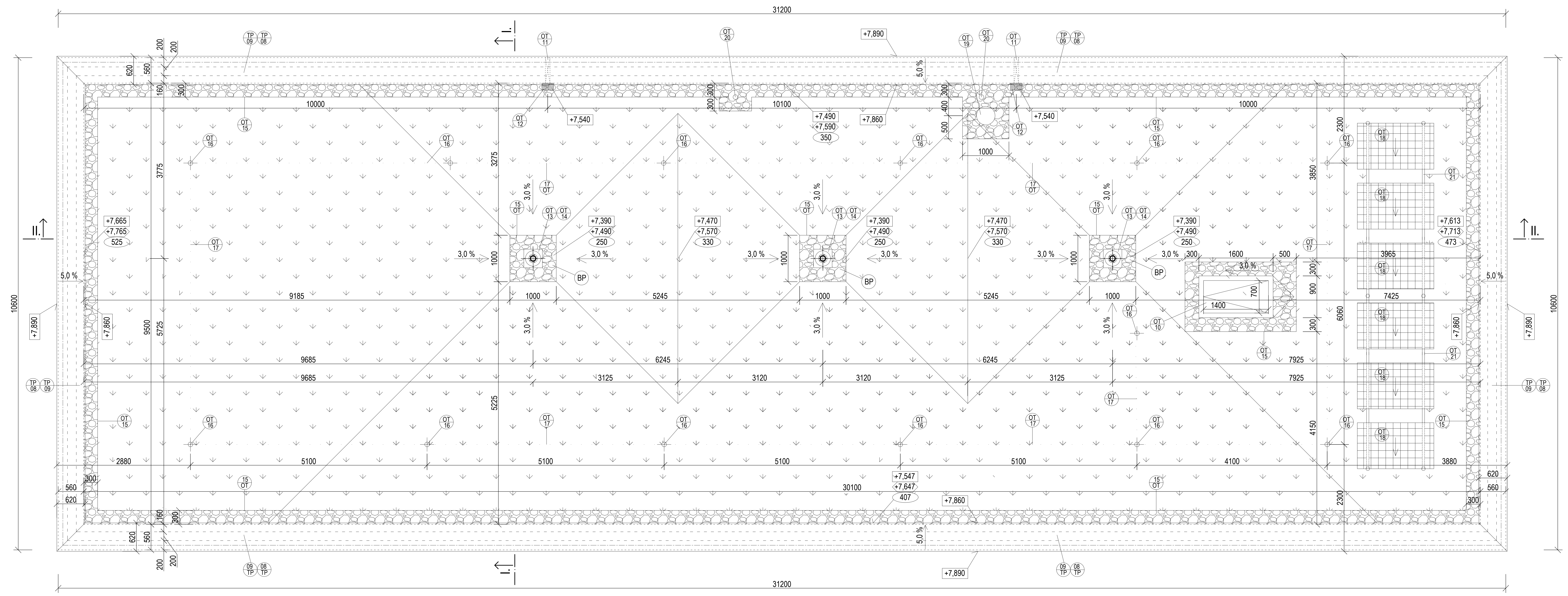
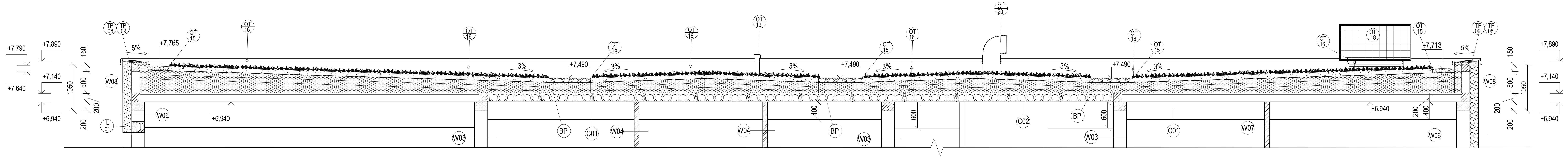
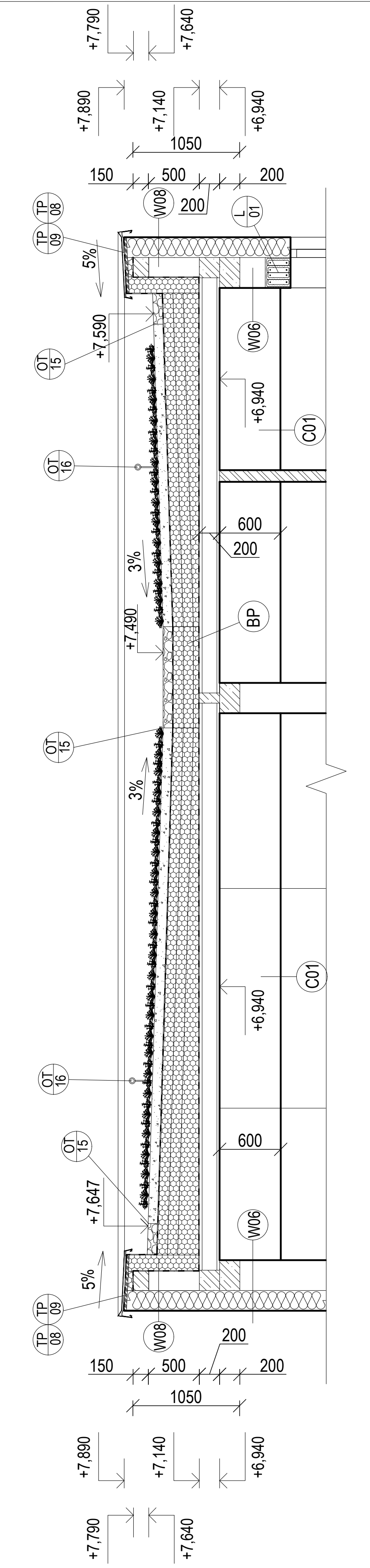
D.1.1.09 FLAT ROOF PLAN







ROOF COMPOSITION:

R01

VEGETATION LAYER - SMALL PLANTS	15-30mm
SUBSTRATE LAYER - SAND AND TARF	60mm
FILTRATION LAYER - PERMEABLE GEOTEXTILE	300g/m2
DRAINAGE AND WATER ACCUMULATION LAYER - HDPE MEMBRANE	30mm
SEPARATION LAYER - FOIL WITH FLL TEST	-
WATERPROOFING TOP - SBS MODIFIED ASPHALT FELT	4mm
WATERPROOFING BOTTOM - SBS MODIFIED ASPHALT FELT	4mm
SLOPING LAYER - EPS 100 S	min. 50mm
THERMAL INSULATION LAYER - 2X EPS 150 S	200mm
WATER VAPOUR BARRIER - BITUMENOUS FELT TYPE S	4mm
PENETRATION LAYER - ASPHALT EMULSION	-
LOAD-BEARING LAYER - SPIROLL PANEL	200mm

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LEGEND OF MATERIALS:

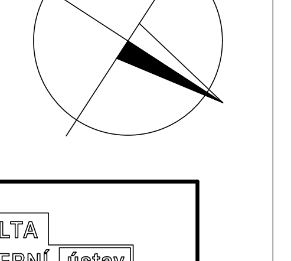
☐	LOAD-BEARING WALL FROM CERAMIC BLOCKS POROTHERM 30 PROFI, th. 300mm, LxWxH 247x300x249mm, LAID ON THIN MORTAR JOINT, Rw=48dB, REI 180 DP1
▧	PARTITION WALL FROM CERAMIC BLOCKS POROTHERM 11,5 PROFI, th. 115mm, LxWxH 497x115x249mm, LAID ON THIN MORTAR JOINT, Rw=43dB, EI 120 DP1
▩	PARTITION WALL FROM CERAMIC BLOCKS POROTHERM 8 PROFI, th. 80mm, LxWxH 497x80x249mm, LAID ON THIN MORTAR JOINT, Rw=38dB, EI 90 DP1
▧	REINFORCED CONCRETE C25/30, STEEL B50B
▭	FACADE THERMAL INSULATION FROM MINERAL WOOL, th.200mm, STRENGTH 100 kPa, λ_d=0,034 W/mK
▦	THERMAL INSULATION FROM EXPANDED POLYSTYRENE EPS - ROOF INSULATION SLOPING BOARDS EPS 100, th. min 50mm, STRENGTH 100 kPa, λ_d=0,036 W/mK - ROOF INSULATION BOARDS EPS 150, th. 2x100mm, STRENGTH 150 kPa, λ_d=0,036 W/mK - ROOF INSULATION EPS 150 IN BETWEEN WOODEN WEDGES, th. 50-60mm, STRENGTH 150 kPa, λ_d=0,036 W/mK
▬	WATER VAPOUR BARRIER - BITUMENOUS FELT TYPE S, th.3mm WATERPROOFING - 2 x SBS MODIFIED ASPHALT FELT, th. 8mm
▒	WASHED RIVER AGGREGATE - GRAVEL FRACTION 16/32
░	SUBSTRATE LAYER - SAND AND TARF, th. 60mm
░	SIMPLE INTENSIVE VEGETATION LAYER - SMALL PLANTS, SHRUBS

LEGEND OF SYMBOLS:

	SEWAGE VENTILATION CHIMNEY, SEE LIST OF ELEMENTS
⊕	SAFETY ANCHOR, SEE LIST OF ELEMENTS
········	SAFETY STAINLESS STEEL ROPE, SEE LIST OF ELEMENTS
—·—·—	LIGHTNING ROD
+7,390	HEIGHT OF THE WATERPROOFING
+7,490	HEIGHT OF THE SUBSTRATE LEVEL
250	HEIGHT OF THE THERMAL INSULATION
BP	BASE PLATE FROM EPS, 1000x1000x250m, TOP SURFACE SLOPED TOWARDS THE INLET, 3 PCS
W0x	WALL COMPOSITION, SEE LIST OF COMPOSITIONS
OT 09	ROOF ACCESS WITH ATTIC LADDER 700x1400mm, SEE LIST OF ELEMENTS, 1PCS
OT 11	SAFETY OVERFLOW TOPWET WITH BITUMEN SLEEVE, DN 125, PVC, SEE LIST OF ELEMENTS, 2PCS
OT 12	ALUMINUM SHAFT FOR SAFETY OVERFLOW TOPWET TWS C, 250x150x100mm, SEE LIST OF ELEMENTS, 2PCS
OT 13	VERTICAL ROOF OUTLET TOPWET, DN 125, WITH BITUMEN SLEEVE, SEE LIST OF ELEMENTS, 3PCS
OT 14	SHAFT FOR GREEN ROOF WITH PERFORATED LID TOPWET, 400x400mm,PVC SEE LIST OF ELEMENTS, 3PCS
OT 15	ALUMINUM GRAVEL CAPTURE L PROFILE TOPWET, 100x80mm, INSTALLED AROUND GRAVEL, SEE LIST OF ELEMENTS
OT 16	SAFETY ANCHOR TOPSAFE FOR CONCRETE CONSTRUCTIONS, 13 PCS, SEE LIST OF ELEMENTS
OT 17	STAINLESS STEEL CABLE STRETCHED BETWEEN SAFETY ANCHORS, TOTAL LENGTH 64,5m, SEE LIST OF ELEMENTS
TP 08	BOTTOM GALVANIZED STEEL SHEET , th. 0,55 mm, ANCHORED BY SCREWS TO THE PLYWOOD, SEE LIST OF ELEMENTS
TP 09	TOP GALVANIZED STEEL SHEET , th. 0,55 mm, ANCHORED BY SCREWS TO THE PLYWOOD, SEE LIST OF ELEMENTS
OT 18	PHOTOVOLTAIC PANELS 60 CELLS, 260-300W, 1000x1650mm, ON GRID
OT 19	VENTILATION CHIMNEY FOR TOILET DRAINAGE, TOPWET 110 PVC DN 100, WITH BITUMEN SLEEVE, HEIGHT min. 500mm ABOVE TOP LAYER OF ROOF, 2 PIECES
OT 20	EXHAUST AIR CHIMNEY FROM HVAC , HEIGHT min. 500mm ABOVE TOP LAYER OF THE ROOF, DESIGNED ACC. TO TZB , NOT PART OD THIS DP
OT 21	GRID FOR PHOTOVOLTAIC PANELS, ALUMINUM PROFILE ANCHORED TO THE ROOF

NOTES:

- FLAT ROOF IS DESIGNED AS SIMPLE INTENSIVE VEGETATION ROOF
- ROOF WATERPROOFING IS MADE OF 2 LAYERS OF ASPHALT FELTS
- ROOF SLOPING LAYER IS MADE OF EPS SLOPING BOARDS WITH 3% SLOPE, th. min. 50mm
- SLOPING OF PARAPET WALL IS MADE BY WOODEN WEDGES THAT HAVE EPS THERMAL INSULATION IN BETWEEN THEM, SLOPE IS 5%
- FOR ANCHORING OF PARAPET WALL FLASHINGS, PLYWOOD IS USED, th. 21mm
- ROOF OUTLETS AND SAFETY OVERFLOWS ARE DESIGNED ACC. TO CALCULATION, SEE CALCULATIONS
- HEIGHT OF SAFETY OVERFLOW IS MIN. 50 mm ABOVE WATERPROOFING
- AROUND PARAPET WALL AND ELEMENTS PROTRUDING ABOVE ROOF LEVELS GRAVEL STRIP th. min. 300mm IS DESIGNED
- IT IS NECESSARY TO CARRY OUT REGULAR INSPECTIONS AND MAINTENANCE OF THE ROOF MIN 2x PER YEAR
- DURING ALL CONSTRUCTION WORKS IT IS IMPORTANT TO FOLLOW LEGAL REGULATION, NORMS, TECHNOLOGICAL PROCEDURES AND BOZP



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COURSE	DIPLOMA THESIS	FAKULTA STAVEBNÍ ústav pozemního stavitelství	
DRAWN BY	BARBORA HUSÁROVÁ		
SUPERVISED BY	ING. JAN MÜLLER PH.D.		
INVESTOR			
LOCATION	POŘÁDÍ, 687 51 NIVNICE, PARCELS No. 65, 64, 63, 61 ,57		
PROJECT TITLE	MUNICIPAL CENTRE IN NIVNICE	PAPER FORMAT	1260x420
BUILDING OBJECT	BO 01 MUNICIPAL CENTRE	DATE	01/2025
PART	D.1.1 ARCHITECTURAL BUILDING SOLUTION	PROJ. PHASE	DPS
DRAWING TITLE:	FLAT ROOF PLAN	SCALE 1:50	DRAWING NO. D.1.1.09