surface A _s = 58 mm ²	Hole diameter d ₀ = 11 mm
Sheet material	S 235	Bolt strength limit f _{ub} = 800 MPa	
Sheet thickness	4 mm	Sheet strength limit f _u = 360 MPa	

Load capacity in shear	
For 1 shear plane passing through the thread F _{v,Rd} =	12.1 kN
For 1 shear plane passing through the shaft F _{v,Rd} =	16.6 kN
Number of shear planes passing through the thread:	0
Number of shear planes passing through the shaft:	1
<u>Resulting load capacity in shear F_{v,Rd}= 16.6 kN</u>	
Compression strength <input type="checkbox"/> I want to enter other pitches	
Ordinary distance	p1= 30 mm α = 0.74 p2= 30 mm e1= 20 mm e2= 15 mm
<u>Resulting compression strength F_{b,Rd}= 14.7 kN</u>	

15.0 kN ≥ 2.77 kN => **Passed**

II) **Series Connect 60**

The most stressed are bolts for sheet cladding; wind load class 4, gate span 4.5 m, height 2.2 m.

Force on C profile connection to frame: 6.91 kN, at the point of binding the C profile of individual frame parts => force per 1 bolt

Bolt	M 8	Shaft surface A= 50 mm ²	Bolt diameter d= 8 mm
Bolt material	8.8	Core surface A _s = 37 mm ²	Hole diameter d ₀ = 9 mm
Sheet material	S 235	Bolt strength limit f _{ub} = 800 MPa	
Sheet thickness	3 mm	Sheet strength limit f _u = 360 MPa	

Load capacity in shear	
For 1 shear plane passing through the thread F _{v,Rd} =	12.1 kN
For 1 shear plane passing through the shaft F _{v,Rd} =	16.6 kN
Number of shear planes passing through the thread:	1
Number of shear planes passing through the shaft:	0
<u>Resulting load capacity in shear F_{v,Rd}= 12.1 kN</u>	
Compression strength <input type="checkbox"/> I want to enter other pitches	
Ordinary distance	p1= 30 mm α = 0.74 p2= 30 mm e1= 20 mm e2= 15 mm
<u>Resulting compression strength F_{b,Rd}= 11.0 kN</u>	

11.0 kN ≥ 6.91 kN => **Passed**

g) **Assessment of anchoring upper L reinforcement profile to the frame – Connect 60 series**

The most stressed are bolts for sheet cladding; wind load class 4, gate span 4.5 m, height 2.2 m, force on the L-profile connection to frame: 10.43 kN per 1 bolt

Bolt	M 10	Shaft surface A= 79 mm ²	Bolt diameter d= 10 mm
Bolt material	10.9	Core surface A _s = 58 mm ²	Hole diameter d ₀ = 11 mm
Sheet material	S 235	Bolt strength limit f _{ub} = 1000 MPa	
Sheet thickness	3 mm	Sheet strength limit f _u = 360 MPa	

Load capacity in shear	
For 1 shear plane passing through the thread F _{v,Rd} =	20.0 kN
For 1 shear plane passing through the shaft F _{v,Rd} =	32.5 kN
Number of shear planes passing through the thread:	0
Number of shear planes passing through the shaft:	1
<u>Resulting load capacity in shear F_{v,Rd}= 32.5 kN</u>	
Compression strength	
<input type="checkbox"/> I want to enter other pitches	
p1= 300 mm	α = 1.00
p2= 300 mm	
e1= 50 mm	
e2= 15 mm	
<u>Resulting compression strength F_{b,Rd}= 18.6 kN</u>	
Tensile strength	
<u>Resulting tensile strength in thread F_{t,Rd}= 36.0 kN</u>	

18.6 kN ≥ 10.43 kN => **Passed**

h) Assessment of pull rod anchoring – Connect 60, frame 3

The most stressed are for bolts for sheet cladding; wind load class 4, gate span 4.5 m, height 2.2 m, tensile strength on pull rod: 6.25 kN

Bolt	M 14	Shaft surface A= 154 mm ²	Bolt diameter d= 14 mm
Bolt material	8.8	Core surface A _s = 121 mm ²	Hole diameter d ₀ = 15 mm
Sheet material	S 235	Bolt strength limit f _{ub} = 800 MPa	
Sheet thickness	10 mm	Sheet strength limit f _u = 360 MPa	

Load capacity in shear	
For 1 shear plane passing through the thread F _{v,Rd} =	33.3 kN
For 1 shear plane passing through the shaft F _{v,Rd} =	51.0 kN
Number of shear planes passing through the thread:	0
Number of shear planes passing through the shaft:	1
<u>Resulting load capacity in shear F_{v,Rd}= 51.0 kN</u>	
Compression strength	
<input type="checkbox"/> I want to enter other pitches	
p1= 20 mm	α = 0.19
p2= 20 mm	
e1= 20 mm	
e2= 20 mm	
<u>Resulting compression strength F_{b,Rd}= 16.9 kN</u>	

16.9 kN ≥ 6.25 kN => **Passed**

i) Assessment of screwed frame connections – Connect 60

The most stressed are bolts for sheet cladding; wind load class 4, gate span 4.5 m, height 2.2 m,

Forces at connection

Linear calculation
 Combination: CO1
 System: Global
 Extreme: Global
 Selection: All

Forces at connection

Name	Nodes(s)	Support(s)	Status	R _x [kN]	R _y [kN]	R _z [kN]	CH/V/P
FC14	N404	B204	CO1/1	-4.50	0.00	0.00	N1
FC13	N407	B204	CO1/1	4.50	0.00	0.00	N1
FC5	N429	B233	CO1/1	-0.91	0.00	0.00	N1
FC22	N398	B205	CO1/1	0.04	0.00	0.00	N1

Bolt	M 10	Shaft surface A= 79 mm ²	Bolt diameter d= 10 mm
Bolt material	10.9	Core surface A _s = 58 mm ²	Hole diameter d ₀ = 11 mm
Sheet material	S 235	Bolt strength limit f _{ub} = 1000MPa	
Sheet thickness	3 mm	Sheet strength limit f _u = 360 MPa	

Load capacity in shear

For 1 shear plane passing through the thread $F_v.Rd=$ 20.0 kN

For 1 shear plane passing through the shaft $F_v.Rd=$ 32.5 kN

Number of shear planes passing through the thread: 0

Number of shear planes passing through the shaft: 1

Resulting load capacity in shear $F_v.Rd= 32.5$ kN

Compression strength

I want to enter other pitches

$p1=$ 100 mm

$\alpha =$ 0.45

$p2=$ 100 mm

$e1=$ 15 mm

$e2=$ 15 mm

Resulting compression strength $F_b.Rd= 8.5$ kN

Tensile strength

Resulting tensile strength in thread $F_t.Rd= 36.0$ kN

8.5 kN \geq 4.5 kN => **Passed**

DRAVING DOKUMENTATION COMPONENTS

- DIAGON 60
- DOCKER O
- DRIVER L 38
- FINISH S
- JRS 30
- LAST S
- PARK CSM
- PILOT SN
- RUN S
- SPEED SE
- STAGE SZ

1 2 3 4

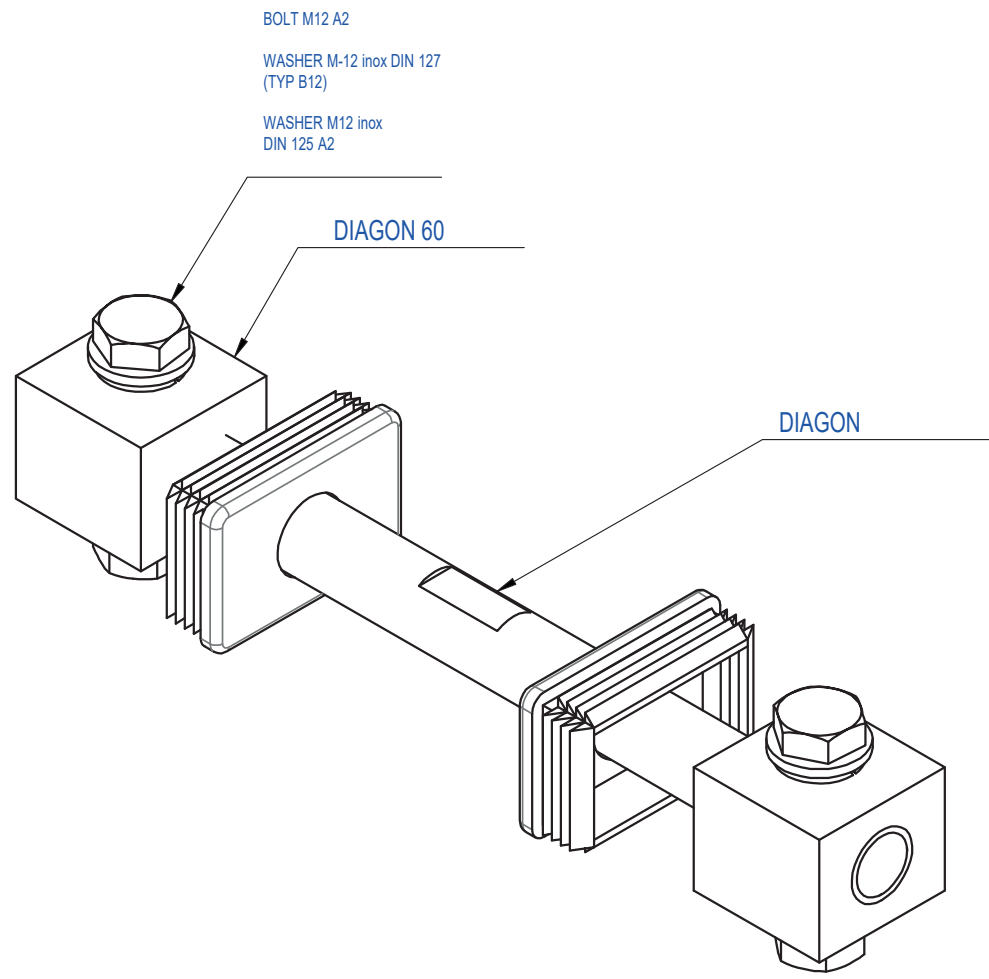
A A

B B

C C

D D

E E



Měřítko: 1 : 1	Kreslil: Schválil:	28.03.2022	David Kolařík	<small>CZ: Tento dokument je duševním majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využití jinak. EN: This document is an intellectual property of CAIS s.r.o. to which we have all rights reserved including the relations to patents and registered models. This document may not be copied, alternatively handed to the utilization of a third party without our consent or used in another way.</small>	
ZMĚNA			Josef Bednařík	Promítání:	
				Hmotnost:	1,463 kg
				Měřítko:	1 : 1
		Název:	DIAGON 60	Materiál:	
		Číslo zboží:	1700237	Program:	
		Poznámka:			
C:\Users\David\Desktop\Autodesk\Autodesk\IRON\DIAGON\DIAGON 60 (SESTAVA).iam					Formát: A4

1 2 3 4

F F

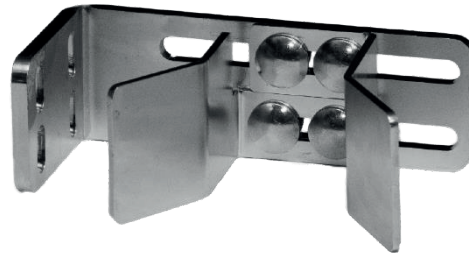
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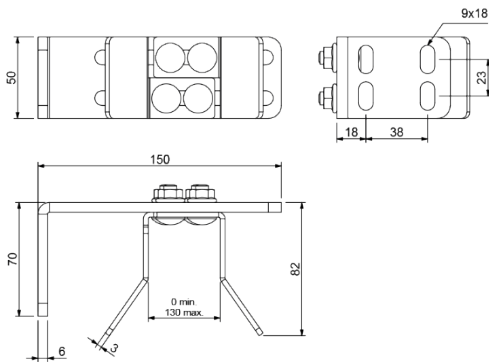
Technical report


Art.



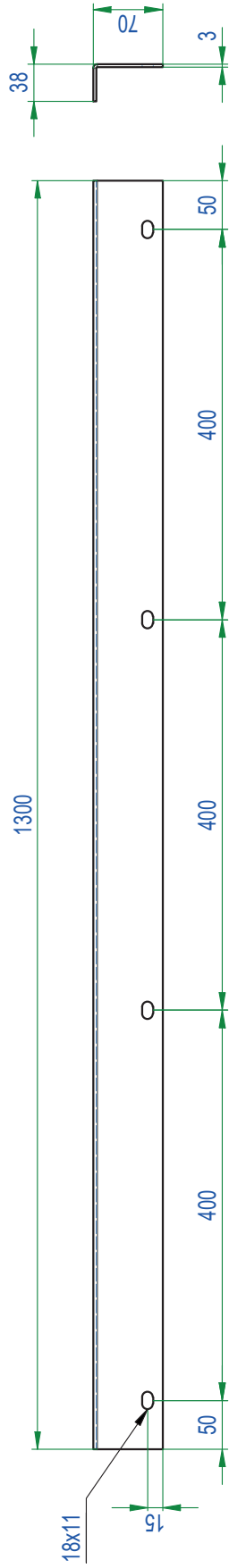
DOCKER O

Art.	DOCKER O
Product	ADJUSTABLE END STOP BRACKET
Item code	1700367
Material	Body - S 235 JR, Bolt M 8x20 - DIN 603, Nut M 8 - DIN 6923
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cr//T2nL
Guarantee	24 months



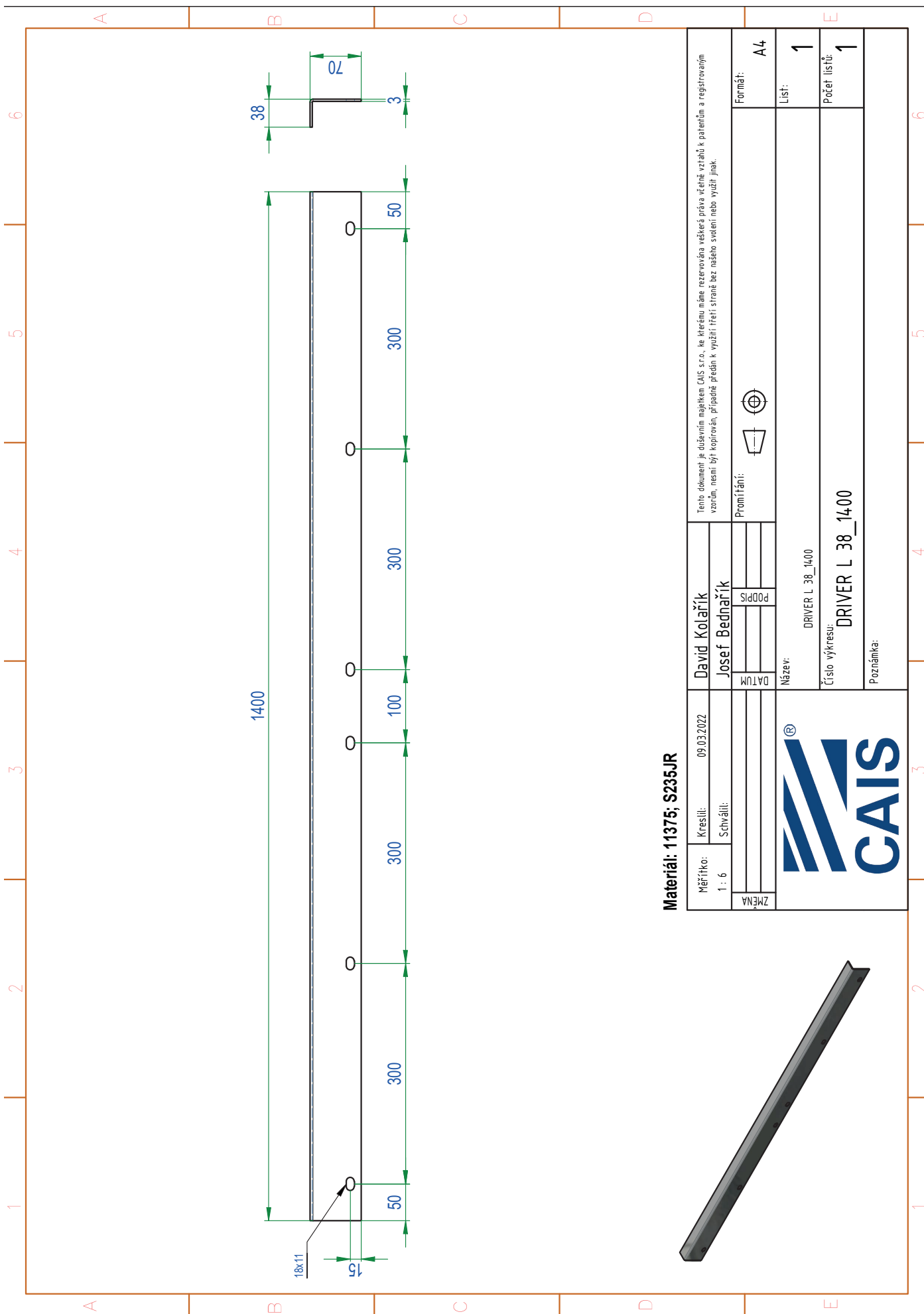
Art.	1pc		CODE
	kg	pcs	kg
DOCKER O	0,67	4	2,68
			1700367

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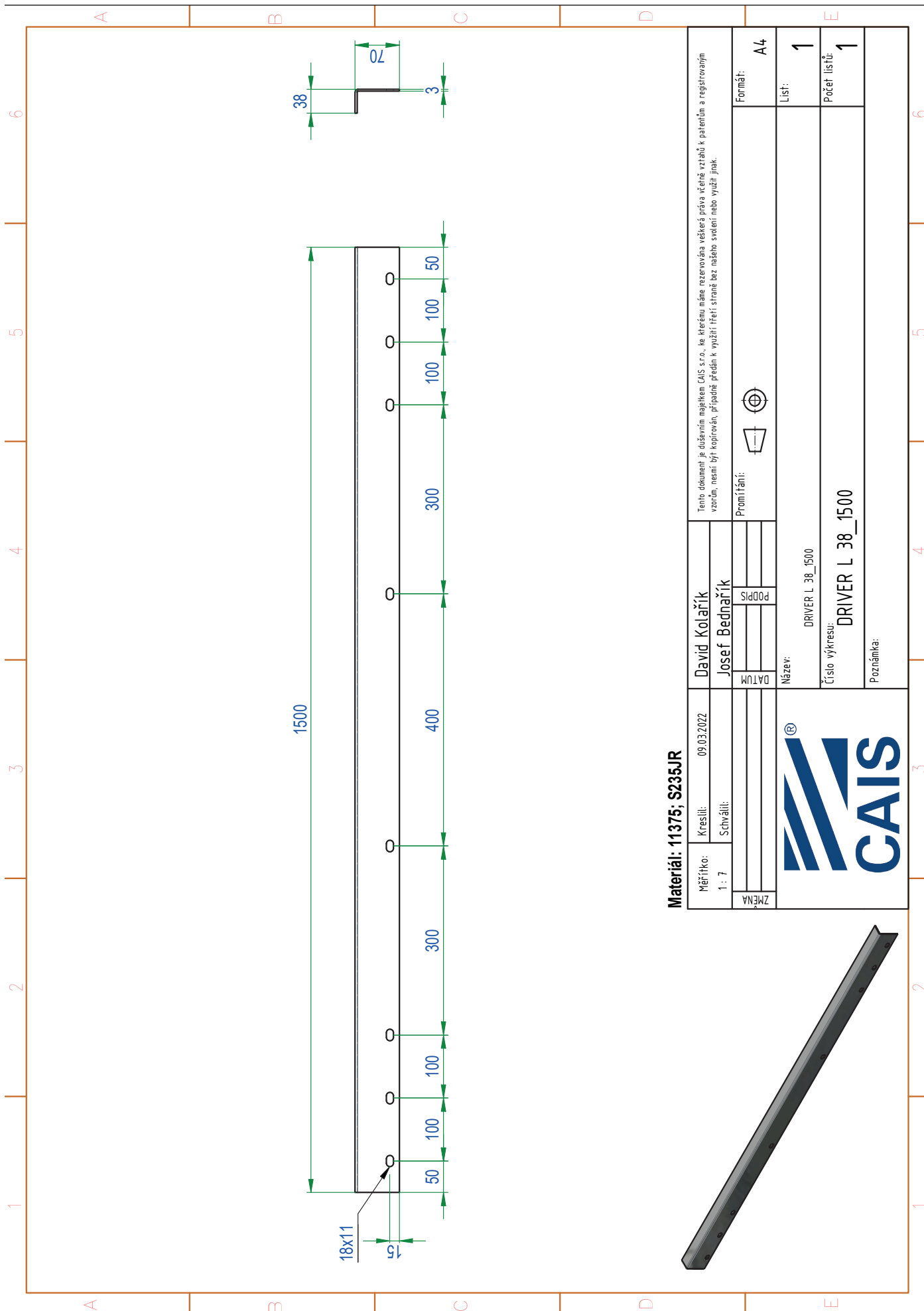
Material: 11375; S235JR

Měřítka: 1 : 6	Kreslí: 09.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vztahů k patentům a registrovaným známkám, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využití jinak.	
ZMENA	Schválí:	Josef Bednařík	Promítání:	Formát: A4
		DATE		Lišt: 1
		PODPIS		Počet listů: 1
		Název: DRIVER L 38_1300		
		Číslo výkresu: DRIVER L 38_1300		
		Poznámka:		



Materiál: 11375; S235JR

Měřítka: 1 : 6	Kreslil: 09.03.2022	David Kotlařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vzáuh k patentům a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využití jinak.
Schválil:		Josef Bednařík	
ZMĚNA		PODPIS	Promítání:
		DATEM	
			Formát: A4
			List: 1
			Počet listů: 1
		Název: DRIVER L 38_1400	
		Číslo výkresu: DRIVER L 38_1400	
		Poznámka:	



Materiál: 11375; S235JR

Měřítko: 1 : 7	Kreslil:	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máne rzezována veškerá práva včetně práva a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využit jinak.	Formát:	A4
	Schválil:	Josef Bednařík		Promítání:	1
ZMĚNA	DATE	PODPIS		Číslo výkresu:	DRIVER L 38_1500
Název:				Počet listů:	1
Číslo výkresu:				Poznámka:	



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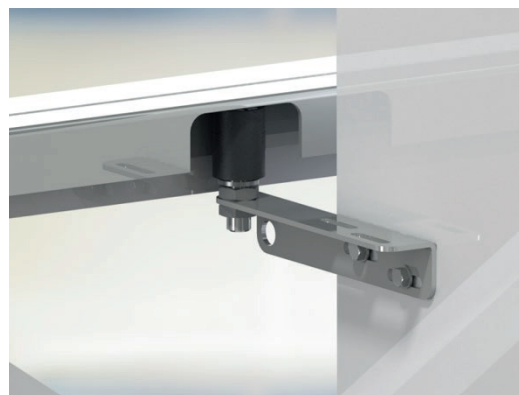
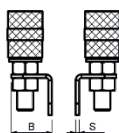
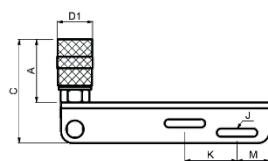
Technical report


Art.



JRS 30

Product	TWO ROLLER GUIDE PLATE
Art.	FRS 2
Item code	1700183
Material	Body - S 235 JR, Bolt M 14 x 45 - DIN 912, Nut M 14 - DIN 934, Nut M 14 - DIN 1587, Plastic roller - POLYAMID 6 BADAMID B 70
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cr//T2nL
Guarantee	24 months



Art.	D1	L	A	B	C	J	K	M	S	1pc		CODE	
	∅	mm								kg	pcs	kg	
JRS 30	31	180	53	35	88	9x35	45	28	3	0,41	10	4,1	1700339
JRM 40	40	220	70	40	110	11x35	45	28	4	0,75	6	4,5	1700340

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Ver.: 220217_01

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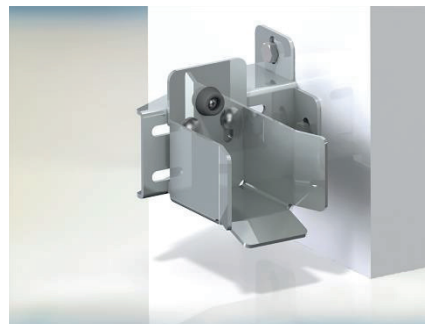
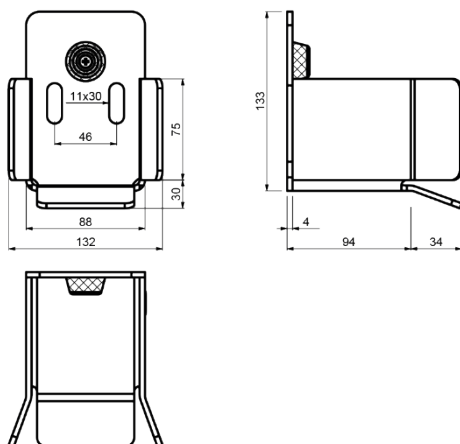
Technical report


Art.

LAST S



Art.	LAST S
Product	END STOP FOR CANTILEVER GATE
Item code	1700005
Material	Body - S 235 JR, Bolt M 5x8 - DIN 7985, Rubber - TPE SANTOPRENE
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cn//T2nL
Guarantee	24 months



Art.	GUIDE	1pc			CODE
		kg	pcs	kg	
LAST S	STAGE SB/SZ	1,24	2	2,48	1700005

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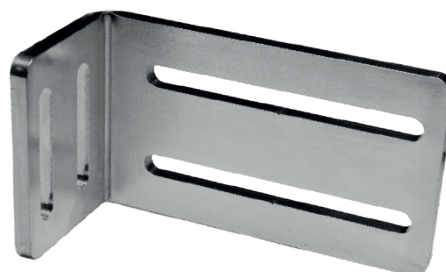
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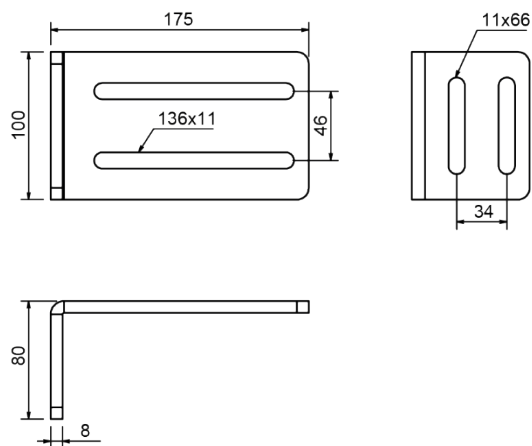
Technical report


Art.



PARK CSM

Art.	PARK CSM
Product	END STOP BRACKET
Item code	1700359
Material	Body S 235 JR, Bolt M 10x25 - DIN 603, Nut M 10 - DIN 6923
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cn//T2nL
Guarantee	24 months



Art.	BRACKET	1pc		CODE
		kg	pcs	kg
PARK CSM	LAST/PADDOCK	1,36	2	2,72
				1700359

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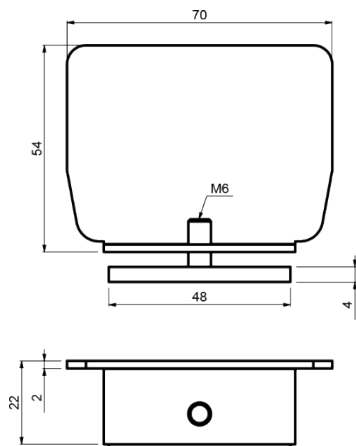
Technical report


Art.



PILOT SN

Art.	PILOT SN
Product	GUIDE END CAP WITH SCREW, INDEPENDENT
Item code	1700007
Material	Body - S 235 JR, Bolt M 6x16 - DIN 7991
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cn//T2nL
Guarantee	24 months



Art.	GUIDE	1pc			CODE
		kg	pcs	kg	
PILOT SN	STAGE SB/SZ	0,1	10	1	1700007

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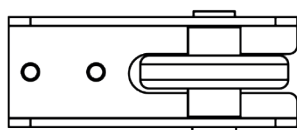
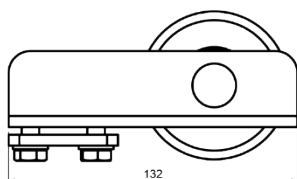
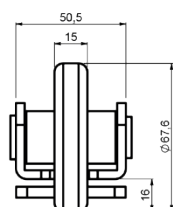
Technical report


Art.



RUN S

Art.	RUN S
Product	GUIDE SUPPORT WHEEL FOR CANTILEVER GATE
Item code	1700004
Material	Body - S 235 JR, Roller - C45, Pin - 11SMn30, Distancial - 11SMn30, Bearing - 6203 2RS, Bolt M 8 x 20 - DIN 933, Washer M 8 - DIN 125A
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cn//T2nL
Guarantee	24 months



Art.	GUIDE	1pc			CODE
		kg	pcs	kg	
RUN S	STAGE SB/SZ	0,97	10	9,7	1700004

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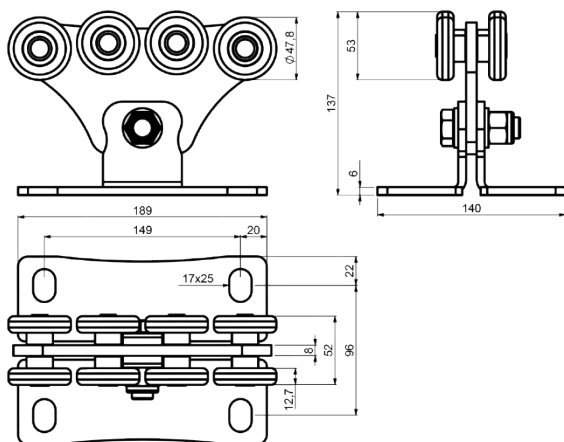
Technical report

Art.



SPEED SE

Art.	SPEED SE
Product	EIGHT WHEELED CARRIAGE FOR CANTILEVER GATE
Item code	1700174
Material	Body - S 235 JR, Roller - C45, Pin - 11SMn30, Distancial - 11SMn30, Bearing - 6201 2RS, Bolt M 16 x 45 - DIN 933, Nut M 16 - DIN 985, Washer M 16 - DIN 125A
Surface finish	ČSN EN ISO 19598 - Fe//Zn12//Cn//T2nL
Guarantee	24 months



Art.	A	GUIDE	1pc			CODE
	max. mm			pcs	kg	
SPEED SE	4000	STAGE SB/SZ	3,5	2	7	1700174

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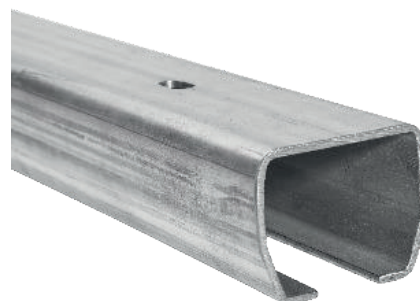
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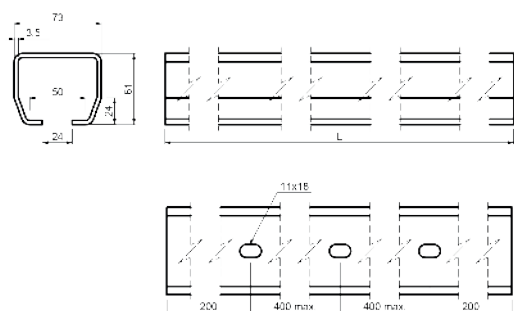
Technical report


Art.



STAGE SZ 6

Art.	STAGE SZ 6
Product	„C“ PROFILE GUIDE FOR CANTILEVER GATE
Item code	1700003
Material	Z 275 MA - WUPPERMANN STEEL
Surface finish	EN 10346 - 15
Guarantee	24 months



Art.	CARRIAGE	GUIDE	L/1pc	1pc			CODE
					pcs	kg	
STAGE SB 6	SPEED S/SE/SK	UNGALVANIZED	6000	33	24	792	1700002
STAGE SB 5,6	SPEED S/SE/SK	UNGALVANIZED	5600	30,8	24	739,2	1700176
STAGE SB 3	SPEED S/SE/SK	UNGALVANIZED	3000	16,5	24	396	1700167
STAGE SB 2,8	SPEED S/SE/SK	UNGALVANIZED	2800	15,4	24	369,6	1720006
STAGE SB 1	SPEED S/SE/SK	UNGALVANIZED	1000	5,5	24	132	1720008
STAGE SZ 6	SPEED S/SE/SK	GALVANIZED	6000	33	24	792	1700003
STAGE SZ 5,6	SPEED S/SE/SK	GALVANIZED	5600	30,8	24	739,2	1700177
STAGE SZ 3	SPEED S/SE/SK	GALVANIZED	3000	16,5	24	396	1700168
STAGE SZ 2,8	SPEED S/SE/SK	GALVANIZED	2800	15,4	24	369,6	1720016
STAGE SZ 1	SPEED S/SE/SK	GALVANIZED	1000	5,5	24	132	1720018

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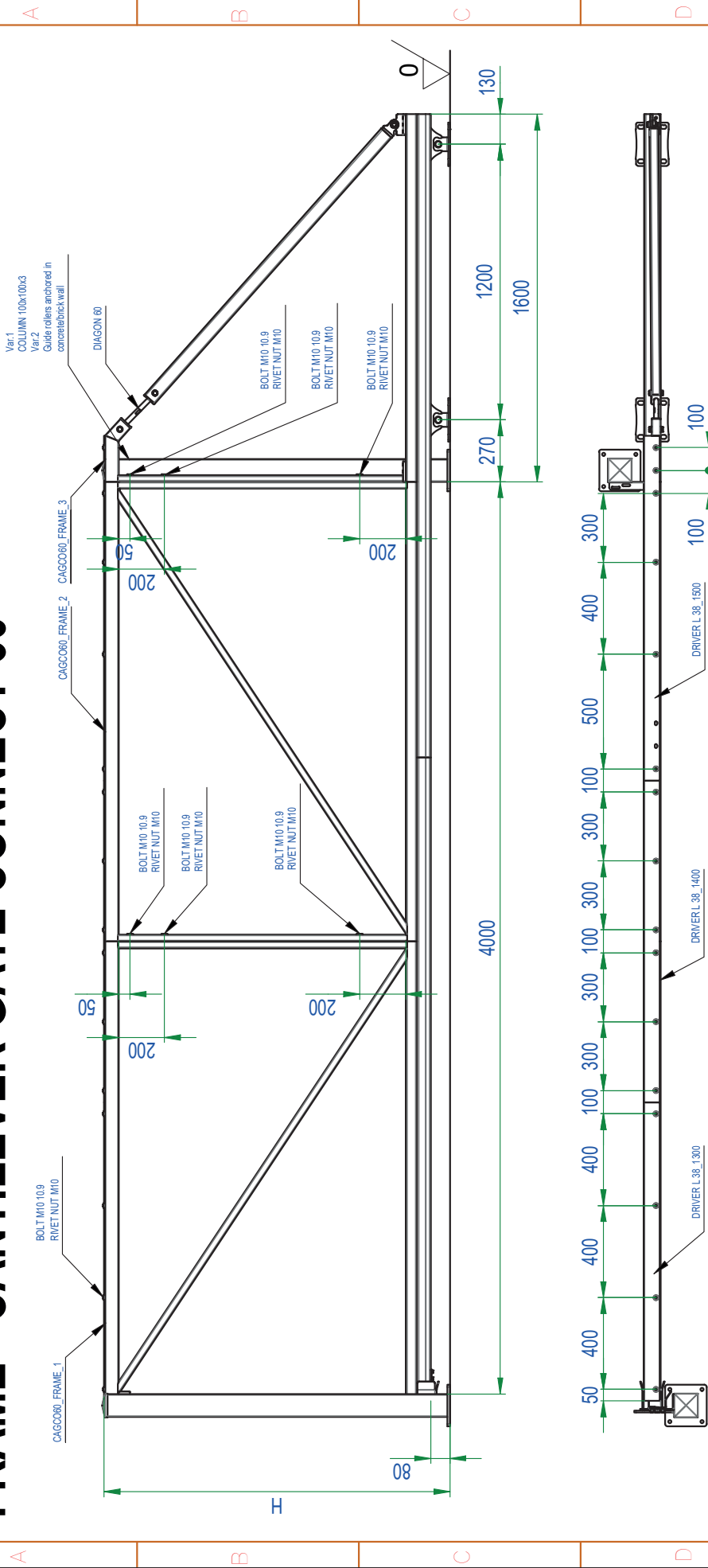
DRAVING

DOKUMENTATION

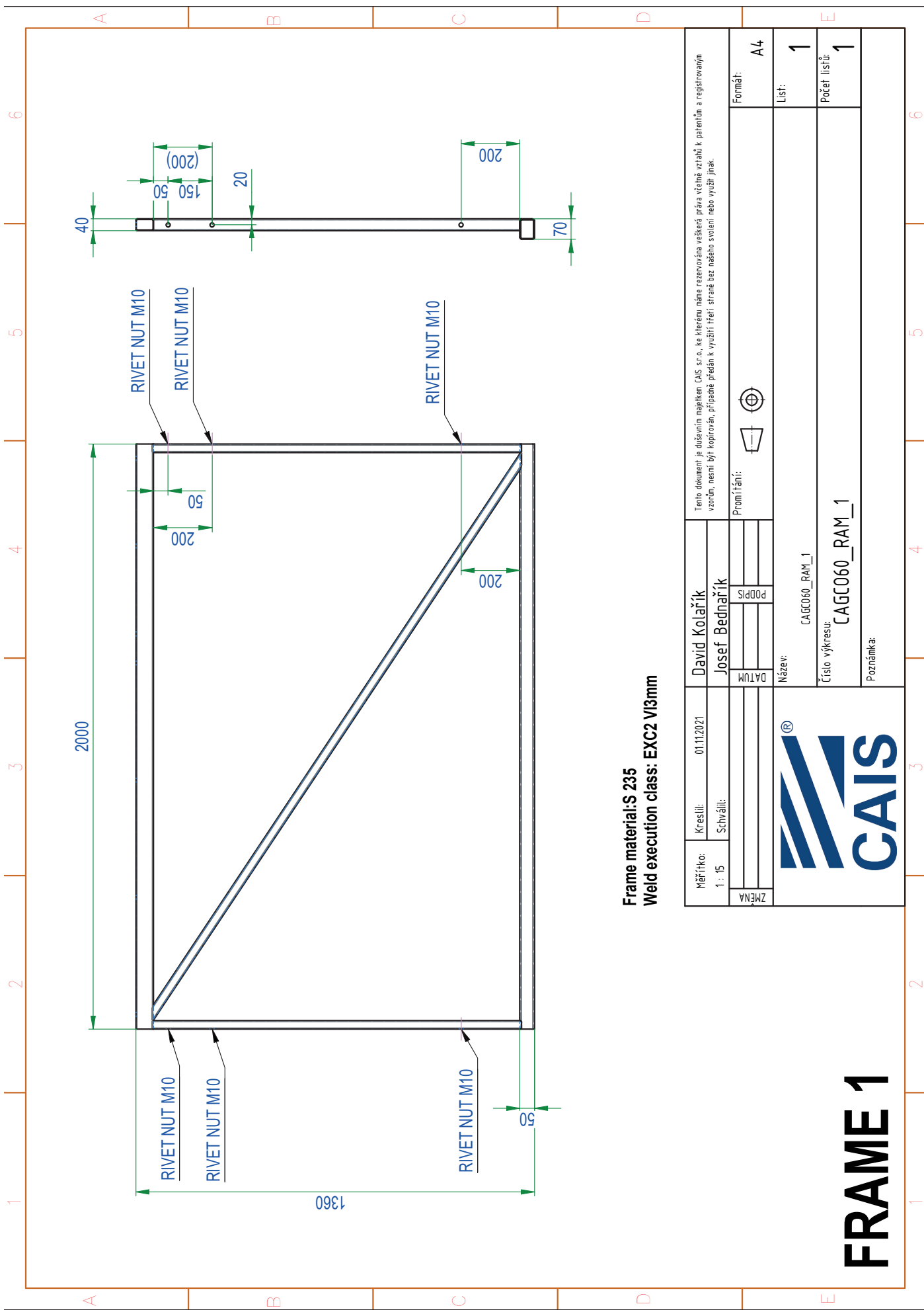
FRAME

- FRAME - CANTILEVER GATE CONNECT 60
- FRAME 1 - CAGCO60_RAM_1
- FRAME 2 - CAGCO60_RAM_2
- FRAME 3 - CAGCO60_RAM_3
- LIST OF COMPONENTS/MATERIAL - 220215CAGCO6002
- CANTILEVER GATE CONNECT 60 RECTANGULAR TUBE
20X20X1,5; 220305CAGCO6002
- FRAME of CANTILEVER GATE CONNECT 60 - 220305CAGCO6002
- DETAILS A,B,C,D; 220305CAGCO6002
- DETAIL E; 220305CAGCO6002
- LIST OF COMPONENTS/MATERIAL - 220215CAGCO6003
- CANTILEVER GATE CONNECT 60 PERFORATED SHEET
220305CAGCO6003
- DETAILS A,B,C,D; 220305CAGCO6003
- DETAIL E; 220305CAGCO6003
- LIST OF COMPONENTS/MATERIAL - 220305CAGCO6004
- CANTILEWER GATE CONNECT 60 WOODEN PLANK 95x18;
220305CAGCO6004
- DETAILS A,B,C,D; 220305CAGCO6004
- DETAIL E; 220305CAGCO6004
- LIST OF COMPONENTS/MATERIAL - 220305CAGCO6005
- GANTILEVER GATE CONNECT 60 FULL GLADING, SHEET 2mm
220305CAGCO6005
- DETAILS A,B,C,D; 220305CAGCO6005
- DETAIL E; 220305CAGCO6005
- COLUMN_GUIDE; 220305CAGCO60_C

FRAME - CANTILEVER GATE CONNECT 60



Měřítka: 1 : 23	Kreslit: 16.03.2022	David Kotlařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máne rezervována veškerá práva včetně vztaž k patentům a registrovaným vzorům, nesmí být kopírován, přibližně předán k využití třetí straně bez našeho svolení nebo využit jinak.
ZMĚNA	Schválit:	Josef Bednařík	Promítání:
		DATA	
			Formát: A4
			List: 1
			Počet listů: 1
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		Číslo výkresu: 220305CAGC06001	
		Poznámka:	

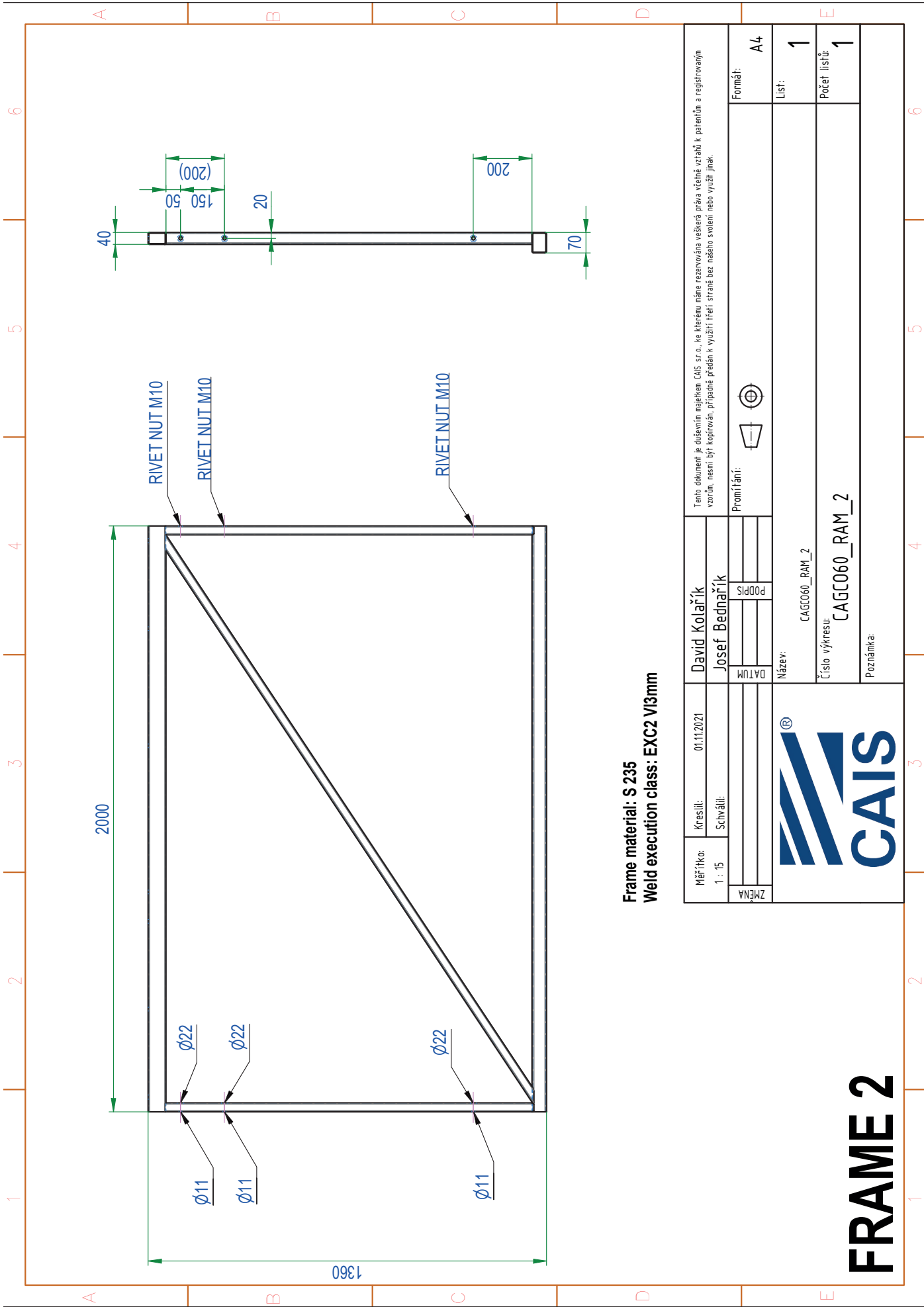


Frame material: S 235
 Weld execution class: EXC2 V13mm

Měřičko: 1 : 15 ZMENA	Kreslil: 01.11.2021	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máne rezervována veškerá práva včetně vztaž k patentům a registrovaným vzorům, nesmí být kopírován, přibližně předán k využití třetí straně bez našeho svolení nebo využití jinak.	Formát: A4
	Schválil:	Josef Bednářík		Promítání:
Název: CAGC060_RAM_1		PODPIS		Počet listů: 1
Číslo výkresu: CAGC060_RAM_1		DATA		
Poznámka:				

FRAME 1



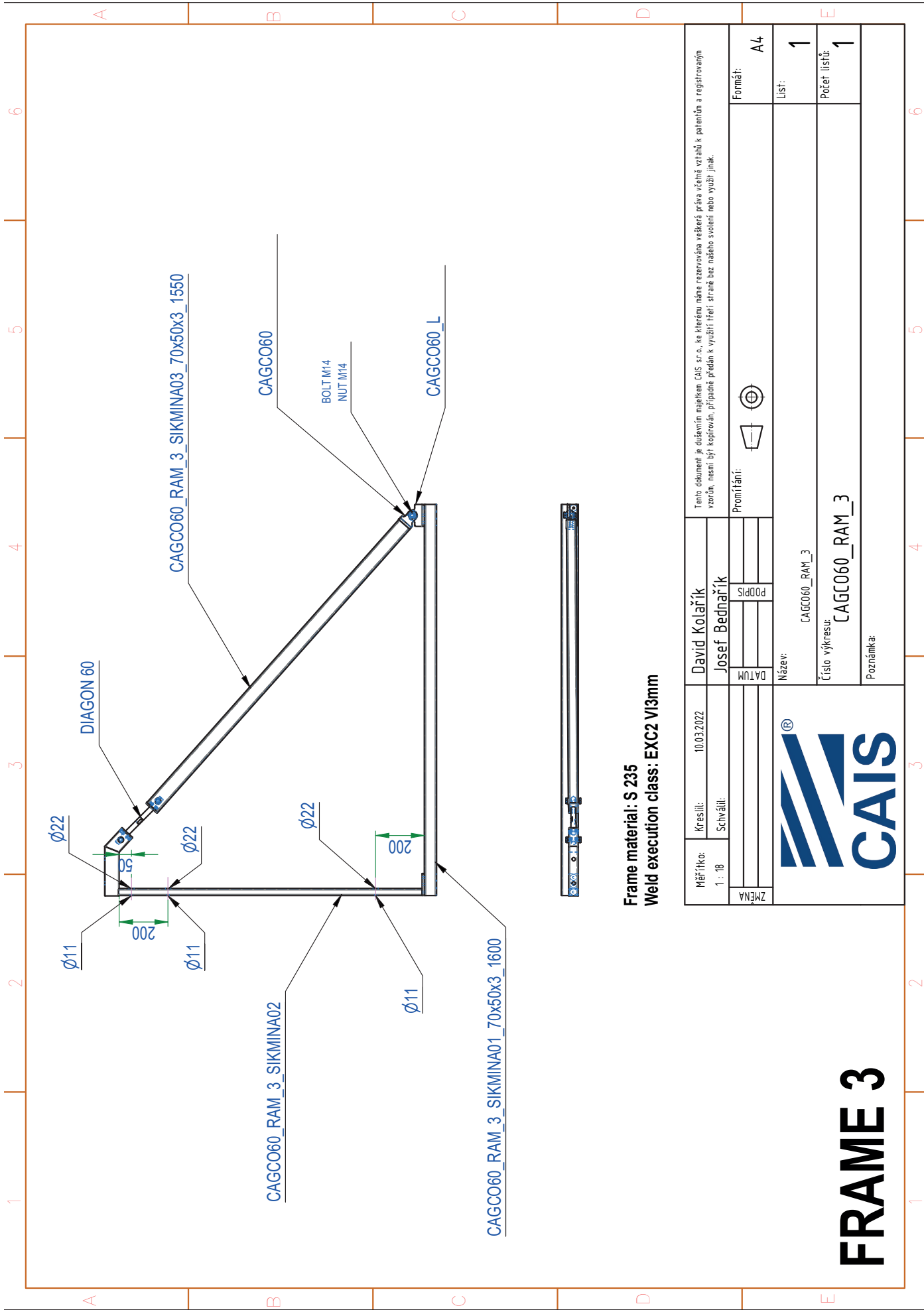


Frame material: S 235
 Weld execution class: EXC2 V13mm

Měřítko: 1 : 15	Kreslil: 01.11.2021	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máne rezervována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využití jinak.		Formát: A4
	Schválil:	Josef Bednařík	PODPIS	Promítání: 	Líst: 1
ZMENA	DATUM				Počet listů: 1
Název: CAGC060_RAM_2		Číslo výkresu: CAGC060_RAM_2			
		Poznámka:			



FRAME 2



Frame material: S 235
 Weld execution class: EXC2 V13mm

Měřítko: 1 : 18	Kreslil:	10.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o. ke kterému máne rezervována všechna práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, přibližně předán k využití třetí straně bez našeho svolení nebo využití jinak.	Formát:	A4
	Schválil:		Josef Bednařík		Promítání:	1st angle
ZMĚNA						
Název:			CAGCO60_RAM_3		Číslo výkresu:	CAGCO60_RAM_3
Poznámka:					Počet listů:	1



FRAME 3



LIST OF COMPONENTS/MATERIAL

CANTIELVER GATE CONNECT 60

RECTANGULAR_TUBE 220215CAGCO6002

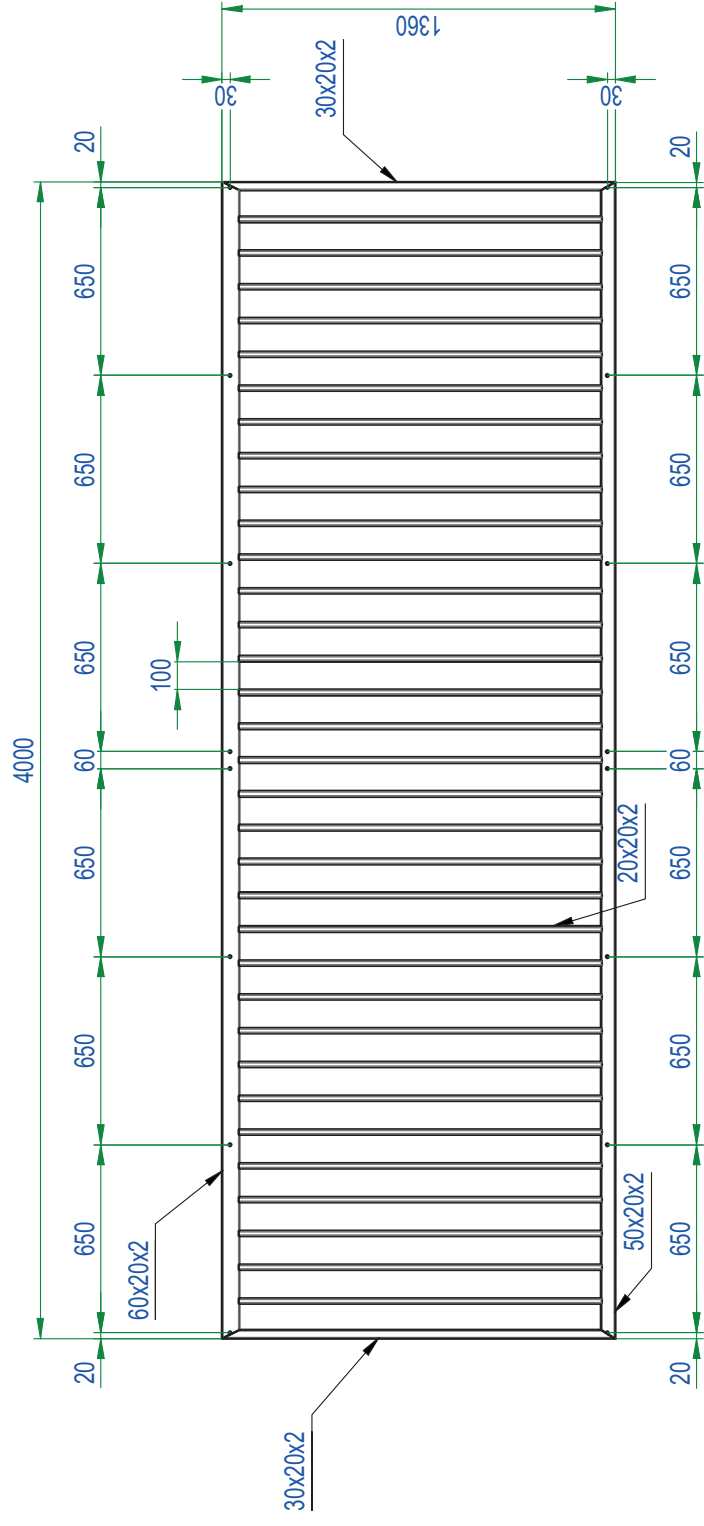
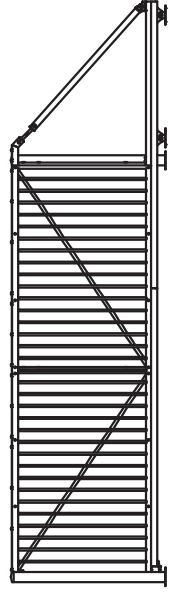
Pg.3

- a) DOCKER O
- b) XXXXXXX
- c) DRIVER L 38
- d) PARK CSM
- e) LAST S
- f) SPEED SE
- g) STAGE SZ
- h) JRS 30

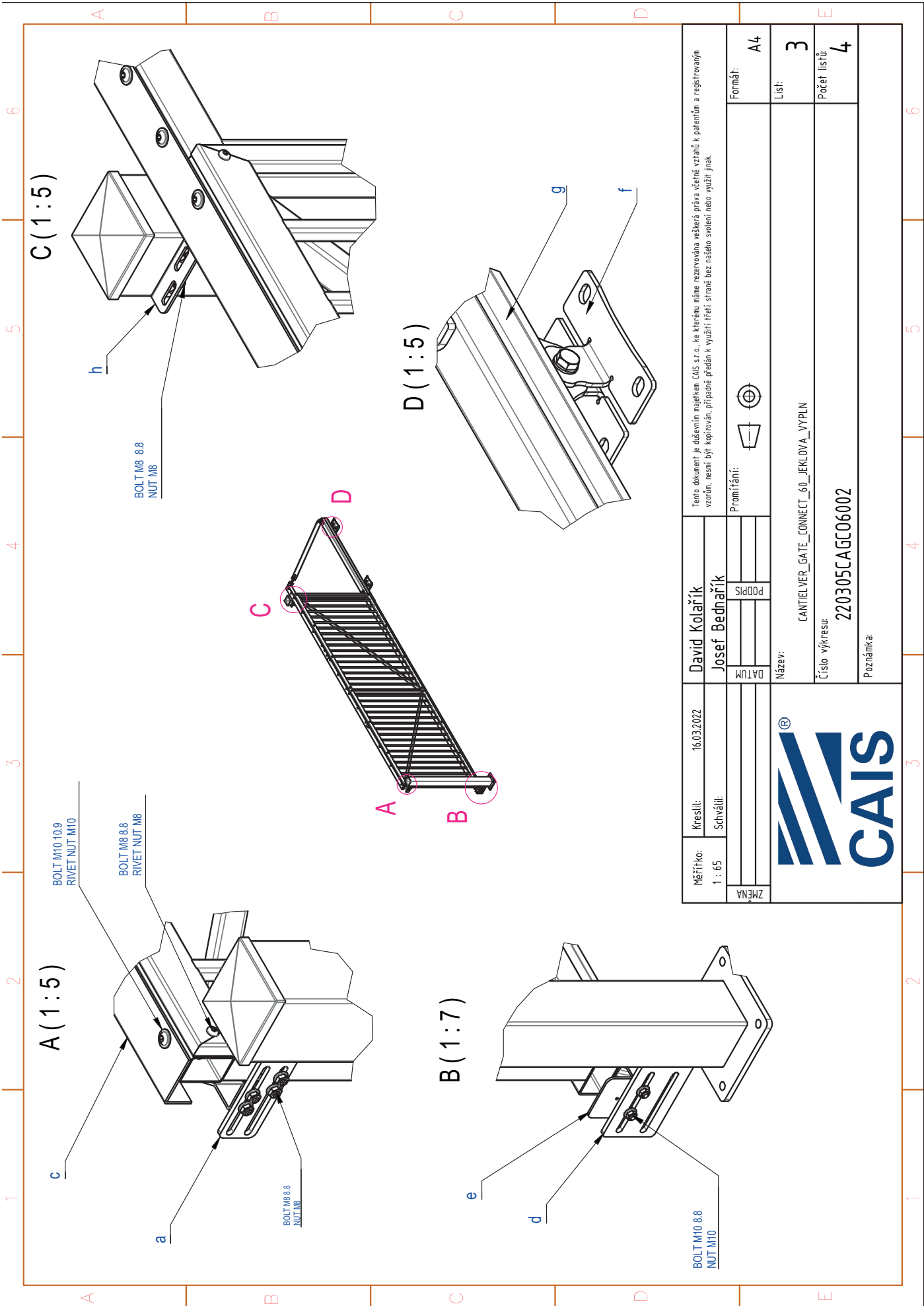
Str. 4


- i) BOLT M10 8.8
- j) RIVET NUT M10

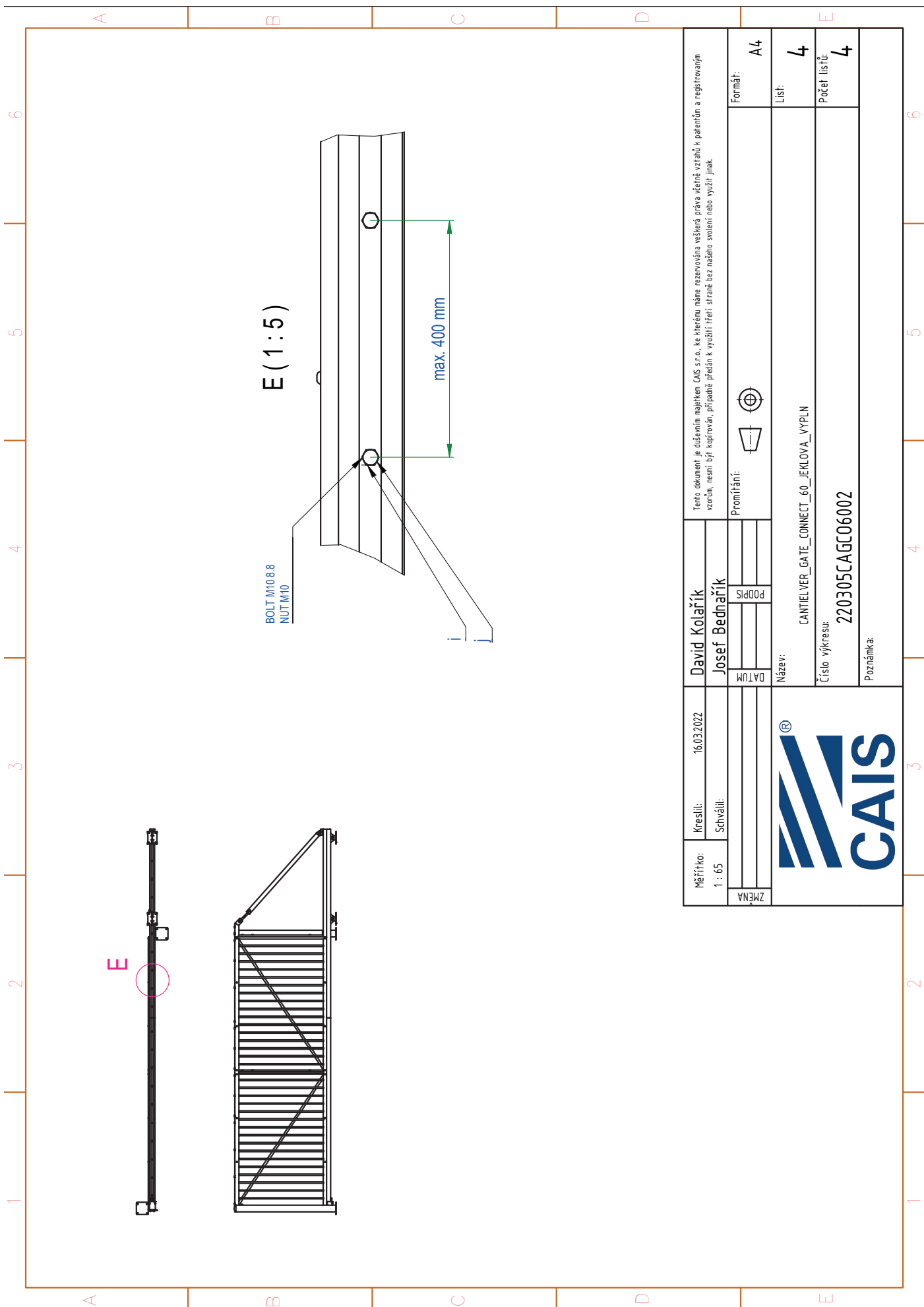
FRAME of CANTILEVER GATE CONNECT 60 „220305CAGCO6002“




Mřížka: 1 : 65	Kreslil: 16.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vzáuh k patentům a registrovaným vzorům, nesmí být kopírován, příjavně předán k využití třetí straně bez našeho svolení nebo využit jinak.
Schválil:		Josef Bednářík	
ZMĚNA		Podpis	Promítání:
			Formát: A4
			List: 2
			Počet listů: 4
		Název: CANTILEVER_GATE_CONNECT_60_„JEKLOVA_VYPLN	
		Číslo výkresu: 220305CAGCO6002	
Poznámka:			



Měřička: 1 : 65	Kreslil: 16.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rzezernována všechna práva včetně vzhledu k patentům a registrovaným vzorům, nesmí být kopírován, příjavně předán k využití třetí straně bez našeho svolení nebo využit jinak.	
ZMĚNA	Schválil:	Josef Bednařík	Proměření:	Formát: A4
		DATE		Líst: 3
		PODPIS		Počet listů: 4
		Název: CANTIELVER_GATE_CONNECT_60_EKLOVA_VYPLN		
		Číslo výkresu: 220305CAGC06002		
		Poznámka:		



Měřítko: 1 : 65	Kreslil:	16.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vzájemných vztahů k patentům a registrovaným vzorům, nesmí být kopírován, příjavně předán k využití třetí straně bez našeho svolení nebo využit jinak.	Formát:	A4	
	Schválil:		Josef Bednářík		Promítání:		Líst:
ZMĚNA			DATA			Počet listů:	4
				Název:	CANTIELVER_GATE_CONNECT_60_JEKLOVA_VYPLN		
				Číslo výkresu:	220305CAGC06002		
Poznámka:							



LIST OF COMPONENTS/MATERIAL

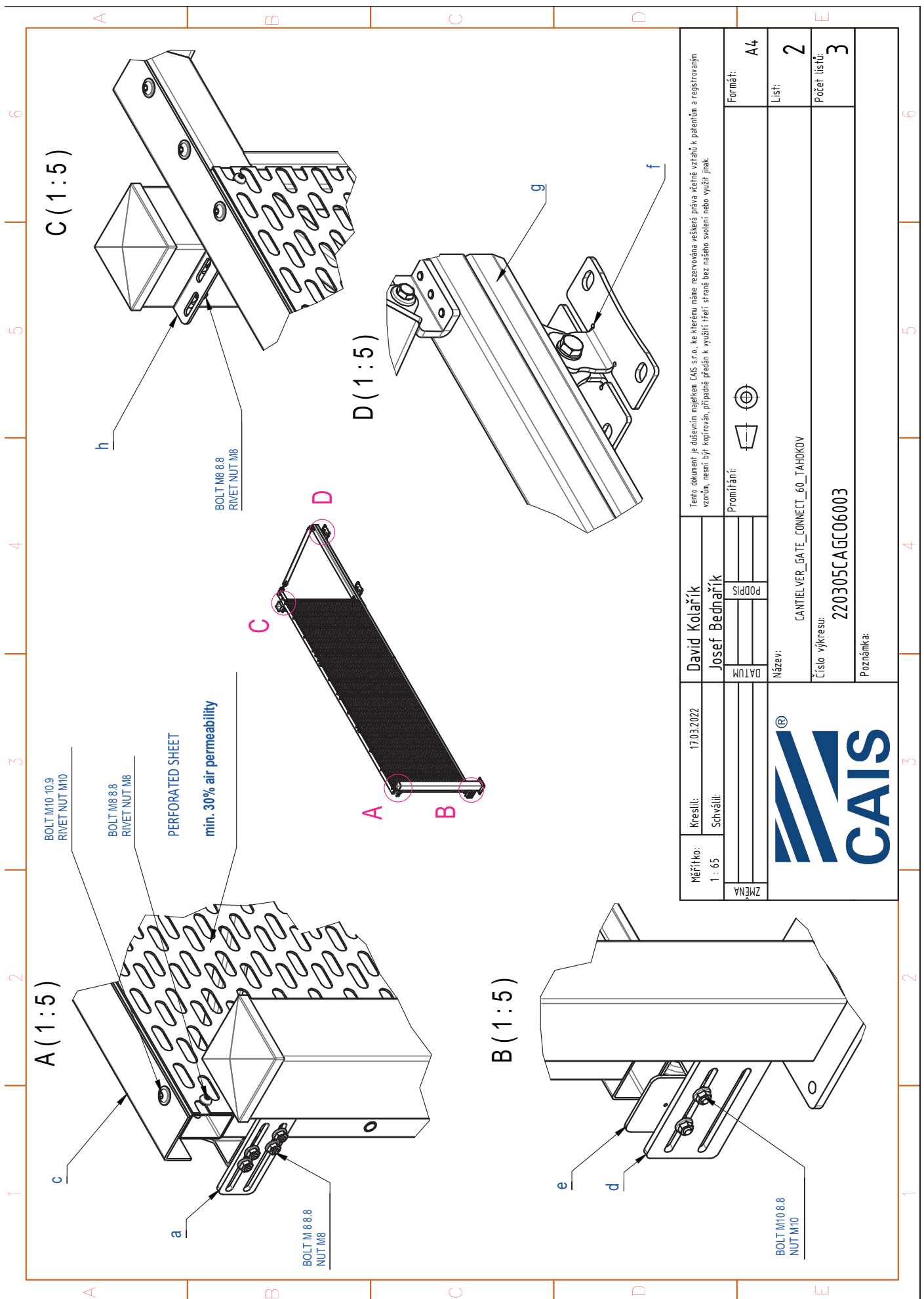
CANTIELVER GATE CONNECT 60 PERFORATED SHEET 30% air permeability 220216CAGCO6003


Pg.2

- a) DOCKER O
- b) XXXXX
- c) DRIVER L 38
- d) PARK CSM
- e) LAST S
- f) SPEED SE
- g) STAGE SZ
- h) JRS 30

Pg. 3

- i) BOLT M10 8.8
- j) RIVET NUT M10



Měřítka: 1 : 65	Kreslil: 17.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována všechna včetně vzrahů k patenům a registrovaným vzorům, nesmí být kopírován, příjavně předán k využití třetí straně bez našeho svolení nebo využit jinak.	
Schválil:		Josef Bednářík	Proměření:	Formát: A4
ZMENA		DATA		Líst: 2
				Počet listů: 3
		Název: CANTIELVER_GATE_CONNECT_60_TAHOKOV		
		Číslo výkresu: 220305CAGC06003		
		Poznámka:		

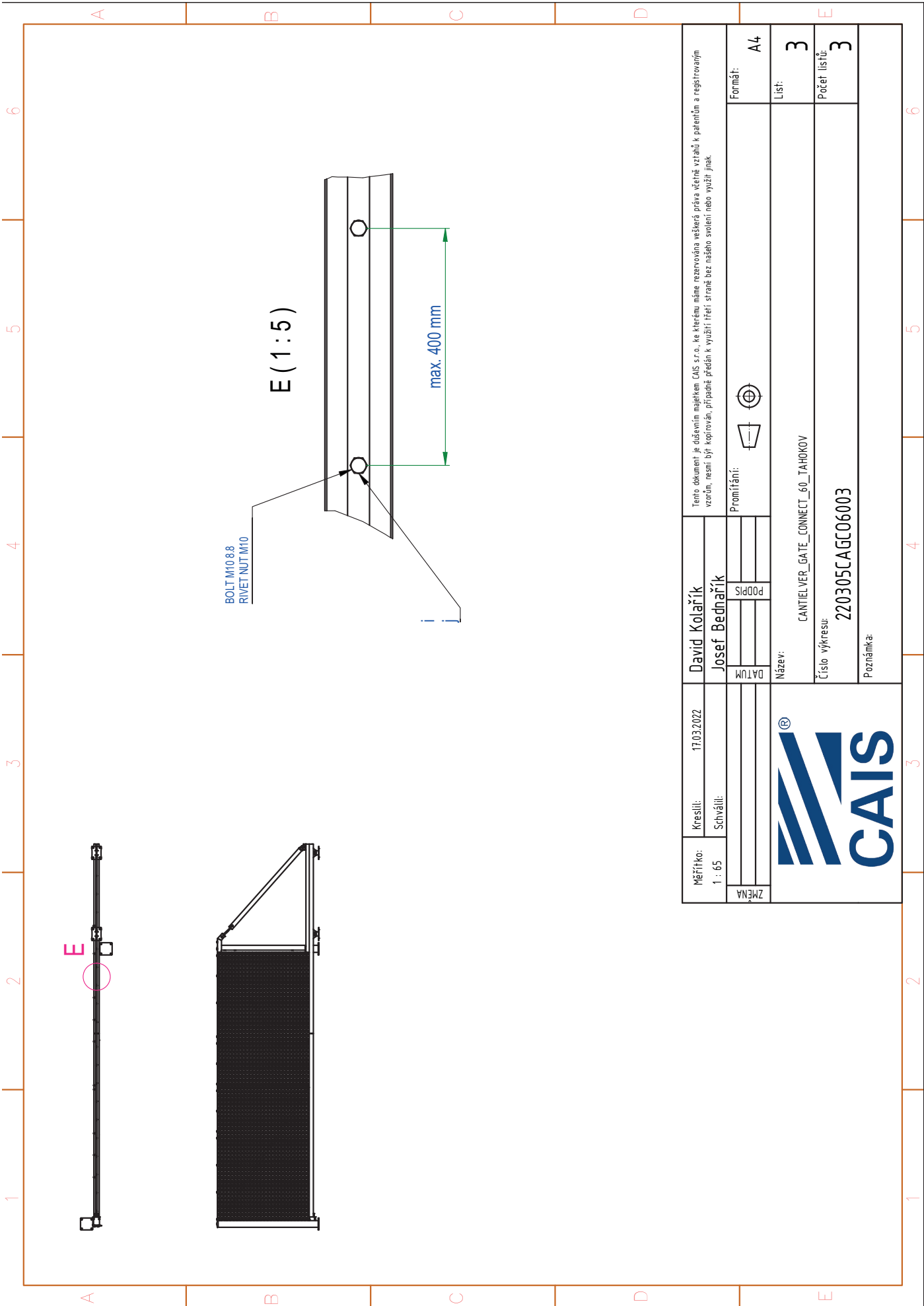
1 2 3 4 5 6

A B C D

A B C D

A B C D

A B C D



Měřítko: 1 : 65	Kreslil:	17.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rzeznována všechna práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využit jinak.	
	Schválil:		Josef Bednařík		
ZMĚNA			DATA	PODPIS	Formát: A4
Název:		CANTIELVER_GATE_CONNECT_60_TAHOVKOV		Líst:	3
Číslo výkresu:		220305CAGC06003		Počet listů:	3
Poznámka:					





LIST OF COMPONENTS/MATERIAL

CANTILEVER GATE CONNECT 60_WOODEN PLANK_95X18

200204CAGCO6004

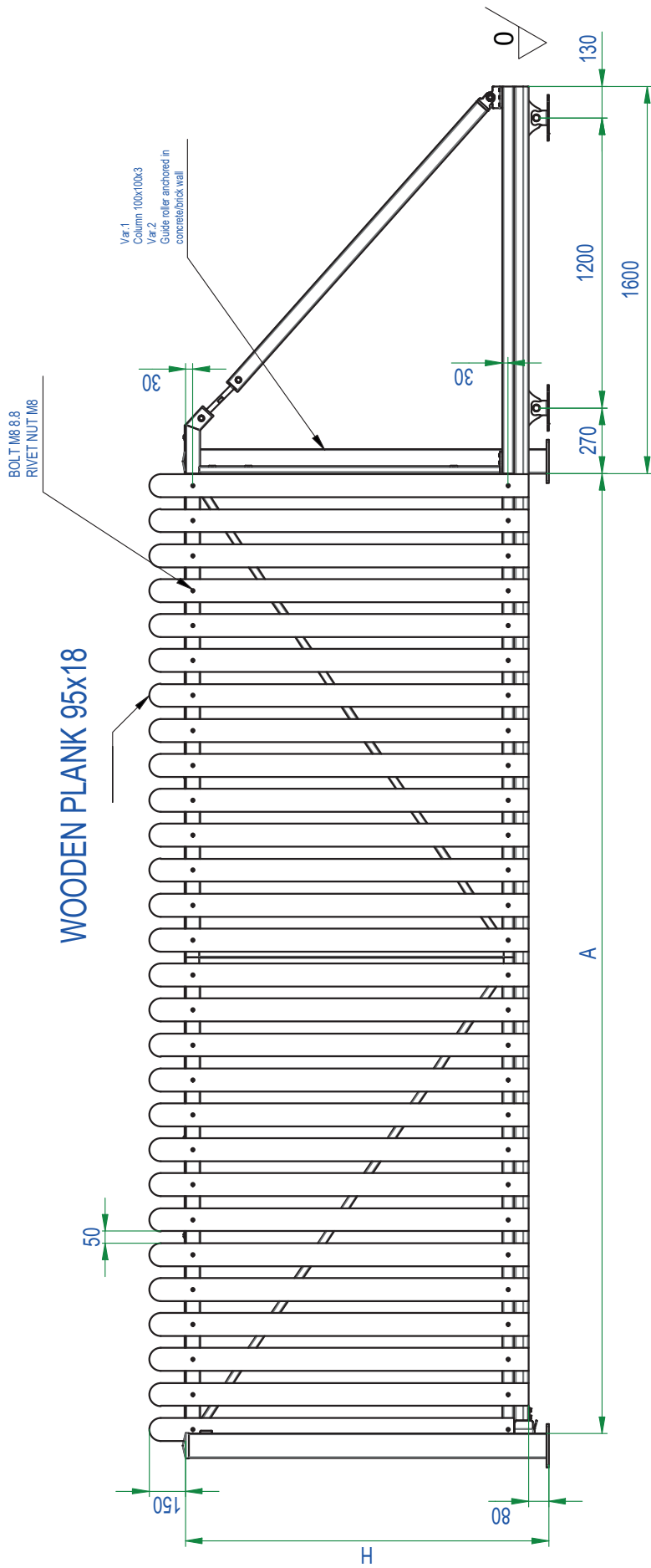
Pg.2


- a) DOCKER O
- b) XXXXX
- c) DRIVER L 38
- d) PARK CSM
- e) LAST S
- f) SPEED SE
- g) STAGE SZ
- h) JRS 30
- i) SCREW M8 8.8 + RIVET NUT M8
- j) WOODEN PLANK 95x18

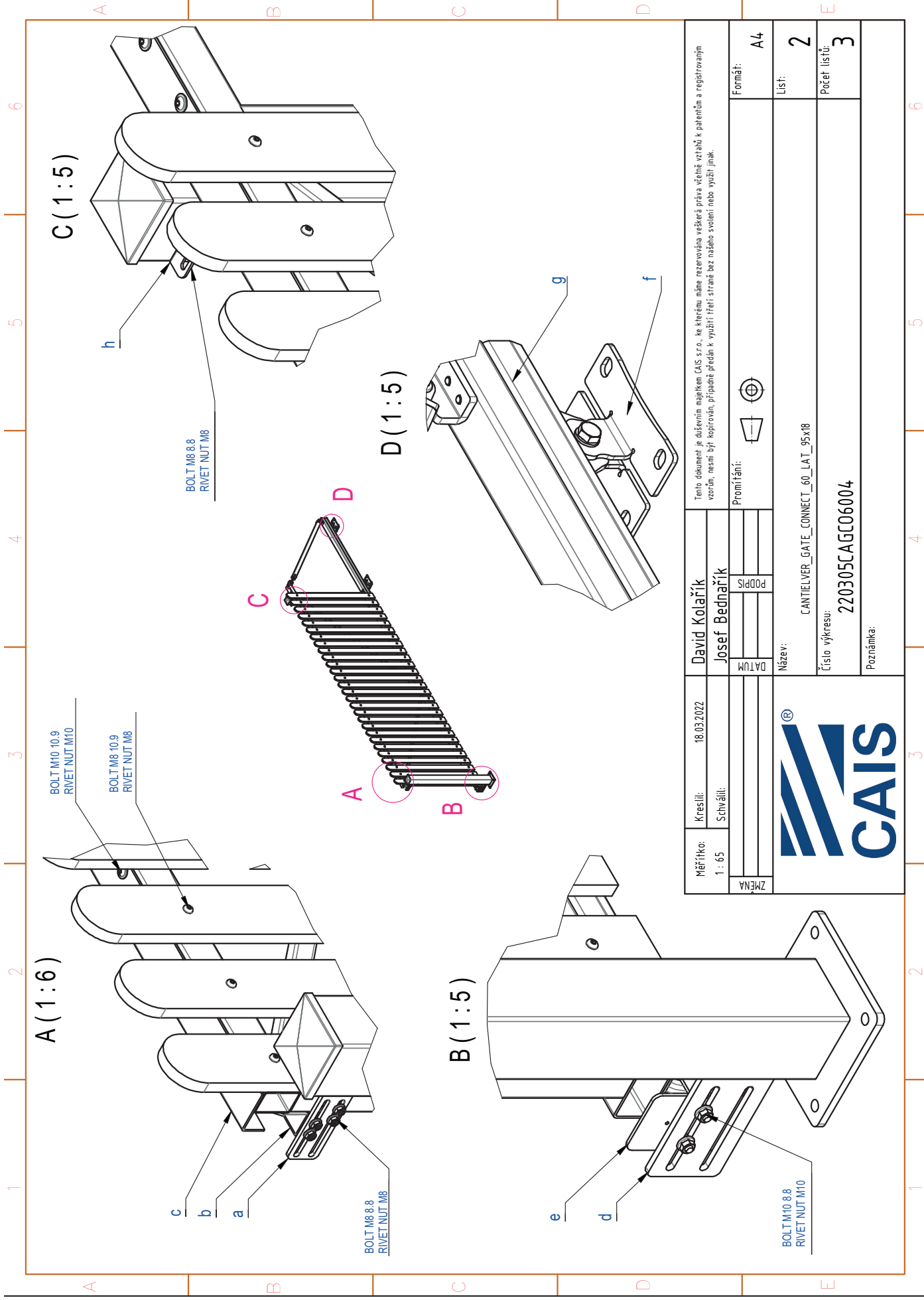
Pg. 3


- k) BOLT M10 8.8
- l) RIVET NUT M10

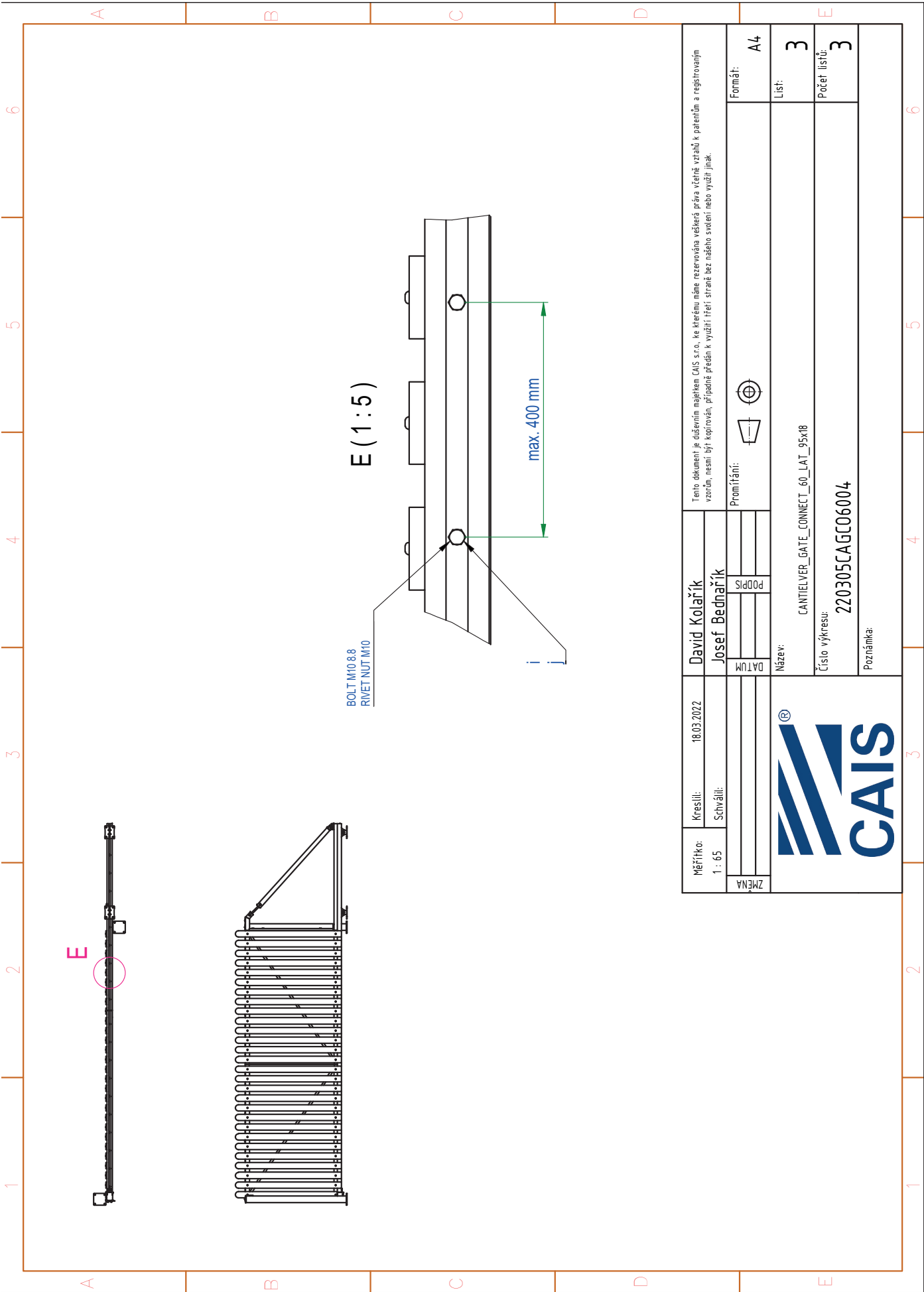
CANTILEVER GATE CONNECT 60




Měřítko: 1 : 23	Kreslil:	18.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rzeznována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, příjavně předán k využití třetí straně bez našeho svolení nebo využit jinak.	
	Schválil:		Josef Bednařík	Promítání:	
ZMĚNA			DATUM	PODPIS	
					Formát: A4
					Líst: 1
					Počet listů: 3
			Název: CANTILEVER_GATE_CONNECT_60_LAT_95x18		
			Číslo výkresu: 220305CAGC06004		
Poznámka:					



Měřítko: 1:65	Kreslil: 18.03.2022	David Kolařík	Tento dokument je důležitým majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využití jinak.		
ZMĚNA	Schválil:	Josef Bednařík	PODPIS	Formát:	A4
		DATUM	Promítání:	LIST:	2
		NÁZEV:		POČET LÍSTŮ:	3
			CANTILEVER_GATE_CONNECT_60_LAT_95x18		
			Číslo výkresu: 220305CAGC06004		
Poznámka:					



Měřičko: 1 : 65	Kreslil: Schválil:	18.03.2022	David Kolařík Josef Bednařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována všechna práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, přepísně předán, k využití třetí straně bez našeho svolení nebo využití jinak.	
ZMĚNA	Podpis	Podpis	Promítání:	Formát:	A4
	DATA			List:	3
			Název:	Počet listů:	3
			CANTIELVER_GATE_CONNECT_60_LAT_95x18		
			Číslo výkresu:		
			220305CAGC06004		
			Poznámka:		



LIST OF COMPONENTS/MATERIAL

CANTILEVER GATE CONNECT 60_FULL GLADDING_SHEET 2 mm

220204CAGCO6005

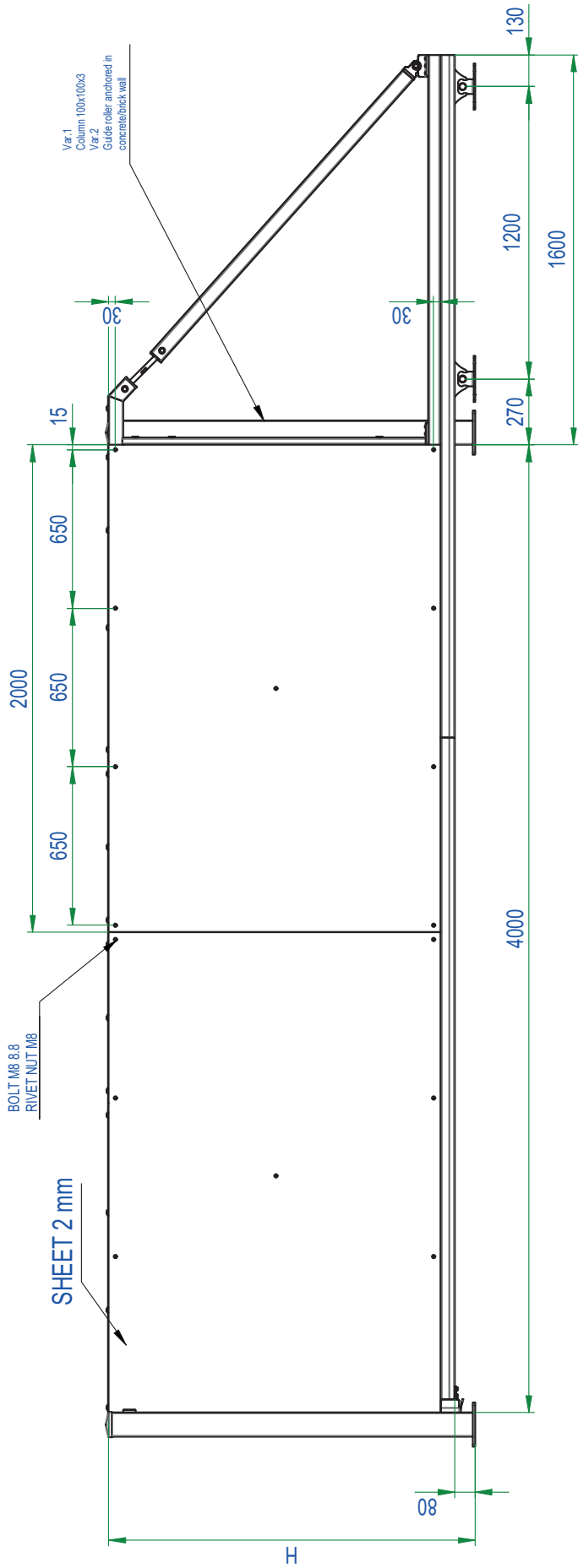
Pg.2


- a) DOCKER O
- b) XXXXX
- c) DRIVER L 38
- d) PARK CSML
- e) LAST S
- f) SPEED SEL
- g) STAGE SZL
- h) JRS 30

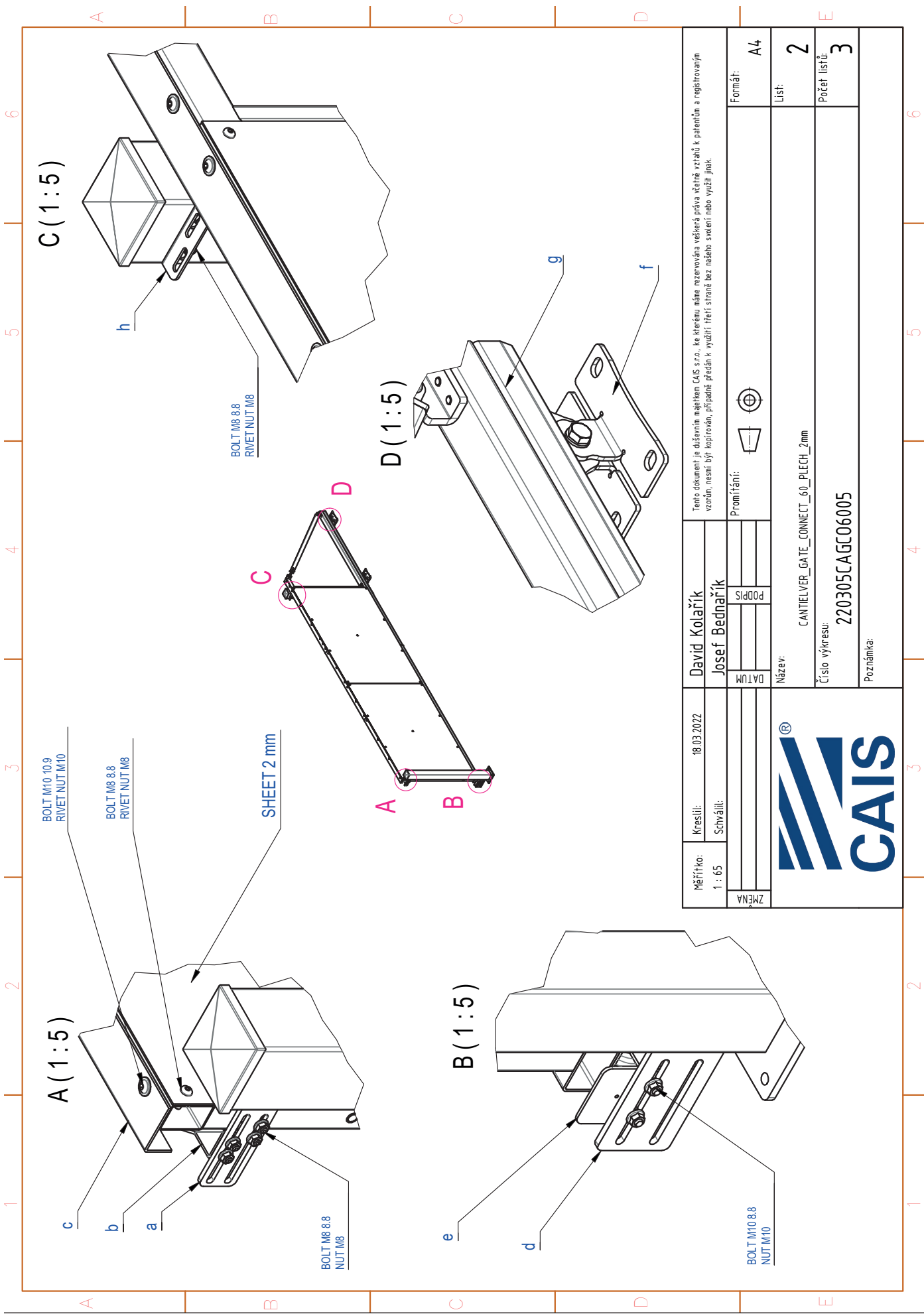
Pg. 3

- i) BOLT M10 8.8
- j) RIVET NUT M10

CANTILEVER GATE CONNECT 60

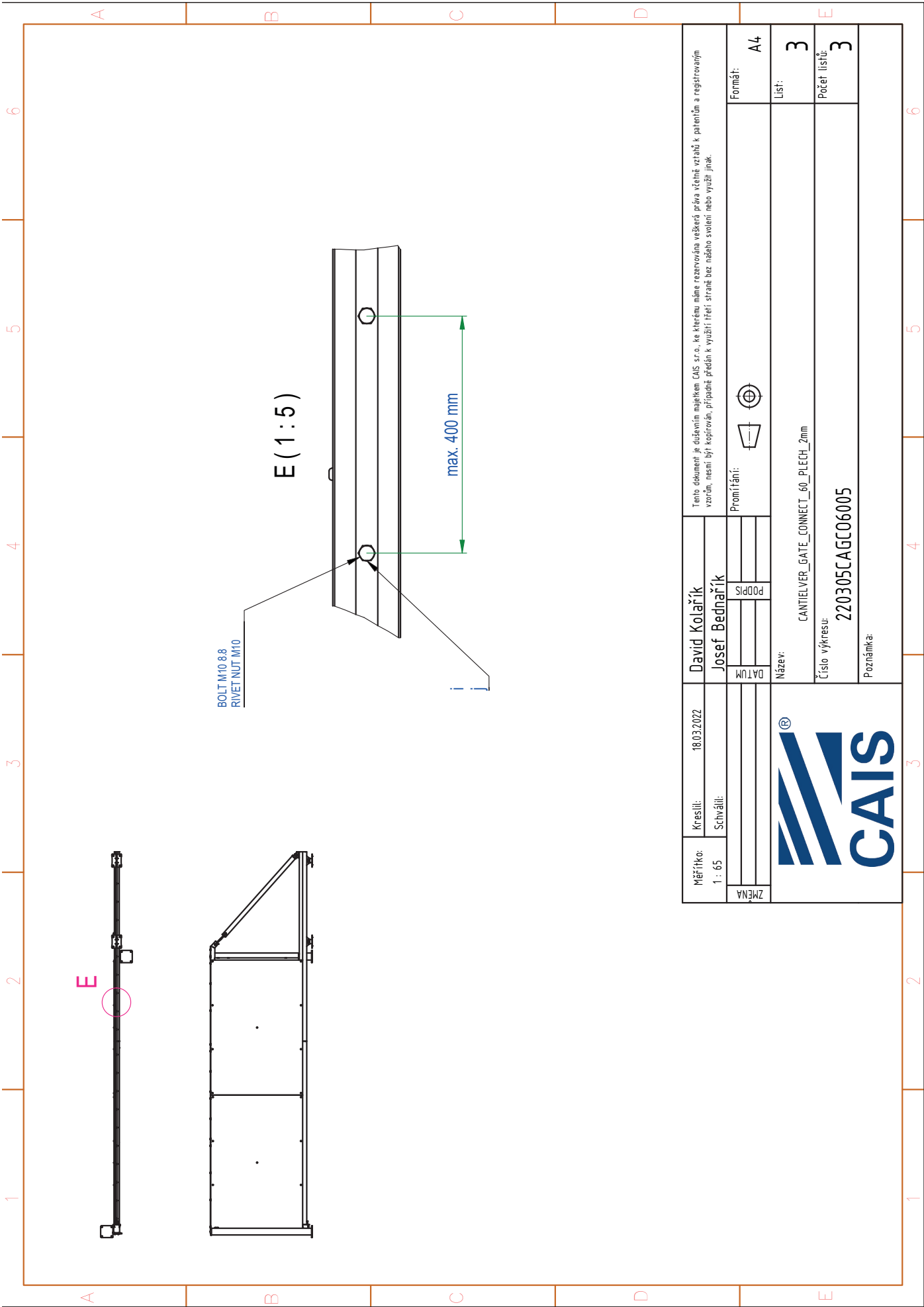


Měřítko: 1 : 23	Kreslil:	18.03.2022	David Kotlařík	Tento dokument je důvěrným majetkem CAIS s.r.o. ke kterému máne rezervována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, přibližně předán k využití třetí straně bez našeho svolení nebo využit jinak.
	Schválil:		Josef Bednařík	
ZMĚNA			PODPIS	Promítání:
				Formát:
				A4
				List:
				1
				Počet listů:
				3
		Název:		
		CANTILEVER_GATE_CONNECT_60_PLECH_2mm		
Číslo výkresu:		220305CAGC06005		
Poznámka:				



Měřítko: 1 : 65	Kreslil:	18.03.2022	David Kolařík	Tento dokument je duševním majetkem CAIS s.r.o., ke kterému máme rezervována všechna práva včetně vztahů k patentům a registrovaným vzhledům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využit jinak.	Formát:	A4
	Schválil:		Josef Bednařík		PODPIS	Líst:
ZMĚNA					Promítání:	
					Název:	CANTIELVER_GATE_CONNECT_60_PLECH_2mm
					Číslo výkresu:	220305CAGC06005
					Poznámka:	
					Počet listů:	3





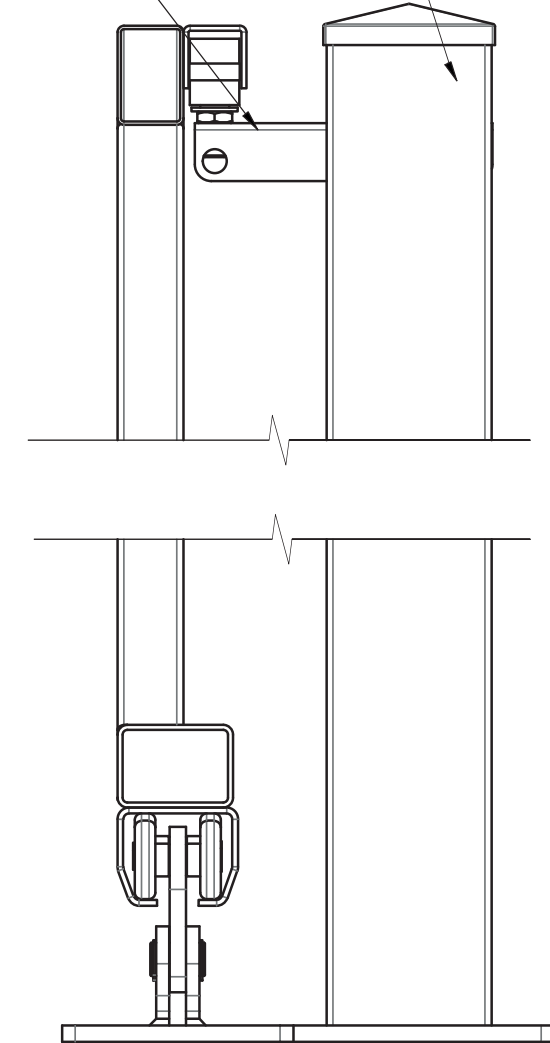
Měřítka: 1 : 65	Kreslil:	18.03.2022	David Kolařík	Tento dokument je důvěrným majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, připsán, předán k využití třetí straně bez našeho svolení nebo využit jinak.
	Schválil:		Josef Bednařík	
ZMĚNA			PODPIS	Promítání:
Název:		CANTIELVER_GATE_CONNECT_60_PLECH_2mm		
Číslo výkresu:		220305CAGC06005		
Poznámka:				
Formát:		A4		
Líst:		3		
Počet listů:		3		



COLUMN_GUIDE

Var. 1
Column 100x100x3
Var. 2
Guide roller anchored in
concrete/brick wall

JRS 30



Měřítko: 1 : 4	Kreslil: 26.11.2021	David Kolařík	<small>CZ: Tento dokument je duševním majetkem CAIS s.r.o., ke kterému máme rezervována veškerá práva včetně vztahů k patentům a registrovaným vzorům, nesmí být kopírován, případně předán k využití třetí straně bez našeho svolení nebo využití jinak. EN: This document is an intellectual property of CAIS s.r.o. to which we have all rights reserved including the relations to patents and registered models. This document may not be copied, alternatively handed to the utilization of a third party without our consent or used in another way.</small>		
	Schválil:	Bednařík	Promítání:		
	Název: COLUMN_GUIDE	Hmotnost: 32000		Měřítko: 1 : 4	
	Číslo zboží: 220305CAGC060_C	Materiál:		List: 1	
	Poznámka: C:\Users\David\Desktop\Autodesk\Autodesk\Certifikace\CANTIELVER GATE S_SE_SKICANTIELVER GATE FRS2_FRM2_IRS30_IRM40_(SESTAVA).iam	Program:		Počet listů: 3	
				Formát: A4	

CAIS s r. o., Přehradní, 199

763 16 Fryšták – Dolní Ves

5. 5. 2022

Declaration

We hereby declare that the requirements of the harmonized product standard ČSN EN 13241 +A2, Article 4.2.9 on the release of dangerous substances are met for the following and assessed types of products. The products are also not classified as dangerous according to Act No. 356/2003 Coll., as amended by Act No. 434/2005 Coll.

Product type Sliding single-leaf self-supporting gate; type designation CANTILEVER

with variants of design:

with type series S (variants of design S, SE, SK), series Connect 60 (variants Connect 60, S, SK), series M (variants M, ME, MEK) and series M max 14 (variants M max 14, MK max 14), with 4 variants of filling designs, in dimensional variants of designs and always with manual control

The manufacturer hereby assures that it ensures compliance with the monitored properties of the entire product assembly, including also components purchased from subcontractors (metal and plastic components, surface treatments, rubbers, sealants, etc.).

The product is not operated in premises where a special assessment is required (e.g. by the National Institute of Public Health), such as the food production environment, etc.

The declaration is issued for The Notified Body 1023, ITC, a.s., třída Tomáše Bati 299, Louky, 763 22 Zlín for the purpose of assessing the product and issuing *the "Protocol on the Assessment of Product Type Characteristics"* for the above products.



Managing Director Miroslav Cais



