

STRUCTURE

GENERAL

This technological card consists in the construction of concrete frame, and steel frame and roof. The building length is 31.25 m and width is 25.25 m. We are going to use reinforced concrete columns 30x30cm for the columns and CHS Ø25 cm for metal columns with concrete filler, and inverted warmen type truss for roof and metal sections type IPE 200 for beams.

The truss and metal beams are only a direction and upon it rests the roof.

The roof drains water only one side with a slope of 3%.

I choose this kind of material for the realization of frame for it is quick and easy installation.

DESCRIPTION AND SEQUENCE OF WORKS

The basics components of our frame are:

- Prefabricated reinforced concrete columns 30X30 cm
- CHS 244.5x6 mm filled with concrete
- IPE 200
- UPN 100x50 mm
- L profile 60x40x5 mm

The truss measured is 14.9, 13.4 and 11.2 m. Truss come already assembled and is composed of:

- RHS 100x100x5 mm
- RHS 80x80x5 mm
- RHS 60x60x5 mm

CONSTRUCTION SEQUENCE:

1. Pillars staking
2. Connect columns with foundations
3. Connect columns with beam and trusses
4. Raise trusses and beams that need assembling with crane
5. Assembly work uploaded to a scaffold
6. Connect the trusses with diagonal stabilizing
7. Leave holes in the roof for skylights
8. Put the different layers of the roof

QUALITY CONTROL

1. Factory Test Reports

Manufacturer shall submit appropriate testing numbers for specific test:

- 1) Deflection and structural test
- 2) Water penetration test
- 3) Air infiltration test
- 4) Delaminating test
- 5) Thermal conductivity test
- 6) Sound transmission
- 7) Submit factory required except that where a curtain wall system or component of similar type, size and design as specified for this project has been previously tested within last year, under conditions specified herein, resulting test may be submitted in lieu of listed testing

2. Manufacturer's Certificates:

Submit Certificates of Compliance, with specification requirements for:

- 1) Metal extrusions
- 2) Metal accessories
- 3) Stating that aluminum has been given specified thickness of anodizing or organic coating finish
- 4) Indicating manufacturer's and installer's meet qualifications as specified
- 5) Submit list of equivalent size installations, for both manufacturer and installer, which have had satisfactory and efficient operation.

3. Tolerances:

- Maximum variation from plane or location shown on approved shop drawings: 3 mm per 3600 mm of length up to not more than 13 mm in any total length.
- Maximum offset from true alignment between two identical members abutting end to end in line: 0.8 mm.
- Sealant space between curtain wall mullion and adjacent construction: Maximum 19 mm and minimum 6 mm.

HUMAN SAFETY

1. Workers are allowed to work only with the knowledge of safety equipment.
2. Each worker must use protective equipment (special clothing, footwear and gloves)
3. Unnecessary collection of materials and debris from the workplace.
4. Should be grounded electrical equipment.
5. Must be all electrical devices absolutely clean.
6. All cables must be in perfect condition.

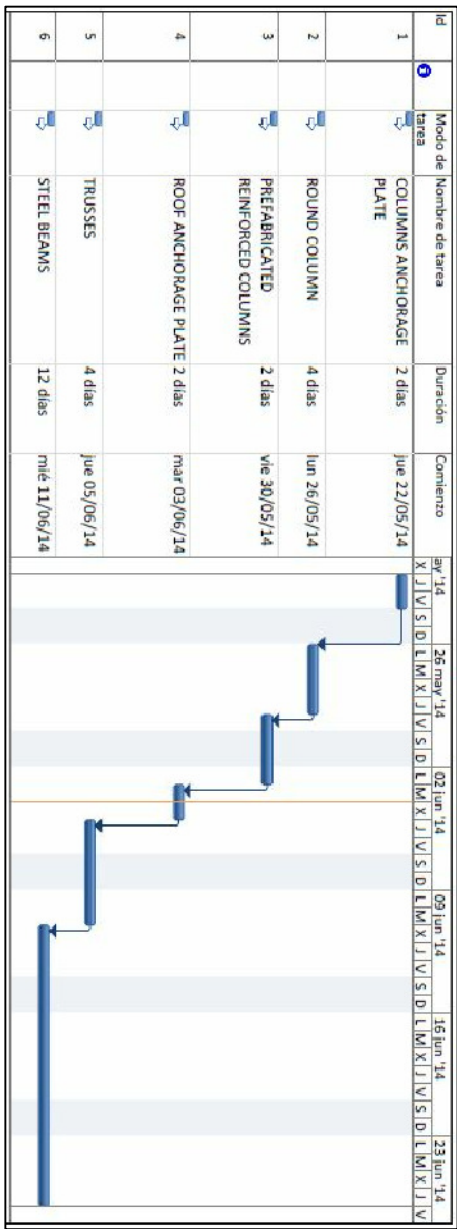
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MECHANICS, MATERIALS AND TOOLS

Number	Name	Quantity
1	TOOLS	
1.1	Metal malletic 2PK	2
1.2	Hammer 10m	2
1.3	Hammer ST-1	2
1.4	Electrodes 42A	2
1.5	Leveils Topcon AT-B4	1
1.6	Crowbar LM-24	2
1.7	Building level 700mm	2
1.10	Theodolite Prekimo T.O.2	1
1.11	Guying weight 13.3 Kg	2
1.12	Visior welding	2
1.13	Heimel	12
1.14	Security belts	2
1.15	Metal brushes	2
1.16	Control measuring detail and found	2
1.17	Chalk lines marked	2
1.18	Wrench	2
2	MECHANISMS	
2.1	Electric welding machine for TC-500 Q=1.2kW	1
2.2	Crane 130 EC-B8	1
2.3	Traverse TS-12, 5 weight 242 Kg	1
2.4	Hook and versatile sling	4
3	Structures and materials bored piles installed	
3.1	Construction	9
3.1	Trusses	
3.1	Material	
3.2	Anchor for bolts	362

WORKS ORGANIZATION

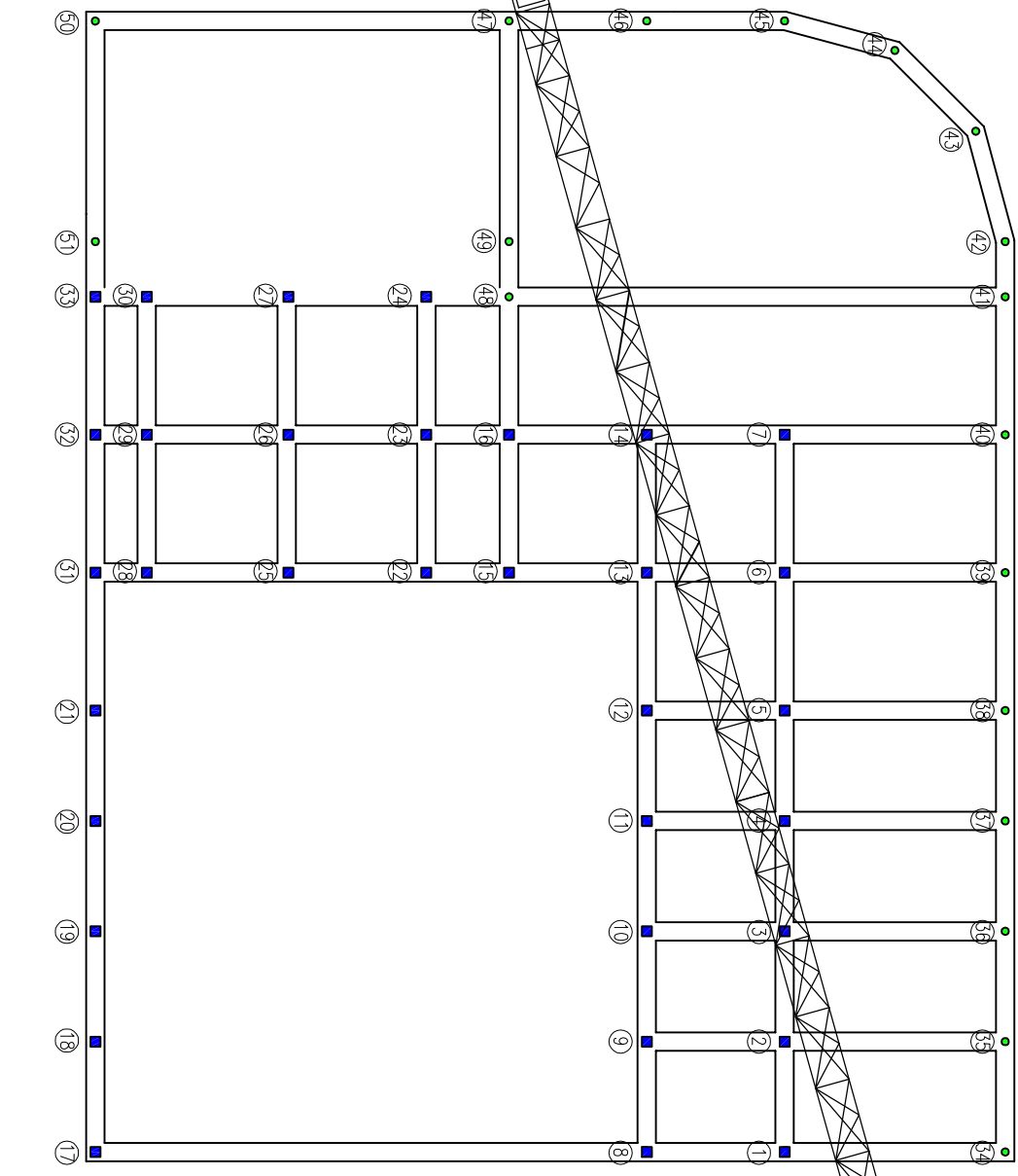


TECHNICAL-ECONOMICS INDICATORS

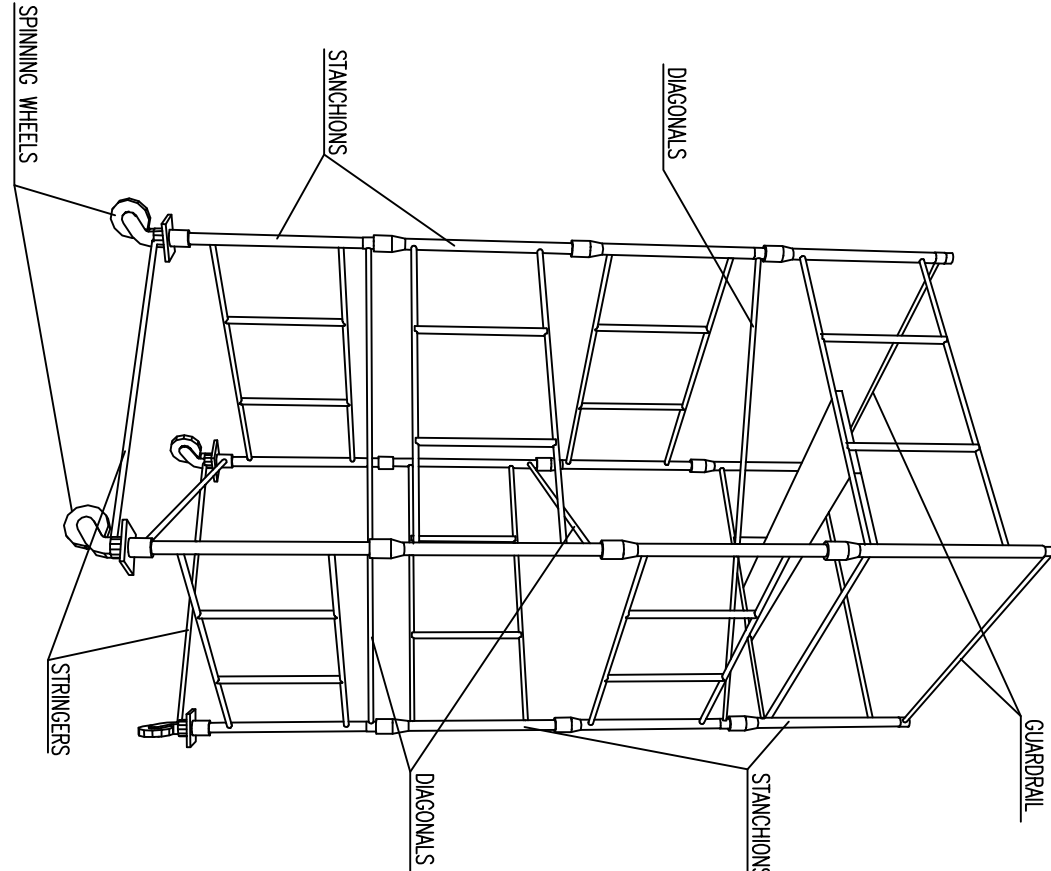
1. Quantity of works: 1.037.29 m²
2. Installation cost: 16.01€/m² x 1.037.29 = 16.607.01€ or 57.294.19 Litas.
1. Quantity of works: 6.842.53 Kg
2. Installation cost: 2.08€/Kg x 6.842.53 = 14.232.46€ or 49.101.98Litas. 1. Quantity of works: 33 U
1. Quantity of works: 376.926U x 33 = 12.438.36€ or 42.912.34 Litas.
1. Quantity of works: 102 U
2. Installation cost: 42.39€/U x 102 = 4.323.78€ or 14.917.04Litas.
1. Quantity of works: 45Kgx18U = 810 Kg
2. Installation cost: 19.50€/Kg x 810 = 15795€ or 54.492.75 Litas.
3. Works duration: 26 Days
4. Wage:

- Steel worker: 1.037.29 x 5.12€/m² = 5.310.92€ or 18.322.69 Litas.
- Steel helper: 1.037.29 x 4.79€/m² = 4.968.62€ or 17.141.74 Litas.
- Steel worker: 6.842.53 x 0.39€/m² = 2.463.31€ or 8.498.42 Litas.
- Steel helper: 6.842.53 x 0.34€/m² = 2.326.46€ or 8.026.29Litas.
- Steel worker: 102 x 6.91€/m² = 704.82€ or 2.431.63Litas.
- Steel helper: 102 x 6.47€/m² = 659.94€ or 2.276.79 Litas.
- Steel worker: 810 x 0.39€/m² = 291.69€ or 1.006.02 Litas.
- Steel helper: 810 x 0.34€/m² = 275.40€ or 950.13 Litas.

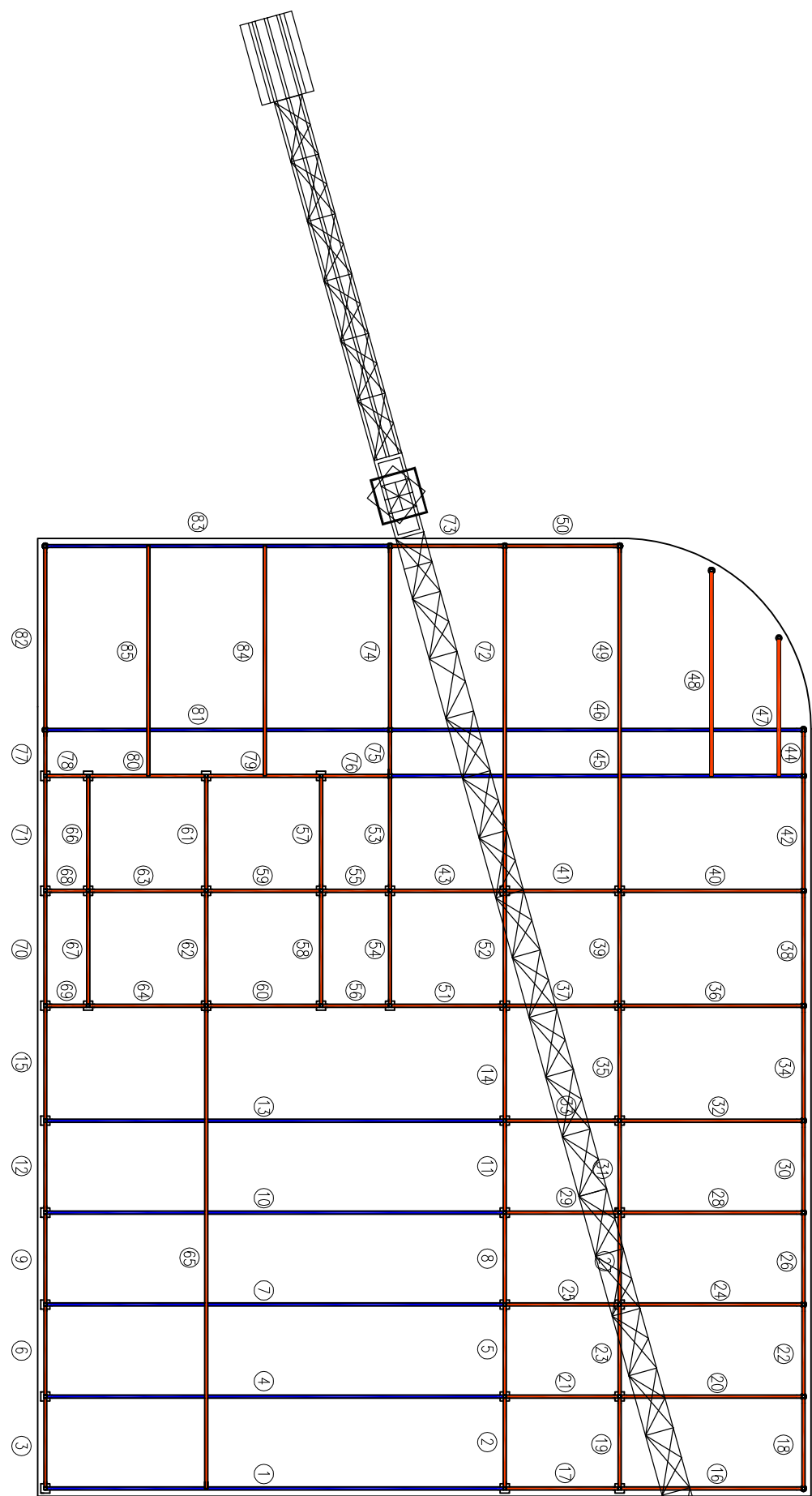
COLUMNS CONSTRUCTION SEQUENCE



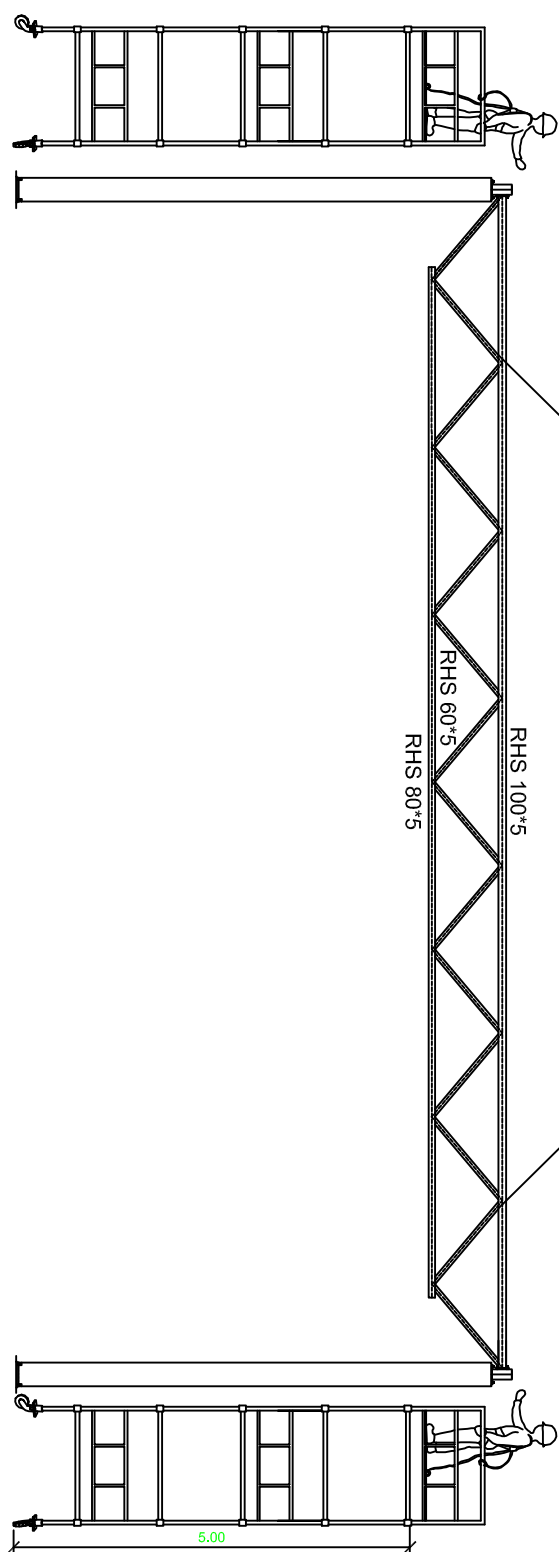
3D SCAFFOLDING



TRUSS AND BEAMS CONSTRUCTION SEQUENCE



TRUSS ASSEMBLING



SCALE 1:7.5

Name and Surname	Signature	Date	Automobilių serviso pastato Darius ir Gienos g. 15 Vilniaus statybos projektavimas	
Student	Adrian Anula Lopez		Construction planning of a garage building at Darius and Gienos str. 15 in Vilnius	
Supervisor	Jonas Saparnauskas		Department of Construction Technology and Management	
Head of Department			DRAWING	
Reviewer			TECHNOLOGICAL CARD	
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			2013/2014	FINAL THESIS WORK