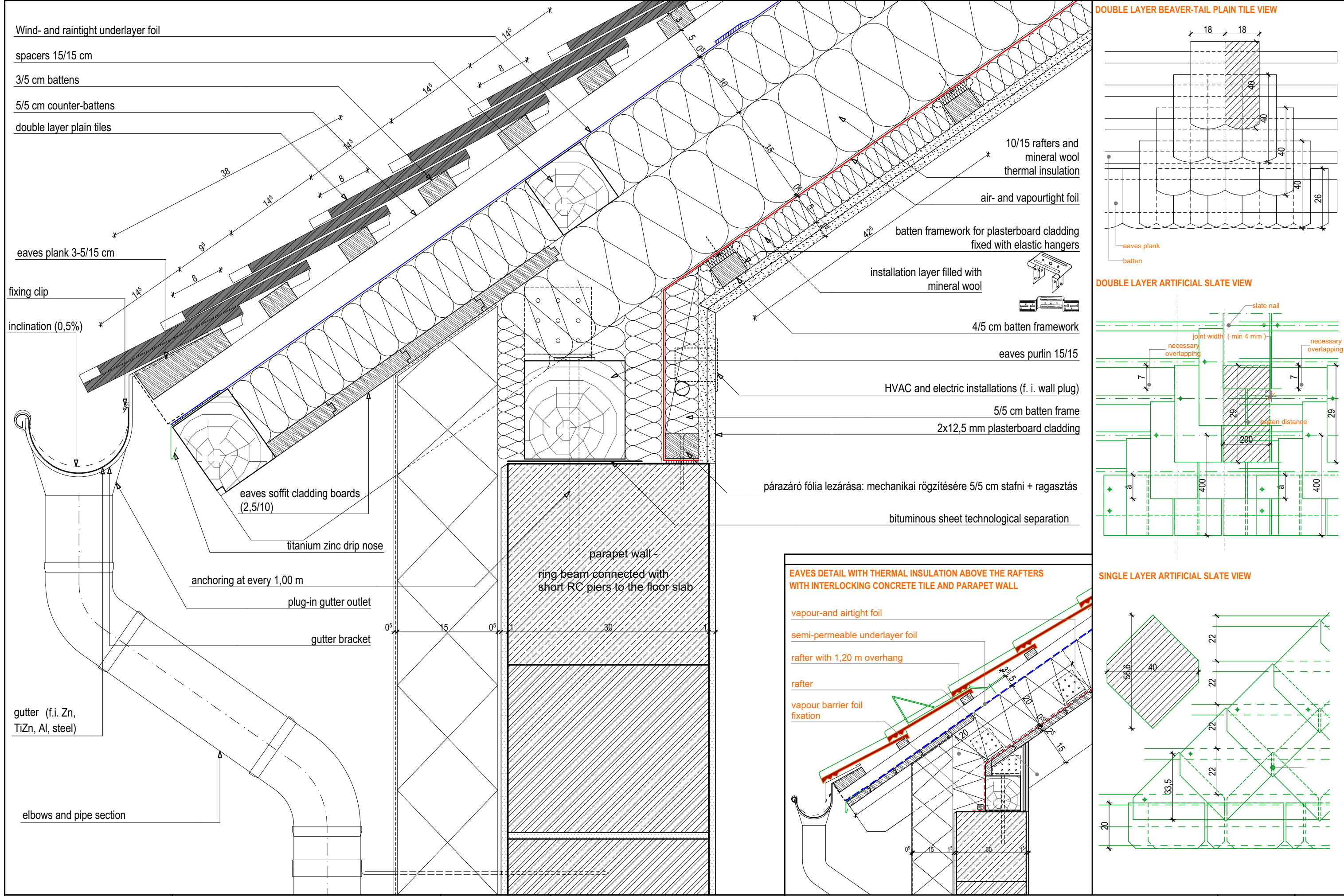


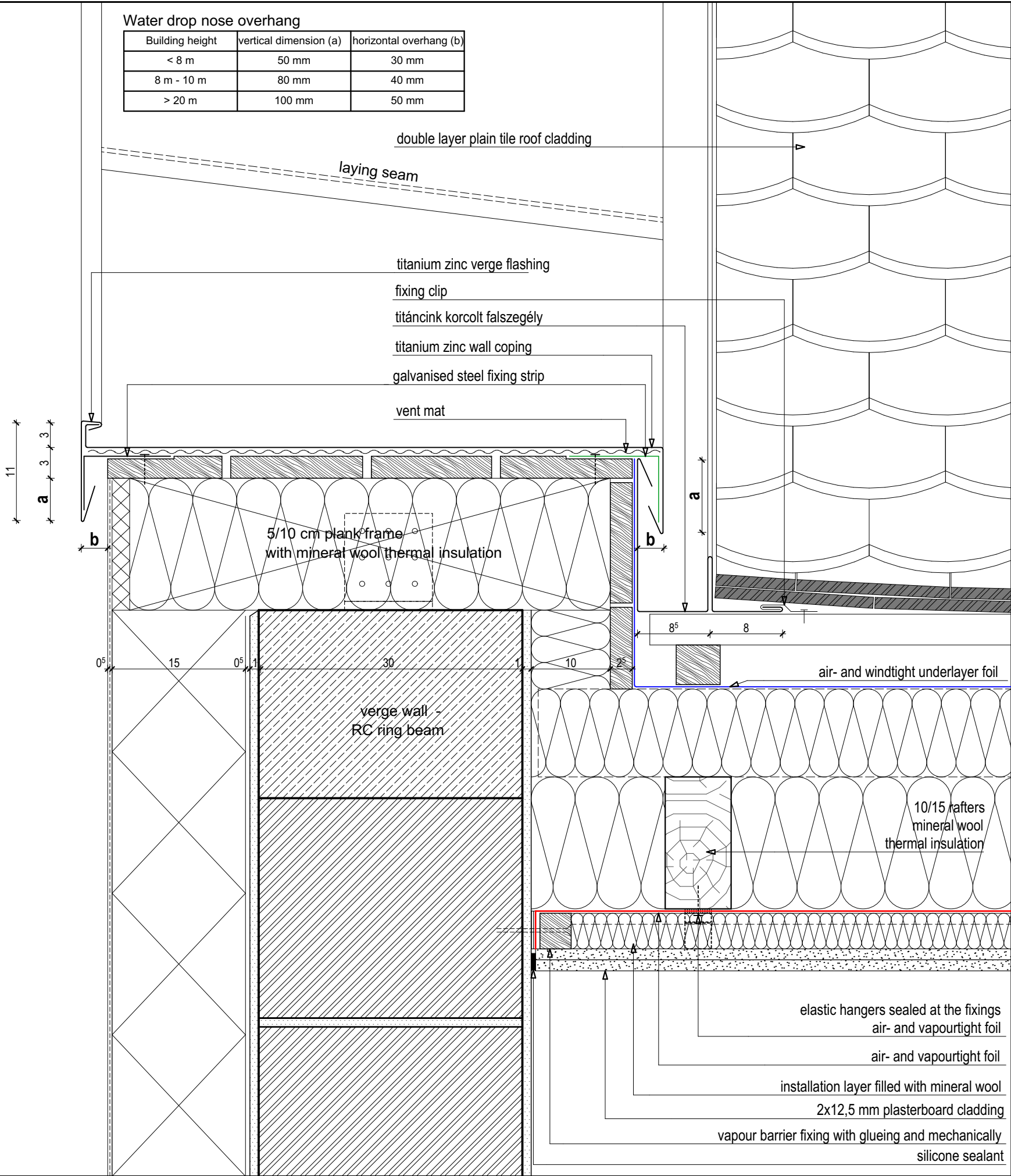
The image displays a set of architectural drawings for a building with a mansard roof. The drawings include:

- Floor Plan:** A detailed plan view showing the building's footprint, internal walls, and a central staircase. Dimensions are provided for various sections and overall lengths.
- Section A-A:** A cross-section showing the profile of the mansard roof, including the slope, height, and internal structure. Dimensions for roof pitch and height are indicated.
- Section B-B:** Another cross-section showing the building's profile from a different angle, highlighting the roof's slope and internal layout.
- Section C-C:** A longitudinal section showing the internal structure, including the staircase and the roof's profile.
- 3D Perspective:** A wireframe drawing of the building, showing its overall form and the mansard roof.
- Roof Section:** A detailed cross-section of the roof, showing the slope, height, and internal structure. It includes labels for the "boundary of attic extension" and "monolithic RC (rig) base".

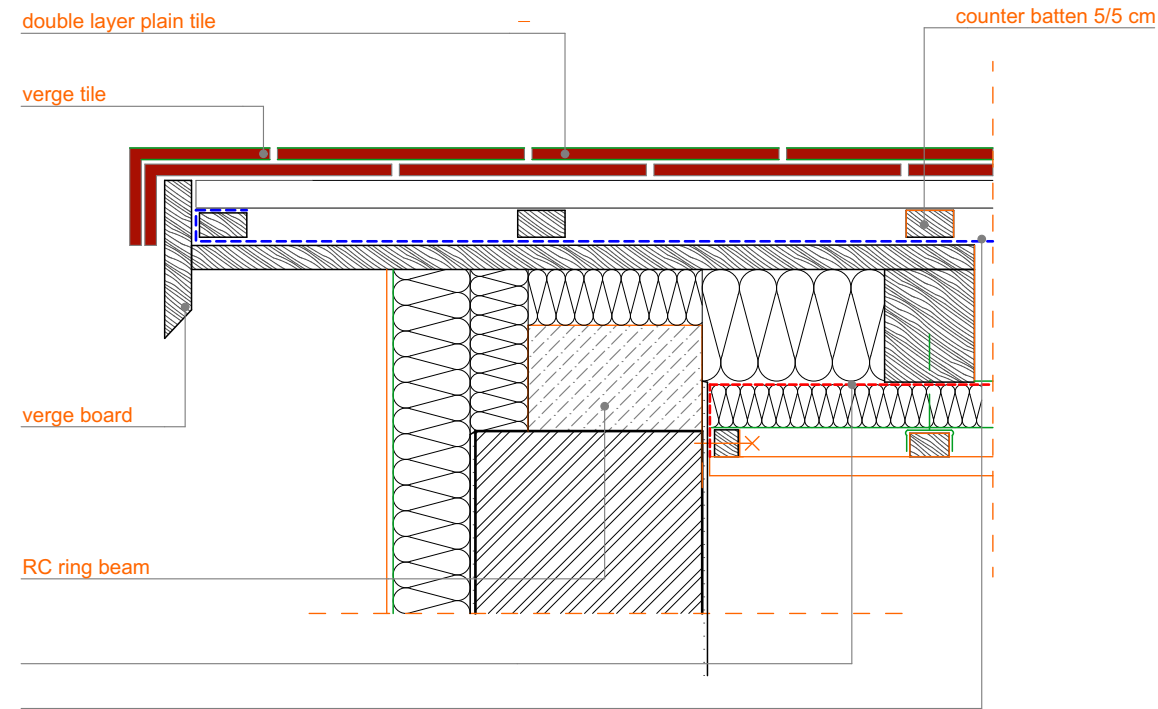
	R1 - Thermal insulation between and above the rafters roof cladding (f.i. double layer plain tile) 3,5 cm battens 5 cm counter battens and air gap 1 rtg wind- and raintight semi-permeable underlayer foil 10 cm 10/10 spacers and mineral wool thermal insulation 15 cm rafters and mineral wool thermal insulation 1 rtg air-and vapourtight foil 5 cm installation layer for HVAC and electricity battens and auxiliary mineral wool thermal insulation 2,5 cm plasterboard cladding (2*12,5 mm or 1*15 mm) $U = 1/R = 1/(1/10+1/25+0,25/0,039+0,05/0,26+0,025/0,23) = \mathbf{0,1459 \text{ W/m}^2\text{K}}$
	R2 - Thermal insulation between and under the rafters 1 rtg titanium zinc seamed roof cladding with underlayer and drainage mat 2,5 cm timber boards 5 cm counter battens and air gap 1 rtg wind- and raintight semi-permeable underlayer foil 15 cm rafters and mineral wool thermal insulation 10 cm 10/10 spacers and mineral wool thermal insulation 1 rtg air-and vapourtight foil 5 cm installation layer for HVAC and electricity battens and auxiliary mineral wool thermal insulation 2,5 cm plasterboard cladding (2*12,5 mm or 1*15 mm) $U = 1/R = 1/(1/10+1/25+0,25/0,039+0,05/0,26+0,025/0,23) = \mathbf{0,1459 \text{ W/m}^2\text{K}}$
	R3 - Thermal insulation above the rafter roof cladding (f.i. tile) 3,5 cm battens 5 cm air gap with 8/5 counter battens 1 rtg wind- and raintight semi-permeable underlayer foil 16 cm thermal insulation (f.i. PIR foam, XPS) 4,5 cm OSB or laminated board 1 rtg air-and vapourtight foil 15 cm 75/15 rafters $U_{\text{PIR}} = 1/R = 1/(1/10+1/25+0,14/0,022+0,025/0,16) = \mathbf{0,1502 \text{ W/m}^2\text{K}}$
	R4 - Thermal insulation between the rafters 1 rtg titanium zinc seamed roof cladding with underlayer and drainage mat 2,5 cm boards with 1 cm spacing 5 cm air gap with 8/5 counter battens 1 rtg wind- and raintight semi-permeable underlayer foil 2,5 cm OSB or laminated board 24-30 cm blown-in celluloid-base thermal insulation between 30 cm I-Joist/rafters with thin web 1 rtg air-and vapourtight foil 2,5 cm plasterboard cladding (2*12,5 mm or 1*15 mm) $U = 1/R = 1/(1/10+1/25+0,025/0,16+0,24/0,039+0,025/0,23) = \mathbf{0,1527 \text{ W/m}^2\text{K}}$



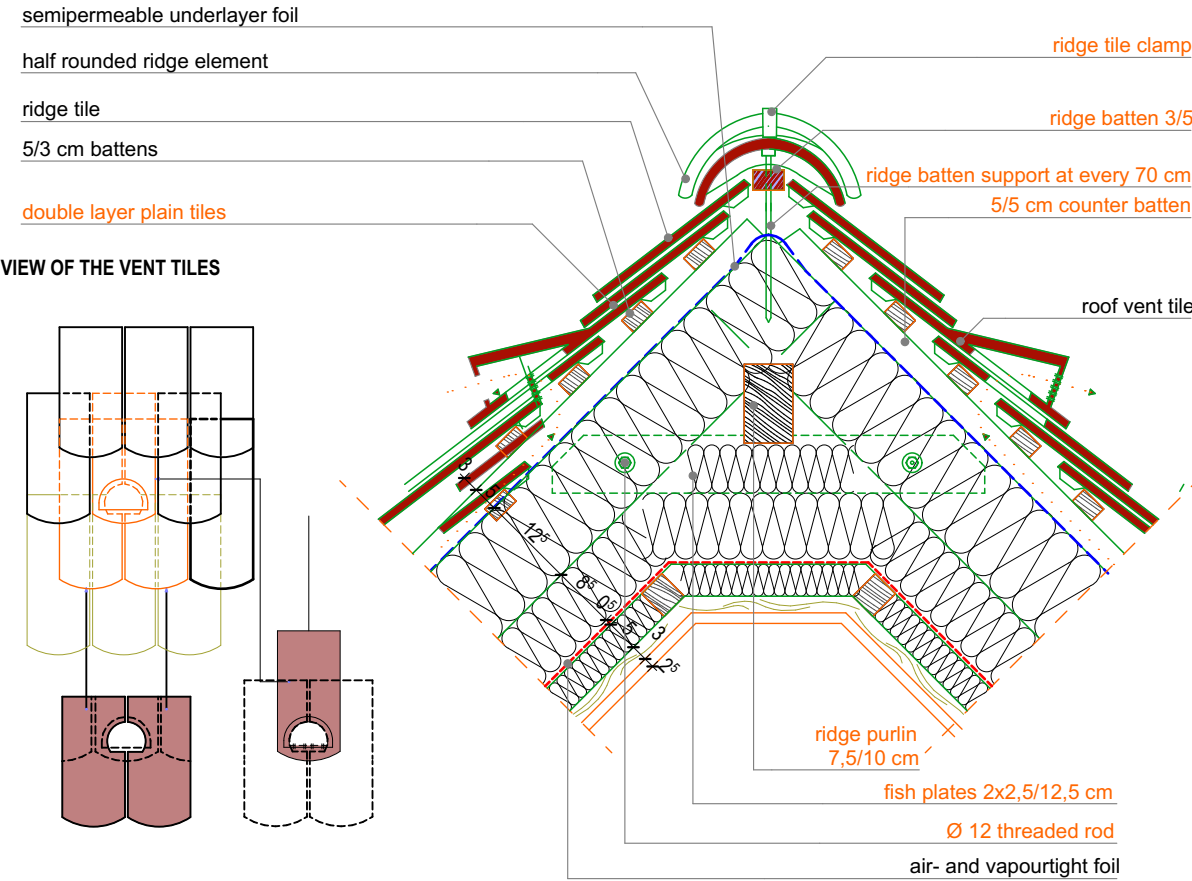
Water drop nose overhang		
Building height	vertical dimension (a)	horizontal overhang (b)
< 8 m	50 mm	30 mm
8 m - 10 m	80 mm	40 mm
> 20 m	100 mm	50 mm



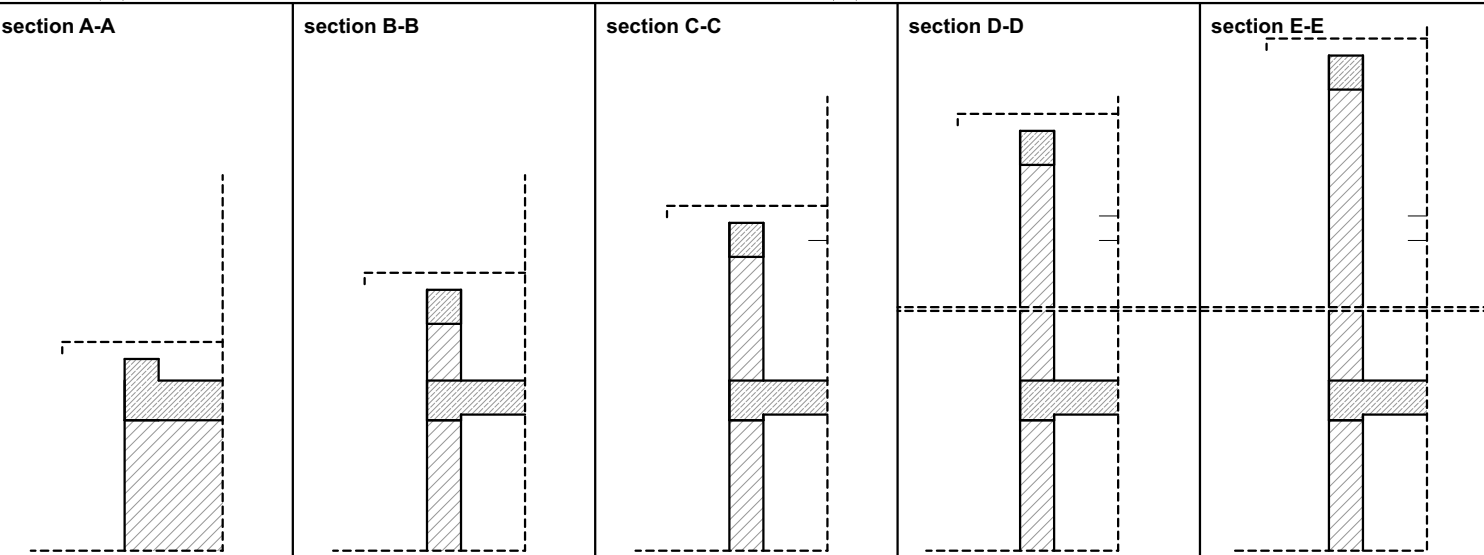
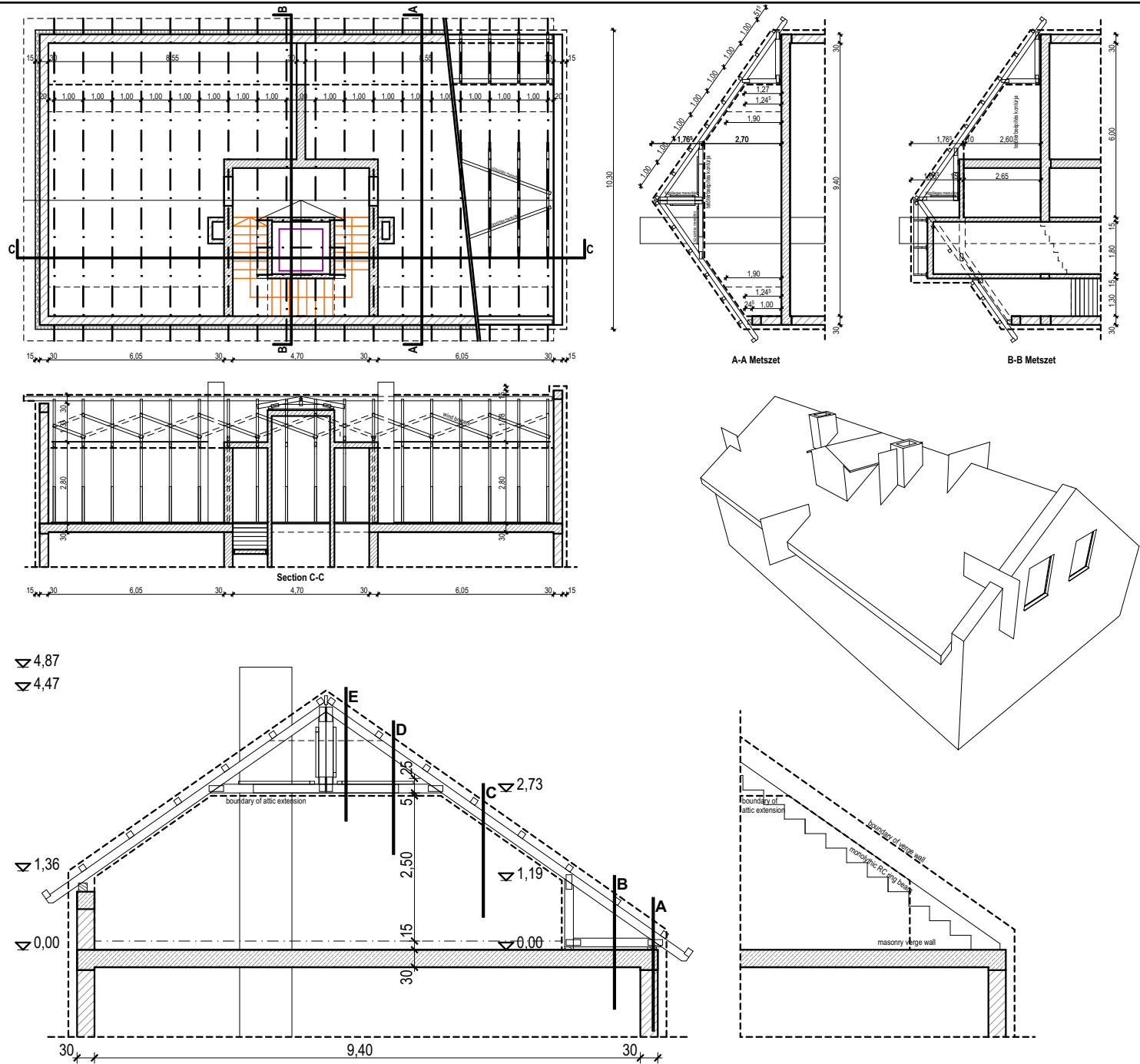
VERGE WALL WITH DOUBLE LAYER PLAIN TILE ROOF CLADDING



DOUBLE LAYER PLAIN TILE



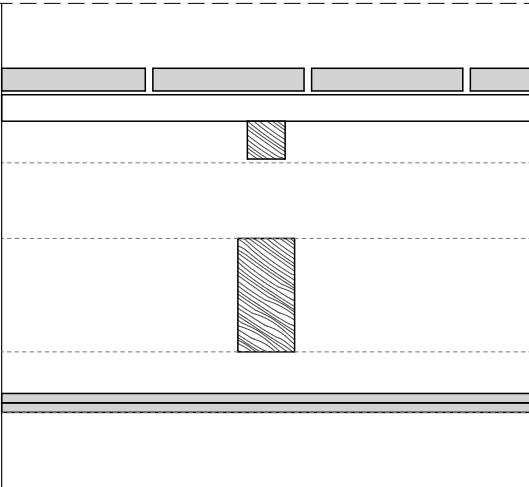
Attic extension S=1:200



Layers

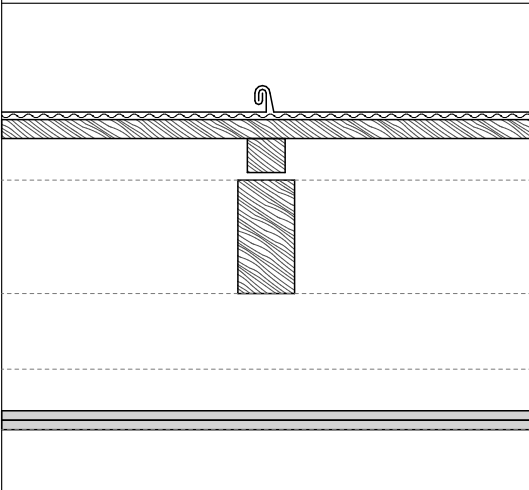
requirement: $U \leq 0,17 \text{ W/m}^2\text{K}$

R1 - Thermal insulation between and above the rafters



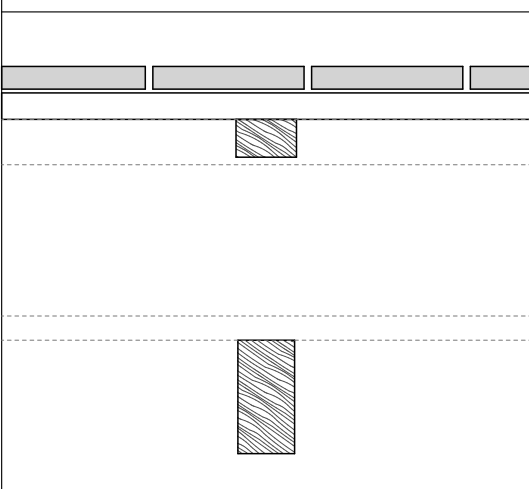
$U = 1/R = 1/(1/10+1/25+0,25/0,039+0,05/0,26+0,025/0,23) = 0,1459 \text{ W/m}^2\text{K}$

R2 - Thermal insulation between and under the rafters



$U = 1/R = 1/(1/10+1/25+0,25/0,039+0,05/0,26+0,025/0,23) = 0,1459 \text{ W/m}^2\text{K}$

R3 - Thermal insulation above the rafters

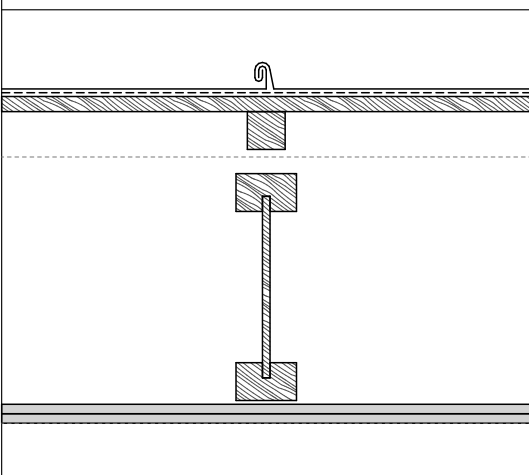


$U_{PIR} = 1/R = 1/(1/10+1/25+0,14/0,022+0,025/0,16) = 0,1502 \text{ W/m}^2\text{K}$

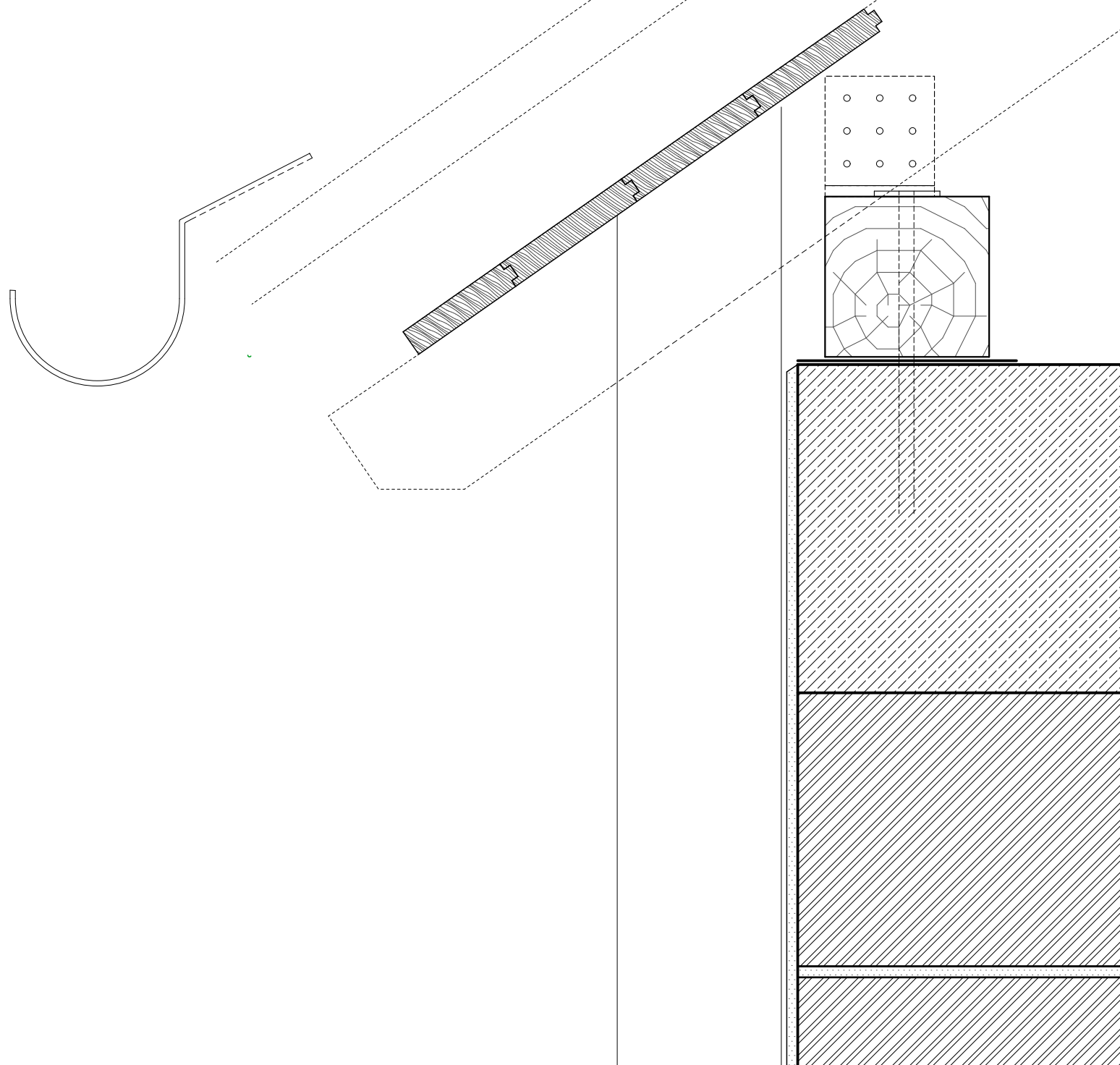
$U_{XPS} = 1/R = 1/(1/10+1/25+0,22/0,035+0,025/0,16) = 0,1519 \text{ W/m}^2\text{K}$

$U_{EPS} = 1/R = 1/(1/10+1/25+0,24/0,039+0,025/0,16) = 0,1550 \text{ W/m}^2\text{K}$

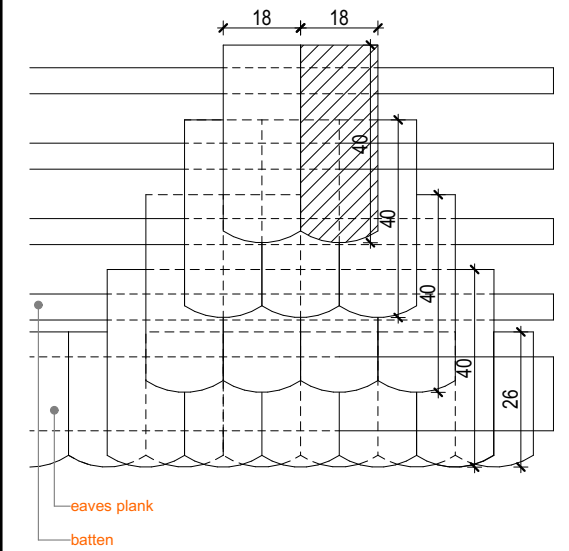
R3 - Thermal insulation between the rafters



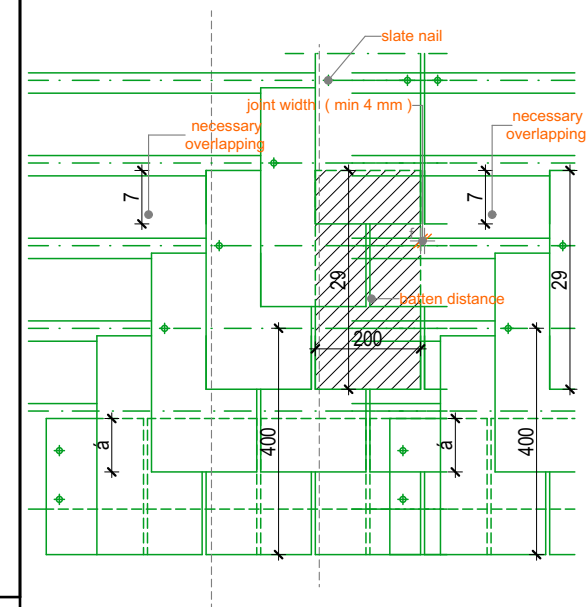
$U = 1/R = 1/(1/10+1/25+0,025/0,16+0,24/0,039+0,025/0,23) = 0,1527 \text{ W/m}^2\text{K}$



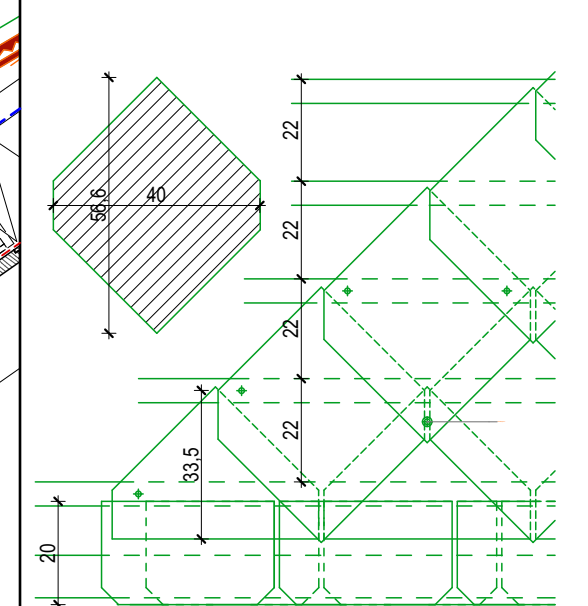
DOUBLE LAYER BEAVER-TAIL PLAIN TILE VIEW



DOUBLE LAYER ARTIFICIAL SLATE VIEW



SINGLE LAYER ARTIFICIAL SLATE VIEW



EAVES DETAIL WITH THERMAL INSULATION ABOVE THE RAFTERS WITH INTERLOCKING CONCRETE TILE AND PARAPET WALL

