
Supplementary information

Gene-drive-capable mosquitoes suppress patient-derived malaria in Tanzania

In the format provided by the
authors and unedited

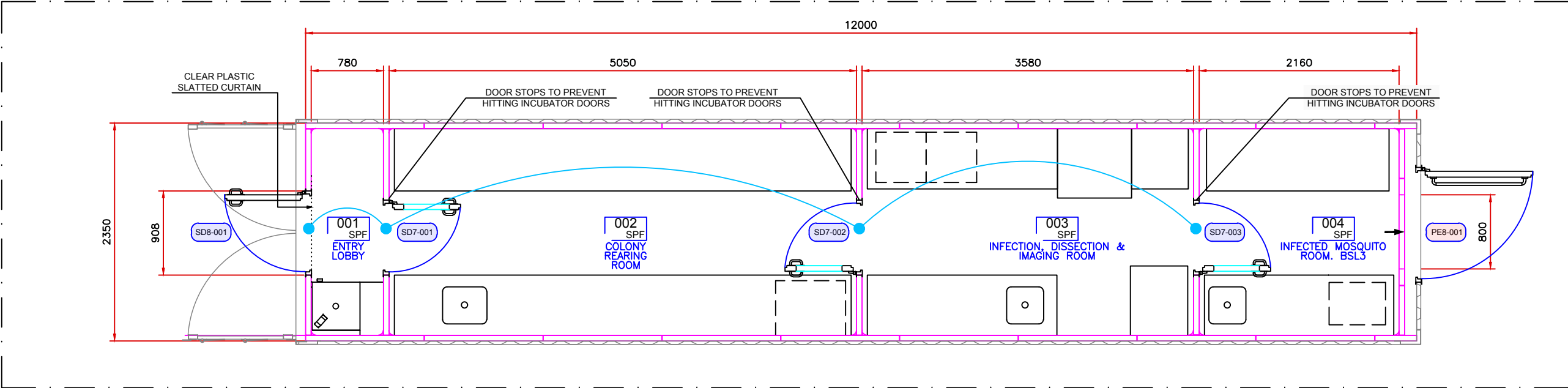


AS BUILT

IMPERIAL

Nº	DOCUMENT	DRAWING CODE
1	OVERVIEW	N/A
2	LAYOUT	15549-PB-LY-00
3	EQUIPMENT	15549-PB-LY-01
4	ROOM PRESSURES	15549-PB-LY-02
5	BIOSAFETY LEVELS	15549-PB-LY-03
6	PEOPLE, MATERIALS AND WASTE FLOW	15549-PB-LY-04
7	MAIN EQUIPMENT LOCATION	15549-PB-LY-05
8	FIRE PROTECTION	15549-PB-LY-06
9	CEILING ELEMENTS ARRANGEMENT	15549-PB-LY-07
10	SECTIONS LAB MODULE	15549-PB-LY-08
11	SECTIONS PCR MODULE	15549-PB-LY-09
12	HVAC DUCTS	15549-PB-CL-00
13	HVAC P&ID SCHEMA	15549-CJ-EP-00
14	COOLING-HEATING P&ID SCHEMA	15549-CJ-EP-01
15	COLD AND HOT WATER P&ID SCHEMA	15549-CJ-EP-02
16	WASTE EFFLUENT TREATMENT P&ID	15549-CJ-EP-03
17	GENERAL SERVICES	15549-PB-TB-00
18	PIPES DISTRIBUTION AND DRAINAGE	15549-PB-TB-01
19	LIGHTING	15549-PB-EC-00
20	POWER SOCKETS	15549-PB-EC-01
21	ELECTRICAL CHANNELS	15549-PB-EC-02
22	POWER INCOME CONNECTION BOX	15549-PB-EC-03
23	ELECTRICAL INSTALLATION GENERAL SCHEMA	15549-CJ-EE-00
24	MODULAR LABORATORY GENERAL CABINET (& HVAC)	15549-CJ-EE-01
25	MODULAR LABORATORY GENERAL CABINET (U.P.S.)	15549-CJ-EE-02
26	MODULAR LABORATORY LIGHTING, EQUIPMENT AND SOCKETS CABINET	15549-CJ-EE-03
27	LIGHTNING PROTECTION DETAILS	15549-CJ-EE-04
28	MAGNEHELIC PLATE	15549-DE-00
29	MPL SUPPORT	15549-DE-01
30	PRESSURE PLATES	15549-DE-02
31	RECEPTION TANK & PUMP	15549-DE-03
32	CONNECTION HOLES & REGISTRY CASES LOCATION	15549-DE-04
33	PRC MODULE FOUNDATION	15549-DE-05
34	PCR MODULE DOORS DETAIL	15549-DE-06
35	EMERGENCY DOOR CLOSURE DETAIL	15549-DE-07
36	GRID DETAIL	15549-DE-08
37	EMERGENCY DOOR SIZE	15549-DE-09
38	LABORATORY CONTAINER. HOLES	15549-DE-10
39	SECONDARY INSTALATIONS CONTAINER. HOLES	15549-DE-11

02-Layout



Lay-out
scale 1/50

Legend

- SD8-XXX SIMPLE CLEAN ROOM DOOR 800x2,100 mm
- SD7-XXX SIMPLE CLEAN ROOM DOOR 700x2,100 mm
- PE8-XXX EMERGENCY EXIT PANEL 1,050x2,200 mm

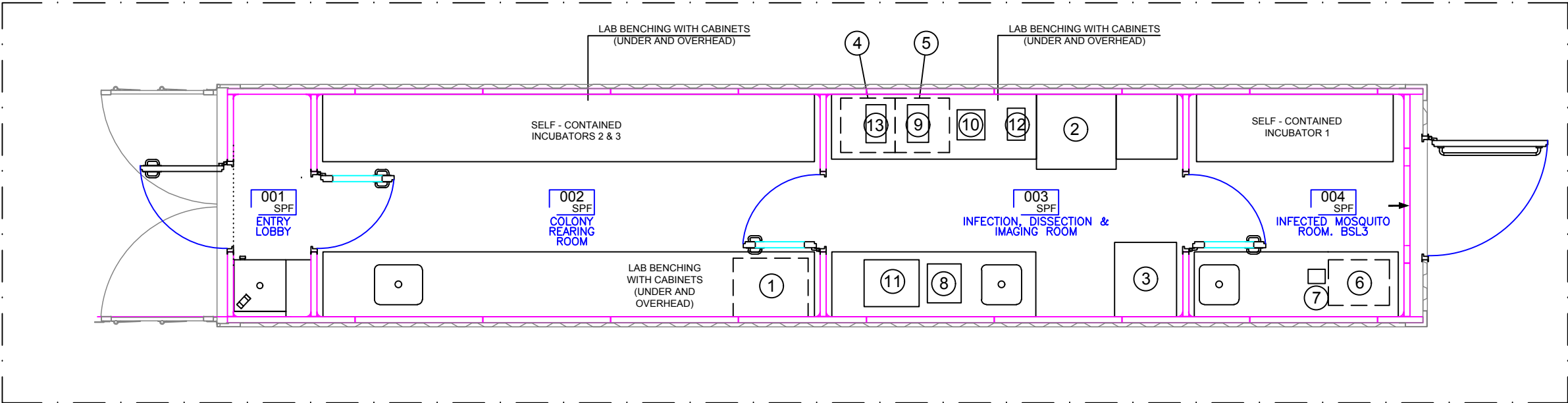
ROOM DESCRIPTION				
N°	NAME	AREA (m²)	CLAS. (ISO)	HEIGHT (m)
001	ENTRY LOBBY	1,74	SPF	2.30
002	COLONY REARING ROOM	11,26	SPF	2.30
003	INFECTION, DISSECTION & IMAGING ROOM	7,98	SPF	2.30
004	INFECTED MOSQUITO ROOM	4,82	SPF	2.30
TOTAL		25.80		

Legend

- 000 GMP ROOM NAME ROOM NAME, CLASSIFICATION AND ID. NUMBER
- CR60 SP-XPS 1,200x2,300 mm. CLEAN ROOM PANEL
- INTERLOCKING



03-Equipment



Lay-out
scale 1/50

DESCRIPTION OF EQUIPMENT

Nº	NAME	WEIGHT (kg)	DIMENSIONS (mm)	HEIGHT (mm)	POWER (kW)
1	DISHWASHER MIELE PG 8504 [AD]	74	600x600	835	9.20 kW
2	CLASS II MICROBIOLOGICAL SAFETY CABINET GUARDIAN MSC800	135	800x750	1321	0.15 kW
3	TOUCHCLAVE TCR/40/H1-SPECIAL AUTOCLAVE	120	580x720	710	2.30 kW
4	FRIDGE LIEBHERR TP 1410	35.7	554x623	850	0.19 kW
5	FREEZER LIEBHERR GP 1376	39.3	553x624	851	0.30 kW
6	BENCHTOP GLOVE BOX ELECTRO-TECH 5503 SERIES	31	610x457	381	
7	CIRCULATING BATHS GRANT TC120	2.3	172x141	333	1.40 kW
8	FLUORESCENT STEREO MICROSCOPE LEICA BIOSCIENCE, M205 FA		340x390	547	
9	STANDARD LIGHT MICROSCOPE OLYMPUS CX43	7.3	211x376	393	
10	DISSECTION/ STEREO MICROSCOPE LEICA BIOSYSTEMS M80		278x301	395	
11	T CONTROLLED CENTRIFUGE: EPPENDORF CENTRIFUGE 5804	55	470x550	340	0.90 kW
12	LABORATORY LIQUID SUCTION SYSTEM INTEGRA VACUSAFE	3.4	180x320	530	
13	HEATING BLOCK GRANT QBD4		380x200	100	0.60 kW

000
GMP
ROOM
NAME

ROOM NAME, CLASSIFICATION AND ID. NUMBER

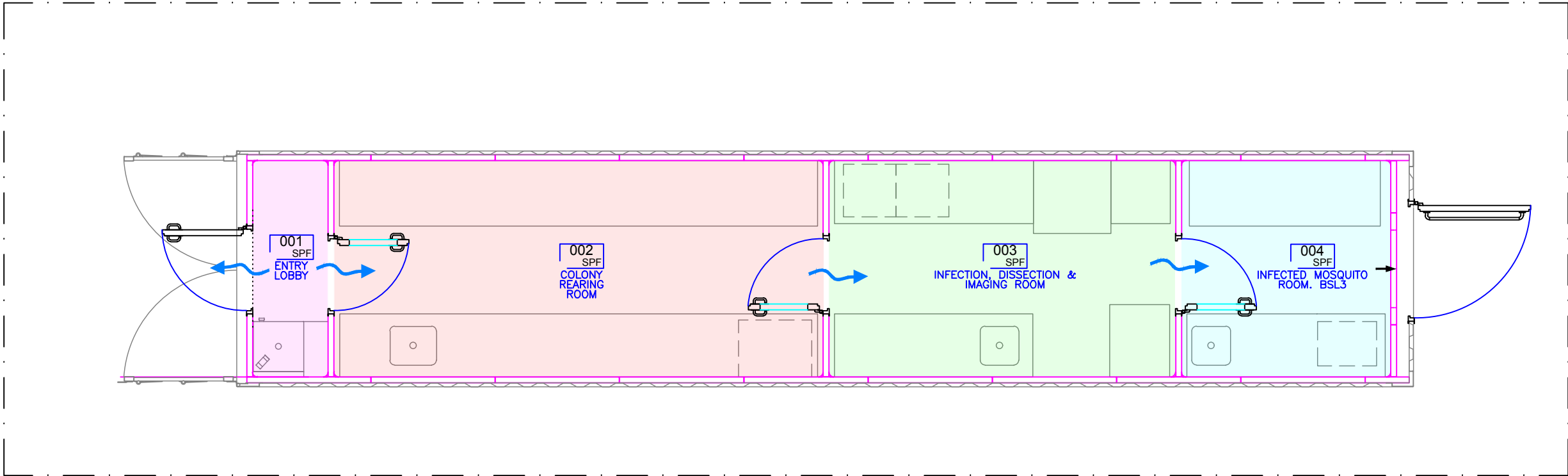
CR60 SP-XPS 1,200x2,300 mm.
CLEAN ROOM PANEL

CLEAN ROOM WINDOW

legend



04-Room Pressures



Lay-out

scale 1/50

000
GMP
ROOM
NAME

ROOM NAME, CLASSIFICATION AND ID. NUMBER

AIR FLOW

PRESSURE +15 (Pa)

PRESSURE 0 (Pa)

PRESSURE -15 (Pa)

PRESSURE -30 (Pa)

legend



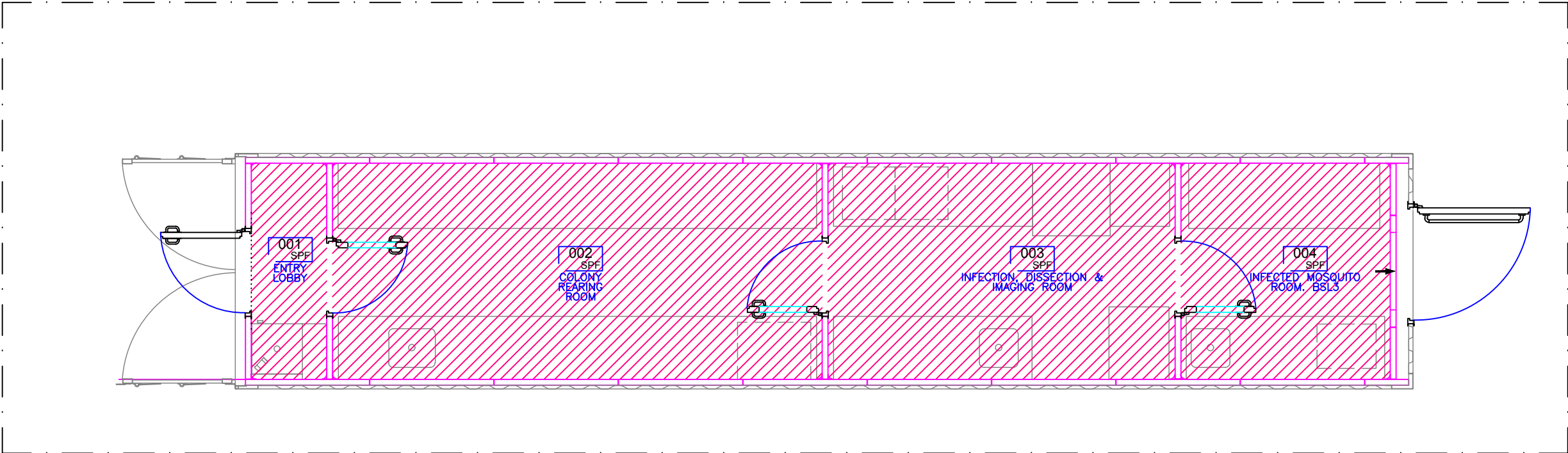
IMPERIAL



A3
420x297

project	Modular Portable Laboratory	title	TECHNICAL DESIGN PROJECT ROOM PRESSURES	4	scale	1/50
					drawing	15549-PB-LY-02

05-Biosafety Levels

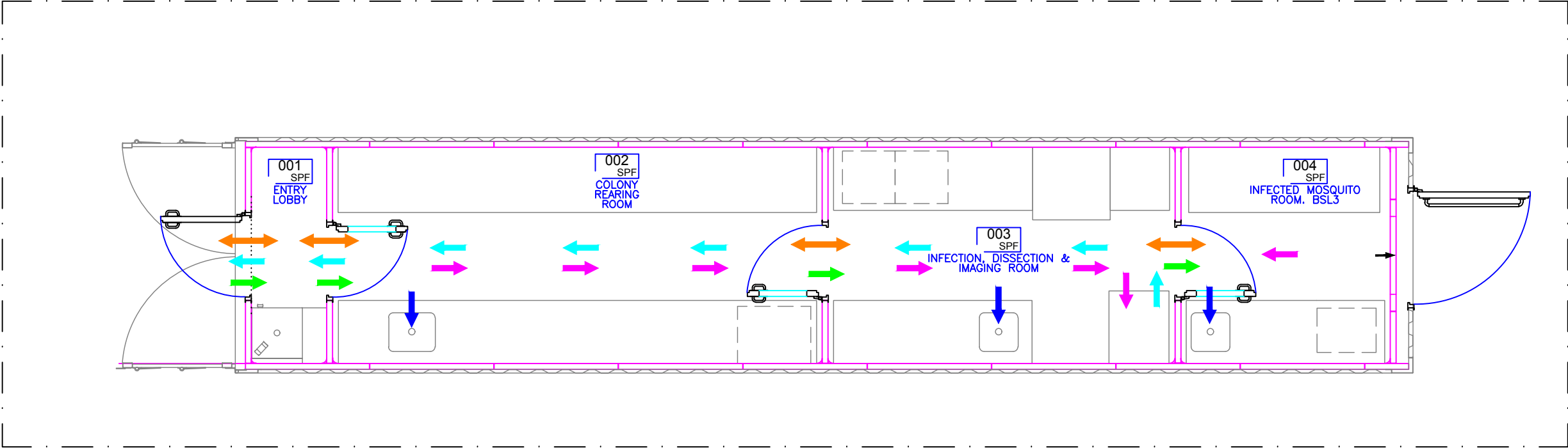


Lay-out
scale 1/50

000 GMP ROOM NAME	ROOM NAME, CLASSIFICATION AND ID. NUMBER
	NC — NOT CLASSIFIED
	BSL3 — BIOSAFETY LEVEL 3

legend

06-People, Materials and Waste Flow



Lay-out
scale 1/50

000
GMP
ROOM
NAME

ROOM NAME, CLASSIFICATION
AND ID. NUMBER

LIQUID WASTE FLOW

SOLID WASTE FLOW

STERILISED SOLID WASTE FLOW

PEOPLE FLOW

MATERIALS FLOW

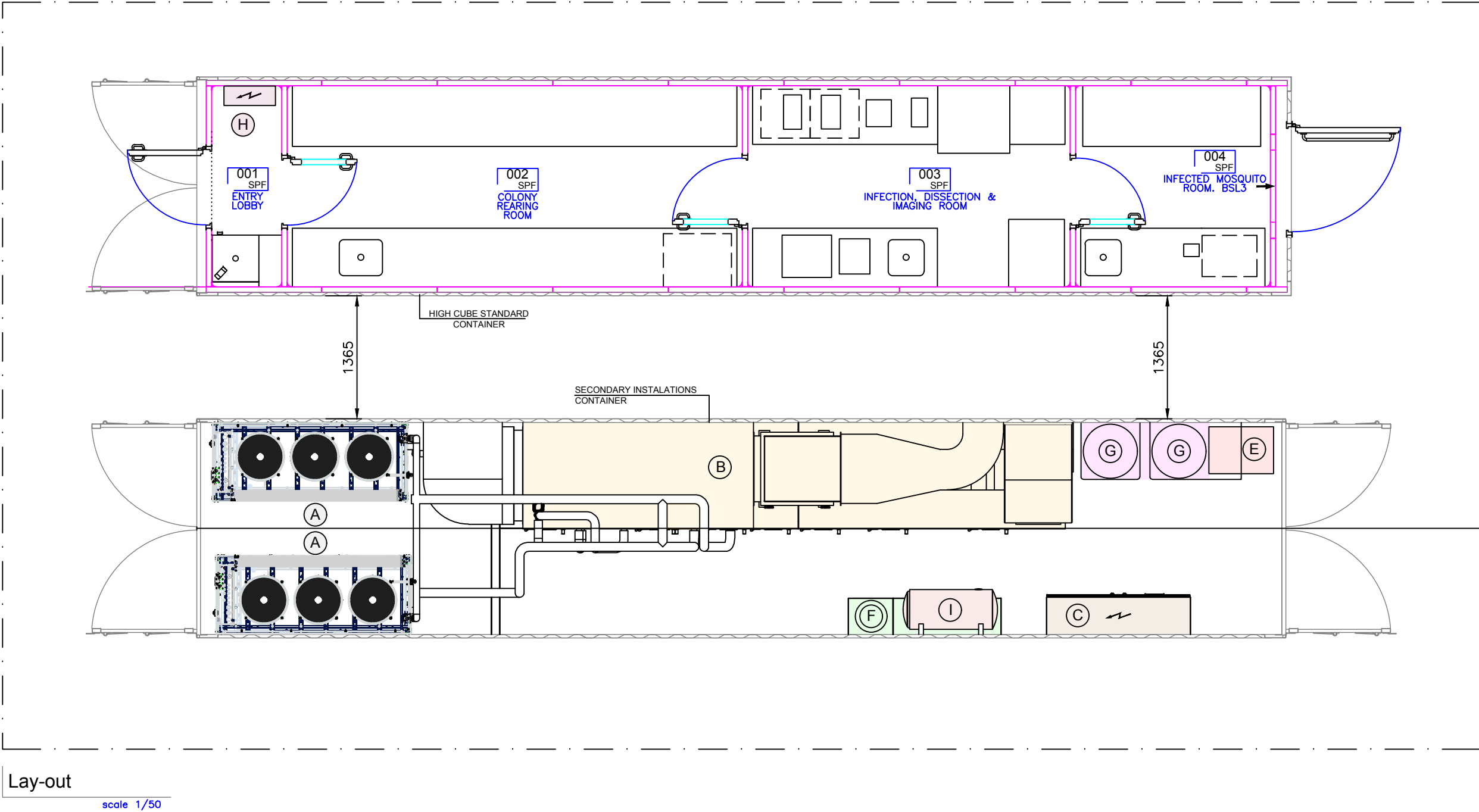
legend



IMPERIAL



07-Main Equipment Location

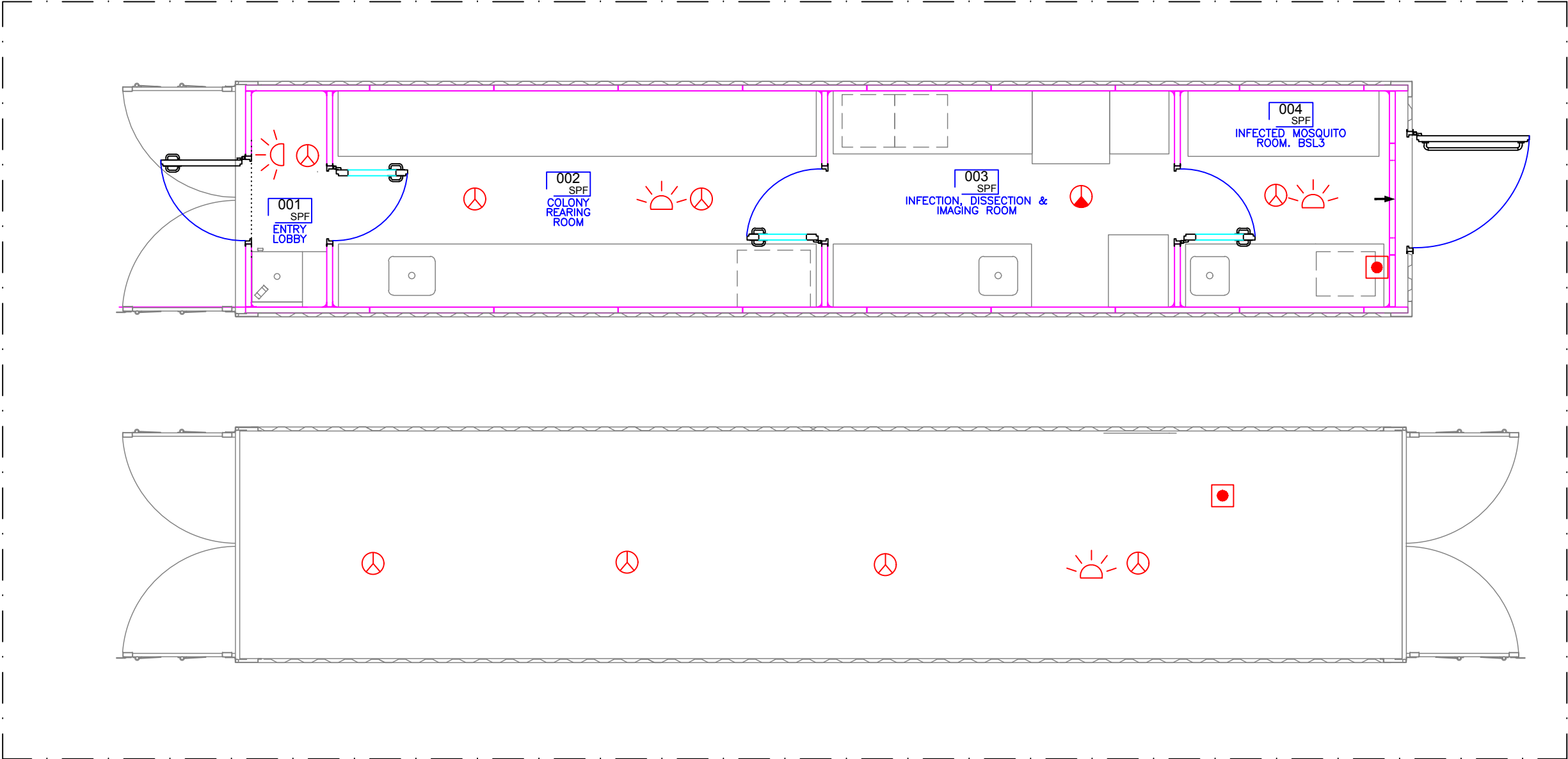


(A)	RUN & STANDBY CHILLERS	(F)	CWS TANK AND BOOSTER SET
(B)	AIR HANDLING UNIT	(G)	EFFLUENT TREATMENT PLANT
(C)	ELECTRICAL GENERAL & HVAC CABINET	(H)	LIGHTING, EQUIPMENT AND SOCKETS CABINET
(E)	RO WATER PRODUCTION & STORAGE SYSTEM	(I)	HOT WATER TANK

legend



08-Fire Protection



Lay-out

scale 1/50

000

GMP

ROOM

NAME

ROOM NAME, CLASSIFICATION AND ID. NUMBER

CALL POINT

OPTICAL DETECTOR

HEAT DETECTOR

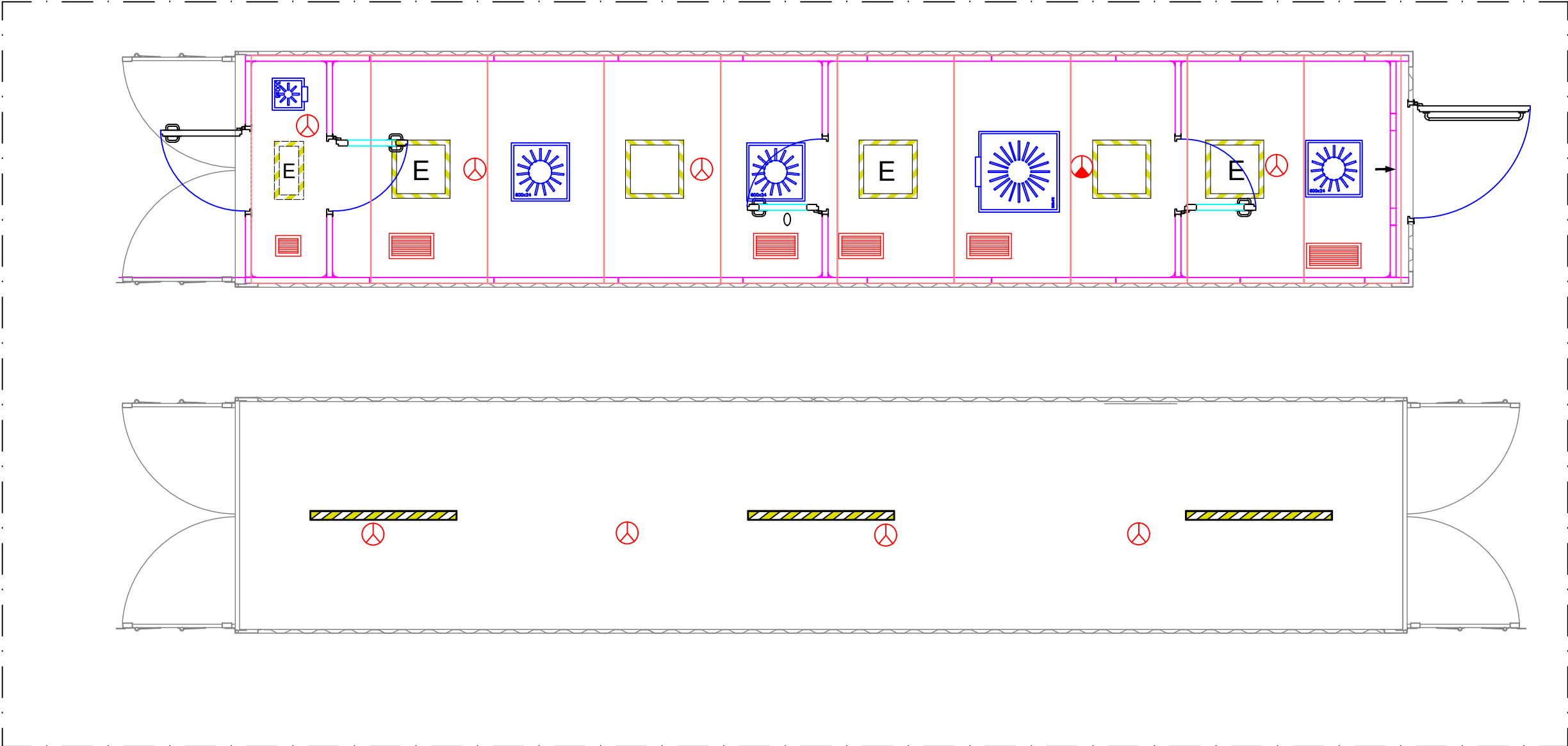
SOUNDER BEACON

legend



project	Modular Portable Laboratory	title	TECHNICAL DESIGN PROJECT FIRE PROTECTION	8	scale	1/50
					drawing	15549-PB-LY-06

09-Ceiling Elements Arrangement



Lay-out
scale 1/50



LED AIRTIGHT LAMP IP65
46x83x1,500mm, 60W, 5,400 Lm.

LED LAMP 600x600 mm ACCESSIBLE FROM BELOW

LED LAMP 600x600 mm ACCESSIBLE FROM BELOW
WITH EMERGENCY KIT (3 HOURS)

LED LAMP 300x600 mm ACCESSIBLE FROM BELOW
WITH EMERGENCY KIT (3 HOURS)

CR30 SP-XPS 1,200x2,350 mm.
CEILING PANEL



CEILING GRILL

SWIRL DIFFUSER

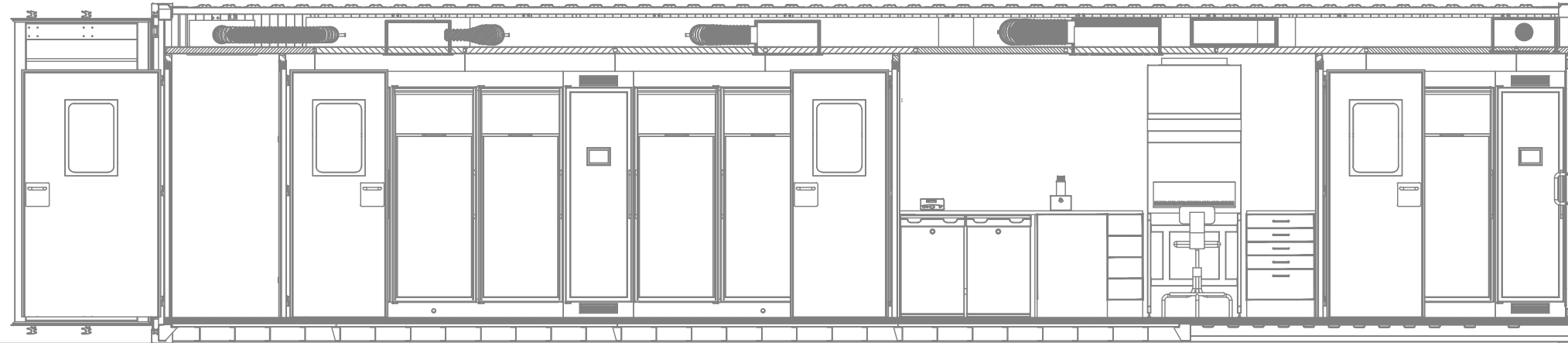
OPTICAL DETECTOR

HEAT DETECTOR

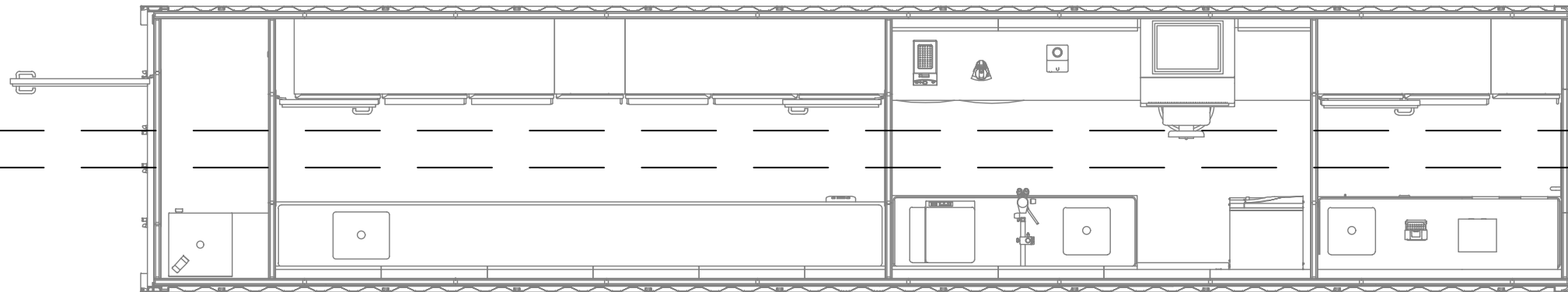
legend



SECTION A-A

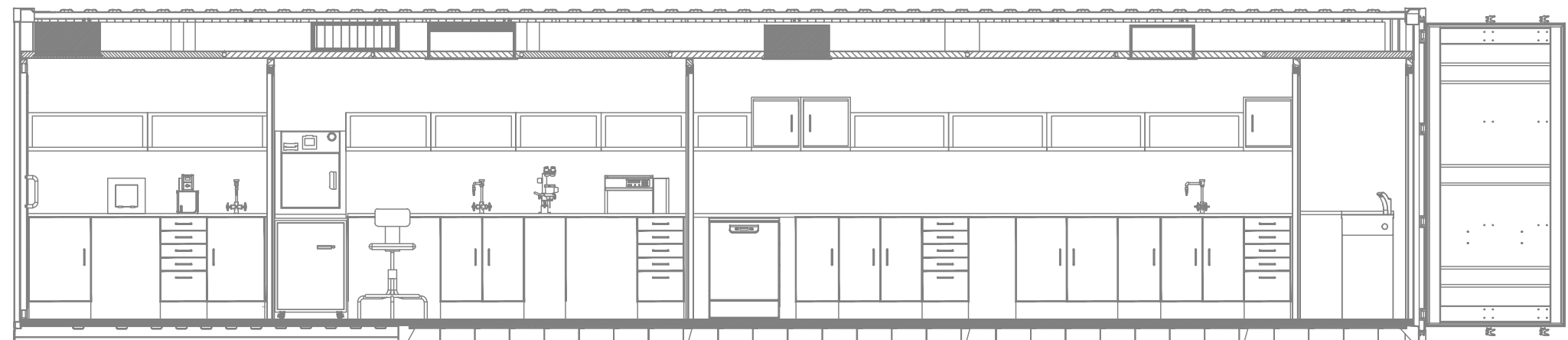


A
B



A
B

SECTION B-B



10-Sections Lab Module

drawing scale 1:50
0 1m 2 3



IMPERIAL

Modular Portable
Laboratory

TECHNICAL DESIGN PROJECT

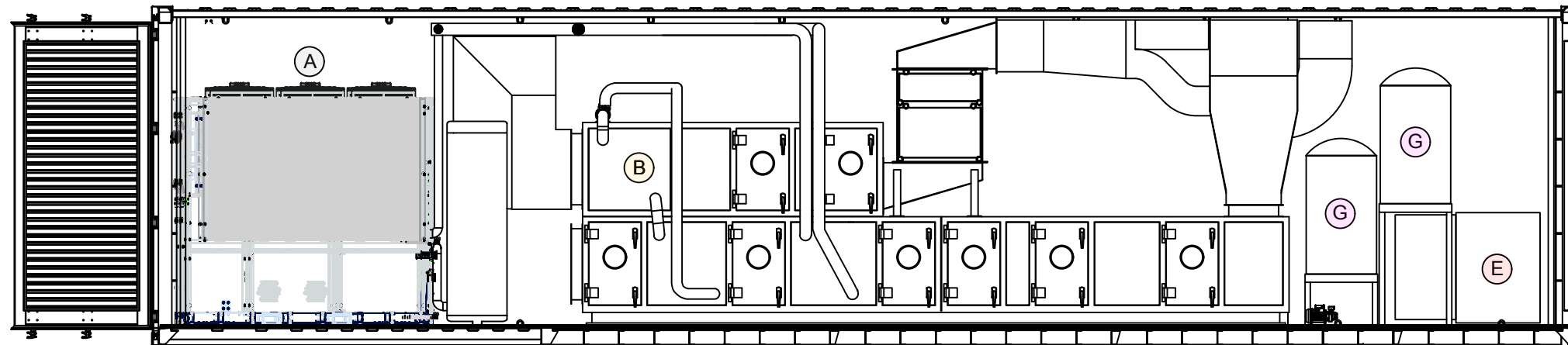
SECTIONS LAB MODULE

10

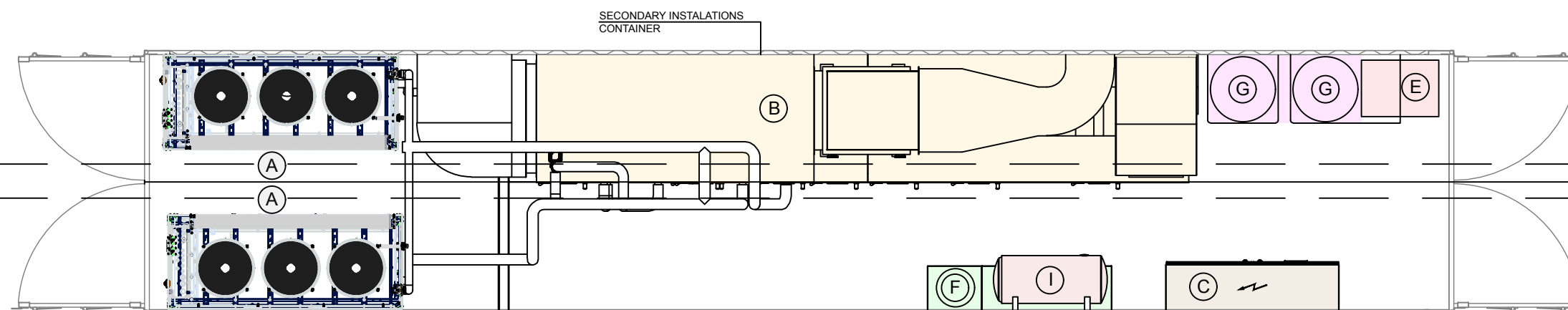
scale 1/50

drawing 15549-PB-LY-08

SECTION A-A

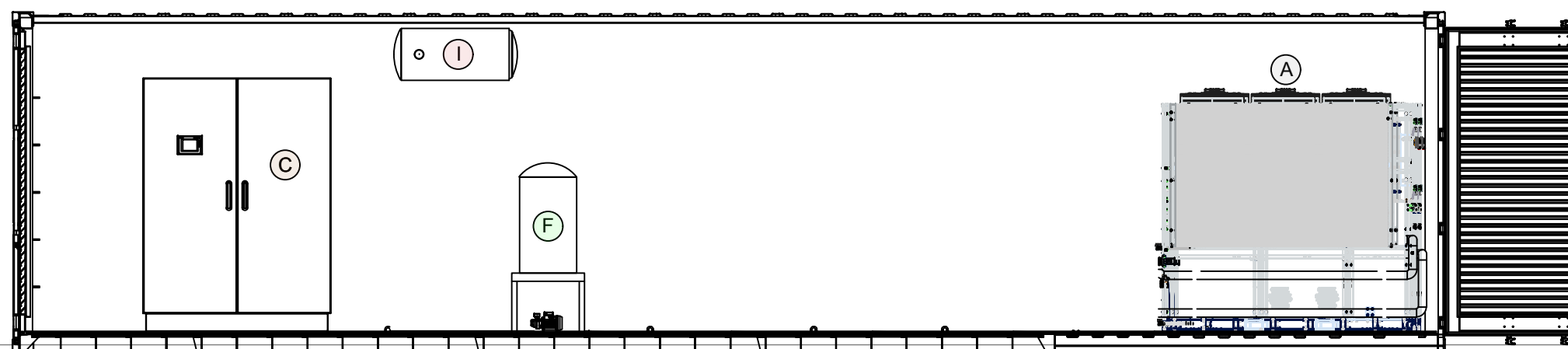


A ↑
B ↓



A ↑
B ↓

SECTION B-B



11-Sections PCR Module



- | | |
|--|------------------------------|
| (A) RUN & STANDBY CHILLERS | (F) CWS TANK AND BOOSTER SET |
| (B) AIR HANDLING UNIT | (G) EFFLUENT TREATMENT PLANT |
| (C) ELECTRICAL GENERAL & HVAC CABINET | (I) HOT WATER TANK |
| (E) RO WATER PRODUCTION & STORAGE SYSTEM | |

legend



IMPERIAL

Modular Portable Laboratory

TECHNICAL DESIGN PROJECT

SECTIONS PRC MODULE

11

scale 1/50

drawing 15549-PB-LY-09

EXHAUST AIR GRILLES

MODEL	SIZE (mm)	CODE
TROX AR-AG	225X125	EAG-01
TROX AR-AG	425x225	EAG-02
TROX AR-AG	425x225	EAG-03
TROX AR-AG	425x225	EAG-04
TROX AR-AG	425x225	EAG-05
TROX AR-AG	525x225	EAG-06

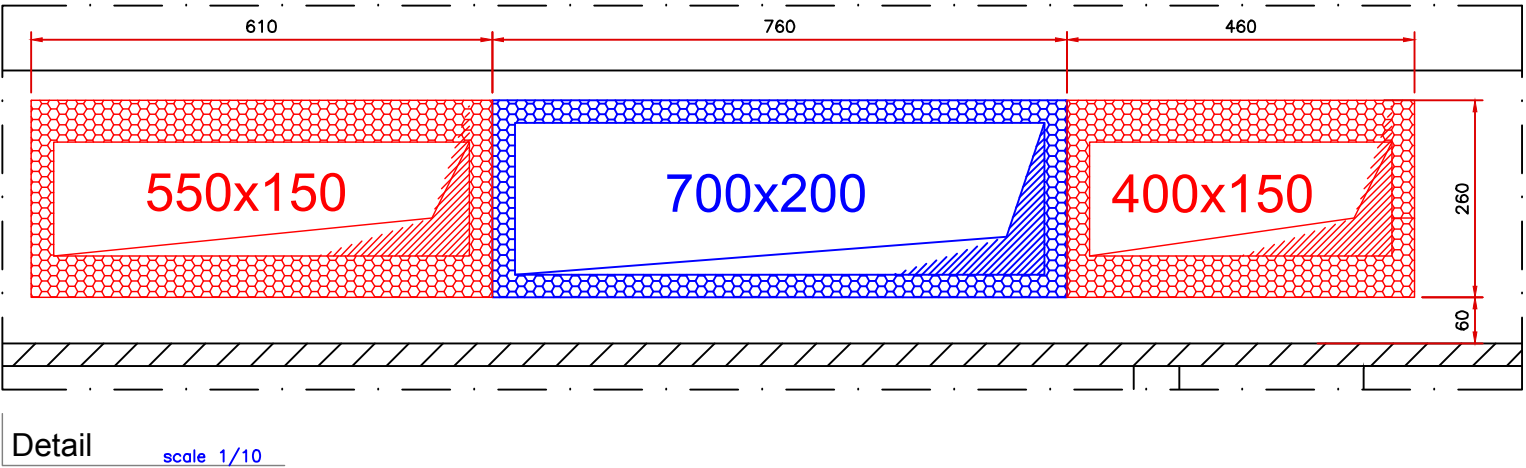
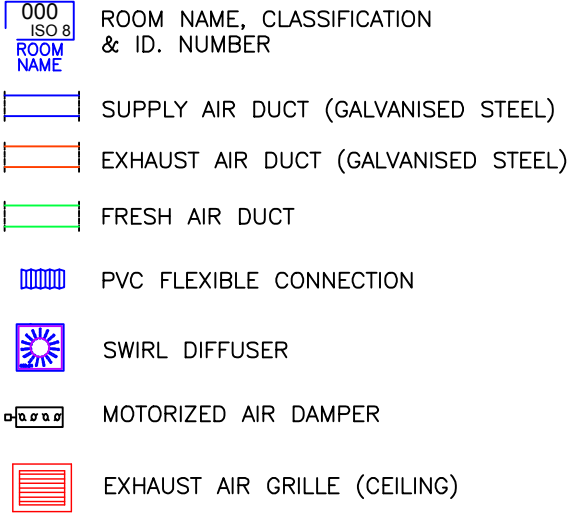
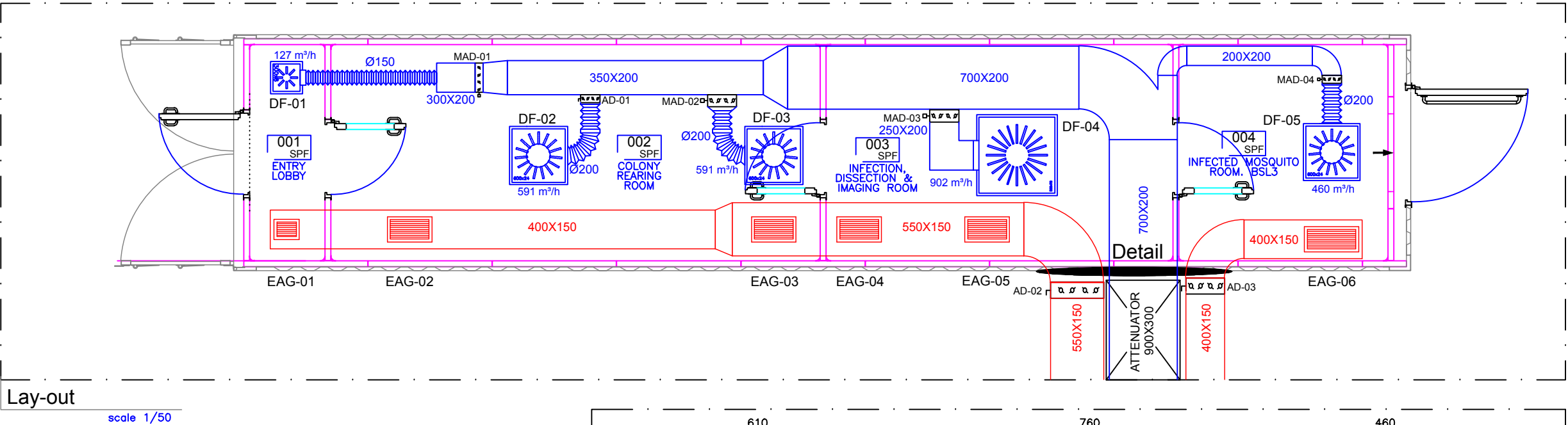
DIFFUSERS

MODEL	SIZE (mm)	CODE
TROX VDW-Q-Z-H-M	300x8	DF-01
TROX VDW-Q-Z-H-M	600x24	DF-02
TROX VDW-Q-Z-H-M	600x24	DF-03
TROX VDW-Q-Z-H-M	825x72	DF-04
TROX VDW-Q-Z-H-M	600x24	DF-05

AIR DAMPERS

OPERATION	SIZE (mm)	CODE
MOTORIZED	200x210	MAD-01
MOTORIZED	300x210	MAD-02
MOTORIZED	300x210	MAD-03
MOTORIZED	200x210	MAD-04
MANUAL	200x210	AD-01
MANUAL	400x210	AD-02
MANUAL	400x210	AD-03

12-HVAC Ducts



IMPERIAL



Modular Portable
Laboratory

TECHNICAL DESIGN PROJECT

HVAC AIR DUCTS

12

scale

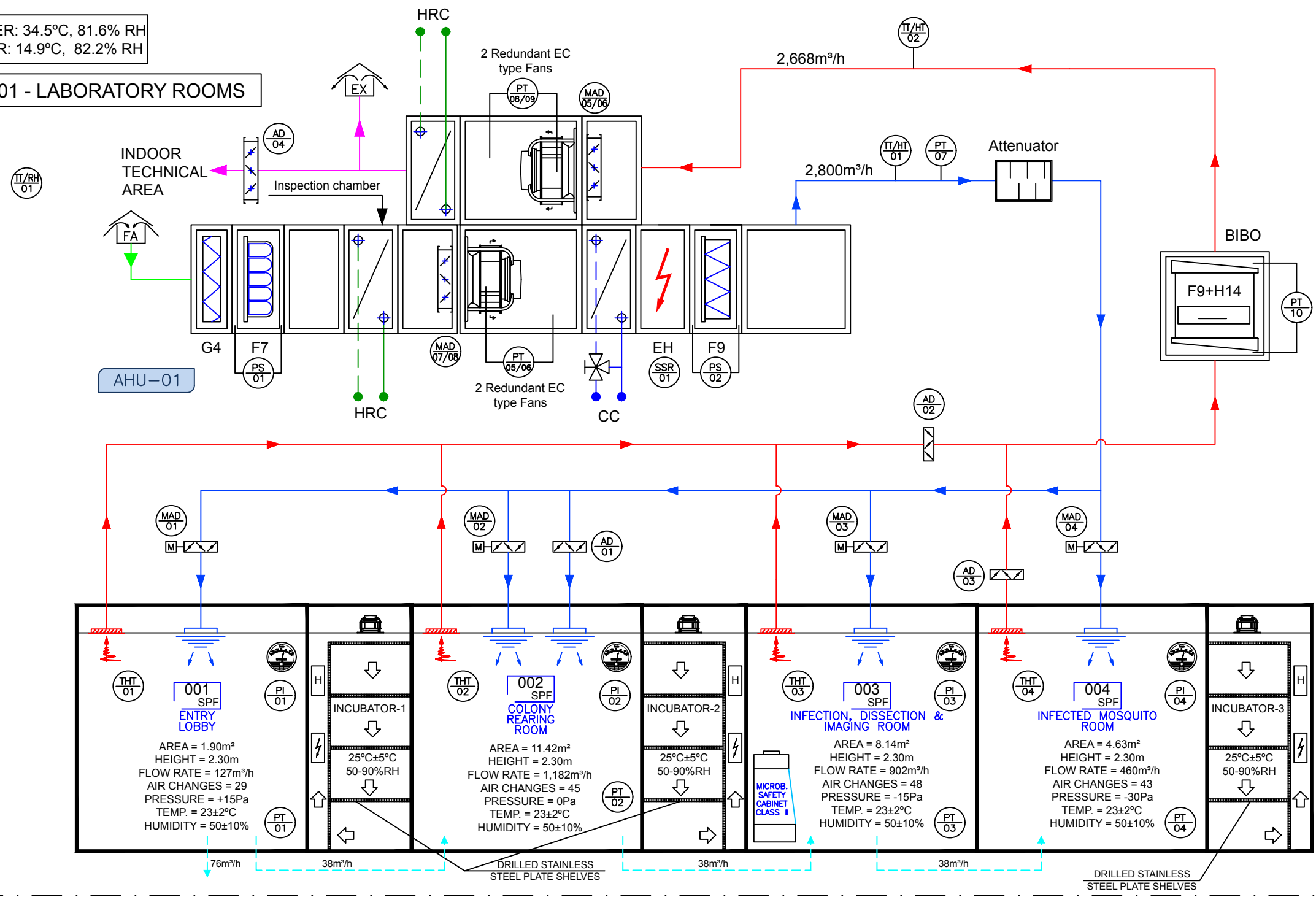
1/50

drawing

15549-PB-CL-00

SUMMER: 34.5°C, 81.6% RH
WINTER: 14.9°C, 82.2% RH

AHU-01 - LABORATORY ROOMS



LEGEND	
G4	MAT FILTER (PRE FILTER)
F7	HIGH EFFICIENCY FILTER
F9	HIGH EFFICIENCY FILTER
H14	HEPA FILTER
BIBO	BAG IN BAG OUT
CC	COOLING COIL (WATER)
HRC	EXHAUST AIR HEAT RECOVERY COIL
EH	ELECTRIC HEATER

BAG IN/BAG OUT FILTER

EC FAN

SWIRL DIFFUSER

MAGNEHELIC

RETURN GRILL

ATTENUATOR

AIR DAMPER (MANUAL)

MOTORIZED AIR DAMPER

FRESH AIR INLET

EXHAUST AIR

SUPPLY AIR DUCT

RETURN AIR DUCT

OUTDOOR AIR DUCT

EXHAUST AIR DUCT

AIR DAMPER (MANUAL)

PRESSURE TRANSMITTER

TEMPERATURE/ HUMIDITY TRANSMITTER (INDOOR)

PRESSURE SWITCH

PRESSURE INDICATOR

TEMPERATURE TRANSMITTER

SOLID STAY RELAY

TEMPERATURE SWITCH

TEMPERATURE INDICATOR

DUCT TEMPERATURE/ HUMIDITY SENSOR

TEMPERATURE/ HUMIDITY SENSOR (OUTDOOR)

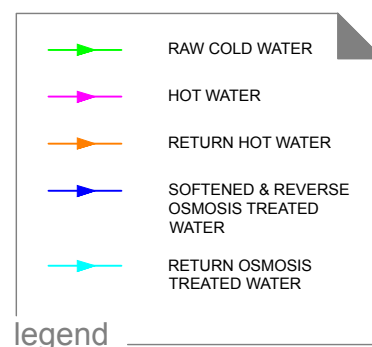
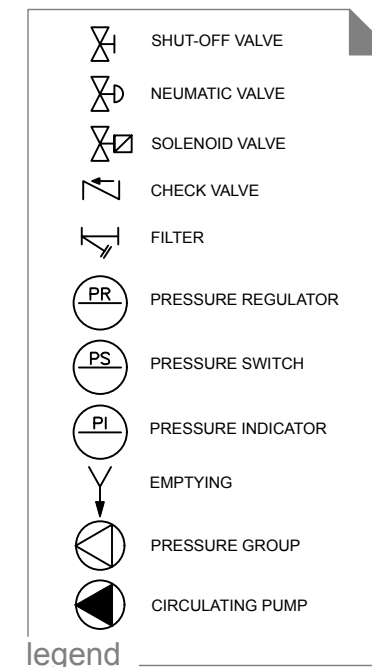
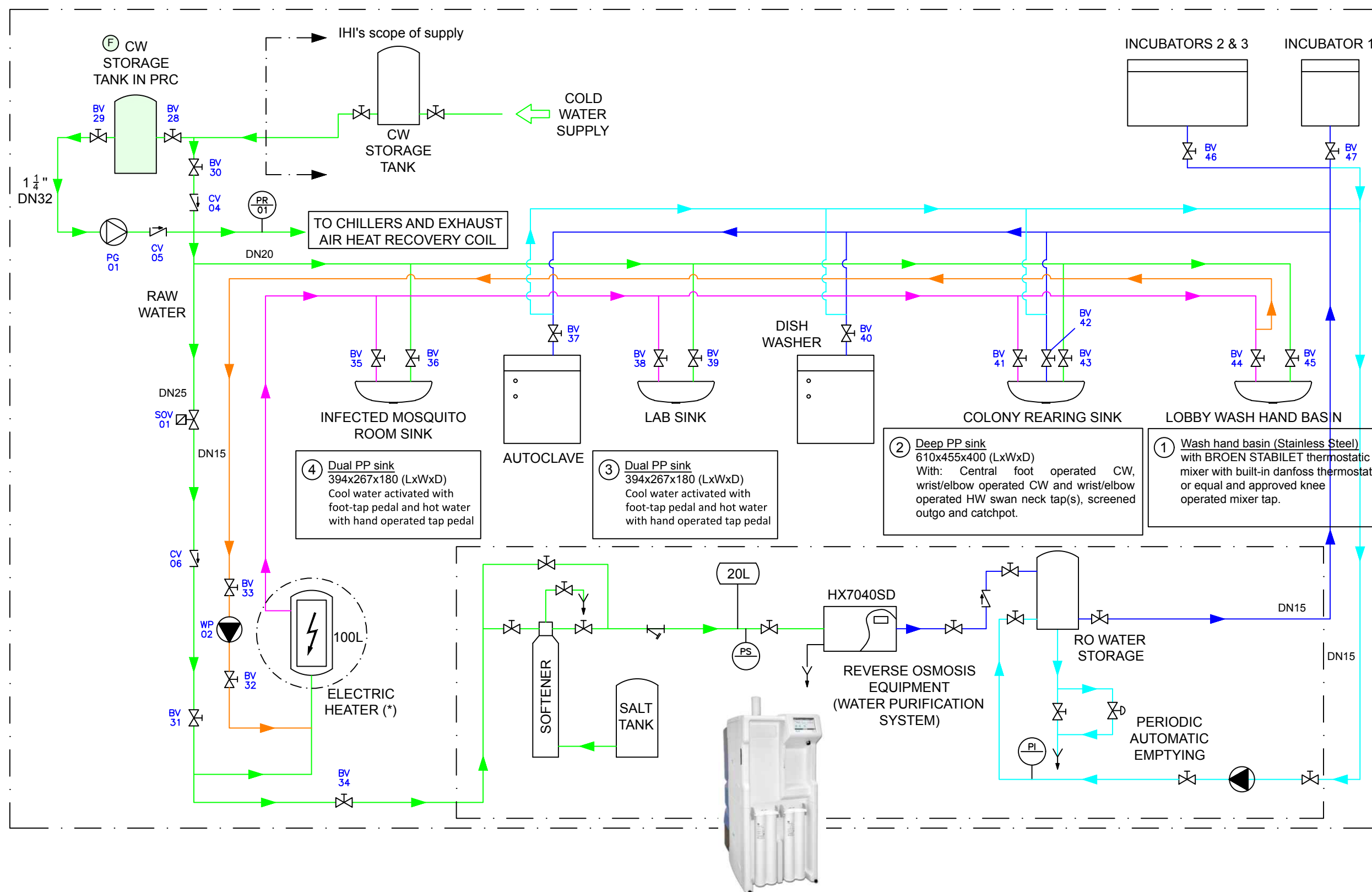
MOTORIZED AIR DAMPER

NAME, CODE & CLASSIFICATION

13-HVAC P&ID Schema



NOTES:
1. THE AIR HANDLING UNIT HAS INTERNAL LIGHTS IN ALL INSPECTION CHAMBERS



NOTES:

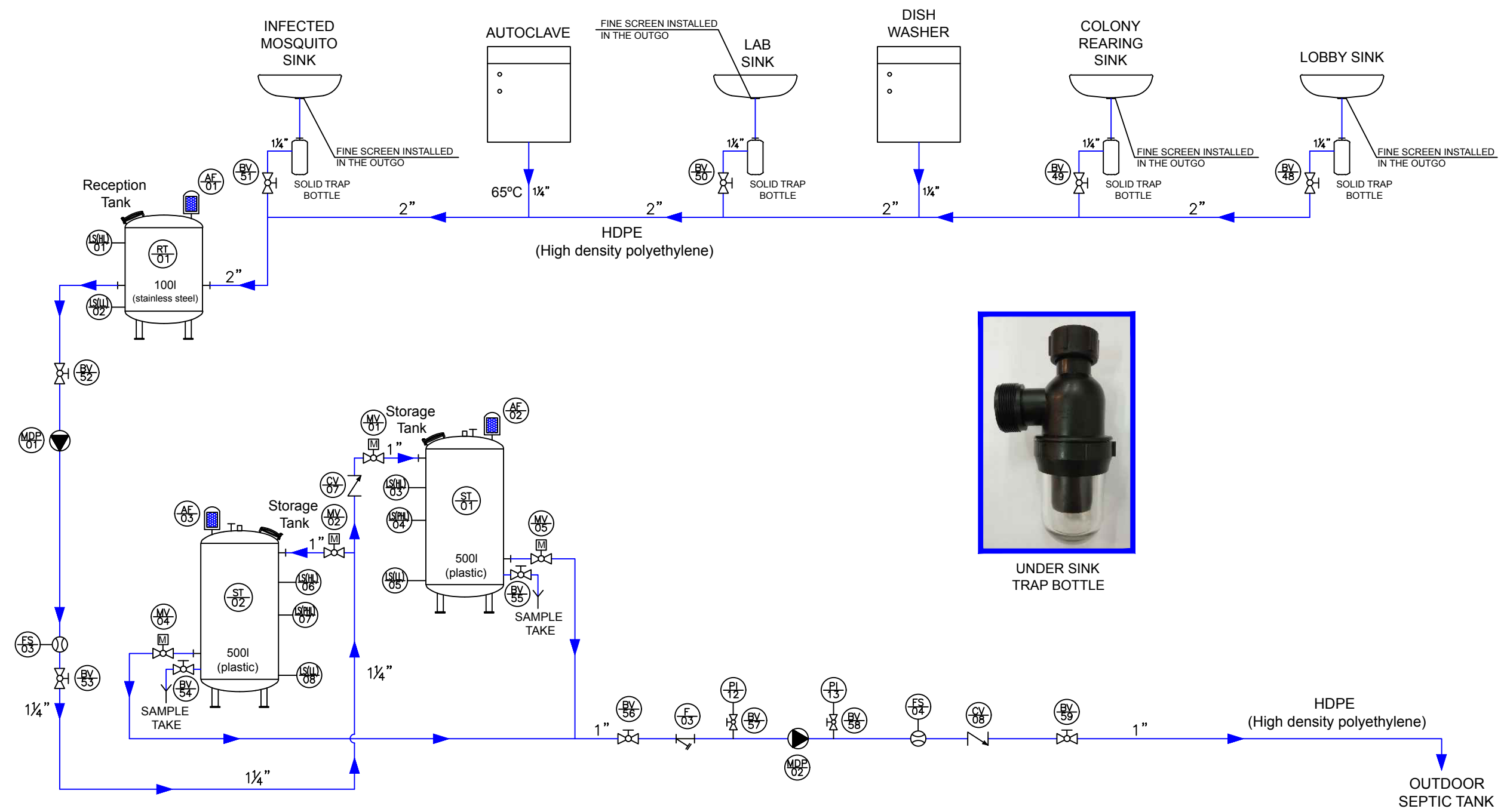
1. THE MILIPORE PW PRODUCTION PLANT INCLUDES PRE-TREATMENT, PW STORAGE AND CIRCULATING PUMP
2. (*) CHECK VALVE INCLUDED IN THE ELECTRIC HEATER

15-Cold And Hot Water P&ID Schema



IMPERIAL

project Modular Portable Laboratory	TECHNICAL DESIGN PROJECT COLD AND HOT WATER P&ID SCHEMA	15	scale N/S drawing 15549-CJ-EP-02
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UNDER SINK TRAP BOTTLE

LEGEND	
MDP	WATER MAGNETIC DRIVE PUMP
AF / F	AIR FILTER / WATER FILTER
FS	FLOW SWITCH
CV	CHECK VALVE
BV	BALL VALVE
MV	MOTORIZED SHUT-OFF VALVE
ST	STORAGE TANK
LS	LEVEL SWITCH
PS	PRESSURE SWITCH
PI	PRESSURE INDIC. (PRESSURE GAUGE)

	MANUAL BALL VALVE		WATER FILTER
	MOTORIZED VALVE		AIR FILTER
	CHECK VALVE		PUMP (magnetic drive)
	FLOW SWITCH		

symbols

16-Waste Effluent Treatment P&ID

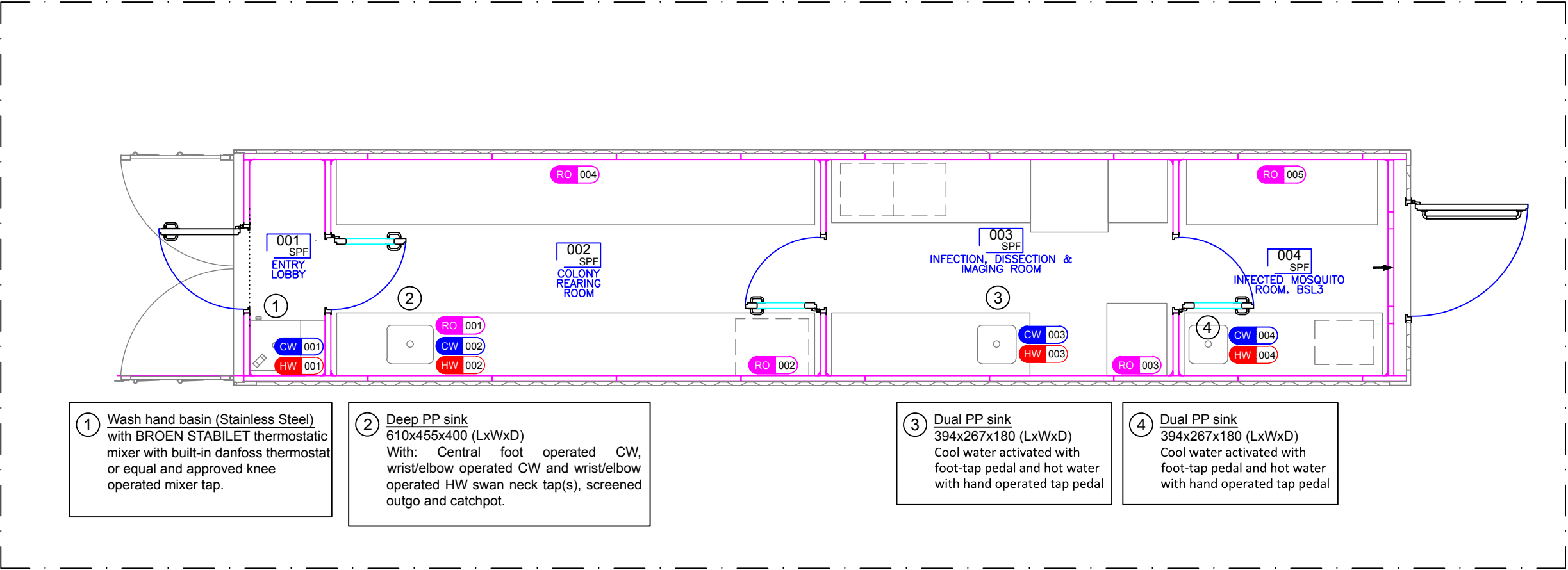


IMPERIAL

NOTES:
1. EFFLUENT TREATMENT SYSTEM CONTROLLED BY A PLC

Modular Portable Laboratory	TECHNICAL DESIGN PROJECT WASTE EFFLUENT TREATMENT P&ID	16	scale _____ N/S
project _____	title _____	drawing _____	15549-CJ-EP-03

17-General Services



Lay-out
scale 1/50

000
GMP
ROOM
NAME

ROOM NAME, CLASSIFICATION AND ID. NUMBER

CW 000

COLD WATER

HW 000

HOT WATER

RO 000

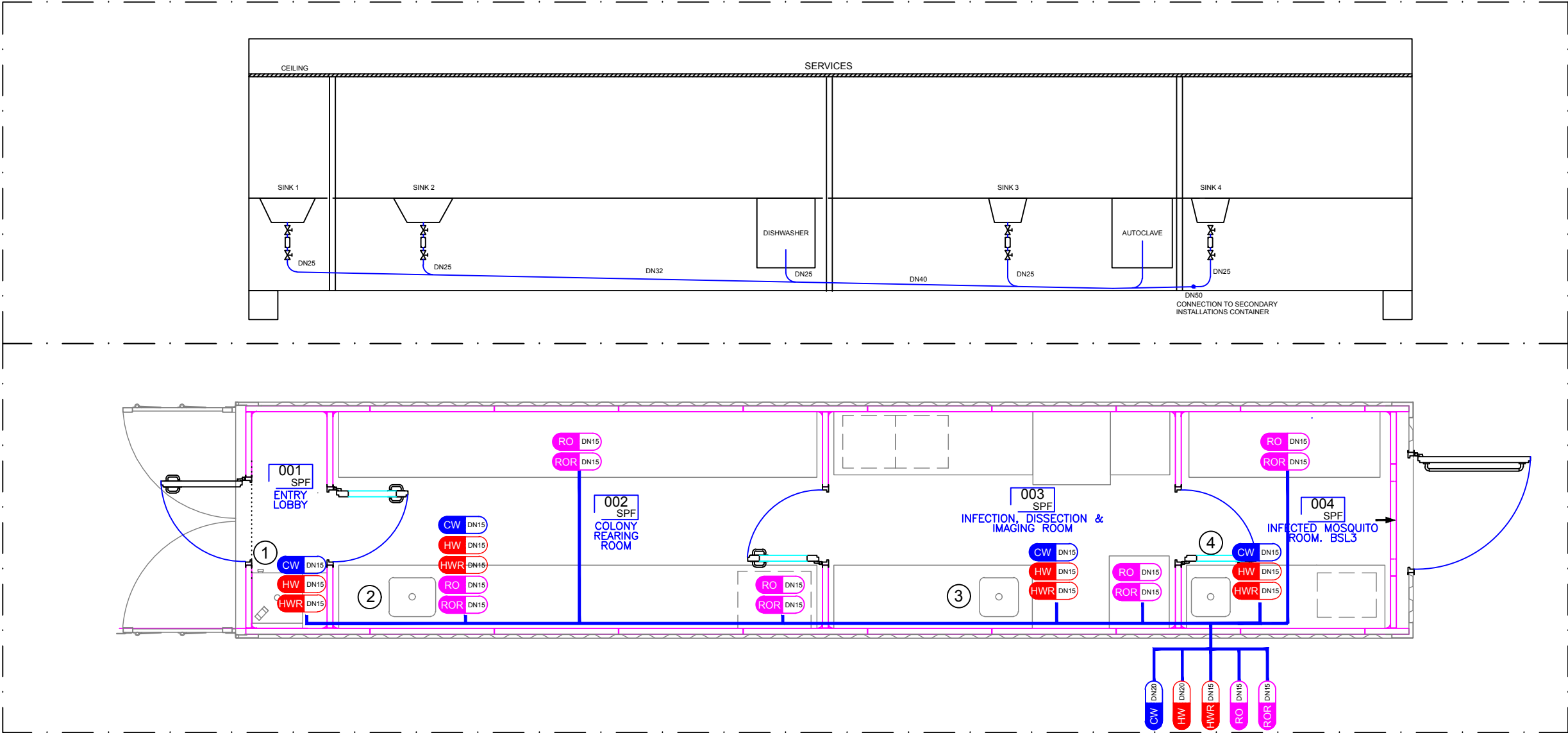
REVERSE OSMOSIS WATER (TYPE II)

legend



IMPERIAL

18-Pipes Distribution and Drainage



Lay-out

scale 1/50

CODE	PIPE DESCRIPTION	MATERIAL
 CW DN20	COLD WATER	Polyethylene HDPE
 HW DN20	HOT WATER	Polyethylene HDPE
 HWR DN15	RETURN OF HOT WATER	Polyethylene HDPE
 RO DN15	SOFTENED & REVERSE OSMOSIS TREATED WATER	Polypropylene PP-H
 ROR DN15	RETURN OF SOFTENED & REVERSE OSMOSIS TREATED WATER	Polypropylene PP-H



IMPERIAL



Modular Portable
Laboratory

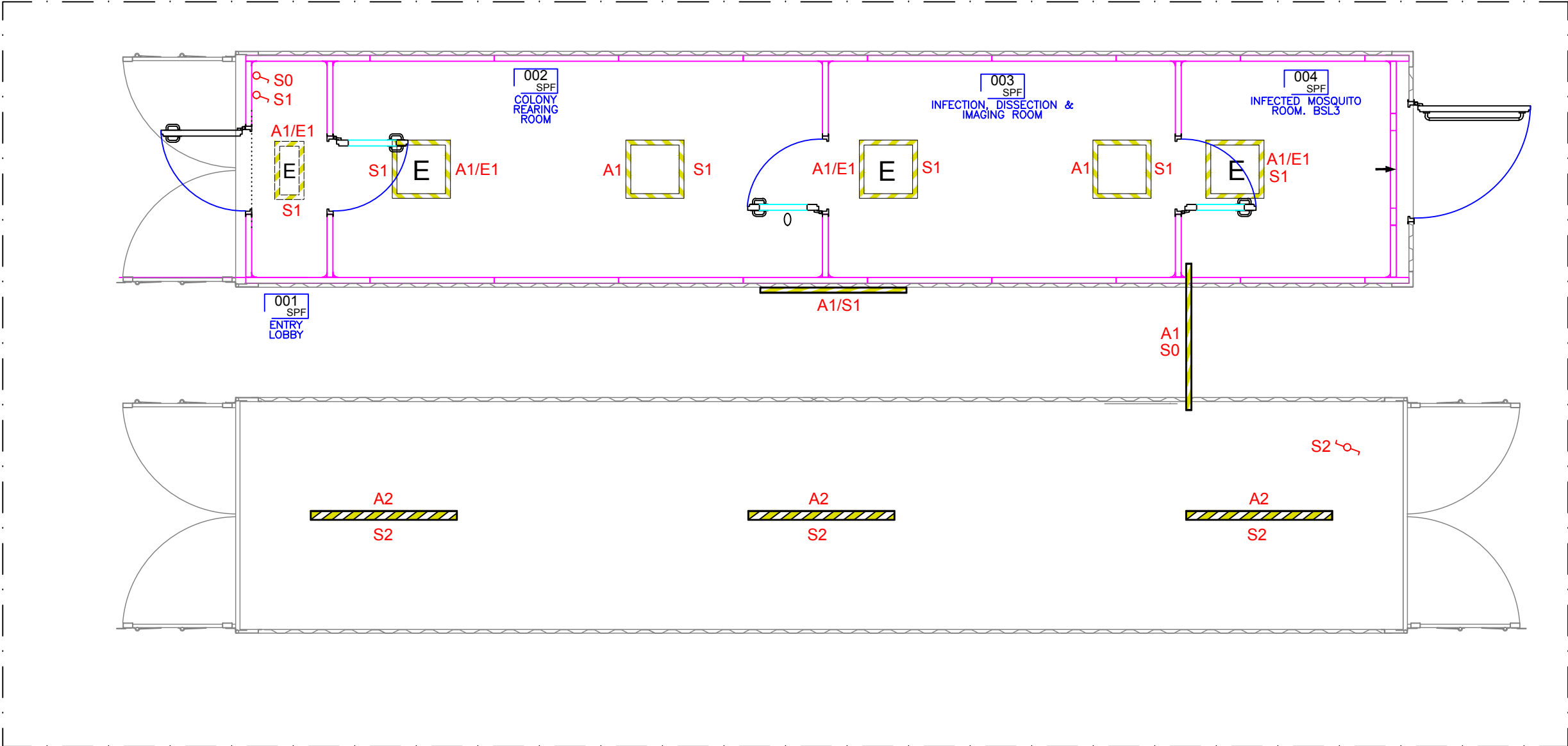
TECHNICAL DESIGN PROJECT
PIPES DISTRIBUTION
AND DRAINAGE

18

scale 1/50

drawing 15549-PB-TB-01

19-Lighting



Lay-out
scale 1/50

AX/EX
SX

AX: LIGHTING CIRCUIT
EX: EMERGENCY CIRCUIT
SX: ON/OFF SWITCH

note

LED AIRTIGHT LAMP IP65
46x83x1,500mm, 60W, 5,400 Lm.

LED LAMP 600x600 mm ACCESSIBLE FROM BELOW

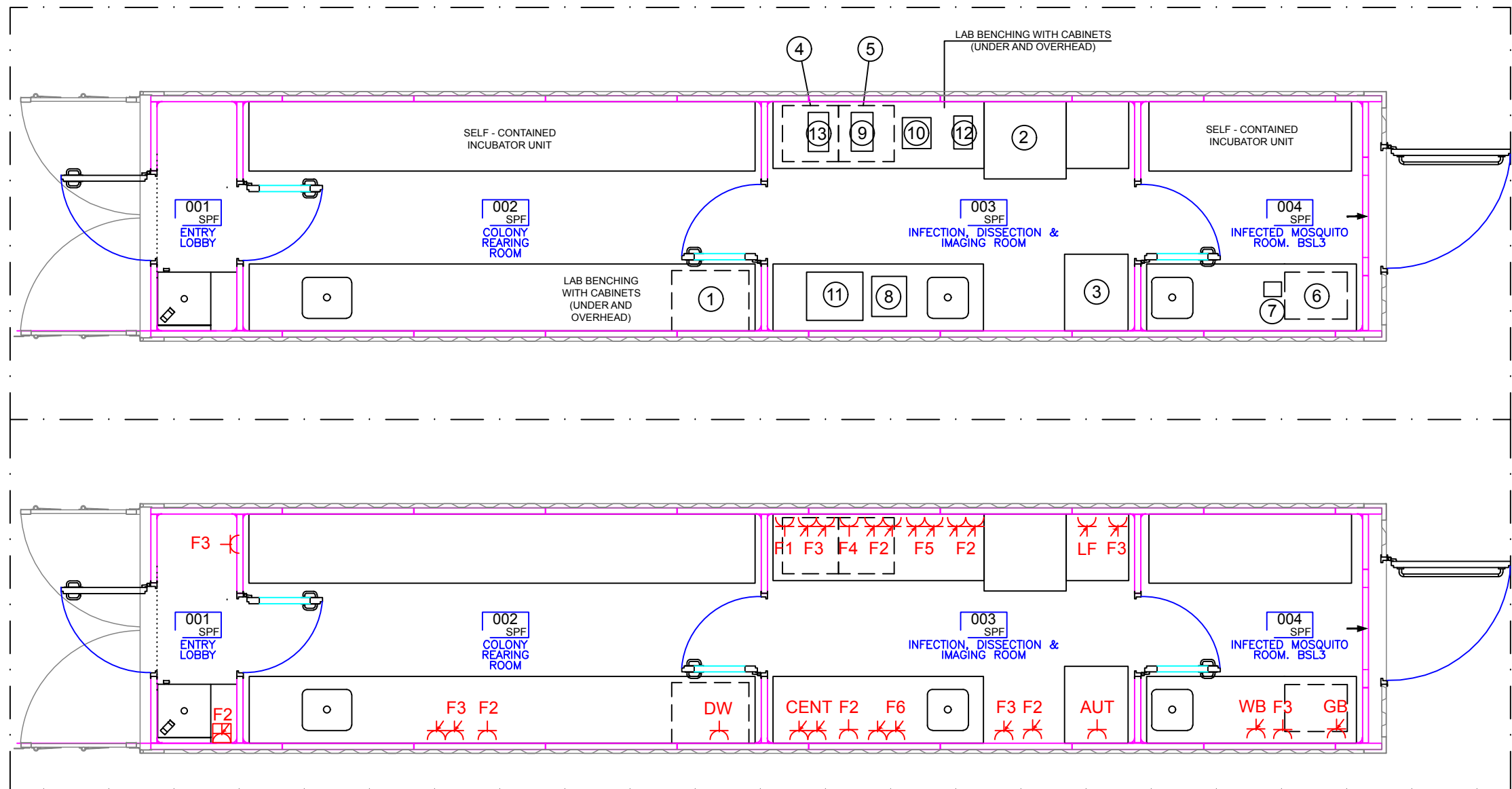
LED LAMP 600x600 mm ACCESSIBLE FROM BELOW
WITH EMERGENCY KIT (3 HOURS)

LED LAMP 300x600 mm ACCESSIBLE FROM BELOW
WITH EMERGENCY KIT (3 HOURS)

SIMPLE SWITCH ON/OFF

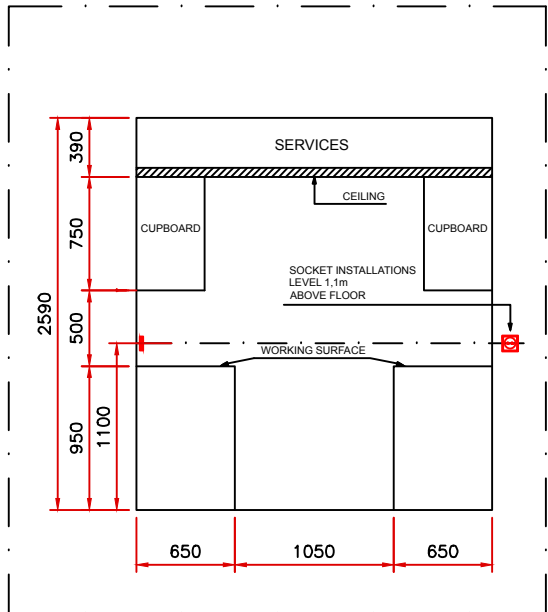
legend





Lay-out

scale 1/50



Section

scale 1/50

000
GMP
ROOM
NAME

ROOM NAME, CLASSIFICATION AND ID. NUMBER

POWER SOCKET TYPE G. LEVEL 1.5m ABOVE FLOOR (hand held air blower)

POWER SOCKET TYPE G. LEVEL 1.1m ABOVE FLOOR

POWER SOCKET TYPE G. LEVEL 0.3m ABOVE FLOOR

Legend

DESCRIPTION OF EQUIPMENT					
Nº	NAME	WEIGHT (kg)	DIMENSIONS (mm)	HEIGHT (mm)	POWER (kW)
1	DISHWASHER MIELE PG 8504 [AD]	74	600x600	835	9.20 kW
2	CLASS II MICROBIOLOGICAL SAFETY CABINET GUARDIAN MSC800	135	800x750	152	0.15 kW
3	TOUCHCLAVE TCR/40/H1-SPECIAL AUTOCLAVE	120	580x720	710	2.50 kW
4	FRIDGE LIEBHERR TP 1410	35.7	554x623	850	0.19 kW
5	FREEZER LIEBHERR GP 1376	39.3	553x624	851	0.30 kW
6	BENCHTOP GLOVE BOX ELECTRO-TECH 5503 SERIES	31	610x457	381	

Nº	NAME	WEIGHT (kg)	DIMENSIONS (mm)	HEIGHT (mm)	POWER (kW)
7	CIRCULATING BATHS GRANT TC120	2.3	172x141	333	1.40 kW
8	FLUORESCENT STEREO MICROSCOPE LEICA BIOSCIENCE, M205 FA		340x390	547	
9	STANDARD LIGHT MICROSCOPE OLYMPUS CX43	7.3	211x376	393	
10	DISSECTION/ STEREO MICROSCOPE LEICA BIOSYSTEMS M80		278x301	395	
11	T CONTROLLED CENTRIFUGE: EPPENDORF CENTRIFUGE 5804	55	470x550	340	0.90 kW
12	LABORATORY LIQUID SUCTION SYSTEM INTEGRA VACUSAFE	3.4	180x320	530	
13	HEATING BLOCK GRANT QBD4		380x200	100	0.60 kW

20-Power Sockets



transmissionzero

IMPERIAL



drawing scale 1:50

Modular Portable Laboratory

project

TECHNICAL DESIGN PROJECT

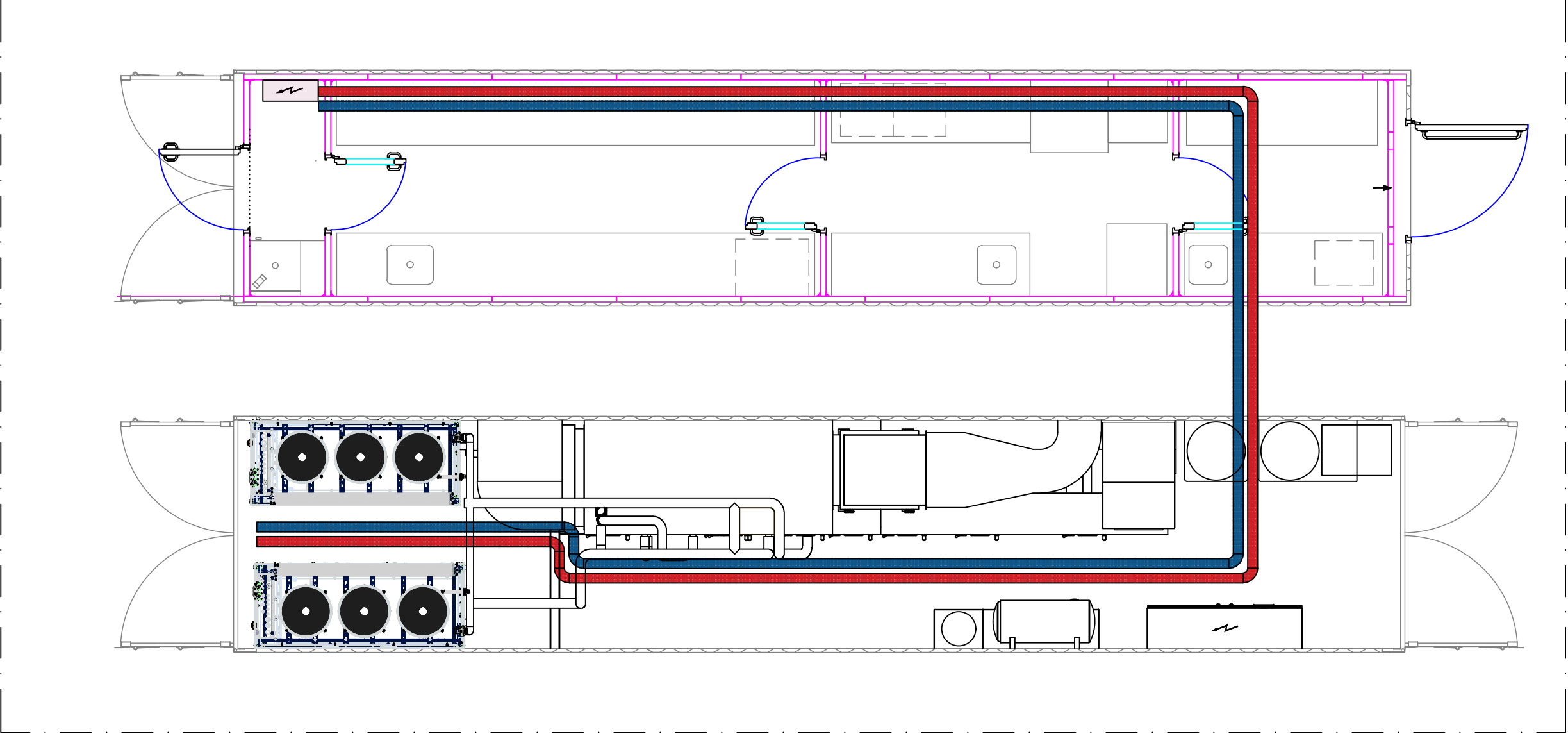
POWER SOCKETS

title

20

scale 1/50

drawing 15549-PB-EC-01



Lay-out
scale 1/50

LIGHTING AND SOCKETS TRAY.
TRAY MESH (REJIBAND TYPE)

CONTROL TRAY.
TRAY MESH (REJIBAND TYPE)

legend

21-Electrical Channels

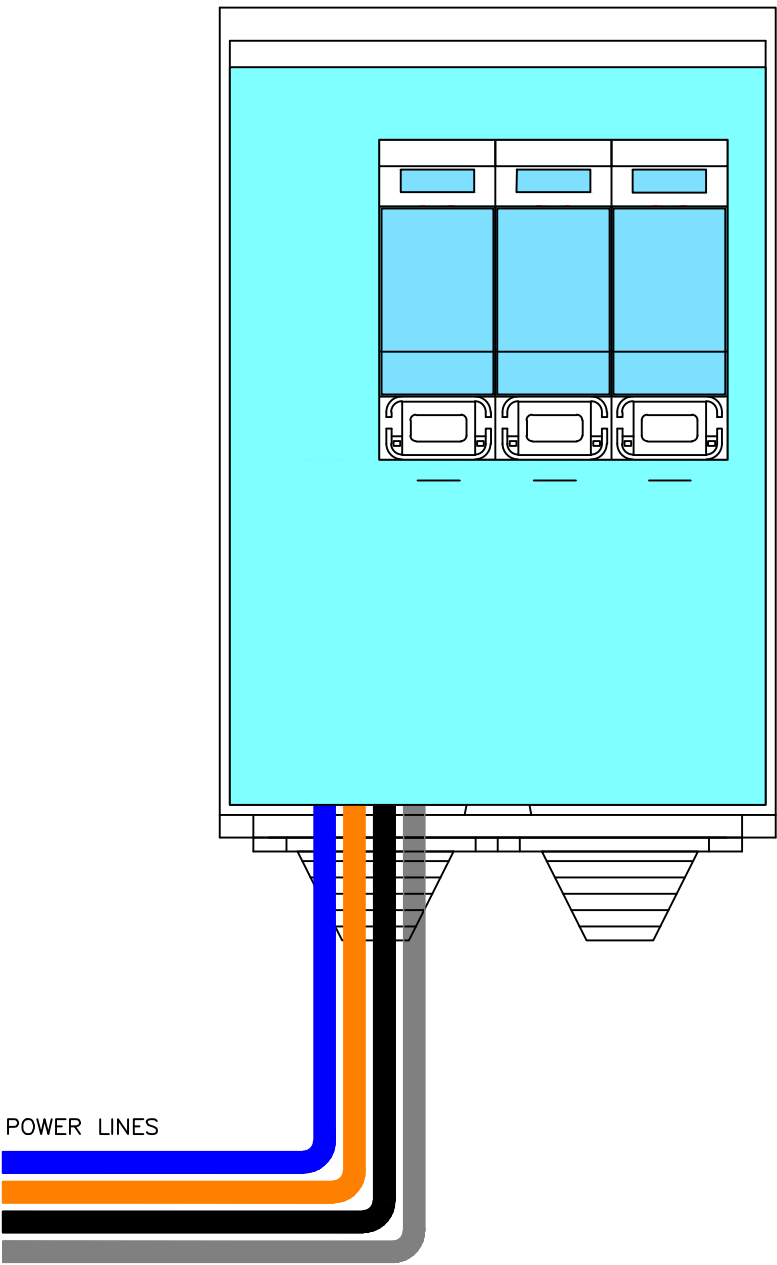


IMPERIAL



project	Modular Portable Laboratory	title	TECHNICAL DESIGN PROJECT ELECTRICAL CHANNELS	21	scale	1/50
					drawing	15549-PB-EC-02

CGP-7-160/BUC



22-Power Income Connection Box



IMPERIAL

Modular Portable
Laboratory

TECHNICAL DESIGN PROJECT

POWER INCOME CONNECTION BOX

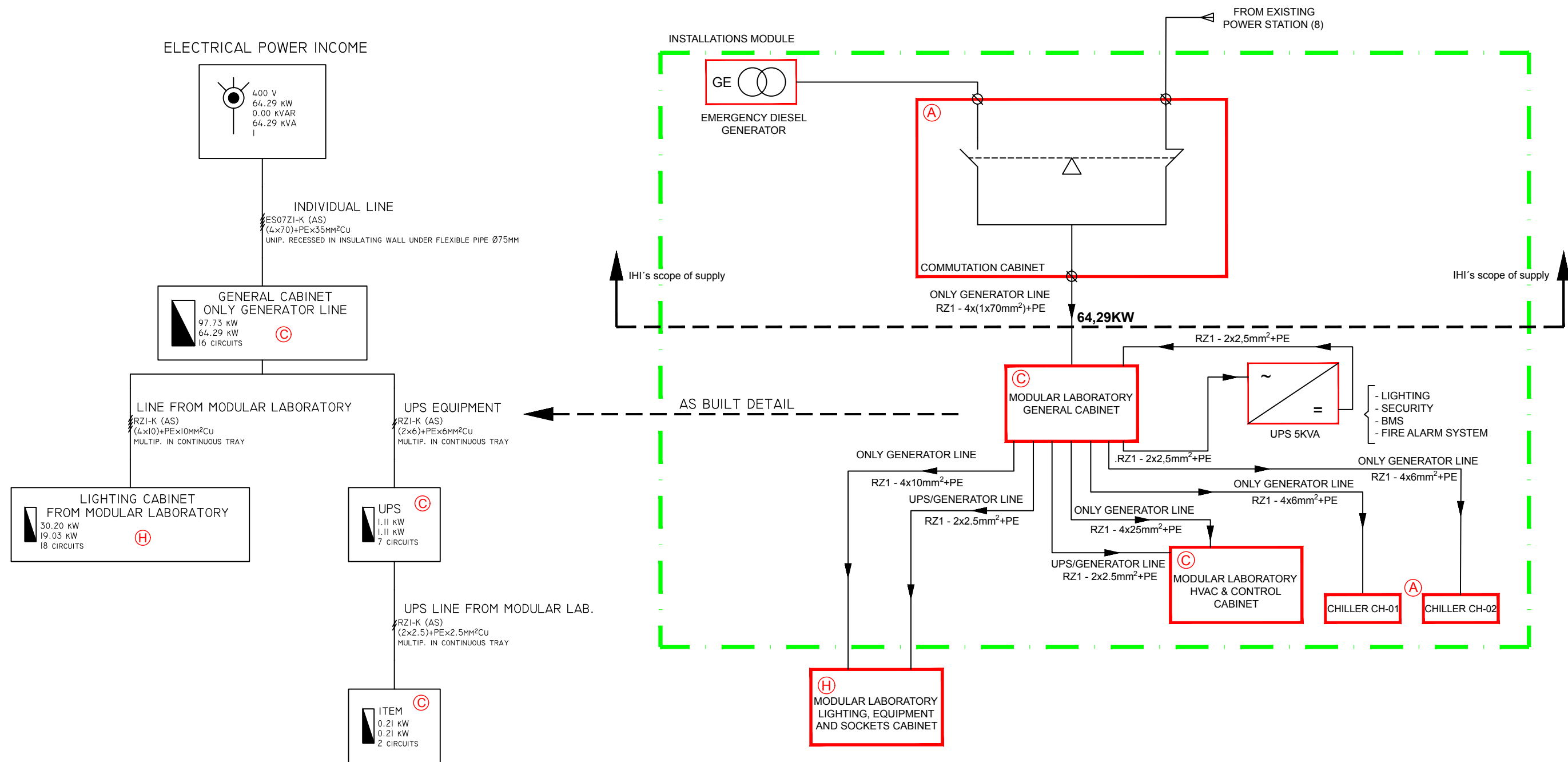
22

scale

AS INDICATED

drawing

15549-PB-EC-03



NOTES:

1. UPS POWERED CABINET

23-Electrical Installation General Schema



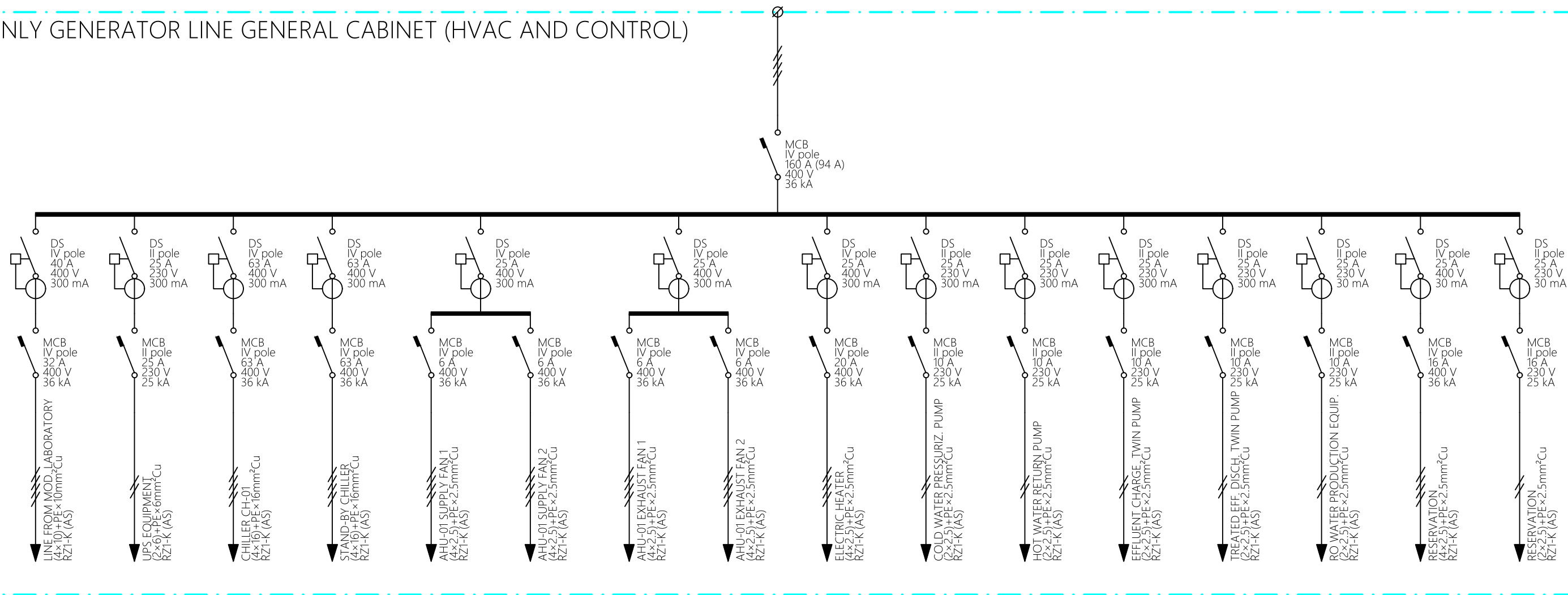
IMPERIAL

Modular Portable Laboratory	TECHNICAL DESIGN PROJECT ELECTRICAL INSTALLATION GENERAL SCHEMA	23	scale _____ N/S
project _____	title _____	drawing _____	15549-CJ-EE-00

24-Modular Laboratory General Cabinet (& HVAC)

ELECTRICAL POWER INCOME
(4×70)+PE×35mm²Cu
ES07Z1-K (AS)
tube=75mm

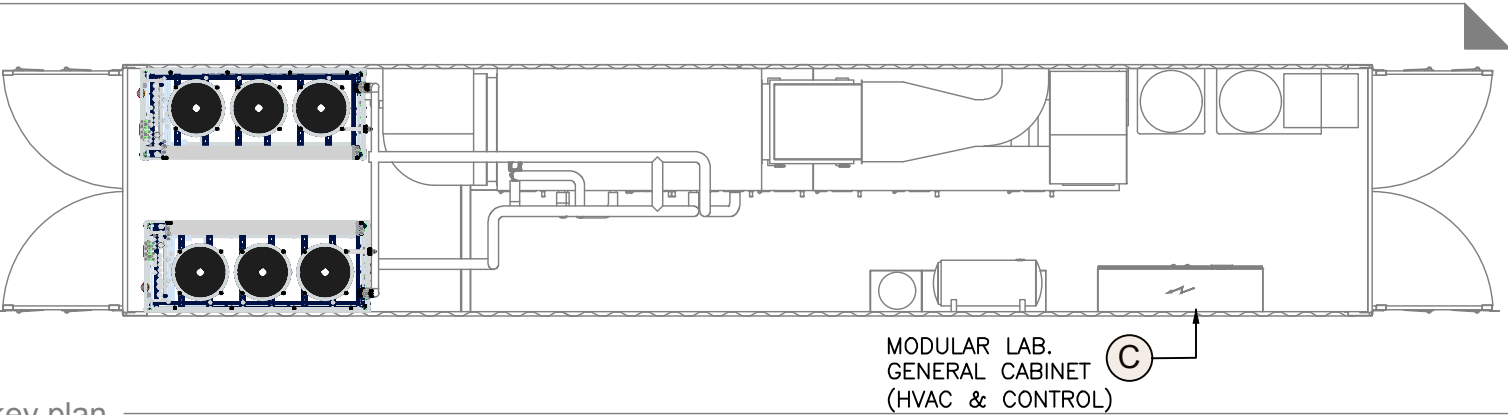
ONLY GENERATOR LINE GENERAL CABINET (HVAC AND CONTROL)



CONSUMPTION	FROM MOD. LAB.	UPS	CHILLER CH-01	STAND-BY CHILLER	SUPPLY FAN 1	SUPPLY FAN 2	EXHAUST FAN 1	EXHAUST FAN 2	ELECTRIC HEATER	COLD WATER PUMP	HOT WATER PUMP	EFFLUENT PUMP 1	EFFLUENT PUMP 2	RO WATER PROD.	RESERVATION	RESERVATION
Pcal (W)	19,026	1,11	22,000	22,000	1,230	1,230	1,230	1,230	9,000	250	250	1,000	1,000	1,000	3,000	2,000
Un (V)	400	230	400	400	400	400	400	400	400	230	230	230	230	230	400	230
Ib (A)	27,46	4,83	31,75	31,75	1,78	1,78	1,78	1,78	12,99	1,09	1,09	4,35	4,35	4,35	4,33	8,70
Iz (A)	64,61	52,78	87,36	87,36	27,30	27,30	27,30	27,30	27,30	30,03	30,03	30,03	30,03	30,03	27,30	30,03
Sf (mm²)	10	6	16	16	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Ltot (m)	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00
Lvd (m)	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00
VD.circ. (%)	0,2283	0,1304	0,1636	0,1636	0,0572	0,0572	0,0572	0,0572	0,4356	0,0703	0,0703	0,2822	0,2822	0,2822	0,1401	0,5709
VD.tot. (%)	0,2853	0,1873	0,2206	0,2206	0,1142	0,1142	0,1142	0,1142	0,4925	0,1273	0,1273	0,3392	0,3392	0,3392	0,1970	0,6279

NOTES:

1. DS: DIFFERENTIAL SWITCH; MCB: THERMAL-MAGNETIC (AUTOMATIC) CIRCUIT BREAKER



key plan



IMPERIAL

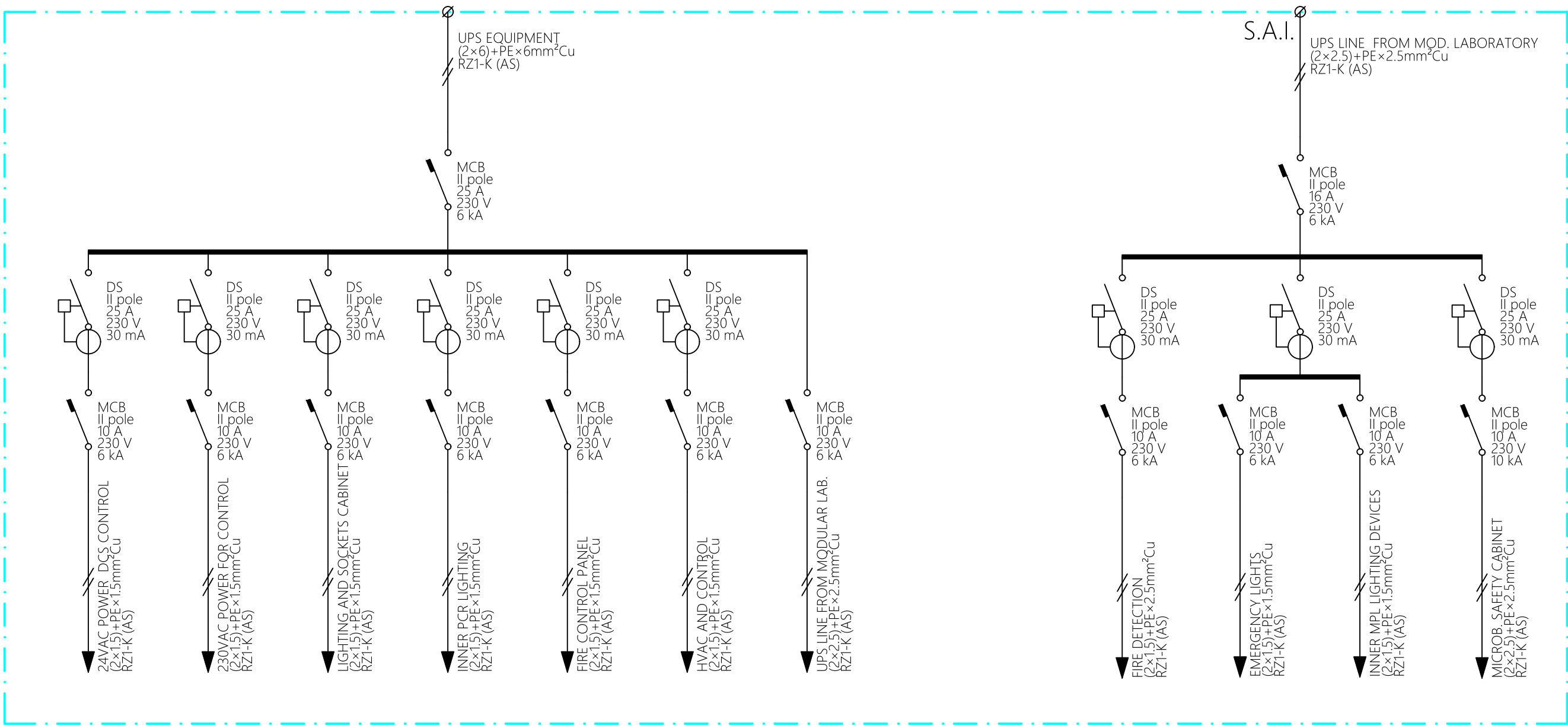
Modular Portable Laboratory

TECHNICAL DESIGN PROJECT
MODULAR LABORATORY
GENERAL CABINET (& HVAC)

24

scale N/S

drawing 15549-CJ-EE-01



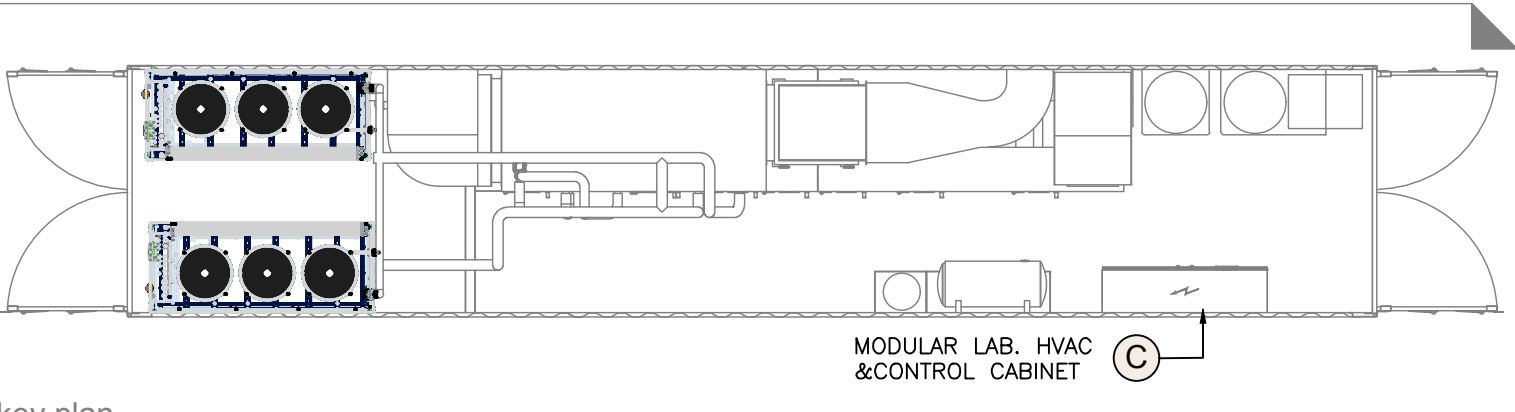
CONSUMPTION	24VAC DCS CONT.	230VAC CONTROL	LIGHTING CABINET	INNER PCR LIGHT.	FIRE PANEL	HVAC & CONTROL	UPS LINE
Pcal (W)	250	150	100	100	150	150	211
Un (V)	230	230	230	230	230	230	230
Ib (A)	1,09	0,65	0,43	0,43	0,65	0,65	0,92
Iz (A)	21,84	21,84	21,84	21,84	21,84	21,84	30,03
Sf (mm²)	1,5	1,5	1,5	1,5	1,5	1,5	2,5
Ltot (m)	10,00	10,00	10,00	10,00	10,00	10,00	10,00
Lvd (m)	10,00	10,00	10,00	10,00	10,00	10,00	10,00
VD,circ. (%)	0,1172	0,0703	0,0469	0,0469	0,0703	0,0703	0,0593
VD,acum. (%)	0,3045	0,2576	0,2342	0,2342	0,2576	0,2576	0,2466

CONSUMPTION	FIRE DETECTION	EMERG. LIGHTS	INNER MPL LIGHT.	MICROB. CABINET
Pcal (W)	483	11	200	100
Un (V)	230	230	230	230
Ib (A)	0,35	0,05	0,87	0,43
Iz (A)	2,1	21,84	21,84	30,03
Sf (mm²)	1,5	1,5	1,5	2,5
Ltot (m)	3,00	8,00	8,00	10,00
Lvd (m)	3,00	8,00	8,00	10,00
VD,circ. (%)	0,820	0,0041	0,0750	0,0281
VD,acum. (%)	0,4318	0,2508	0,3216	0,3134

NOTES:

- 1. DS: DIFFERENTIAL SWITCH; MCB: THERMAL-MAGNETIC (AUTOMATIC) CIRCUIT BREAKER
- 2. UPS POWERED CABINET

25-Modular Laboratory General Cabinet (U.P.S.)

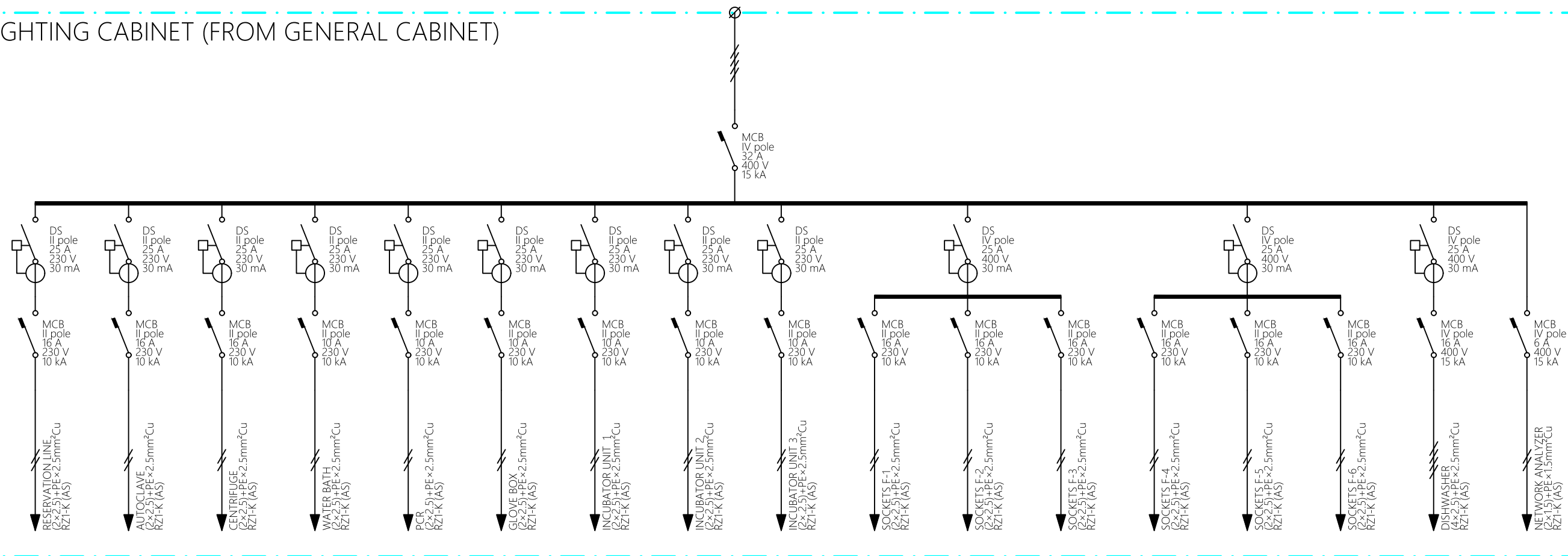


IMPERIAL

26-Modular Laboratory Lighting, Equipment and Sockets Cabinet

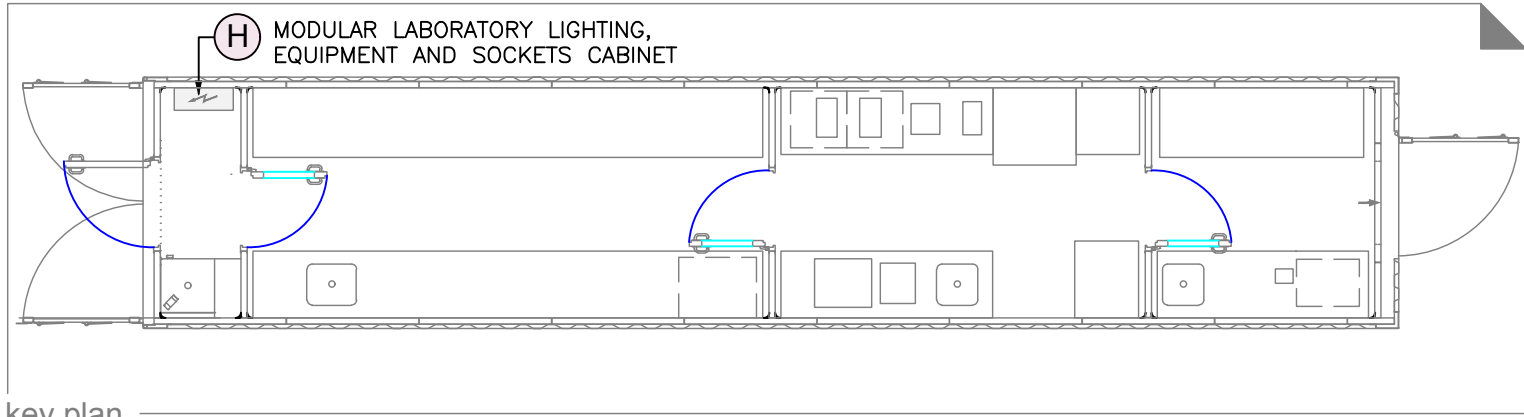
LINE FROM MODULAR LABORATORY GENERAL CABINET
(4×10)+PE×10mm²Cu
RZ1-K (AS)

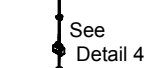
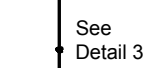
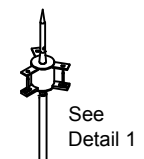
LIGHTING CABINET (FROM GENERAL CABINET)



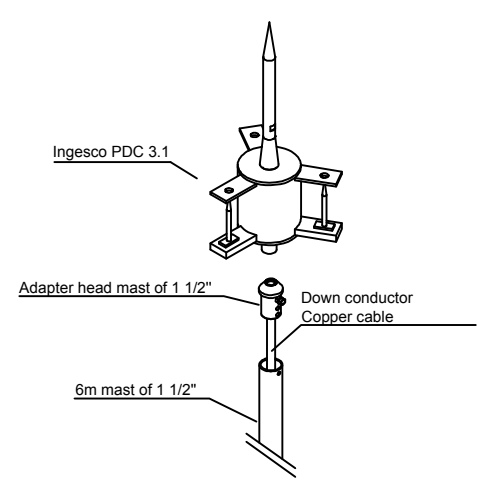
CONSUMPTION	RESERVATION	AUTOCLAVE	CENTRIFUGE	WATER BATH	PCR MACHINE	GLOVE BOX	INCUBATOR 1	INCUBATOR 2	INCUBATOR 3	SOCKETS F-1	SOCKETS F-2	SOCKETS F-3	SOCKETS F-4	SOCKETS F-5	SOCKETS F-6	DISHWASHER	NET. ANALYZER
Pcal (W)	1,200	2,500	900	1,400	600	1,000	2,000	2,000	2,000	1,200	1,200	1,200	1,200	1,200	1,200	9,200	100
Un (V)	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	400	230
Ib (A)	5.22	10.87	3.91	6.09	2.61	4.35	8.70	8.70	8.70	5.22	5.22	5.22	5.22	5.22	5.22	13.28	0.43
Iz (A)	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	30.03	27.30	21.84
Sf (mm²)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.5
Ltot (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Lvd (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
VD.circ. (%)	0.3393	0.7197	0.2538	0.3966	0.1689	0.2822	0.5709	0.5709	0.5709	0.3393	0.3393	0.3393	0.3393	0.3393	0.3393	0.4460	0.0469
VD.tot. (%)	0.6246	1.0050	0.5391	0.6819	0.4542	0.5675	0.8562	0.8562	0.8562	0.6246	0.6246	0.6246	0.6246	0.6246	0.6246	0.7313	0.3322

- NOTES:
- DS: DIFFERENTIAL SWITCH; MCB: THERMAL-MAGNETIC (AUTOMATIC) CIRCUIT BREAKER
 - UPS POWERED CABINET

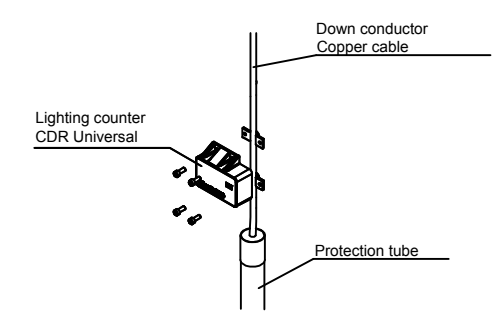




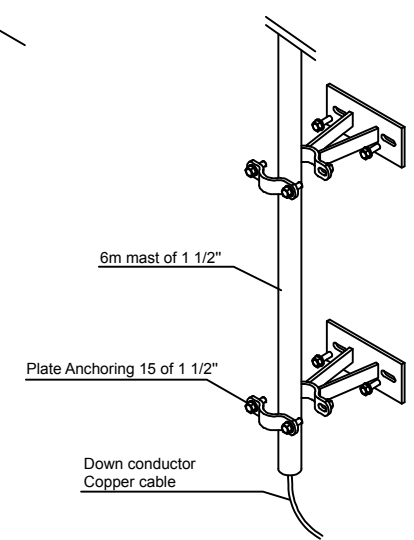
Detail 1



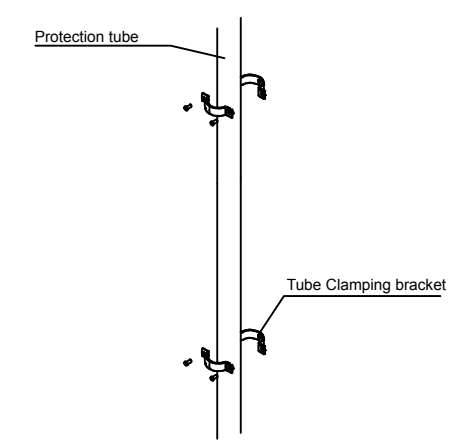
Detail 4



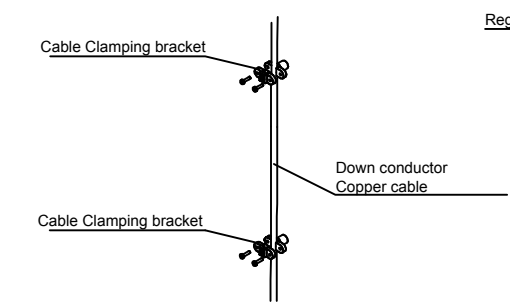
Detail 2



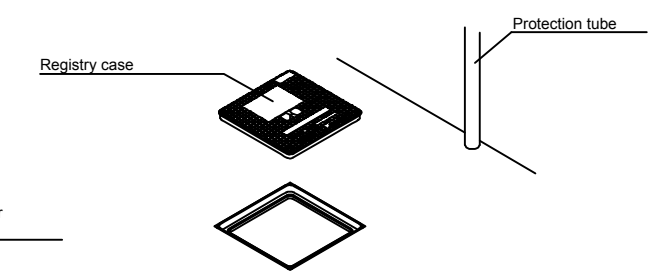
Detail 5



Detail 3



Detail 6

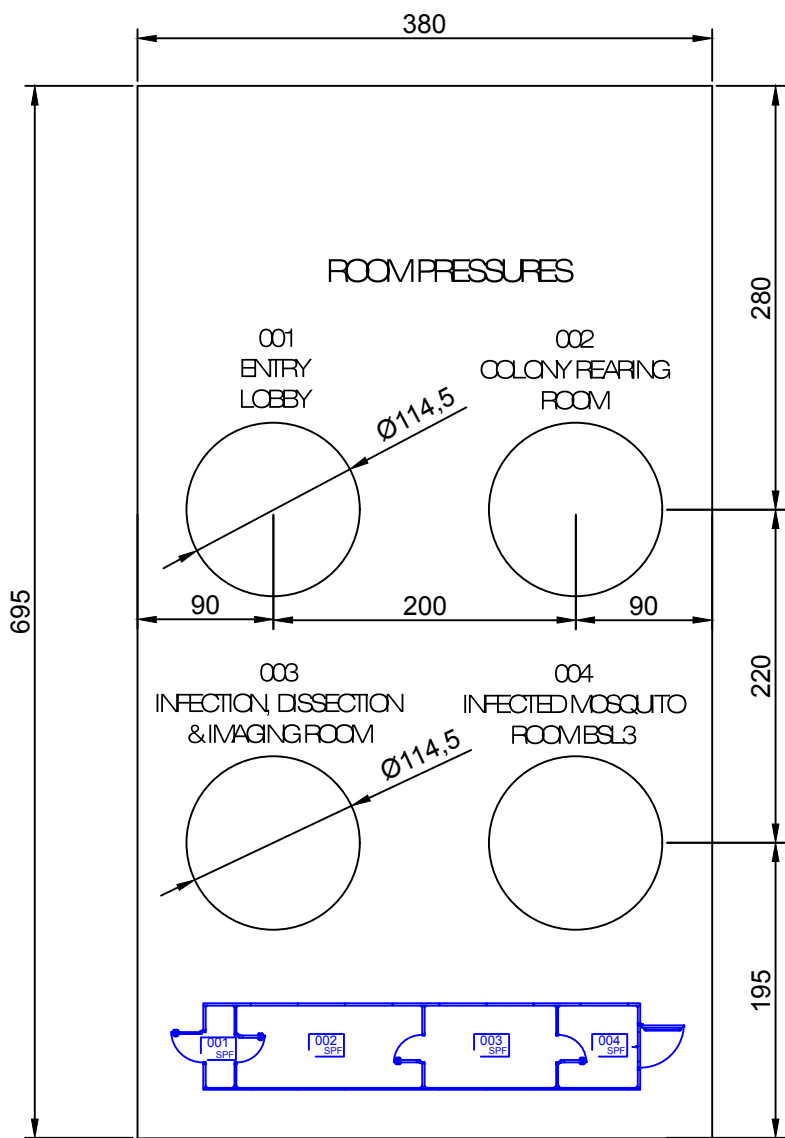


27-Lightning Protection Details



IMPERIAL

28-Magnehelic Plate



NOTES:

- 1. REMOVABLE PANEL WITH SCREWS AND RUBBER GASKET.



IMPERIAL

Modular Portable
Laboratory

TECHNICAL DESIGN PROJECT

MAGNEHELIC PLATE

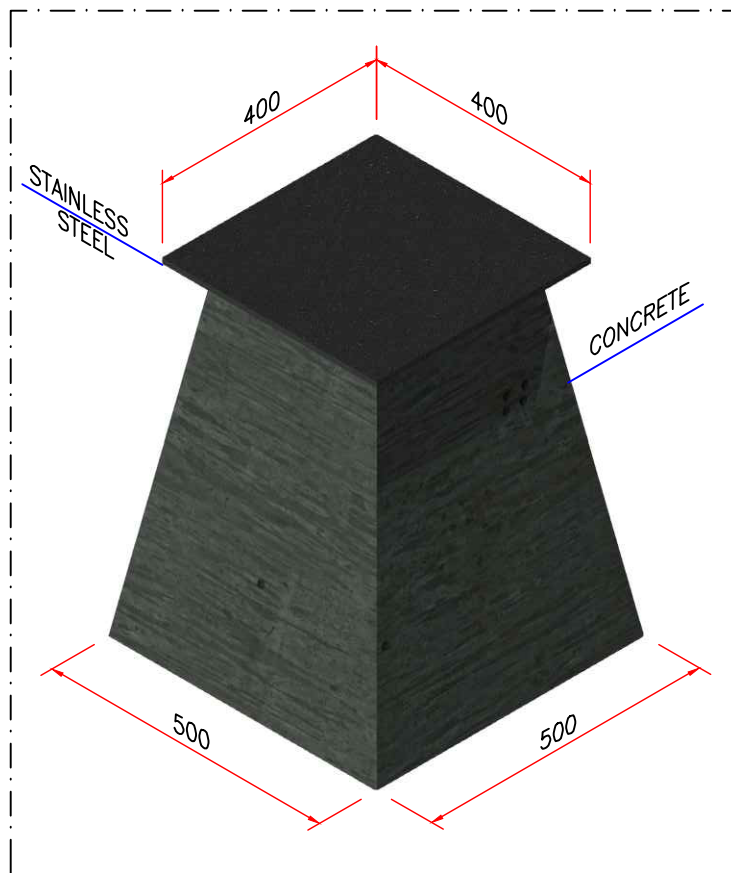
28

scale

1:5

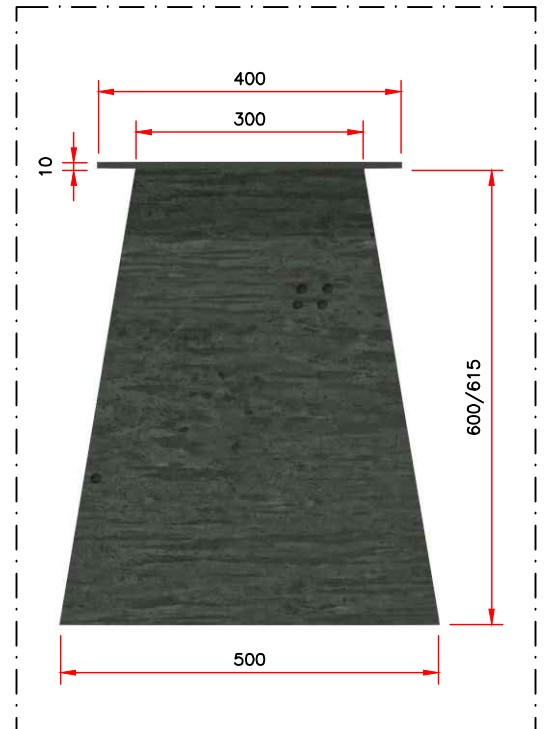
drawing

15549-DE-00



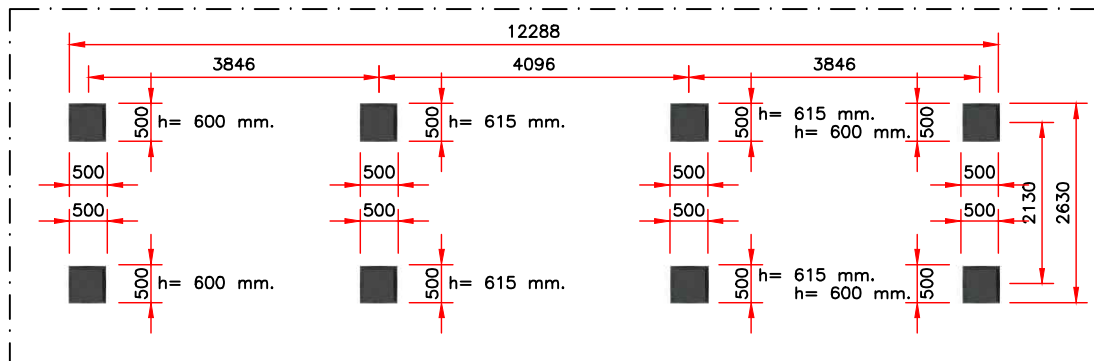
Isometric view

scale 1/10



Front view

scale 1/10



Top view

scale 1/100

1. EIGHT UNITS.

notes

29-MPL Support



transmissionzero

IMPERIAL

Modular Portable
Laboratory

TECHNICAL DESIGN PROJECT

MPL SUPPORT

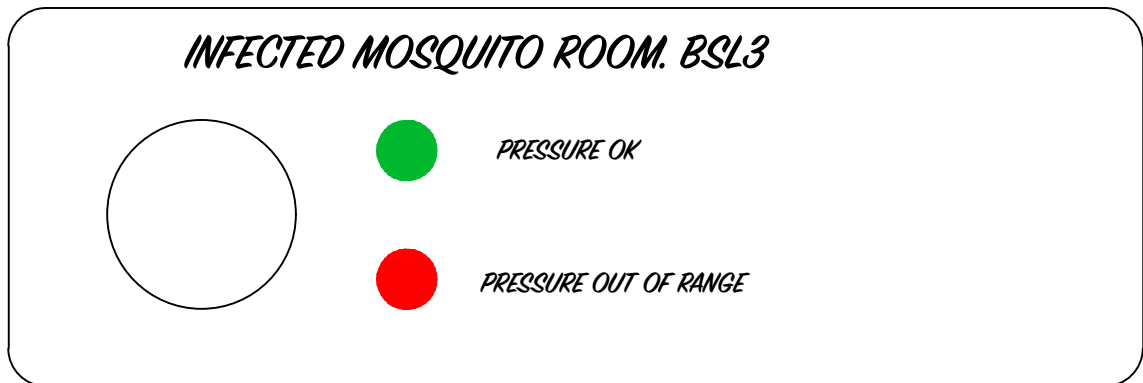
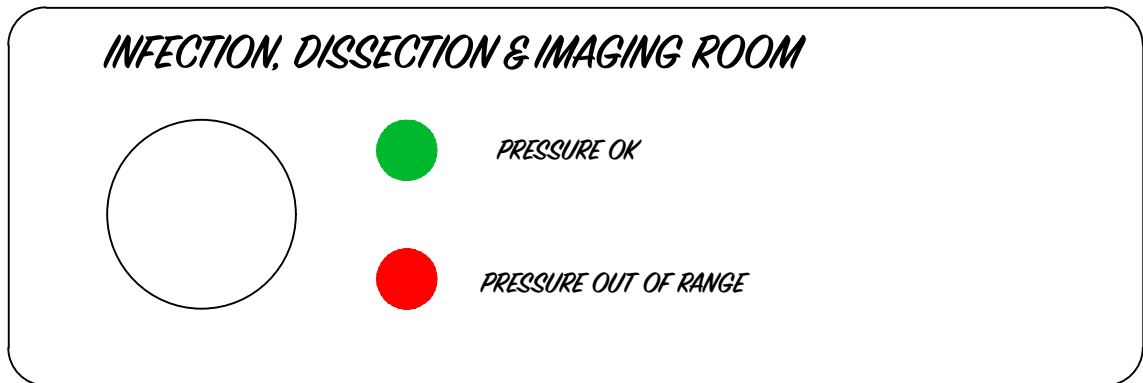
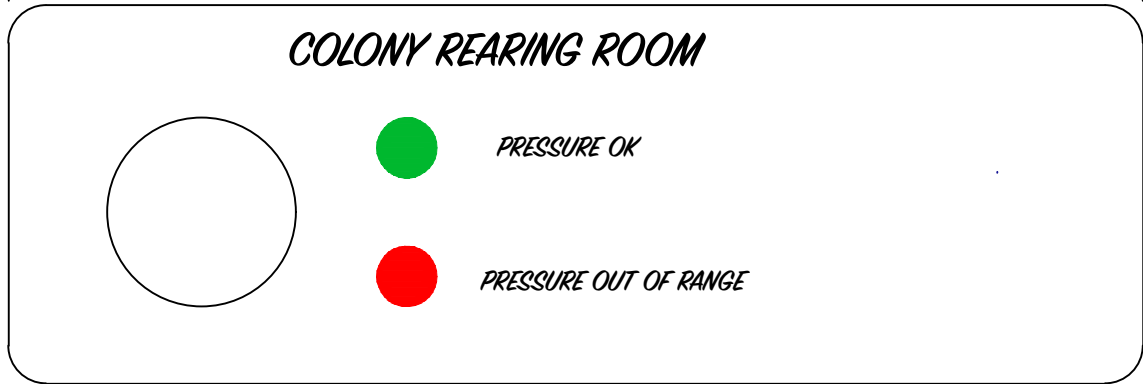
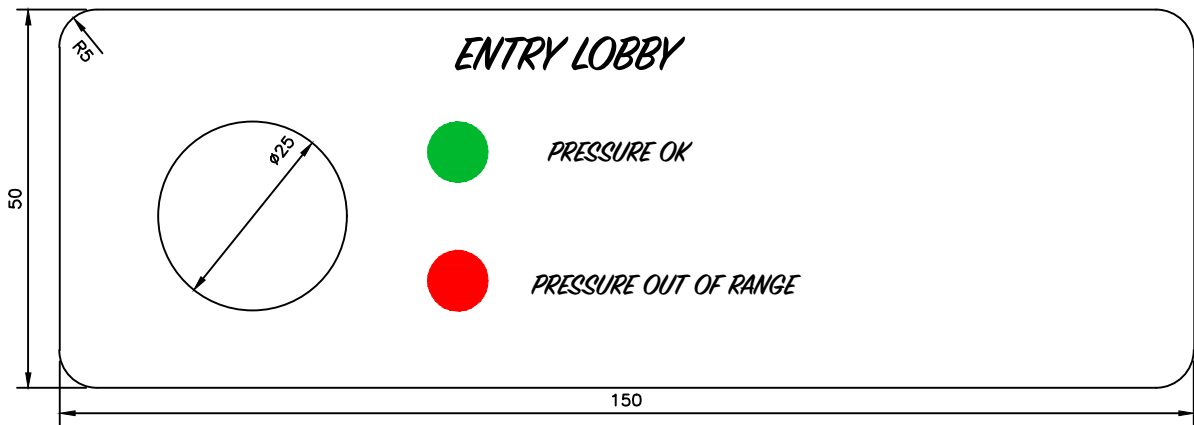
29

scale

AS INDICATED

drawing

15549-DE-01



IMPERIAL

Modular Portable
Laboratory

TECHNICAL DESIGN PROJECT

PRESSURE PLATES

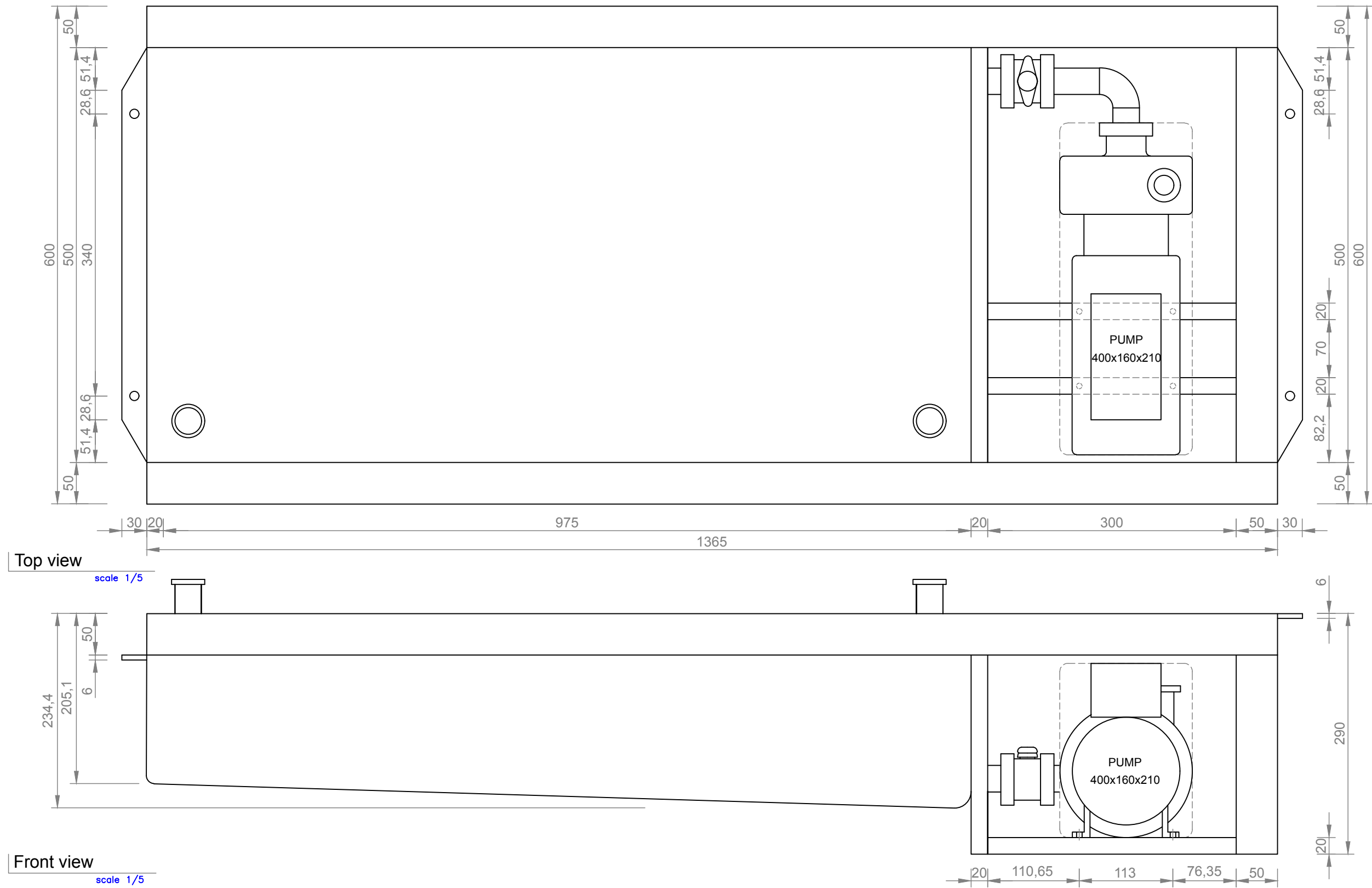
30

scale

1:1

drawing

15549-DE-02



Top view

scale 1/5

Front view

scale 1/5

Units in millimeters

31-Reception Tank & Pump



IMPERIAL

project	Modular Portable Laboratory	title	TECHNICAL DESIGN PROJECT RECEPTION TANK & PUMP	31	scale	1:5
					drawing	15549-DE-03

32-Connection Holes & Registry Cases Location

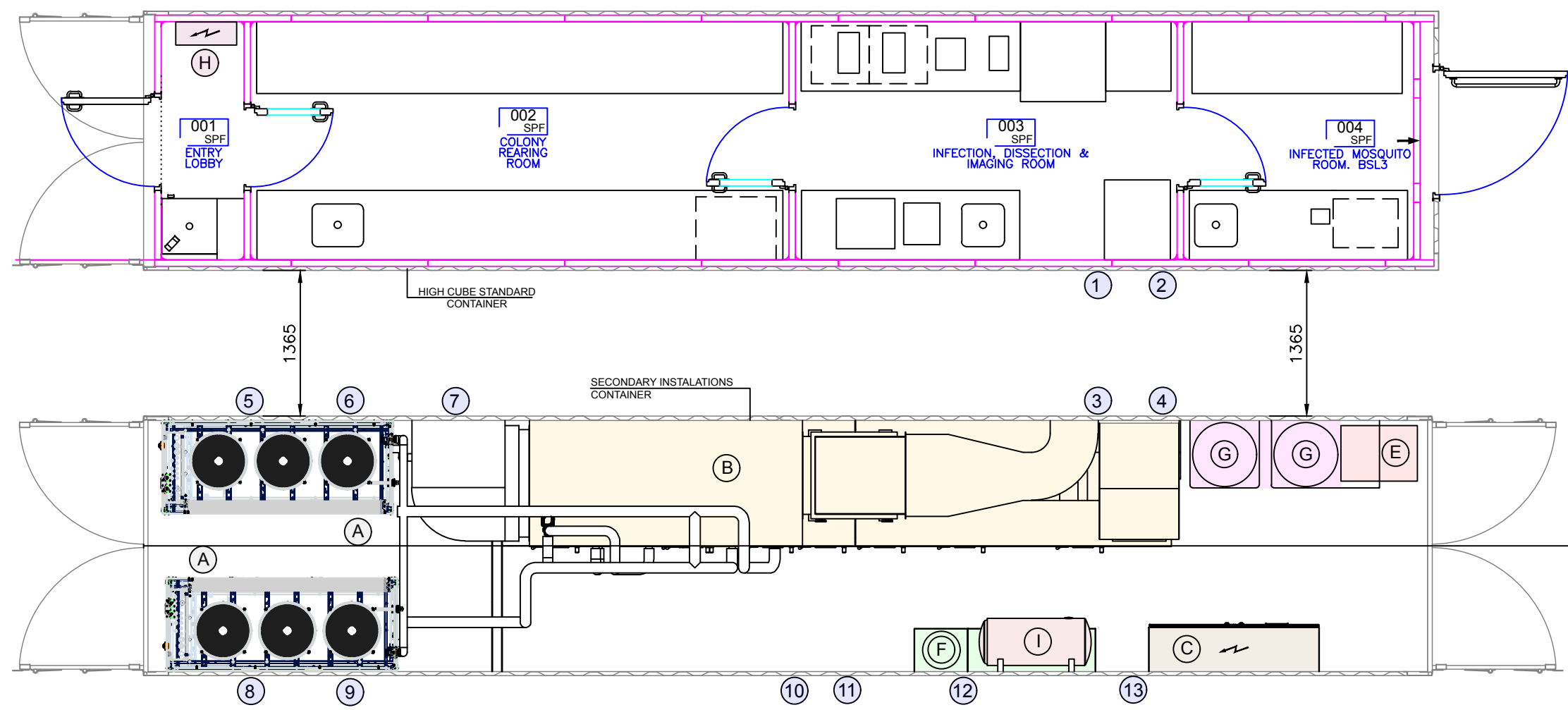


IMAGE 1 - GCP 160 A



IMAGE 2 - FEMALE HARTING



IMAGE 3 - MALE HARTING



IMAGE 4 - CONNECT. HOLE (REGISTRY CASE)

Lay-out

scale 1/50

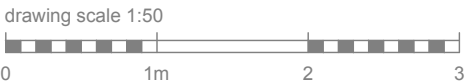
- | | |
|--|---|
| (A) RUN & STANDBY CHILLERS | (F) CWS TANK AND BOOSTER SET |
| (B) AIR HANDLING UNIT | (G) EFFLUENT TREATMENT PLANT |
| (C) ELECTRICAL GENERAL & HVAC CABINET | (H) LIGHTING, EQUIPMENT AND SOCKETS CABINET |
| (E) RO WATER PRODUCTION & STORAGE SYSTEM | (I) HOT WATER TANK |
| | (X) HOLE NUMBER |

legend

- | | |
|--------------|---------------|
| (1) DUCT | (8) CHILLER |
| (2) ELECTRIC | (9) CHILLER |
| (3) DUCT | (10) DRAINAGE |
| (4) ELECTRIC | (11) DRAINAGE |
| (5) CHILLER | (12) WATER |
| (6) CHILLER | (13) ELECTRIC |
| (7) AHU | |

legend

NOTES: SEE DRAWINGS 38 AND 39



Modular Portable Laboratory

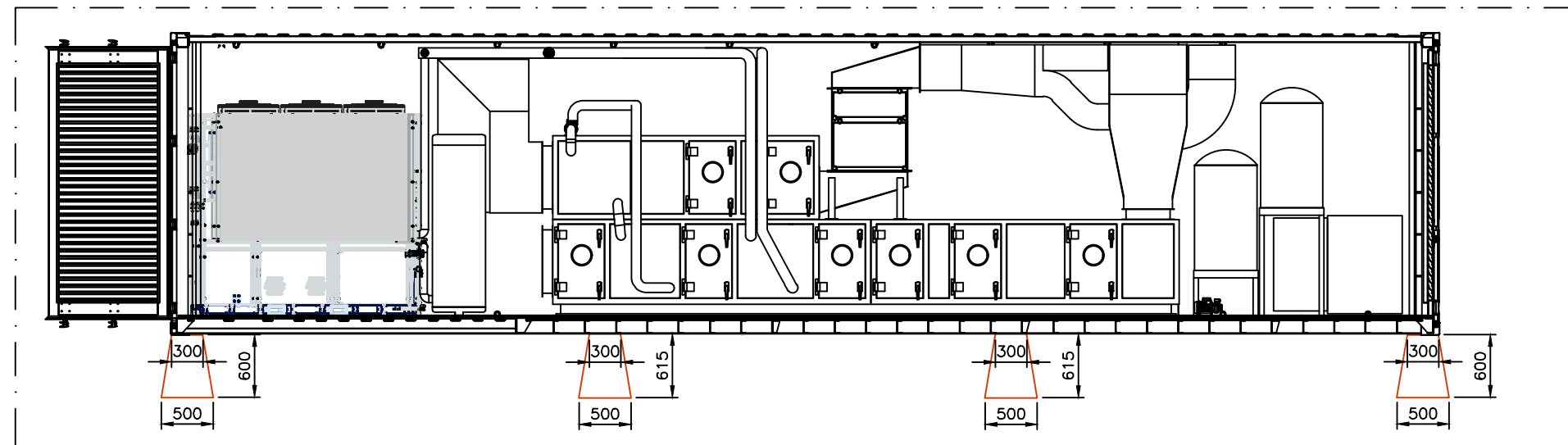
TECHNICAL DESIGN PROJECT
CONNECTION HOLES & REGISTRY CASES LOCATION

32

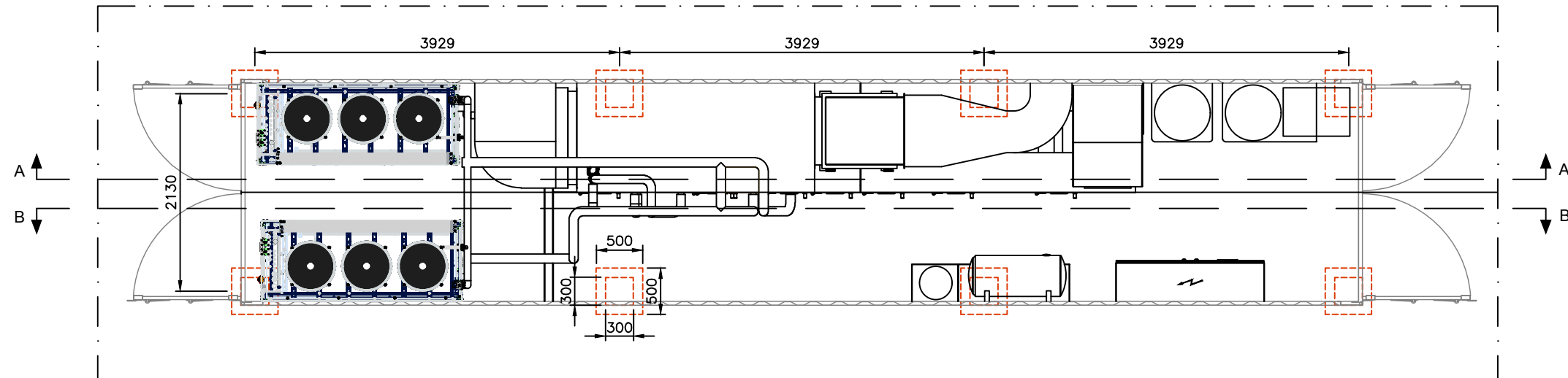
scale 1/50

drawing 15549-DE-04

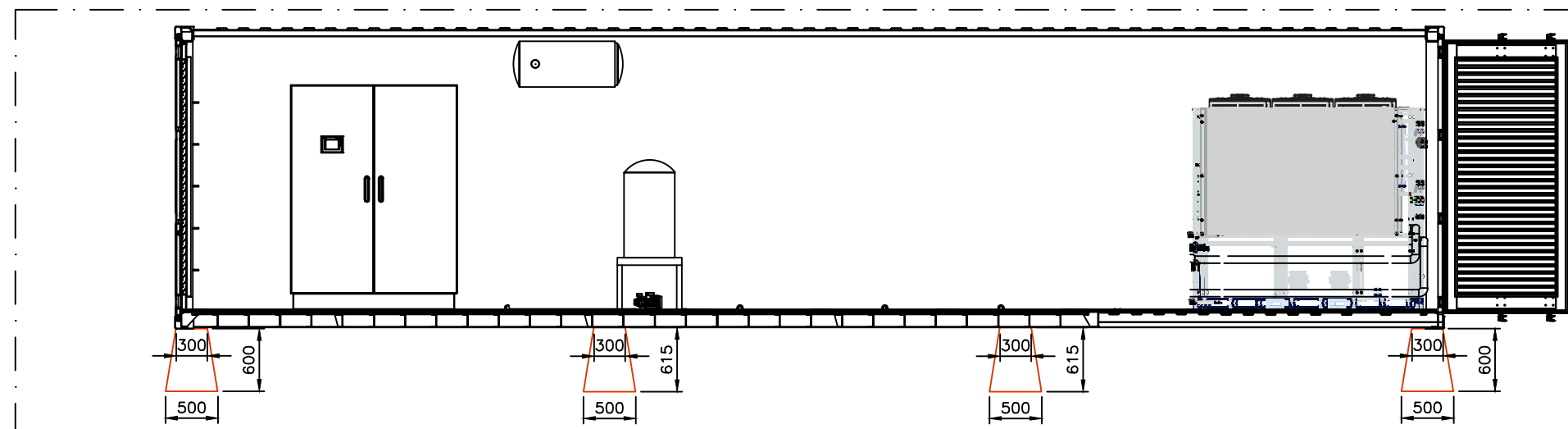




SECTION A-A



TOP VIEW



SECTION B-B

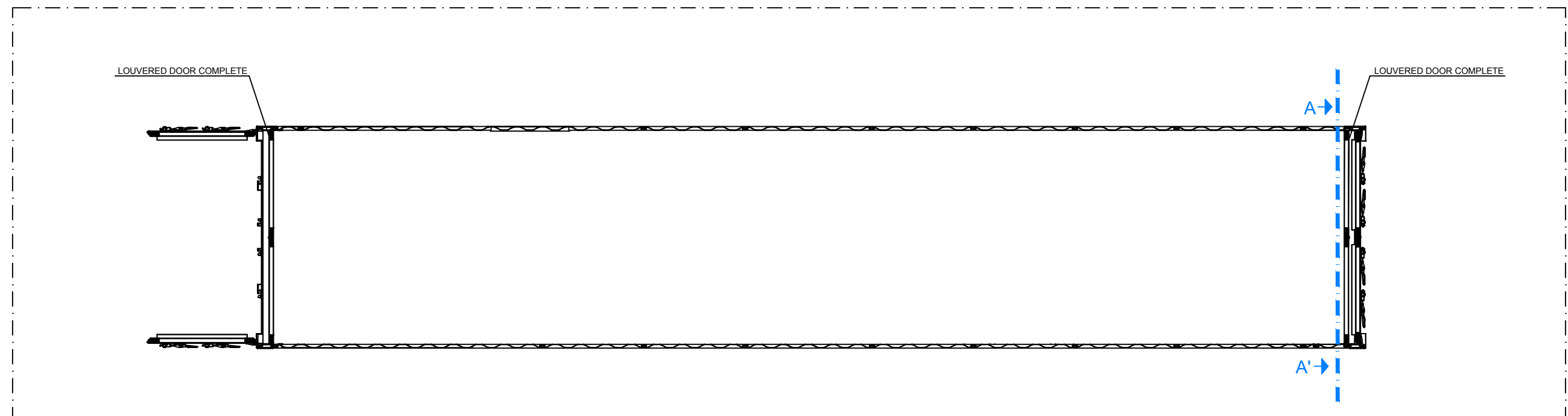
33-PCR Module Foundation



IMPERIAL

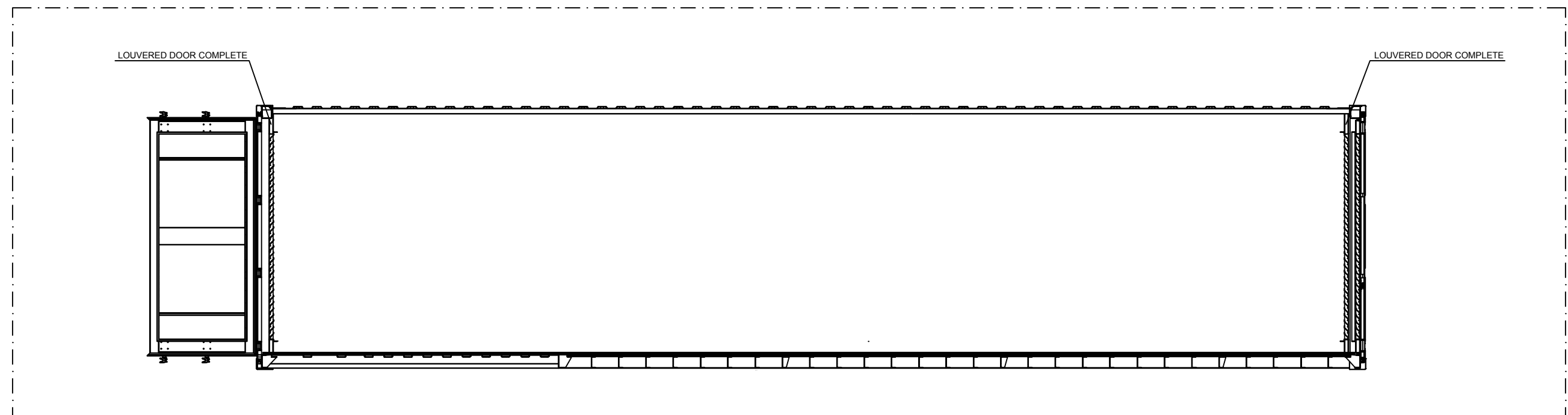


project Modular Portable Laboratory	TECHNICAL DESIGN PROJECT PRC MODULE FOUNDATION	33	scale 1/50 drawing 15549-DE-05
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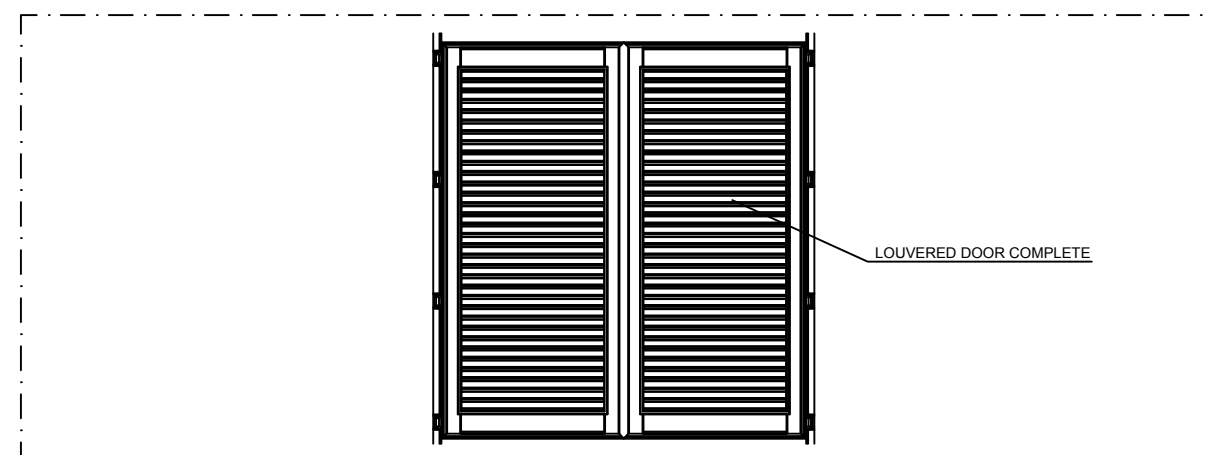
Top view

scale 1/50



Front view

scale 1/50



A-A' view-louvered door complete

scale 1/50

34-PCR Module Doors Details



IMPERIAL

Modular Portable
Laboratory

project

TECHNICAL DESIGN PROJECT

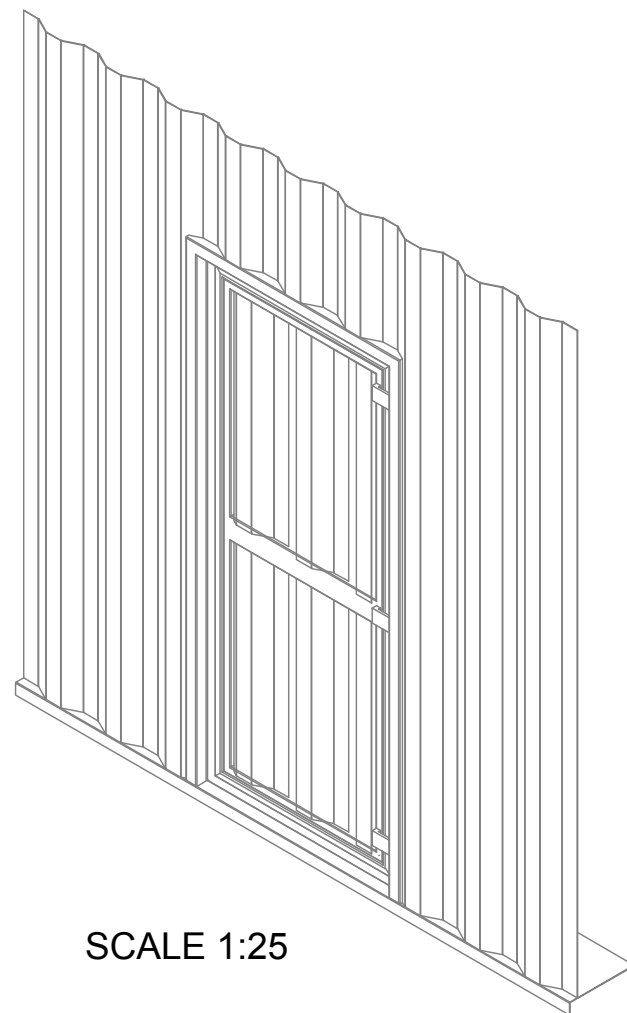
PCR MODULE
DOORS DETAIL

title

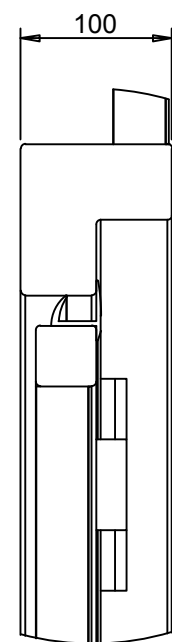
34

scale 1:50

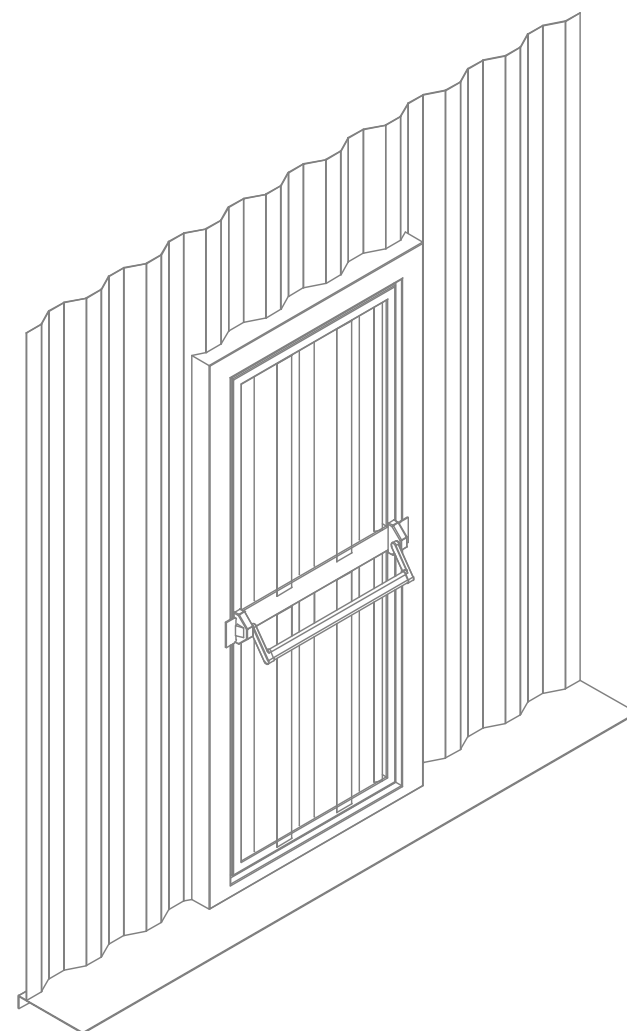
drawing 15549-DE-06



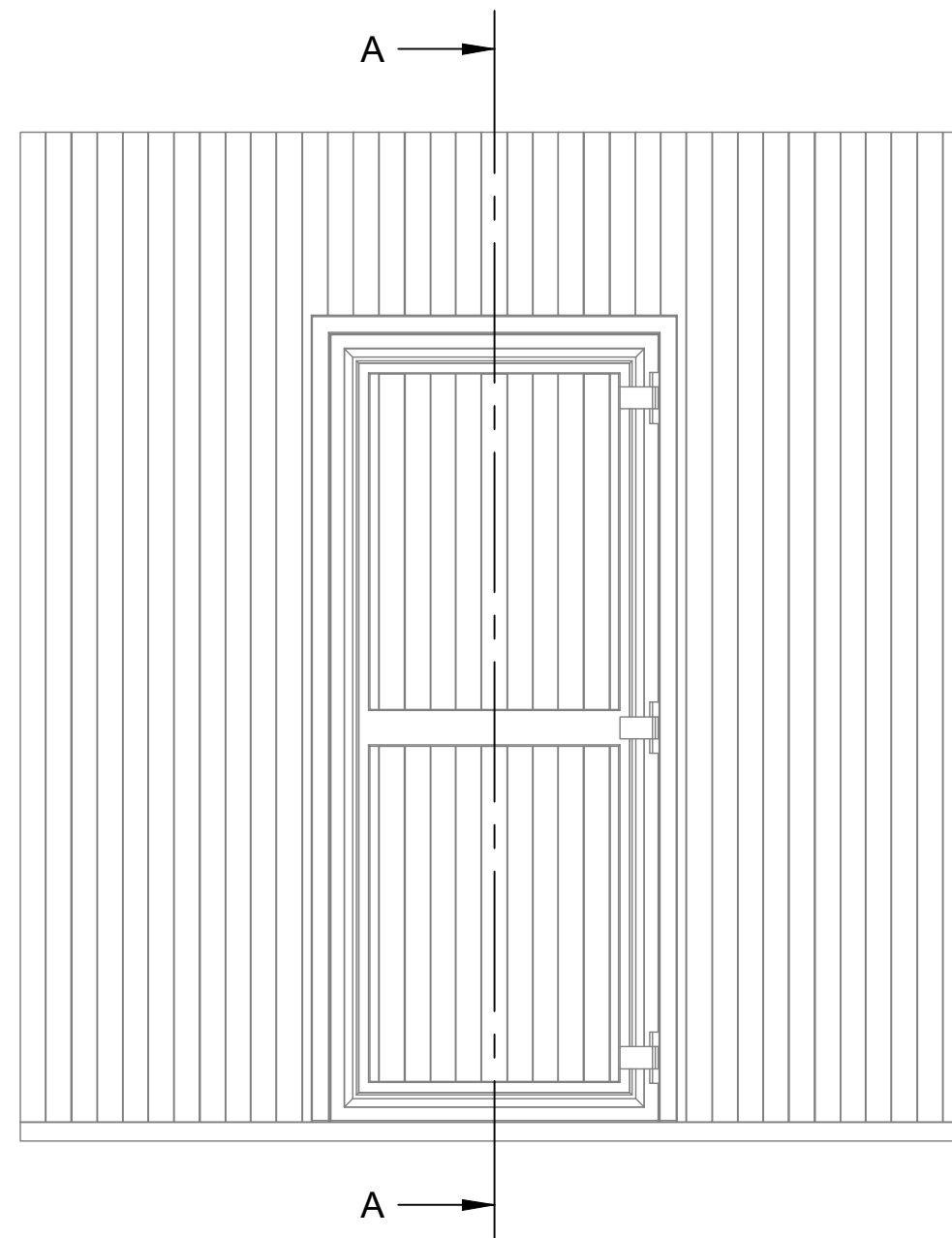
SCALE 1:25



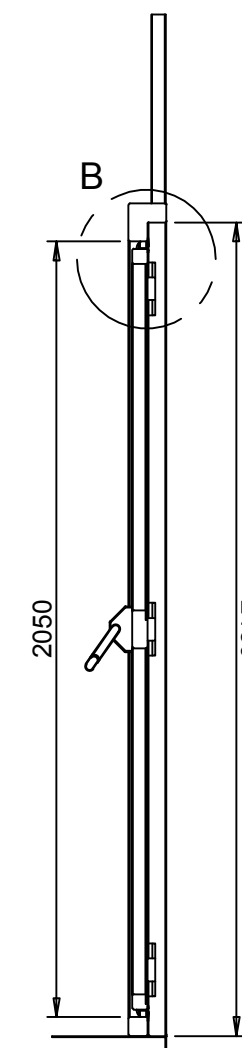
DETAIL B
SCALE 1:5



SCALE 1:25



SCALE 1:25



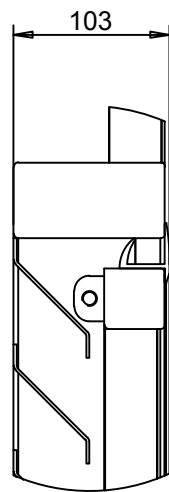
CUT A-A
SCALE 1:25

35-Emergency Door Closure Detail

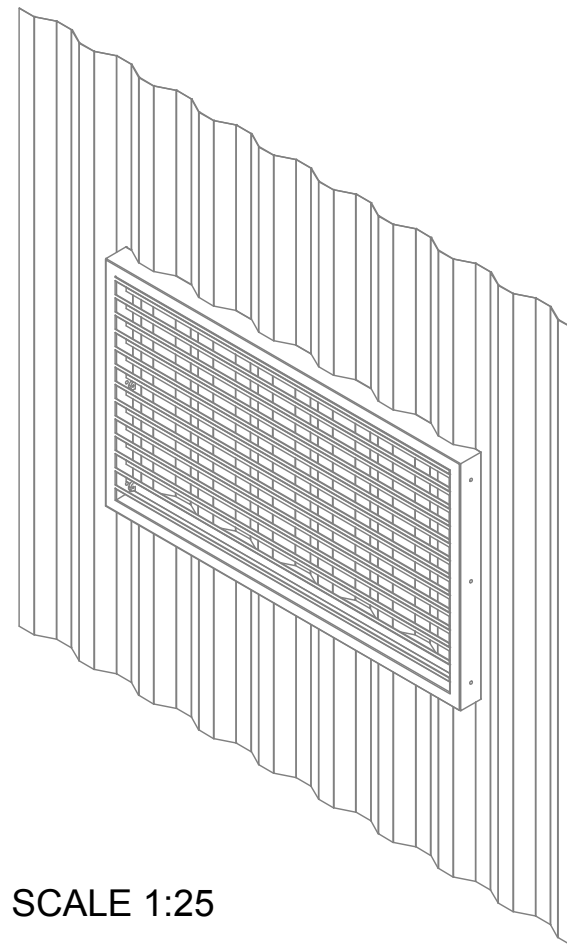


IMPERIAL

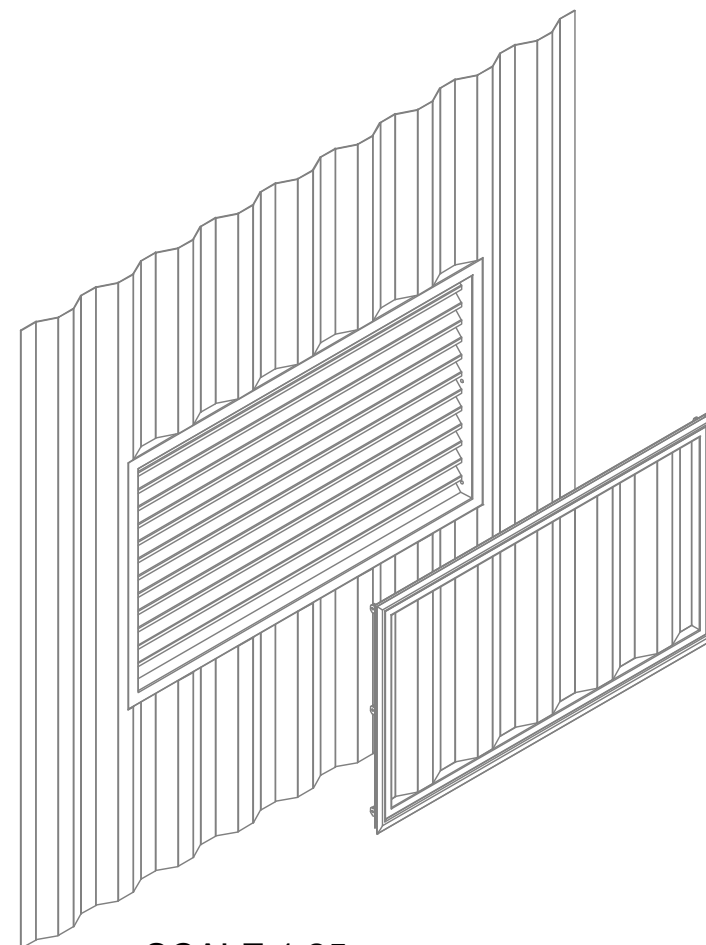
project Modular Portable Laboratory	title TECHNICAL DESIGN PROJECT EMERGENCY DOOR CLOSURE DETAIL	35	scale AS INDICATED drawing 15549-DE-07
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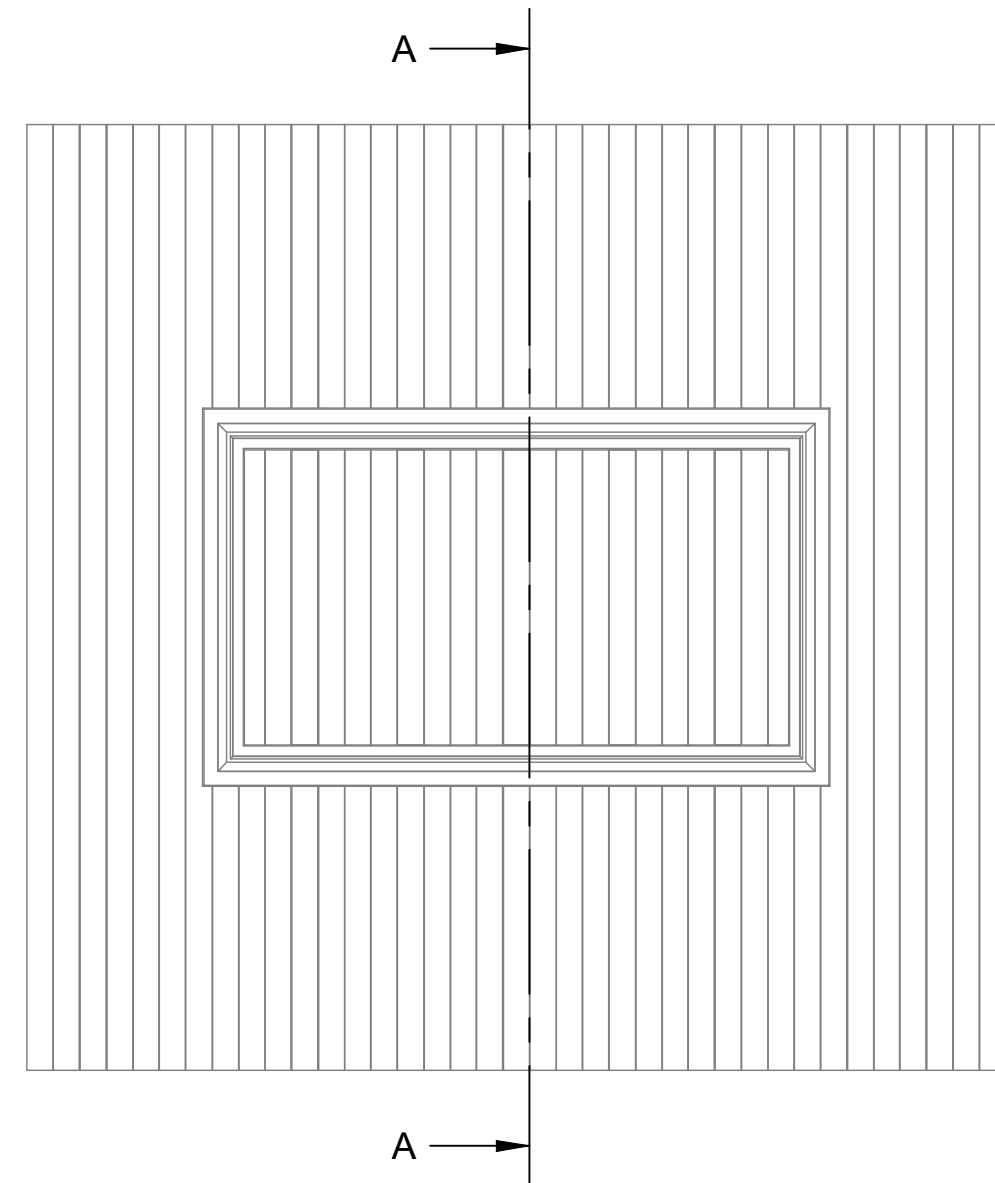
DETAIL B
SCALE 1:5



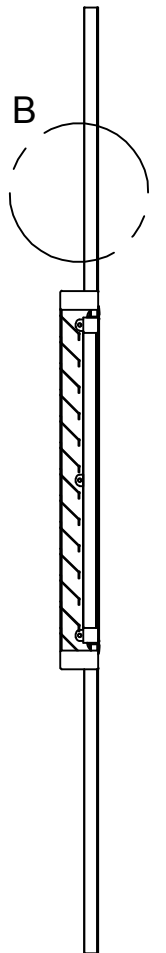
SCALE 1:25



SCALE 1:25



SCALE 1:25



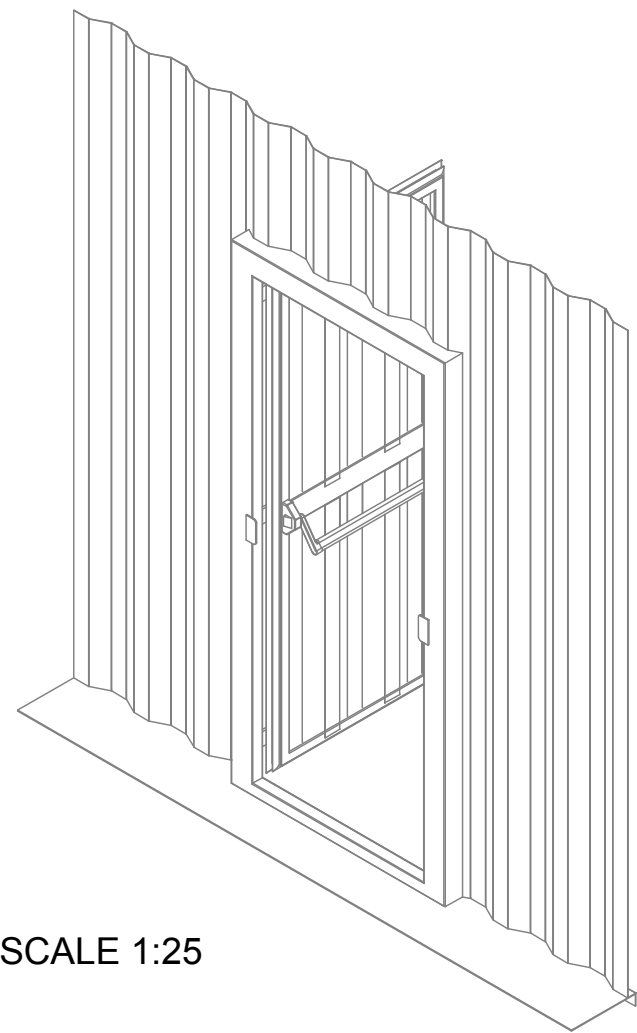
CUT A-A
SCALE 1:25

36-Grid Detail

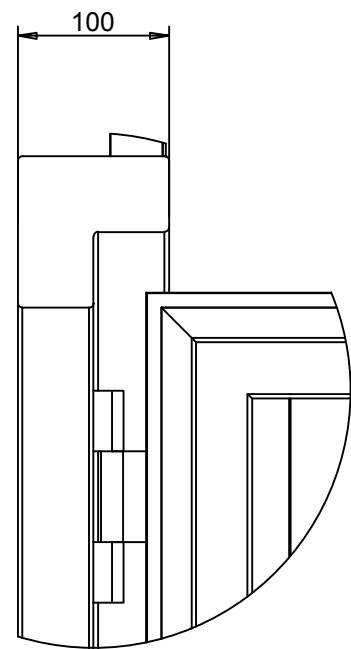


transmissionzero

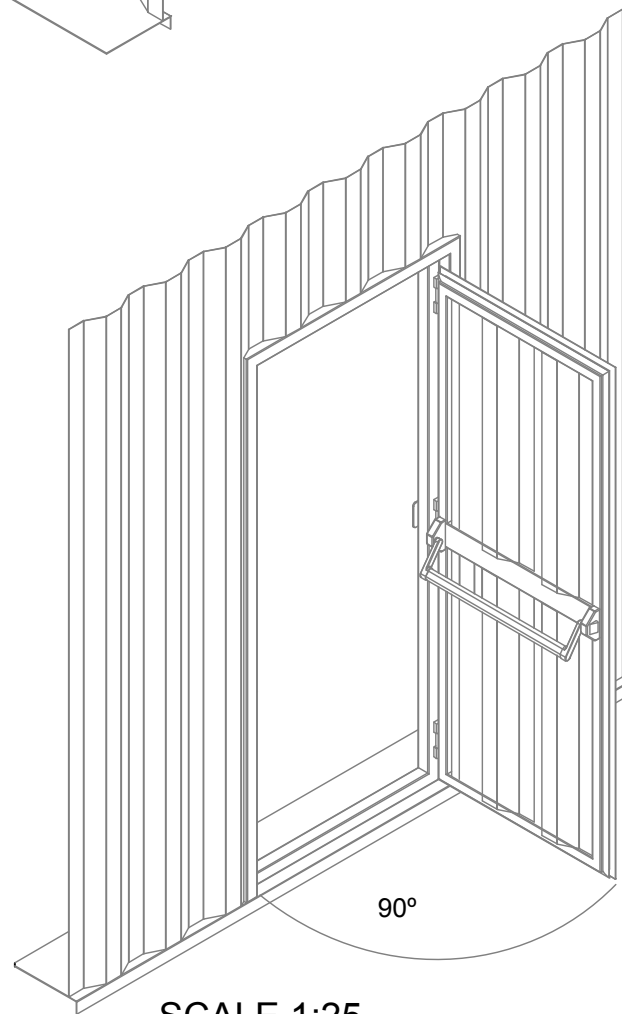
IMPERIAL



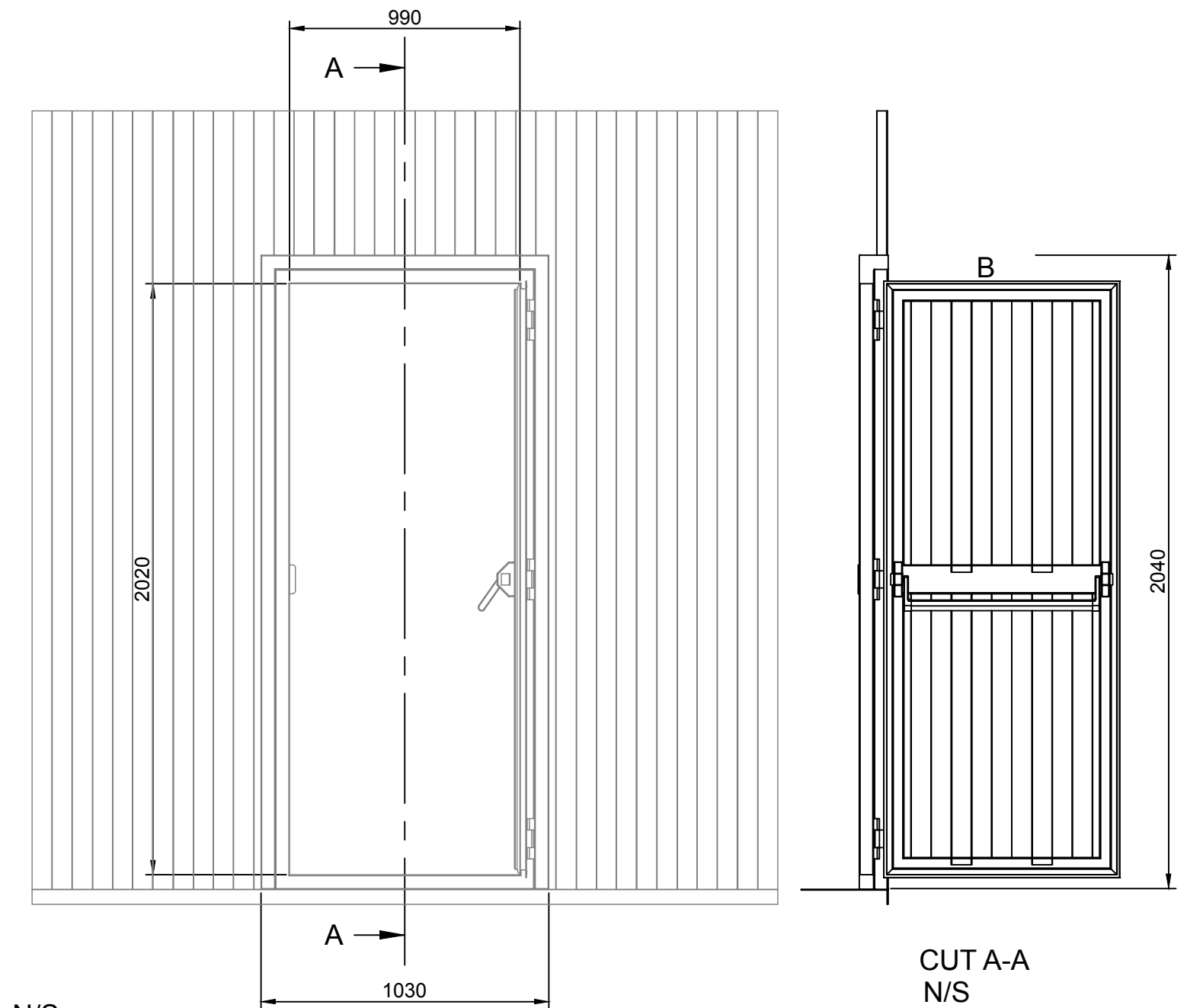
SCALE 1:25



DETAIL B
SCALE 1:5



SCALE 1:25



N/S

CUT A-A
N/S

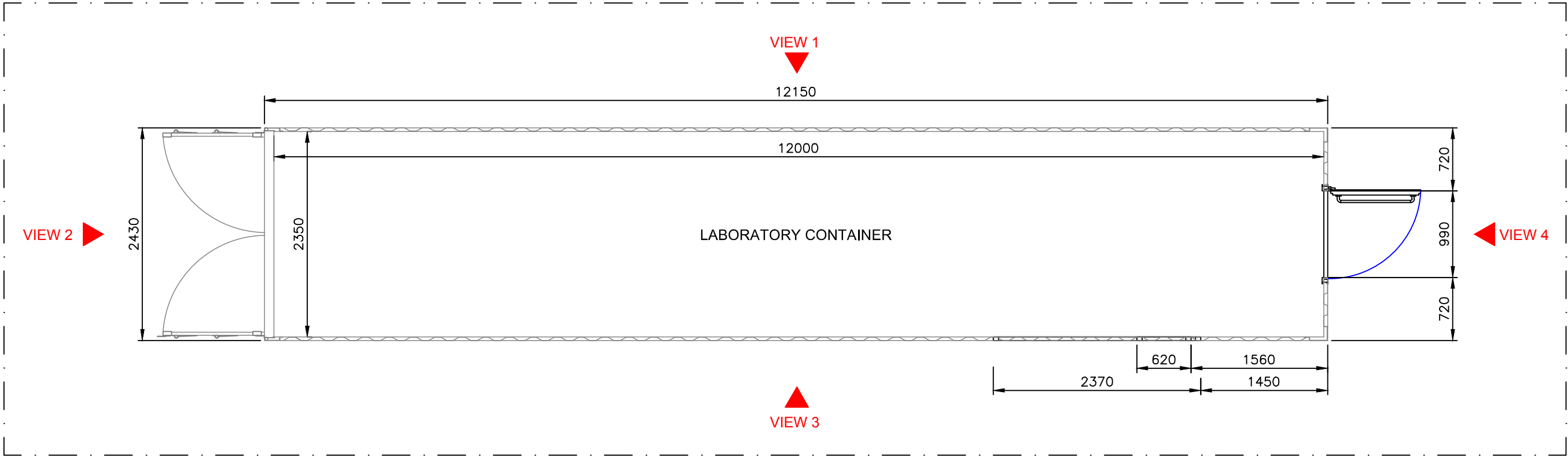
37-Emergency Door Size



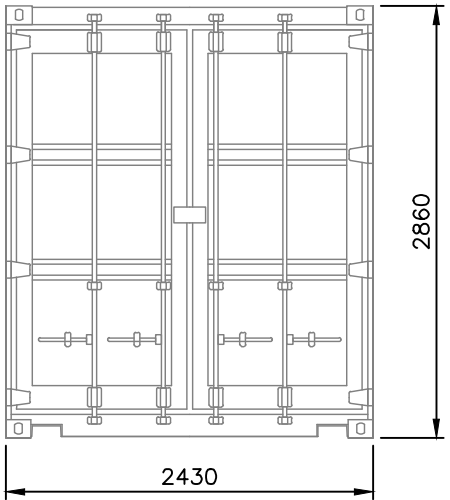
IMPERIAL

project Modular Portable Laboratory	title TECHNICAL DESIGN PROJECT EMERGENCY DOOR SIZE	37	scale AS INDICATED drawing 15549-DE-09
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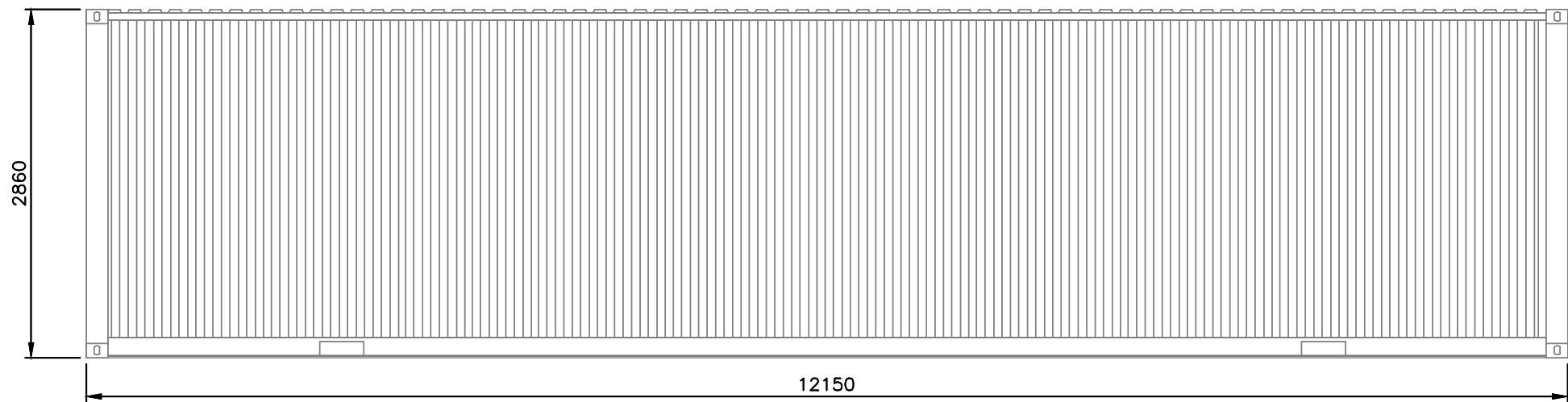
38-Laboratory Container Holes



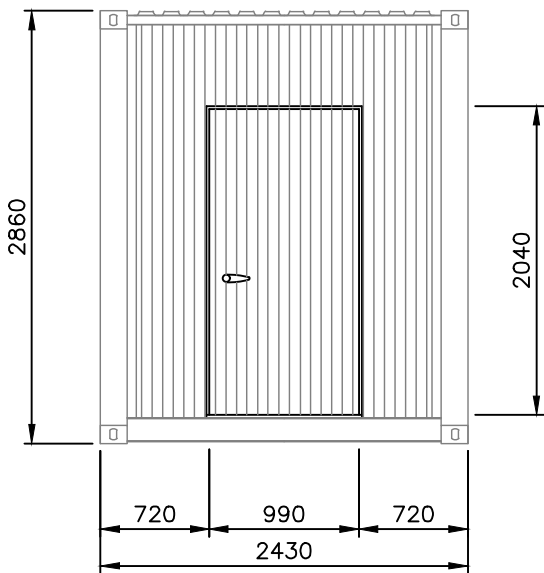
TOP VIEW



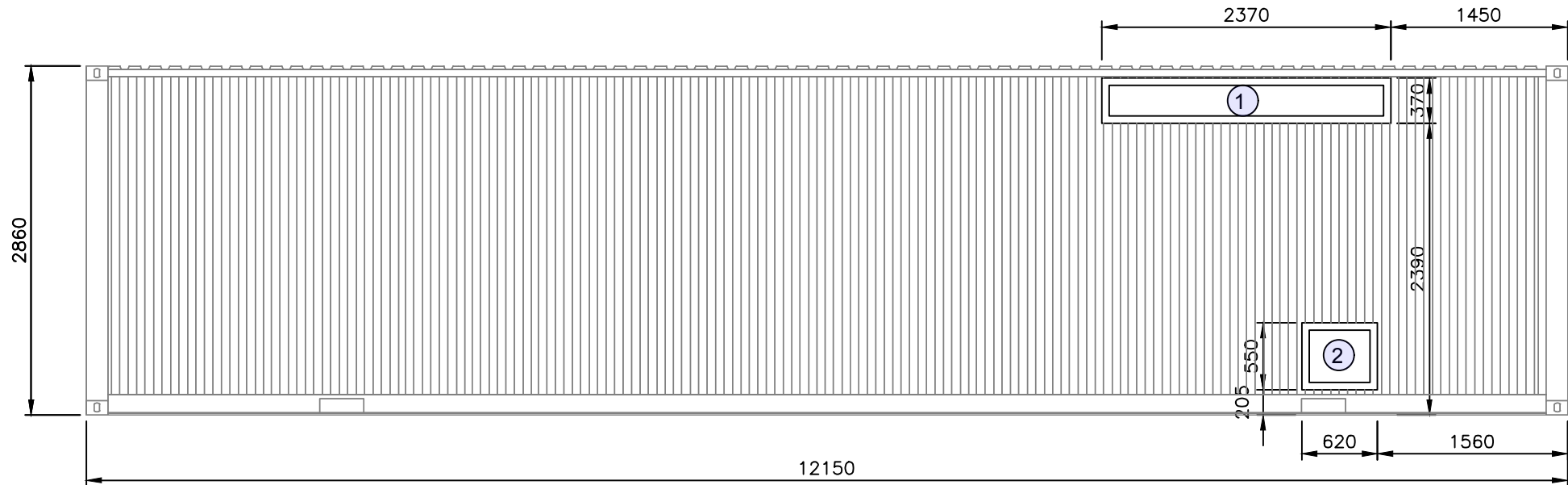
VIEW 2



VIEW 1



VIEW 4



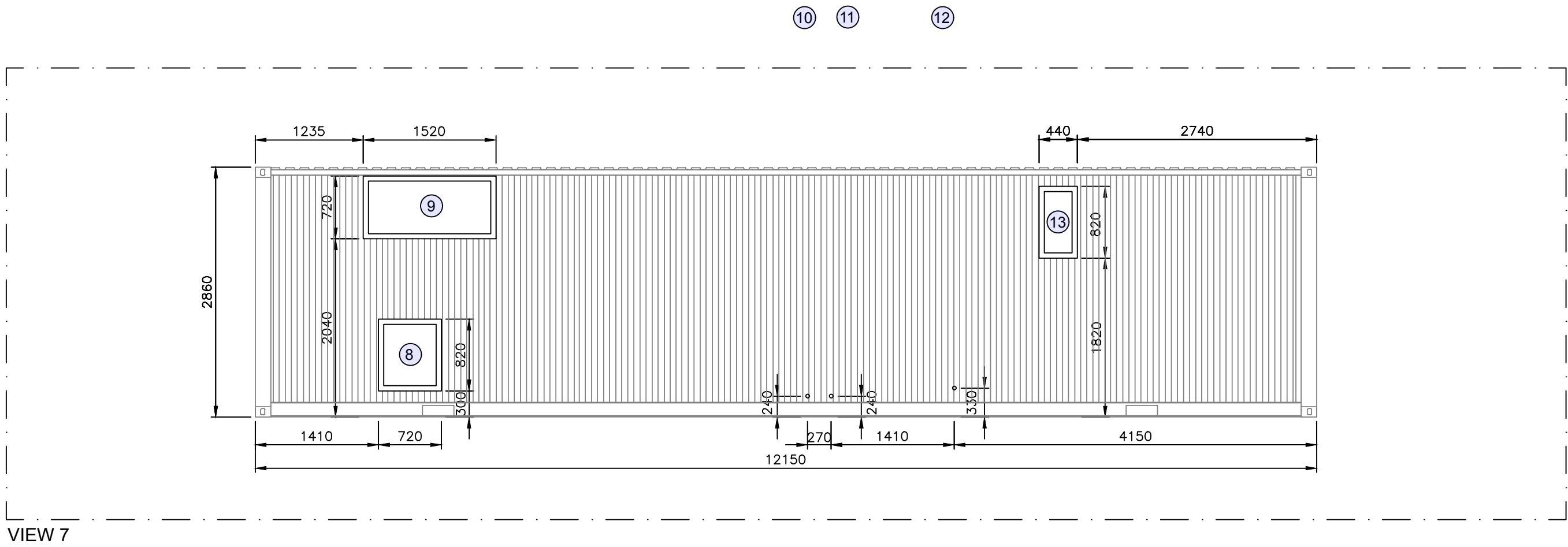
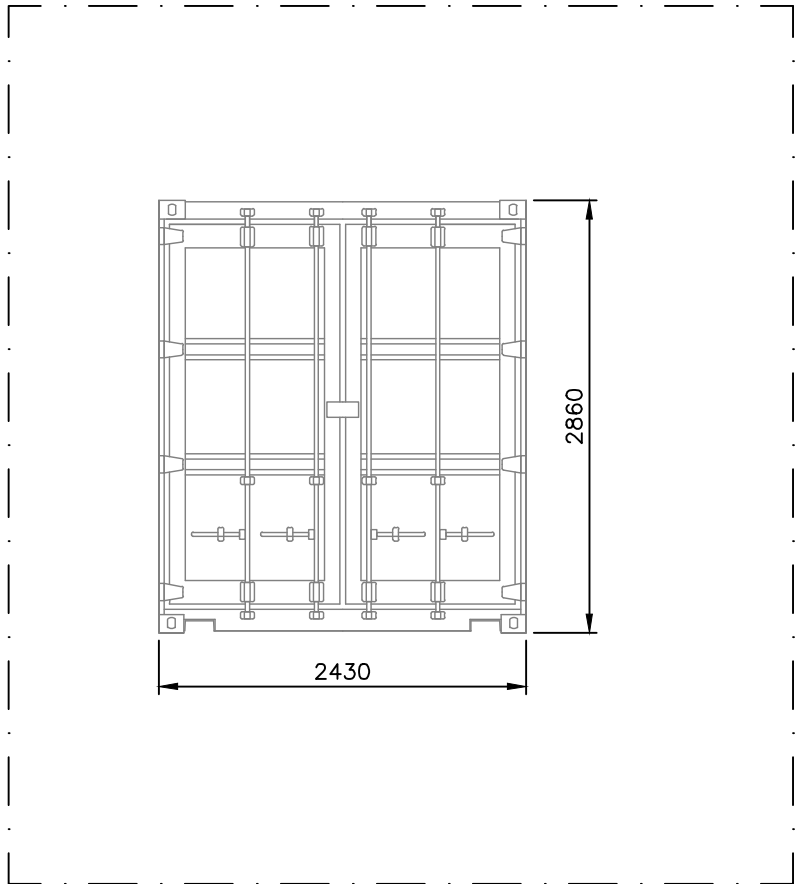
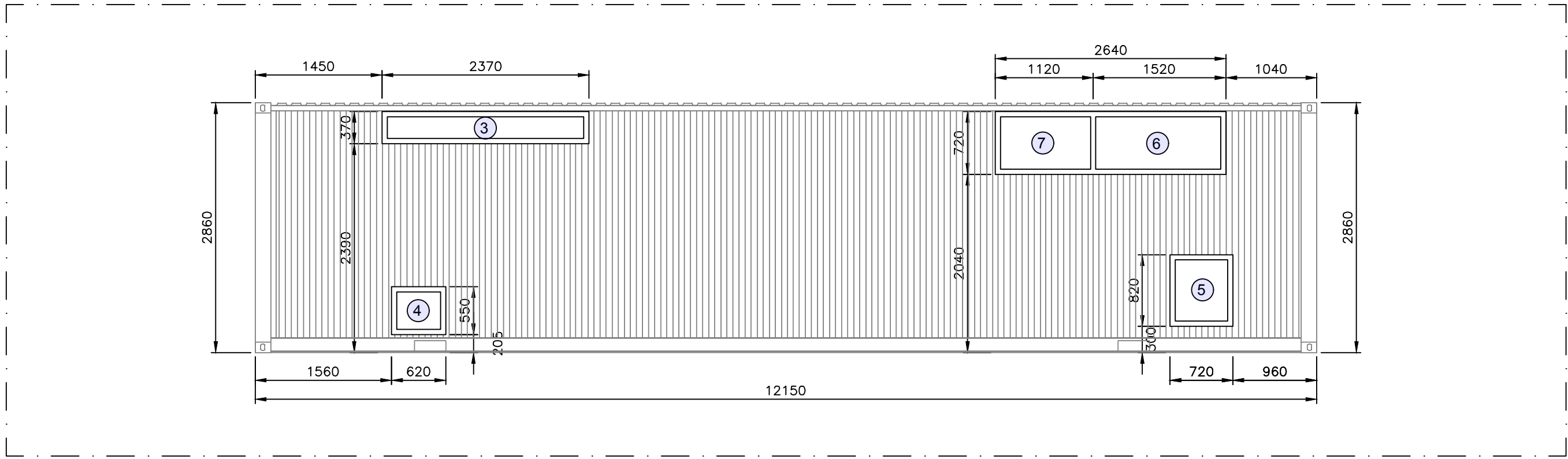
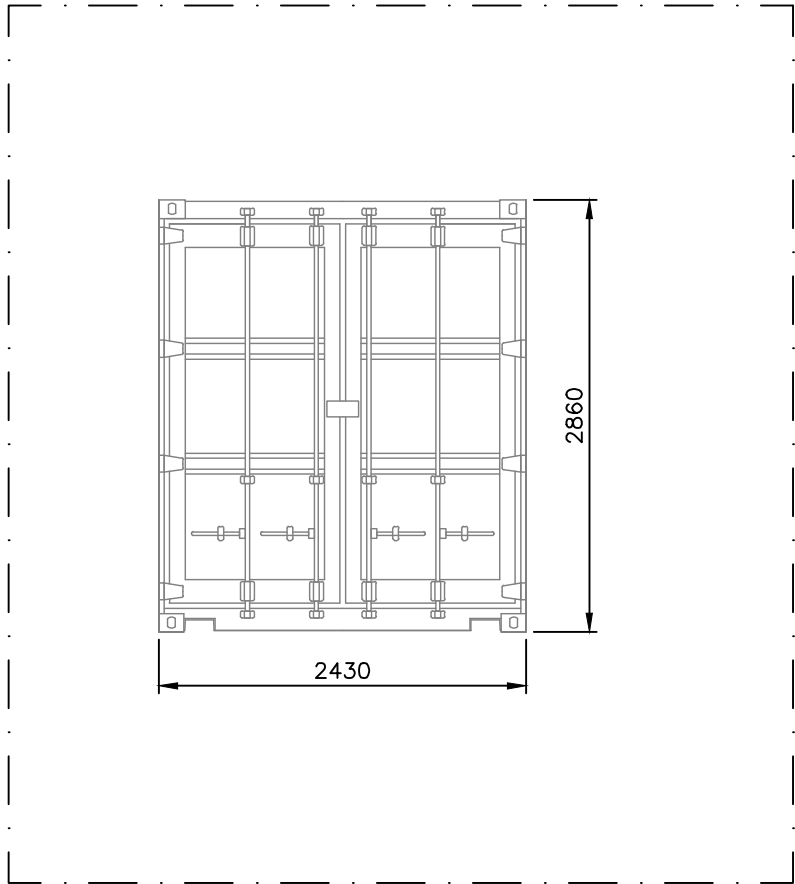
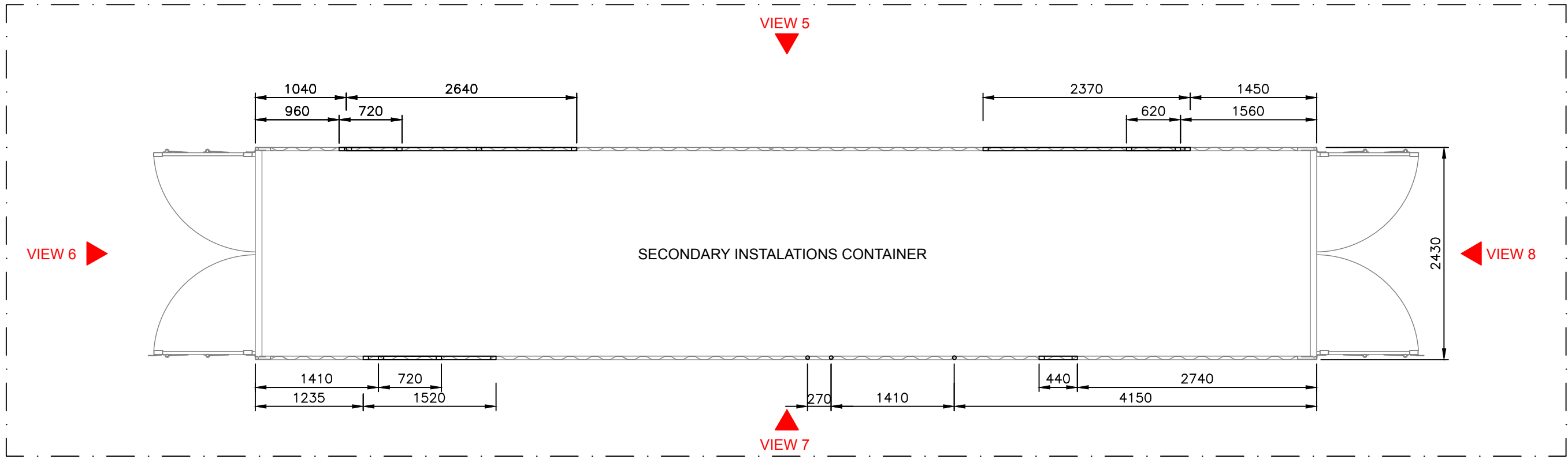
VIEW 3

NOTES: PAINT COLOR - RAL AGATE GREY 7038
INTERIOR FENCES OF THE HOLES ARE 60 mm.



project	Modular Portable Laboratory	title	TECHNICAL DESIGN PROJECT LABORATORY CONTAINER HOLES	38	scale	1/50
					drawing	15549-DE-10

39-Secondary Installations Container Holes



NOTES: PAINT COLOR - RAL AGATE GREY 7038
INTERIOR FENCES OF THE HOLES ARE 60 mm.

