Curso 2015-16

SUMMER HOUSE IN ZAHARA DE LOS ATUNES

22/06/2016

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UNIVERSITAT POLITÈCNICA DE VALÈNCIA

ESCOLA TÈCNICA SUPERIOR ENGINYERIA D'EDIFICACIÓ

ETS d'Enginyeria d'Edificació
Universitat Politècnica de València

FINAL PROJECT: *SUMMER HOUSE IN ZAHARA DE LOS ATUNES*

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YEAR 2015/2016

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

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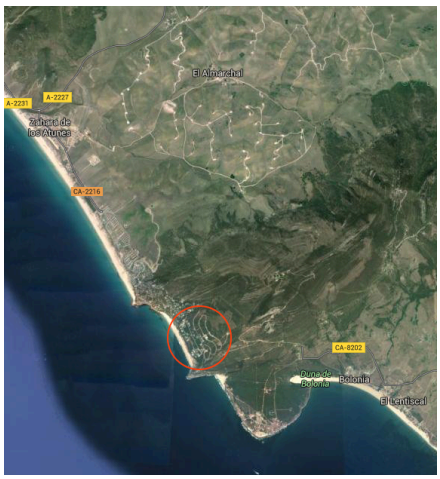
1. DESCRIPTIVE MEMORY

1.1 SITUATION

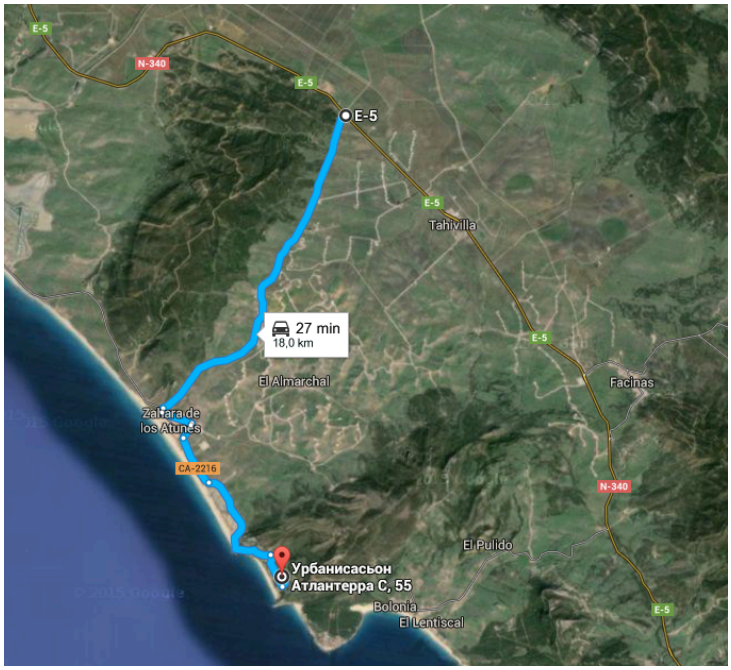
The building will be built in Spain, specifically in the village of Zahara de los Atunes (Cádiz) in the urbanization Atlanterra located on beachside Los Alemanes.



1.2 PREVIOUS INFORMATION

URBAN ATMOSPHERE AND ACCESS

The beach, located between the capes Silver and Grace, has an area of 1500 meters and an average width of 50 meters and sand fina.1 It's a beach little crowded during the summer because it is located away from the main centers of population.



The N-340 connects us with Malaga, which has the main international airport in La costa de la Luz. The N-340 coastal highway runs along the inside of the territory, which places us away from heavy traffic.

The peerless beauty of this magical light, its natural surroundings, fantastic climate, the awesome views of the African coast and its heavenly golden sun beaches

This area of the coast has low-density urban development, which makes for uncontested beaches and unspoiled natural settings.

The property is to be used as a summerhouse because of the area in which it is located.

COMPOSITION AND SURFACES

The implementation of the house will be made on a plot of 737,42 m2 separate to 13,56 m of the access road, housing occupies only 216,37 m2 of the plot.

The house is a detached house consists of three floors (basement, ground floor and first floor) with garden area with pool and garage.

FLOOR	BUILT AREA (m^2)	USEFUL AREA (m^2)
GROUND FLOOR	155,59	130,4
FIRST FLOOR	146,67	129,7
SECOND FLOOR	212,29	169,53
ROOF	158,25	-
TOTAL	**672,8**	**429,63**

MONEY ESTIMATION

CHAPTER	MONEY	%
1. EARTHWORKS	11.001,48	4,05
2. HOUSING SANITATION	3.675,46	1,35
3. FOUNDATIONS	15.325,26	5,64
4. STRUCTURE	42.133,13	15,51
5. MASONRY	30.704,47	11,30
6. INSULATION	8.430,09	3,10
7. TILES AND CLAD	6.931,51	2,55
8. FLOORS	14.398,77	5,30
9. WOODWORK	5.175,66	1,90
10. WOODWORKING ALUMINUM	17.141,86	6,31
11. CERRAJERÍA	8.605,69	3,17
12. VIDRIERÍA and translucent	1.250,21	0,46
13. PLUMBING	4.413,57	1,62
14. FIXTURES	3.154,88	1,16
15. ELECTRICAL	2.978,02	1,10

16. PAINTING	2.802,93	1,03
17. SPECIAL FACILITIES	24.434,70	8,99
18. PACKAGING OF FOREIGN	68.052,07	25,04
19. SAFETY AND HEALTH	1.124,26	0,41
TOTAL	271.734,02	100%

2. CONSTRUCTIVE MEMORY

2.1. STRUCTURAL SYSTEM

FOUNDATION

Data hypothesis

Data and hypothesis, the program needs, the calculation bases and procedures or methods employed for the entire structural system and the characteristics of the materials involved will be established.

Program needs

Through visual inspection and references obtained in adjacent lands, while taking into account the type of building to be constructed, it has chosen to resolve the foundations by reinforced concrete slab 50 cm thick.

Basis of calculation

For the calculation of stresses they have been taken into account as shares characteristics established in the document DB-SE-AE: building actions, actions of the earthquake, thermal and rheological actions and actions on the ground.

Procedure used for the entire structural system

The calculation used in conjunction calculates the structure and foundation, considering it as a level more, so that automatically applies the actions characteristics obtained from the upper floors. This allows for an overview of structure-foundation operation. As a method of calculating the Limit States method is used.

Characteristics of the materials involved

According to the EHE-99 concrete used is HA-30 / B / 40 / IIIa and steel B400S.

SUPPORTING STRUCTURE

Data hypothesis

It has opted for loading gantries compounds pillars of reinforced concrete and

metal, given the type of building to be constructed, size of the rooms, gravitational actions must support, ease of construction and experience in the area in this type of construction. They are made with square pillars and flat beams and / or singing.

Program needs

For the calculation of stresses have been taken into account as shares characteristics established in the document DB-SE-AE: Actions in buildings, wind actions, actions of the earthquake, thermal and rheological actions and actions on the ground.

Basis of calculation

As a basis for calculating simple four hypotheses are established and three combinations of hypotheses.

Procedure used for the entire structural system

The calculation used in conjunction calculates the structure and foundation, considering it as a level more, so that automatically applies the actions characteristics obtained from the upper floors. This allows for an overview of structure-foundation operation.

As a method of calculating the Limit States method is used.

Characteristics of the materials involved

According to the EHE-99 concrete used is HA-30 / b / 20 / IIIa and steel B400S.

HORIZONTAL STRUCTURE

Data hypothesis

The choice of prefabricated unidirectional Singing forged 22 + 5/70 depends on the type and dimensions of the space required housing, the economy of the lights on the chosen structural system and overloading of slabs, which will run with beams armed lattice and Styrofoam slabs with compression layer 5 cm thick, where it will stay the mesh partition.

Program needs

For the calculation of stresses have been taken into account as shares characteristics established in the document DB-SE-AE: Actions in buildings, wind actions, actions of the earthquake, thermal and rheological actions and actions on the ground.

Basis of calculation

The criteria considered in the calculation of the one-way slabs follow the specifications of the standard EHE, having to adjust to them both the general conditions of the floor, like pieces of lightweight supplying manufacturers.

Procedure used for the entire structural system

The calculation used in conjunction calculates the structure and foundation, considering it as a level more, so that automatically applies the actions characteristics obtained from the upper floors. This allows for an overview of structure-foundation operation.

As a method of calculating the Limit States method is used.

Characteristics of the materials involved

According to the EHE-99 concrete used is HA-30 / b / 20 / IIIa and steel B400S.

2.2. SURROUND SYSTEM

The walls of the building have been resolved by factory perforated brick, taken with mortar 1: 6 cement and sand, plaster inside, air chamber insulated with polyurethane projected "in situ" of 3 cm thick and partition of double hollow brick.

Facade cladding consists of 1/2 perforated brick thick to coat, sitting with cement mortar and river sand 1: 6 (M-40), plastered inside with cement mortar and river sand 1 6, air chamber and hollow brick wall of 5 cm, received with cement mortar and river sand of 2 cm thick. 1: 6 (M-40) .

The cover is flat inverted not passable and consist of: vapour barrier, formation of slope made with lightweight concrete Arlite with a minimum thickness of 5 cm, levelling screed mortar M-40 2 cm thick waterproofing membrane modified bitumen elastomers unprotected surface 4 mm thick, 10 cm overlap, protective mortar 2 cm thick, M40, extruded polystyrene insulation 40mm. thick sheet and geotextile layer of gravel boulder.

The terrace will be flat Andalusian and consist of: vapour barrier, thermal insulation projected polyurethane 4 cm thick, training slope made with lightweight concrete Arlite with a minimum thickness of 5 cm, levelling screed mortar M-40 2 cm thick sheet waterproofing modified bitumen non-protected surface 4 mm thick, 10 cm overlap, protection mortar 2 cm thick, M-40 and stoneware flooring slip.

Wall of reinforce concrete HA-30/B/20/IIIa with armor B-400 S. floor.

2.3. PARTITIONS

Double hollow brick partition 25x17x15 cm. received with cement mortar and river sand 1/6 of 2 cm thick on both sides of the wall.

Double hollow brick partition 25x12x11 cm. received with cement mortar and river sand 1/6 of 2 cm thick on both sides of the wall.

2.4. PAVEMENTS AND FINISHES

Floor

Flooring porcelain tile chosen by the ownership received with cement mortar and river sand 1/6, baseboard of the same material 7 cm.

Tile flooring stoneware slip model chosen by the property, received with adhesive.

Formation of continuous concrete floor with hm-20 / b / 20 / i fibbers manufactured in Central and discharge pump, 10 cm thick, polypropylene fibbers and industrial mortar layer weber, floor rolling pul "weber Cemarksa" gray cement compound, silica sand, organic and inorganic pigments and additives.

Walls

Elastomer or the like based acrylic resin polymerization, applied with roller on vertical and horizontal surfaces facade, with hand background and two coats

of finish paint.

White plastic paint PROCOLOR YUMBO PLUS or the like in vertical and horizontal , washable walls , with hand background and two finish coats.

Tile tiled to be chosen by the property received with adhesive.

3. SERVICES

3.1. WATER SERVICE

Water supply service

The house has infrastructure for water supply. At the edge of the parcel is the locker for the general water meter.

The vertical tube, tube that joins the output of the water meter with the indoor particular installation, will be underground in a protected waterway and easily registrable over a layer of sand.

Inside the house is distributed through the roof, in order to make more difficult the return of water, and therefore always above the height of any of the devices. Over the vertical pipe and at a height easy for the user will be located a cut key, which cut all the internal supply.

Minimum flows in-home appliances. (DB HS4; Water Supply) Table 2.1. Each of them should receive, independently of the state of others, a minimum instantaneous flow for a proper use:
Minimum diameters derivations to the appliances. (DB HS4; Water Supply) Table 4.2.

Protection against returns

Backstop systems shall be provided to prevent the reversal of flow in the points listed below and elsewhere as necessary:

After the water meter- At the base of the vertical pipes- Before the water treatment equipment- Supply tubes not intended for domestic purposes - Before refrigeration or air conditioning

Municipal Connection

The Municipal connection must have at least the following elements:

a) A key or a collar of for the connection to the outside distribution pipe network supply to open the waterway from the municipal connection.b) a tube that links the cut key in the municipal connection with the general cut key. c) a cut key outside of the property.

General cut key

The general cut key will interrupt the supply to the building and will be located within the property in an area commonly accessible for handling and properly indicated to allow its identification. If a locker or water meter exists, should generally stay inside the property.

Main distributor

The route of the main distribution must be made in common areas. In case of be embedded should be available for inspection registers and leakage tests, at least in its extreme and changes direction. Cut keys should be disposed in all derivations, such a way that in case of failure at any point can't be interrupted all the supply.

Separations regarding other installations

The route of the cold water pipes should be such that will be not affected by heat sources and therefore must take part always separated from the hot water pipes (or heating ACS) at a distance of 4 cm, at least . When the two pipes are in a same vertical plane, the cold water should always be under the hot water.
The pipes must go below any drains or item containing electrical or electronic devices, and any telecommunications network, in parallel at a distance of at least 30 cm. Regarding the gas pipes, these will be stored at least at a distance of 3 cm.

Testing of indoor installations

The installer is required to perform a test of strength and water tightness of all piping, elements and accessories that integrate the installation being all components seen and accessible for control.To start the test, the entire installation will be filled with water, keeping the end taps open until there is assurance that the drain has been completed and there is no air. Then close the taps that have served to the purge and also the power source. Then the bomb is used, which is already connected and maintain its operation up to the test pressure. Once fitted, the procedure according to the type of material as follows:

a) For metal pipes shall be considered valid tests as described in the standard UNE100 151:1988;

b) For multilayer thermoplastic pipes shall be considered valid testing according to Method A of the Standard UNE ENV 12 108:2002.
After a previous test, the installation you will connected taps and consumer devices,submitting again to the previous test.
The manometer is used in this test should be appreciated intervals least 0.1 bar pressure.

Pressures alluded previously relate to the level of the roadway.

Particular tests on the hot water installations (ACS)

a) Measurement of flow rate and temperature at points of water;b) obtain the required flow at the set temperature after opening the estimated number of taps in simultaneity;c) check the time it takes the water to go out at operating temperature once the hydraulic balance of the various derivations of the return network and open the tap one to one of the farthest from each of the derivations, without open any tap in the last 24 hours;d) measuring temperatures of the network;e) with the accumulator at full activity, check with contact thermometer the temperatures at its output and taps. The return temperature must not be lower than 3 ° C at the output of the accumulator.

3.2. SANITATION SERVICE

The collectors of the building must drain, preferably by gravity into the well or pit, which is usually the point of connection between the drainage installation and the public sewer network, through the corresponding connection. Water hydraulic closures should be available in the installation to prevent the transmission of air in the rooms occupied not affecting the waste stream. The pipe drainage network must have the simplest route possible, distances and slopes to facilitate the evacuation of waste and be self-cleaning. Should be avoided water retention inside. Will be provided adequate ventilation systems that allow the functioning of the hydraulic closure and evacuation of sewer gas. The installation should not be used for the evacuation of residues other than wastewater or rainwater.

Pipes; the diameter must not decrease in the direction of flow. It may be provided an increase in diameter when connecting to the downpipe flow rates much larger than those of the situated upstream section.
Suspended collectors; the downpipes should be connected by special pieces. They should have a slope of 1% or more. Must not connect at the same point more than two collectors. Registers points in horizontal routes every 15 meters long.

Buried collectors; pipes should be placed in ditches located below the distribution of drinking water. They should have a slope of 2% or more. The connection of downpipes will be done with interposition of a pit at the end of the downpipes, which must not be siphonic.

Connecting elements; in buried networks the joint between the vertical and horizontal networks, between their encounters and derivations, must be arranged with pits on concrete foundation with accessible cover. Can connect only one collector for each side of the pit, such a way that the angle formed by the collector and the output is greater than 90 °.

Wastewater downpipes should extend at least 1.30 m over the roof of the building if it is not passable and 2.00 m it is. The primary ventilation outlet must not be located closer than 6 m from any outside air intake for air conditioning or ventilation and should surpass it in height. The output of the ventilation should be adequately protected from strange things and the design should be such that the wind action favours the expulsion of gases.

3.3. ELECTRICAL INSTALLATION (ITC-BT)

Description and calculation

Selection of the degree of electrification; we are in a house that exceeds 160 m2, and therefore requires a high degree of electrification. Being high power electrification not be less than 9200 W at 230 V.

Municipal connection; we call this the installation between the distribution network of hydroelectric and general protection box. This network is made by the developer, so it is not our concern.

Electric meter; the meter shall be centralized in prefabricated modules, taking care that the derivations in these modules are distributed independently within their respective protective tube. The situation of the module has not to be wet, will be sufficiently ventilated and illuminated, and if the level of the soil is less than or equal to the corridors and surrounding locals, shall be provided for drainage sinks, in case of failure, neglect or rupture of water pipe.

Line deliverer to housing; the section was calculated by the formula:
Being:S = Section of the line in mm2 L = Length of the line in meters W = Power in wattsC = Conductivity coefficientv = Rated voltageCost = Power factor

Circuits; will be installed at least four independent circuits are:

- Circuit for lighting and lighting power outlets.- Circuit for the washing

machine and water heater. - Circuit for the kitchen.- Circuit for other applications.

$$S = \frac{L \cdot W}{C \cdot v \cdot V \cdot cosf}$$

General box of distribution; automatic differential switch of 25 A. capacity, single- phase 230 V and 30 mA sensitivity. All this embedded in a box, plasticized elements will be in fixing guides. The general protection box will be placed in the main entry or on the facade of the building. Shall keep a terminal for the ground connection of the box, if it is metallic.

Bathrooms installations; due that we are installing outside the volume of protection; it is not necessary to use safety outlets. The only outlet will be placed next to switch, outside the volume of protection and at height of 1.20 meters from the ground.

The materials used

Electric cable; for indoor installation has been used copper double insulated and different colours.

Protective conductors; of copper and will present the same insulation conductors. Will be installed by the same pipeline than these.
Identification of the cables; installation cables are identified by the colours of their isolation;

- Clear blue for neutral conductor. - Yellow green to the ground conductor and shield. - Brown, black and gray, for conductors or phases.

Protection tubes; will be used to embedding corrugated plastic, immune to attack by building materials. It must be protected at intersections with hot water pipes. In the changes of direction registers will be used.
Connection boxes; these will be plasticised with white cover and sized according to the drivers who derived in there.

Control and operation devices; commutator and switches, which cut the maximum current of the circuit in which they are placed, without causing permanent arcing, opening and closing circuits, and no possibility of taking an intermediate position, shall be of closed type and insulated material.

TV Antenna - FM; will be installed completely independent of the electrical system of the house. Will have two internal connections in the home.

Ground connection; all the light points and outlets of the house are

connected to the ground as well as TV antenna. This will be a bare conductor of Cu.

Protection devices; are the electrical circuit breakers, fuses and circuit breakers.Its ability to cut to short circuit protection, will agree with the short circuit current that may arise at a point of installation. Will be marked with the nominal current operation voltage as well as the indication sign of disconnection.

Fuses used to protect the secondary circuits shall be calibrated to the intensity of the circuit they protect. Shall be provided with non-combustible insulation. They could be replaced safely and be marked with the nominal current work voltage.

4. REGULATIONS

- **NCSE-02;** Earthquake Resistant Construction Standard

- **EHE 08;** Structural Concrete Instruction- REBT; Low Voltage Electro technical Regulation- RITE 2007;

- **Technical building code (CTE)**

- DB SE; Structural safetyDB SE1; Stability and resistance DB SE2; Edification actionsDB SE3; FoundationsDB SE4; SteelDB SE5; WallsDB SE6; Wood

- DB SI; Safety in case of fireDB SI1; Interior propagationDB SI2; Exterior propagationDB SI3; Evacuation of occupants DB SI4; Fire protection installations DB SI5; Intervention of firefighters DB SI6; Structural fire resistance

- DB SUA; Utilization Security and AccessibilityDB SUA1; Security against the risk of fallsDB SUA2; Security against the risk of impact or entrapmentDB SUA3; Security against the risk of imprisonmentDB SUA4; Security against risks caused by inadequate lightingDB SUA5; Security against the risk caused by high occupancy situations DB SUA6; Security against the risk of drowningDB SUA7; Security against risks caused by moving vehiclesDB SUA8; Security against risks associated with the action of thunderbolt DB SUA9; Accessibility

- HS DB: Public HealthHS DB1; Protection against humidity HS DB2; Waste collection and removal HS DB3; Indoor Air QualityHS DB4; Water supplyHS DB5; Drainage

- DB HR; Noise protection

- DB HE: Save EnergyDB HE1; Limiting energy demandDB HE2; Efficiency of thermal installationsDB HE3; Energy efficiency of lighting installationsDB HE4; Minimum solar contribution to hot waterDB HE5; Minimum photovoltaic contribution electricity

5. PLANS

PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

3D-FRONT VIEW

escale: -

plan: 1

Author: SERRANO BRUZON, GUILLERMO

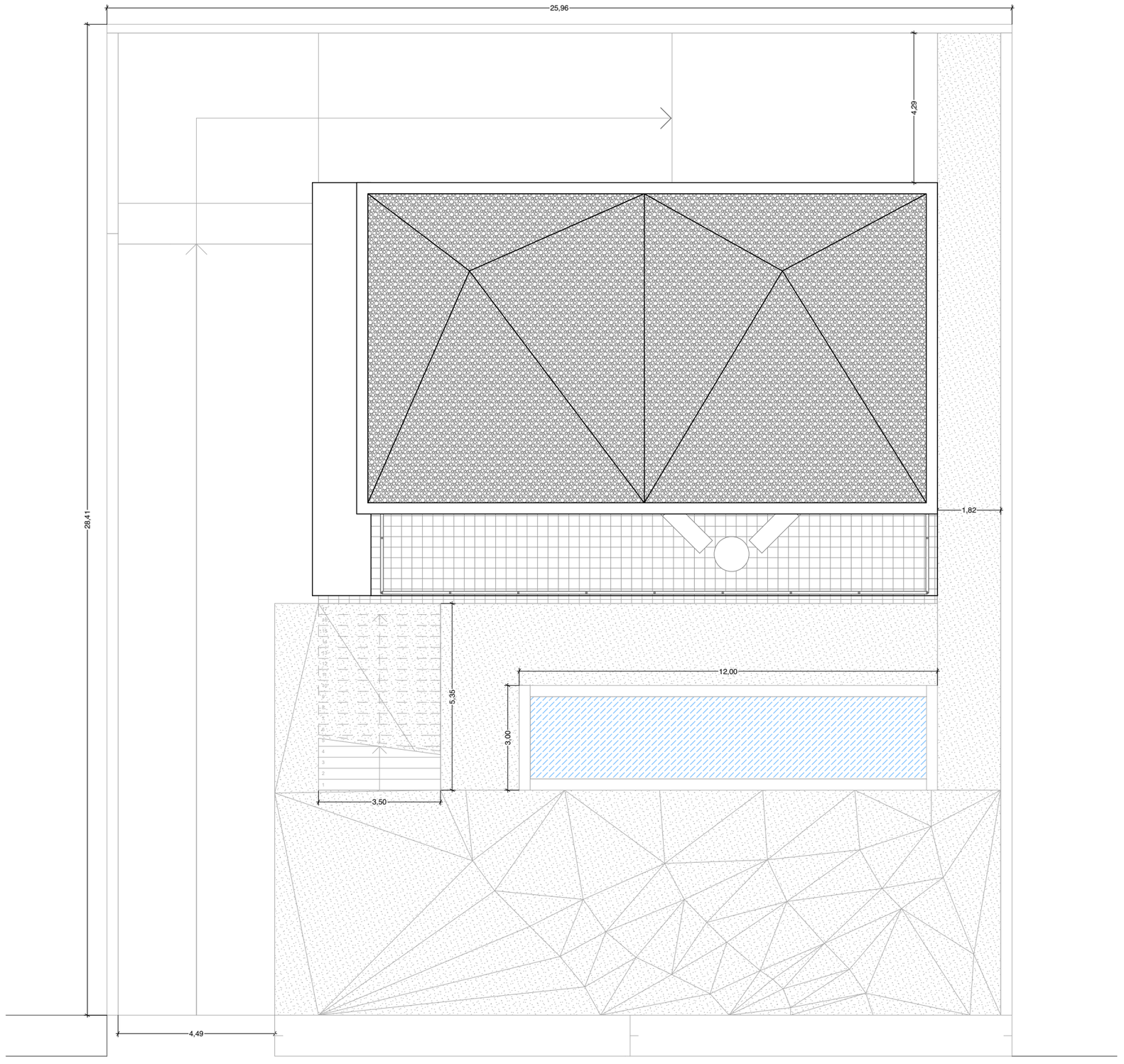
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

3D-BACK VIEW

escale: -

plan: 2

Author: SERRANO BRUZON, GUILLERMO



PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

EMPLACEMENT

escale: 1:125

plan: 3

Author: SERRANO BRUZON, GUILLERMO

P Elastomeric paint or similar based on acrylic resin polymerization, applied with roller in vertical and horizontal surfaces of the facade with hand background and two coats of finish paint.

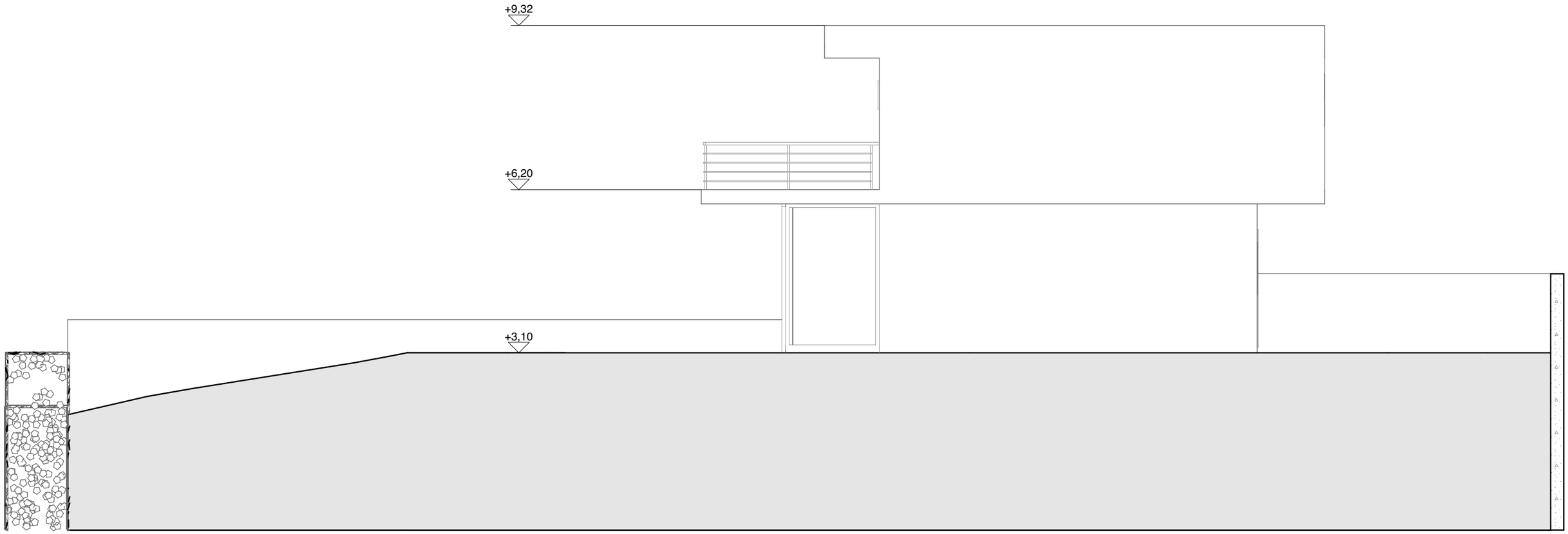
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

SOUTH VIEW

escale: 1:75,00

plan: 4

Author: SERRANO BRUZON, GUILLERMO



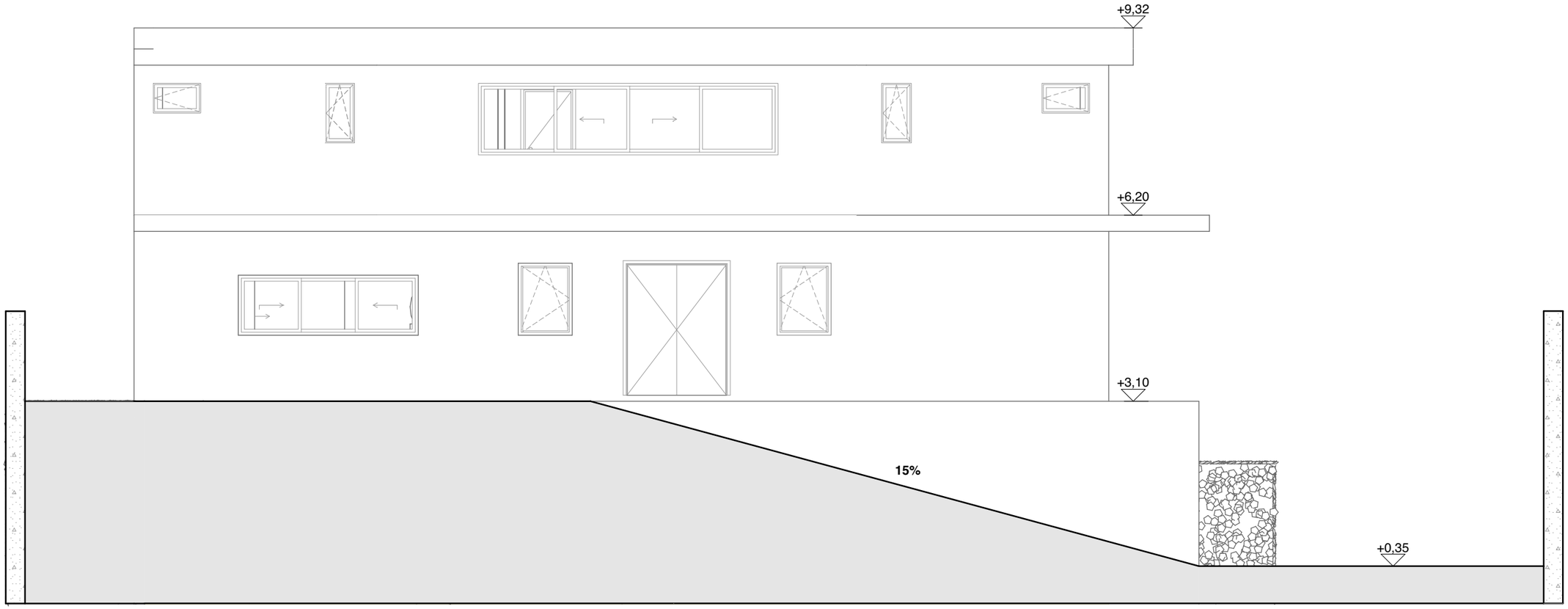
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

EAST VIEW

escale: 1:75,00

plan: 5

Author: SERRANO BRUZON, GUILLERMO



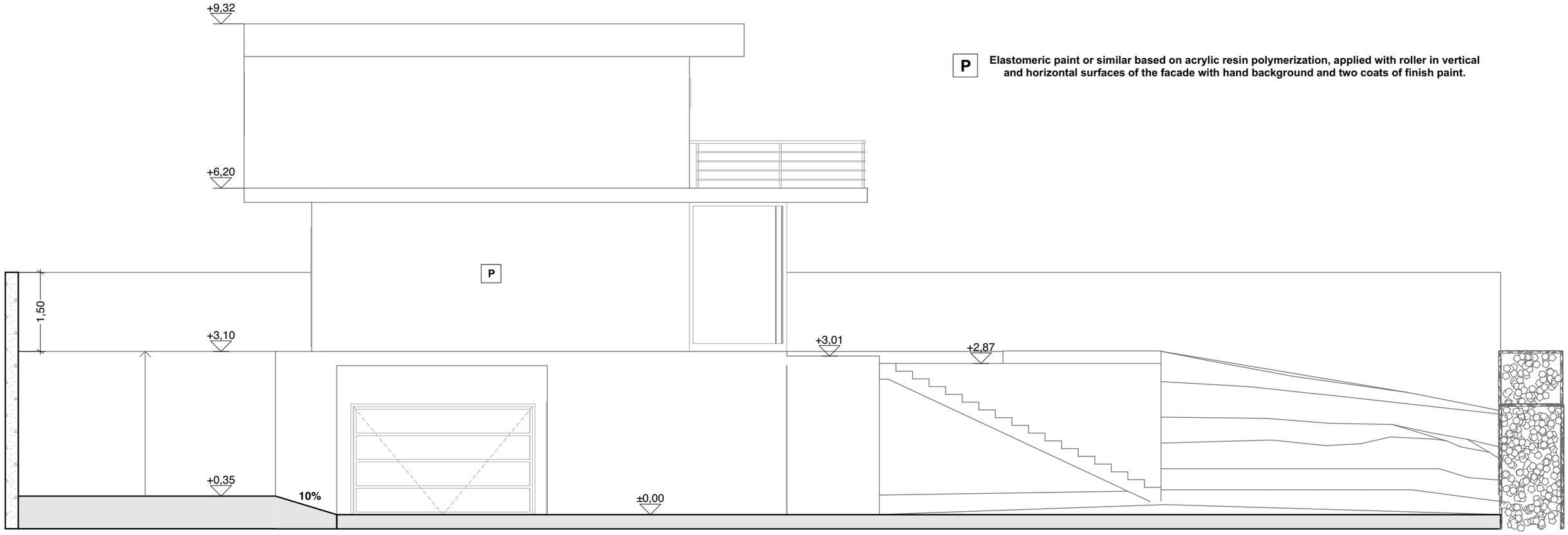
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

NORTH VIEW

escale: 1:75,00

plan: 6

Author: SERRANO BRUZON, GUILLERMO



P Elastomeric paint or similar based on acrylic resin polymerization, applied with roller in vertical and horizontal surfaces of the facade with hand background and two coats of finish paint.

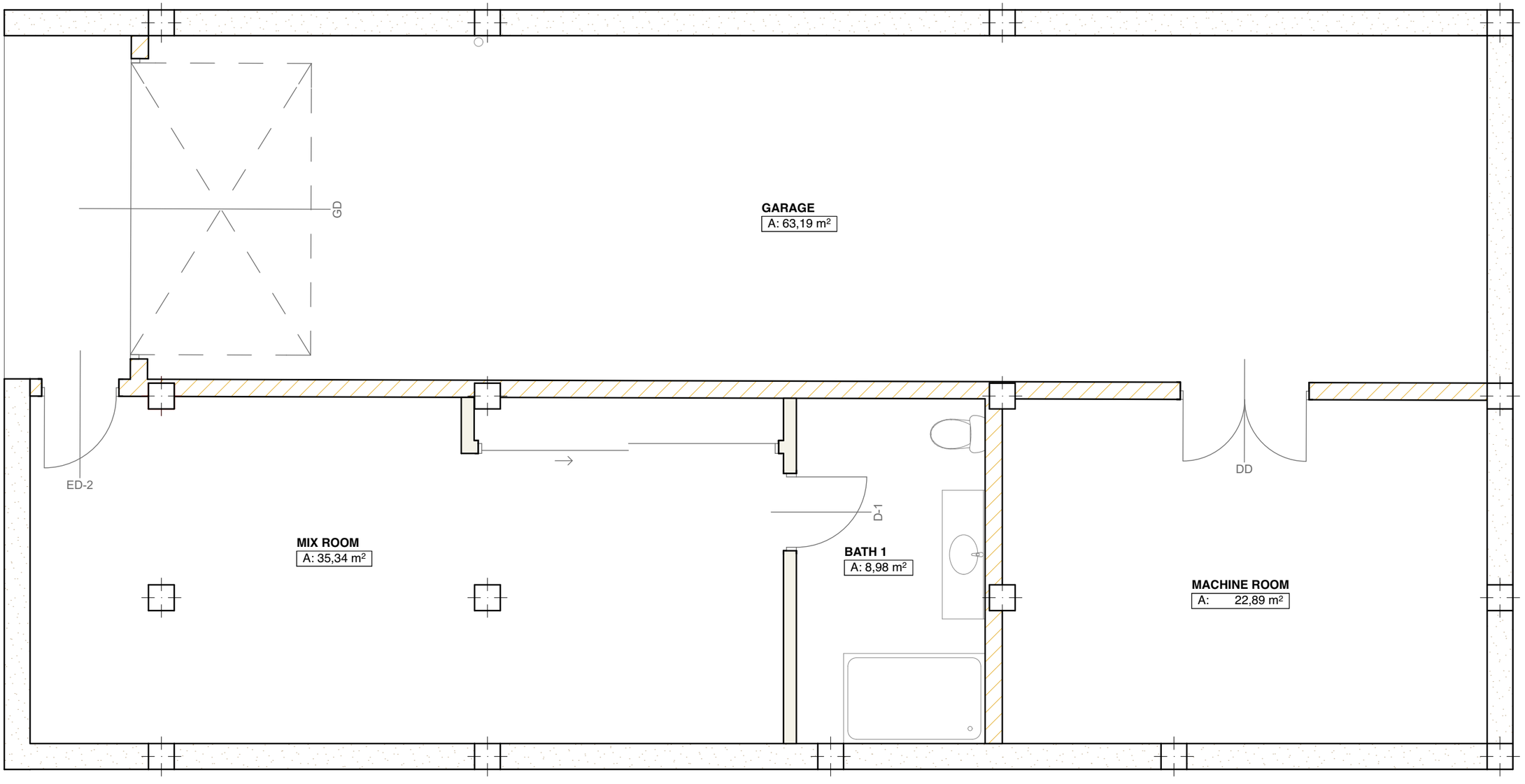
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

WEST VIEW

escale: 1:75,00

plan: 7

Author: SERRANO BRUZON, GUILLERMO



*CARPENTRY SPECIFICATIONS WILL BE SHOWN IN THE CARPENTRY PLAN (26)

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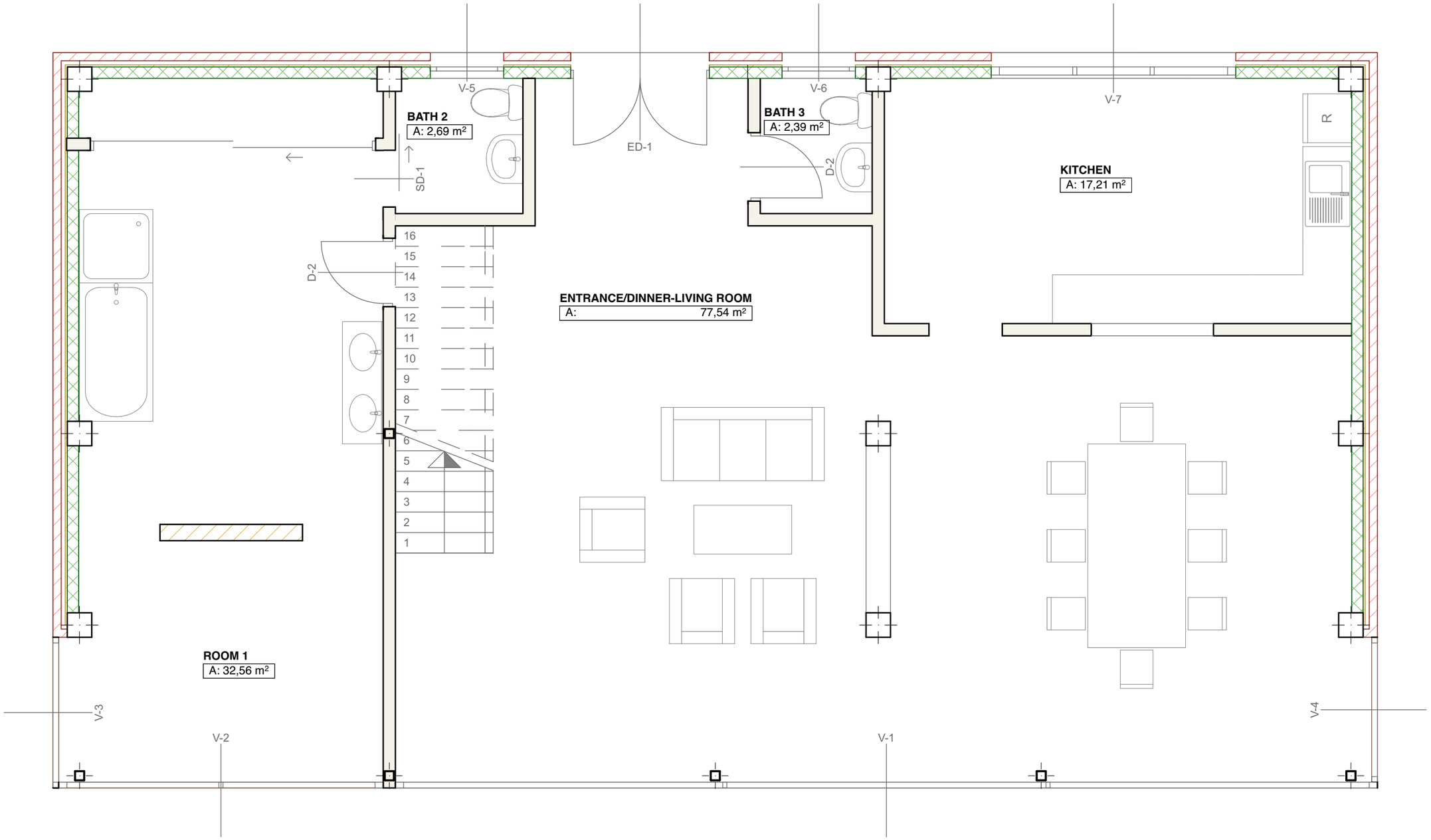
GROUND FLOOR DISTRIBUTION

escale: 1:50

plan: 8

Author: SERRANO BRUZON, GUILLERMO



*CARPENTRY SPECIFICATIONS WILL BE SHOWN IN THE CARPENTRY PLAN (26)

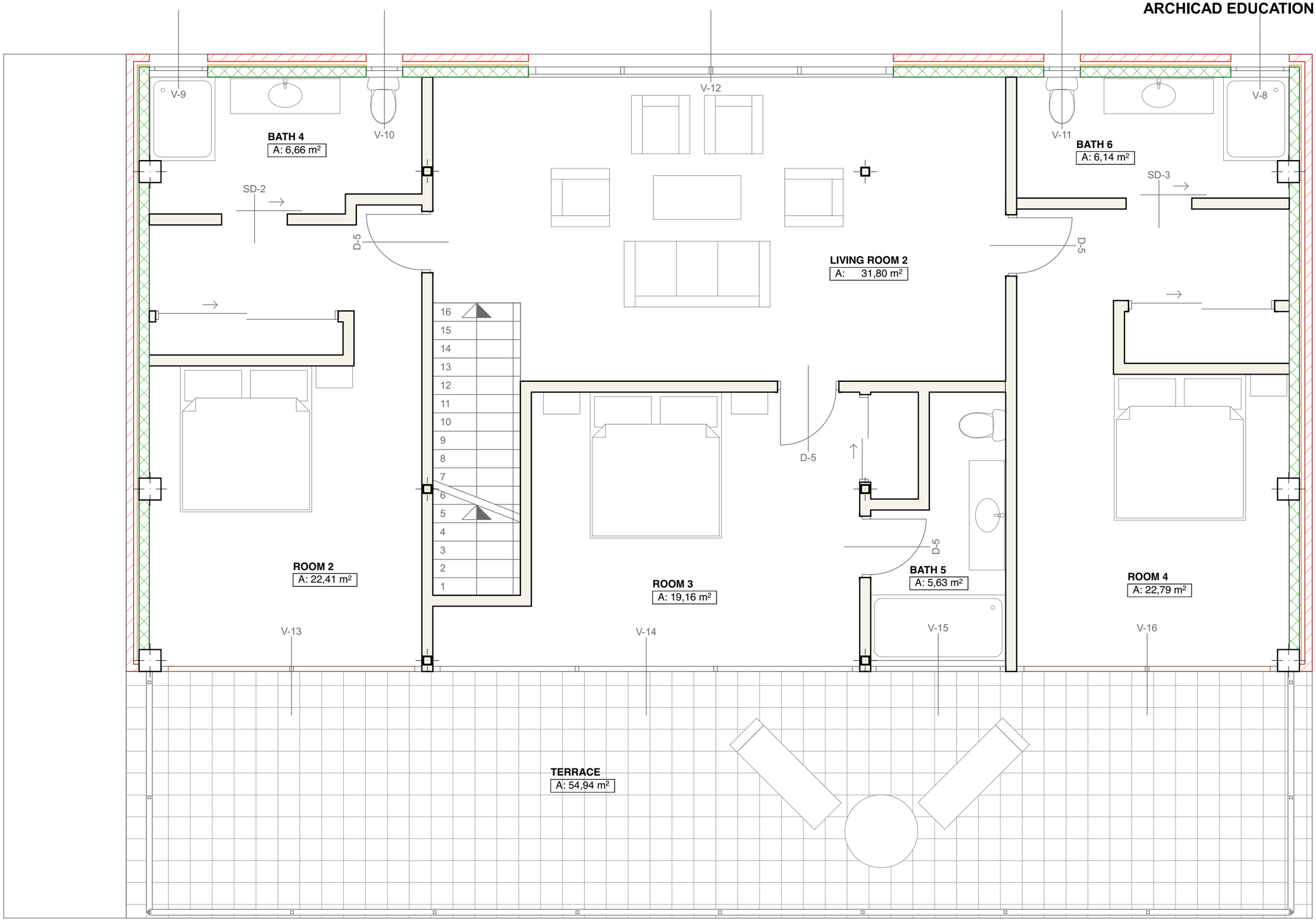
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

FIRST FLOOR DISTRIBUTION

escale: 1:50

plan: 9

Author: SERRANO BRUZON, GUILLERMO



*CARPENTRY SPECIFICATIONS WILL BE SHOWN IN THE CARPENTRY PLAN (26)

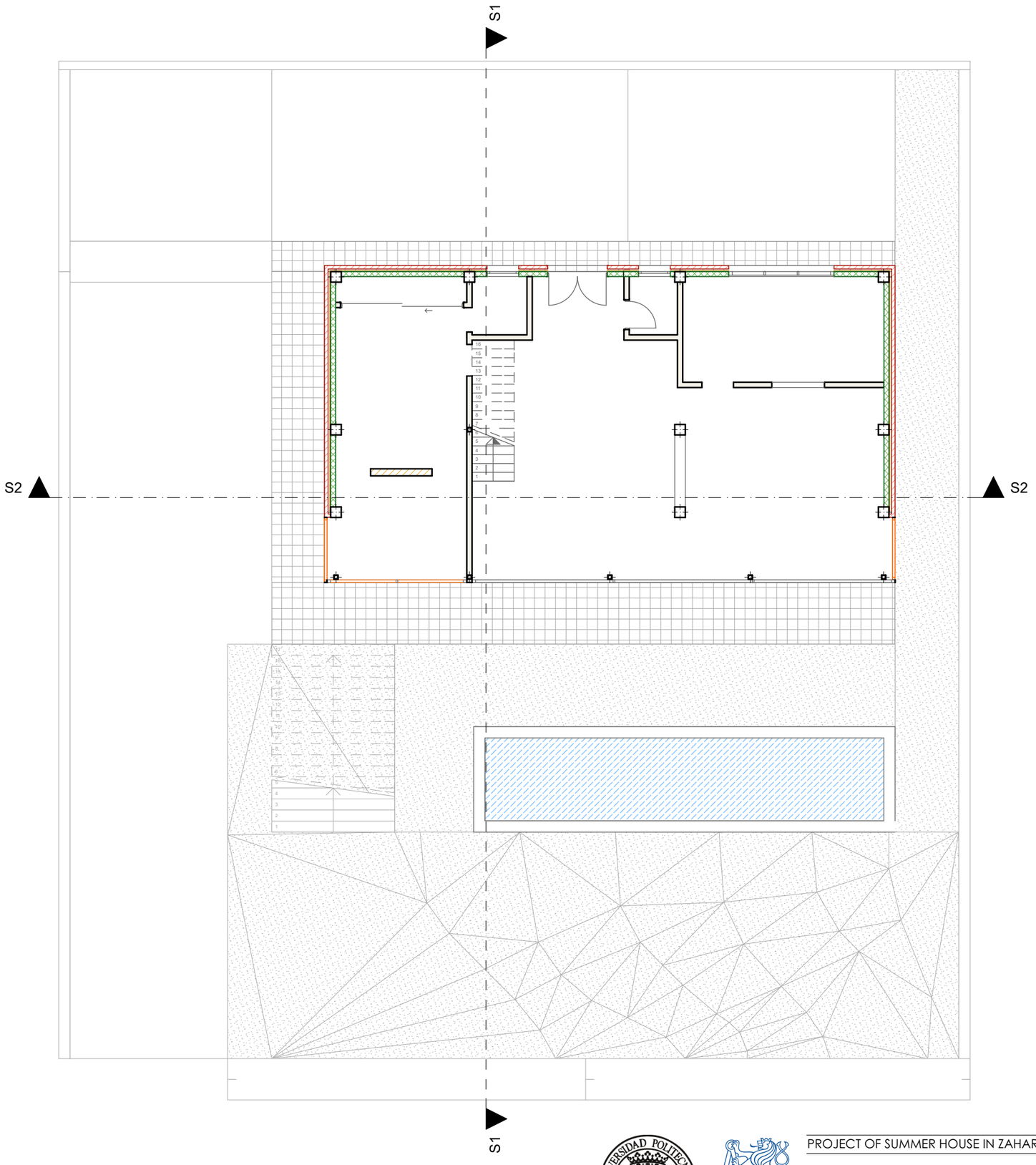
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

SECOND FLOOR DISTRIBUTION

escale: 1:50

plan: 10

Author: SERRANO BRUZON, GUILLERMO



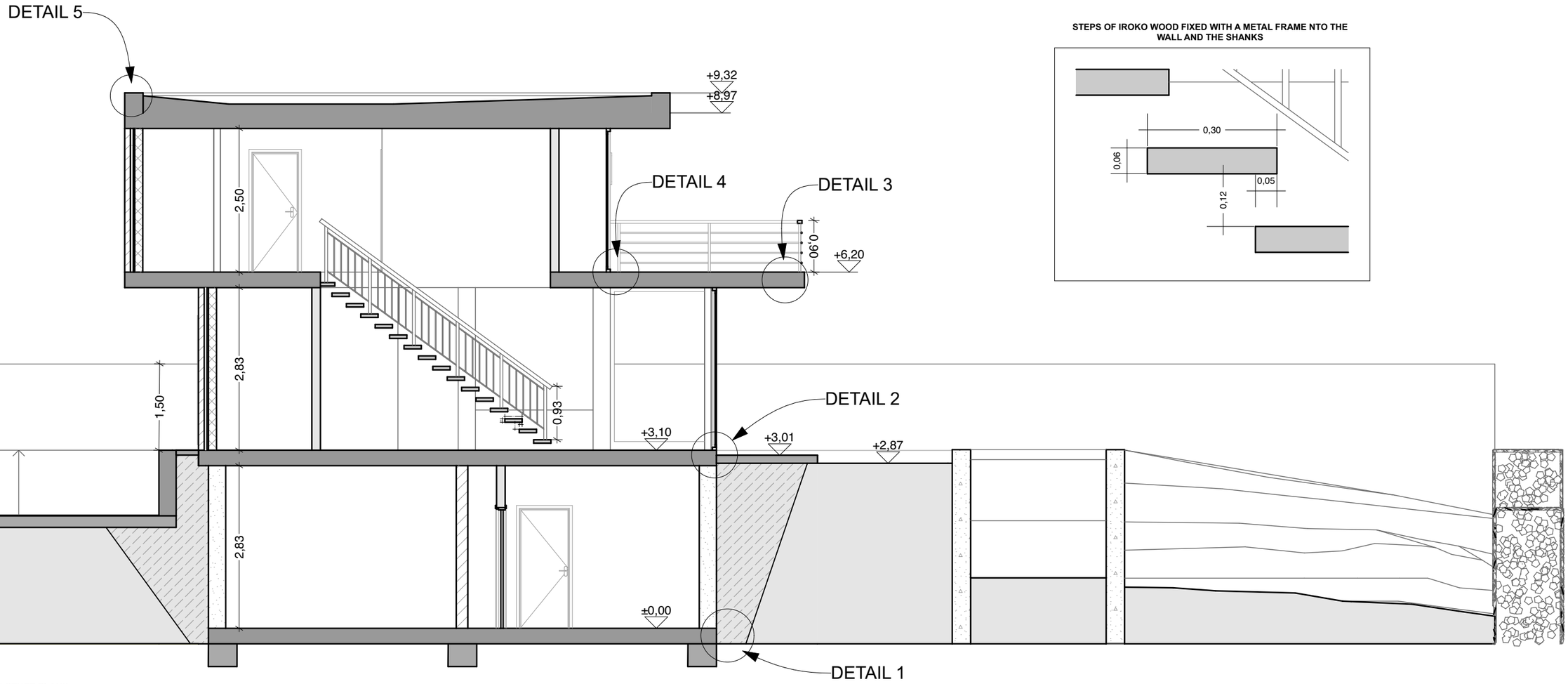
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

SECTIONS PLAN

escale: 1:125

plan: *

Author: SERRANO BRUZON, GUILLERMO



STEPS OF IROKO WOOD FIXED WITH A METAL FRAME NTO THE WALL AND THE SHANKS

*DETAILS WILL BE SHOWN IN OTHER PLANS

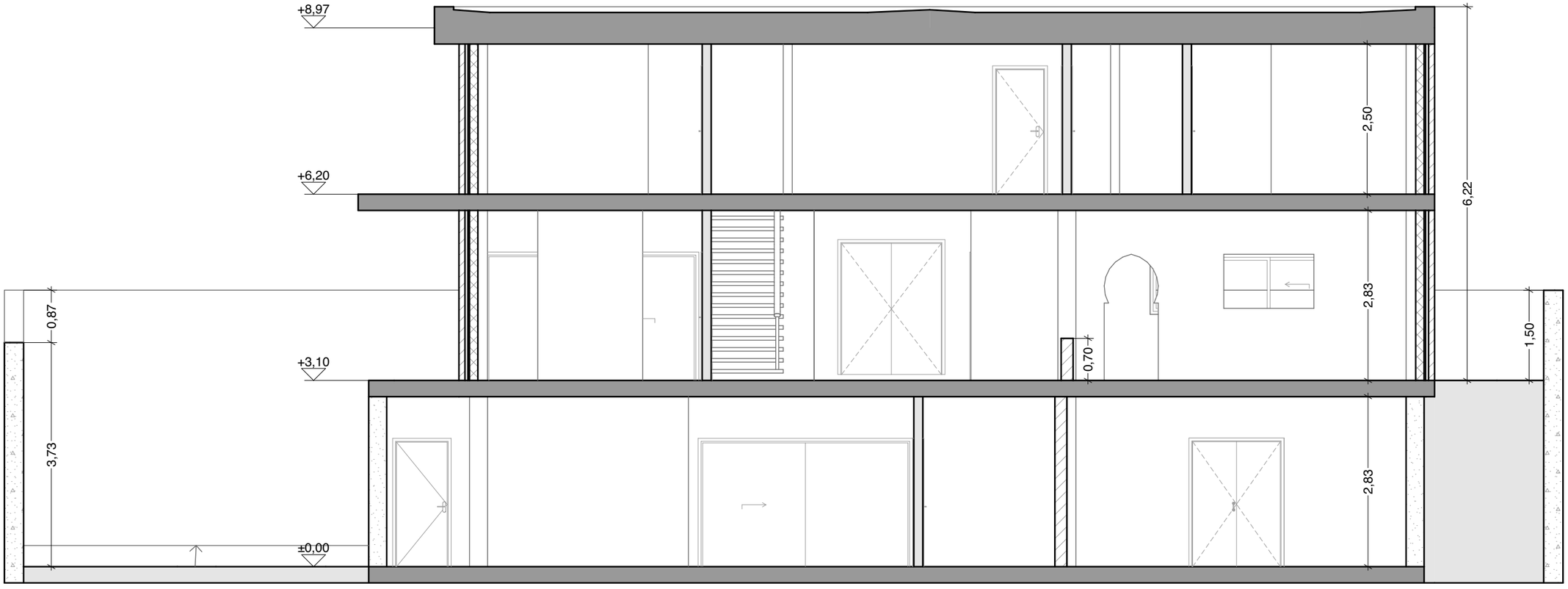
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

SECTION 1

escale: 1:10, 1:75,00

plan: 11

Author: SERRANO BRUZON, GUILLERMO



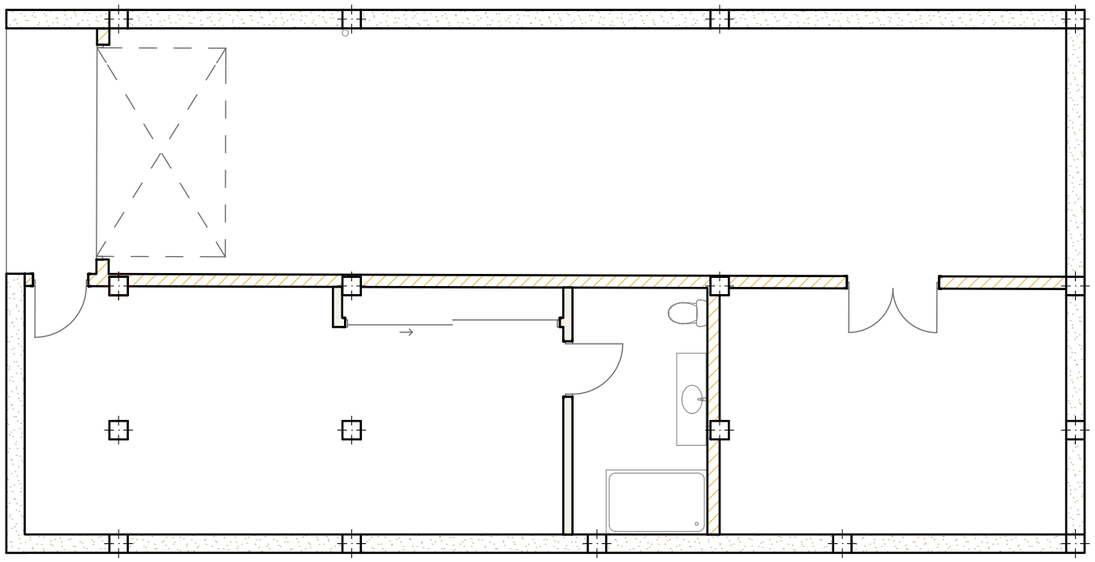
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

SECTION 2

escale: 1:75,00

plan: 12

Author: SERRANO BRUZON, GUILLERMO



Concrete wall - 30 cm thick

Wall of reinforce concrete HA-30/B/20/IIIa with armor B-400 S.

Exterior Wall - 32 cm thick

Facade cladding consists of 1/2 perforated brick thick to coat, sitting with cement mortar and river sand 1: 6 (M-40), plastered inside with cement mortar and river sand 1 6, air chamber and hollow brick wall of 5 cm, received with cement mortar and river sand of 2 cm thick. 1: 6 (M-40) .

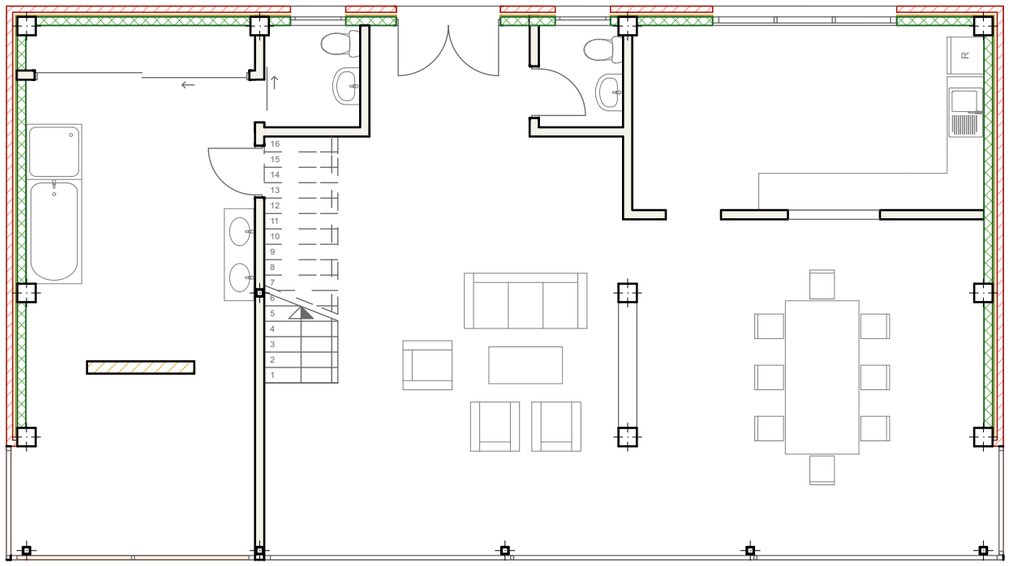
Interior Wall 1 - 20 cm thick

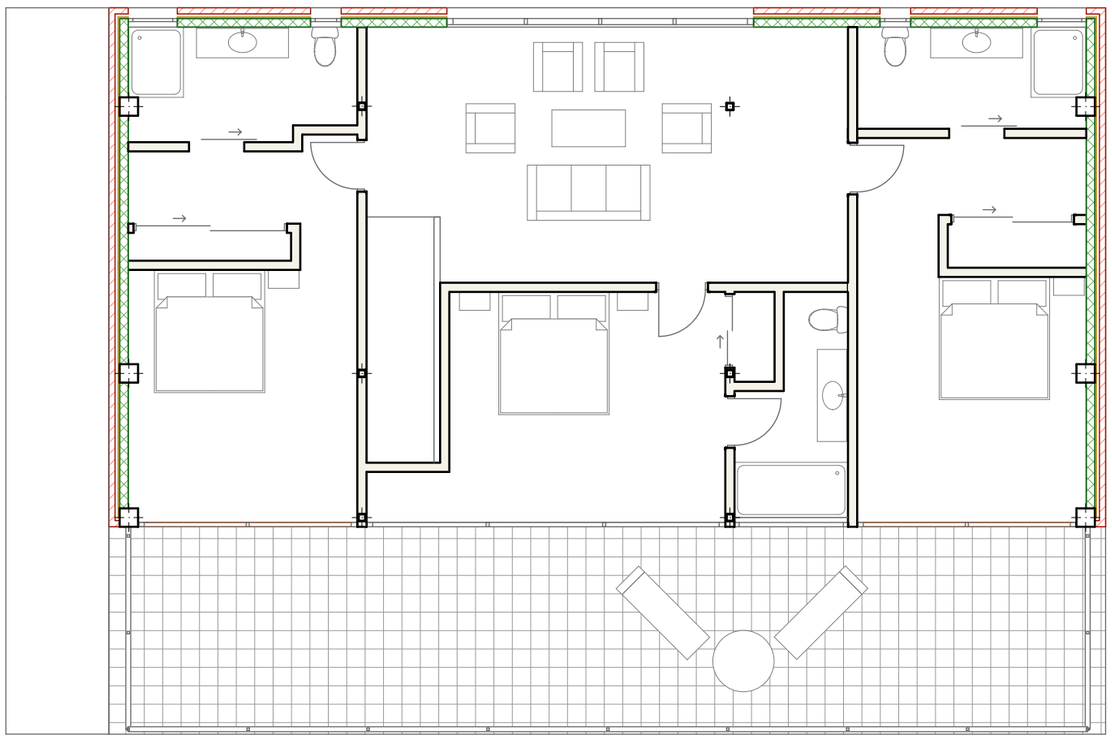
Double hollow brick partition 25x17x15 cm. received with cement mortar and river sand 1/6 of 2 cm thick on both sides of the wall.

Interior Wall 2 - 15 cm thick

Double hollow brick partition 25x12x11 cm. received with cement mortar and river sand 1/6 of 2 cm thick on both sides of the wall.

*Finishing of the walls and floors will be shown in the next plans.





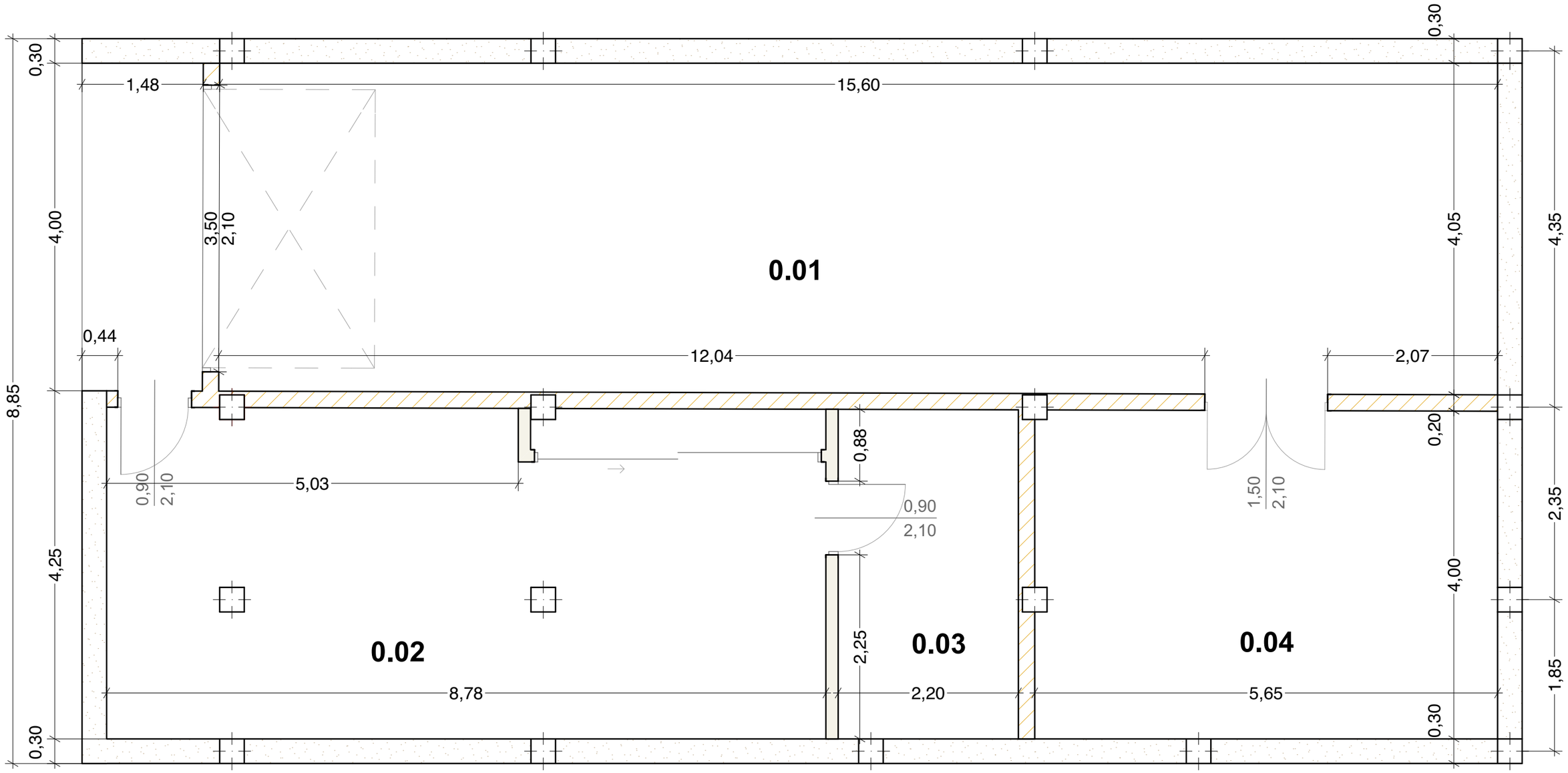
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

WALLS SPECIFICATIONS

escale: 1:100

plan: 13

Author: SERRANO BRUZON, GUILLERMO



0.01	**GARAGE - 63,19 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Formation of continuous concrete floor
0.02	**MIX ROOM - 35,34 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
0.03	**BATH 1 - 8,98 m2**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive
0.04	**MACHINE ROOM - 22,89 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Formation of continuous concrete floor

*More specifications in the Constructive Memory

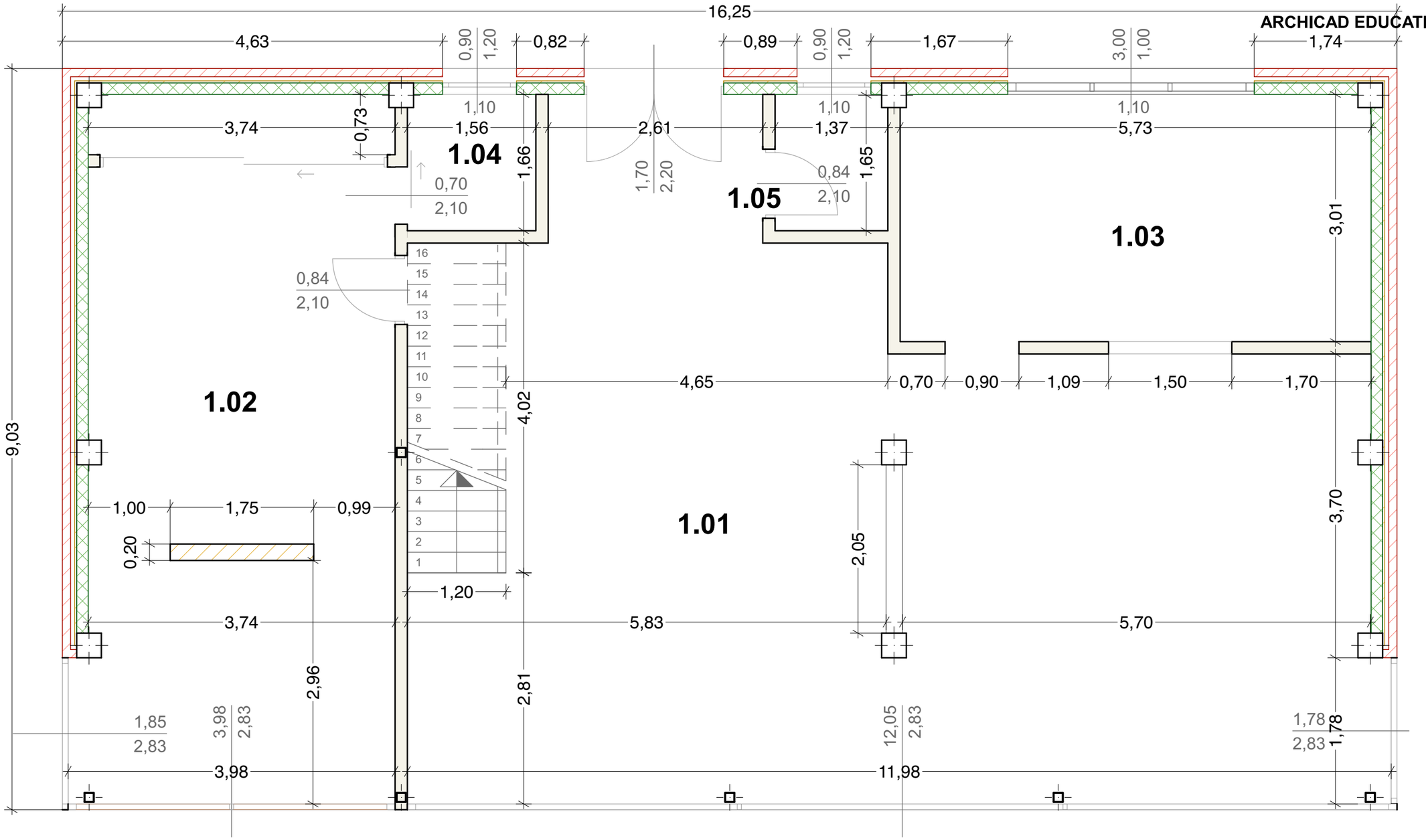
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

GROUND FLOOR DIMENSIONS

escale: 1:50

plan: 14

Author: SERRANO BRUZON, GUILLERMO



1.01	**LIVING ROOM - 63,19 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
1.02	**ROOM 1 - 35,34 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
1.03	**KITCHEN - 17,21 m2**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive
1.04	**BATH 2 - 2,79**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive
1.05	**BATH 3 - 2,39 m2**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive

*More specifications in the Constructive Memory

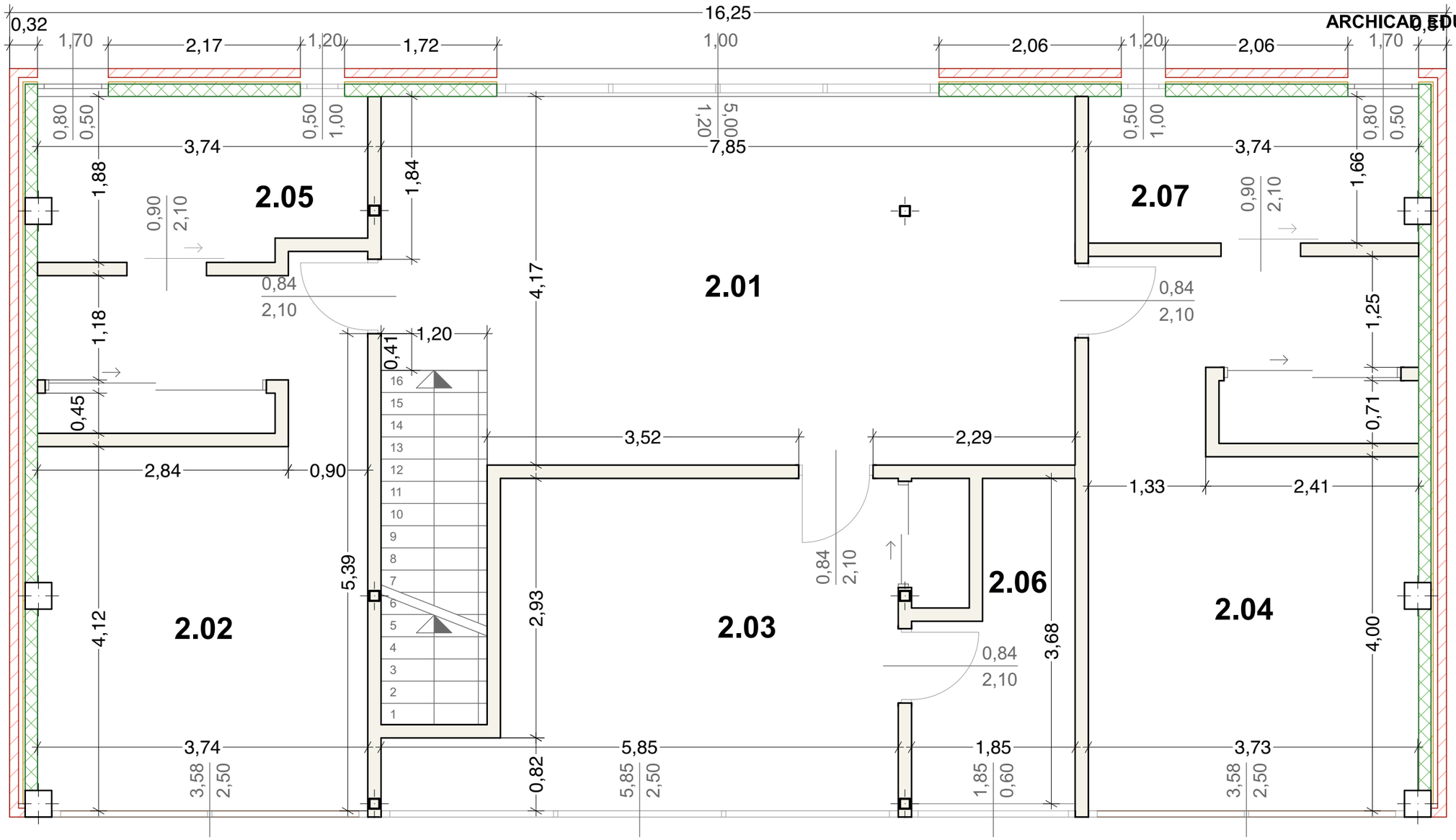
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

FIRST FLOOR DIMENSIONS

Author: SERRANO BRUZON, GUILLERMO

escale: 1:50

plan: 15



2.01	**LIVING ROOM 2 - 31,80 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
2.02	**ROOM 2 - 22,41 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
2.03	**ROOM 3 - 19,16 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
2.04	**ROOM 4 - 22,79 m2**	Wall finishing - White plastic paint, washable.	Floor finishing - Porcelain tile received with cement mortar and river sand.
2.05	**BATH 3 - 2,39 m2**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive
2.06	**BATH 3 - 2,39 m2**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive
2.07	**BATH 3 - 2,39 m2**	Wall finishing - Tile tiled received with adhesive	Floor finishing - Tile flooring stoneware slip model received with adhesive

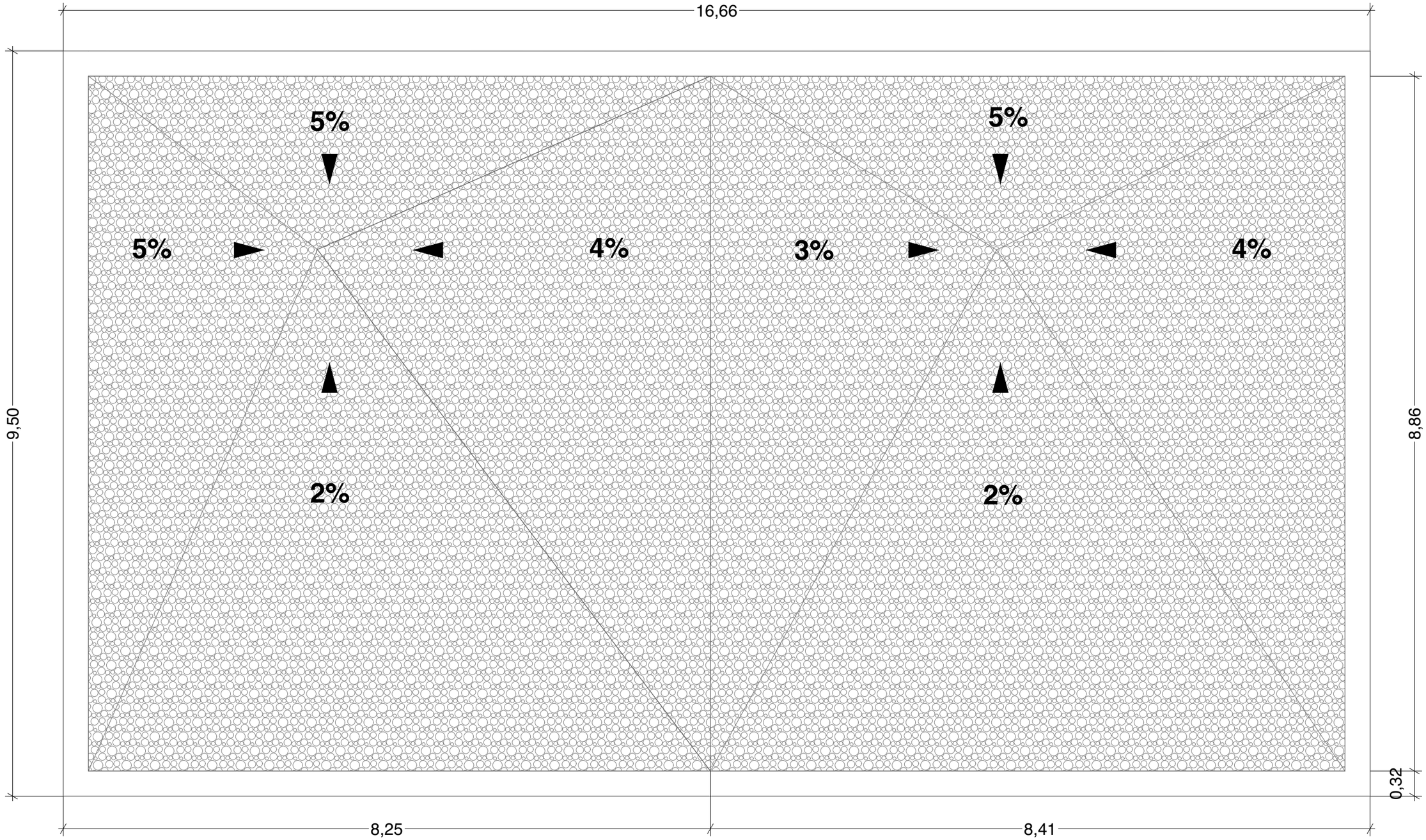
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

SECOND FLOOR DIMENSIONS

Author: SERRANO BRUZON, GUILLERMO

escale: 1:50

plan: 16



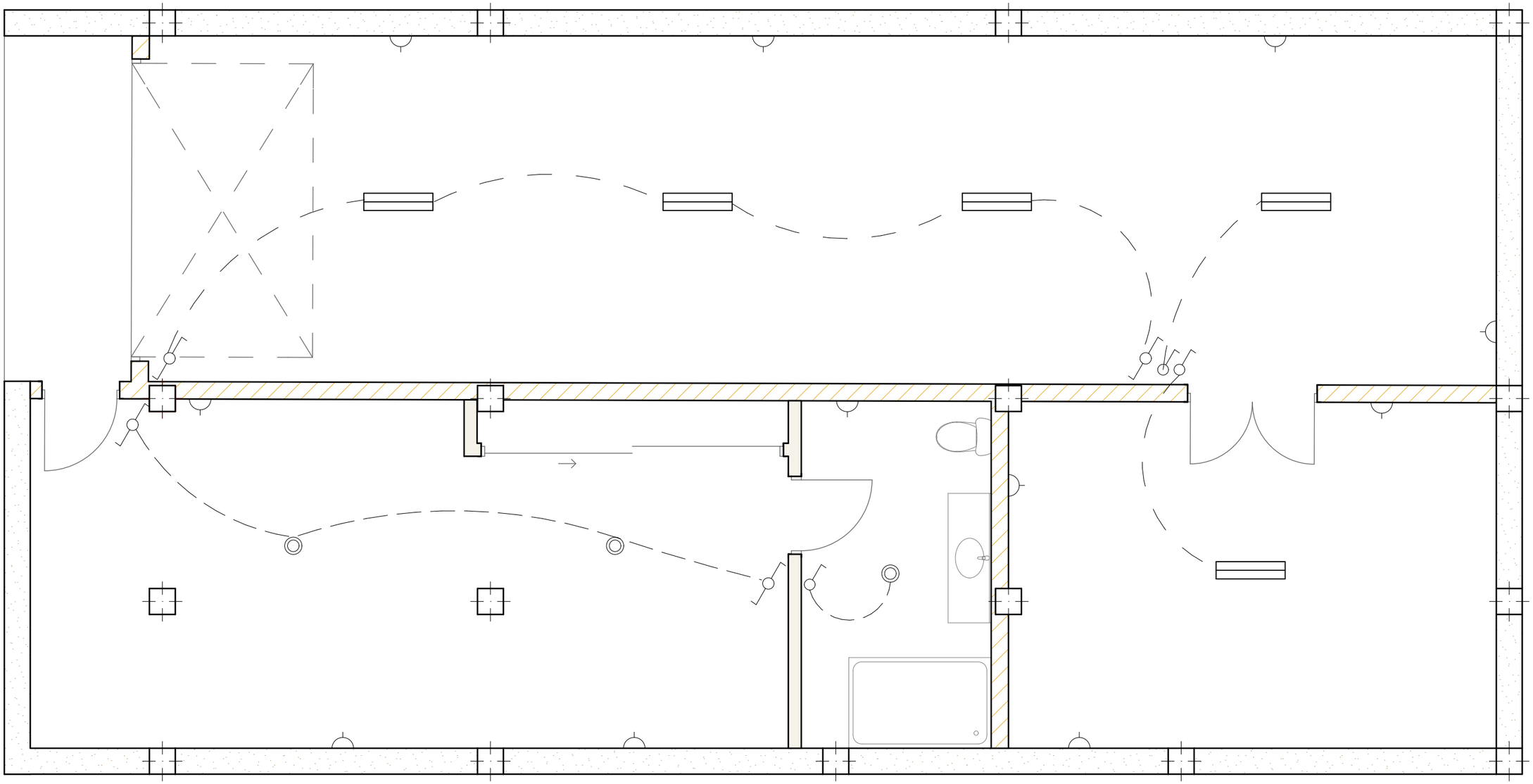
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

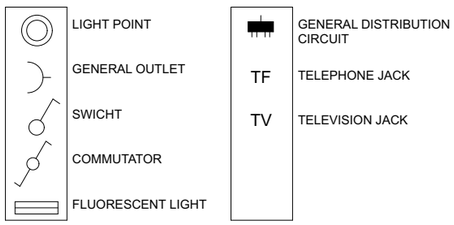
ROOF DIMENSIONS

Author: SERRANO BRUZON, GUILLERMO

escale: 1:50

plan: 17





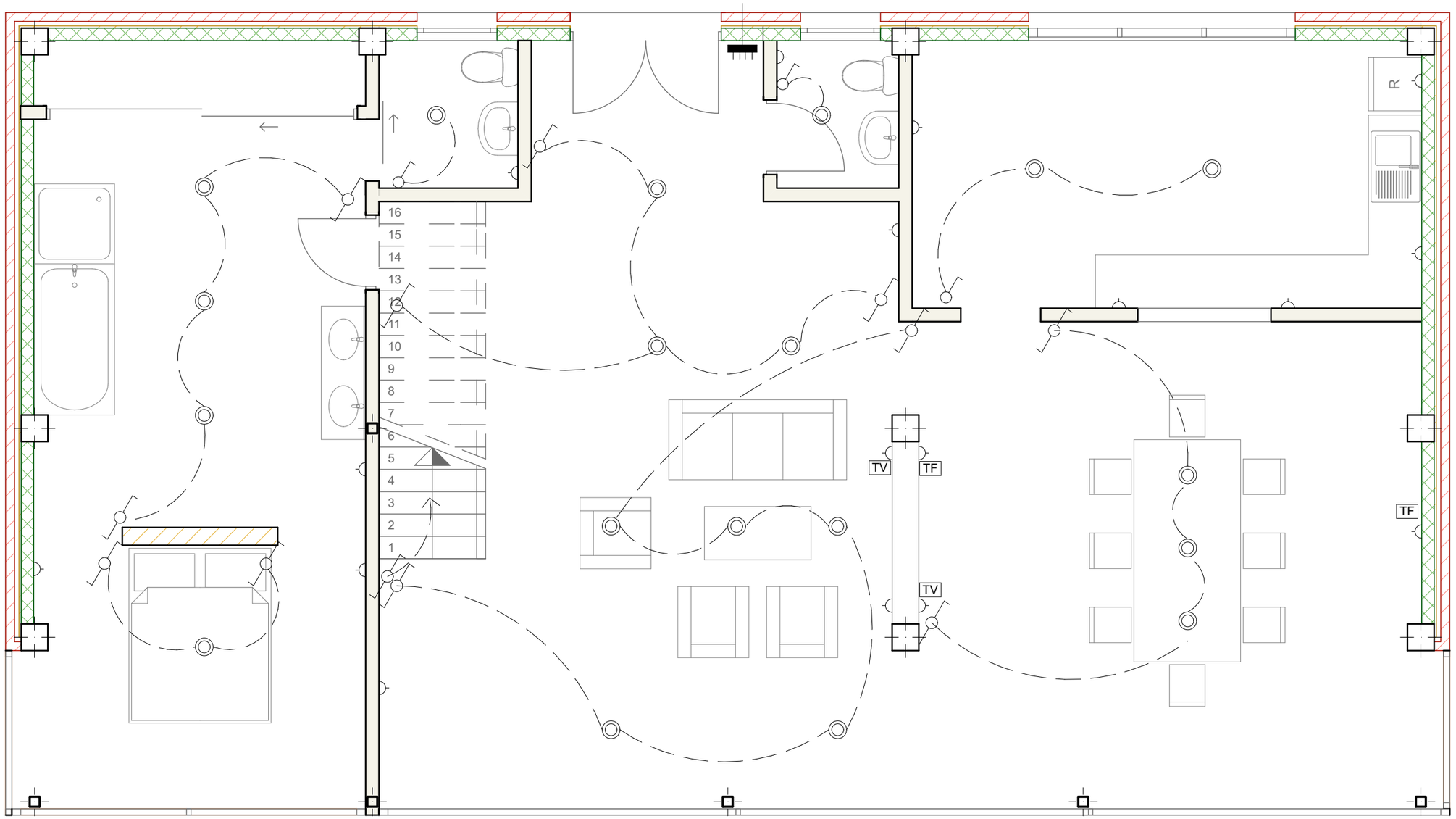
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ELECTRICITY GROUND FLOOR

Author: SERRANO BRUZON, GUILLERMO

escale: 1:100

plan: 18



LIGHT POINT
GENERAL OUTLET
SWICHT
COMMUTATOR
FLUORESCENT LIGHT

GENERAL DISTRIBUTION CIRCUIT
TF TELEPHONE JACK
TV TELEVISION JACK

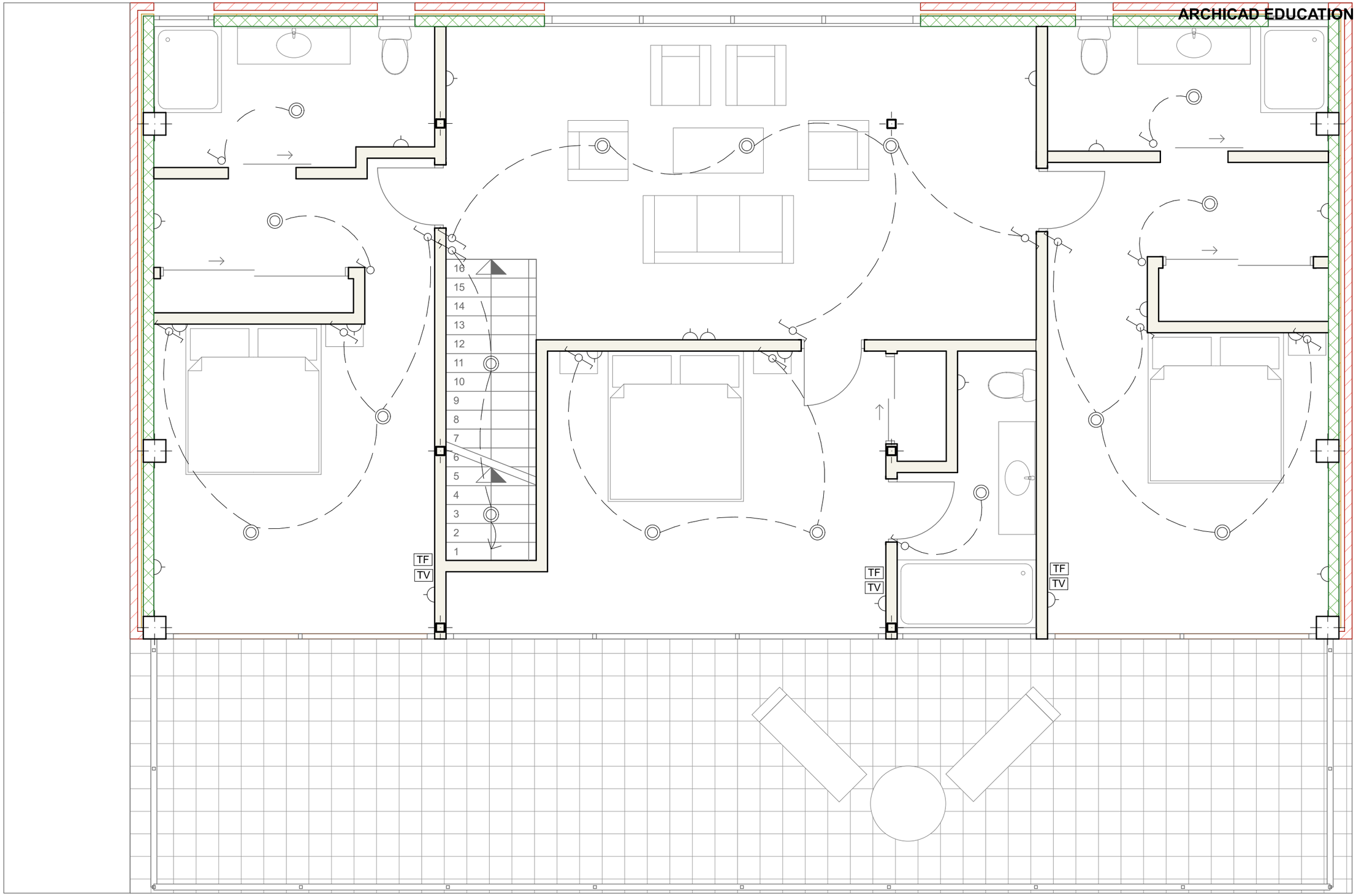
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ELECTRICITY FIRST FLOOR

escale: 1:100

plan: 19

Author: SERRANO BRUZON, GUILLERMO



LIGHT POINT

GENERAL OUTLET

SWICHT

COMMUTATOR

FLUORESCENT LIGHT

GENERAL DISTRIBUTION CIRCUIT

TF TELEPHONE JACK

TV TELEVISION JACK

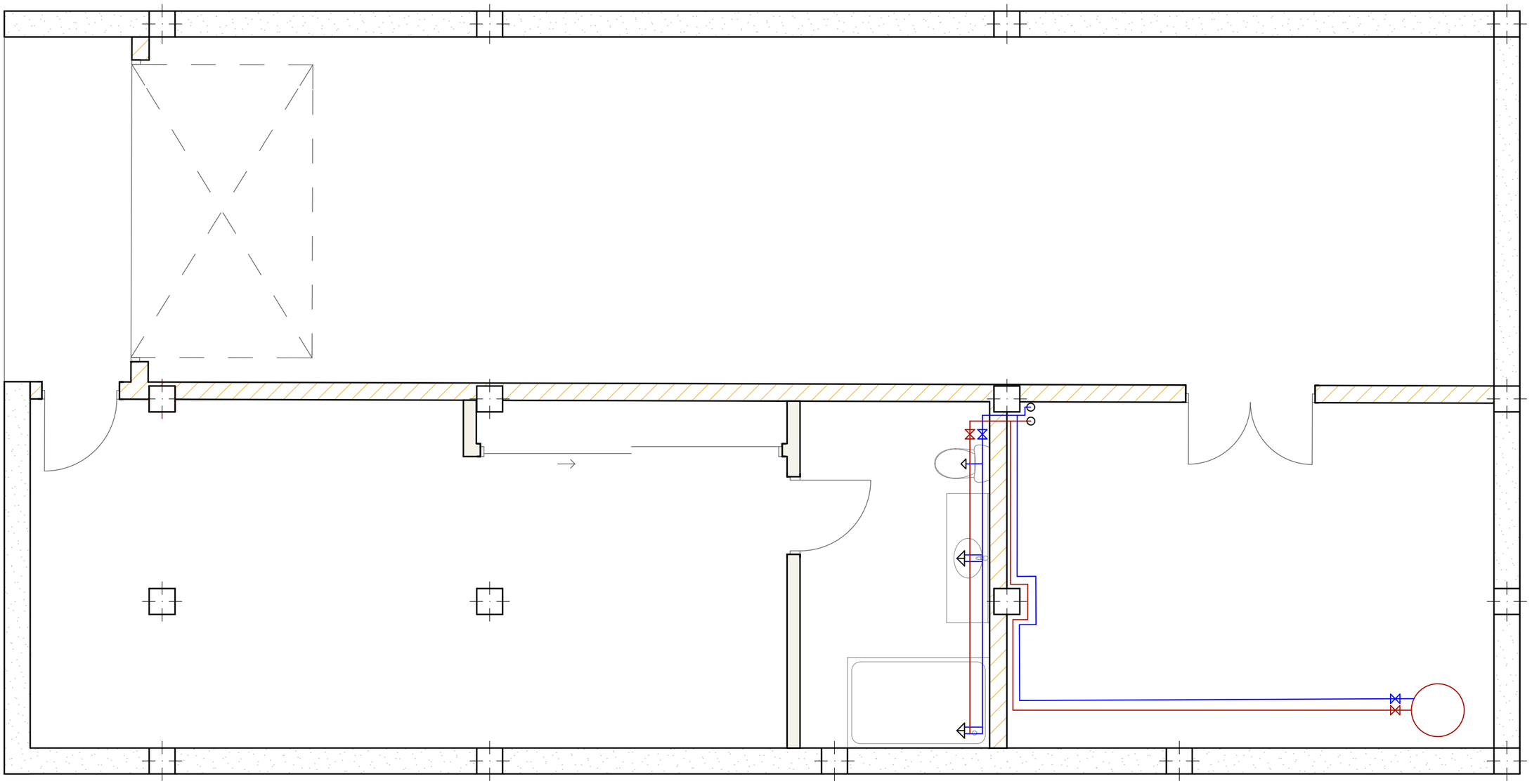
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ELECTRICITY SECOND FLOOR

escale: 1:100

plan: 20

Author: SERRANO BRUZON, GUILLERMO



- Cold water network
- Hot water network
- Individual cut key
- Hidro-mixer
- Cold water tap
- Water meter
- General key
- Pass valve - Stopcock
- Vertical pipe
- Heater

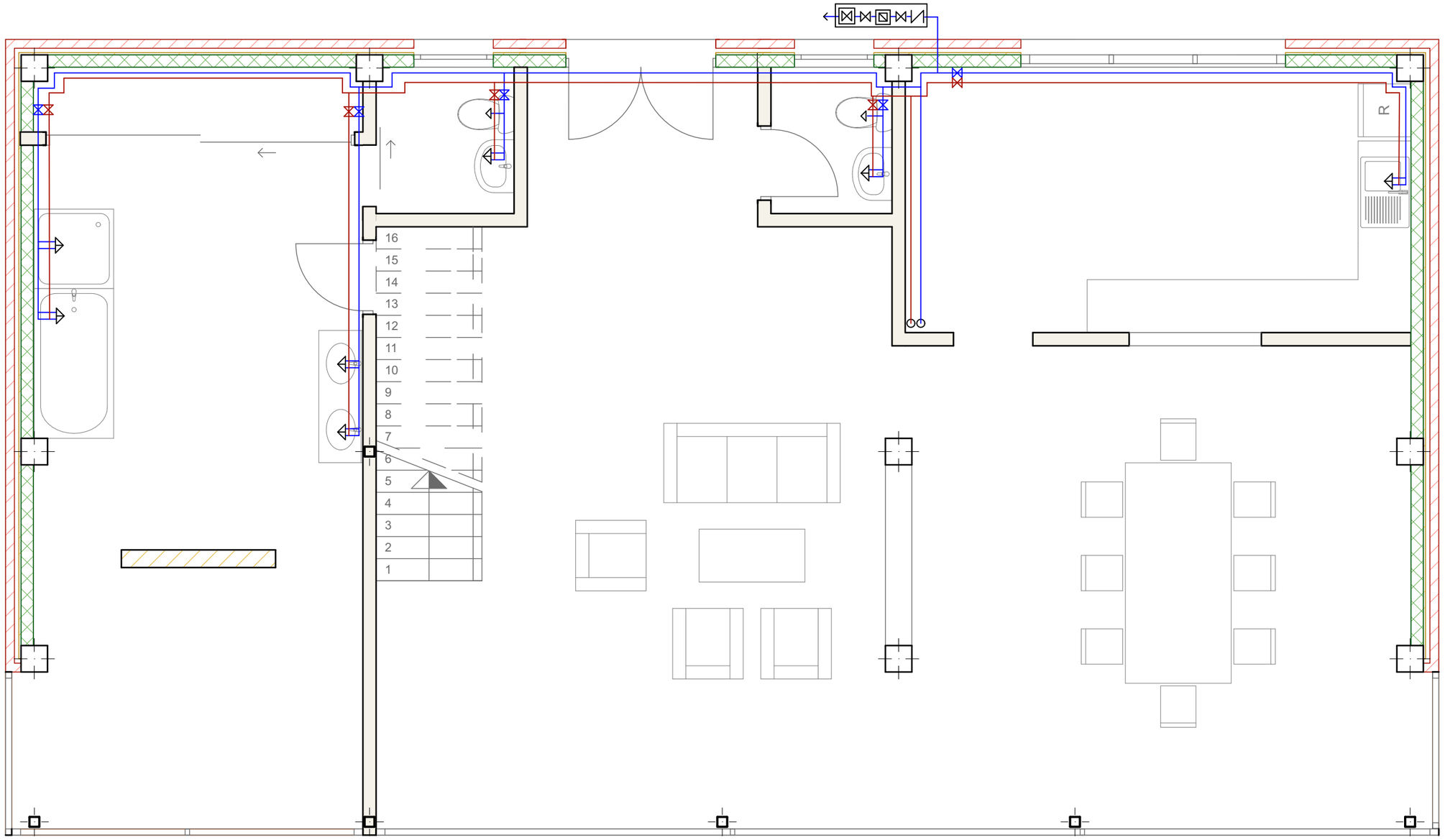
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

WATER SUPPLY-GROUND FLOOR

escale: 1:100

plan: 21

Author: SERRANO BRUZON, GUILLERMO



- Cold water network
- Hot water network
- Individual cut key
- Hidro-mixer
- Cold water tap
- Water meter
- General key
- Pass valve - Stopcock
- Vertical pipe
- Heater

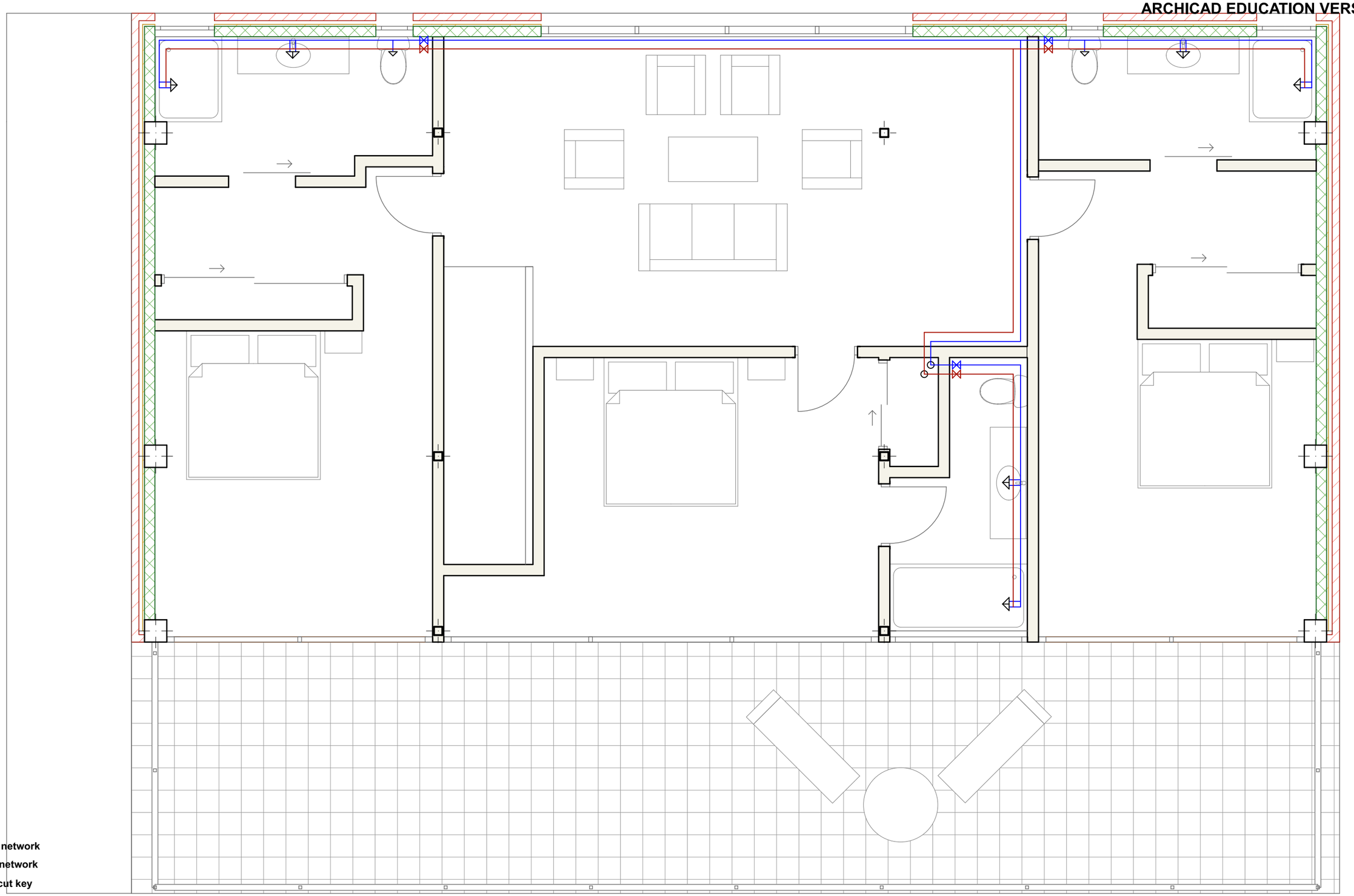
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

WATER SUPPLY-FIRST FLOOR

escale: 1:100

plan: 22

Author: SERRANO BRUZON, GUILLERMO



- Cold water network
- Hot water network
- Individual cut key
- Hidro-mixer
- Cold water tap
- Water meter
- General key
- Pass valve - Stopcock
- Vertical pipe
- Heater

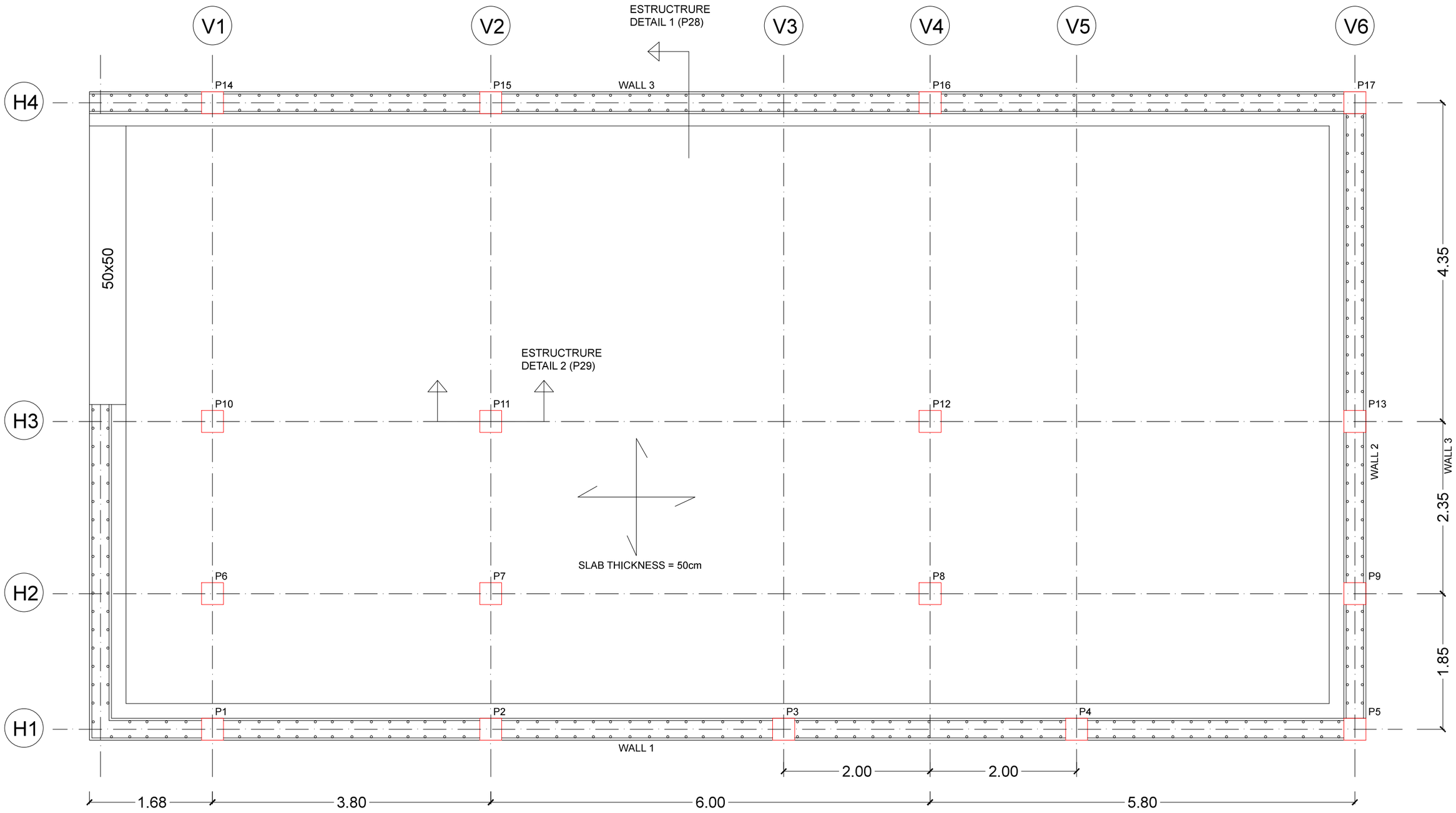
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

WATER SUPPLY-SECOND FLOOR

escale: 1:100

plan: 23

Author: SERRANO BRUZON, GUILLERMO



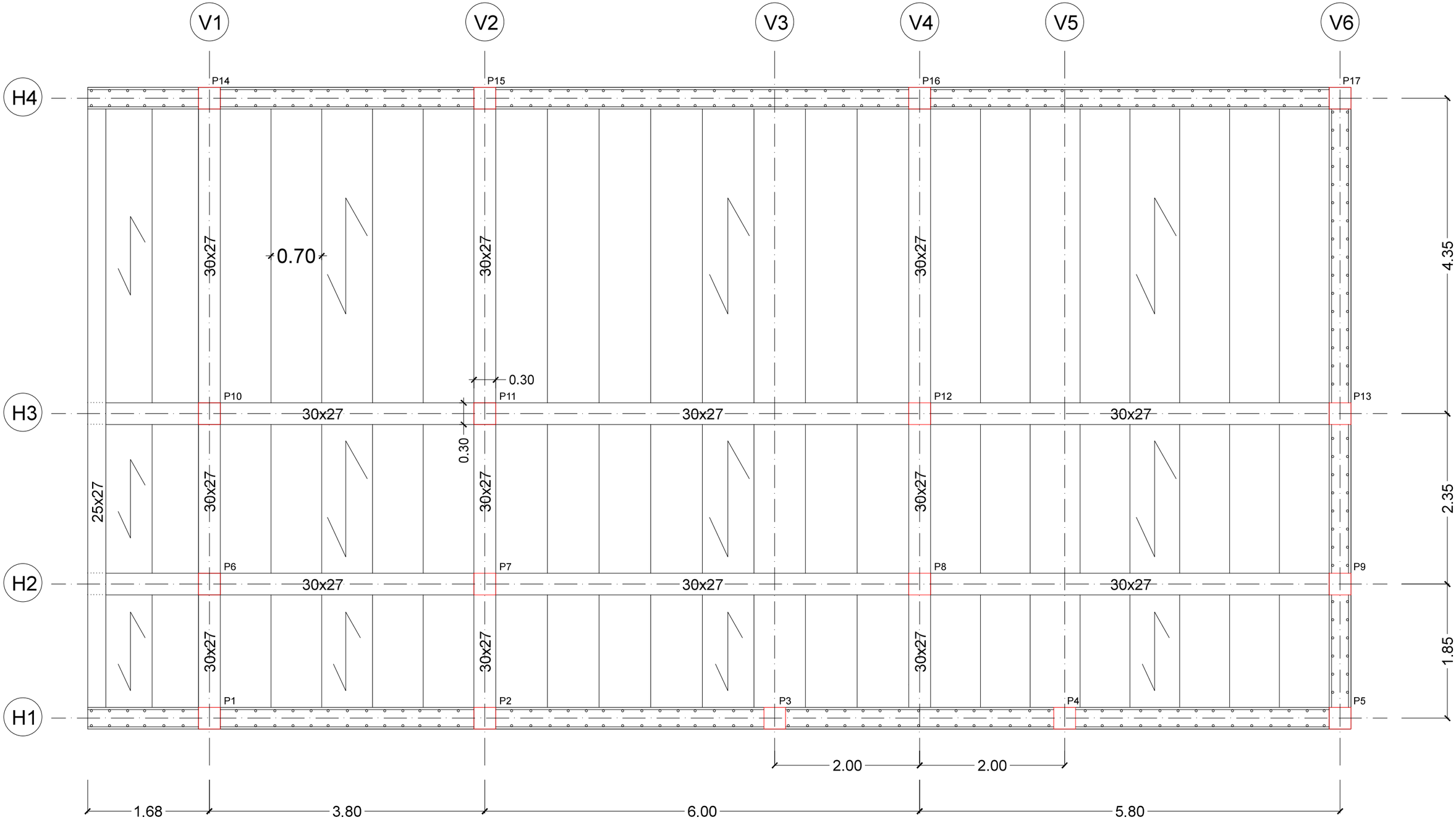
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - FOUNDATION

escale: 1/50

plan: 24

Author: SERRANO BRUZÓN, GUILLERMO



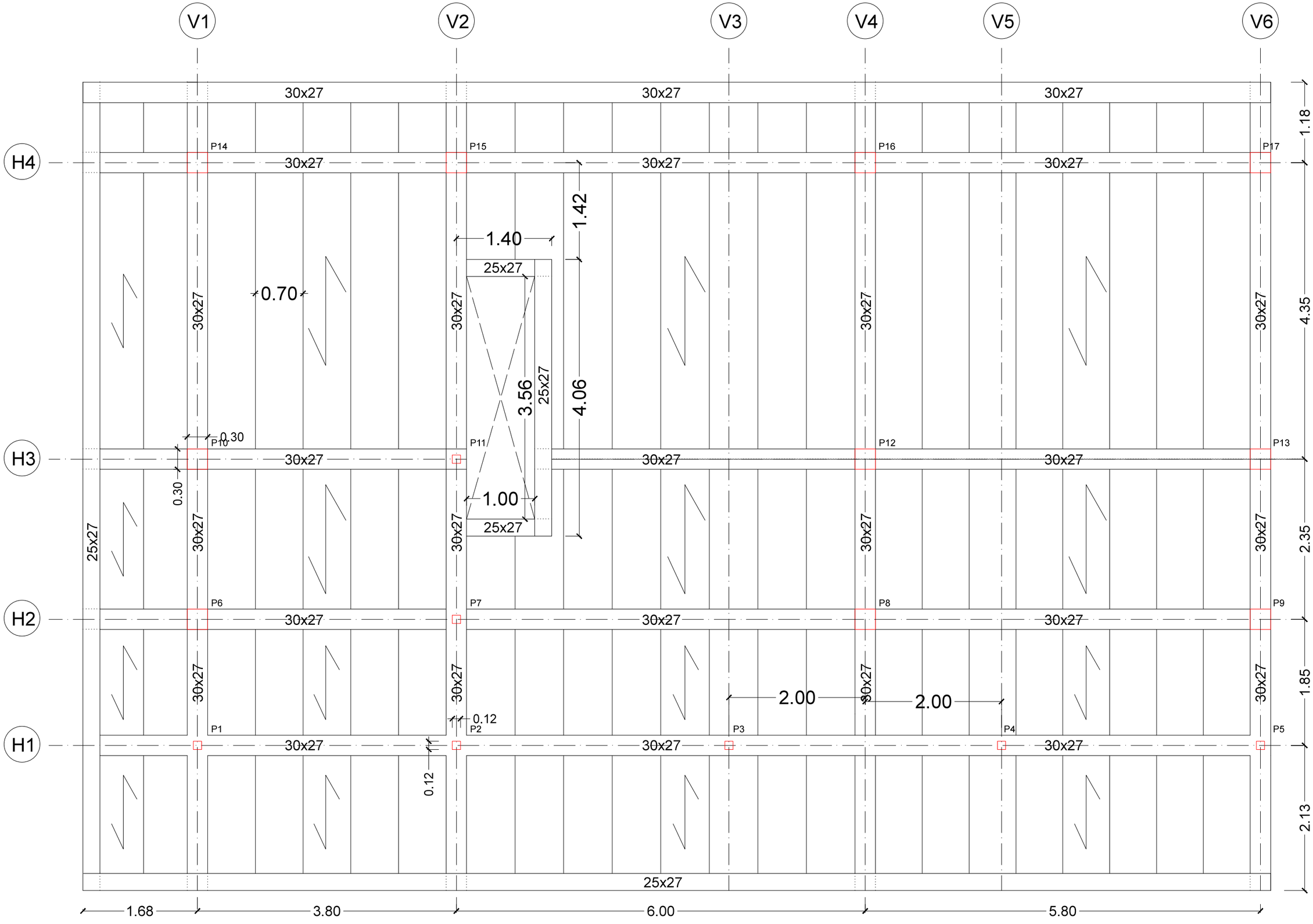
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - FORGE GROUND FLOOR

escale: 1/50

plan: 25

Author: SERRANO BRUZÓN, GUILLERMO



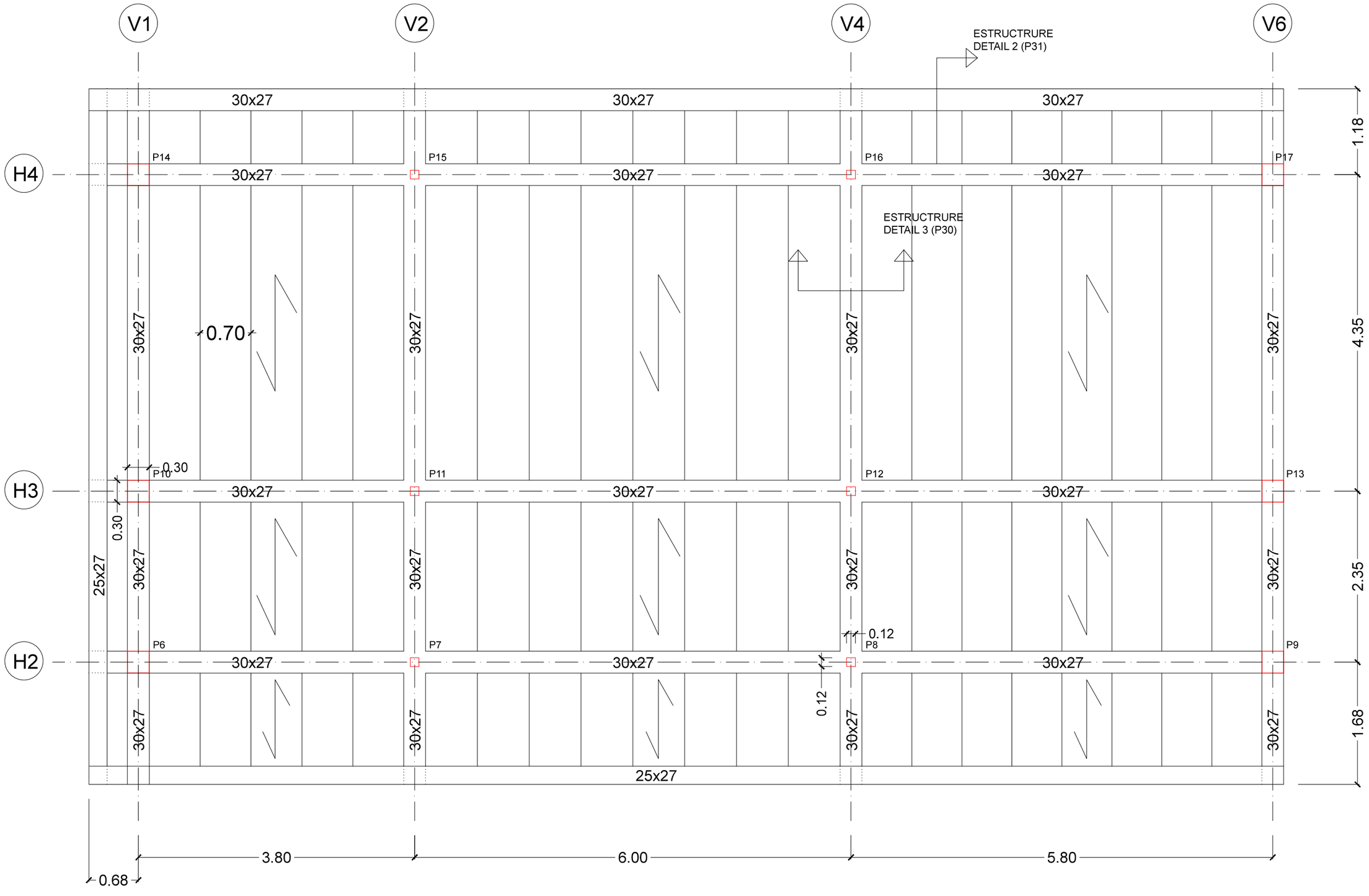
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - FORGE FIRST FLOOR

Author: SERRANO BRUZÓN, GUILLERMO

escale: 1/50

plan: 26



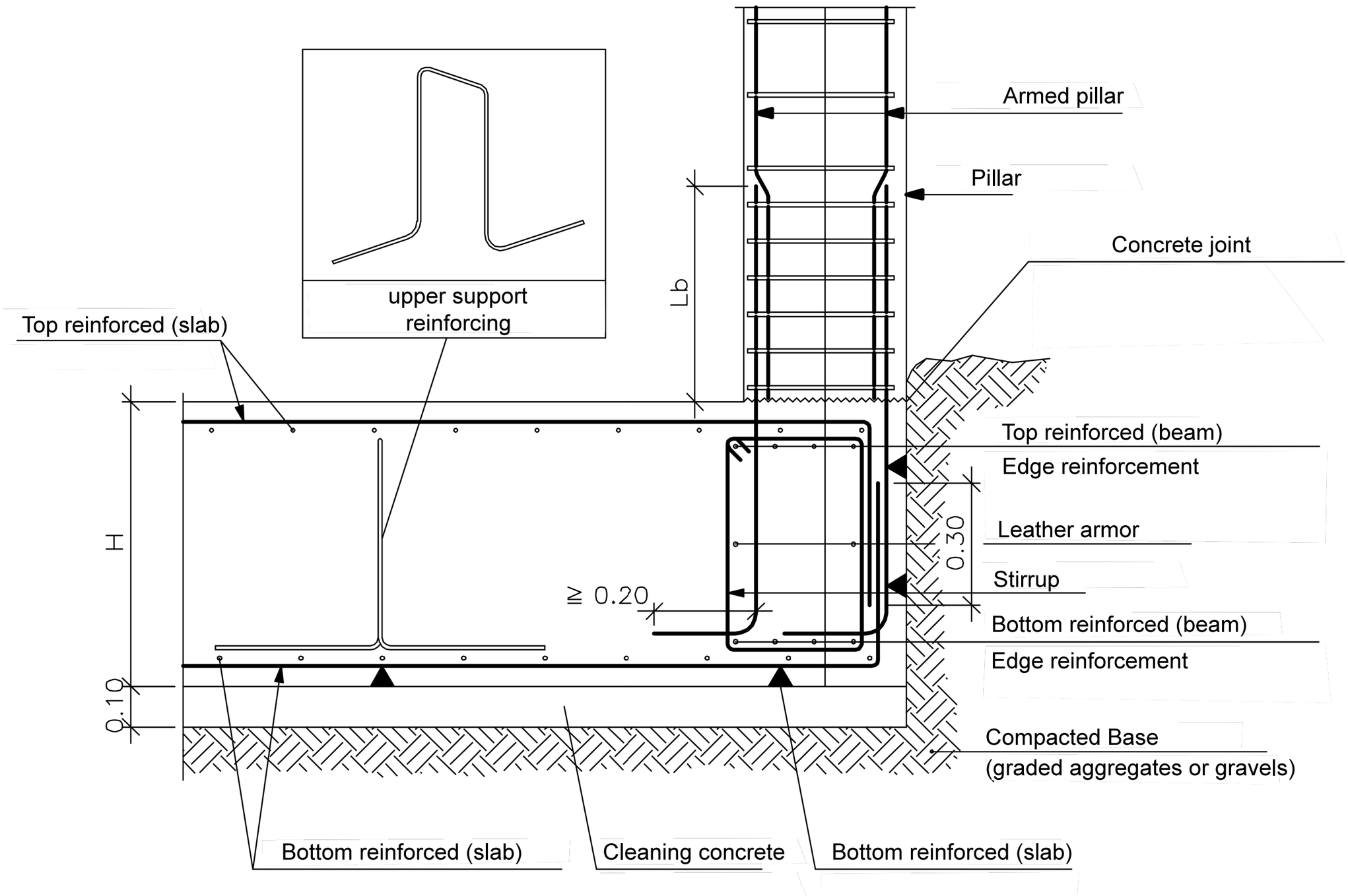
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - FORGE SECOND FLOOR

escale: 1/50

plan: 27

Author: SERRANO BRUZÓN, GUILLERMO



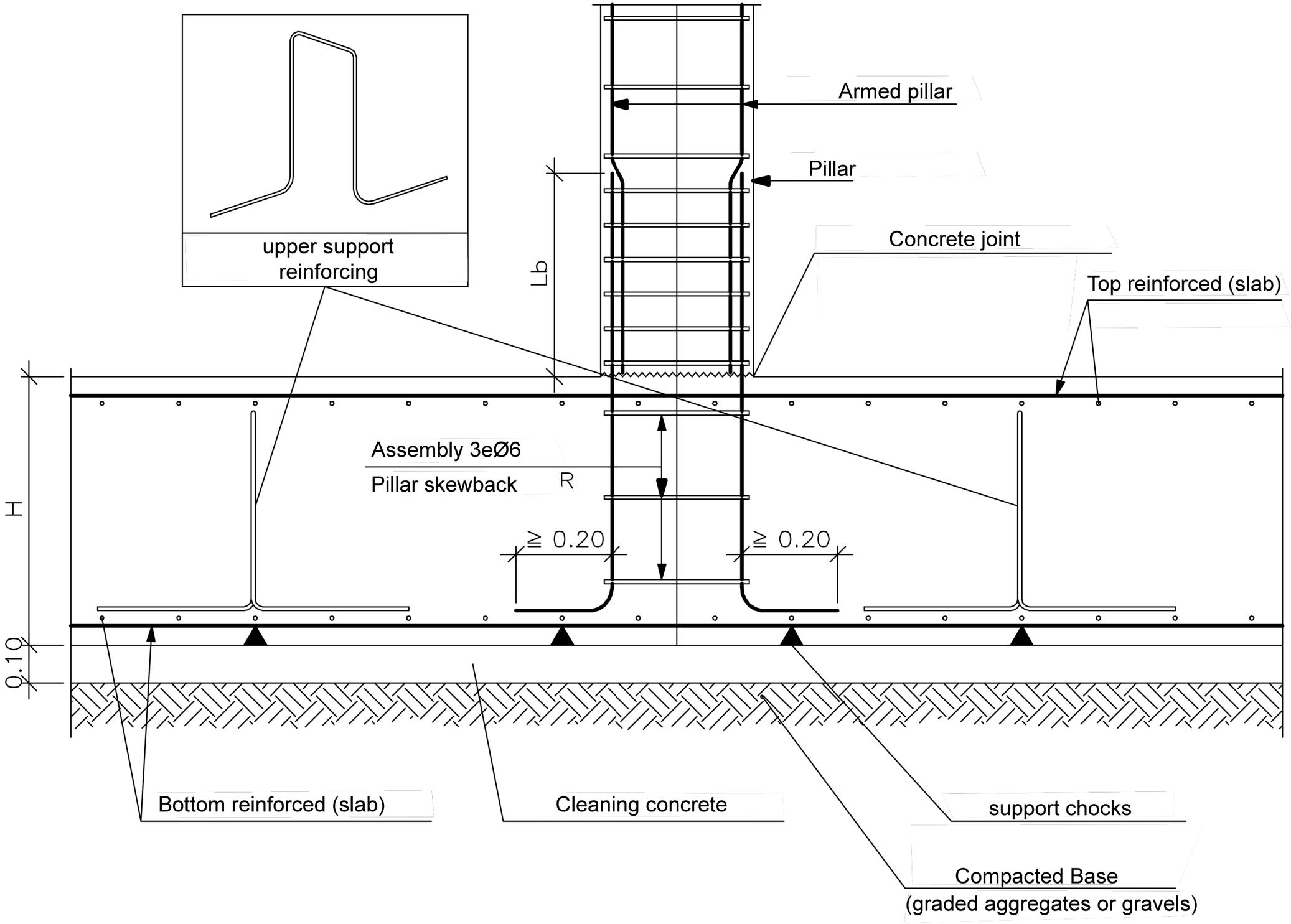
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - DETAIL 1

escale: 1/10

plan: 28

Author: SERRANO BRUZÓN, GUILLERMO



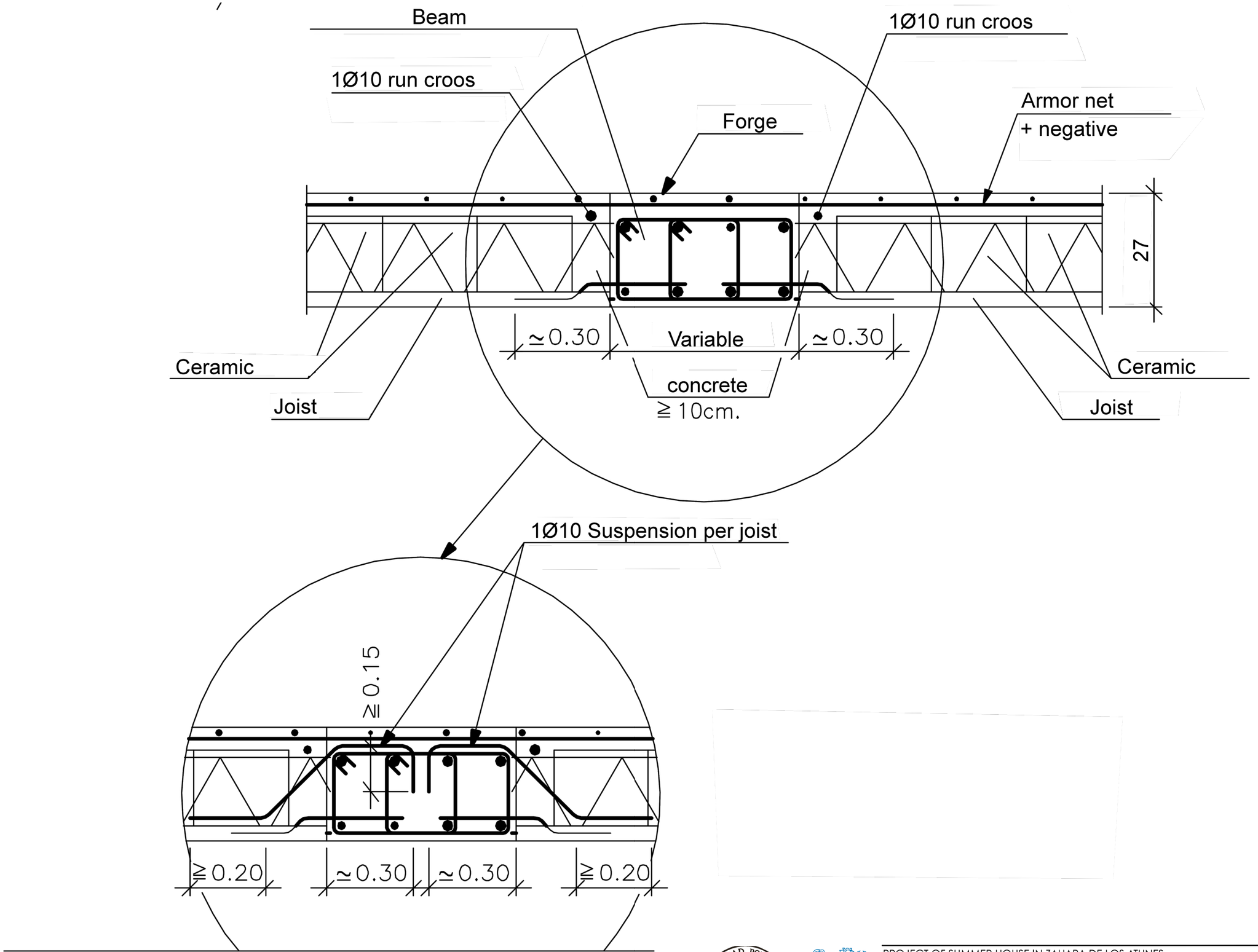
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - DETAIL 2

escale: 1/10

plan: 29

Author: SERRANO BRUZÓN, GUILLERMO



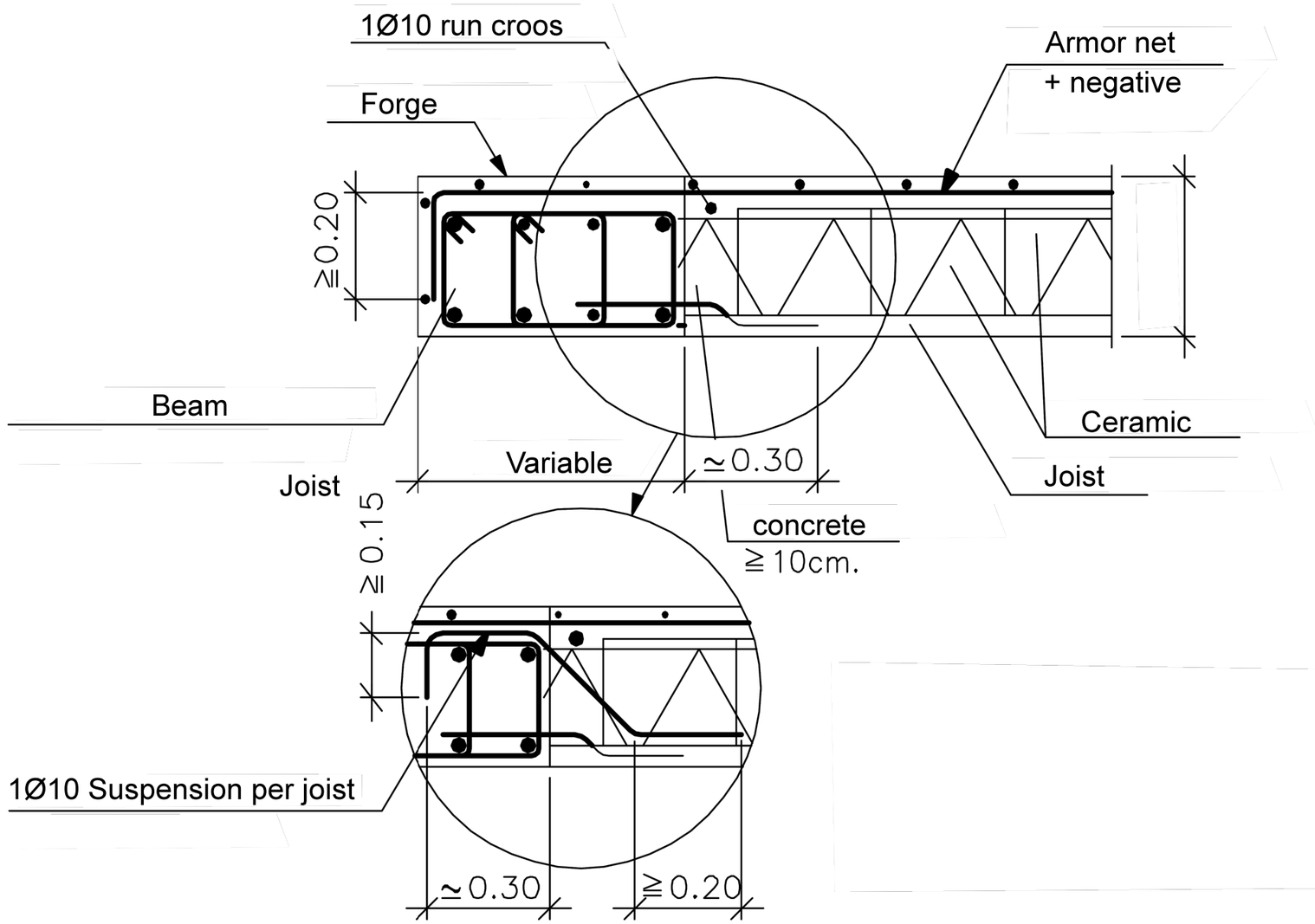
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - DETAIL 3

escale: 1/10

plan: 30

Author: SERRANO BRUZÓN, GUILLERMO



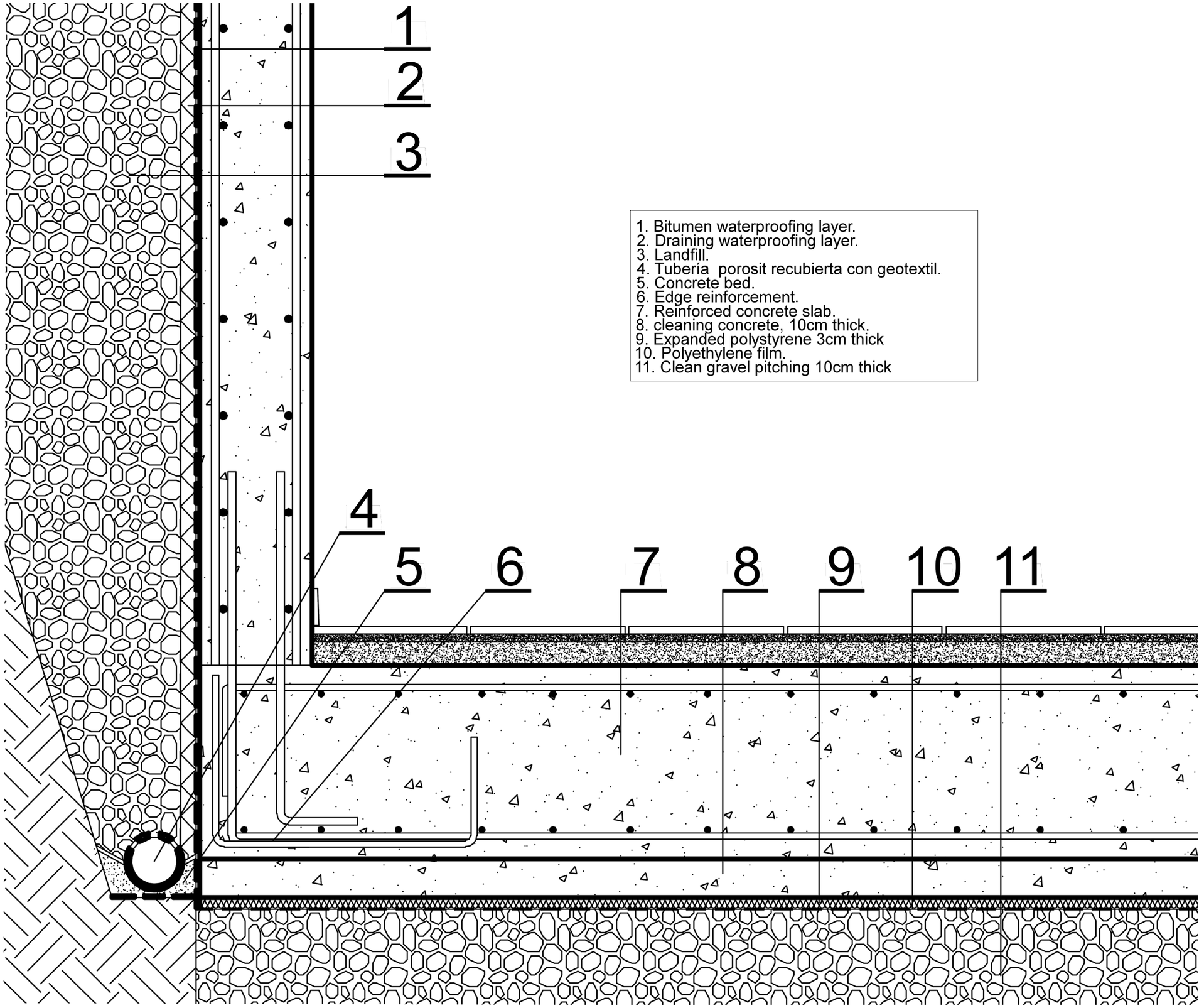
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

ESTRUCTURE - DETAIL 4

escale: 1/10

plan: 31

Author: SERRANO BRUZÓN, GUILLERMO



1. Bitumen waterproofing layer.
2. Draining waterproofing layer.
3. Landfill.
4. Tubería porosit recubierta con geotextil.
5. Concrete bed.
6. Edge reinforcement.
7. Reinforced concrete slab.
8. cleaning concrete, 10cm thick.
9. Expanded polystyrene 3cm thick
10. Polyethylene film.
11. Clean gravel pitching 10cm thick

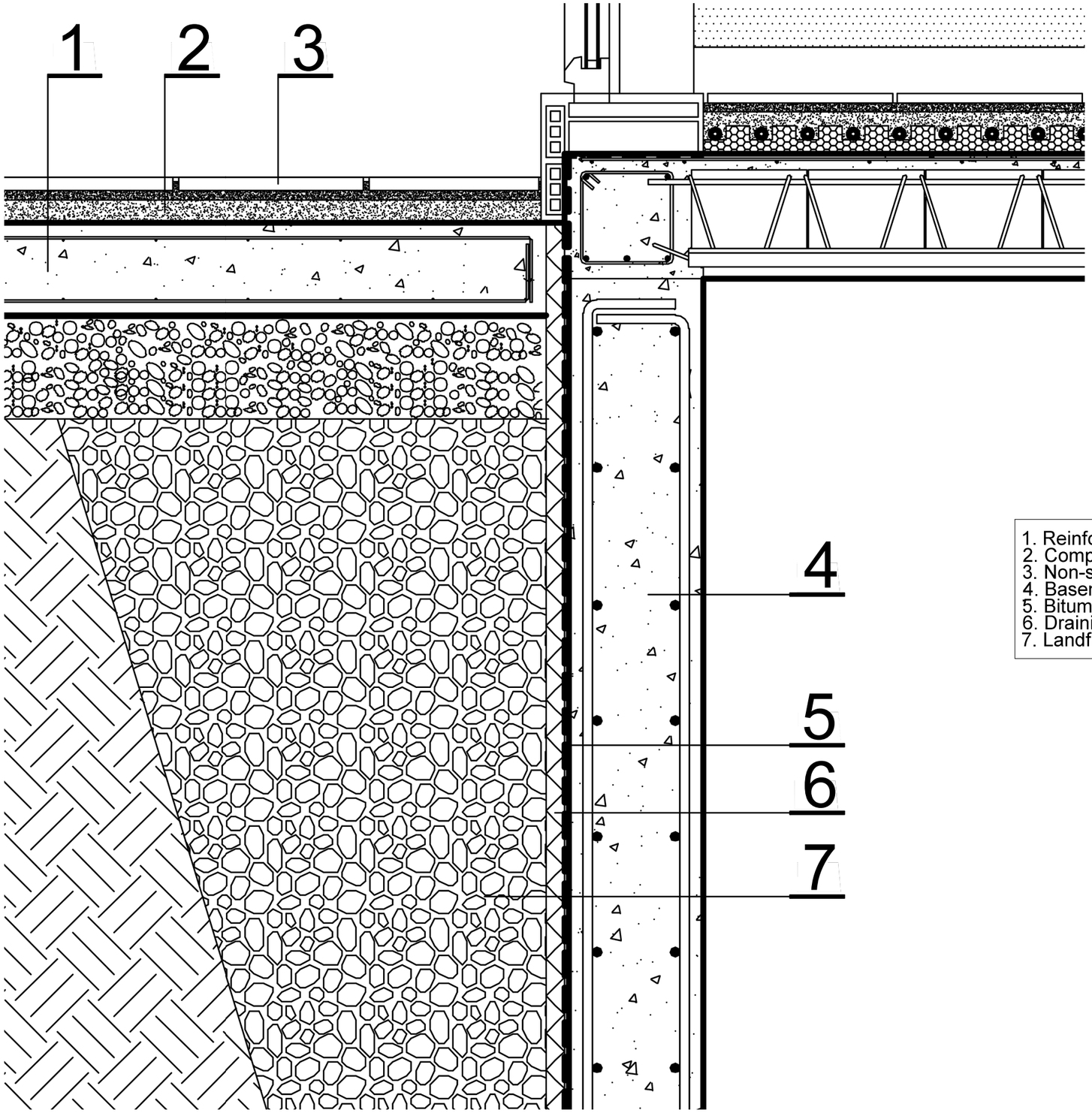
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

DETAIL 1

escale: 1/10

plan: 32

Author: SERRANO BRUZÓN, GUILLERMO



1. Reinforced concrete slab.
2. Compacted clean sand.
3. Non-slip floor tiles.
4. Basement wall of reinforced concrete 30 cm thick
5. Bitumen waterproofing layer.
6. Draining waterproofing layer
7. Landfill.

ČVUT

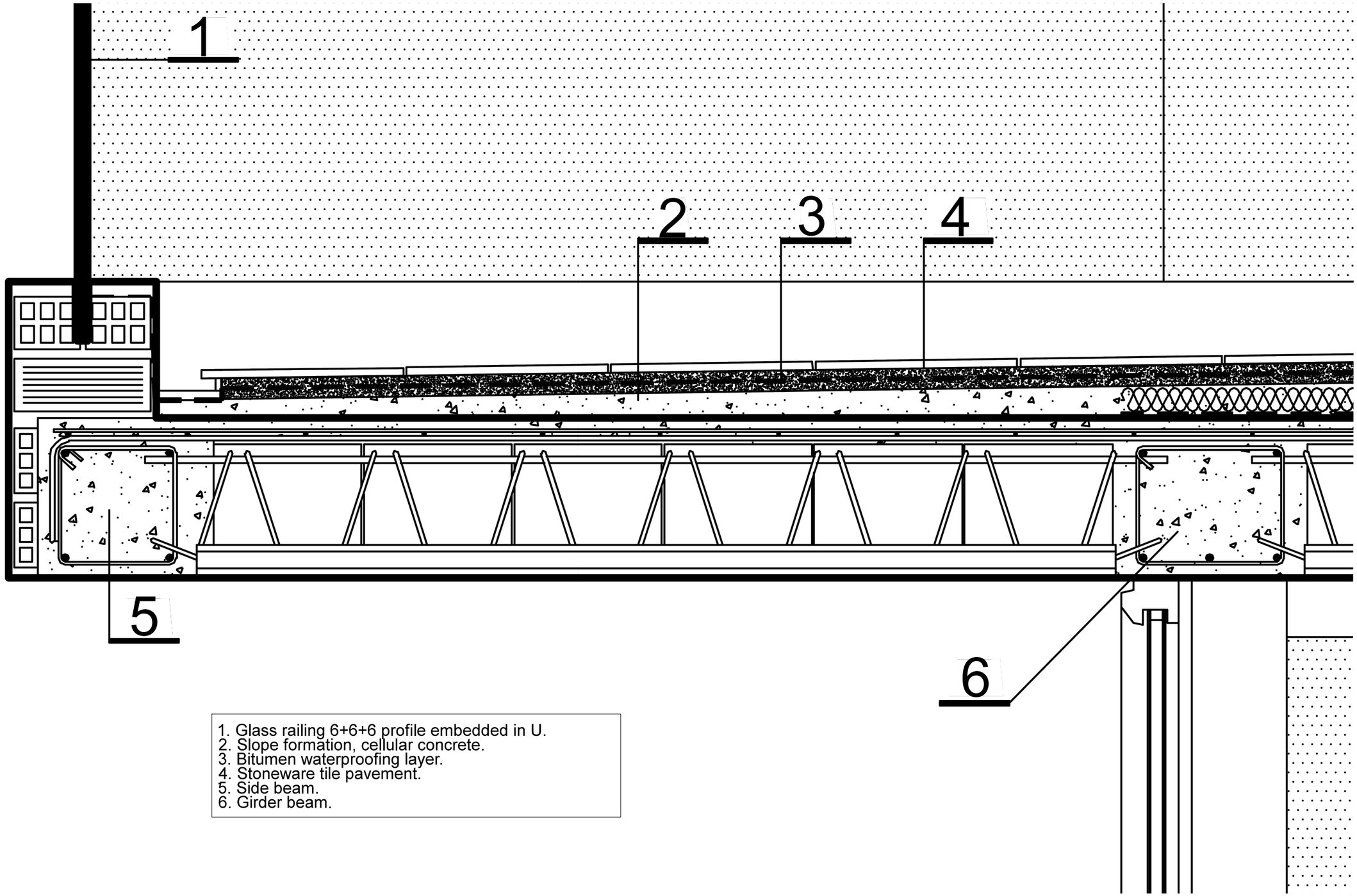
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

DETAIL 2

escale: 1/10

plan: 33

Author: SERRANO BRUZÓN, GUILLERMO



1. Glass railing 6+6+6 profile embedded in U.
2. Slope formation, cellular concrete.
3. Bitumen waterproofing layer.
4. Stoneware tile pavement.
5. Side beam.
6. Girder beam.

PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

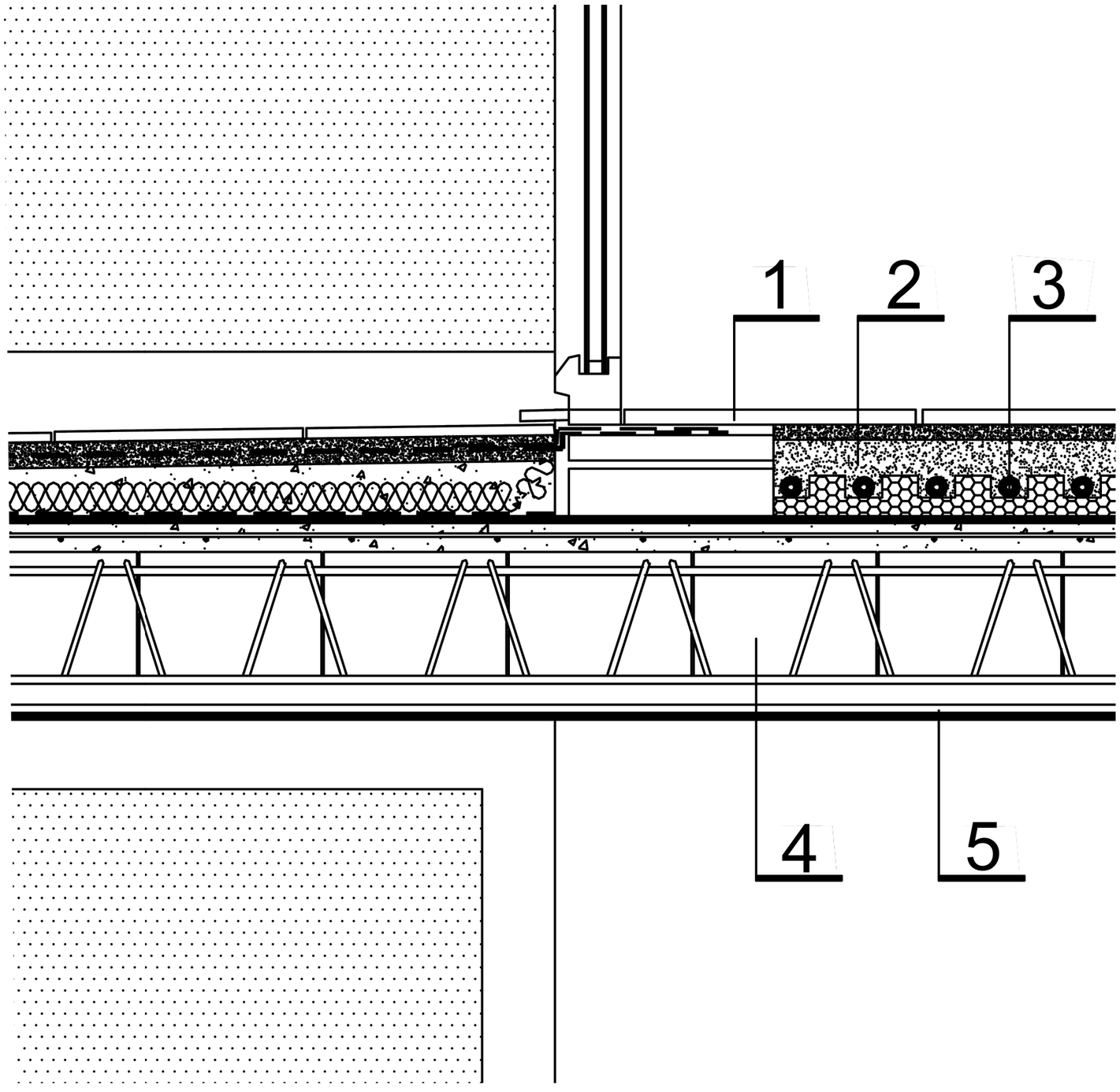
DETAIL 3

escale: 1/10

plan: 34

Author: SERRANO BRUZÓN, GUILLERMO

1. Ceramic tile pavement.
2. Regulation mortar M-4
3. Underfloor heating.
4. Unidirectional forge.
5. Perlite Lying.



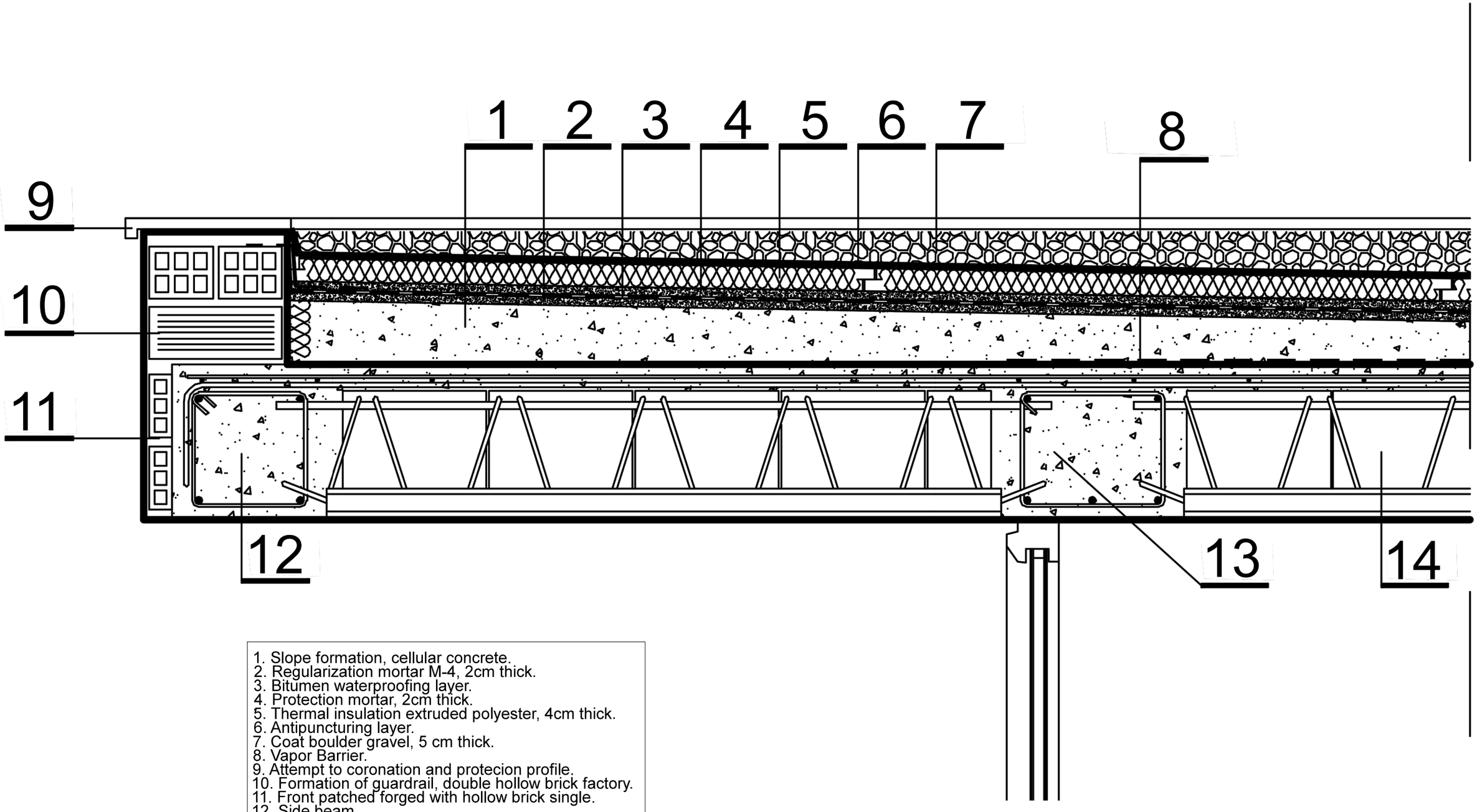
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

DETAIL 4

Author: SERRANO BRUZÓN, GUILLERMO

escale: 1/10

plan: 35



1. Slope formation, cellular concrete.
2. Regularization mortar M-4, 2cm thick.
3. Bitumen waterproofing layer.
4. Protection mortar, 2cm thick.
5. Thermal insulation extruded polyester, 4cm thick.
6. Antipuncturing layer.
7. Coat boulder gravel, 5 cm thick.
8. Vapor Barrier.
9. Attempt to coronation and protecion profile.
10. Formation of guardrail, double hollow brick factory.
11. Front patched forged with hollow brick single.
12. Side beam.
13. Girder beam.
14. Unidirectional forge.

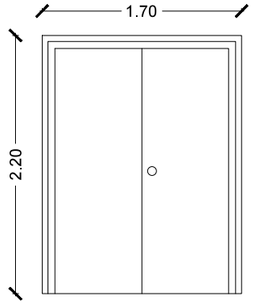
PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

DETAIL 5

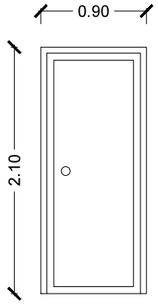
escale: 1/10

plan: 36

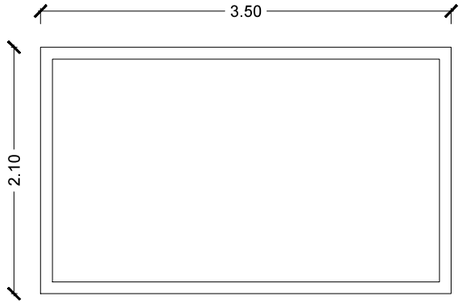
Author: SERRANO BRUZÓN, GUILLERMO



ED1 - 1u
Entrance door 1
Inox Aluminum

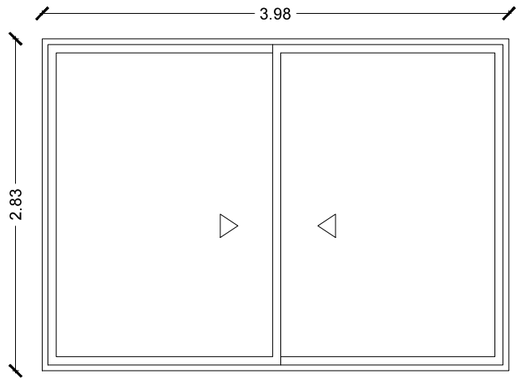


ED2 - 1u
Entrance door 2
Inox Aluminum

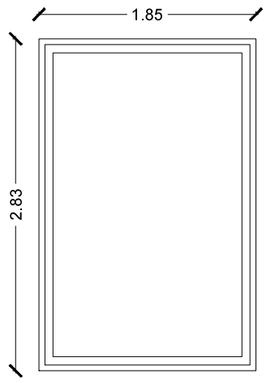


GD - 1u
Garage door
Inox Aluminum

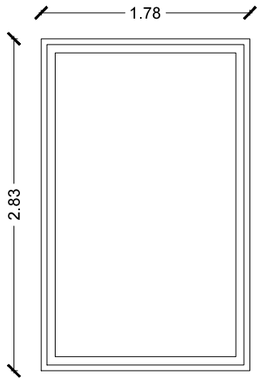
V1 - 1u
Sliding window
Inox Aluminum
Glass 4+4-10-4+4



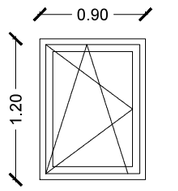
V2 - 1u
Sliding window
Inox Aluminum
Glass 4+4-10-4+4



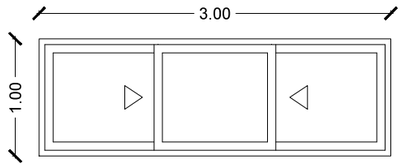
V3 - 1u
Fixed aluminum
Inox Aluminum
Glass 4+4-10-4+4



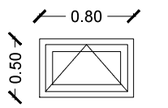
V4 - 1u
Fixed aluminum
Inox Aluminum
Glass 4+4-10-4+4



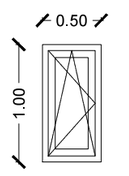
V5-V6 - 2u
Tilt window
Inox Aluminum
Glass 4+4-10-4+4



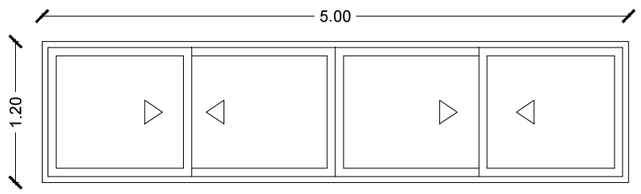
V7 - 1u
Sliding window
Inox Aluminum
Glass 4+4-10-4+4



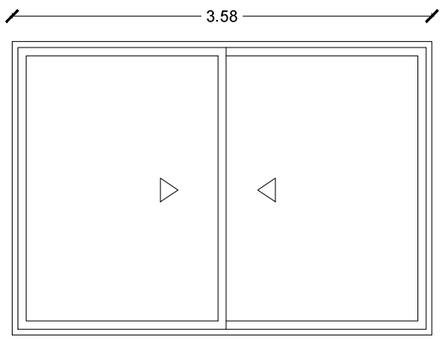
V10-V11 - 2u
Swing window
Inox Aluminum
Glass 4+4-10-4+4



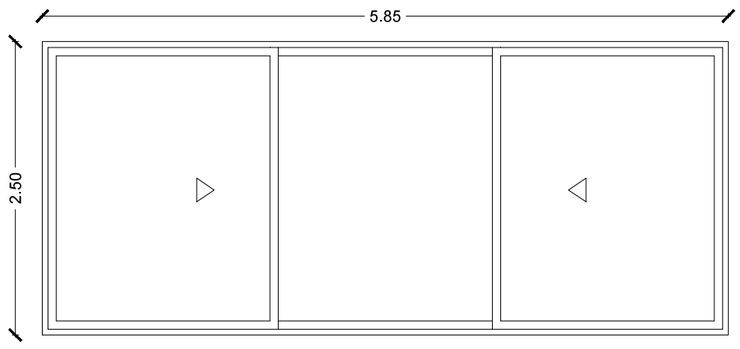
V8-V9 - 2u
Tilt window
Inox Aluminum
Glass 4+4-10-4+4



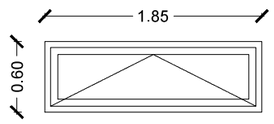
V12 - 1u
Sliding window
Inox Aluminum
Glass 4+4-10-4+4



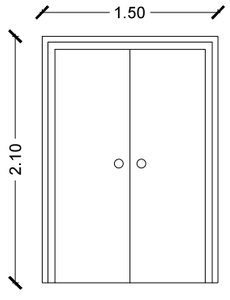
V3-V16 - 2u
Sliding window
Inox Aluminum
Glass 4+4-10-4+4



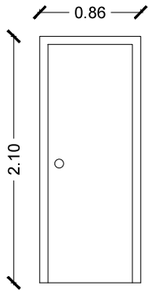
V14 - 1u
Sliding windowInox
Aluminum
Glass 4+4-10-4+4



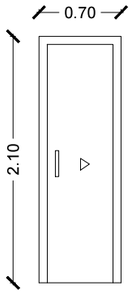
V15 - 1u
Swing window
Inox Aluminum
Glass 4+4-10-4+4



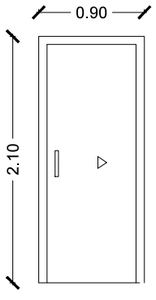
DD - 1u
Double door
Laquered wood



D2-D5 - 6u
Double door
Laquered wood
White paint



SD1 - 1u
Slide door
Laquered wood
White paint



SD2-SD3 - 2u
Slide door
Laquered wood
White paint

PROJECT OF SUMMER HOUSE IN ZAHARA DE LOS ATUNES — PRAGUE. 2016

CARPENTRY

escale: 1/50

plan: 37

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