

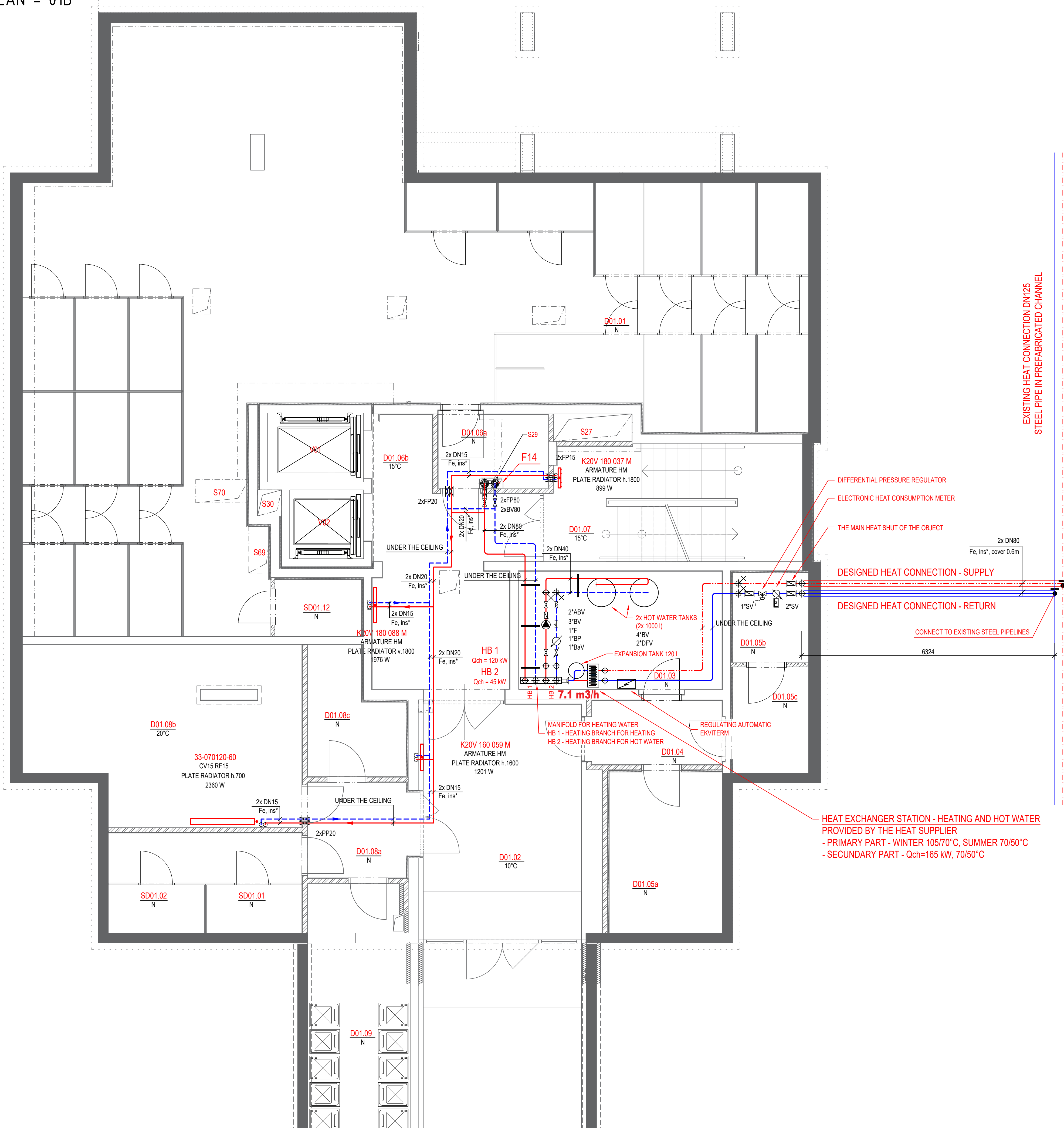
NUMBER OF ROOM	NAME OF ROOM	AREA (m <sup>2</sup> )
D01.01	CELLAR CUBICLE	1102,54
D01.02	BASEMENT CORRIDOR 2	23,31
D01.03	TECHNICAL ROOM BOILER ROOM	14,74
D01.04	PANTRY	5,83
D01.05a	TECHNICAL ROOM ELECTRO	11,50
D01.05b	TECHNICAL ROOM ELECTRO	4,41
D01.05c	TECHNICAL ROOM ELECTRO	15,27
D01.06a	PANTRY	5,16
D01.06b	BASEMENT CORRIDOR 1.1	21,94
D01.07	STAIRCASE	16,60
D01.08a	PANTRY	6,80
D01.08b	COMMON ROOM	28,67
D01.08c	TECHNICAL ROOM - HTI	6,52
SD01.01	CELLAR	2,86
SD01.02	CELLAR	2,88
V01	LIFT	-
V02	LIFT	-

LEGEND OF MATERIALS

- HEATING WATER - SUPPLY
- HEATING WATER - RETURN
- - - CENTRAL HEAT SUPPLY - SUPPLY
- - - CENTRAL HEAT SUPPLY - RETURN
- PLATE RADIATOR
- FLOOR CONVECTOR
- TUBE RADIATOR
- 33-040140-60 - PRODUCT TYPE - REFERENCE PRODUCT
- CV15 RF15 - PRODUCT PLUG IN - CONTROL VALVE, REGULATING FITTING
- PLATE RADIATOR h.400 - HEIGHT OF RADIATOR
- 780 W - RADIATOR POWER
- F14 - LABEL OF RISER
- M 14/1 - 1F(4) - STOREY MANIFOLD
- Q = 15 006 W; 516 kg/hrs - NUMBER OF MANIFOLD (NUMBER OF CIRCUITS)
- 70/50°C - POWER / FLOW
- 70/50°C - TEMPERATURE GRADIENT
- SV - FLANGE SHUT-OFF VALVE
- AVR - AUTOMATIC FLOW REGULATOR
- DPR - DIFFERENTIAL PRESSURE REGULATOR
- EHC - ELECTRONIC HEAT CONSUMPTION METER
- BV - BALL VALVE
- DFV - BALL DUMP AND FILLING VALVE
- ABV - AUTOMATIC BLEEDING VALVE
- T - THERMOMETER
- AX - AXIALLY COMPENSATOR
- M - FIRE PROTECTOR
- DF - DIRECT FILTER
- BP - BACKFLOW PREVENTER
- BV - BALANCING VALVE - MEASURING PRESSURE, FLOW AND TEMPERATURE
- Fe, ins\* - STEEL PIPELINES, PIPE INSULATION IN SCRUCTURES
- PE-Xa, ins - PE-Xa PIPES, INSULATION OF PIPING LEADED FREELY
- PE-Xa, ins - MINERAL INSULATION WITH ALUMINUM FOIL

NOTES:

- 1) PIPING CH IS ROUTED FROM MANIFOLD TO RADIATORS / CONVECTORS IN THE FLOOR
- 2) PIPING IN THE FLOOR:
  - PE-Xa/A/PE; PN 10
  - HEAT INSULATION th. 13 mm
- 3) TEMPERATURE GRADIENT 70 / 50 °C
- 4) PIPELINE BETWEEN THE FIRE SECTIONS WILL BE EQUIPPED WITH FIRE SEALS
- 5) PIPE RISERS - UNDER THE CEILING OF EACH FLOOR WILL BE COMPENSATOR
- 6) THE SYSTEM WILL BE POSSIBLE TO BLEED IN THE HIGHEST PLACE; DRAINING WILL BE LOCATED IN THE LOWEST PLACE
- 7) TILT OF PIPING WILL BE MINIMALLY 3 mm FOR EVERY METER OF LENGTH



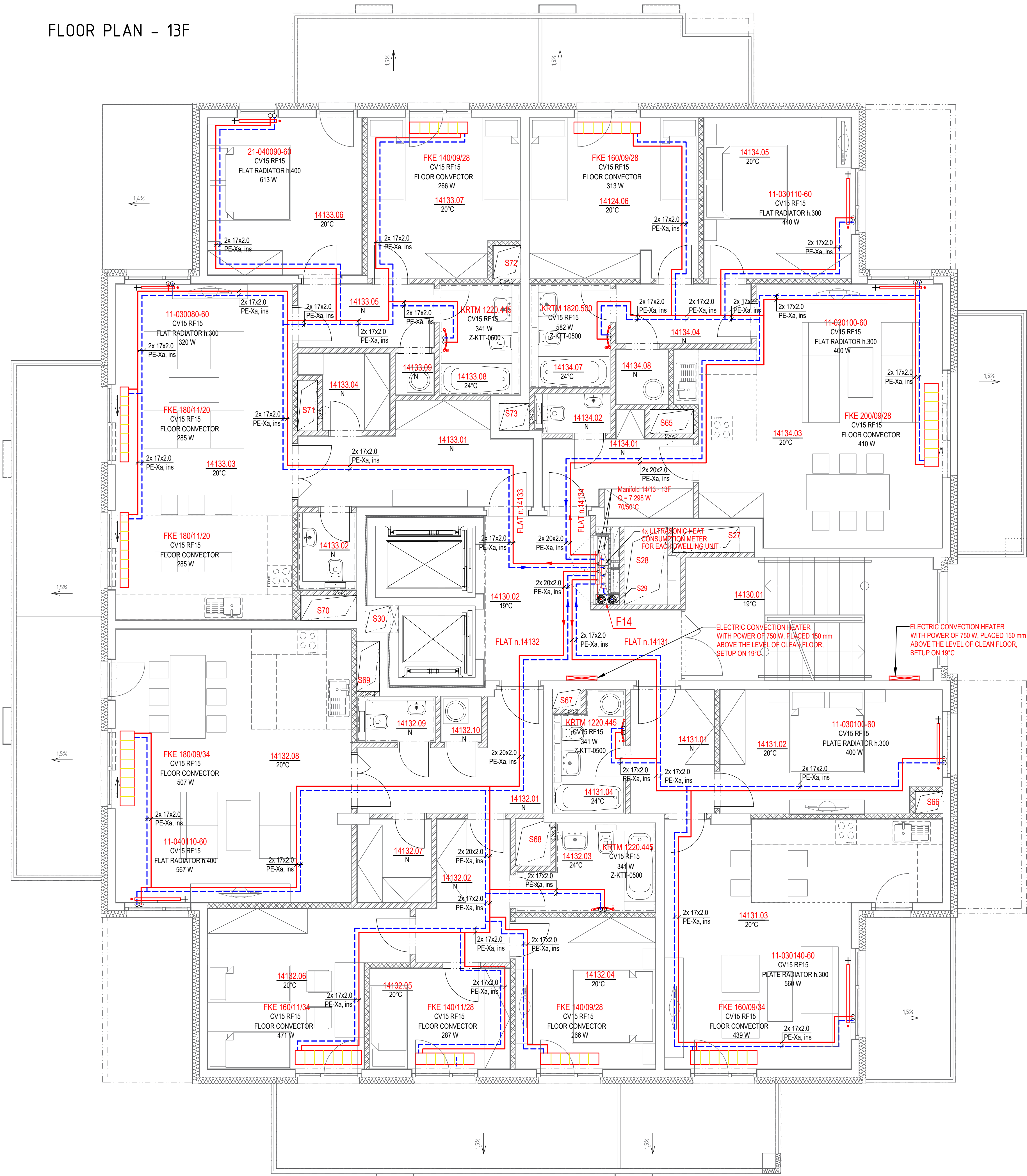
Author Bc. David Šnajdr	Supervisor doc. Ing. Michal Kabrhel, Ph.D.	Academic Year 2018-2019	Faculty of Civil Engineering CTU in Prague
125DPM - Master Thesis			Department of Indoor Environmental and Building Services Engineering
Category Name CZECHIA Heating System Design			
Title FLOOR PLAN - 01B	Drawing Number A1.1	Date 05/2019	Drawing Scale 1:50







FLOOR PLAN - 13F



LEGEND OF MATERIALS

- HEATING WATER - SUPPLY
- HEATING WATER - RETURN
- - - - - CENTRAL HEAT SUPPLY - SUPPLY
- - - - - CENTRAL HEAT SUPPLY - RETURN
- + + + + + PLATE RADIATOR
- FLOOR CONVECTOR
- TUBE RADIATOR
- 33-040140-60 CV15 RF15 PLATE RADIATOR h.400 780 W
- F14 STOREY MANIFOLD
- M 14/1 - 1F(4) NUMBER OF MANIFOLD (NUMBER OF CIRCUITS)
- Q = 15 006 W; 516 kg/hrs
- 70/50°C
- SV - FLANGE SHUT-OFF VALVE
- AV - AUTOMATIC FLOW REGULATOR
- DPV - DIFFERENTIAL PRESSURE REGULATOR
- ABV - AUTOMATIC BLEEDING VALVE
- AX - AXIALLY COMPENSATOR
- M - FIRE PROTECTOR
- D - DIRECT FILTER
- BP - BACKFLOW PREVENTER
- BV - BALANCING VALVE - MEASURING PRESSURE, FLOW AND TEMPERATURE
- Fe, ins\* - STEEL PIPELINES, PIPE INSULATION IN STRUCTURES
- PE-Xa, ins - PE-Xa PIPES, INSULATION OF PIPING LEADED FREELY - MINERAL INSULATION WITH ALUMINUM FOIL

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  - PE-Xa/A/PE; PN 10
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TABLE OF ROOMS - 13F

FLAT n. 14131

NUMBER OF ROOM	NAME OF ROOM	AREA (m <sup>2</sup> )
14131.01	HALL	6,36
14131.02	BEDROOM	15,35
14131.03	LIVING ROOM + KITCHENETTE	31,38
14131.04	BATHROOM	4,66
TOTAL AREA:		57,75

FLAT n. 14132

NUMBER OF ROOM	NAME OF ROOM	AREA (m <sup>2</sup> )
14132.01	HALL	9,17
14132.02	CORRIDOR	7,13
14132.03	BATHROOM	6,03
14132.04	BEDROOM	12,34
14132.05	BEDROOM	8,29
14132.06	BEDROOM	16,10
14132.07	CHANGING ROOM	3,50
14132.08	LIVING ROOM + KITCHENETTE	37,54
14132.09	WC	2,13
14132.10	PANTRY	1,15
TOTAL AREA:		103,38

FLAT n. 14133

NUMBER OF ROOM	NAME OF ROOM	AREA (m <sup>2</sup> )
14133.01	HALL	11,69
14133.02	WC	2,58
14133.03	LIVING ROOM + KITCHENETTE	35,07
14133.04	CHANGING ROOM	3,26
14133.05	CORRIDOR	5,29
14133.06	BEDROOM	14,17
14133.07	BEDROOM	13,58
14133.08	BATHROOM	5,12
14133.09	PANTRY	1,01
TOTAL AREA:		91,77

FLAT n. 14134

NUMBER OF ROOM	NAME OF ROOM	AREA (m <sup>2</sup> )
14134.01	HALL	6,93
14134.02	WC	1,81
14134.03	LIVING ROOM + KITCHENETTE	35,13
14134.04	CORRIDOR	4,93
14134.05	BEDROOM	13,59
14134.06	BEDROOM	15,58
14134.07	BATHROOM	4,80
14134.08	PANTRY	1,74
TOTAL AREA:		84,51

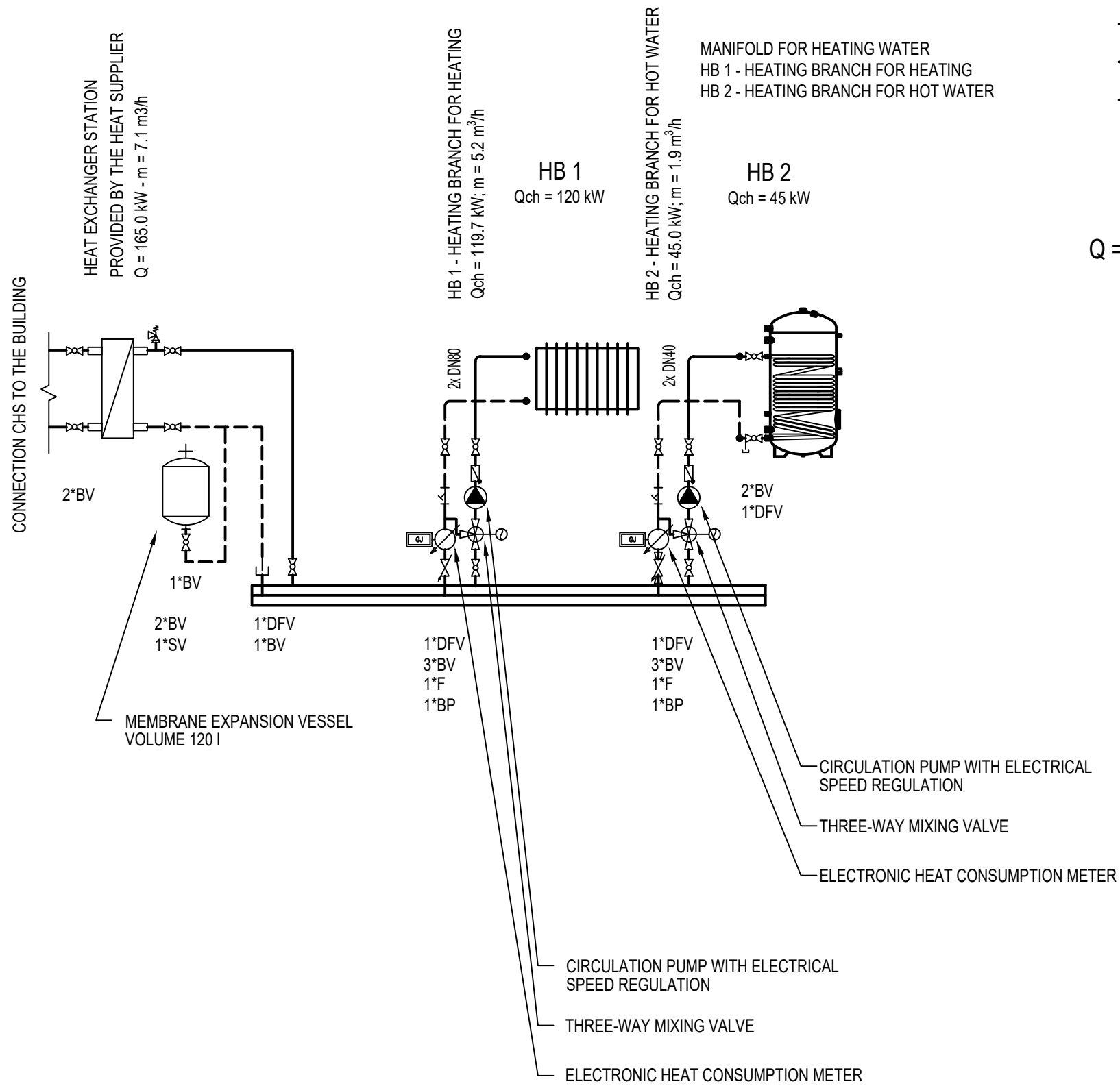
COMMON AREA

NUMBER OF ROOM	NAME OF ROOM	AREA (m <sup>2</sup> )
14130.01	STAIRCASE	17,28
14130.02	CORRIDOR	14,90
V01	LIFT	-
V02	LIFT	-
TOTAL AREA:		32,18

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Title FLOOR PLAN - 13F (12-15F)	Drawing Number A1.3	Date 05/2019	Drawing Scale 1:50

# FUNCTION PATTERN OF MANIFOLD FOR HEATING AND DHW

# LEGEND OF MATERIALS

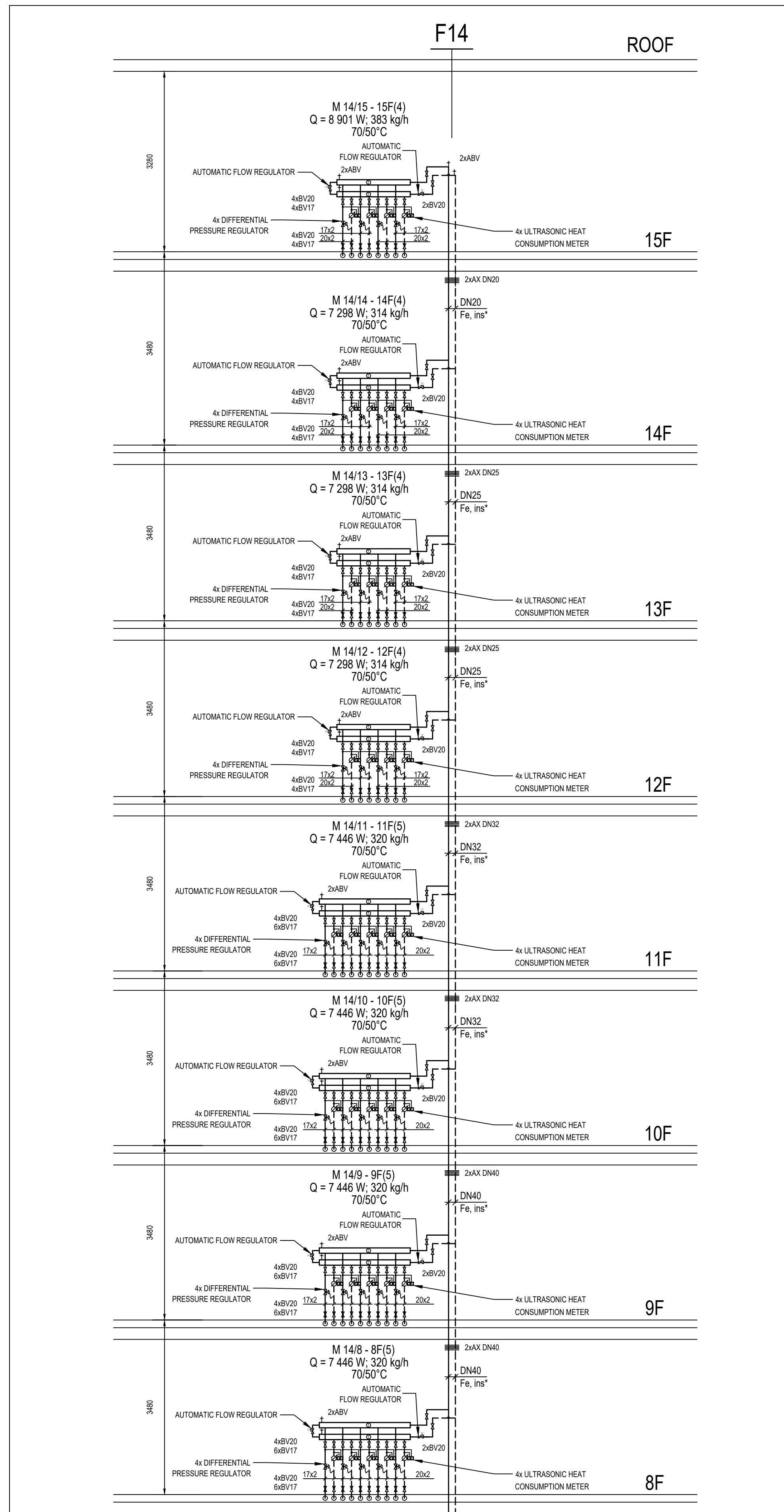
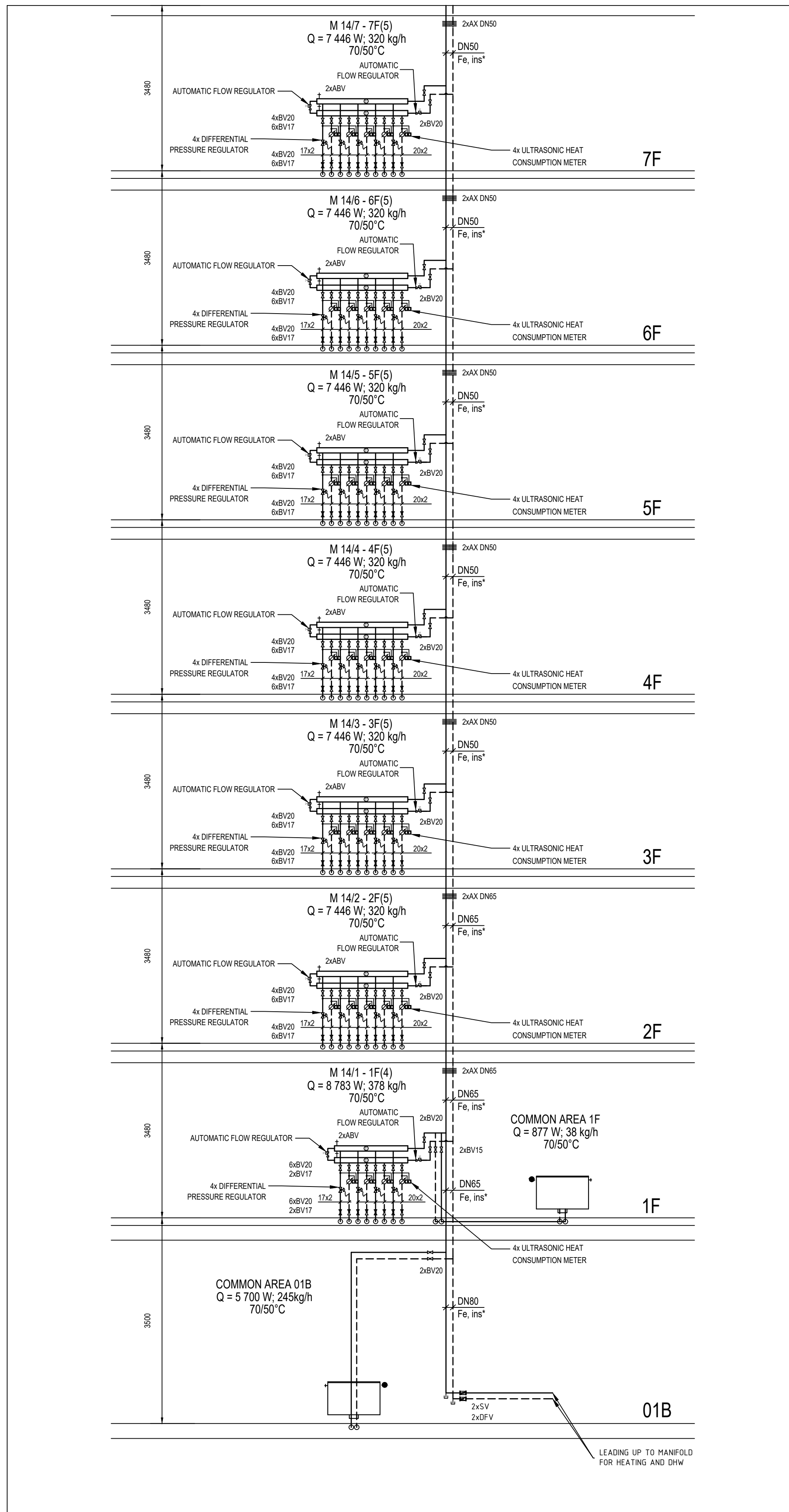


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- - HEATING WATER - RETURN
- ..... - CENTRAL HEAT SUPPLY - SUPPLY
- - CENTRAL HEAT SUPPLY - RETURN
- F14 - LABEL OF RISER
- STOREY MANIFOLD
- M 14/1 - 1F(4) - NUMBER OF MANIFOLD (NUMBER OF CIRCUITS)
- Q = 15 006 W; 516 kg/hrs - POWER / FLOW
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- PE-Xa, ins - PE-Xa PIPES, INSULATION OF PIPING LEADED FREELY  
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Category Name <b>CZECHIA</b> Heating System Design			
Title <b>PATTERN OF MANIFOLD</b>	Drawing Number A1.4	Date 05/2019	Drawing Scale 1:50



# VERTICAL SCHEME - FLOOR MANIFOLDS



## LEGEND OF MATERIALS

- HEATING WATER - SUPPLY
- HEATING WATER - RETURN
- CENTRAL HEAT SUPPLY - SUPPLY
- CENTRAL HEAT SUPPLY - RETURN
- PLATE RADIATOR
- FLOOR CONVECTOR
- TUBE RADIATOR
- PRODUCT TYPE - REFERENCE PRODUCT
- PRODUCT PLUG IN - CONTROL VALVE, REGULATING FITTING
- HEIGHT OF RADIATOR
- RADIATOR POWER
- LABEL OF RISER
- STOREY MANIFOLD
- NUMBER OF MANIFOLD (NUMBER OF CIRCUITS)
- POWER / FLOW
- TEMPERATURE GRADIENT
- FLANGE SHUT-OFF VALVE
- AUTOMATIC FLOW REGULATOR
- DIFFERENTIAL PRESSURE REGULATOR
- ELECTRONIC HEAT CONSUMPTION METER
- BALL VALVE
- BALL DUMP AND FILLING VALVE
- AUTOMATIC BLEEDING VALVE
- THERMOMETER
- AXIALLY COMPENSATOR
- FIRE PROTECTOR
- DIRECT FILTER
- BACKFLOW PREVENTER
- BALANCING VALVE - MEASURING PRESSURE, FLOW AND TEMPERATURE
- STEEL PIPELINES, PIPE INSULATION IN STRUCTURES
- FOAM POLYETHYLENE SLEEVE INSULATION
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## NOTES:

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- 2) PIPING IN THE FLOOR:
  - PE-Xa/A/PE, PN 10
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Category Name CZECHIA Heating System Design			
Title VERTICAL SCHEME - MANIF.		Drawing Number A1.5	Date 05/2019 Drawing Scale 1:50