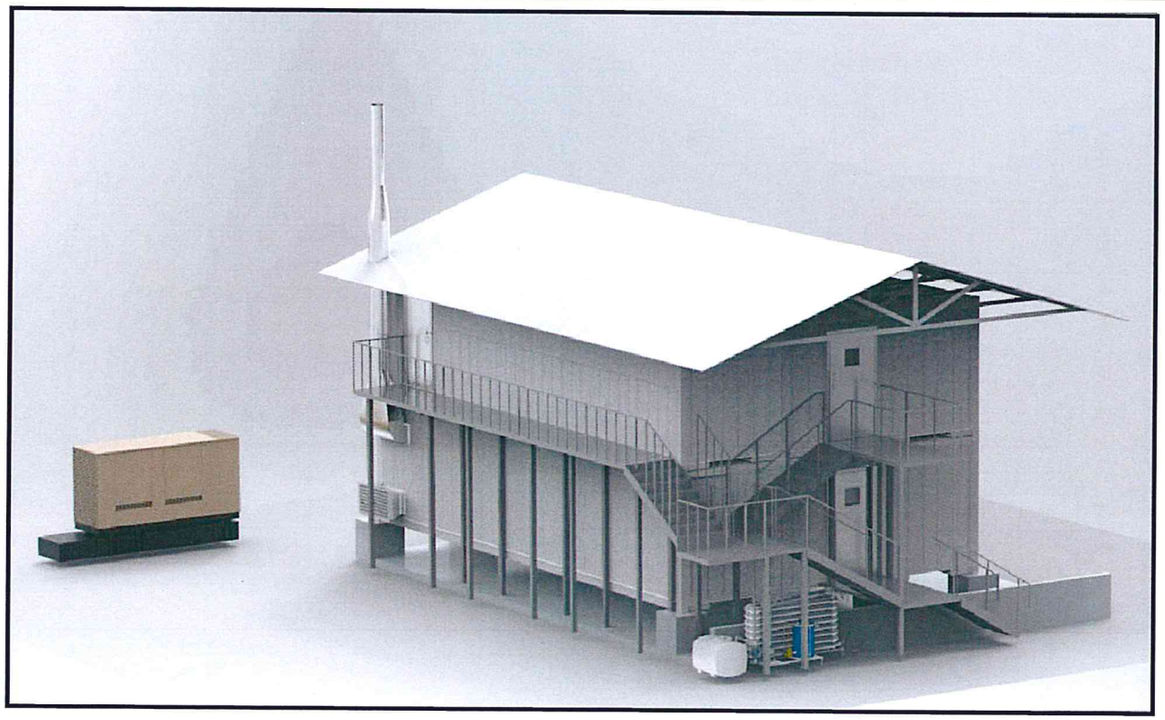
REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	CDR PACKAGE	06/15/17	CMJ	GAW

CDR DRAWING PACKAGE

CONTACT INFORMATION

GERMFREE LABORATORIES, INC.
MS. VALERIE DUHL, DIR. OF CONTRACT MGMT.
4 SUNSHINE BLVD.
ORMOND BEACH, FL 32174-2983
TEL: 386-265-4305
FAX: 386-677-0442
VDUHL@GERMFREE.COM

MODULAR HIGH CONTAINMENT FACILITY AT CHARLES HARWOOD MEDICAL COMPLEX



DRAWING INDEX

DRAWING INDEX				
DRAWING NO.	SHTS	NAME	REV.	DATE
917-0028-00	1	COVER SHEET	2	16-Jun-17
892-0023-00	8	PLAN, SITE	3	16-Jun-17
908-5003-00	6	PLATFORM SHELL	4	16-Jun-17
888-0015-00	1	PLAN, PRESSURE MONITOR	1	15-Jun-17
889-0022-00	2	PLAN, LIGHTING	1	15-Jun-17
890-0046-00	2	PLAN, FLOW, PRESSURE	2	16-Jun-17
890-0047-00	2	PLAN, FLOW, PERSONNEL	2	16-Jun-17
890-0048-00	2	PLAN, FLOW, MATERIAL	2	16-Jun-17
890-0049-00	2	PLAN, FLOW, WASTE	2	16-Jun-17
890-0050-00	2	PLAN, FLOW, LIFE SAFETY	1	16-Jun-17
891-0013-00	2	PLAN, EQUIPMENT	2	15-Jun-17
894-0063-00	2	PLAN, PLUMBING	2	16-Jun-17
895-0016-00	1	PLAN, GAS SYSTEM	1	15-Jun-17
896-0035-00	2	PLAN, FURNITURE	3	15-Jun-17
897-0024-00	2	PLAN, VIDEO INTERCOM	1	9-Jun-17
899-0041-00	2	PLAN, DATA SYSTEM	1	9-Jun-17
900-0029-00	2	PLAN, CCTV	1	9-Jun-17
901-0019-00	2	PLAN, BURGLAR	1	14-Jun-17
902-0022-00	2	PLAN, FIRE	1	14-Jun-17
903-0028-00	2	PLAN, DOOR SYSTEM	1	15-Jun-17
905-0094-00	3	PLAN, ELECTRICAL	3	15-Jun-17
905-0095-00	2	PLAN, TEMPERATURE MONITOR-THERMOSTATS	2	9-Jun-17
214-0044-00	2	ASSY, GERMFREE HVAC UNIT	1	21-Jun-17
612-1045-00	2	ASSY, GLOVEBOX, CLASS III SEA-3 (2 GLOVE)	1	23-Jun-17
906-2088-00	7	PANEL SCHEDULE, ELECTRICAL	3	7-Jun-17
906-2089-00	1	LINE DIAGRAM, AC POWER DISTRIBUTION	1	2-Jun-17
909-0041-00	2	SCHEMATIC, HVAC SYSTEM	3	21-Jun-17
910-0081-00	1	LOCATIONS, GROUNDING & BONDING	2	8-Jun-17
910-0083-00	2	LOCATIONS, UTILITY LOCATIONS	1	16-Jun-17

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .01 .XXX = ± .005 FRACTIONAL = ±1/64 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/24/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

COVER SHEET
PD16011-USVI MODULAR BSL-3 LAB

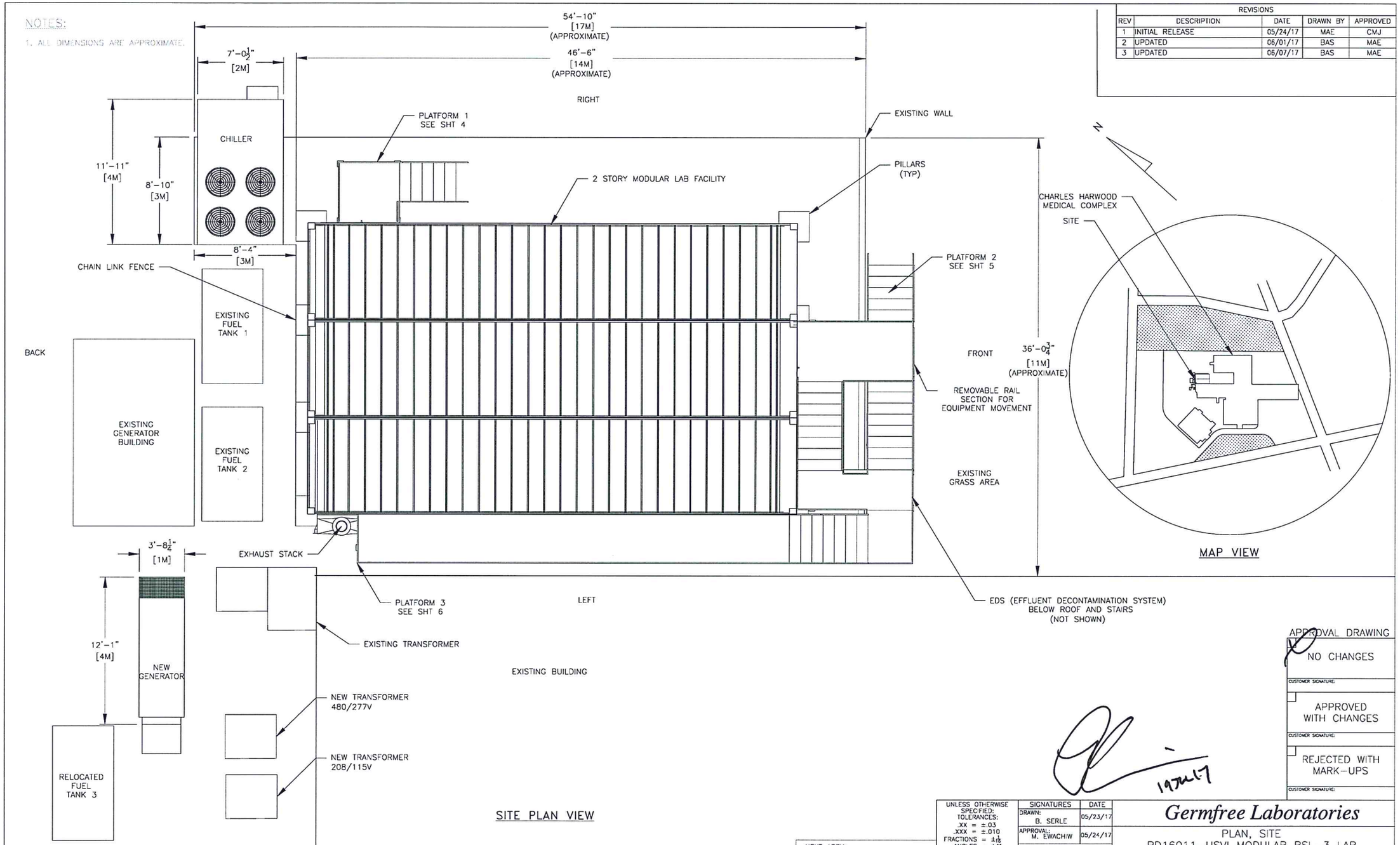
DRAWING NO. 917-0028-00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 1

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE.

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/24/17	MAE	CMJ
2	UPDATED	06/01/17	BAS	MAE
3	UPDATED	06/07/17	BAS	MAE



SITE PLAN VIEW

APPROVAL DRAWING

☒ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

19 JUL 17

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	05/23/17
APPROVAL:	M. EWACHIW	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

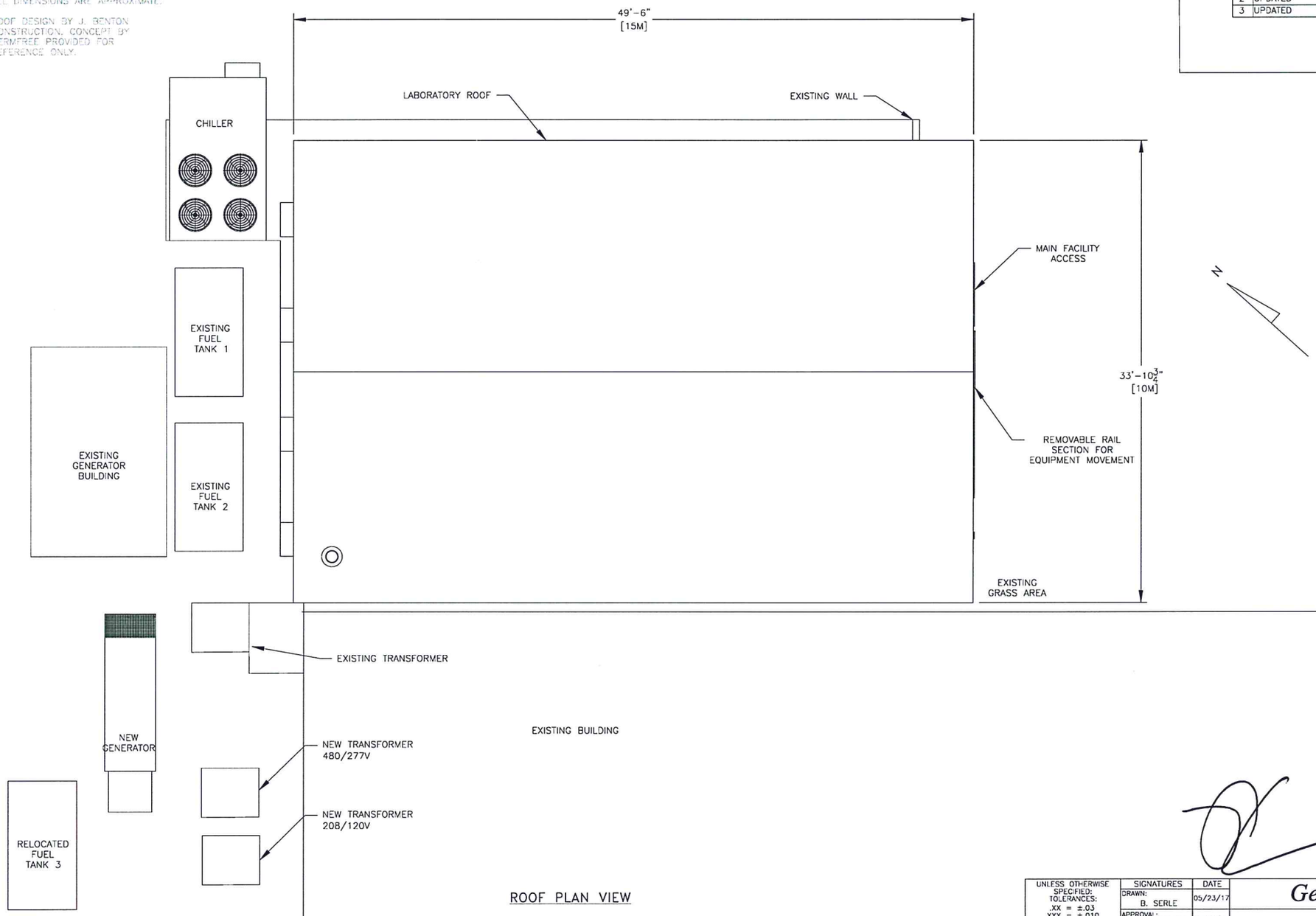
DRAWING NO. 892-0023-00 REV. 3

SCALE N/A FILE NO. SHEET 1 OF 8

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE.
2. ROOF DESIGN BY J. BENTON CONSTRUCTION. CONCEPT BY GERMFREE PROVIDED FOR REFERENCE ONLY.

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/24/17	MAE	CMJ
2	UPDATED	06/01/17	BAS	MAE
3	UPDATED	06/07/17	BAS	MAE



ROOF PLAN VIEW

APPROVAL DRAWING

☒ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

190ct17

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: B. SERLE	05/23/17
APPROVAL: M. EWACHIW	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

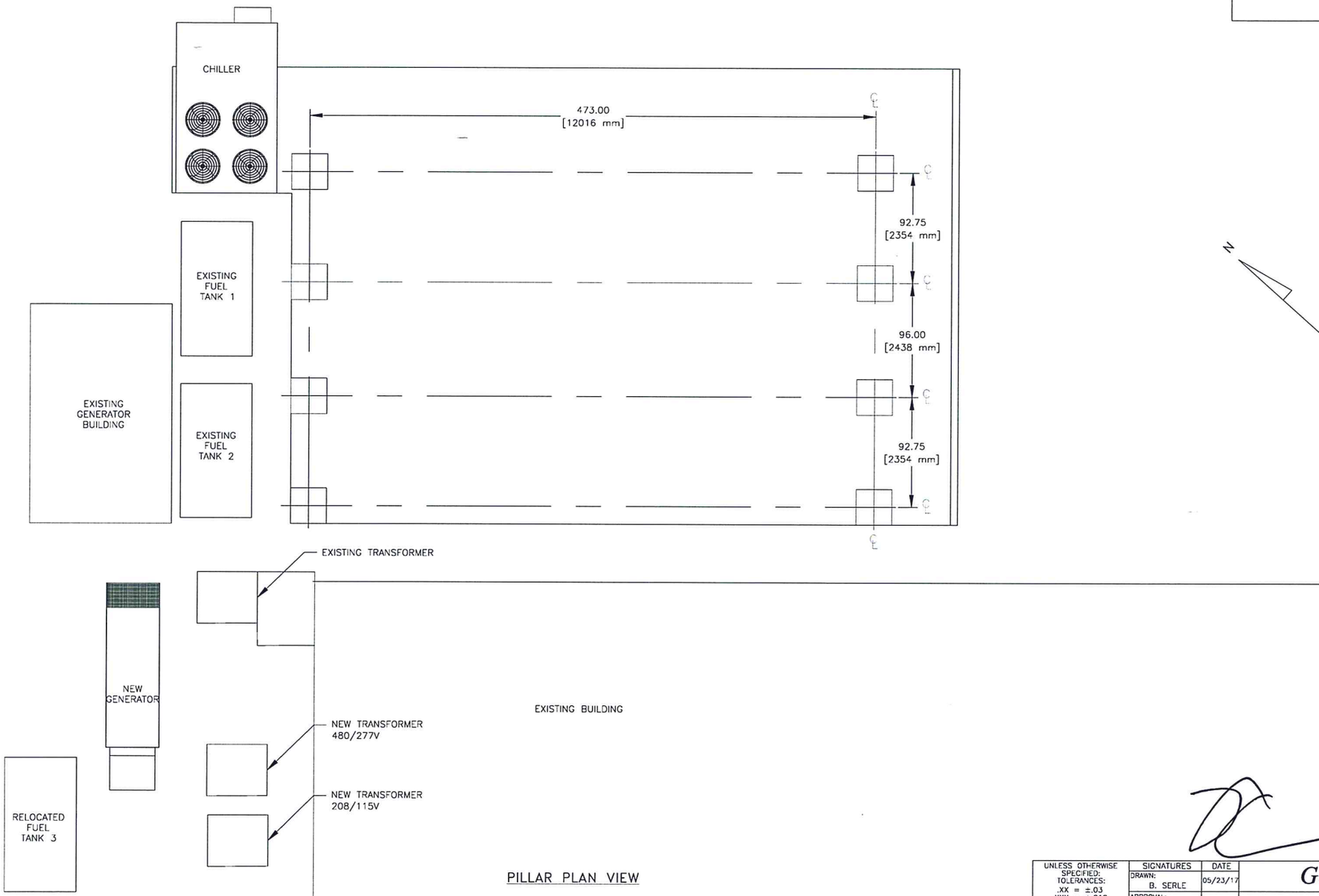
DRAWING NO. 892-0023-00 REV. 3

SCALE N/A FILE NO. SHEET 2 OF 8

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE.

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/24/17	MAE	CMJ
2	UPDATED	06/01/17	BAS	MAE
3	UPDATED	06/07/17	BAS	MAE



PILLAR PLAN VIEW

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

190277

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: B. SERLE	05/23/17
APPROVAL: M. EWACHIW	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 892-0023-00 REV. 3

SCALE N/A FILE NO. SHEET 3 OF 8

APPROVAL DRAWING

NO CHANGES
CUSTOMER SIGNATURE:
APPROVED WITH CHANGES
CUSTOMER SIGNATURE:
REJECTED WITH MARK-UPS
CUSTOMER SIGNATURE:

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
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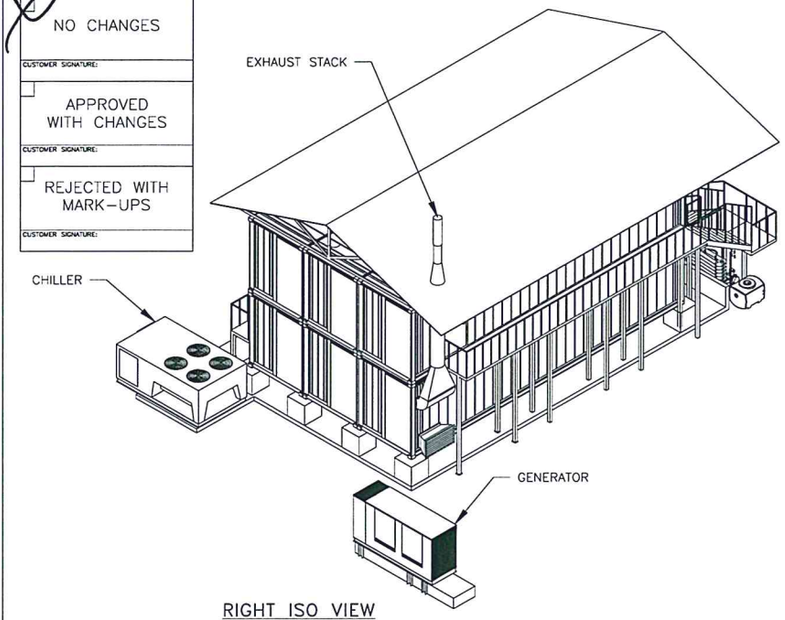
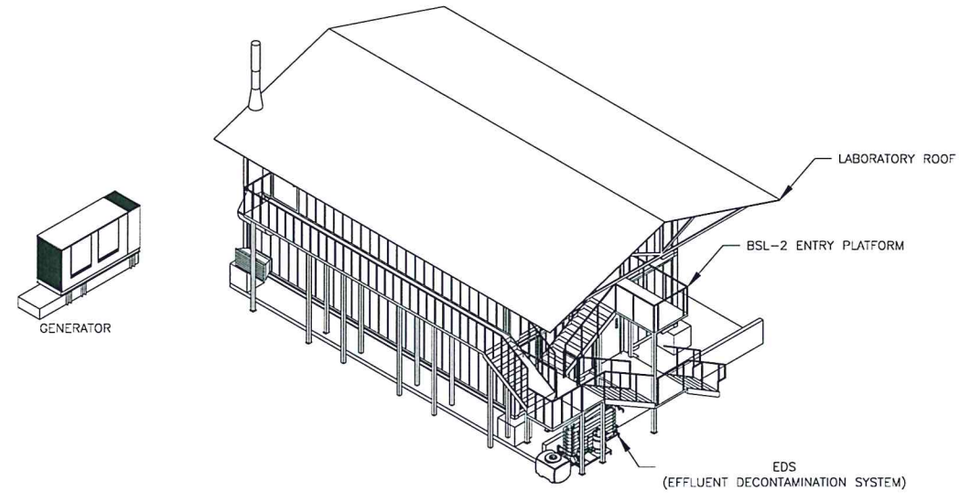
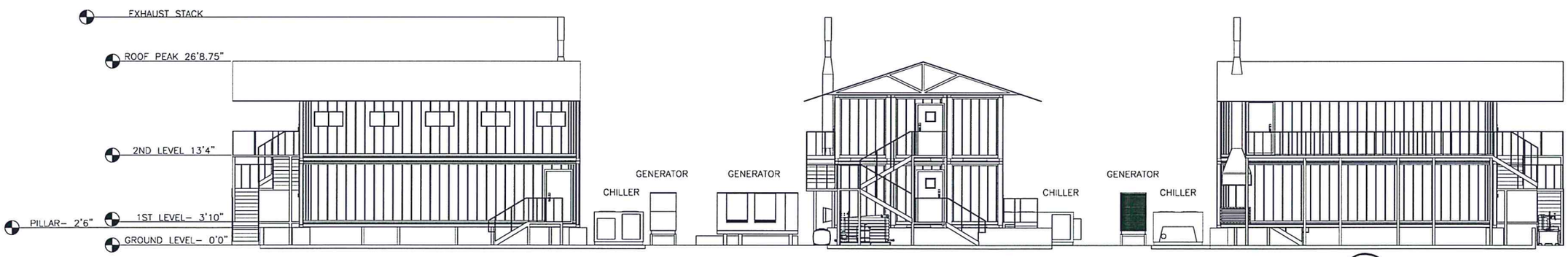
2	UPDATED	06/01/17	BAS	MAE
3	UPDATED	06/07/17	BAS	MAE



RIGHT ISO VIEW



LEFT ISO VIEW



RIGHT VIEW

FRONT VIEW

LEFT VIEW 19JUL17.

NOTES:

1. ROOF IS TO BE 24 GA COATED STEEL
2. ALL DIMENSIONS ARE APPROXIMATE
3. ROOF DESIGN BY J. BENTON CONSTRUCTION. CONCEPT BY GERMFREE PROVIDED FOR REFERENCE ONLY.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03, .XXX = ±.010, FRACTIONS = ±1/16, ANGLES = ±1°. DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	05/23/17
APPROVAL:	M. EWACHIW	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 892-0023-00 REV. 3

SCALE N/A FILE NO. SHEET 4 OF 8

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
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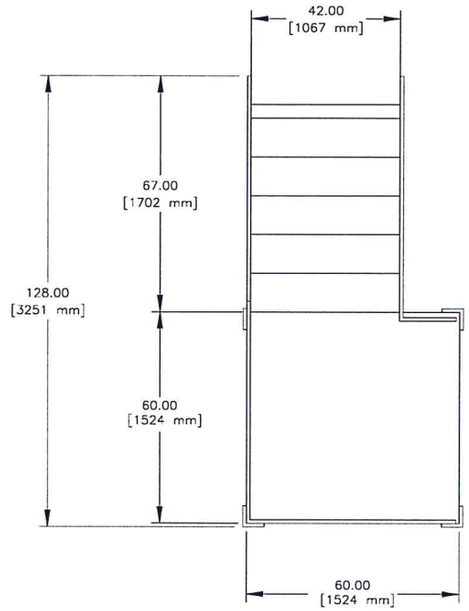
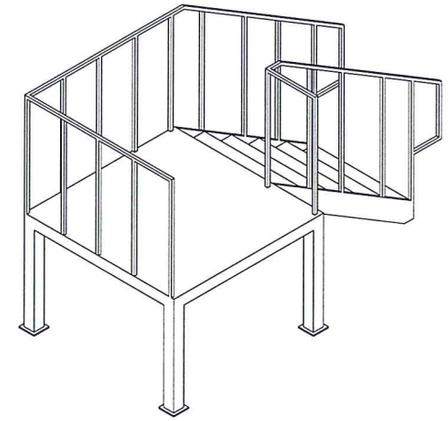


PLAN VIEW



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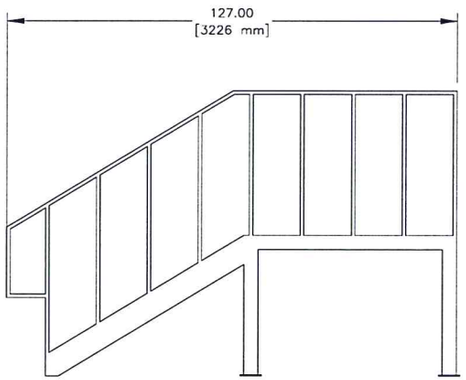
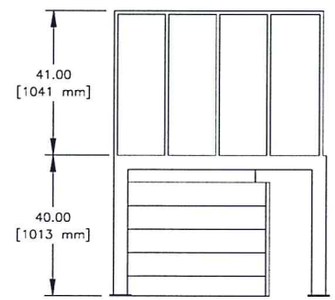
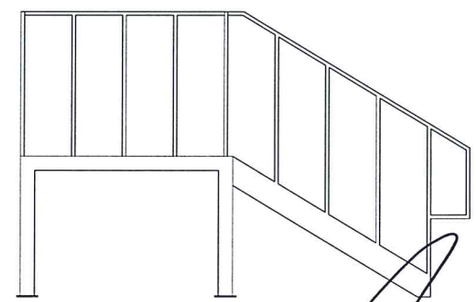


LEFT VIEW



FRONT VIEW



RIGHT VIEW

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE FOR ESTIMATING PURPOSES.
2. FABRICATION OF STAIRS SHALL BE COMPLETED AFTER INSTALLATION AND FIELD MEASUREMENT VERIFICATION.
3. DISTANCE BETWEEN HANDRAIL POSTS IS TO BE 4" OR LESS.
4. HANDRAILS TO BE AT A HEIGHT OF 38".
5. STAIRS TO BE 6061 ALUMINUM

PLATFORM 1
(FOR REFERENCE ONLY)

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

19Jul-17

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	05/23/17
APPROVAL:	M. EWACHIW	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO.	REV.
892-0023-00	3

SCALE N/A | FILE NO. | SHEET 5 OF 8

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
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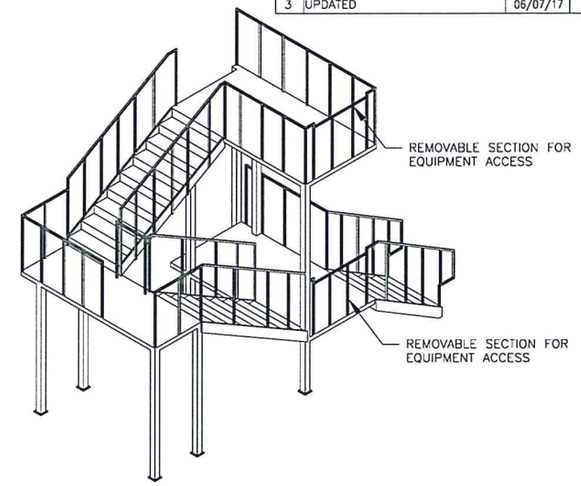
3	UPDATED	06/07/17	BAS	MAE



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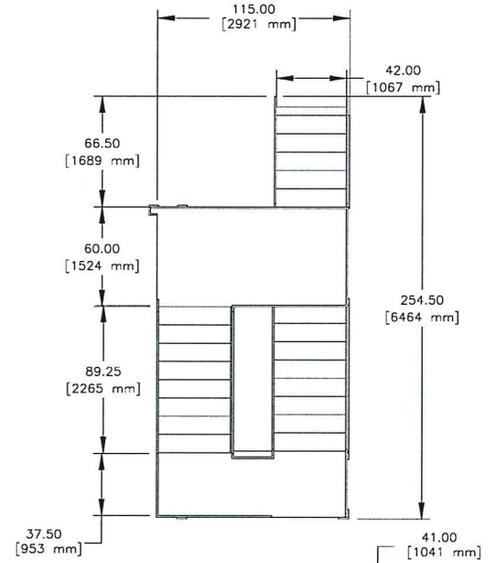
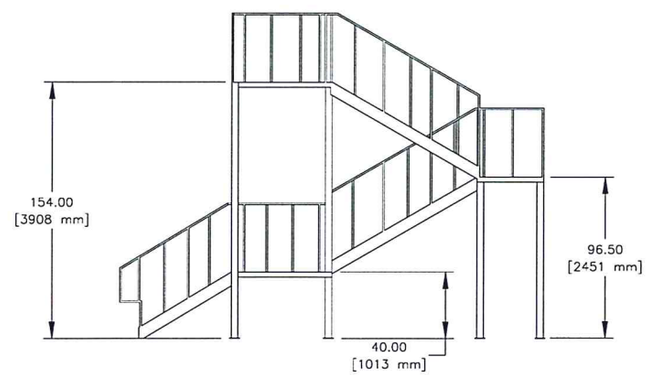
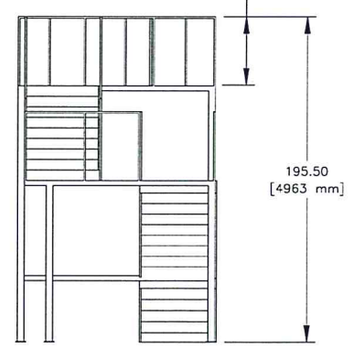


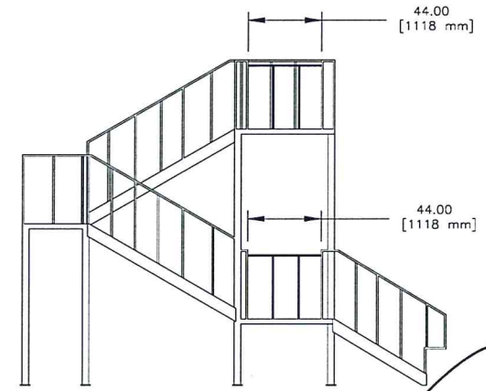


RIGHT VIEW



FRONT VIEW

PLATFORM 2
(FOR REFERENCE ONLY)



RIGHT VIEW

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE FOR ESTIMATING PURPOSES.
2. FABRICATION OF STAIRS SHALL BE COMPLETED AFTER INSTALLATION AND FIELD MEASUREMENT VERIFICATION.
3. DISTANCE BETWEEN HANDRAIL POSTS IS TO BE 4" OR LESS.
4. HANDRAILS TO BE AT A HEIGHT OF 38".
5. STAIRS TO BE 6061 ALUMINUM

APPROVAL DRAWING

☑ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	05/23/17
APPROVAL:	M. EWACHIW	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 892-0023-00 REV. 3

SCALE N/A FILE NO. SHEET 6 OF 8

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
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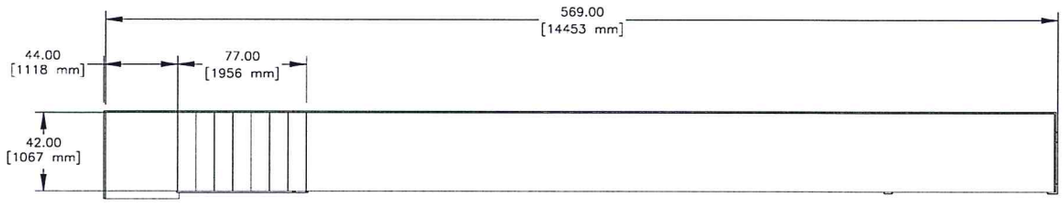
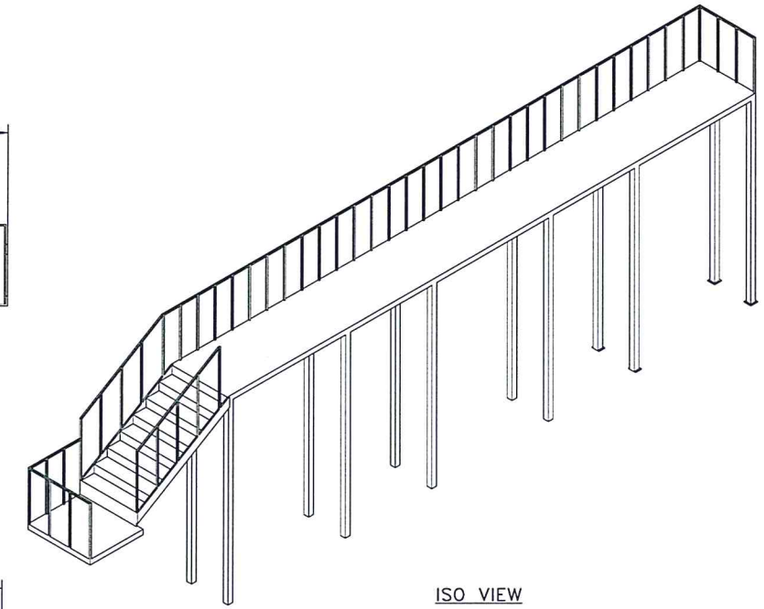
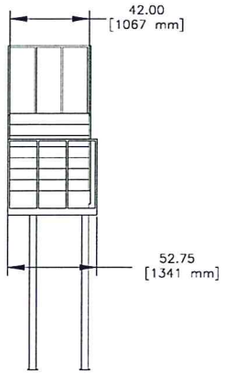
2	UPDATED	06/01/17	BAS	MAE
3	UPDATED	06/07/17	BAS	MAE



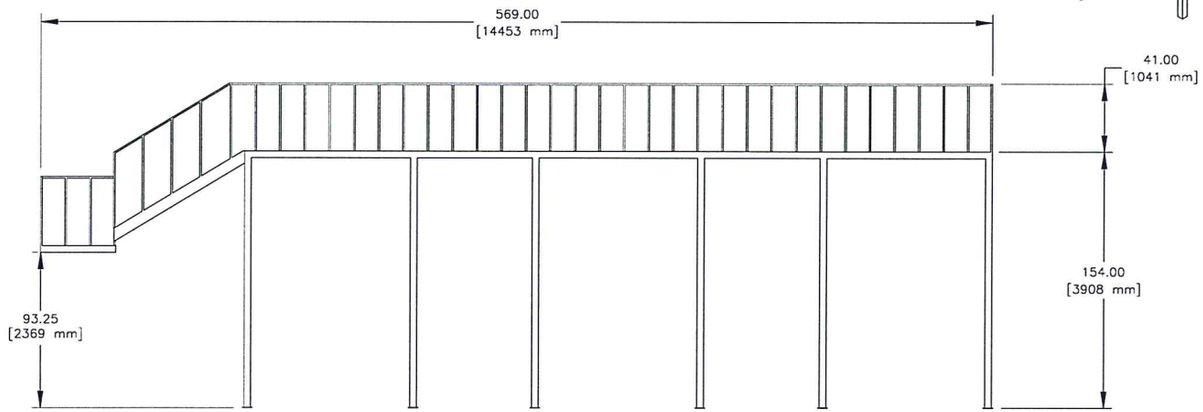
PLAN VIEW



ISO VIEW



LEFT VIEW



FRONT VIEW

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE FOR ESTIMATING PURPOSES.
2. FABRICATION OF STAIRS SHALL BE COMPLETED AFTER INSTALLATION AND FIELD MEASUREMENT VERIFICATION.
3. DISTANCE BETWEEN HANDRAIL POSTS IS TO BE 4" OR LESS.
4. HANDRAILS TO BE AT A HEIGHT OF 36".
5. STAIRS TO BE 6061 ALUMINUM

PLATFORM 3
(FOR REFERENCE ONLY)

APPROVAL DRAWING

☒ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

19 Jul 17

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	05/23/17
APPROVAL:	M. EWACHIW	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, SITE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 892-0023-00 REV. 3

SCALE N/A FILE NO. SHEET 7 OF 8

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
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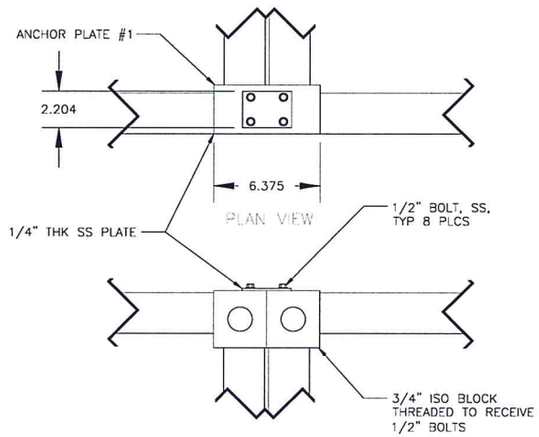
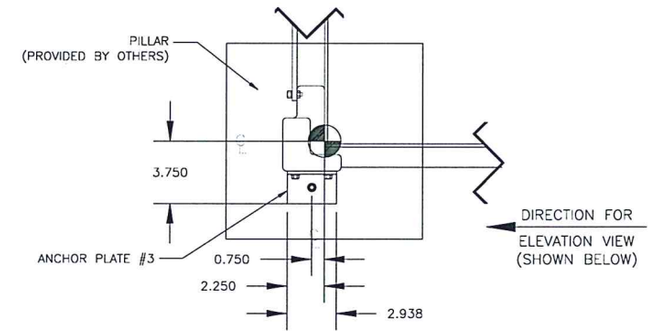
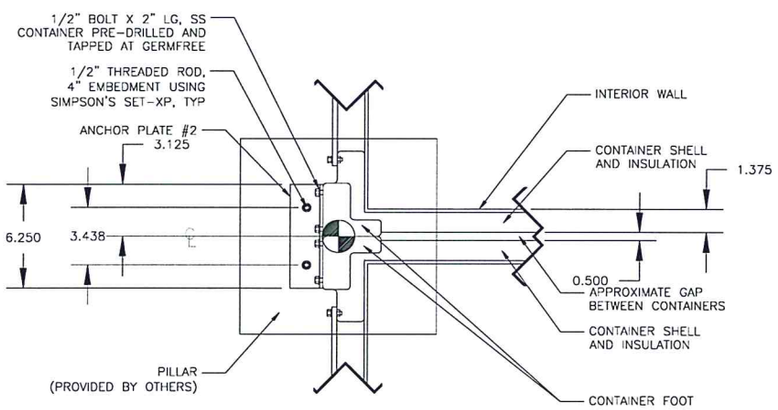
2	UPDATED	06/01/17	BAS	MAE
3	UPDATED	06/07/17	BAS	MAE



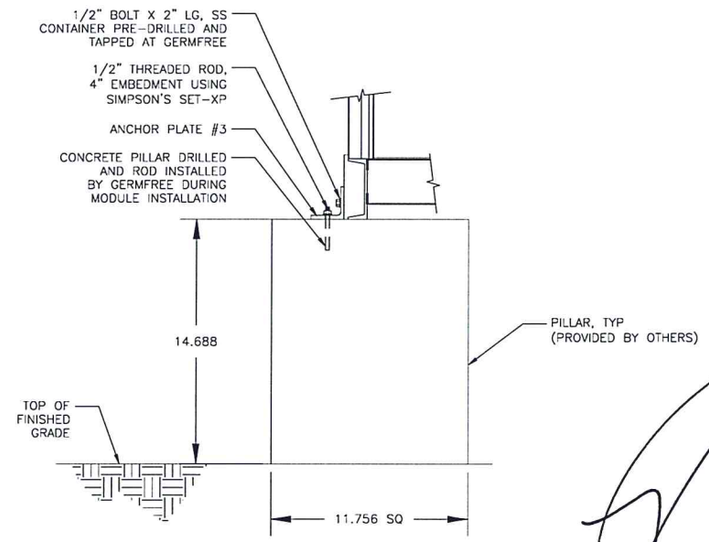
SECTION A–A
TOP OF CONTAINER



PLAN VIEW
PILLAR AT CORNER OF CONTAINER



PLAN VIEW
PILLAR WHERE CONTAINERS ARE JOINED



ELEVATION VIEW
PILLAR AT CORNER OF CONTAINER

NOTES:

1. FINAL PIER (PILLAR) DESIGN AND DIMENSIONS NEED TO BE DETERMINED BY OTHERS.
2. ANCHOR BRACKETS/PLATES AND ANCHOR HARDWARE TO BE PROVIDED BY GERMFREE.
3. STAINLESS STEEL PLATES TO MEET OR EXCEED MINIMUM TENSILE STRENGTHS OF TYPE 304 PER ASTM A240.
4. STAINLESS STEEL BOLTS AND NUTS TO MEET OR EXCEED MINIMUM TENSILE STRENGTHS OF TYPE 304 PER ASTM A193 AND A194 RESPECTIVELY.

APPROVAL DRAWING

☐ NO CHANGES
CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES
CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS
CUSTOMER SIGNATURE:

19Jul17

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: B. SERLE	05/23/17
APPROVAL: M. EWACHIW	05/24/17
MATERIAL N/A	
FINISH N/A	

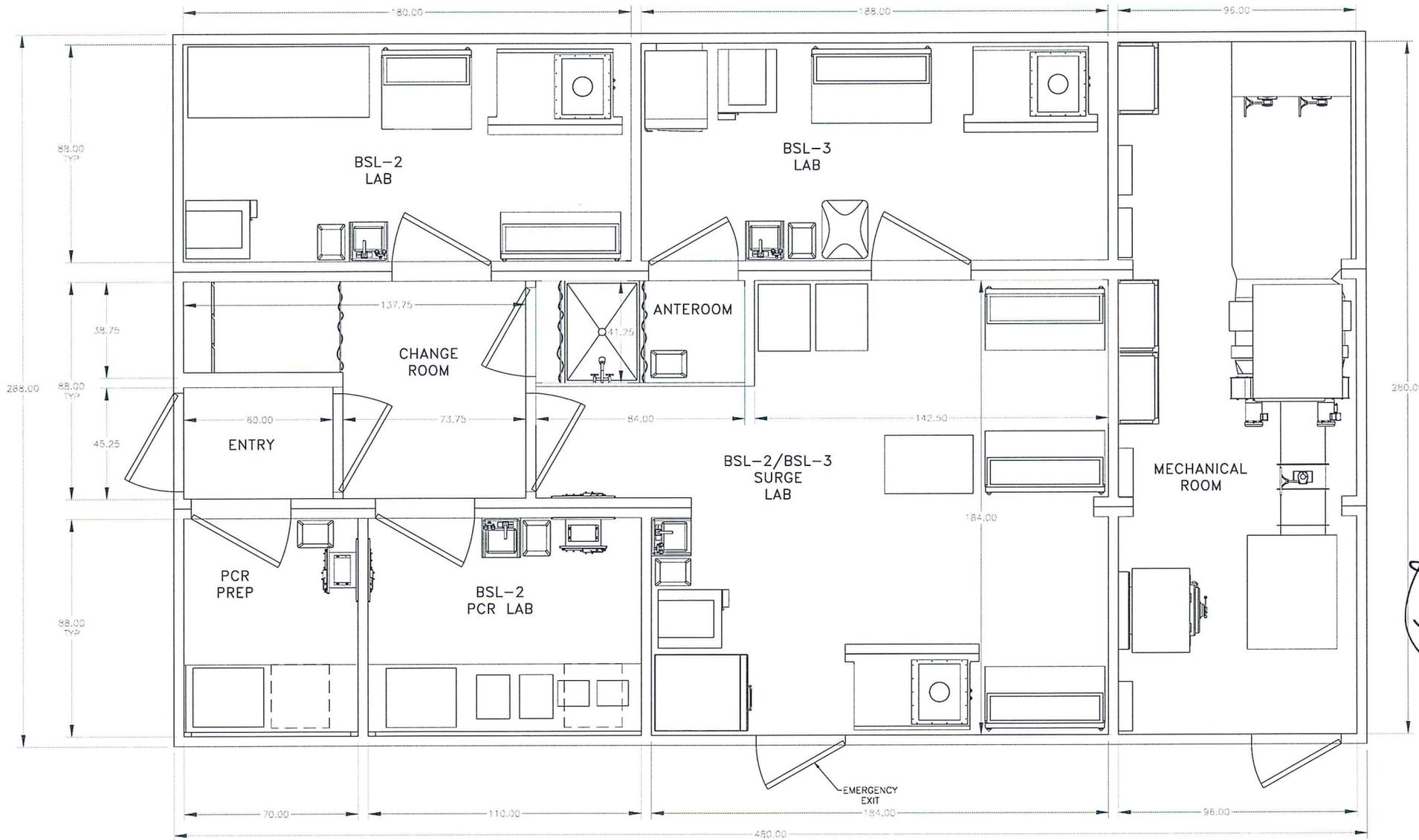
Germfree Laboratories

PLAN, SITE
PD16011–USVI MODULAR BSL–3 LAB

DRAWING NO. 892–0023–00 REV. 3

SCALE N/A FILE NO. SHEET 8 OF 8

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
2	REMOVED EQUIPMENT CALL-OUTS	05/08/17	CMJ	CMJ
3	UPDATED 1ST FLOOR, ADDED 2ND	05/23/17	CMJ	MAE
4	UPDATED 1ST FLOOR LAYOUT	06/15/17	CMJ	BAS



PLAN VIEW
(1ST FLOOR)

19 Jul 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C.JAMES	04/07/17
APPROVAL: M.EWACHIW	05/23/17
MATERIAL N/A	
FINISH N/A	

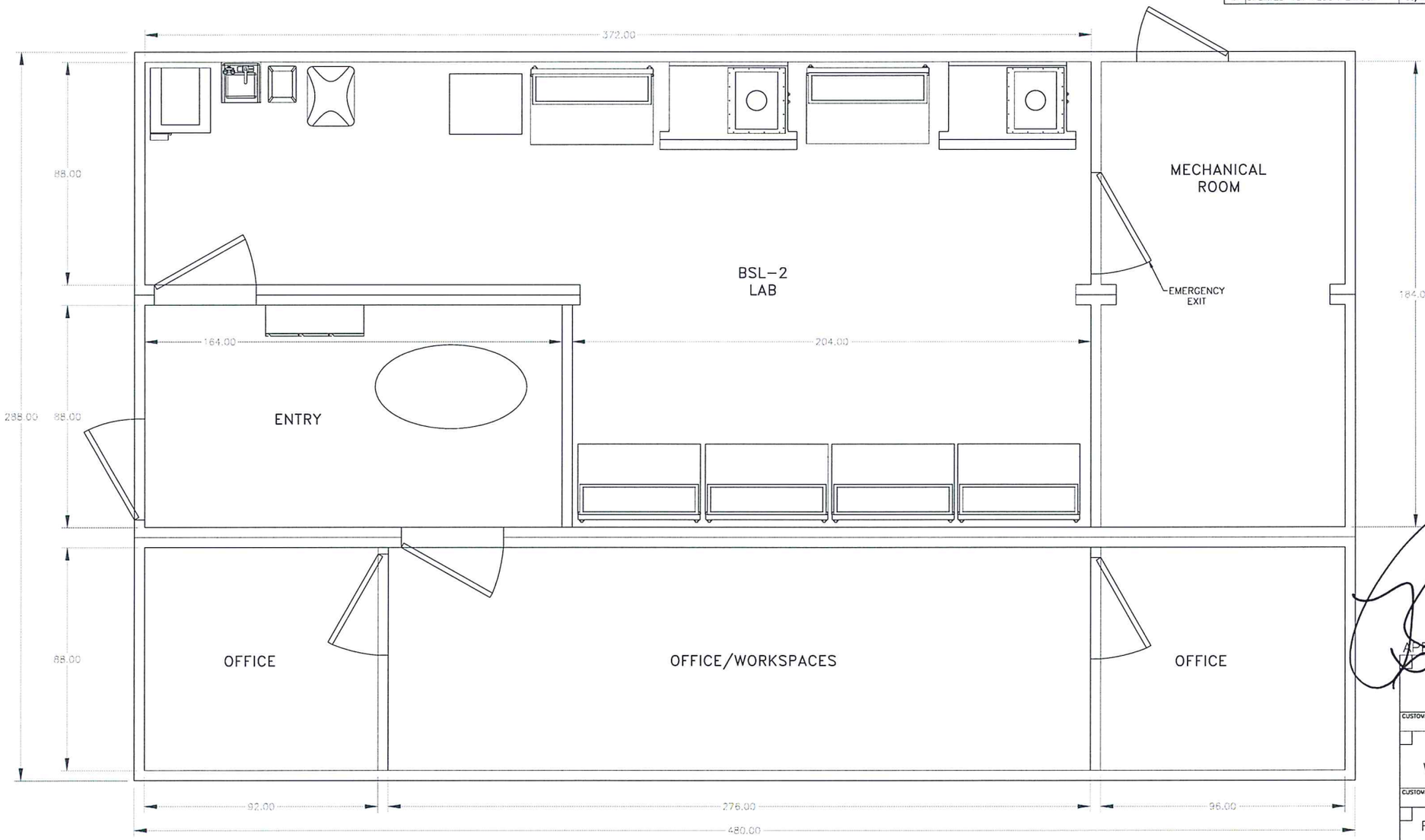
Germfree Laboratories

PLATFORM, SHELL
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 908-5003-00 REV. 4

SCALE N/A FILE NO. SHEET 1 OF 6

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
2	REMOVED EQUIPMENT CALL-OUTS	05/08/17	CMJ	CMJ
3	UPDATED 1ST FLOOR, ADDED 2ND	05/23/17	CMJ	MAE
4	UPDATED 1ST FLOOR LAYOUT	06/15/17	CMJ	BAS



PLAN VIEW
(2ND FLOOR)

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C.JAMES	04/07/17
APPROVAL: M.EWACHIW	05/23/17
MATERIAL N/A	
FINISH N/A	

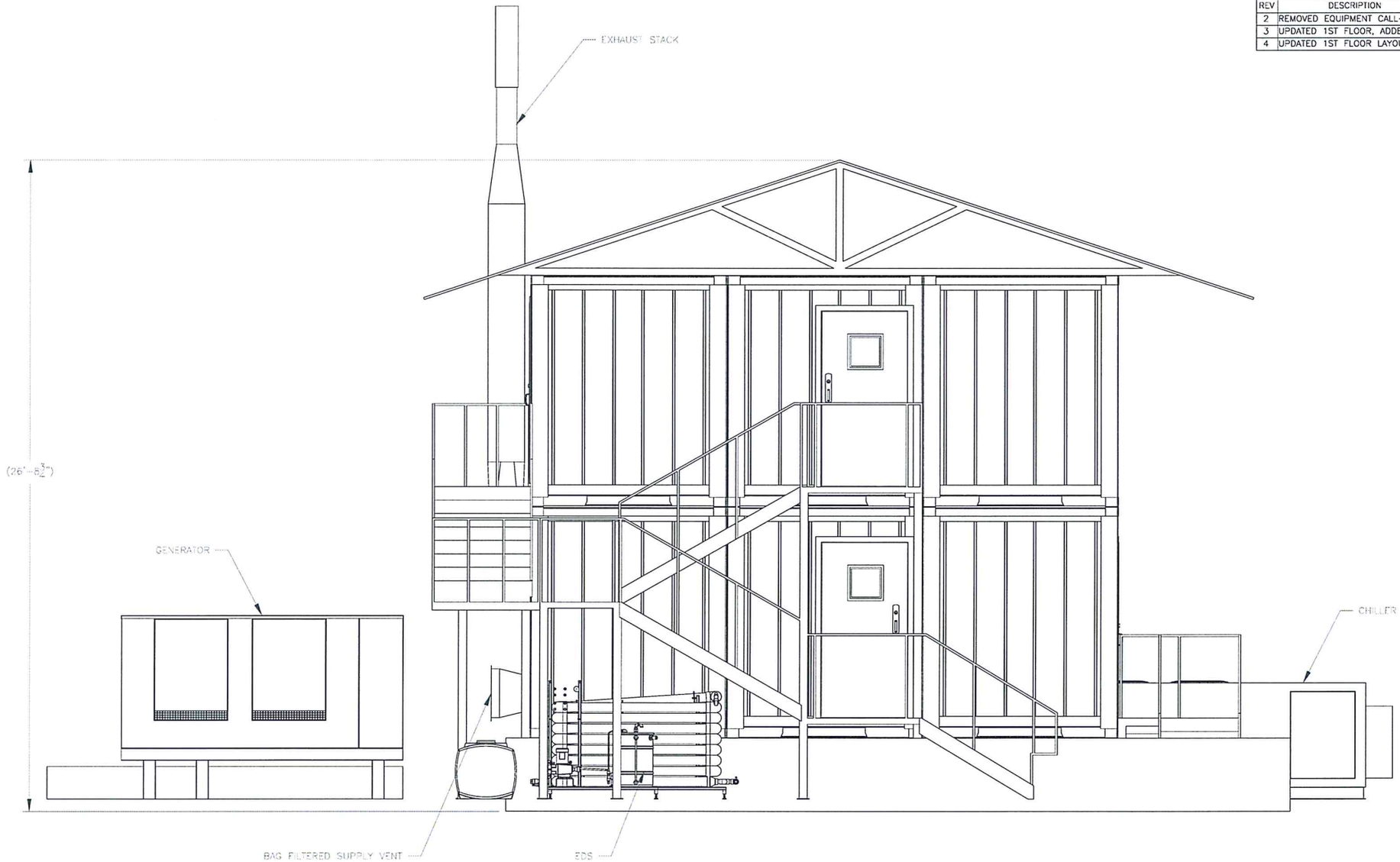
Germfree Laboratories

PLATFORM, SHELL
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 908-5003-00 REV. 4

SCALE N/A FILE NO. SHEET 2 OF 6

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
2	REMOVED EQUIPMENT CALL-OUTS	05/08/17	CMJ	CMJ
3	UPDATED 1ST FLOOR, ADDED 2ND	05/23/17	CMJ	MAE
4	UPDATED 1ST FLOOR LAYOUT	06/15/17	CMJ	BAS



FRONT VIEW

NOTES:

1. ALL DIMENSIONS IN ( ) ARE FOR REFERENCE ONLY.
2. EDS = EFFLUENT DECONTAMINATION SYSTEM

19 JUL 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C.JAMES	04/07/17
APPROVAL:	M.EWACHIW	05/23/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLATFORM, SHELL
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 908-5003-00 REV. 4

SCALE N/A FILE NO. SHEET 3 OF 6

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
2	REMOVED EQUIPMENT CALL-OUTS	05/08/17	CMJ	CMJ
3	UPDATED 1ST FLOOR, ADDED 2ND	05/23/17	CMJ	MAE
4	UPDATED 1ST FLOOR LAYOUT	06/15/17	CMJ	BAS

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

197047

RIGHT SIDE VIEW

NOTES:

1. ALL DIMENSIONS IN ( ) ARE FOR REFERENCE ONLY.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C.JAMES	04/07/17
APPROVAL: M.EWACHIW	05/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLATFORM, SHELL
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 908-5003-00 REV. 4

SCALE N/A FILE NO. SHEET 4 OF 6

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
2	REMOVED EQUIPMENT CALL-OUTS	05/08/17	CMJ	CMJ
3	UPDATED 1ST FLOOR, ADDED 2ND	05/23/17	CMJ	MAE
4	UPDATED 1ST FLOOR LAYOUT	06/15/17	CMJ	BAS

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

190617

BACK VIEW

NOTES:

1. ALL DIMENSIONS IN ( ) ARE FOR REFERENCE ONLY.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C.JAMES	04/07/17
APPROVAL: M.EWACHIW	05/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLATFORM, SHELL
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 908-5003-00 REV. 4

SCALE N/A FILE NO. SHEET 5 OF 6

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

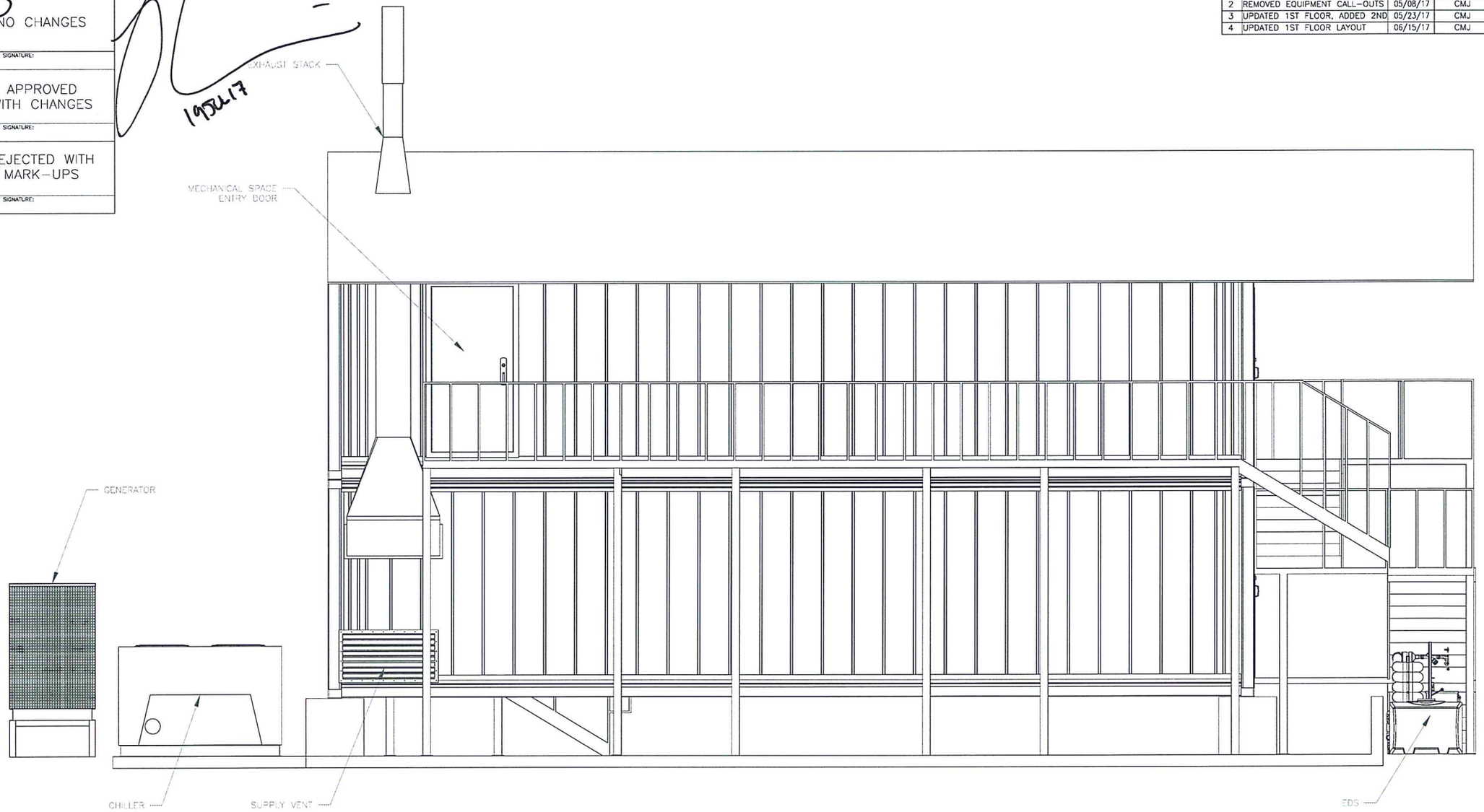
CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

19JUL17

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
2	REMOVED EQUIPMENT CALL-OUTS	05/08/17	CMJ	CMJ
3	UPDATED 1ST FLOOR, ADDED 2ND	05/23/17	CMJ	MAE
4	UPDATED 1ST FLOOR LAYOUT	06/15/17	CMJ	BAS



LEFT SIDE VIEW

NOTES:

1. ALL DIMENSIONS IN ( ) ARE FOR REFERENCE ONLY.
2. EDS -- EFFLUENT DECONTAMINATION SYSTEM

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03, .XXX = ±.010, FRACTIONS = ±1/16, ANGLES = ±1°. DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C.JAMES	04/07/17
APPROVAL: M.EWACHIW	05/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLATFORM, SHELL
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 908-5003-00 REV. 4

SCALE N/A FILE NO. SHEET 6 OF 6

NOTES:

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	6/15/17	KJ	--

LEGEND:

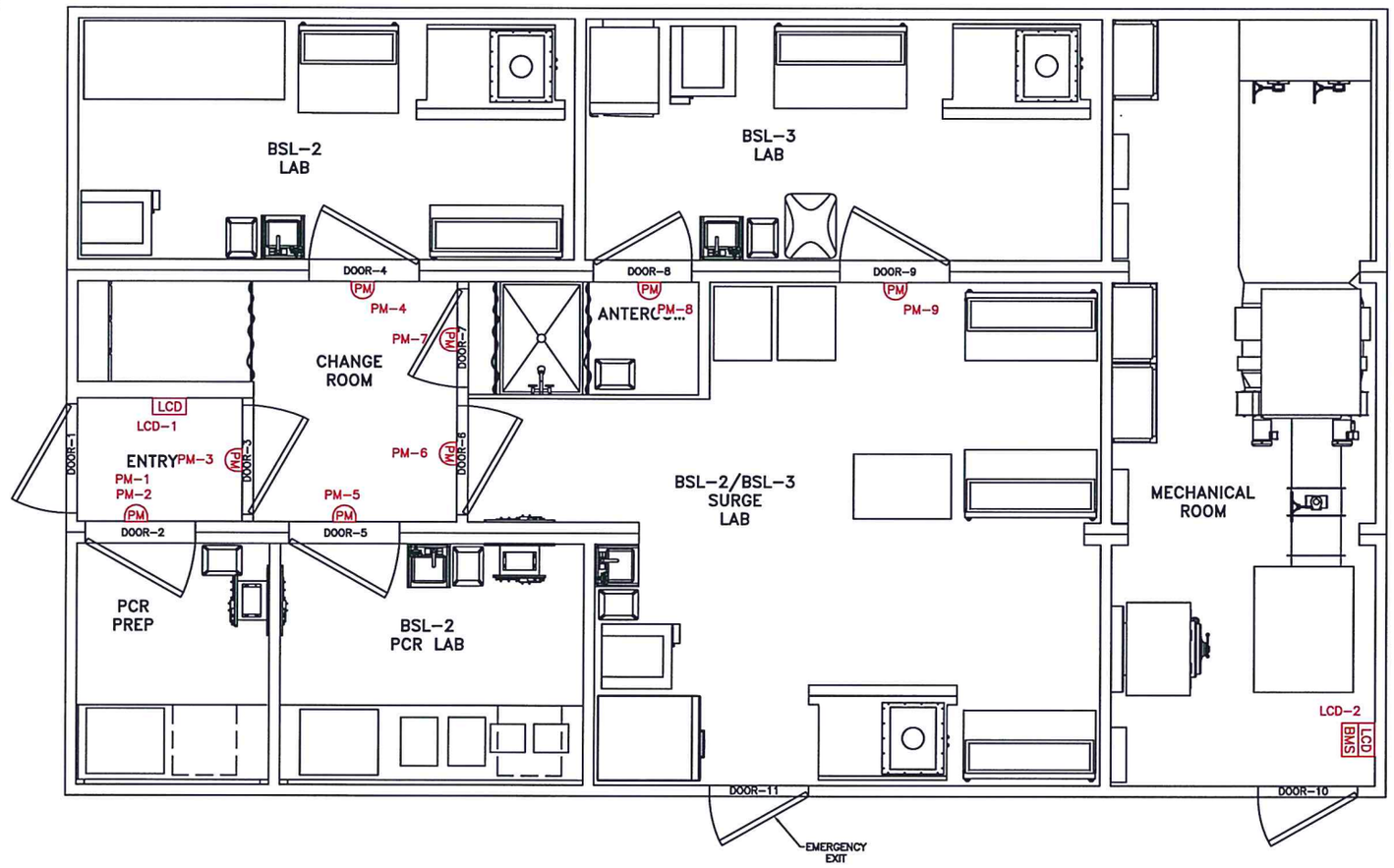
LCD – BMS TOUCH SCREEN CONTROL STATION

BMS – BMS CONTROLLER

PM – PRESSURE MONITOR

SPECIFICATIONS:

1. VISUAL PRESSURE MONITOR DEVICES ARE MAGNEHELIC GAUGES, MODEL 2300-0 (+/- 0.25 IWC)



14744-7

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: K. JOHNSON	6/15/17
PARTS LIST:		APPROVAL: ---	-/--/--
		MATERIAL N/A	
		FINISH N/A	

Germfree Laboratories

PLAN, PRESSURE MONITOR
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 888-0015-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN.	6/15/17	RK

S LIGHT SWITCH

LGT EXTERIOR LIGHT

T EXTERIOR LIGHT TIMER SWITCH

FLOOR-1, BSL-3 LAB

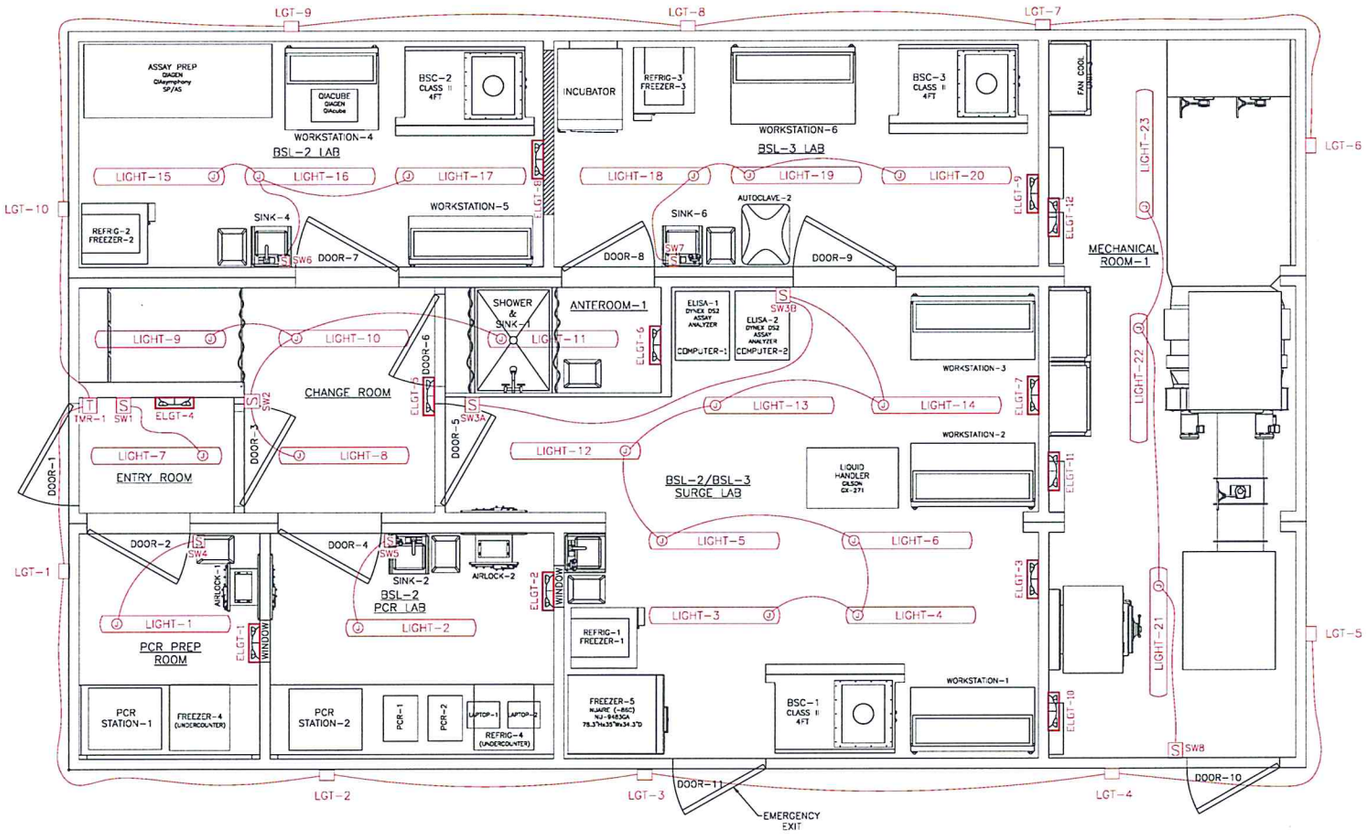
LEFT SIDE

FRONT

MODULE-3

MODULE-2

MODULE-1



RIGHT SIDE

BACK

19JUL17

APPROVAL DRAWING

☐ NO CHANGES	
CUSTOMER SIGNATURE:	
☐ APPROVED WITH CHANGES	
CUSTOMER SIGNATURE:	
☐ REJECTED WITH MARK-UPS	
CUSTOMER SIGNATURE:	

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: R. KITAOKA	4/21/17
PARTS LIST:		APPROVAL:	
		MATERIAL	
		FINISH	

Germfree Laboratories

PLAN, LIGHTING,
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 889-0022-00 REV. 1

SCALE FILE NO. 889-0022-00 SHEET 1 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN.	6/15/17	RK

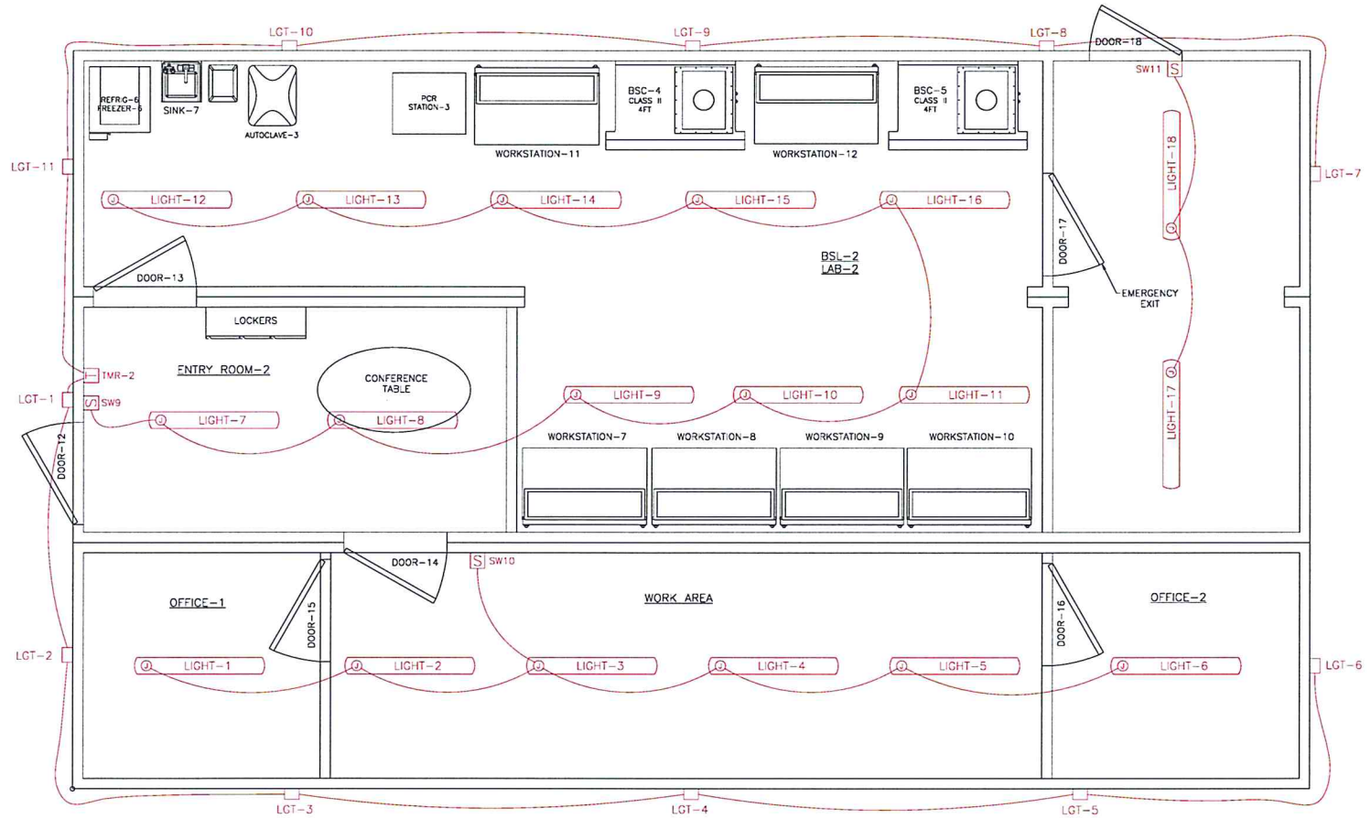
S LIGHT SWITCH

LGT EXTERIOR LIGHT

T EXTERIOR LIGHT TIMER SWITCH

FLOOR-2, BSL-2 LAB

LEFT SIDE



FRONT

MODULE-6

MODULE-5

MODULE-4

BACK

RIGHT SIDE

19 Jun 17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: R. KITAOKA	4/21/17
PARTS LIST:		APPROVAL:	
		MATERIAL	
		FINISH	

Germfree Laboratories

PLAN, LIGHTING, PD16011-USVI MODULAR BSL-3 LAB

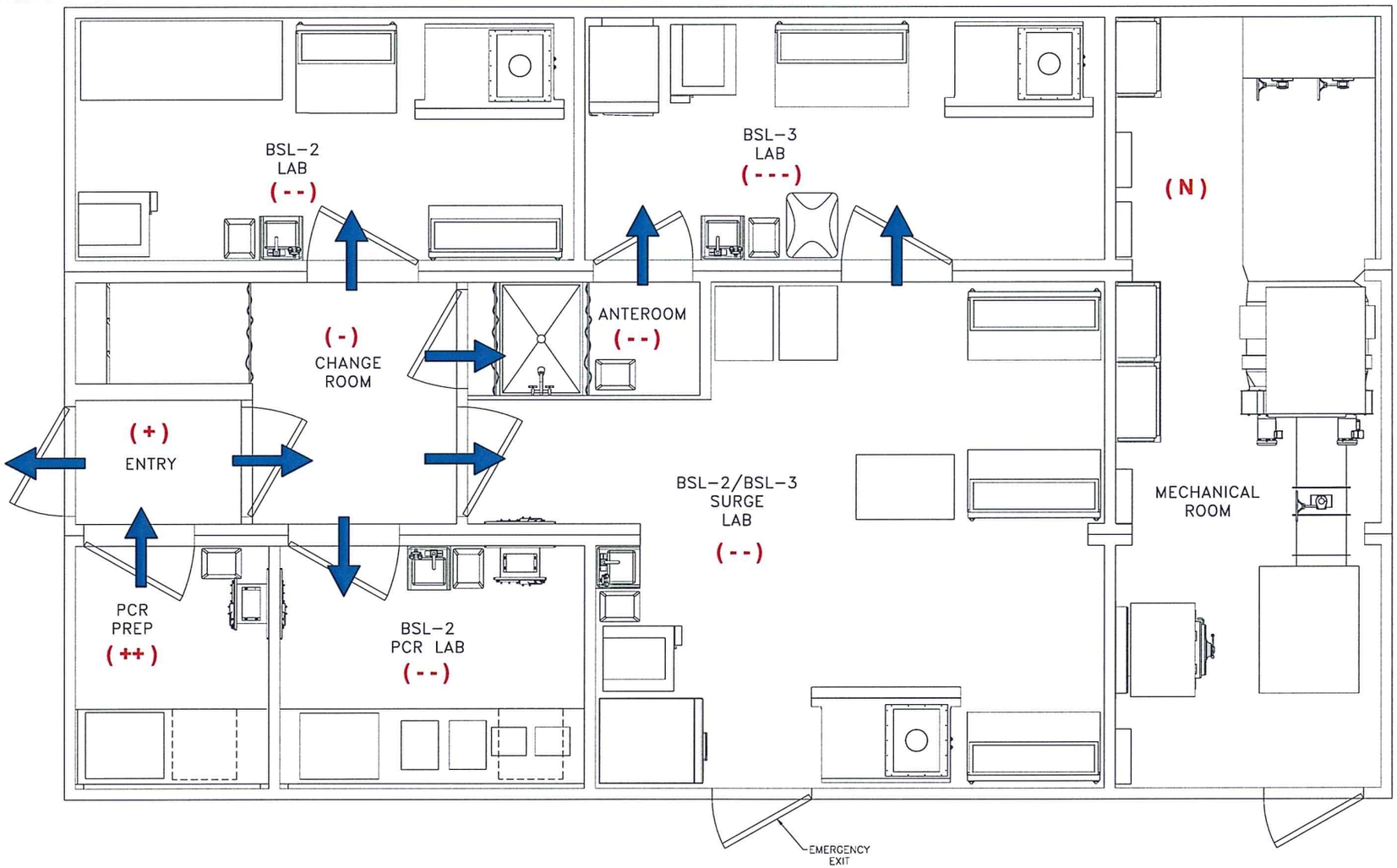
DRAWING NO. 889-0022-00 REV. 1

SCALE FILE NO. 889-0022-00 SHEET 2 OF 2

LEGEND

- DIRECTIONAL AIRFLOW
- (N) – NEUTRAL PRESSURE RELATIVE TO AMBIENT
- (-) – NEGATIVE PRESSURE RELATIVE TO AMBIENT
- (+) – POSITIVE PRESSURE RELATIVE TO AMBIENT

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ



PLAN VIEW
(1ST FLOOR)

19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ± .01
.XXX = ± .005
FRACTIONAL = ±1/64
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/23/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FLOW, PRESSURE
PD16011-USVI MODULAR BSL-3 LAB

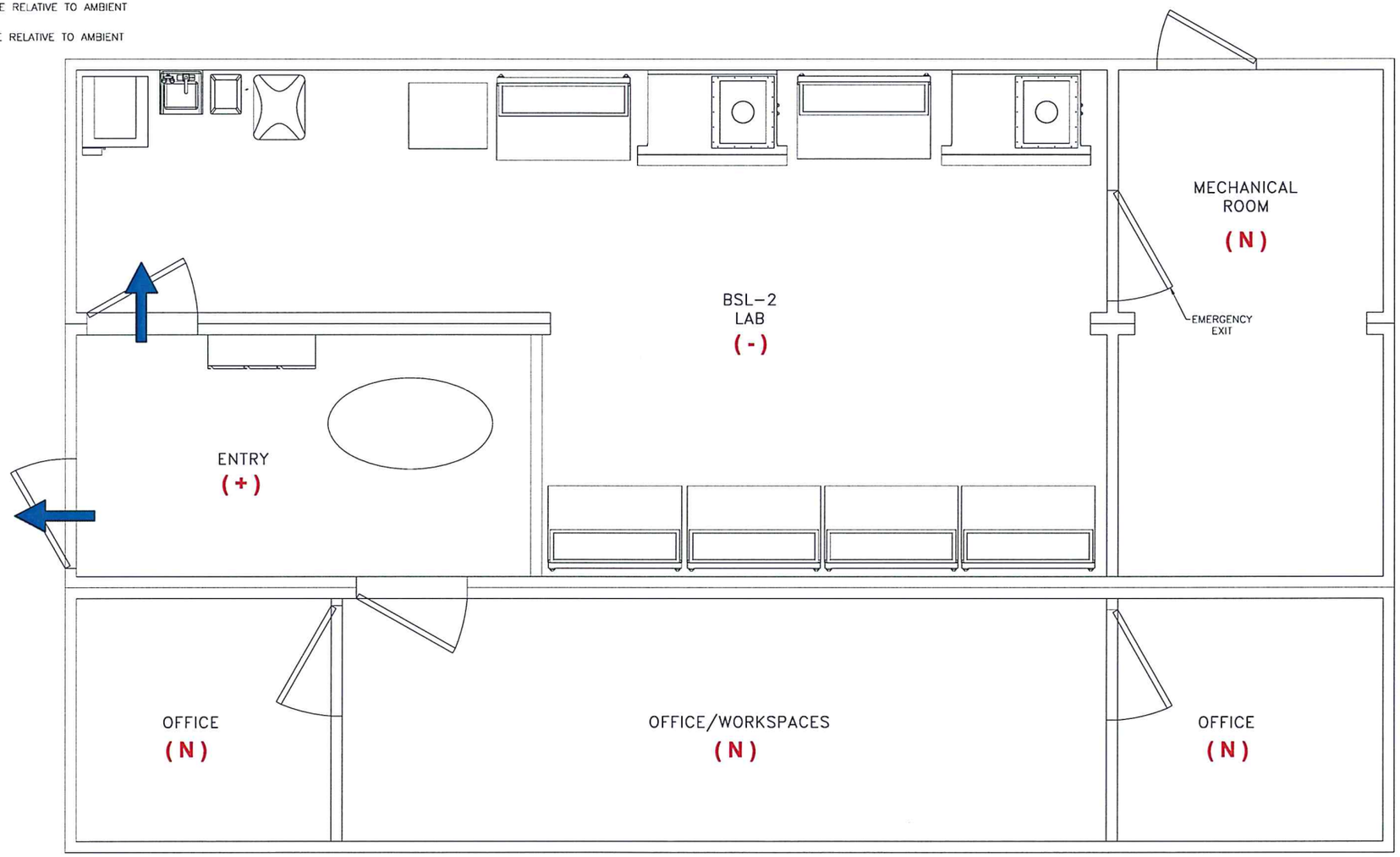
DRAWING NO. 890-0046-00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 2

LEGEND

- DIRECTIONAL AIRFLOW
- (N) – NEUTRAL PRESSURE RELATIVE TO AMBIENT
- (-) – NEGATIVE PRESSURE RELATIVE TO AMBIENT
- (+) – POSITIVE PRESSURE RELATIVE TO AMBIENT

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ



19JUN17

APPROVAL DRAWING

- NO CHANGES
  CUSTOMER SIGNATURE:
- APPROVED WITH CHANGES
  CUSTOMER SIGNATURE:
- REJECTED WITH MARK-UPS
  CUSTOMER SIGNATURE:

PLAN VIEW (2ND FLOOR)

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ± .01
.XXX = ± .005
FRACTIONAL = ±1/64
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/23/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FLOW, PRESSURE
PD16011-USVI MODULAR BSL-3 LAB

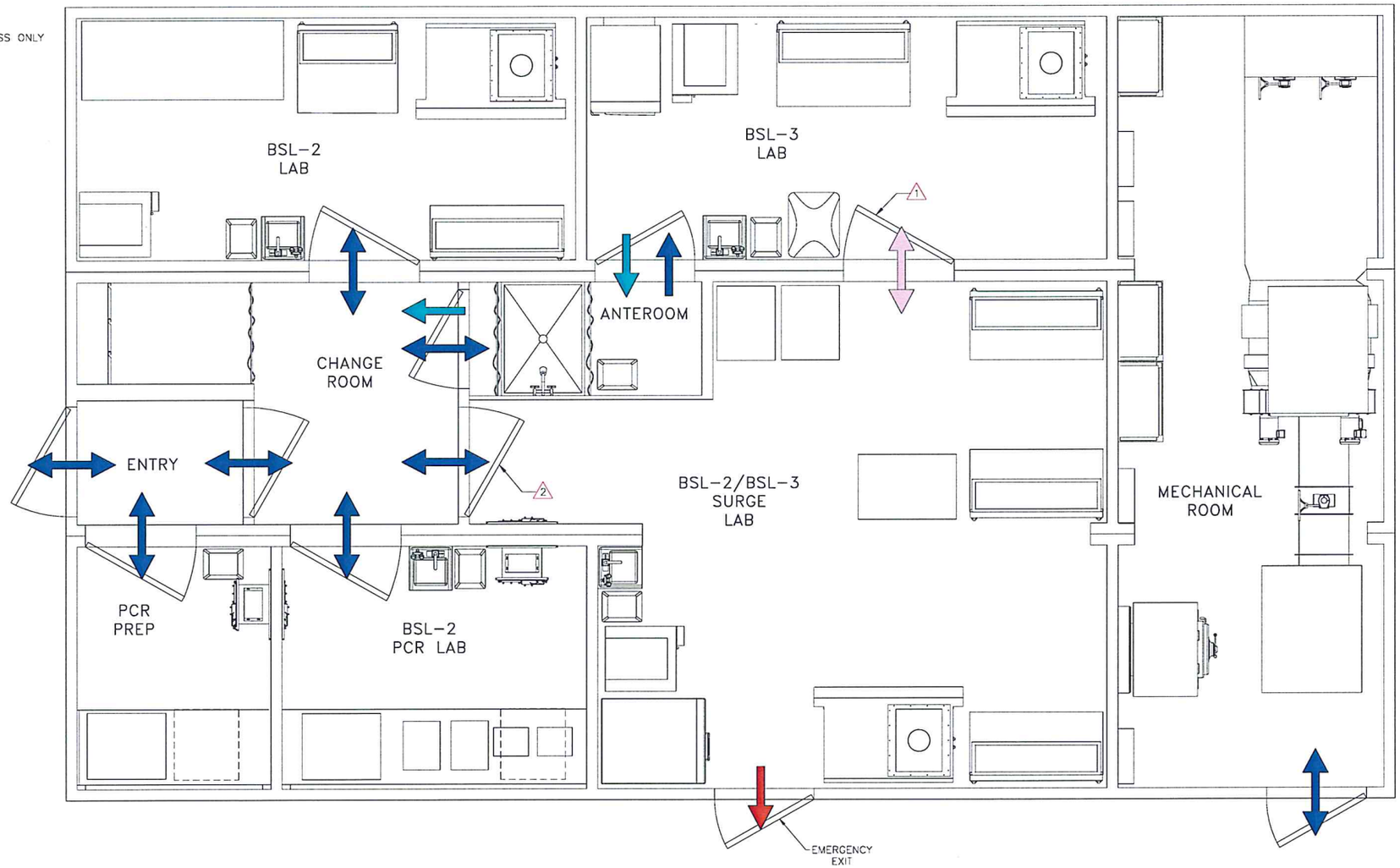
DRAWING NO. 890-0046-00 REV. 2

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ

LEGEND

- CLEAN ZONE
- GRAY ZONE (BSL-3 BUFFER ZONE)
- BSL-3 ZONE
- EMERGENCY EGRESS ONLY



19 Oct 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. WHEN SURGE LAB IS OPERATING AS BSL-2, DOOR BETWEEN CHANGE ROOM AND SURGE LAB IS OPEN, BSL-3 DOOR IS LOCKED.
2. WHEN SURGE LAB IS OPERATING AS BSL-3, DOOR TO BSL-3 LAB IS OPEN, CHANGE ROOM DOOR IS LOCKED.

PLAN VIEW (1ST FLOOR)

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .01, .XXX = ± .005, FRACTIONAL = ±1/64, ANGLES = ±1°. DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C. JAMES	05/23/17
APPROVAL:	V. DUHL	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, FLOW, PERSONNEL
PD16011-USVI MODULAR BSL-3 LAB

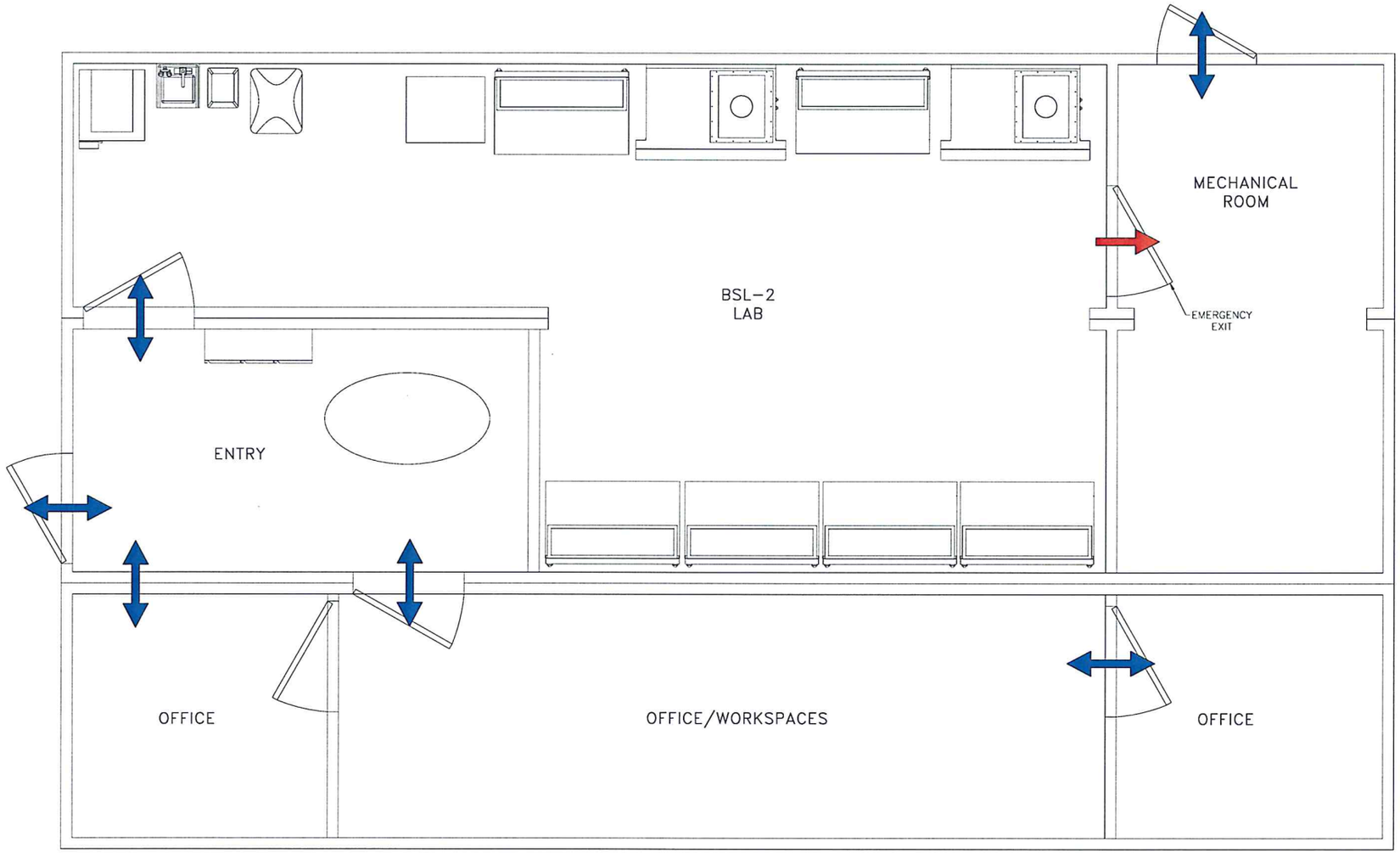
DRAWING NO. 890-0047-00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 2

LEGEND

- CLEAN ZONE
- EMERGENCY EGRESS ONLY

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ



19 Jul 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

PLAN VIEW (2ND FLOOR)

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .01 .XXX = ± .005 FRACTIONAL = ±1/64 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/23/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FLOW, PERSONNEL
PD16011-USVI MODULAR BSL-3 LAB

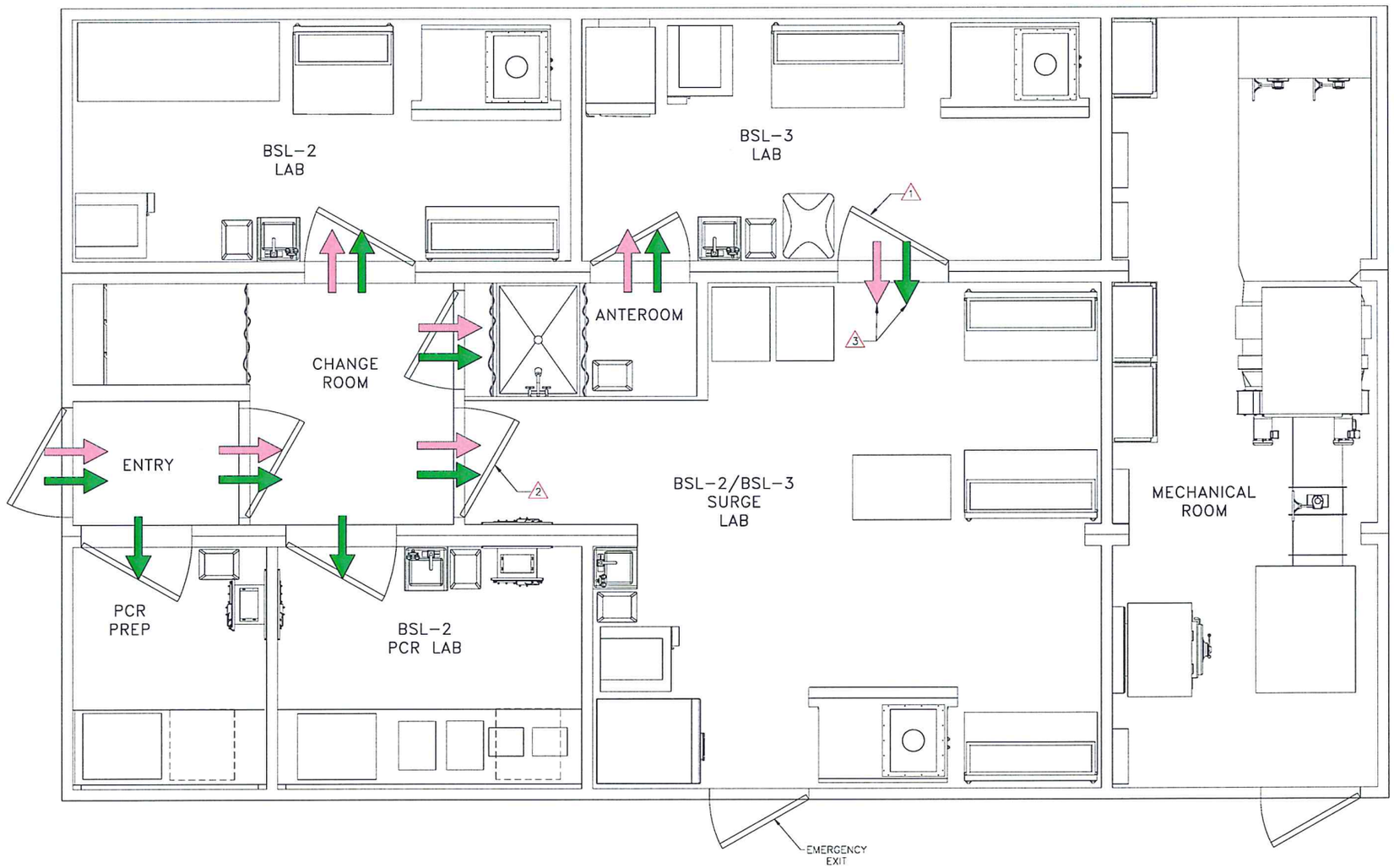
DRAWING NO. 890-0047-00 REV. 2

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ

LEGEND

- NEW LAB SUPPLIES/EQUIPMENT
- INFECTIOUS RESEARCH MATERIAL–CONTAINED



19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NOTES:

1. WHEN SURGE LAB IS OPERATING AS BSL–2, DOOR BETWEEN CHANGE ROOM AND SURGE LAB IS OPEN, BSL–3 DOOR IS LOCKED.
2. WHEN SURGE LAB IS OPERATING AS BSL–3, DOOR TO BSL–3 LAB IS OPEN, CHANGE ROOM DOOR IS LOCKED.
3. NEW LAB SUPPLIES/EQUIPMENT AND CONTAINED INFECTIOUS RESEARCH MATERIAL CAN ONLY BE BROUGHT INTO THE SURGE LAB WHEN OPERATING AS A BSL–3. REFER TO NOTE 2.

PLAN VIEW (1ST FLOOR)

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ± .01
.XXX = ± .005
FRACTIONAL = ±1/64
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C. JAMES	05/23/17
APPROVAL:	V. DUHL	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, FLOW, MATERIALS
PD16011–USVI MODULAR BSL–3 LAB

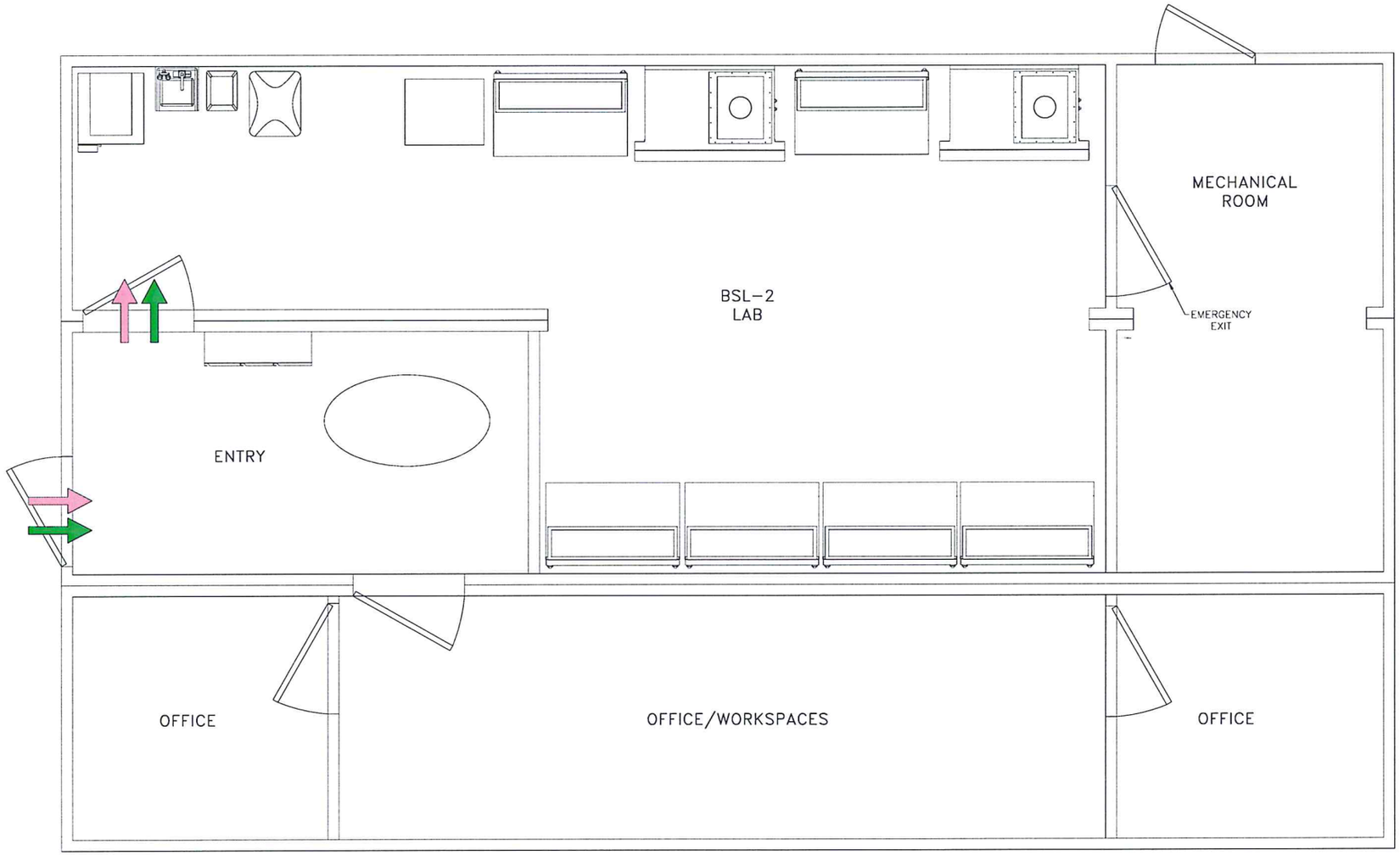
DRAWING NO. 890–0048–00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 2

LEGEND

- NEW LAB SUPPLIES/EQUIPMENT
- INFECTIOUS RESEARCH MATERIAL–CONTAINED

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ



19 JUL 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

PLAN VIEW (2ND FLOOR)

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .01 .XXX = ± .005 FRACTIONAL = ±1/64 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/23/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FLOW, MATERIALS
PD16011–USVI MODULAR BSL–3 LAB

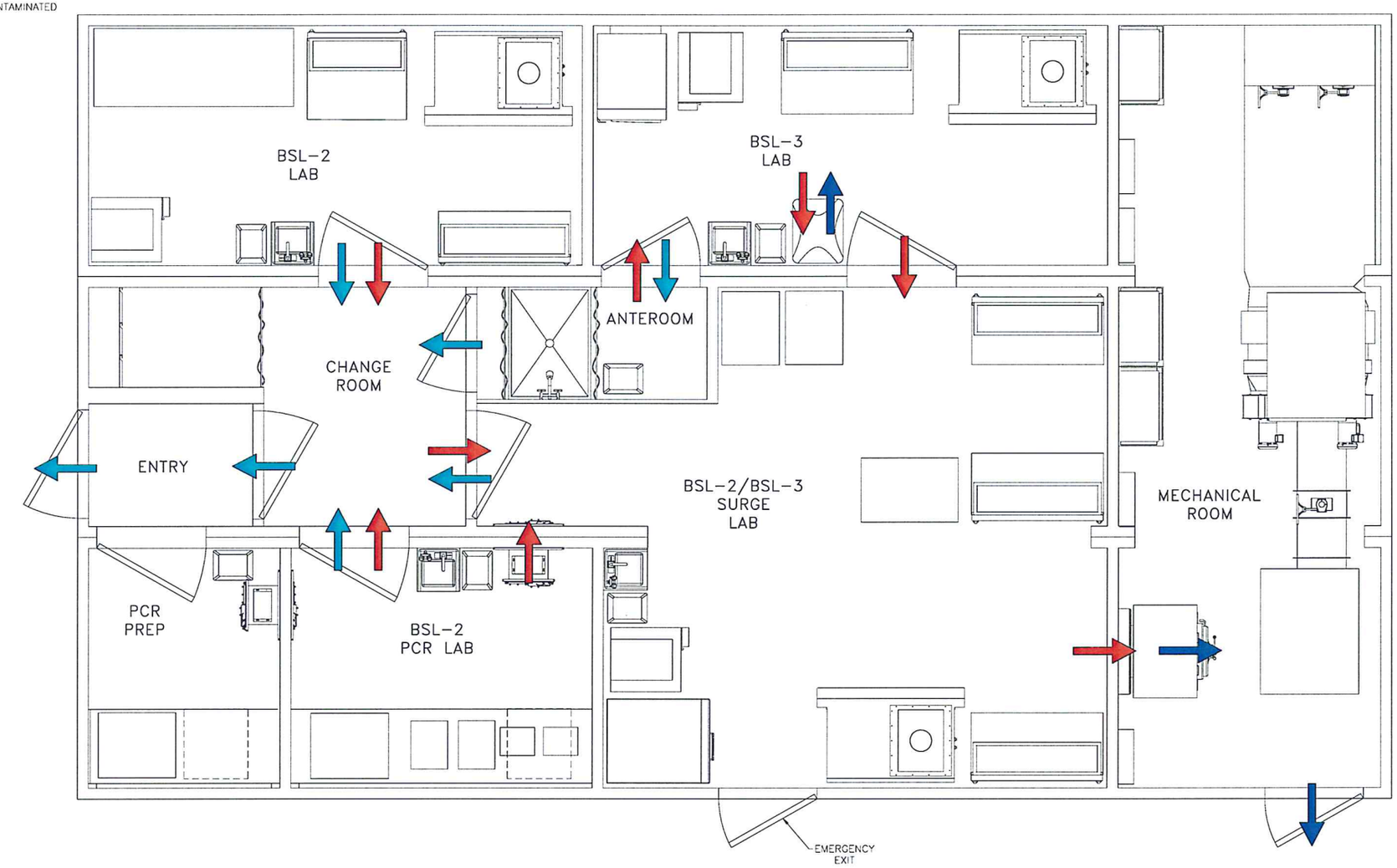
DRAWING NO. 890–0048–00 REV. 2

SCALE N/A FILE NO. SHEET 2 OF 2

LEGEND

- SURFACE DISINFECTED WASTE
- CONTAMINATED WASTE FOR AUTOCLAVE STERILIZATION
- AUTOCLAVE DECONTAMINATED WASTE

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ



PLAN VIEW
(1ST FLOOR)

19 JUL 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ± .01
.XXX = ± .005
FRACTIONAL = ±1/64
ANGLES = ±°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/23/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FLOW, WASTE
PD16011-USVI MODULAR BSL-3 LAB

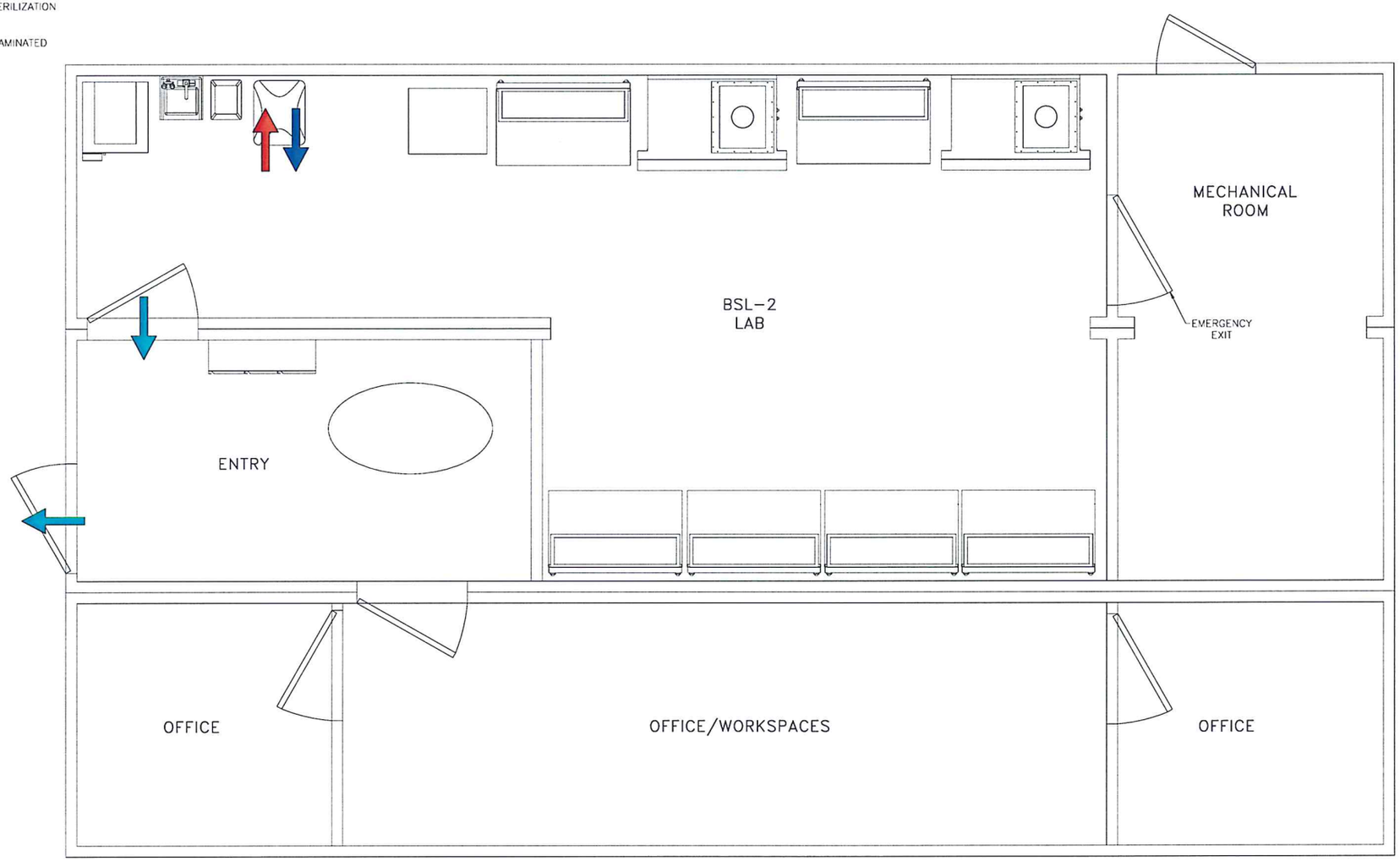
DRAWING NO. 890-0049-00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/16/17	BAS	CMJ

LEGEND

- SURFACE DISINFECTED WASTE
- CONTAMINATED WASTE FOR AUTOCLAVE STERILIZATION
- AUTOCLAVE DECONTAMINATED WASTE



19 JUL 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

PLAN VIEW
(2ND FLOOR)

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ± .01
.XXX = ± .005
FRACTIONAL = ±1/64
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/23/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FLOW, WASTE
PD16011-USVI MODULAR BSL-3 LAB

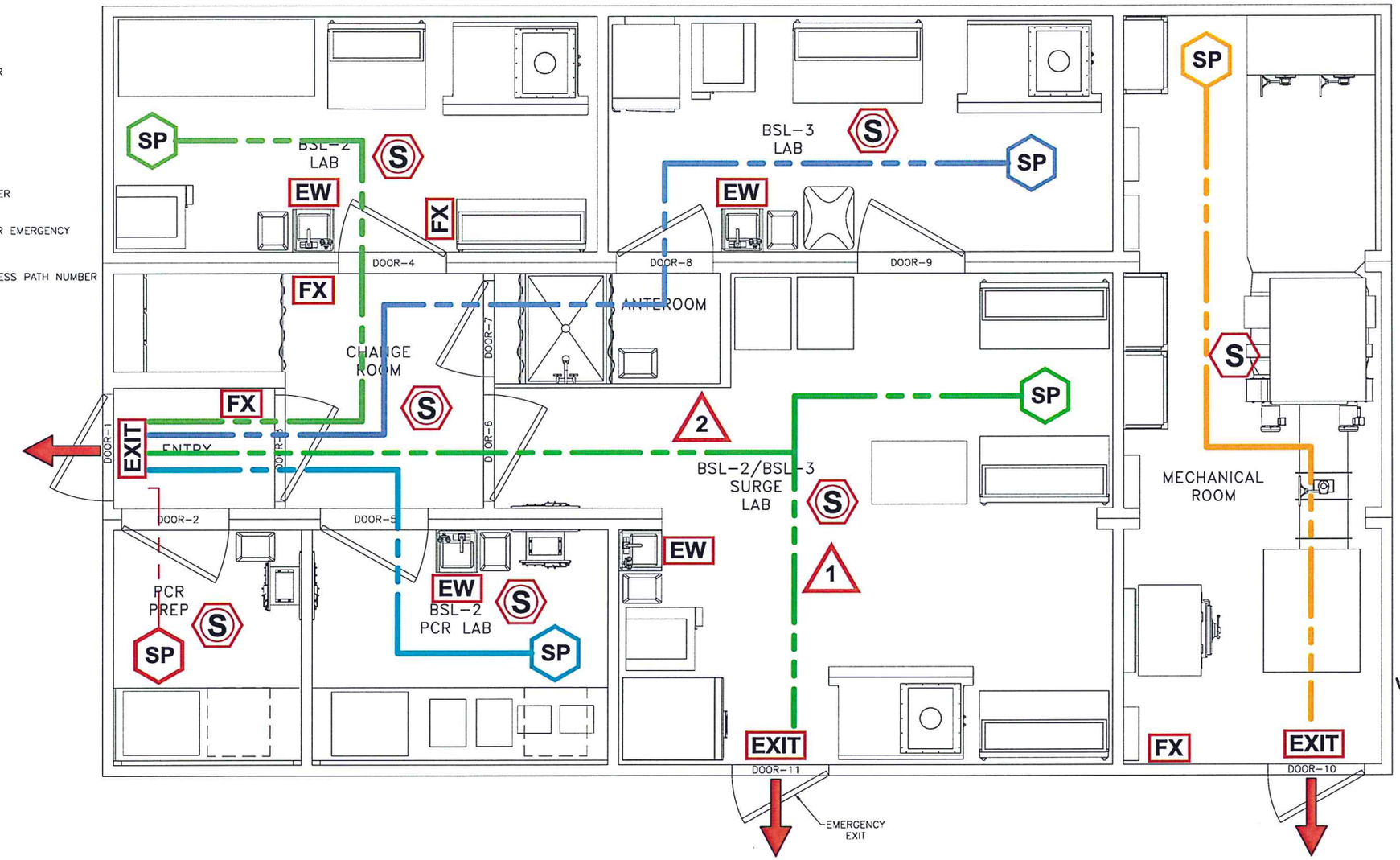
DRAWING NO. 890-0049-00 REV. 2

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	06/16/17	CMJ	BAS

LEGEND

- EMERGENCY EGRESS
- (S) – SMOKE/ HEAT DETECTOR
- (S) – SMOKE DETECTOR
- EXIT – EXIT SIGN
- EW – EYE WASH
- FX – FIRE EXTINGUISHER
- SP – START POINT FOR EMERGENCY EGRESS PATH
- 1 – EMERGENCY EGRESS PATH NUMBER



PLAN VIEW (1ST FLOOR)

1ST FLOOR EMERGENCY EGRESS CHART

START POINT	FINISH POINT	DISTANCE
BSL-3 LAB	DOOR 1	35 FT [10.7 M]
BSL-2 LAB	DOOR 1	21 FT [6.4 M]
SURGE LAB (PATH 1)	DOOR 11	18 FT [5.5 M]
SURGE LAB (PATH 2)	DOOR 1	29 FT [8.8 M]
BSL 2 PCR LAB	DOOR 1	18 FT [5.5 M]
PCR PREP	DOOR 1	6.5 FT [1.9 M]
MECHANICAL SPACE	DOOR 10	24 FT [7.3 M]

NOTES:

1. LONGEST EXIT PATH DISTANCE ON 1ST FLOOR IS 35 FT [10.7 M] 2ND FLOOR IS 41 FT [12.5 M].
2. TRAVEL PATHS SHOWN ARE CLEAR AND UNOBSTRUCTED.
3. LAB SINKS ARE EQUIPPED WITH AN EMERGENCY TEMPERED EYE WASH DRENCH HOSE.

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

19JUL17

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C.JAMES	06/15/17
APPROVAL:	B. SERLE	06/16/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, FLOW, LIFE SAFETY
PD16011-USVI MODULAR BSL-3 LAB

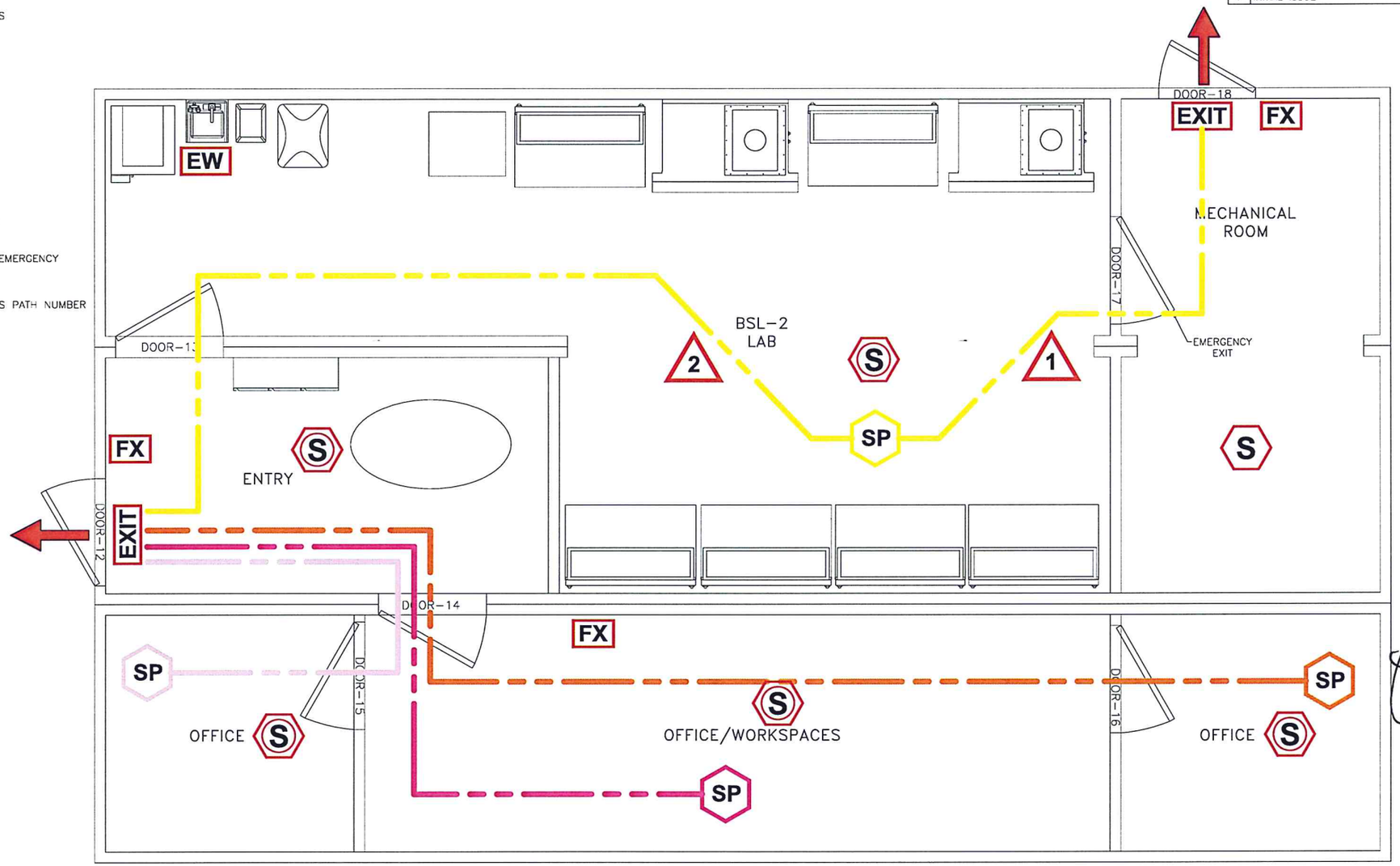
DRAWING NO. 890-0050-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	06/16/17	CMJ	BAS

LEGEND

- EMERGENCY EGRESS
- S – SMOKE/ HEAT DETECTOR
- S – SMOKE DETECTOR
- EXIT – EXIT SIGN
- EW – EYE WASH
- FX – FIRE EXTINGUISHER
- SP – START POINT FOR EMERGENCY EGRESS PATH
- 1 – EMERGENCY EGRESS PATH NUMBER



PLAN VIEW
(2ND FLOOR)

19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. LONGEST EXIT PATH DISTANCE ON 1ST FLOOR IS 35 FT [10.7 M]. 2ND FLOOR IS 41 FT [12.5 M].
2. TRAVEL PATHS SHOWN ARE CLEAR AND UNOBSTRUCTED.
3. LAB SINKS ARE EQUIPPED WITH AN EMERGENCY TEMPERED EYE WASH DRENCH HOSE.

2ND FLOOR EMERGENCY EGRESS CHART

START POINT	FINISH POINT	DISTANCE
BSL-2 LAB (PATH 1)	DOOR 18	18 FT [5.5 M]
BSL-2 LAB (PATH 2)	DOOR 12	31 FT [9.5 M]
OFFICE (FRONT)	DOOR 12	19 FT [5.8 M]
OFFICE/WORKSPACES	DOOR 12	25 FT [7.6 M]
OFFICE (BACK)	DOOR 12	41 FT [12.5 M]

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C.JAMES	06/15/17
APPROVAL:	B. SERLE	06/16/17
MATERIAL	N/A	
FINISH	N/A	

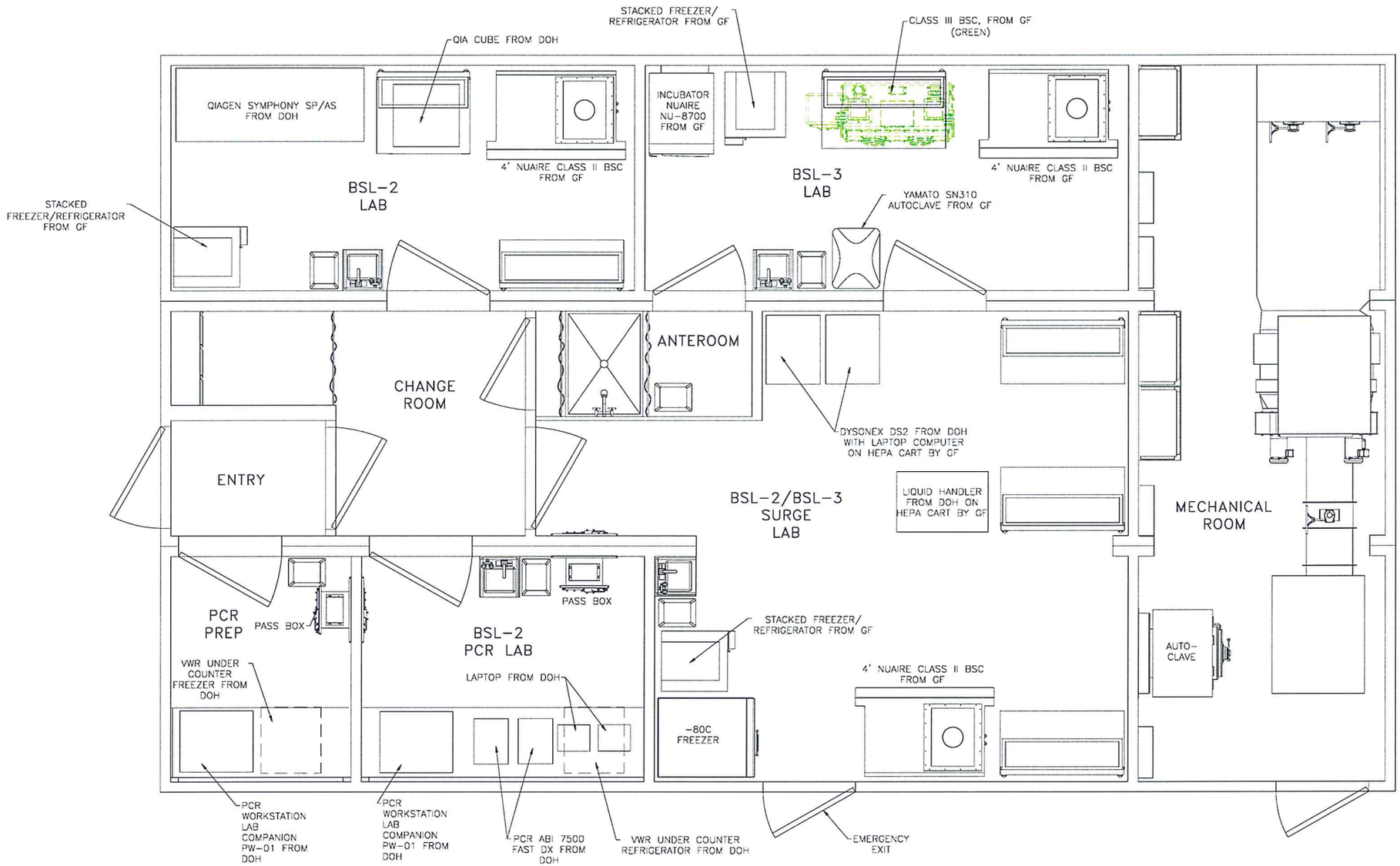
Germfree Laboratories

PLAN, FLOW, LIFE SAFETY
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 890-0050-00 REV. 1

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/15/17	CMJ	BAS



PLAN VIEW
(1ST FLOOR)

19 Jun 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	05/24/17
APPROVAL: V. DUHL	05/24/17
MATERIAL N/A	
FINISH N/A	

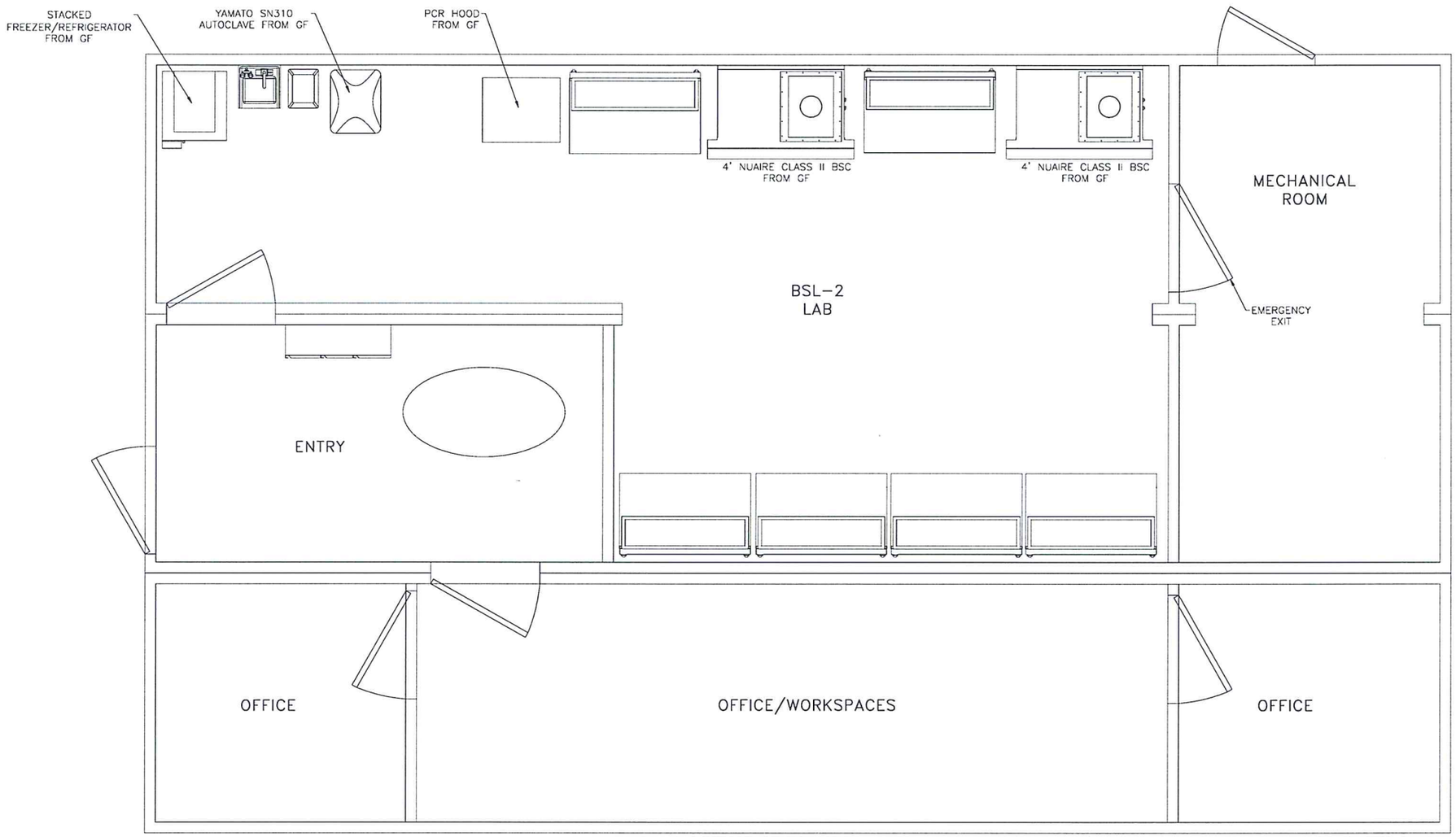
Germfree Laboratories

PLAN, EQUIPMENT
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 891-0013-00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/24/17	CMJ	VAD
2	UPDATED	06/15/17	CMJ	BAS



PLAN VIEW
(2ND FLOOR)

19Jun17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C. JAMES	05/24/17
APPROVAL:	V. DUHL	05/24/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, EQUIPMENT
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 891-0013-00 REV. 2

SCALE N/A FILE NO. SHEET 2 OF 2

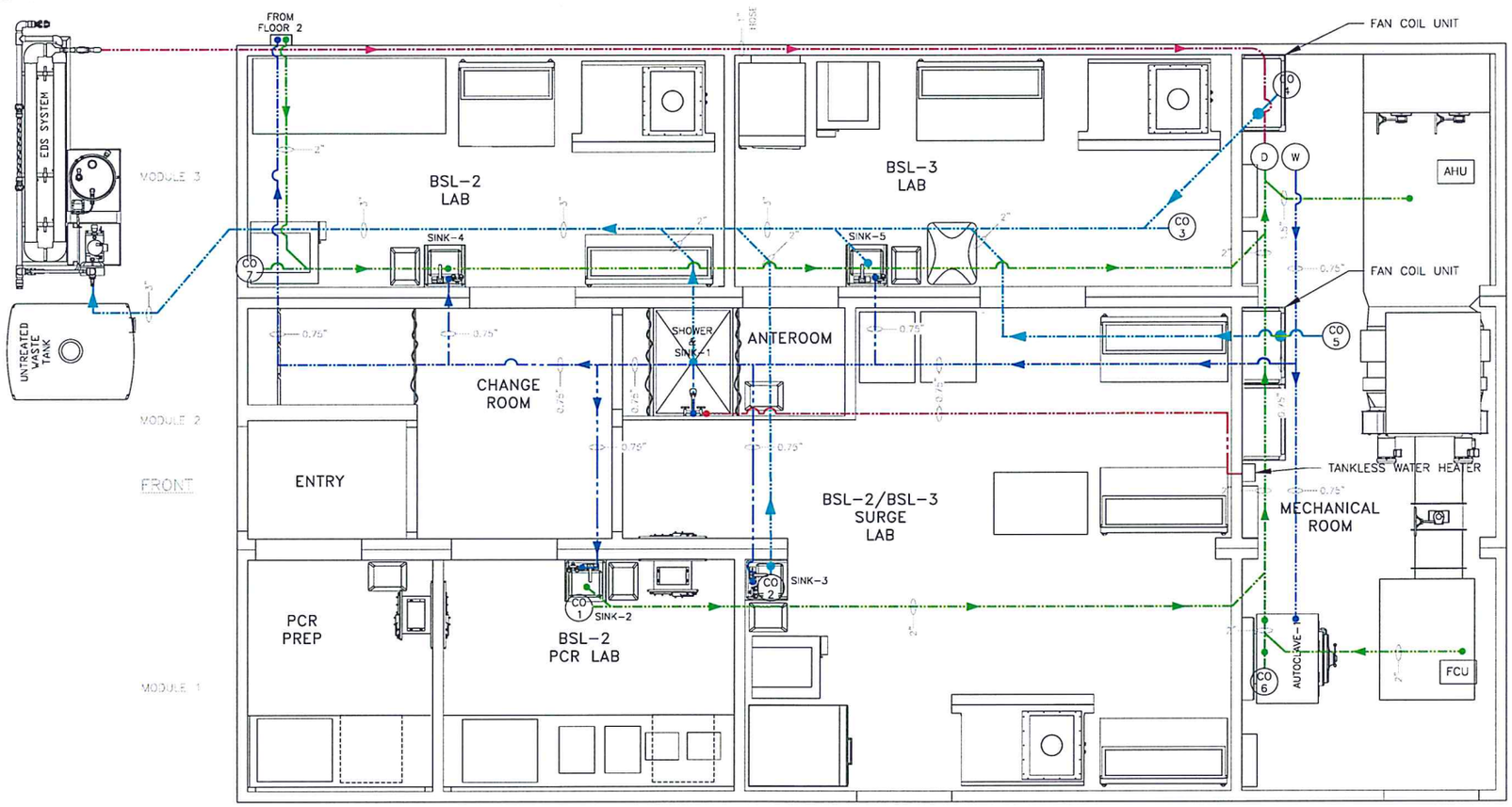
REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/04/17	RK	VAD
2	UPDATED	06/16/17	BAS	CMJ

LEGEND

- CO — FNPT WITH PLUG DRAIN CLEAN OUT PORT
- D — 3" [76mm] IPS SEWER UTILITY DRAIN CONNECTION (FNPT)
- W — 3/4" [19mm] IPS UTILITY WATER CONNECTION (FNPT)
- FCU — FAN COIL UNIT
- AHU — AIR HANDLER UNIT

- WATER SUPPLY LINE
- CONTAMINATED WASTE DRAIN LINE
- TREATED WASTE LINE
- UNCONTAMINATED WASTE DRAIN LINE
- HOT WATER SUPPLY LINE

PHASE-1: GROUND FLOOR, BSL-3 LAB



NOTES:

1. WATER AND DRAIN LINES TO BE IN CRAWL SPACE UNDER MODULES. PIPE LOCATIONS ARE APPROXIMATE AND SUBJECT TO ADJUSTMENT DURING INSTALLATION.
2. DRAIN LINES TO BE SLOPED AT 1/4" [6mm] PER 12" [305mm] FOR PROPER DRAINAGE.
3. ALL BSL-3 LABORATORY WASTE AND CONDENSATE DRAINS TO BE DECONTAMINATED THROUGH EDS, EFFLUENT DECONTAMINATION SYSTEM.

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03, .XXX = ±.010, FRACTIONS = ±1/16, ANGLES = ±1°. DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	R. KITAOKA	05/04/17
APPROVAL:	V. DUHL	05/04/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, PLUMBING
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 894-0038-00 REV. 2

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/04/17	RK	VAD
2	UPDATED	06/16/17	BAS	CMJ

LEGEND

WATER SUPPLY LINE

UNCONTAMINATED WASTE DRAIN LINE

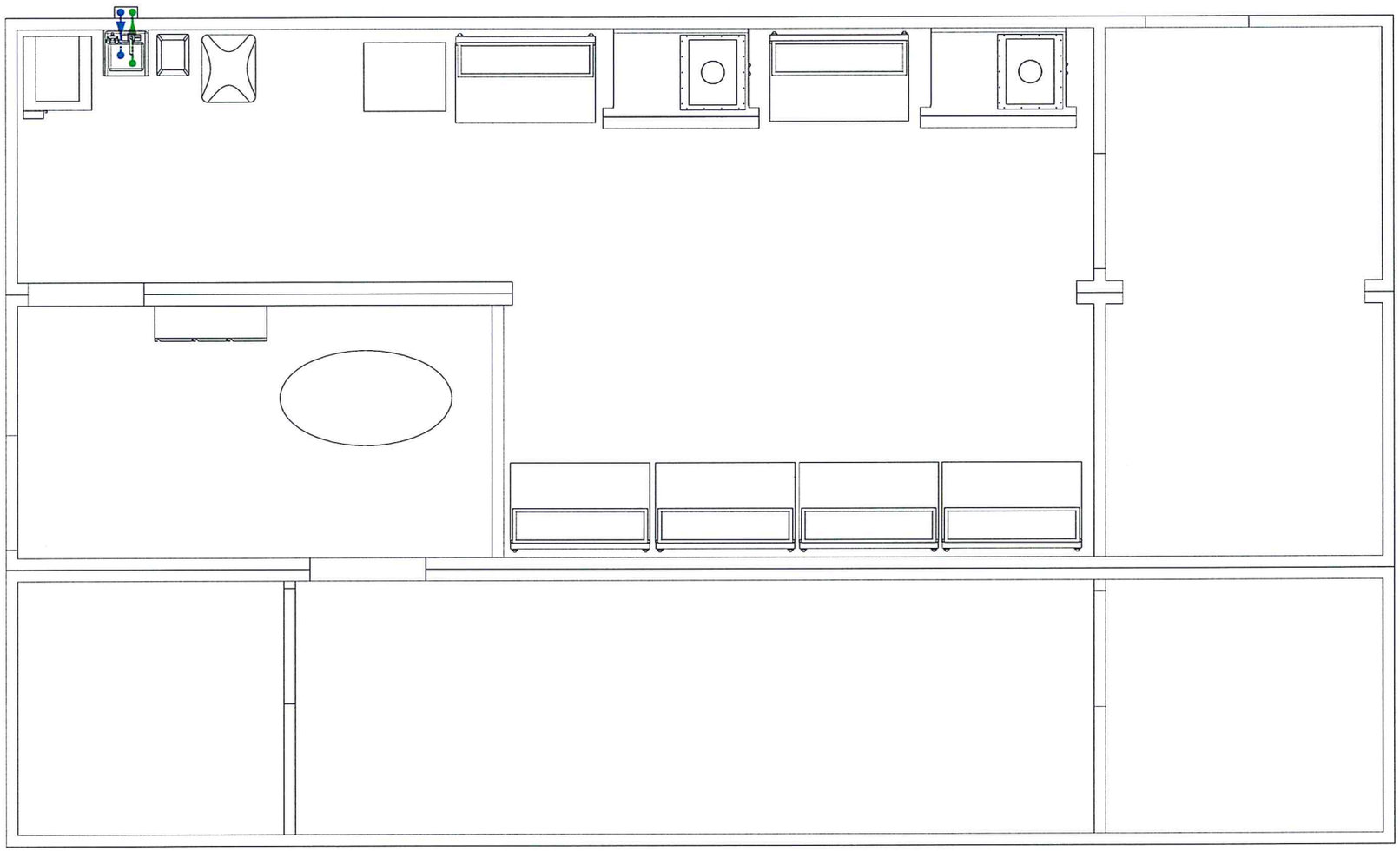
(CO) — FNPT WITH PLUG DRAIN CLEAN OUT PORT

(D) — 3" [76mm] IPS SEWER UTILITY DRAIN CONNECTION (FNPT)

(W) — 3/4" [19mm] IPS UTILITY WATER CONNECTION (FNPT)

LEFT SIDE

PHASE-2 SECOND FLOOR, BSL-2 LAB



FRONT

BACK

RIGHT SIDE

NOTES:

1. WATER AND DRAIN LINES TO BE IN CRAWL SPACE UNDER MODULES. PIPE LOCATIONS ARE APPROXIMATE AND SUBJECT TO ADJUSTMENT DURING INSTALLATION.
2. DRAIN LINES TO BE SLOPED AT 1/4" [6mm] PER 12" [305mm] FOR PROPER DRAINAGE.
3. ALL LABORATORY WASTE TO BE DECONTAMINATED THROUGH EDS, EFFLUENT DECONTAMINATION SYSTEM.

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: R. KITAOKA	05/04/17
APPROVAL: V. DUHL	05/04/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, PLUMBING
PD16011-USVI MODULAR BSL-3 LAB

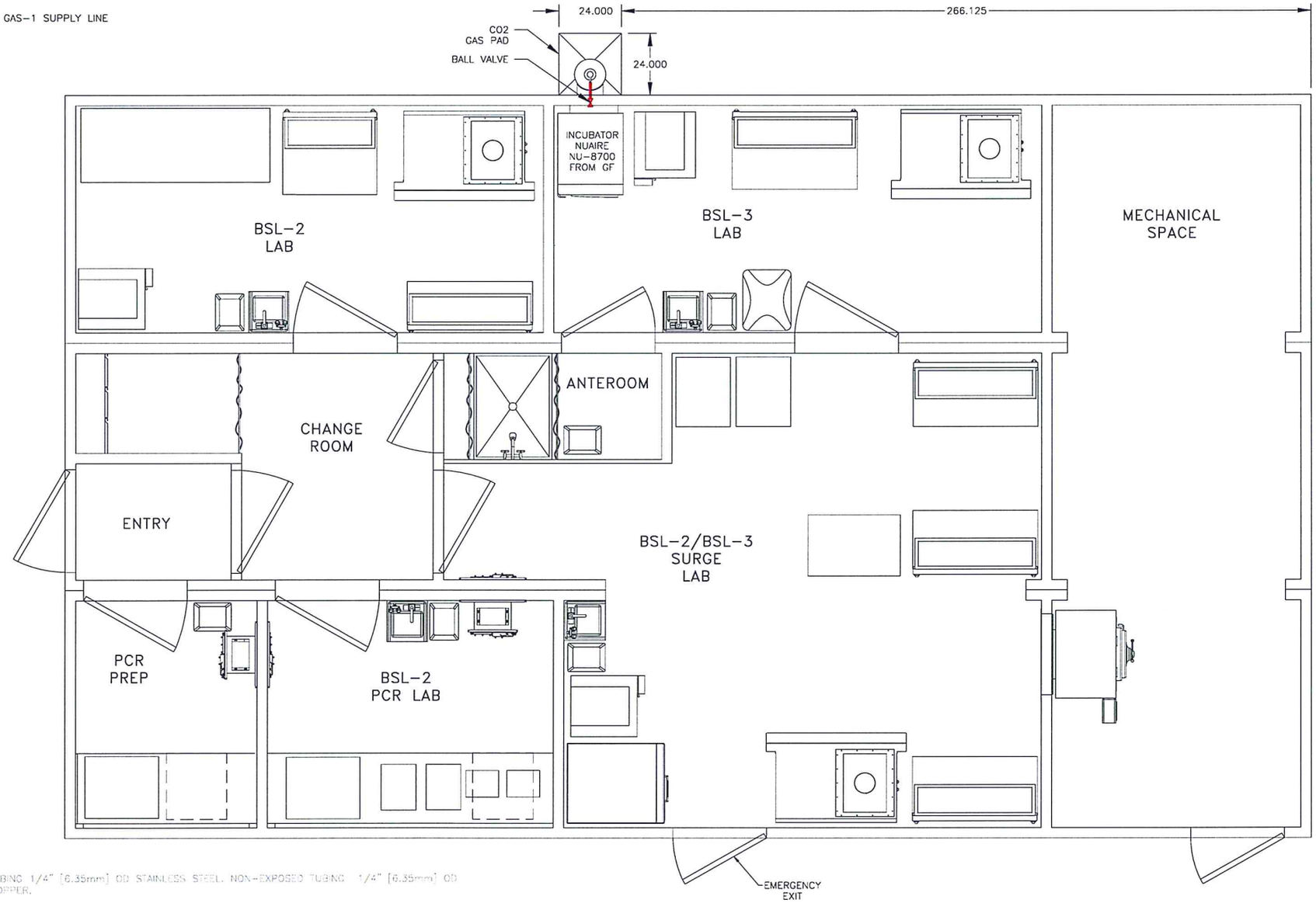
DRAWING NO. 894-0038-00 REV. 2

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/15/17	BAS	MAE

LEGEND

CO_2 GAS-1 SUPPLY LINE



PLAN VIEW
(1ST FLOOR)

NOTES:

1. LAB EXPOSED TUBING 1/4" [6.35mm] OD STAINLESS STEEL. NON-EXPOSED TUBING 1/4" [6.35mm] OD PRE-CLEANED COPPER.
2. LOCAL POINT-OF-USE VALVES, FILTERS AND REGULATORS PROVIDED BY GERMFREE AS SPECIFIED BY EQUIPMENT MANUFACTURER.
3. GAS SUPPLY TANKS WILL BE SUPPLIED BY CUSTOMER. REGULATORS, VALVES & FILTERS WILL BE SUPPLIED BY GERMFREE.
4. GAS PAD BY OTHERS.
5. ALL DIMENSIONS ARE APPROXIMATE.

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B.SERLE	06/15/17
APPROVAL:	M.EWACHIW	06/15/17
MATERIAL	N/A	
FINISH	N/A	

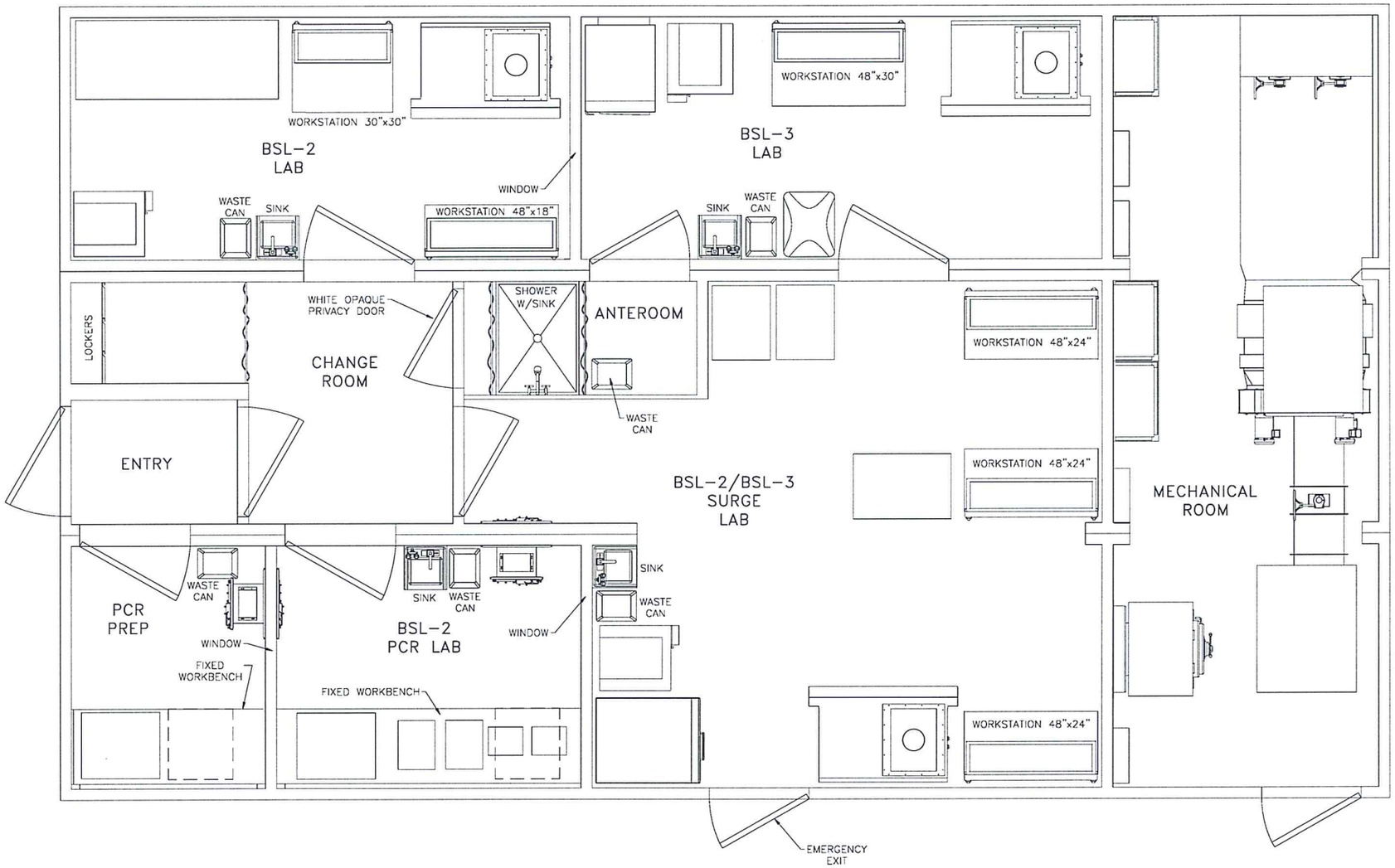
Germfree Laboratories

PLAN, GAS SYSTEM
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 895-0016-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 1

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/16/17	CMJ	MAE
2	UPDATED 1ST FLOOR, ADDED 2ND	05/24/17	CMJ	VAD
3	UPDATED	06/15/17	CMJ	BAS



PLAN VIEW
(1ST FLOOR)

190ec17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED
WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH
MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	CJJAVES	05/16/17
APPROVAL:	M.EWACHIW	05/16/17
MATERIAL	N/A	
FINISH	N/A	

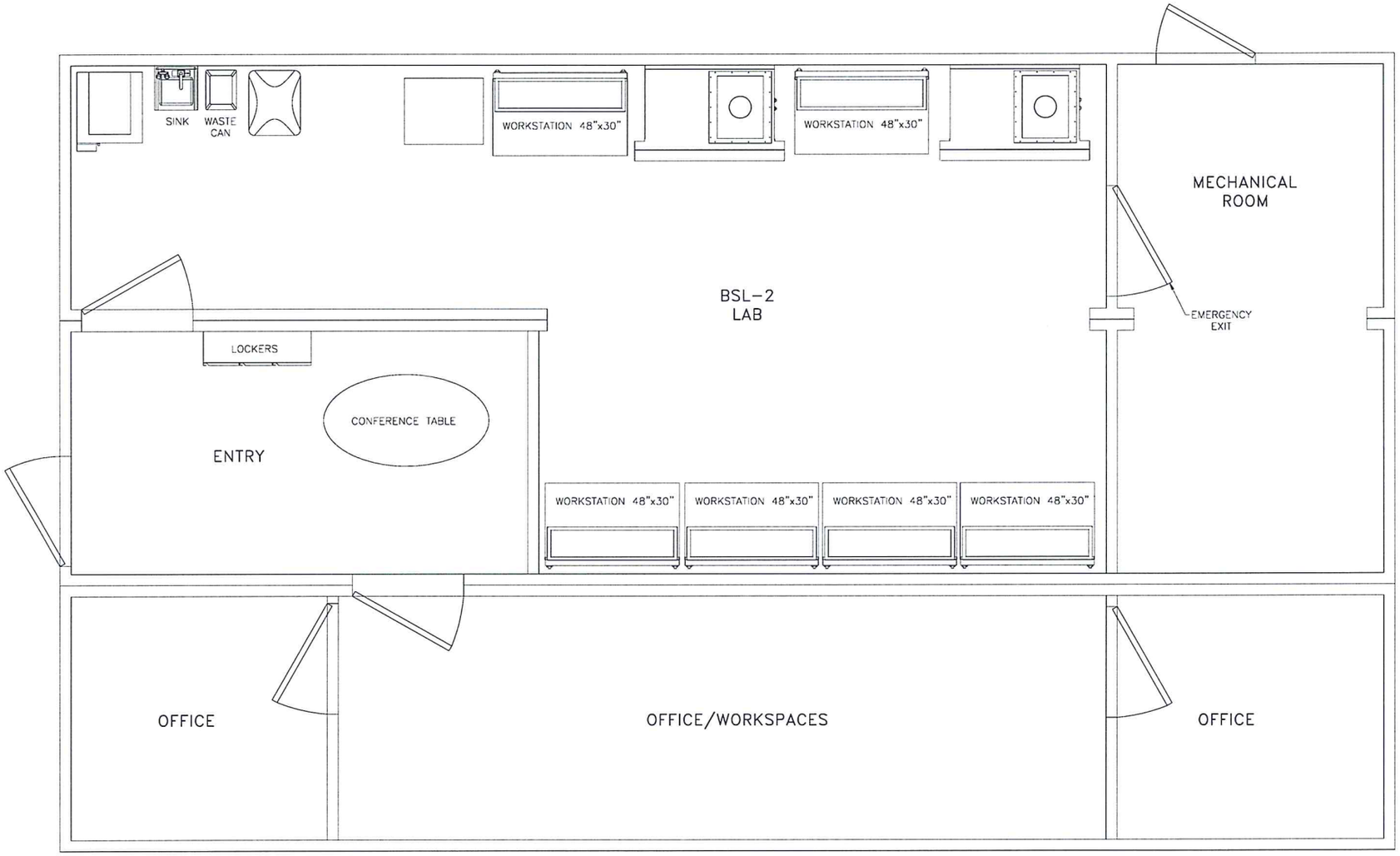
Germfree Laboratories

PLAN, FURNITURE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 896-0035-00 REV. 3

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL ISSUE	05/16/17	CMJ	MAE
2	UPDATED 1ST FLOOR, ADDED 2ND	05/24/17	CMJ	VAD
3	UPDATED	06/15/17	CMJ	BAS



PLAN VIEW
(2ND FLOOR)

19OCT17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. GERMFREE TO PROVIDE OFFICE FURNITURE.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C.JAVES	05/16/17
APPROVAL: M.EWACHIW	05/16/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, FURNITURE
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 896-0035-00 REV. 3

SCALE N/A FILE NO. SHEET 2 OF 2

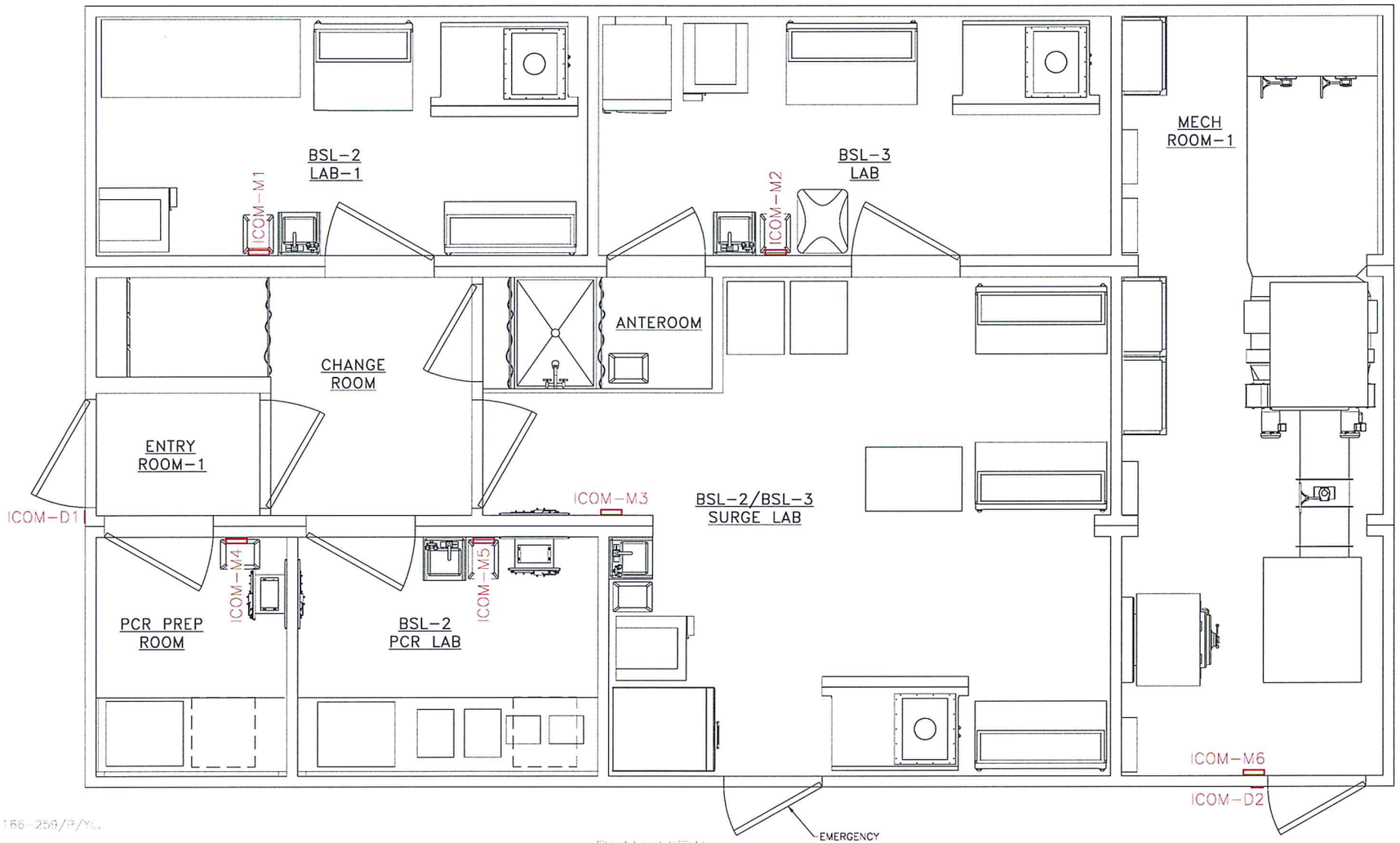
REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/09/17	CS	GW

LEGEND

ICOM-D VIDEO INTERCOM DOOR STATION - AIPHONE AX-DVF

ICOM-M VIDEO INTERCOM MASTER STATION - AIPHONE AX-8MV

EXCH INTERCOM EXCHANGE UNIT - AIPHONE AX-248C



PLAN VIEW

SPECIFICATIONS:

1. WIRING: VERTICAL CABLE 166-259/P/YL.
2. CABLE TERMINATED TO TIA/EIA 568B STANDARD.

NOTES:

1. RECOMMENDED MOUNTING HEIGHT IS 5' FROM FLOOR TO CENTER OF INTERCOM.

19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:		
WIRE LIST:		
PARTS LIST:		

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	C. SHIRLEY	06/09/17
APPROVAL:	G. WILLIAMS	06/23/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

PLAN, VIDEO INTERCOM
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 897-0024-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 2

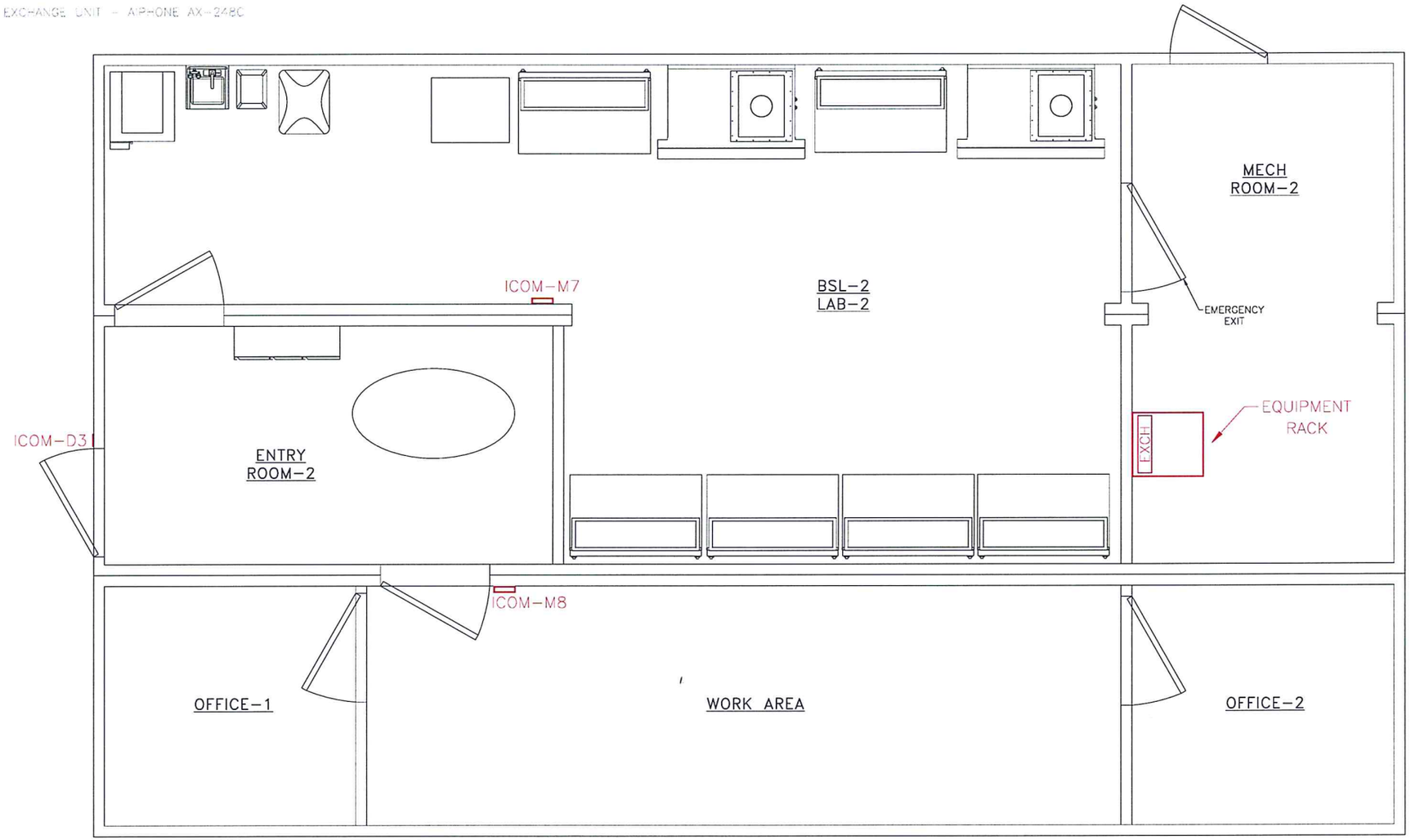
REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/09/17	CS	GW

LEGEND

ICOM-D VIDEO INTERCOM DOOR STATION – AIPHONE AX-DVF

ICOM-M VIDEO INTERCOM MASTER STATION – AIPHONE AX-8VV

EXCH INTERCOM EXCHANGE UNIT – AIPHONE AX-248C



PLAN VIEW

SPECIFICATIONS:

1. WIRING: VERTICAL CABLE 166-259/P/YL.
2. CABLE TERMINATED TO TIA/EIA 568B STANDARD.

NOTES:

1. RECOMMENDED MOUNTING HEIGHT IS 5' FROM FLOOR TO CENTER OF INTERCOM.

19Jul17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. SHIRLEY	06/09/17
APPROVAL: G. WILLIAMS	06/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, VIDEO INTERCOM
PD16011-USVI MODULAR BSL-3 LAB

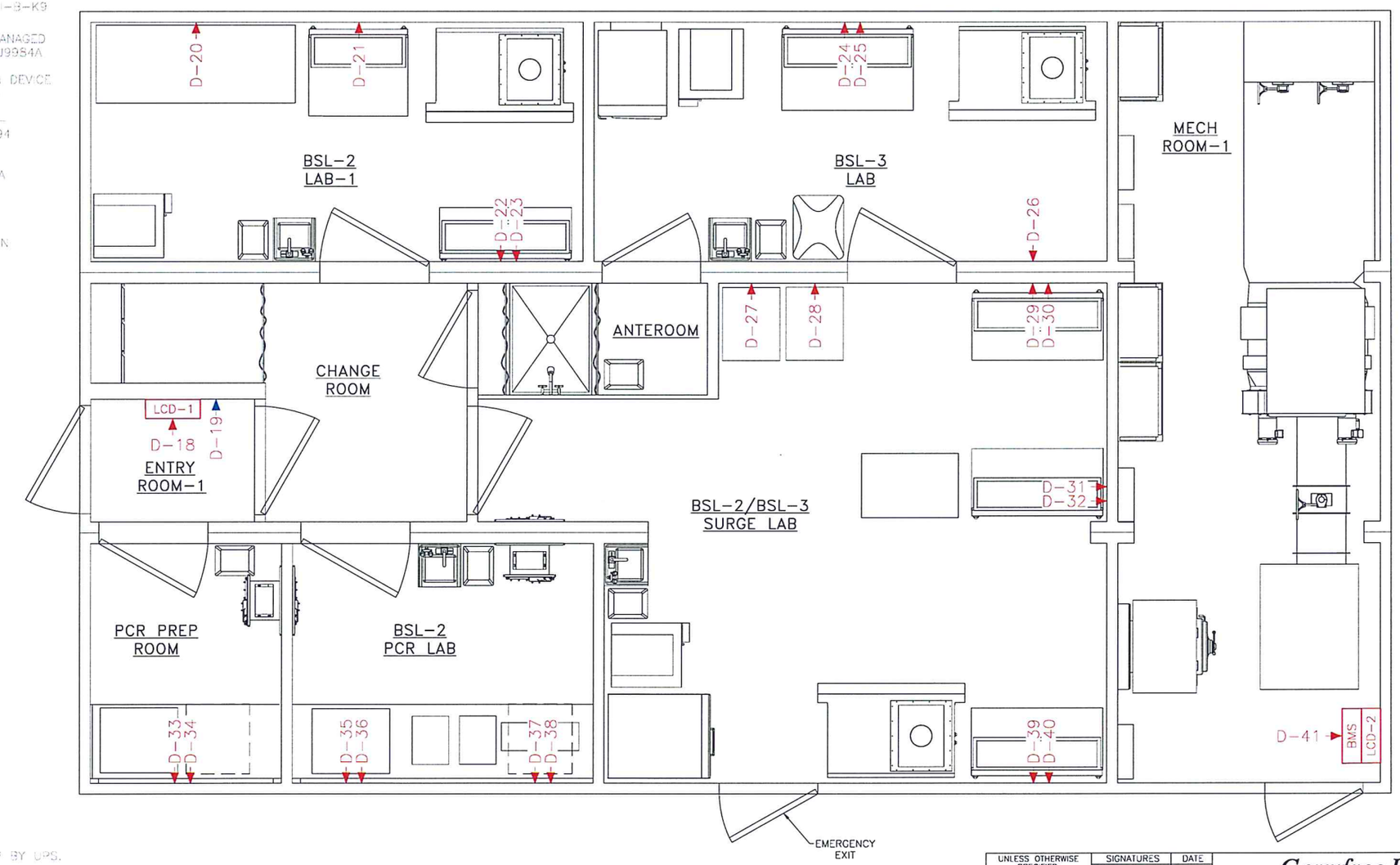
DRAWING NO. 897-0024-00 REV. 1

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/09/17	CS	GW

LEGEND

- SINGLE DATA PORT: RJ-45 JACK
- SINGLE DATA PORT: VOIP PHONE
- SINGLE DATA PORT: WIRELESS ACCESS POINT CISCO AIR-AP1815I-B-K9
- SWITCH — 48 PORT SMART MANAGED PoE+ SWITCH HP J9984A
- SPD — SURGE PROTECTION DEVICE L-COM ELPD-CAT6
- DVR — 16 CHANNEL DVR - SAMSUNG SRD-1694
- UPS — UPS - TRIPP LITE SMART1500RMXL2UA
- BMS — BMS CONTROLLER
- LCD — BMS TOUCH SCREEN CONTROL STATION



SPECIFICATIONS:

1. WIRING: VERTICAL CABLE 166-256/P/PR.
2. CABLE TERMINATED TO TIA/EIA 568B STANDARD.

NOTES:

1. DVR & SWITCH BACKED UP BY UPS.
2. PORTS 1-24 OF SWITCH ARE PoE+ BY DEFAULT. ANY PORT CAN BE CONFIGURED TO HAVE PoE+ TURNED ON OR OFF, NOT TO EXCEED 370W.
3. VOIP PHONES NOT INCLUDED.

19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. SHIRLEY	06/09/17
APPROVAL: G. WILLIAMS	06/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, DATA
PD16011-USVI MODULAR BSL-3 LAB

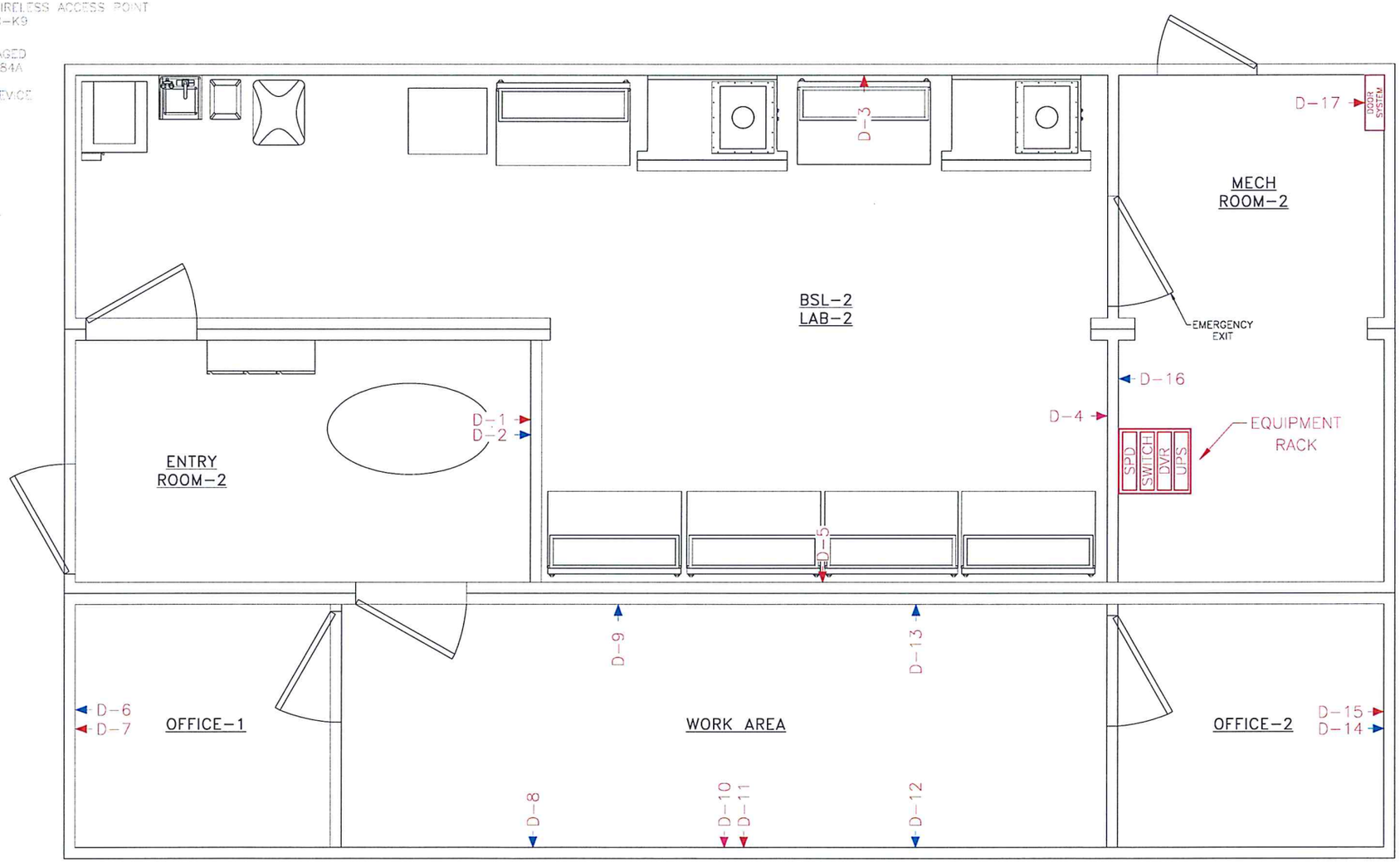
DRAWING NO. 899-0041-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/09/17	CS	GW

LEGEND

- SINGLE DATA PORT: RJ-45 JACK
- SINGLE DATA PORT: VOIP PHONE
- SINGLE DATA PORT: WIRELESS ACCESS POINT CISCO AIR-AP1815-B-K9
- SWITCH — 48 PORT SMART MANAGED PoE+ SWITCH HP J9984A
- SPD — SURGE PROTECTION DEVICE L-COM ELPD-CAT6
- DVR — 16 CHANNEL DVR - SAMSUNG SRD-1694
- UPS — UPS - TRIPP LITE SMART1500RMXL2UA
- BMS — BUILDING MANAGEMENT SYSTEM CONTROLLER



SPECIFICATIONS:

1. WIRING: VERTICAL CABLE 166-256/P/PR.
2. CABLE TERMINATED TO TIA/EIA 568B STANDARD.

NOTES:

1. DVR & SWITCH BACKED UP BY UPS.
2. PORTS 1-24 OF SWITCH ARE PoE+ BY DEFAULT. ANY PORT CAN BE CONFIGURED TO HAVE PoE+ TURNED ON OR OFF. NOT TO EXCEED 370W.
3. VOIP PHONES NOT INCLUDED.

19Jul17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. SHIRLEY	06/09/17
APPROVAL: G. WILLIAMS	06/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, DATA
PD16011-USVI MODULAR BSL-3 LAB

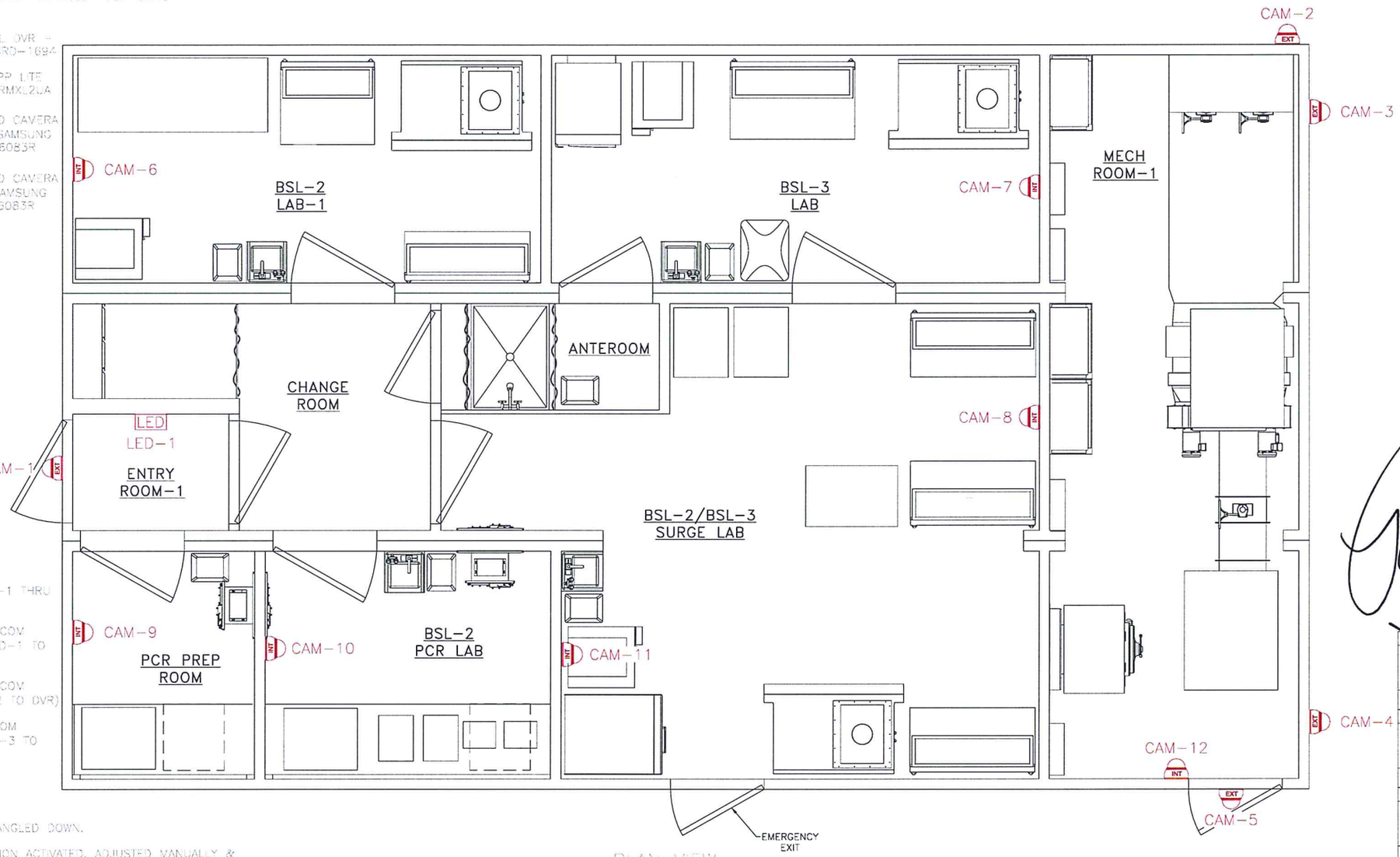
DRAWING NO. 899-0041-00 REV. 1

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/09/17	CS	GW

LEGEND

- LED — 19.5" CCTV LED MONITOR VIEWSONIC MODEL VA2055SA
- SWITCH — 48 PORT SMART MANAGED PoE+ SWITCH HP J9984A
- DVR — 16 CHANNEL DVR – SAMSUNG SRD-1694
- UPS — UPS – TRIPP LITE SMART1500RMXL2UA
- INT — ANALOG VIDEO CAMERA (INTERIOR) SAMSUNG MODEL SCD-6083R
- EXT — ANALOG VIDEO CAMERA (EXTERIOR) SAMSUNG MODEL SCV-6083R



PLAN VIEW

SPECIFICATIONS:

1. WIRING: RG-59 11X3-18291NH (CAM-1 THRU 12 TO DVR).
2. SVGA CABLE – L-COM CTL83VGAVM-50T (LED-1 TO DVR)
3. SVGA CABLE – L-COM CTL3VGAMM-5 (LED-2 TO DVR)
4. SVGA CABLE – L-COM CTL3VGAMM-50T (LED-3 TO DVR)

NOTES:

1. CAM-1 & 5 ARE ANGLED DOWN.
2. CAMERAS ARE MOTION ACTIVATED, ADJUSTED MANUALLY & WORK IN LOW LIGHT CONDITIONS.
3. CCTV SYSTEM & SWITCH BACKED UP BY TRIPP LITE UPS.
4. UP TO 30 DAYS OF MOTION ACTIVATED STORAGE.
5. DVR CAN BE ACCESSED & MONITORED REMOTELY.

19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. SHIRLEY	06/09/17
APPROVAL: G. WILLIAMS	06/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, CCTV
PD16011-USVI MODULAR BSL-3 LAB

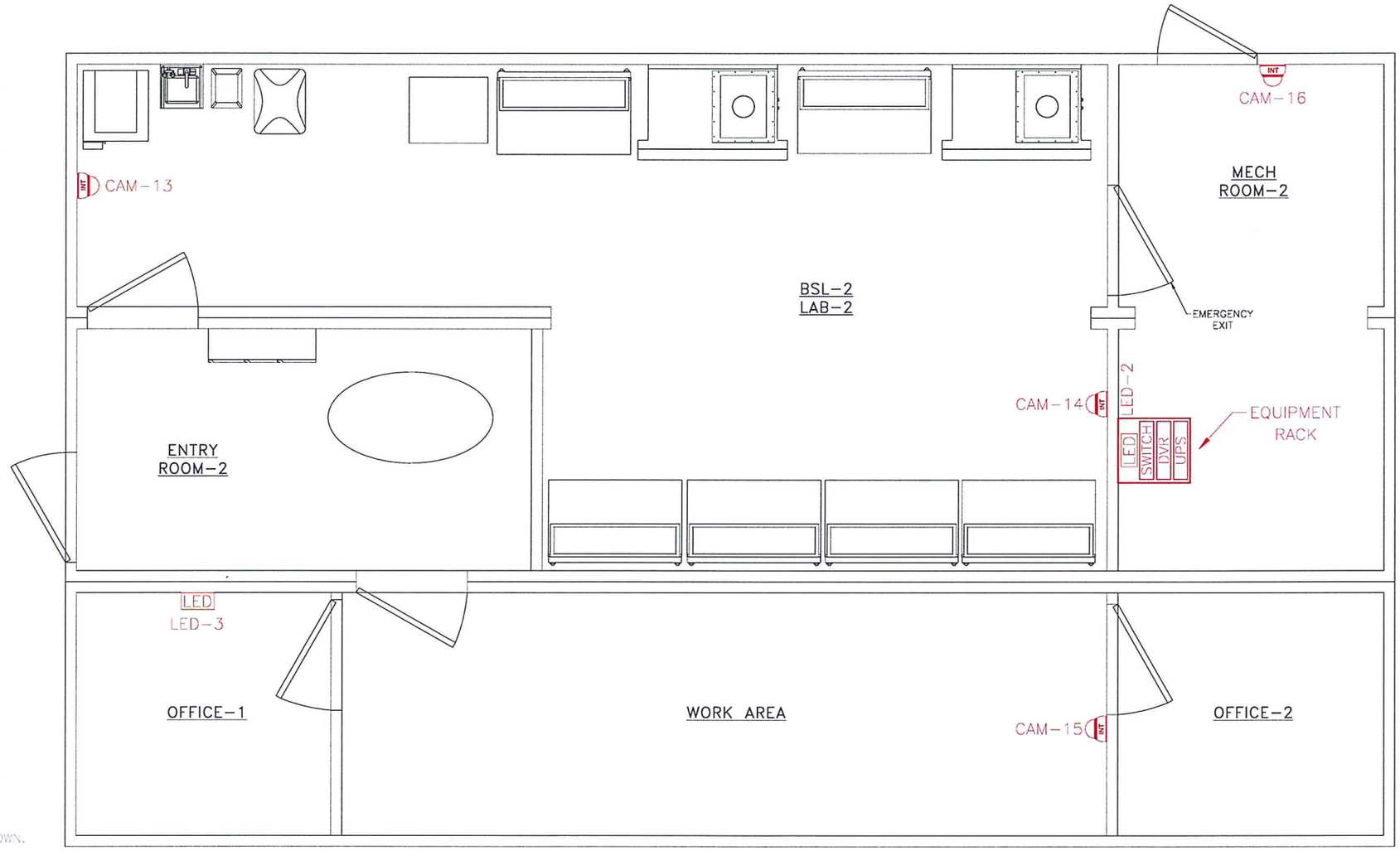
DRAWING NO. 900-0029-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/09/17	CS	GW

LEGEND

- LED — 19.5" CCTV LED MONITOR VIEWSONIC MODEL VA2055SA
- SWITCH — 48 PORT SMART MANAGED PoE+ SWITCH – HP J9984A
- DVR — 16 CHANNEL DVR – SAMSUNG SRD-1694
- UPS — UPS – TRIPP LITE SMART1500RMXL2UA
- INT — ANALOG VIDEO CAMERA (INTERIOR) SAMSUNG MODEL SCD-6083R
- EXT — ANALOG VIDEO CAMERA (EXTERIOR) SAMSUNG MODEL SCV-6083R



PLAN VIEW

SPECIFICATIONS:

1. WIRING: RG-59 11X3-18291NH (CAM-1 THRU 12 TO DVR).
2. SVGA CABLE – L-COM CTL3VGAVM-50T (LED-1 TO DVR)
3. SVGA CABLE – L-COM CTL3VGAMM-5 (LED-2 TO DVR)

NOTES:

1. CAM-1 & 5 ARE ANGLED DOWN.
2. CAMERAS ARE MOTION ACTIVATED, ADJUSTED MANUALLY & WORK IN LOW LIGHT CONDITIONS.
3. CCTV SYSTEM & SWITCH BACKED UP BY TRIPP LITE UPS.
4. UP TO 30 DAYS OF MOTION ACTIVATED STORAGE.
5. DVR CAN BE ACCESSED & MONITORED REMOTELY.

19Jul17

APPROVAL DRAWING

- NO CHANGES — CUSTOMER SIGNATURE:
- APPROVED WITH CHANGES — CUSTOMER SIGNATURE:
- REJECTED WITH MARK-UPS — CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. SHIRLEY	06/09/17
APPROVAL: G. WILLIAMS	06/23/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

PLAN, CCTV
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 900-0029-00 REV. 1

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	6/14/17	KJ

LEGEND

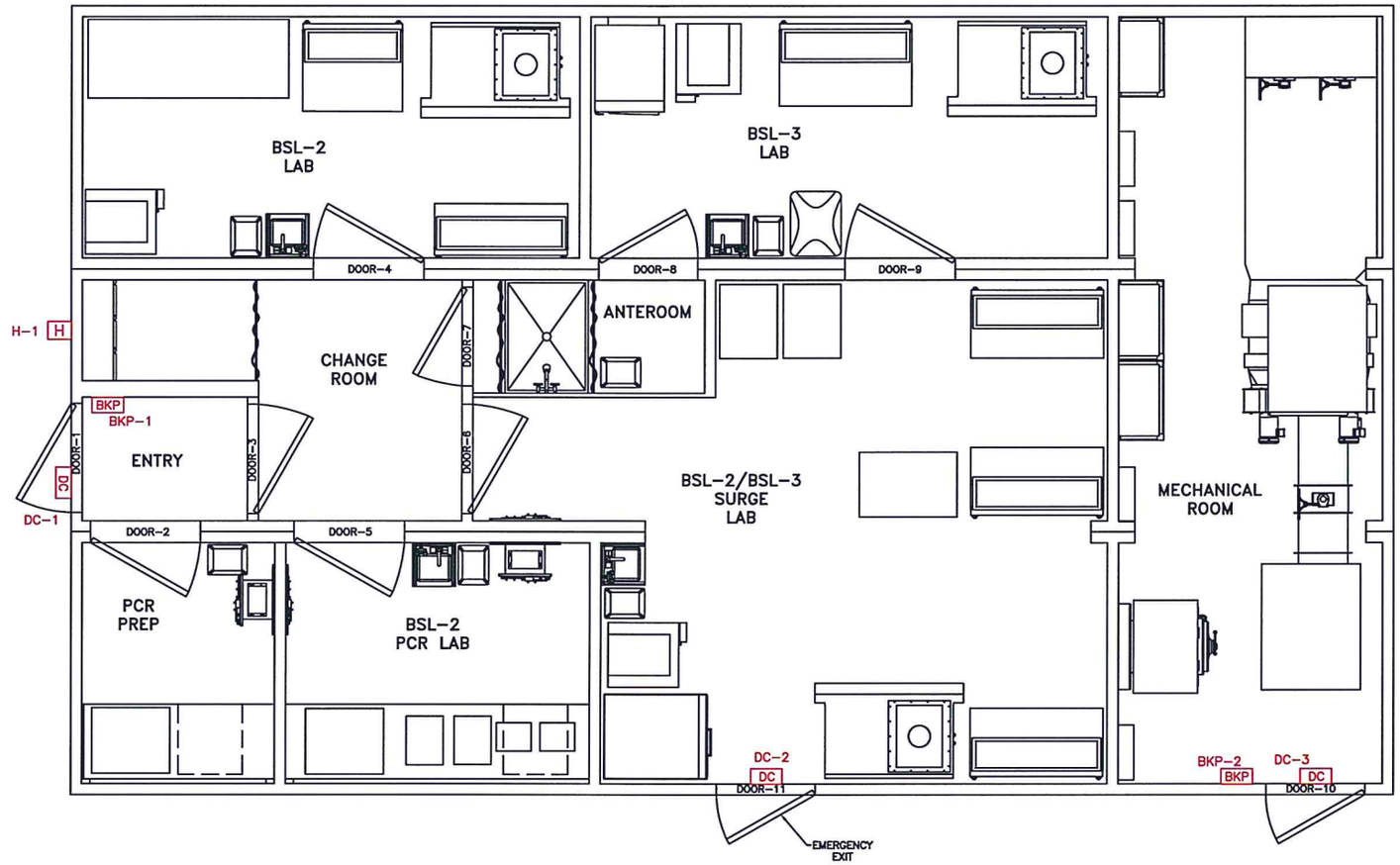
DC – DOOR CONTACT

H – BURGLAR HORN (SIREN)

BKP – BURGLAR ALARM KEY PAD

SPECIFICATIONS:

1. KEY PAD WIRING: #22/8, BELDEN WIRE 9421–060500
2. DC WIRING: #22/2 RED/BLK, ALPHA WIRE 11722CSL001
3. FIRE/BURGLAR ALARM PANEL: NAPCO GEMC–32



NOTES:

1. EMERGENCY EGRESS ZONE IS ALWAYS ARMED.
2. DOOR–1 BURGLAR KEY PAD ARMS AND DISARMS LAB ONLY.
3. DOOR–10 BURGLAR KEYPAD ARMS AND DISARMS MECHANICAL ROOM ONLY.
4. ALL BURGLAR SYSTEM WIRING AND DEVICES SHOWN ARE SUPPLIED AND INSTALLED BY GERMFREE.

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: K. JOHNSON	4/21/17
PARTS LIST:		APPROVAL:	
		MATERIAL	
		FINISH	

Germfree Laboratories

PLAN, BURGLAR ALARM
PD16011–USVI MODULAR BSL–3 LAB

DRAWING NO. 901–0019–00 REV. 1

SCALE NTS FILE NO. SHEET 1 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	6/14/17	KJ

LEGEND

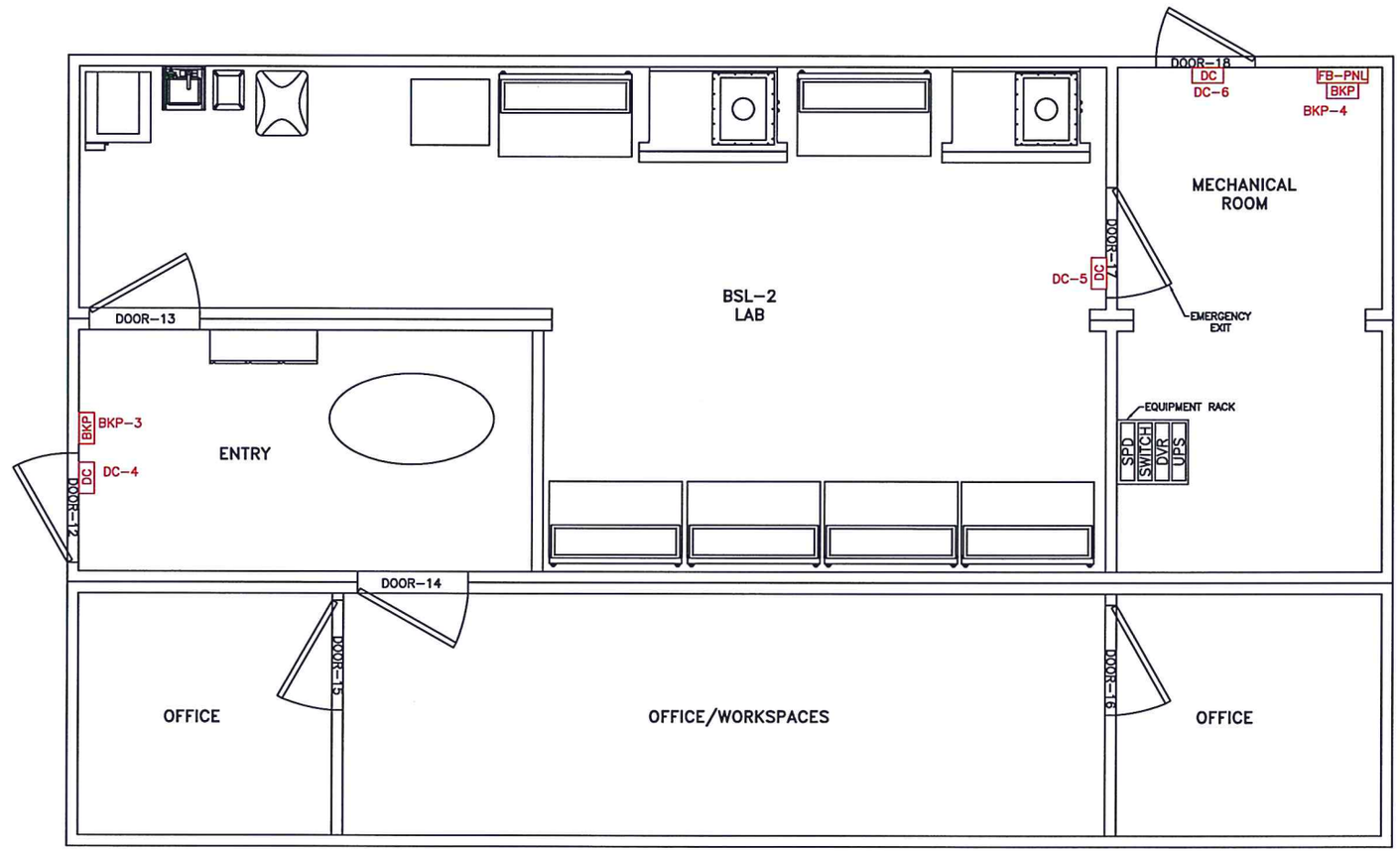
DC – DOOR CONTACT

FB–PNL – FIRE/BURGLAR ALARM PANEL

BKP – BURGLAR ALARM KEY PAD

SPECIFICATIONS:

1. KEY PAD WIRING: #22/8, BELDEN WIRE 9421–060500
2. DC WIRING: #22/2 RED/BLK, ALPHA WIRE 11722CSL001
3. FIRE/BURGLAR ALARM PANEL: NAPCO GEMC–32



NOTES:

1. EMERGENCY EGRESS ZONE IS ALWAYS ARMED.
2. DOOR–11 BURGLAR KEY PAD ARMS AND DISARMS LAB ONLY.
3. DOOR–18 BURGLAR KEYPAD ARMS AND DISARMS MECHANICAL ROOM ONLY.
4. ALL BURGLAR SYSTEM WIRING AND DEVICES SHOWN ARE SUPPLIED AND INSTALLED BY GERMFREE.

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
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ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K. JOHNSON	4/21/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

PLAN, BURGLAR ALARM
PD16011–USVI MODULAR BSL–3 LAB

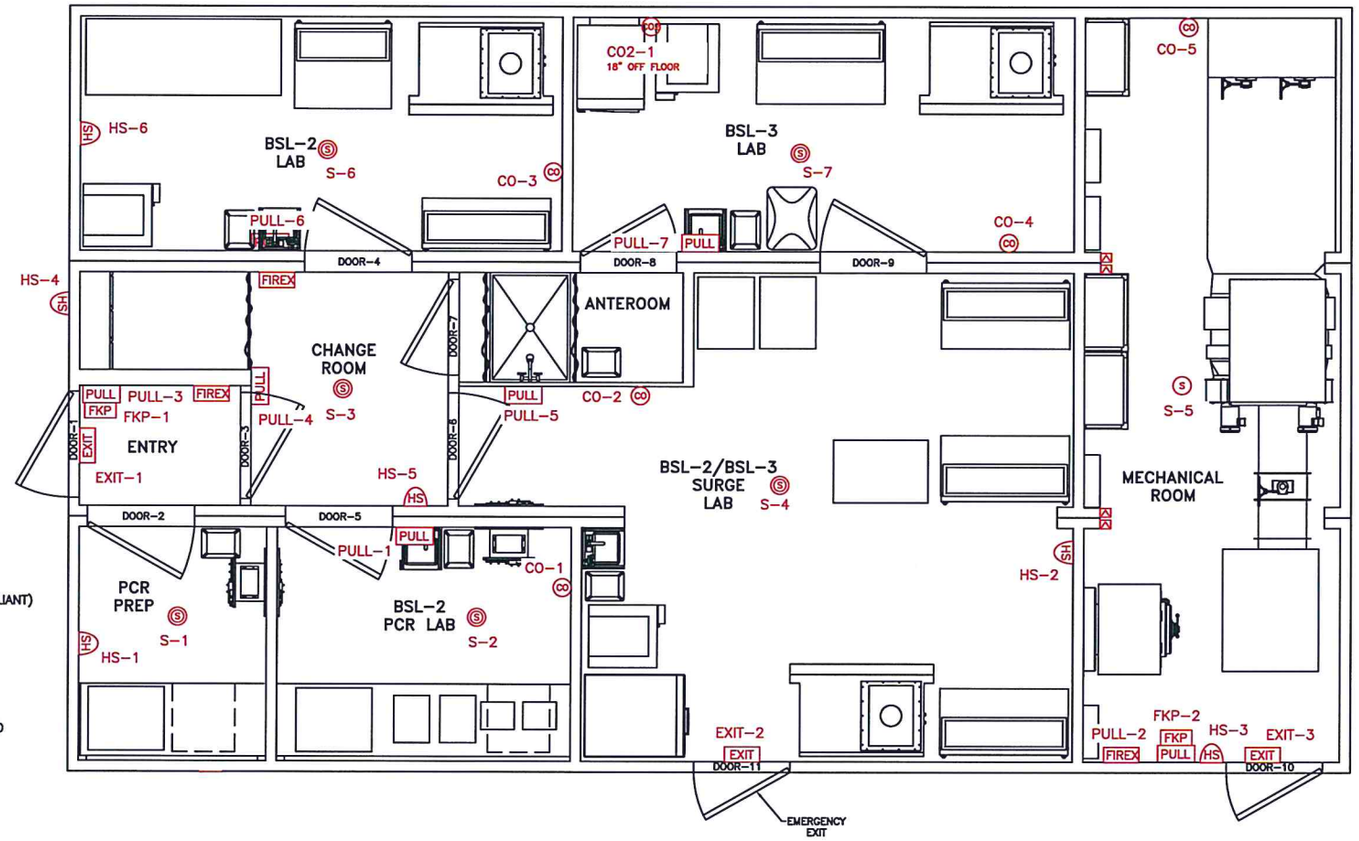
DRAWING NO. 901–0019–00 REV. 1

SCALE NTS FILE NO. SHEET 2 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	6/14/17	KJ

LEGEND

- PULL – FIRE ALARM PULL STATION
- (S) – SMOKE/HEAT DETECTOR
- (s) – SMOKE DETECTOR
- HS – FIRE HORN STROBE
- CO2 – CARBON DIOXIDE DETECTOR
- – INTERCONNECT
- FIREX – FIRE EXTINGUISHER
- FKP – FIRE KEY PAD
- CO – CARBON MONOXIDE DETECTOR
- EXIT – PHOTOLUMINESCENT EXIT SIGN



SPECIFICATIONS:

1. WIRING: HORN STROBE, PULL STATION, SMOKE DETECTOR
   16 AWG 2C DAISY CHAIN, GENERAL CABLE E2522S.41.03
2. WIRING: KEYPADS
   22 AWG 8C, BELDEN WIRE 9421–060500
3. FIRE/BURGLAR ALARM PANEL: NAPCO GEMC–32 (NFPA 72 COMPLIANT)
4. EXIT SIGN: THE EXIT LIGHT COMPANY PDS–F

NOTES:

1. ALL FIRE SYSTEM WIRING AND DEVICES SHOWN ARE SUPPLIED AND INSTALLED BY GERMFREE.
2. ALL FIRE ALARM WIRING TO BE IN CONDUIT.

19 JUL 17

APPROVAL DRAWING

☒ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: K. JOHNSON	4/21/17
PARTS LIST:		APPROVAL:	
		MATERIAL	
		FINISH	

Germfree Laboratories

PLAN, FIRE ALARM
PD16011–USVI MODULAR BSL–3 LAB

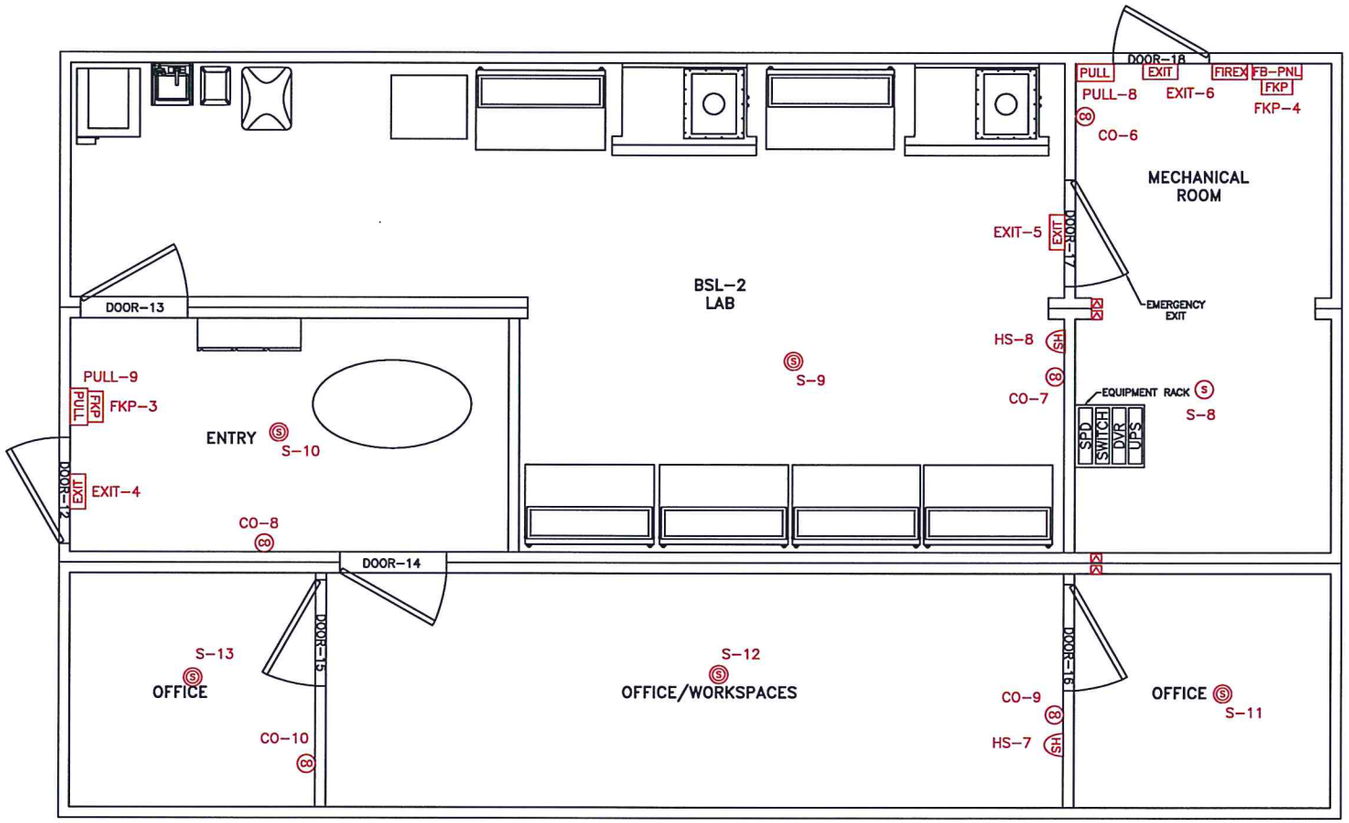
DRAWING NO. 902–0022–00 REV. 1

SCALE NTS FILE NO. SHEET 1 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	6/14/17	KJ

LEGEND

- PULL – FIRE ALARM PULL STATION
- S – SMOKE/HEAT DETECTOR
- S – SMOKE DETECTOR
- HS – FIRE HORN STROBE
- FB–PNL – FIRE/BURGLAR ALARM PANEL
- – INTERCONNECT
- FIREX – FIRE EXTINGUISHER
- FKP – FIRE KEY PAD
- CO – CARBON MONOXIDE DETECTOR
- EXIT – PHOTOLUMINESCENT EXIT SIGN



SPECIFICATIONS:

1. WIRING: HORN STROBE, PULL STATION, SMOKE DETECTOR 16 AWG 2C DAISY CHAIN, GENERAL CABLE E2522S.41.03
2. WIRING: KEYPADS 22 AWG 8C, BELDEN WIRE 9421–060500
3. EXIT SIGN: THE EXIT LIGHT COMPANY PDS–F

NOTES:

1. ALL FIRE SYSTEM WIRING AND DEVICES SHOWN ARE SUPPLIED AND INSTALLED BY GERMFREE.
2. ALL FIRE ALARM WIRING TO BE IN CONDUIT.

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K. JOHNSON	4/21/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

PLAN, FIRE ALARM
PD16011–USVI MODULAR BSL–3 LAB

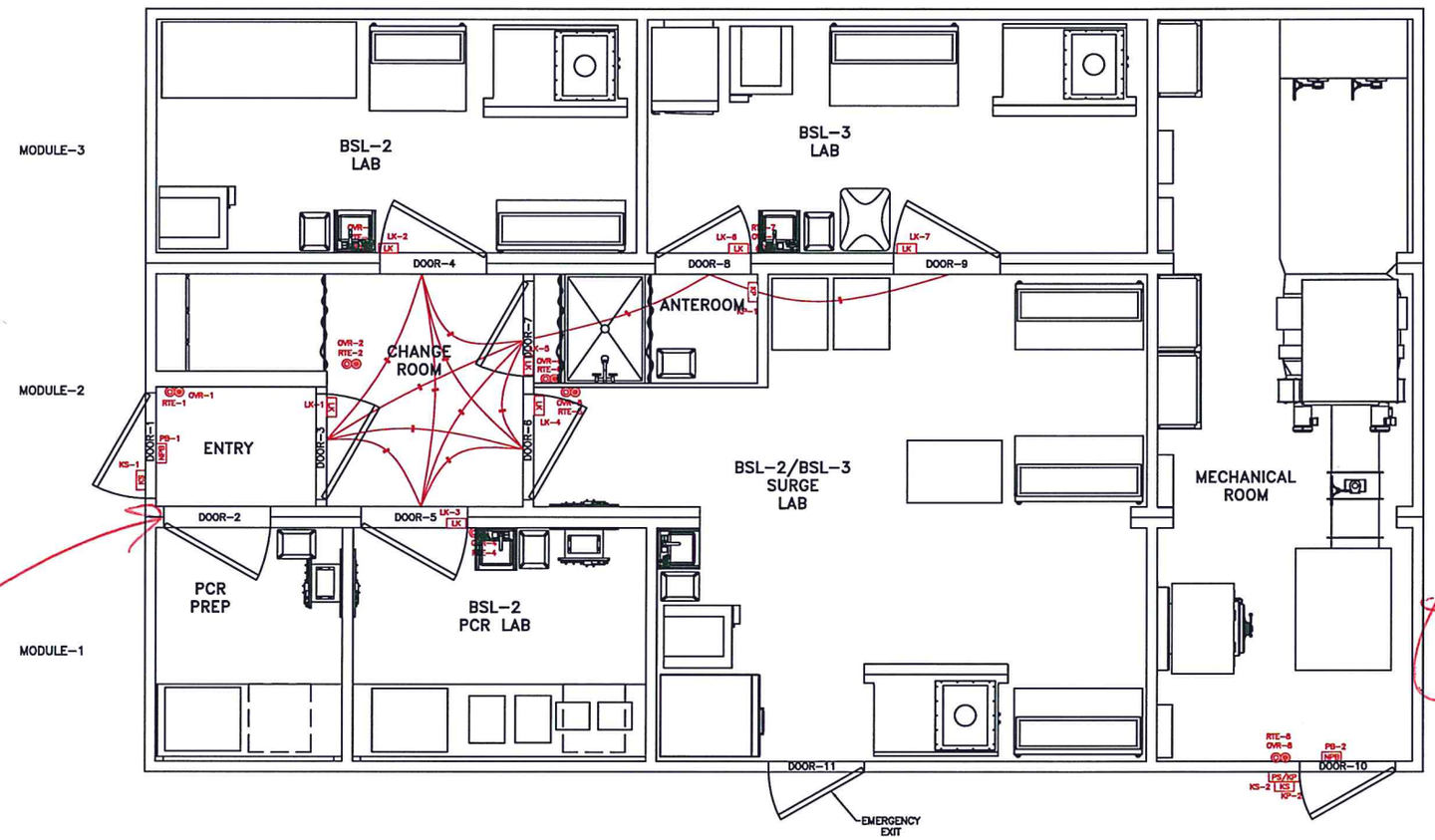
DRAWING NO. 902–0022–00 REV. 1

SCALE NTS | FILE NO. | SHEET 2 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	6/15/17	KJ

LEGEND

- — INTERLOCKED DOORS
- KP — KEY PAD
- KS — KEY SWITCH OVERRIDE
- PS/KP — RFID SENSOR/KEY PAD
- LK — ELECTRIC LOCK
- — EMERGENCY OVERRIDE PUSHBUTTON
- — REQUEST TO EXIT PUSHBUTTON
- NPB — NON-ELECTRIC PANIC BAR



Type of lock?

19 Jul 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: K. JOHNSON	4/21/17
PARTS LIST:		APPROVAL:	
		MATERIAL	
		FINISH	

Germfree Laboratories

PLAN, DOOR SYSTEM
PD16011-USVI MODULAR BSL-3 LAB

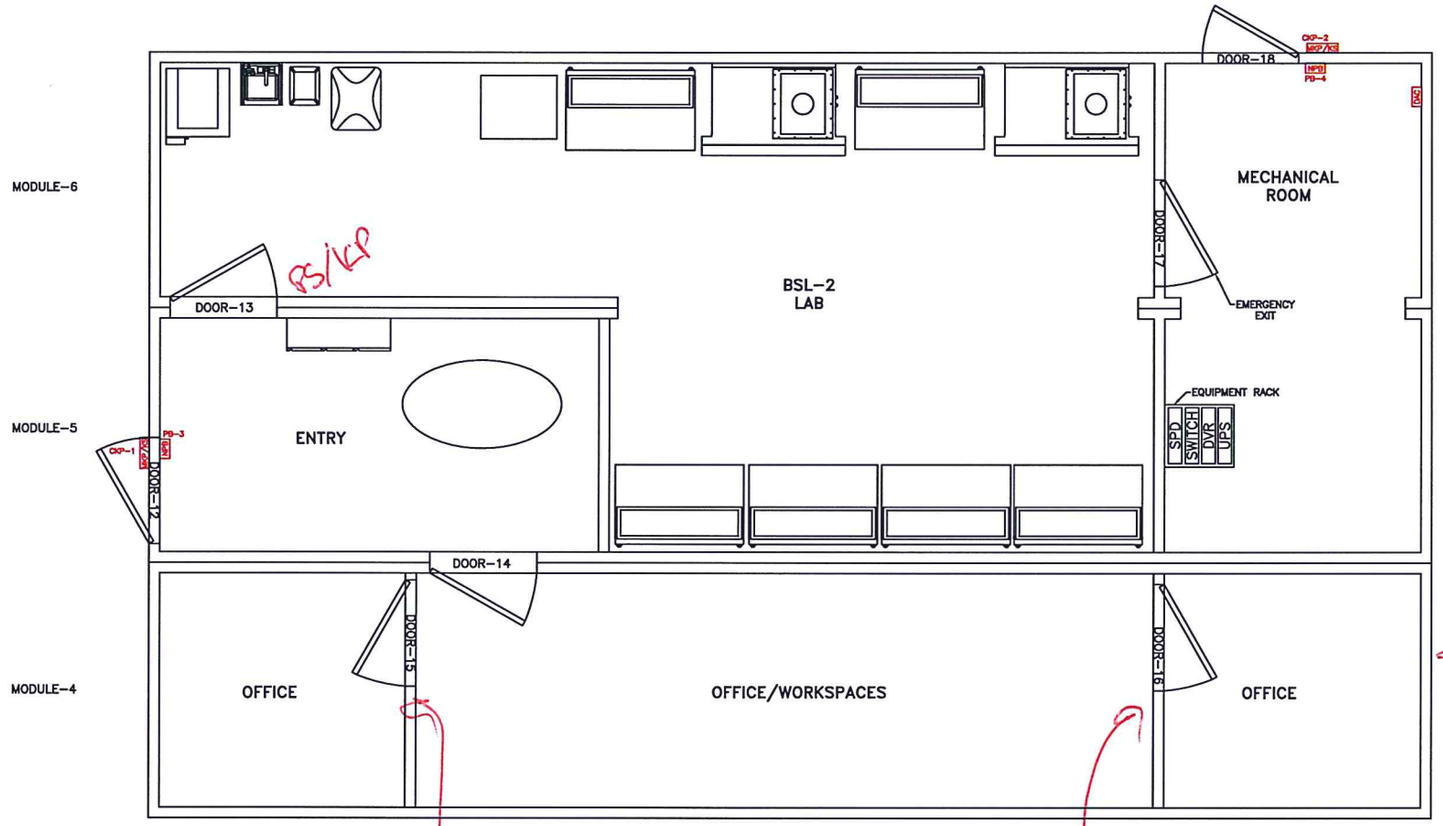
DRAWING NO. 903-0028-00 REV. 1

SCALE NTS FILE NO. SHEET 1 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	6/15/17	KJ

LEGEND

- MKP/KC – MECHANICAL KEYPAD W/KEY OVERRIDE
- NPB – NON-ELECTRIC PANIC BAR
- DAC – DOOR ACCESS CONTROLLER



19 JUL 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K. JOHNSON	4/21/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

PLAN, DOOR SYSTEM
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 903-0028-00 REV. 1

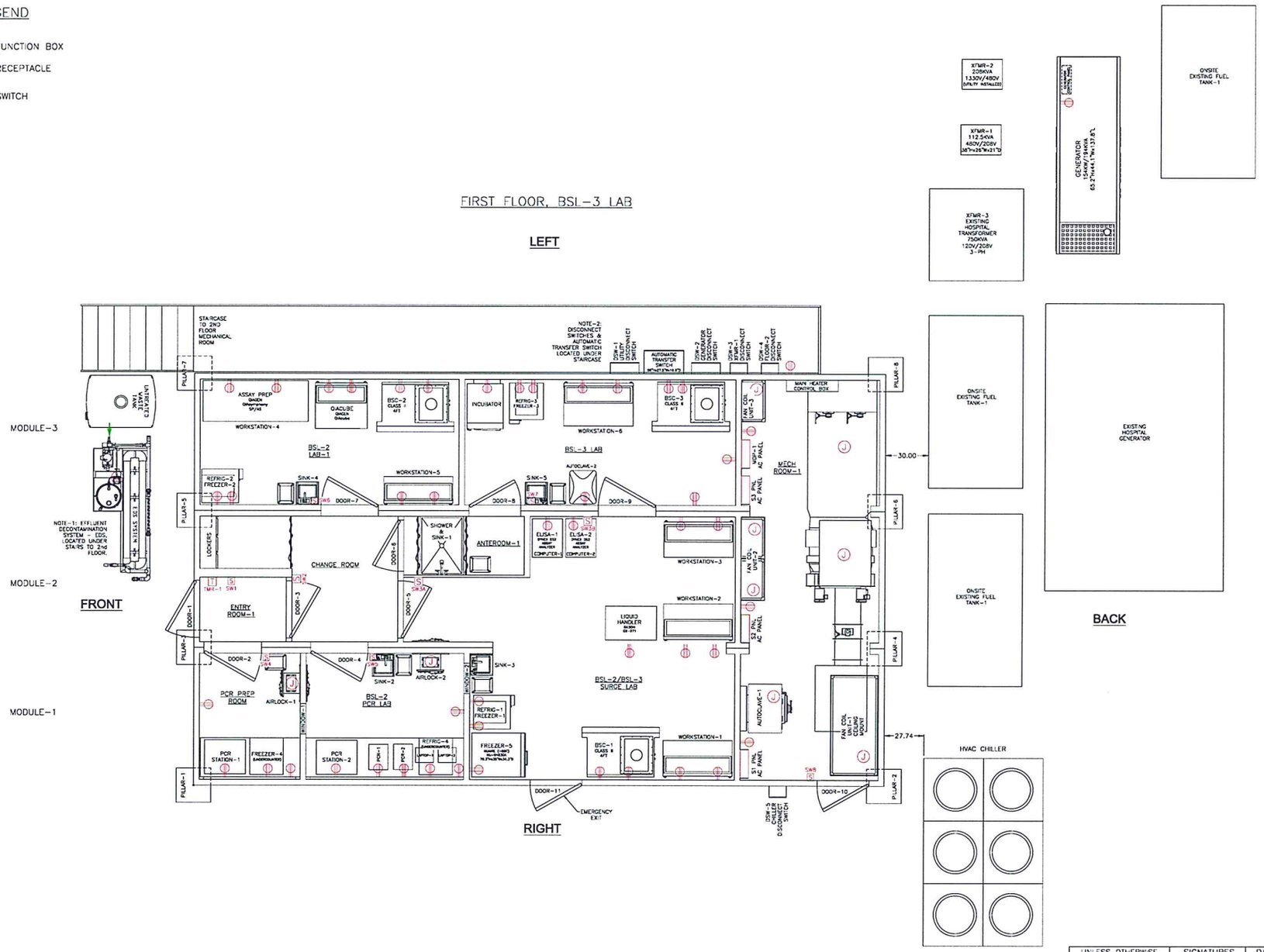
SCALE NTS FILE NO. SHEET 2 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN.	4/19/17	RK
	2	UPDATED FLOOR PLAN.	6/5/17	RK
	3	UPDATE w/NEW XREFs	6/22/17	RK

LEGEND

- (J) JUNCTION BOX
- RECEPTACLE
- [S] SWITCH

FIRST FLOOR, BSL-3 LAB



APPROVAL DRAWING

- [x] NO CHANGES
- CUSTOMER SIGNATURE:
- [ ] APPROVED WITH CHANGES
- CUSTOMER SIGNATURE:
- [ ] REJECTED WITH MARK-UPS
- CUSTOMER SIGNATURE:

NEXT ASSY:
WIRE LIST:
PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: R. KITAOKA	4/19/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

PLAN, ELECTRICAL,
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 905-0094-00 REV. 3

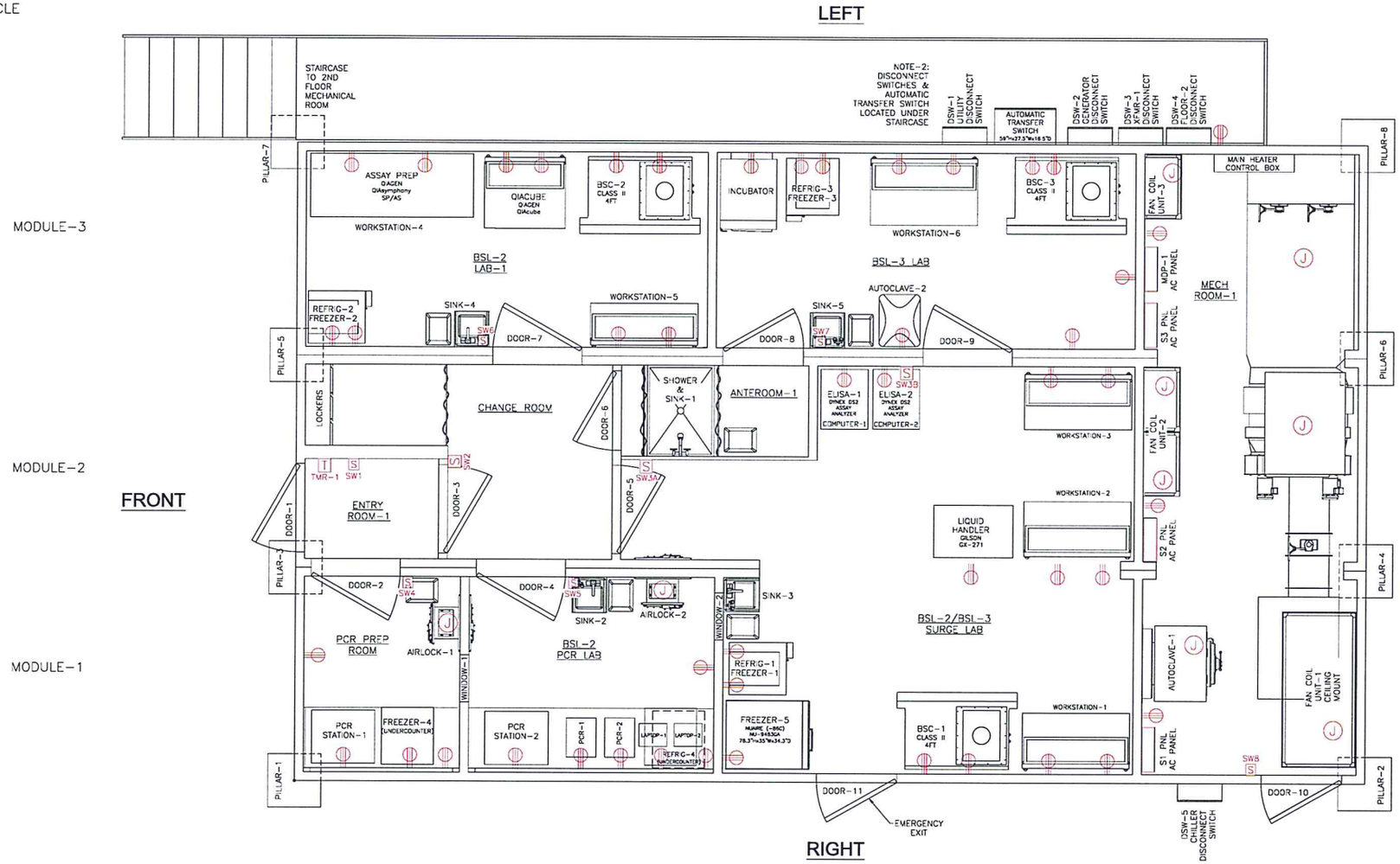
SCALE | FILE NO. | SHEET 1 OF 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN.	4/19/17	RK
	2	UPDATED FLOOR PLAN.	6/5/17	RK
	3	UPDATED WITH NEW XREF.	6/2/17	RK

LEGEND

- (J) JUNCTION BOX
- RECEPTACLE
- [S] SWITCH

FIRST FLOOR, BSL-3 LAB



19JUL17

APPROVAL DRAWING

NO CHANGES
CUSTOMER SIGNATURE:
APPROVED WITH CHANGES
CUSTOMER SIGNATURE:
REJECTED WITH MARK-UPS
CUSTOMER SIGNATURE:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES / DATE
WIRE LIST:		DRAWN: R. KITAOKA 4/19/17
PARTS LIST:		APPROVAL:
		MATERIAL
		FINISH

Germfree Laboratories

PLAN, ELECTRICAL,
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 905-0094-00 REV. 3

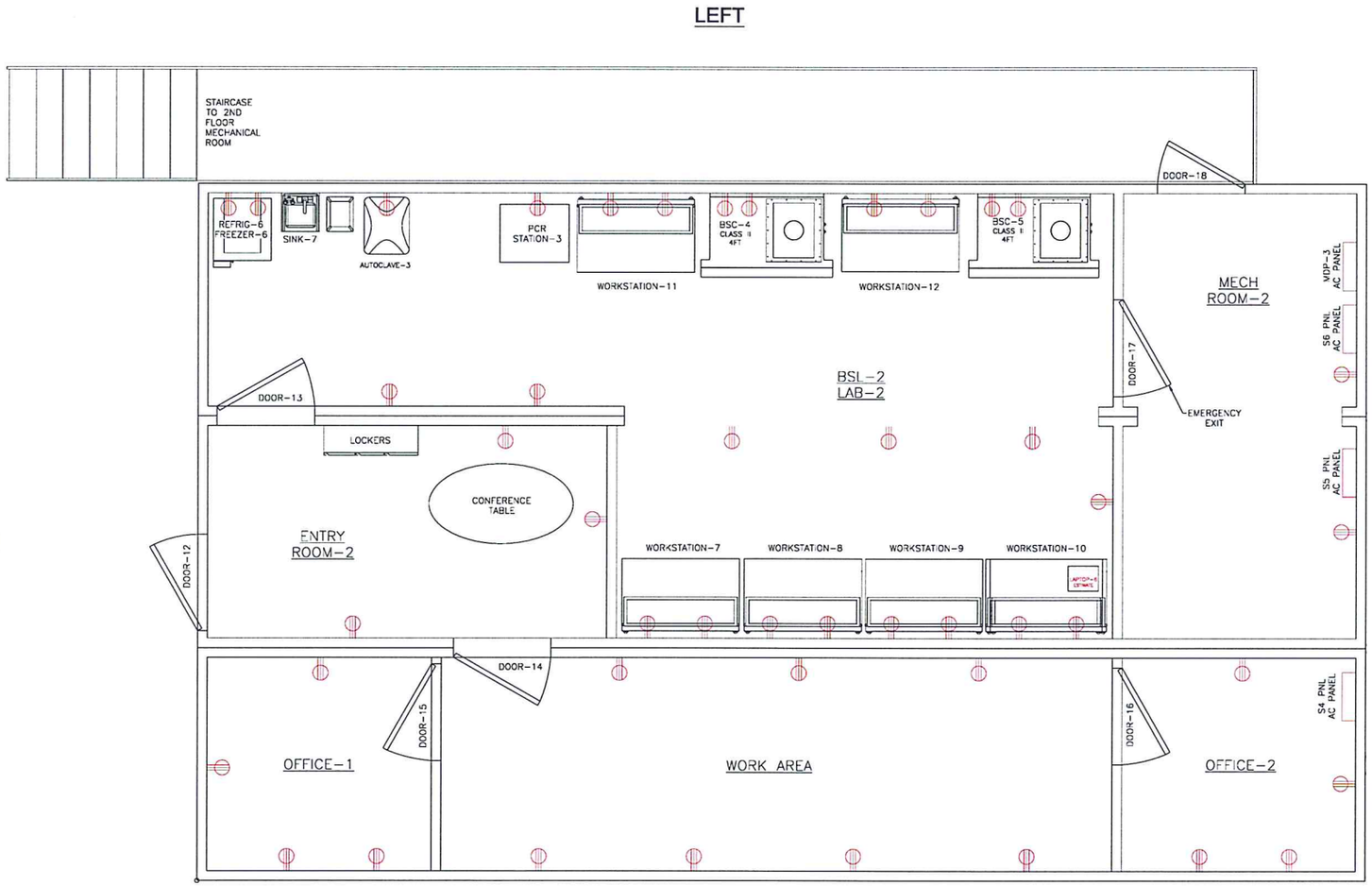
SCALE | FILE NO. | SHEET 2 OF 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN.	4/19/17	RK
	2	UPDATED FLOOR PLAN.	6/5/17	RK
	3	UPDATE w/NEW XREFs.	6/22/17	RK

LEGEND

- (J) JUNCTION BOX
- RECEPTACLE
- (S) SWITCH

SECOND FLOOR, BSL-2 LAB



APPROVAL DRAWING

NO CHANGES
CUSTOMER SIGNATURE:
☐ APPROVED WITH CHANGES
CUSTOMER SIGNATURE:
☐ REJECTED WITH MARK-UPS
CUSTOMER SIGNATURE:

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES / DATE
WIRE LIST:		DRAWN: R. KITAOKA 4/19/17
PARTS LIST:		APPROVAL:
		MATERIAL
		FINISH

Germfree Laboratories

PLAN, ELECTRICAL, PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 905-0094-00 REV. 3

SCALE | FILE NO. | SHEET 3 OF 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	4/21/17	KJ
	2	ADDED SECOND FLOOR	6/9/17	KJ

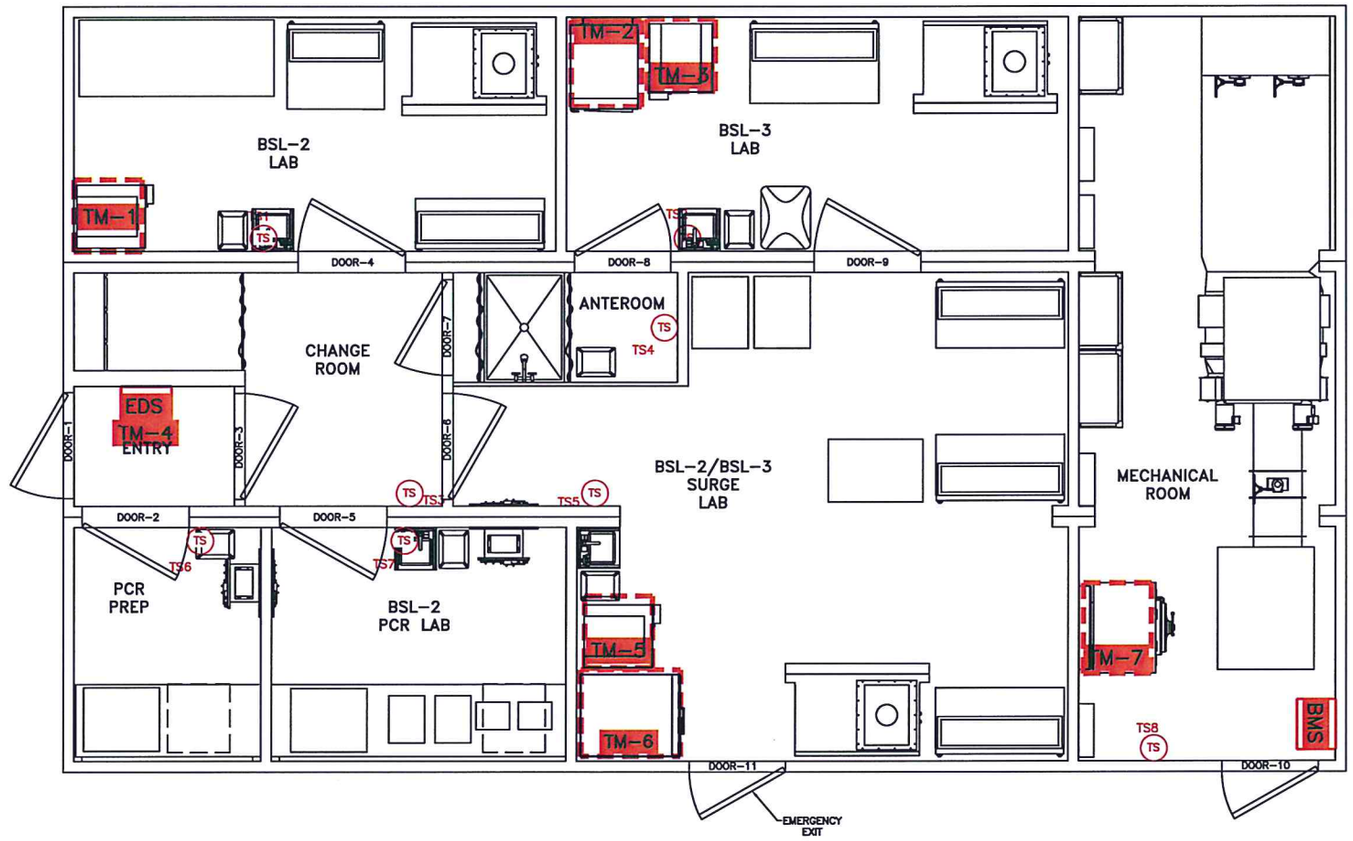
LEGEND

TM–X – OUTLINE INDICATES TEMPERATURE OR ALARM MONITORED EQUIPMENT

BMS – TEMPERATURE AND ALARM MONITORING CONTROLLER

TS – WALL–MOUNTED THERMOSTAT WITH HUMIDITY AND OCCUPANCY SENSOR

EDS – EFFLUENT DECONTAMINATION SYSTEM REMOTE PANEL



19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NOTES:

1. TEMPERATURE AND ALARM MONITORING FROM UPPER LEVEL WILL TERMINATE TO LOWER LEVEL BMS.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K. JOHNSON	4/21/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

PLAN, TEMP MONITOR–THERMOSTATS
PD16011–USVI MODULAR BSL–3 LAB

DRAWING NO. 905–0095–00 REV. 2

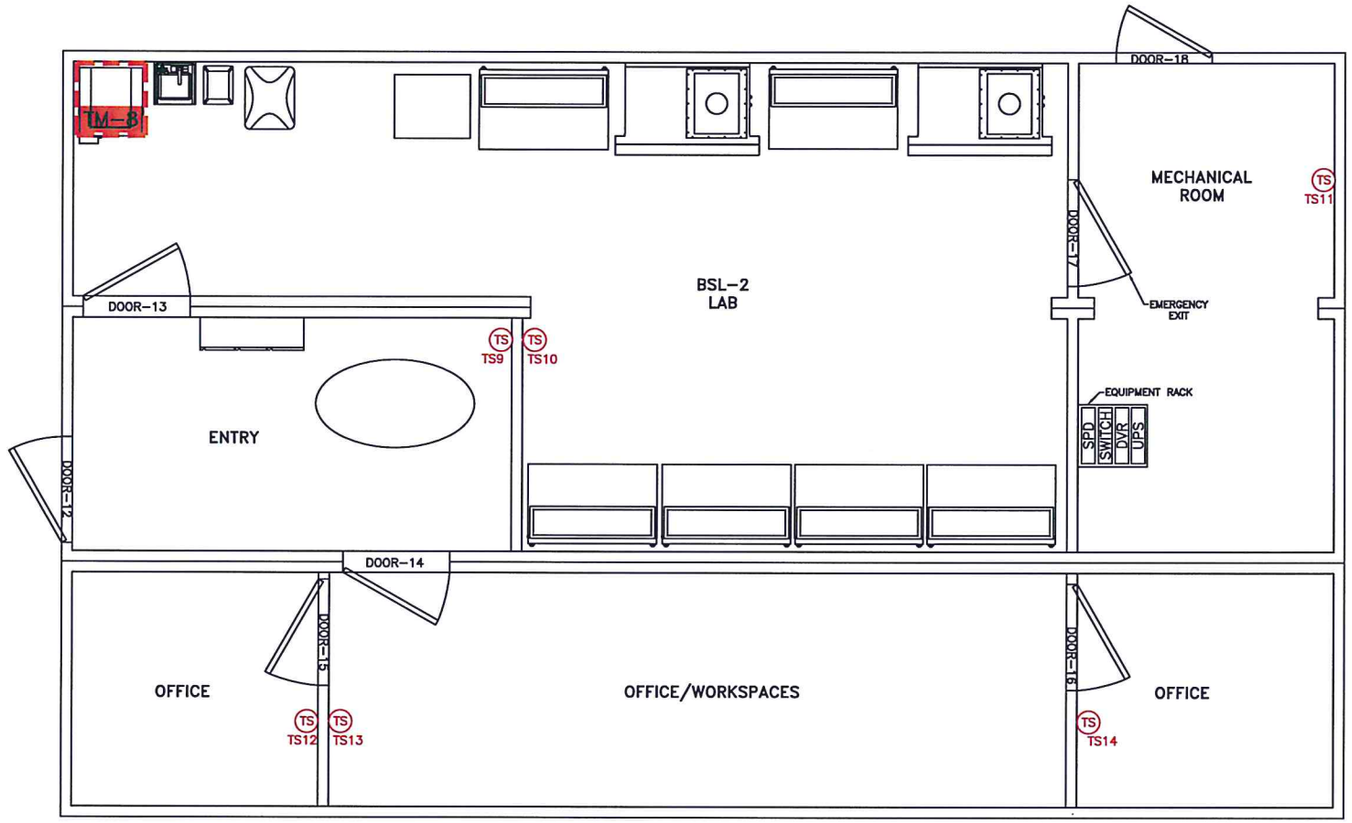
SCALE NTS FILE NO. SHEET 1 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	4/21/17	KJ
	2	ADDED SECOND FLOOR	6/9/17	KJ

LEGEND

TM–X – OUTLINE INDICATES MONITORED EQUIPMENT

TS – THERMOSTAT



19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK–UPS

CUSTOMER SIGNATURE:

NOTES:

1. TEMPERATURE AND ALARM MONITORING FROM UPPER LEVEL WILL TERMINATE TO LOWER LEVEL BMS.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K. JOHNSON	4/21/17
APPROVAL:	
MATERIAL	
FINISH	

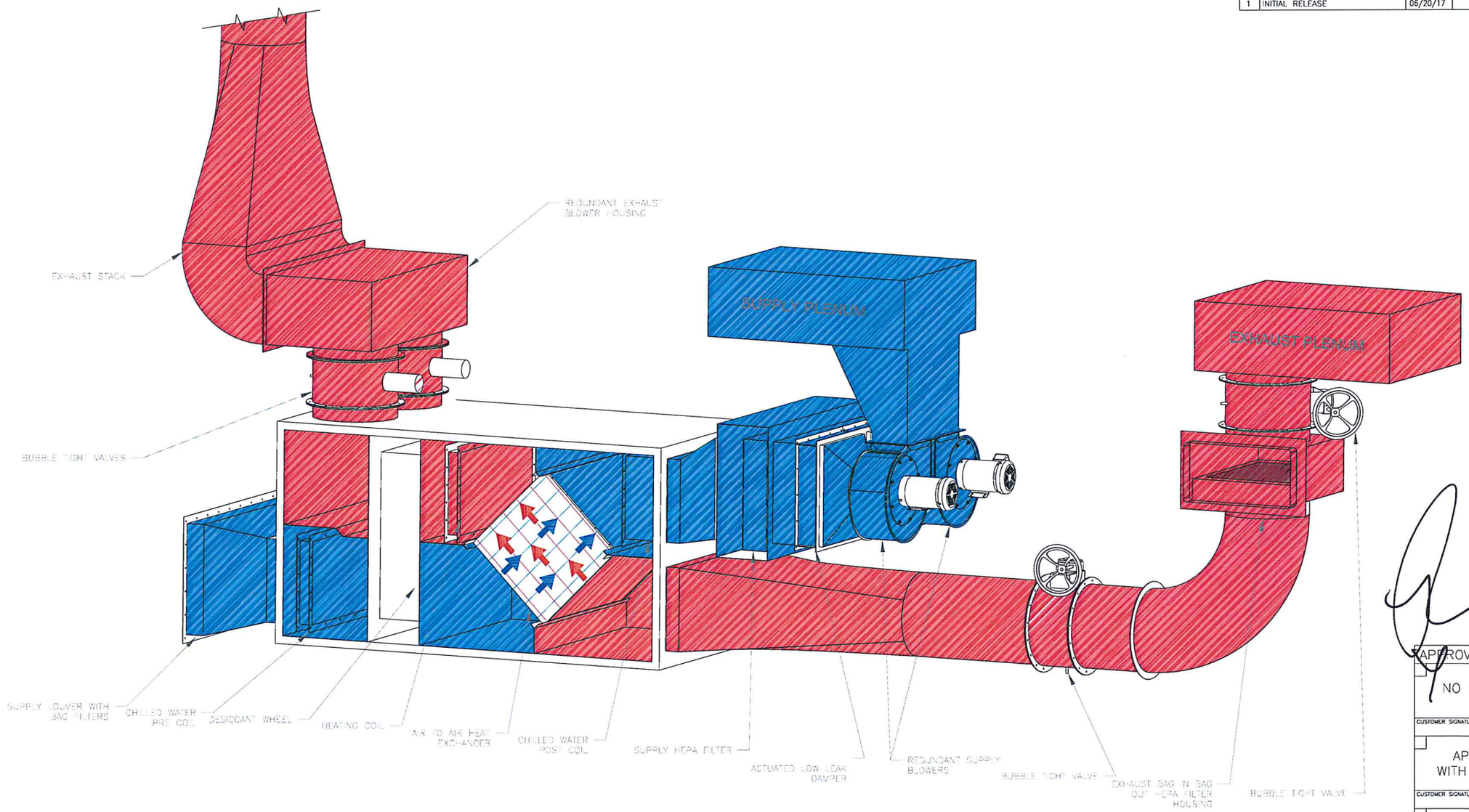
Germfree Laboratories

PLAN, TEMP MONITOR–THERMOSTATS
PD16011–USVI MODULAR BSL–3 LAB

DRAWING NO. 905–0095–00 REV. 2

SCALE NTS FILE NO. SHEET 2 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/20/17	BAS	MAE



19JUL-17

APPROVAL DRAWING
NO CHANGES
CUSTOMER SIGNATURE:
APPROVED WITH CHANGES
CUSTOMER SIGNATURE:
REJECTED WITH MARK-UPS
CUSTOMER SIGNATURE:

ISOMETRIC VIEW
GERMFREE AIR HANDLER UNIT

NOTES:

1. AHU IS PROVIDED AND MANUFACTURED BY GERMFREE LABORATORIES.
2. REFER TO THE HVAC SCHEMATIC 909-0041-00 FOR MORE INFORMATION.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: B. SERLE	06/20/17
APPROVAL: M.EWACHIW	05/16/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

ASSY, HVAC UNIT
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 214-0044-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 2

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

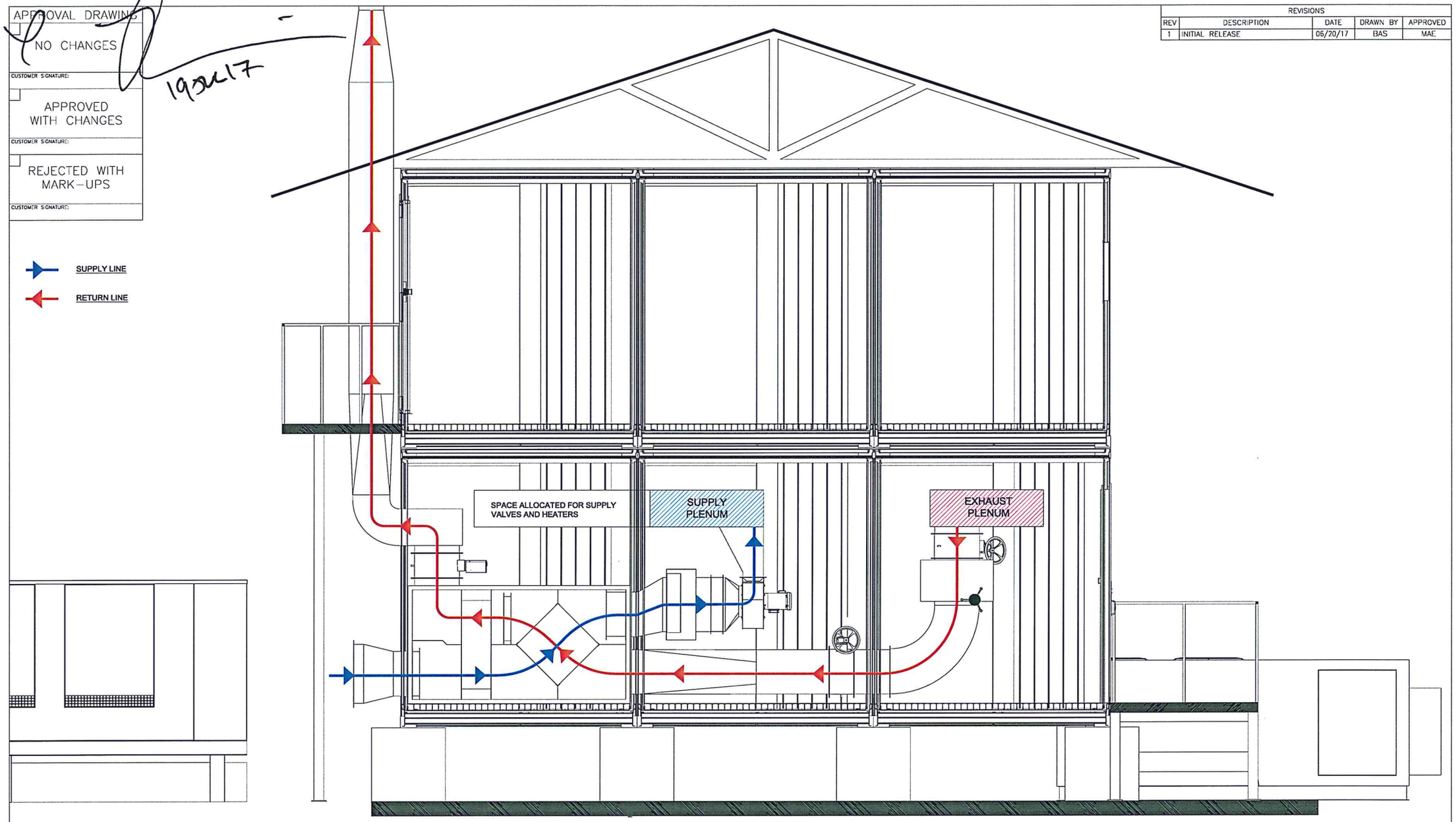
CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

19 Dec 17

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/20/17	BAS	MAE



NOTES:

1. AHU IS PROVIDED AND MANUFACTURED BY GERMFREE LABORATORIES.
2. REFER TO THE HVAC SCHEMATIC 909-0041-00 FOR MORE INFORMATION.

FRONT VIEW
GERMFREE AIR HANDLER UNIT

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	06/20/17
APPROVAL:	M.EWACHIW	05/16/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

ASSY, HVAC UNIT
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 214-0044-00 REV. 1

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	06/23/17	BAS

NOTES:

CONSTRUCTION:

- 12-16 GA MATERIAL
- PRODUCT WETTED PARTS: TYPE 316L SS, #4 POLISHED
- NON-PRODUCT WETTED PARTS: TYPE 304 SS, #4 POLISHED
- RADIUS CORNERS 3/4" [19 mm] AT SS COMPARTMENTS
- VIEW SCREEN: 3/8" [10 mm] LEXAN
- GLOVES: HYPOLAN

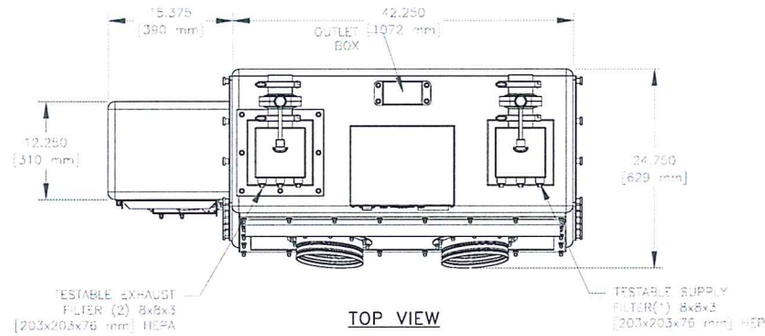
CONTROL PANEL:

- 1x DIGIHELIC (DIGITAL PRIMARY PRESSURE GAUGE)
- 1x MINIHELIC (MECHANICAL SECONDARY PRESSURE GAUGE)
- 1x MAIN POWER SWITCH (10 AMP BREAKER)
- 1x OUTLET SWITCH WITH GFCI (10 AMP BREAKER)
- 1x LIGHT SWITCH
- 1x AIR PRESSURE ALARM (VISUAL AND AUDIBLE)
- 1x SILENCE OVERRIDE BUTTON

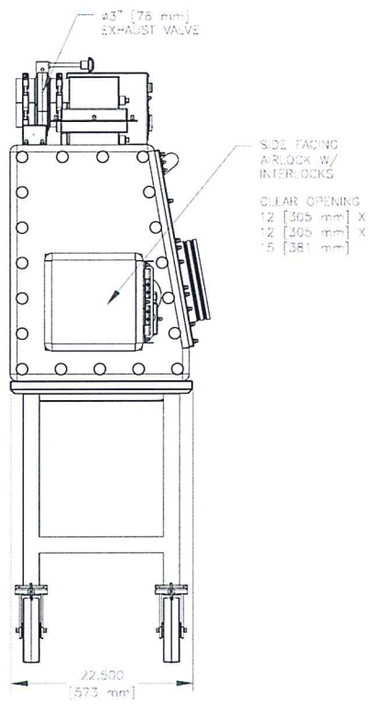
POWER REQUIREMENTS:

- GLOVEBOX REQUIRES A DEDICATED 120V 60Hz SINGLE PHASE CIRCUIT

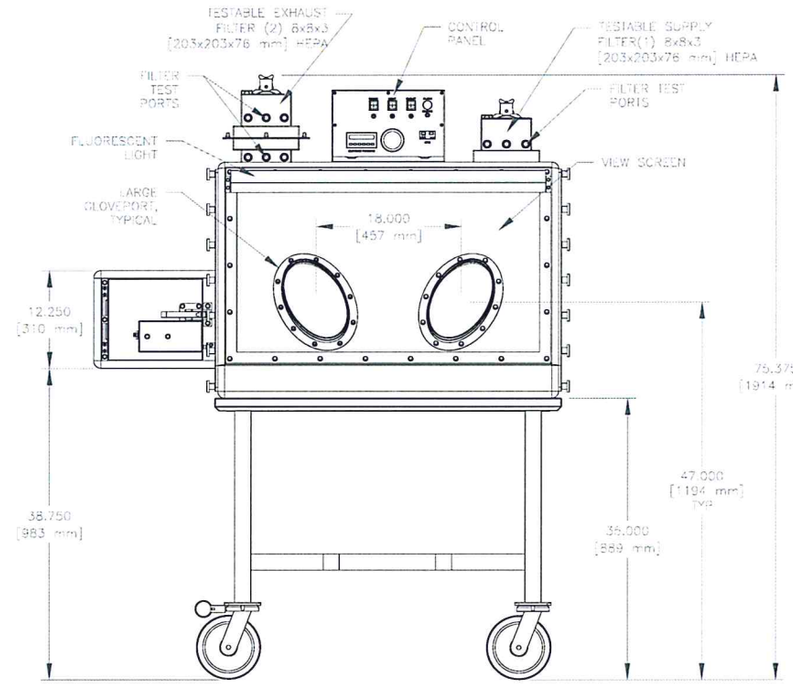
GLOVEBOX
OVERALL INTERIOR DIMENSIONS ARE
- H29.25" x W42.00" x D21.75"
  [743mm x 1067mm x 552mm]



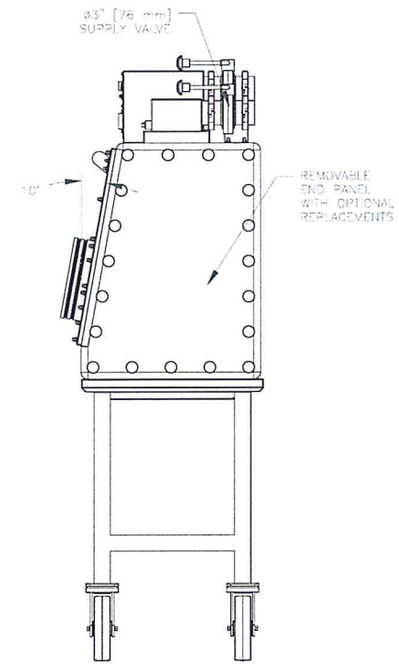
TOP VIEW



LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW

19JUL17

APPROVAL DRAWING

☐ NO CHANGES	CUSTOMER SIGNATURE:
☐ APPROVED WITH CHANGES	CUSTOMER SIGNATURE:
☐ REJECTED WITH MARK-UPS	CUSTOMER SIGNATURE:

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: C. JAMES	09/09/14
APPROVAL:	
MATERIAL 304/316 SS	
FINISH #4 POLISHED	

Germfree Laboratories

ASSY, GLOVEBOX, CLASS III, SEA-3, STANDARD, PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 612-1045-00 REV. 1

SCALE NTS FILE NO. SHEET 1 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL RELEASE	06/23/17	BAS

Available Choices and Options

Glovebox			
End Panel	Plain	X	Standard
	*Locking Door		Optional
	Dunk tank		Optional
VHP decontamination ports			Optional
Airlock			
Location	Left side	X	
	Right side		
Exterior door	Side		
	Front	X	
Purge	No purge	X	Standard
	Active HEPA purge		Optional
Gloves (Circle size requested)			
Hypalon (CSM)	Size: 8.5, 9.75, 10.5	X	Standard
Butyl	Size: 8.5, 9.75, 10.5		Standard
GRx (in addition to standard gloves)			Optional
Table			
Adjustable feet			Standard
Casters		X	Optional
Exhuast			
Blower Location	Not mounted	X	Standard
	Underneath airlock		
	On stand		
*Carbon filter (non-TEDA)			Optional
Electrical			
Voltage	120 Volt	X	
	240 Volt		
	230 Volt		
Frequency	50 Hz.		
	60 Hz.	X	
Plug type (BS, Schuko, US, etc.)		US	
Cord length	10 feet (3.2 m)	X	Standard
	Longer		

Note: Items maked "Optional" have additional cost.
(See quote for descriptions and pricing.)

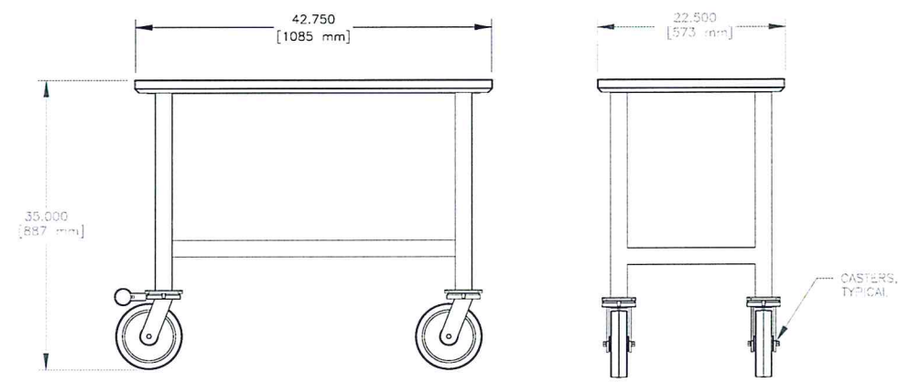


TABLE STAND WITH CASTERS

19 JUL 17

APPROVAL DRAWING

☐ NO CHANGES	
CUSTOMER SIGNATURE:	
☐ APPROVED WITH CHANGES	
CUSTOMER SIGNATURE:	
☐ REJECTED WITH MARK-UPS	
CUSTOMER SIGNATURE:	

NEXT ASSY:	UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ± .XXX = ± ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.	SIGNATURES	DATE
WIRE LIST:		DRAWN: C. JAMES	09/09/14
PARTS LIST:		APPROVAL:	
		MATERIAL 304/316 SS	
		FINISH #4 POLISHED	

Germfree Laboratories

ASSY, GLOVEBOX, CLASS III, SEA-3, STANDARD, PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 612-1045-00 REV. 1

SCALE NTS FILE NO. SHEET 2 OF 2

Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER 120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ???KVA/???KW Available Utility Power: 120/208V, 750KVA New Utility Power for HVAC: 277/480V, 3-Phase		•				•										All Equip. On		MODE-1 SUMMER			MODE-2 WINTER			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
1		**HVAC SYSTEM**		•				•																							
2	E	HVAC Chiller: Compressor (13.8-ton) ESTIMATE	Compressor-1	MDP	1	HVAC	Exterior	3	Drake Refrigeration	PACT601D1-T4-SM	480	3	36.0	29,920			1. Compressor: 400V, 65.5A, 3-Ph, 50Hz, 45.326KVA, 25 tons. 2. Compressor oversized; assume load is 66% of max. capacity. 3. Estimated Compressor Load: 400V, 54.6A, 50Hz, 29.92KVA, 16.5 tons. 4. Compressor oversized; normal load is 55% of max capacity. 5. Estimate adjusted for 480V, 60Hz, assume same KVA. 6. Chiller sized to handle 1st & 2nd floors.	29,920	20.8%	29,920	20.8%	1	29,920	20.8%	1	0	0.0%	0	29,920	26.9%	1.00
3	E	HVAC Chiller: Compressor (13.8-ton) ESTIMATE	Compressor-2	MDP	1	HVAC	Exterior	3	Drake Refrigeration	PACT601D1-T4-SM	480	3	36.0	29,920			1. Compressor: 400V, 65.5A, 3-Ph, 50Hz, 45.326KVA, 25 tons. 2. Compressor oversized; assume load is 66% of max. capacity. 3. Estimated Compressor Load: 400V, 54.6A, 50Hz, 29.92KVA, 16.5 tons. 4. Compressor oversized; normal load is 55% of max capacity. 5. Estimate adjusted for 480V, 60Hz, assume same KVA. 6. Chiller sized to handle 1st & 2nd floors.	29,920	20.8%	29,920	20.8%	1	29,920	20.8%	1	0	0.0%	0	29,920	26.9%	1.00
3	E	HVAC Chiller: Condenser Fans (27.6-ton) ESTIMATE	CHILLER FANS	MDP	6	HVAC	Exterior	3	Drake Refrigeration	PACT601D1-T4-SM	480	3	5.8	4,776			1. Condenser Fan: 1.15A, 400V, 3-Ph, 50Hz, 0.796KVA. 2. Estimate adjusted for 480V, assume same KVA.	4,776	3.3%	4,776	3.3%	1	4,776	3.3%	1	0	0.0%	0	4,776	4.3%	1.00
4	E	HVAC Chiller: 3hp Circulation Pump ESTIMATE	C-Pump-1	MDP	1	HVAC	Exterior	3	Drake Refrigeration	PACT601D1-T4-SM	480	3	3.5	2,906			1. 400V, 3-Ph, 50Hz, 4.2A, 2.906KVA. 2. Only one circulation pump energized at a time. 3. Estimate adjusted for 480V, assume same KVA.	2,906	2.0%	2,906	2.0%	1	2,906	2.0%	1	0	0.0%	0	2,906	2.6%	1.00
5	E	HVAC Chiller: 3hp Circulation Pump ESTIMATE	C-Pump-2	MDP	1	HVAC	Exterior	3	Drake Refrigeration	PACT601D1-T4-SM	480	3	0.0	0			1. 400V, 3-Ph, 50Hz, 4.2A, 2.906KVA. 2. Only one circulation pump energized at a time. 3. Estimate adjusted for 480V, assume same KVA.	0	0.0%	0	0.0%	0	0	0.0%	1	0	0.0%	0	0	0.0%	1.00
5	E	Supply Fan Motor-1, 3hp with VFD ESTIMATE	SF-1		1	HVAC	Mech Room	3	Continental Fan	TFD315-1R	480	3	3.5	2,865			1. Continental Fan Blower: TEK315-1R 2. Blower Motor: Baldor CEM3610T ... ESTIMATE 3. Blower Motor: 3hp, 460V, 3.6A, 60Hz, 3-Ph, 2.865KVA. 4. Blower Motor: 3hp, 230V, 7.2A, 60Hz, 3-Ph, 2.865KVA. 5. Blower Motor: 3hp, 208V, 7.9A, 3-Ph, 2.843KVA. 6. 3450 RPM/60Hz, TEFC.	2,865	2.0%	2,865	2.0%	1	2,865	2.0%	1	0	0.0%	0	2,865	2.6%	1.00
6	E	Supply Fan Motor-2, 3hp with VFD ESTIMATE	SF-2		1	HVAC	Mech Room	3	Continental Fan	TFD315-1R	480	3	3.5	2,865			1. Continental Fan Blower: TEK315-1R 2. Blower Motor: Baldor CEM3610T ... ESTIMATE 3. Blower Motor: 3hp, 460V, 3.6A, 60Hz, 3-Ph, 2.865KVA. 4. Blower Motor: 3hp, 230V, 7.2A, 60Hz, 3-Ph, 2.865KVA. 5. Blower Motor: 3hp, 208V, 7.9A, 3-Ph, 2.843KVA. 6. 3450 RPM/60Hz, TEFC.	2,865	2.0%	2,865	2.0%	1	2,865	2.0%	1	0	0.0%	0	2,865	2.6%	1.00
7														**A/C Subtotal:**	**73,252**			**73,252**	**51.0%**												
8	E	A/C Electric Heater (0.5KW Electric) ESTIMATE	HTR-1		1	HVAC	Entry Room	3	Thermolec	445-0052-00	208	2	9.6	2,000			1. Round Duct, 8"Dia, 2KW.	2,000	1.4%	2,000	1.4%	1	2,000	1.4%	1	0	0.0%	0	2,000	1.8%	1.00
9	E	A/C Electric Heater (0.5KW Electric) ESTIMATE	HTR-2		1	HVAC	Change Room	3	Thermolec	445-0052-00	208	2	2.4	500			1. Round Duct, 6"Dia, 0.5KW. 2. Estimate - need final duct size to finalize P/N.	500	0.3%	500	0.3%	1	500	0.3%	1	0	0.0%	0	500	0.4%	1.00
10	E	A/C Electric Heater (0.5KW Electric) ESTIMATE	HTR-3		1	HVAC	Anteroom	3	Thermolec	445-0052-00	208	2	2.4	500			1. Round Duct, 6"Dia, 0.5KW. 2. Estimate - need final duct size to finalize P/N.	500	0.3%	500	0.3%	1	500	0.3%	1	0	0.0%	0	500	0.4%	1.00
11	E	A/C Electric Heater (0.5KW Electric) ESTIMATE	HTR-4		1	HVAC	BSL-2/BSL-3 Surge Lab	3	Thermolec	445-0052-00	208	2	2.4	500			1. Round Duct, 6"Dia, 0.5KW. 2. Estimate - need final duct size to finalize P/N.	500	0.3%	500	0.3%	1	500	0.3%	1	0	0.0%	0	500	0.4%	1.00
12	E	A/C Electric Heater (0.5KW Electric) ESTIMATE	HTR-5		1	HVAC	PCR Prep Room	3	Thermolec	445-0052-00	208	2	2.4	500			1. Round Duct, 6"Dia, 0.5KW. 2. Estimate - need final duct size to finalize P/N.	500	0.3%	500	0.3%	1	500	0.3%	1	0	0.0%	0	500	0.4%	1.00
13	E	A/C Electric Heater (1.5KW Electric) ESTIMATE	HTR-6		1	HVAC	BSL-2 PCR Lab	3	Thermolec	445-0054-00	208	2	7.2	1,500			1. Round Duct, 6"Dia, 1.5KW. 2. Estimate - need final duct size to finalize P/N.	1,500	1.0%	1,500	1.0%	1	1,500	1.0%	1	0	0.0%	0	1,500	1.3%	1.00
14	E	A/C Electric Heater (0.5KW Electric) ESTIMATE	HTR-7		1	HVAC	BSL-2 Lab	3	Thermolec	445-0052-00	208	2	2.4	500			1. Round Duct, 6"Dia, 0.5KW. 2. Estimate - need final duct size to finalize P/N.	500	0.3%	500	0.3%	1	500	0.3%	1	0	0.0%	0	500	0.4%	1.00
15	E	A/C Electric Heater (1KW Electric) ESTIMATE	HTR-8		1	HVAC	BSL-3 Lab	3	Thermolec	445-0053-00	208	2	4.8	1,000			1. Round Duct, 6"Dia, 1KW. 2. Estimate - need final duct size to finalize P/N.	1,000	0.7%	1,000	0.7%	1	1,000	0.7%	1	0	0.0%	0	1,000	0.9%	1.00
16														**Heater Subtotal:**	**7,000**			**7,000**	**4.9%**												
17	E	Exhaust Fan Motor-1, 3hp with VFD ESTIMATE	EF-1		1	HVAC	Mech Room	?	Continental Fan	TFD315-1R	480	3	3.5	2,865			1. Continental Fan Blower: TEK315-1R 2. Blower Motor: Baldor CEM3610T ... ESTIMATE 3. Blower Motor: 3hp, 460V, 3.6A, 60Hz, 3-Ph, 2.865KVA. 4. Blower Motor: 3hp, 230V, 7.2A, 60Hz, 3-Ph, 2.865KVA. 5. Blower Motor: 3hp, 208V, 7.9A, 3-Ph, 2.843KVA. 6. 3450 RPM/60Hz, TEFC.	2,865	2.0%	2,865	2.0%	1	2,865	2.0%	1	0	0.0%	0	2,865	2.6%	1.00
18	E	Exhaust Fan Motor-2, 2hp with VFD ESTIMATE 3hp	EF-2		1	HVAC	Mech Room	?	Continental Fan	TFD315-1R	480	3	3.5	2,865			1. Continental Fan Blower: TEK315-1R 2. Blower Motor: Baldor CEM3610T ... ESTIMATE 3. Blower Motor: 3hp, 460V, 3.6A, 60Hz, 3-Ph, 2.865KVA. 4. Blower Motor: 3hp, 230V, 7.2A, 60Hz, 3-Ph, 2.865KVA. 5. Blower Motor: 3hp, 208V, 7.9A, 3-Ph, 2.843KVA. 6. 3450 RPM/60Hz, TEFC.	2,865	2.0%	2,865	2.0%	1	2,865	2.0%	1	0	0.0%	0	2,865	2.6%	1.00
19														**Exhaust Subtotal:**	**5,730**			**5,730**	**4.0%**												
20	E	Horizontal Fan Coil Unit, 2.85 tons cooling. ESTIMATE	FAN COOL-1		1	HVAC	BSL-2/BSL-3 Surge Lab	2	Genteq Motors/Regal Beloit	Model: 70005990	208	2	15.0	3,128			1. Rated 120/208-240V, 9.6/6.8A, 50/60Hz, 3/4hp per motor. 2. 230V, 6.8A, 1.564KVA, 50Hz, per motor at 4.9 tons. 3. Has two Fan Cool Motors. Assume both on at 100%, 3.128KVA. 4. Cooling capacity adjusted by amount of chilled water flowing thru coils. 5. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	3,128	2.2%	3,128	2.2%	1	3,128	2.2%	1	0	0.0%	0	3,128	2.8%	1.00
21	E	Horizontal Fan Coil Unit, 1.97 ton cooling. ESTIMATE	FAN COOL-2		1	HVAC	BSL-2 Lab	3	Genteq Motors/Regal Beloit	Model: 70005990	208	2	15.0	3,128			1. Rated 120/208-240V, 9.6/6.8A, 50/60Hz, 3/4hp per motor. 2. 230V, 6.8A, 1.564KVA, 50Hz, per motor at 4.9 tons. 3. Has two Fan Cool Motors. Assume both on at 100%, 3.128KVA. 4. Cooling capacity adjusted by amount of chilled water flowing thru coils. 5. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	3,128	2.2%	3,128	2.2%	1	3,128	2.2%	1	0	0.0%	0	3,128	2.8%	1.00

Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER		•				•																							
		120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ???KVA/???KW Available Utility Power: 120/208V, 750KVA. New Utility Power for HVAC: 277/480V, 3-Phase																All Equip. On		MODE-1 SUMMER			MODE-2 WINTER			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
22	E	Horizontal Fan Coil Unit, 3.24 ton cooling ESTIMATE	FAN COOL-3		1	HVAC	Mech Room-1	1	Genteq Motors/Regal Beloit	Model: 70005990	208	2	15.0	3,128			1. Rated 120/208-240V, 9.6/6.8A, 50/60Hz, 3/4hp per motor. 2. 230V, 6.8A, 1.564KVA, 50Hz, per motor at 4.9 tons. 3. Has two Fan Cool Motors. Assume both on at 100%, 3.128KVA. 4. Cooling capacity adjusted by amount of chilled water flowing thru coils. 5. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	3,128	2.2%	3,128	2.2%	1	3,128	2.2%	1	0	0.0%	0	3,128	2.8%	1.00
23														Fan Cool Unit Subtotal:	9,384			9,384	6.5%												
24													HVAC Subtotal:	95,366			Subtotal:	95,366	66.4%	95,366	66.4%		95,366	66.4%		0	0.0%		95,366	85.8%	
25		**COMPUTER SYSTEM**						•																							
26	x	Ethernet Network Switch, 48-Port Ethernet ESTIMATE	NETWORK SWITCH		1	Computer	Mech Room	2	Cisco	WS-C2960X-48FPD-L	120	1	7.8	940	1.75"x17.5"x14.5" 45x445x368 mm	12.9 lbs 5.8 kg	1. Rated: 100-240V, 50/60Hz, 9A-4A. 2. Use 230V, 940W for power estimate.	940	0.7%	940	0.7%	1	940	0.7%	1	940	1.9%	1	940	0.8%	1.00
27	x	Laptop Computer ESTIMATE	LAPTOP-1		1	Computer	BSL-2 PCR Lab	1	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	33	0.0%	0.50
28	x	Laptop Computer ESTIMATE	LAPTOP-2		1	Computer	BSL-2 PCR Lab	1	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	33	0.0%	0.50
29	x	Laptop Computer ESTIMATE	LAPTOP-3		1	Computer	BSL-2 Lab	1	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	33	0.0%	0.50
30	x	Laptop Computer ESTIMATE	LAPTOP-4		1	Computer	BSL-2 Lab	1	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	33	0.0%	0.50
31	x	Elisa Laptop Computer ESTIMATE	COMPUTER-1		1	Computer	BSL-2/BSL-3 Surge Lab	1	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	33	0.0%	0.50
32	x	Elisa Laptop Computer ESTIMATE	COMPUTER-2		1	Computer	BSL-2/BSL-3 Surge Lab	1	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	33	0.0%	0.50
33											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.25
34																															
35													Computer Subtotal:	1,330			Subtotal:	1,330	0.9%	1,330	0.9%		1,330	0.9%		1,330	2.8%		1,135	1.0%	
36		**GERMFREE EQUIPMENT**						•																							
37											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
38											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
39											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
40											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
41																															
42													GF Equip Subtotal:	0			Subtotal:	0	0.0%	0	0.0%		0	0.0%		0	0.0%		0	0.0%	
43		**MONTORING SYSTEMS/ALARM**						•																							
44	E	Intercom System ESTIMATE			1	Intercom	Mech Room	2	AiPhone	PS-1225UL (Power Supply)	120	1	0.7	82	6.56"x3.56"x2" 167x90x152 mm	0.95 lbs 0.43 kg	1. Intercom Power Supply Rating: 100-240VAC, 82VA, 50/60Hz.	82	0.1%	82	0.1%	1	82	0.1%	1	82	0.2%	1	21	0.0%	0.25
45	E	Fire & Burglar Alarm Systems ESTIMATE			1	Fire-Burglar	Mech Room	2	Napco	GEMC-COMBO32KT	120	1	3.0	360	24"Ht14.25"x6"D		1. 32 Point Fire & Burglar devices.	360	0.3%	360	0.3%	1	360	0.3%	1	360	0.7%	1	90	0.1%	0.25
46																															
47													Monitoring Subtotal:	442			Subtotal:	442	0.3%	442	0.3%		442	0.3%		442	0.9%		111	0.1%	
48		**POWER BACKUP/CONDITIONING**						•																							
49	x	UPS, 3KVA/2.1KW (For Class II BSC, BSC-1)	UPS-1		1	Equipment	BSL-2/BSL-3 Surge Lab	1	Falcon Electric	SSG3KRM-1TU	120	1	3.3	390	3.5"Hx19"Wx21.3"D per module	103 lbs. 47 kg	1. Efficiency 87%; 13% losses = 390W. 2. UPS loss = 390W 3. Two modules: Inverter Module & Battery Module. 4. Occupies 4U rackmount units.	390	0.3%	390	0.3%	1	390	0.3%	1	390	0.8%	1	390	0.4%	1.00
50	x	UPS, 3KVA/2.1KW (For Class II BSC, BSC-2)	UPS-2		1	Equipment	BSL-2 Lab	3	Falcon Electric	SSG3KRM-1TU	120	1	3.3	390	3.5"Hx19"Wx21.3"D per module	103 lbs. 47 kg	1. Efficiency 87%; 13% losses = 390W. 2. UPS loss = 390W 3. Two modules: Inverter Module & Battery Module. 4. Occupies 4U rackmount units.	390	0.3%	390	0.3%	1	390	0.3%	1	390	0.8%	1	390	0.4%	1.00
51	x	UPS, 3KVA/2.1KW (For Class II BSC, BSC-3)	UPS-3		1	Equipment	BSL-3 Lab	3	Falcon Electric	SSG3KRM-1TU	120	1	3.3	390	3.5"Hx19"Wx21.3"D per module	103 lbs. 47 kg	1. Efficiency 87%; 13% losses = 390W. 2. UPS loss = 390W 3. Two modules: Inverter Module & Battery Module. 4. Occupies 4U rackmount units.	390	0.3%	390	0.3%	1	390	0.3%	1	390	0.8%	1	390	0.4%	1.00
52	x	UPS, 2KVA/1.8KW	UPS-4		1	Equipment	Mech Room	2	Tripp Lite	SMART1500RMXL2UA	120	1	1.1	135	3.4"x17.25"x17.2" 86.5x438x436 mm	43.4 lbs 19.7 kg	1. Efficiency 93%; 7% losses = 135W. 2. UPS loss = 135W 3. Occupies 2U rackmount units.	135	0.1%	135	0.1%	1	135	0.1%	1	135	0.3%	1	135	0.1%	1.00
53																															
54													UPS Subtotal:	1,305			Subtotal:	1,305	0.9%	1,305	0.9%		1,305	0.9%		1,305	2.7%		1,305	1.2%	
55		**LAB EQUIPMENT - CUSTOMER SPECIFIC**						•																							
56	x	Autoclave, Pass-Thru 200 liter: Booster Pump & Steam Generator	AUTOCLAVE-1		1	Equipment	BSL-2/BSL-3 SURGE Lab	1	Consolidated Sterilizer Systems	PT-SSR-2A-ADVPRO	208	3	55.6	20,000	X	1300 lbs 590 kg	1. Rated: 208V, 20KW, 60Hz, 3-Phase. 2. Basis of Estimate PT-SSR-2A-ADVPRO-081414	20,000	13.9%	20,000	13.9%	1	20,000	13.9%	1	20,000	41.4%	1	5,000	4.5%	0.25
57	x	Autoclave, Pass-Thru 200 liter: Sterilizer Controller	AUTOCLAVE-1		1	Equipment	BSL-2/BSL-3 SURGE Lab	1	Consolidated Sterilizer Systems	PT-SSR-2A-ADVPRO	208	3	11.1	2,300			1. Rated: 208V, 2.3KW, 1-Phase. 2. Basis of Estimate PT-SSR-2A-ADVPRO-081414	2,300	1.6%	2,300	1.6%	1	2,300	1.6%	1	2,300	4.8%	1	575	0.5%	0.25
57	x	Incubator (CO2) (Dual Chamber Volume: 13.3 cu. Ft, Water Jacketed)	INCUB-1		1	Equipment	BSL-3 Lab	3	NuAire	NU-8700	120	1	5.8	690	75.5"x25.5"x27" 1918x648x686 mm	826 lbs 375 kg	1. Rated: 115V, 60Hz, 6A/690W	690	0.5%	690	0.5%	1	690	0.5%	1	690	1.4%	1	345	0.3%	0.50
58	x	Autoclave (Top Loading, 1.1 cu ft/32L)	AUTOCLAVE-2		1	Equipment	BSL-3 Lab	3	Yamato Scientific America	SN310	208	2	11.5	2,400	33"Hx16"Wx21"D 838x406x533 mm	165 lbs 75 kg	1. Rated: 200-240V, 8.5-10A, 50/60Hz	2,400	1.7%	2,400	1.7%	1	2,400	1.7%	1	2,400	5.0%	1	480	0.4%	0.20
59	x	Class II BSC, Type A2, 4ft	BSC-1		1	Equipment	BSL-2/BSL-3 Surge Lab	1	NuAire	NU-425-400	120	1	2.8	333	63"Ht53.7"Wx32.9"D 1600x1364x836 mm	500 lbs 227 kg	1. Rated: 115V, 2.9A, 60Hz.	333	0.2%	333	0.2%	1	333	0.2%	1	333	0.7%	1	333	0.3%	1.00
60	x	Class II BSC, Type A2, 4ft	BSC-2		1	Equipment	BSL-2	3	NuAire	NU-425-400	120	1	2.8	333	63"Ht53.7"Wx32.9"D 1600x1364x836 mm	500 lbs 227 kg	1. Rated: 115V, 2.9A, 60Hz.	333	0.2%	333	0.2%	1	333	0.2%	1	333	0.7%	1	333	0.3%	1.00

Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER		•				•																							
		120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ???KVA/???KW Available Utility Power: 120/208V, 750KVA. New Utility Power for HVAC: 277/480V, 3-Phase																All Equip. On		MODE-1 SUMMER			MODE-2 WINTER			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
61	x	Class II BSC, Type A2, 4ft	BSC-3		1	Equipment	BSL-3	3	NuAire	NU-425-400	120	1	2.8	333	63"Hx53.7"Wx32.9"D 1600x1364x836 mm	500 lbs 227 kg	1. Rated: 115V, 2.9A, 60Hz.	333	0.2%	333	0.2%	1	333	0.2%	1	333	0.7%	1	333	0.3%	1.00
62		Exhaust Fan for BSC-3 ESTIMATE	EF-3		1	Equipment	BSL-3 Lab	1	Leeson	C4C34DK11A	208	2	5.4	1,123	7.78"Hx5.62"Wx9"D 198x143x229 mm	24 lbs 11 kg	1. Rated: 115V/11A, 208V/5.4A, 230V/5.5A, 60Hz, 3450RPM. 2. Rated: 115V/1.265KVA, 208V/1.123KVA, 230V/1.265KVA.	1,123	0.8%	1,123	0.8%	1	1,123	0.8%	1	1,123	2.3%	1	225	0.2%	0.20
63	x	PCR Detection System	PCR-1		1	Equipment	BSL-2 PCR Lab	1	ABI	7500 Fast DX	120	1	7.9	950	19.3"Hx13.4"Wx17.8"D 490x340x450 mm	75 lbs 34.1 kg	1. Rated: 120V, 50/60Hz, 8A, 950W. 2. Rated: 100V to 240V, 50/60Hz, 950W. 2. Total Height with door open: 31".	950	0.7%	950	0.7%	1	950	0.7%	1	950	2.0%	1	190	0.2%	0.20
64	x	PCR Detection System	PCR-2		1	Equipment	BSL-2 PCR Lab	1	ABI	7501 Fast DX	120	1	7.9	950	19.3"Hx13.4"Wx17.8"D 490x340x450 mm	75 lbs 34.1 kg	1. Rated: 120V, 50/60Hz, 8A, 950W. 2. Rated: 100V to 240V, 50/60Hz, 950W. 2. Total Height with door open: 31".	950	0.7%	950	0.7%	1	950	0.7%	1	950	2.0%	1	190	0.2%	0.20
65	x	Dynex DS2 ELISA Assay Analyzer	ELISA-1		1	Equipment	BSL-2/BSL-3 SURGE Lab	2	Dynex Technologies	DS2	120	1	2.5	300	26"x21"x27" 660x540x680 mm	105 lbs 48 kg	1. Rated: 100-240V, 50/60Hz, 300VA max. 2.	300	0.2%	300	0.2%	1	300	0.2%	1	300	0.6%	1	150	0.1%	0.50
66	x	Dynex DS2 ELISA Assay Analyzer	ELISA-2		1	Equipment	BSL-2/BSL-3 SURGE Lab	2	Dynex Technologies	DS2	120	1	2.5	300	26"x21"x27" 660x540x680 mm	105 lbs 48 kg	1. Rated: 100-240V, 50/60Hz, 300VA max. 2.	300	0.2%	300	0.2%	1	300	0.2%	1	300	0.6%	1	150	0.1%	0.50
67											120	1	0.0	0				0	0.0%	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0.00
66	x	QIAGEN SP/AS PCR Assay/Sample Prep	ASSAY PREP		1	Equipment	BSL-2 Lab	3	QIAGEN Sample & Assay Technologies	QIAsymphony SP/AS	208	2	6.7	1,400	40.5"x72.8"x28.7" 1030x730x1850 mm	683 lbs 310 kg	1. Rated: 100-240V, 50/60Hz, 1400VA. 2. SP/AS PCR setup. 3. Hood Open Height: 64.2"/1631mm.	1,400	1.0%	1,400	1.0%	1	1,400	1.0%	1	1,400	2.9%	1	280	0.3%	0.20
67	E	Laptop Computer (Part of QIAcube) ESTIMATE	LAPTOP-6		1	Computer	BSL-2 Lab	3	Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.0%	65	0.0%	1	65	0.0%	1	65	0.1%	1	65	0.1%	1.00
68	x	QIAGEN Integrated Centrifuge/Shaker	QIACUBE		1	Equipment	BSL-2 Lab	1	QIAGEN Sample & Assay Technologies	QIAcube	120	1	5.4	650	22.4"x25.6"x24.4" 570x650x620 mm	155.4 lbs 70.5 kg	1. Rated 100-200V, 50/60Hz, 650VA (USA); 220-240V,50/60Hz, 650VA (Europe)	650	0.5%	650	0.5%	1	650	0.5%	1	650	1.3%	1	163	0.1%	0.25
69	x	Dry Block Heater	BLK HTR-1		1	Equipment	BSL-2 Lab	3	VWR	460-0184	120	1	2.7	327	7"x7.9"x15.4" 178x200x391 mm	7 lbs 3.2 kg	1. Rated: 230V, 1.65A, 400W, 50/60Hz 2. Derated to 208V: 208V, 1.57A, 327W 3. UK Plug	327	0.2%	327	0.2%	1	327	0.2%	1	327	0.7%	1	33	0.0%	0.10
70	x	Dry Block Heater	BLK HTR-2		1	Equipment	BSL-3 Lab	3	VWR	460-0184	120	1	2.7	327	7"x7.9"x15.4" 178x200x391 mm	7 lbs 3.2 kg	1. Rated: 230V, 1.65A, 400W, 50/60Hz 2. Derated to 208V: 208V, 1.57A, 327W 3. UK Plug	327	0.2%	327	0.2%	1	327	0.2%	1	327	0.7%	1	33	0.0%	0.10
71	x	Microcentrifuge	MICRO CFUGE-2		1	Equipment	BSL-2 Lab	3	VWR	75838-336	120	1	2.1	250	5.9"x8.7"x10.6"		1. 100-240V, 50/60Hz, 250W, per Tech Support.	250	0.2%	250	0.2%	1	250	0.2%	1	250	0.5%	1	25	0.0%	0.10
72	x	Microcentrifuge	MICRO CFUGE-3		1	Equipment	BSL-3 Lab	3	VWR	75838-336	120	1	2.1	250	5.9"x8.7"x10.6"		1. 100-240V, 50/60Hz, 250W, per Tech Support.	250	0.2%	250	0.2%	1	250	0.2%	1	250	0.5%	1	25	0.0%	0.10
73	x	Microcentrifuge	MICRO CFUGE-1		1	Equipment	BSL-2/BSL-3 SURGE Lab	1	VWR	75838-336	120	1	2.1	250	5.9"x8.7"x10.6"		1. 100-240V, 50/60Hz, 250W, per Tech Support.	250	0.2%	250	0.2%	1	250	0.2%	1	250	0.5%	1	25	0.0%	0.10
74	x	PCR Workstation	PCR STATION-1		1	Equipment	PCR Prep Room	1	Lab Companion	PW-01	120	1	2.2	264	38"x28"x24" 964x720x605 mm	123.9 lbs 56.2 kg	1. Rated 120V, 60Hz, 2.2A, 264W.	264	0.2%	264	0.2%	1	264	0.2%	1	264	0.5%	1	26	0.0%	0.10
75	x	PCR Workstation	PCR STATION-2		1	Equipment	BSL-2 PCR Lab	1	Lab Companion	PW-01	120	1	2.2	264	38"x28"x24" 964x720x605 mm	123.9 lbs 56.2 kg	1. Rated 120V, 60Hz, 2.2A, 264W.	264	0.2%	264	0.2%	1	264	0.2%	1	264	0.5%	1	26	0.0%	0.10
76	x	Liquid Handler	LIQUID HDLR-1		1	Equipment	BSL-2/BSL-3 SURGE Lab	1	Gilson	GX-271	120	1	2.1	250	22.5"x21.3"x23.5" 571x541x597 mm	48 lbs 22 kg	1. Rated: 100-240V, 50/60Hz. 2. 120V/2A/240VA; 240V/1A/240VA. 3. Max. Power Consumption: 250W.	250	0.2%	250	0.2%	1	250	0.2%	1	250	0.5%	1	25	0.0%	0.10
77											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.10
78											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.10
79																															
80													**Lab Equip Subtotal:**	**34,309**			**Subtotal:**	**34,309**	**23.9%**	**34,309**	**23.9%**		**34,309**	**23.9%**		**34,309**	**71.0%**		**9,029**	**8.1%**	
81		**APPLIANCES**						•																							
82	x	Refrigerator/Freezer Combo, 4.5 cu ft/4.2 cu ft	REFRIG-1 FREEZER-1		1	Appliance	BSL-2/BSL-3 SURGE Lab	2	VWR International	10819-926	120	1	3.1	373	66.75"x23.75"x24.5"	200 lbs 91 kg	1. Refrigerator: 115V, 1.74A, 60Hz, 200VA. 2. Freezer: 115V, 1.5A, 60Hz, 173VA. 3. Requires 3" minimum clearance behind refrigerator	373	0.3%	373	0.3%	1	373	0.3%	1	373	0.8%	1	280	0.3%	0.75
83	x	Refrigerator/Freezer Combo, 4.5 cu ft/4.2 cu ft	REFRIG-2 FREEZER-2		1	Appliance	BSL-2	2	VWR International	10819-926	120	1	3.1	373	66.75"x23.75"x24.5"	200 lbs 91 kg	1. Refrigerator: 115V, 1.74A, 60Hz, 200VA. 2. Freezer: 115V, 1.5A, 60Hz, 173VA. 3. Requires 3" minimum clearance behind refrigerator	373	0.3%	373	0.3%	1	373	0.3%	1	373	0.8%	1	280	0.3%	0.75
84	x	Refrigerator/Freezer Combo, 4.5 cu ft/4.2 cu ft	REFRIG-3 FREEZER-3		1	Appliance	BSL-3 Lab	2	VWR International	10819-926	120	1	3.1	373	66.75"x23.75"x24.5"	200 lbs 91 kg	1. Refrigerator: 115V, 1.74A, 60Hz, 200VA. 2. Freezer: 115V, 1.5A, 60Hz, 173VA. 3. Requires 3" minimum clearance behind refrigerator	373	0.3%	373	0.3%	1	373	0.3%	1	373	0.8%	1	280	0.3%	0.75
85	x	Refrigerator, (Undercounter), 4 cu ft (113 liter) (34F to 50F, 1C to 10C)	REFRIG-4		1	Appliance	PCR Lab	1	VWR International	10819-876	120	1	1.3	156	32.13"x23.75"x24" 815x603x609 mm	129 lbs 58.5 kg	1. Rated 120V, 1.3A, 60Hz. 2. Requires 4" minimum clearance behind freezer. 3. Manual defrost.	156	0.1%	156	0.1%	1	156	0.1%	1	156	0.3%	1	117	0.1%	0.75
86	x	Freezer, (Undercounter), 5.4 cu ft (153 liter) (-13F to +5F, -25C to -15C) (Manual Defrost)	FREEZER-4		1	Appliance	PCR Prep Room	1	VWR International	89031-976	120	1	0.8	96	34.5"x23.63"x25.5" 876x600x648 mm	110 lbs 50 kg	1. Rated 115V, 0.835A, 60Hz, 96W. 2. Requires 4" minimum clearance behind freezer. 3. Manual defrost.	96	0.1%	96	0.1%	1	96	0.1%	1	96	0.2%	1	72	0.1%	0.75
87	x	Freezer, (Ultralow), 17.1 cu ft (487 liter) (9F to -123F, -13C to -86C)	FREEZER-5		1	Appliance	BSL-2/BSL-3 SURGE Lab	1	Nuaire	NU-9483GA	120	1	6.4	770	78.3"x35"x34.3" 1990x890x870 mm	706 lbs 320 kg	1. Rated 115V, 770W, 6.7A, 60Hz. 2. Requires 4" minimum clearance around freezer (back & sides). 3. Manual defrost.	770	0.5%	770	0.5%	1	770	0.5%	1	770	1.6%	1	578	0.5%	0.75
88	x	Tankless Water Heater for Shower	WATER HTR		1	Appliance	Anteroom		Eemax	EX65T	208	2	23.6	4,900	9.67"x5.22"x3"	4 lbs 1.8 kg	1. Rated: 240V/6.5KW, 208V/4.9KW. 2. Water Temp. Rise at 0.75 GPM: 240V/59F, 208V/44F.	4,900	3.4%	4,900	3.4%	1	4,900	3.4%	1	4,900	10.1%	1	490	0.4%	0.10
89	x	EDS - Effluent Decontamination System (150 gallon waste tank) ESTIMATE	EDS		1	Appliance	Exterior	3	BioResponse	EDS-200/450CF-CHEM	208	2	9.3	1,936			1. Rated: 220V, 8.8A, 50/60Hz, 1.936 KVA. 2. Estimate for 208V, same KVA.	1,936	1.3%	1,936	1.3%	1	1,936	1.3%	1	1,936	4.0%	1	194	0.2%	0.10
90											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.10
91																															
92													**Appliance Subtotal:**	**8,977**			**Subtotal:**	**8,977**	**6.2%**	**8,977**	**6.2%**		**8,977**	**6.2%**		**8,977**	**18.6%**		**2,289**	**2.1%**	
93		**CCTV VIDEO SYSTEM**						•																							
94	E	DVR, 8-Channel, 1280H, Coaxial, 1TB	DVR-1		1	CCTV	Mech Room	2	Samsung	SRD-876D-1TB	120	1	0.6	68	3.46"x17.32"x15.15" 88x440x385 mm	14.33 lbs 6.5 kg	1. DVR rated: 100-240V, 50/60Hz, 60W. 2. Add 3TB hard drive, 8W; total hard drive storage 4TB.	68	0.0%	68	0.0%	1	68	0.0%	1	68	0.1%	1	51	0.0%	0.75
95	E	Power Supply, CCTV			1	CCTV	Mech Room	2	Altronix	VERTILINE8	120	1	1.4	173	1.625"x19.125"x8.5" 41x486x216 mm	6.55 lbs 3 kg	1. Rated: 115V, 172.5VA; 230V, 184VA.	173	0.1%	173	0.1%	1	173	0.1%	1	173	0.4%	1	173	0.2%	1.00
96	E	LCD Monitor, 17", LED Back lit	LCD-1		1	CCTV		2	Viewsonic	VA705-LED	120	1	0.2	24	13.28"x14.92"x2.68" 337x379x68 mm	5.6 lbs 2.5 kg	1. Rated: 100-240V, 50/60Hz, 24W max.	24	0.0%	24	0.0%	1	24	0.0%	1	24	0.0%	1	6	0.0%	0.25
97																															
98													**CCTV Subtotal:**	**265**			**Subtotal:**	**265**	**0.2%**	**265**	**0.2%**		**265**	**0.2%**		**265**	**0.5%**		**230**	**0.2%**	
99		**LIGHTING**						•																							

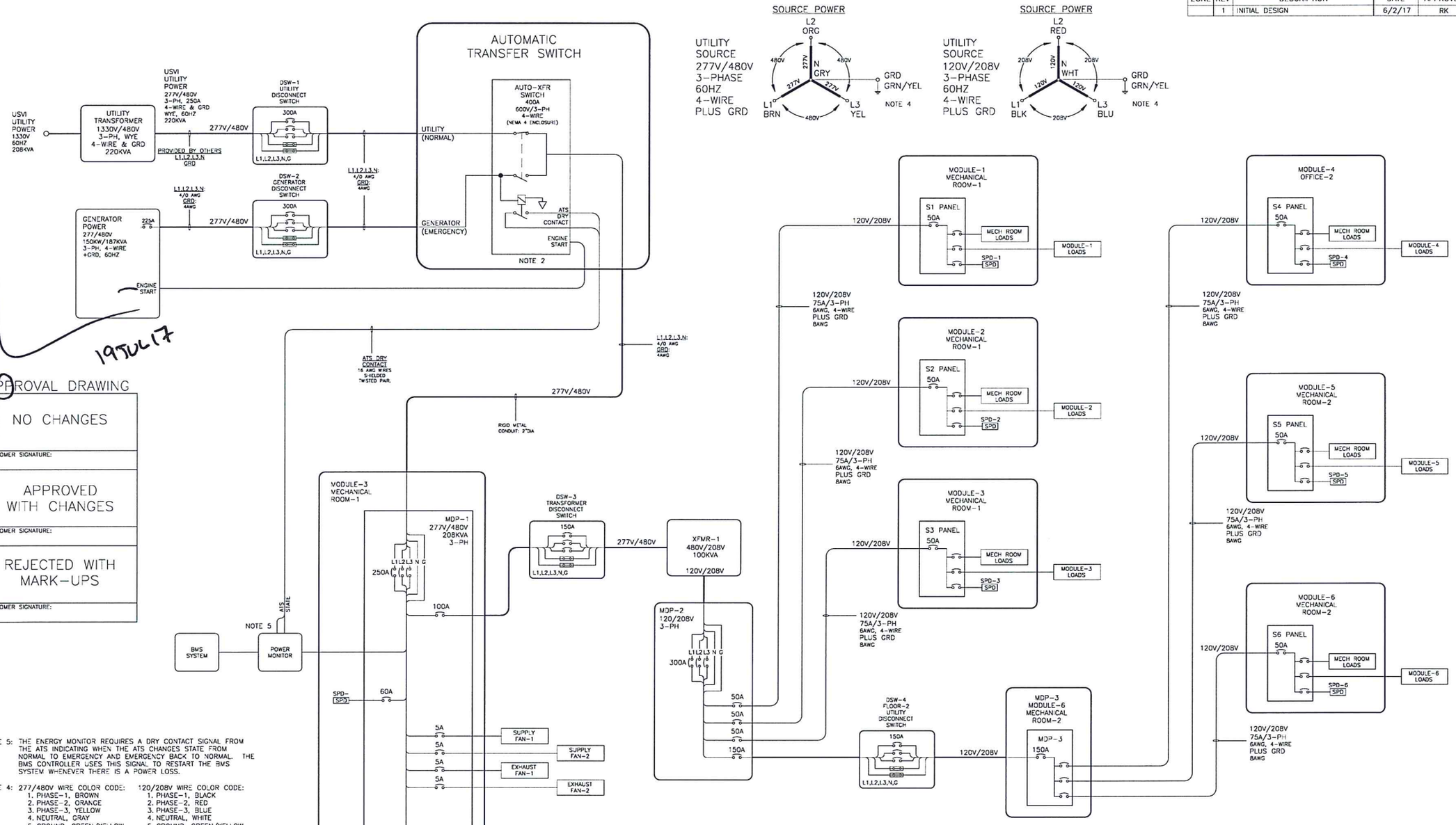
Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER		•				•																							
		120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ???KVA/???KW Available Utility Power: 120/208V, 750KVA. New Utility Power for HVAC: 277/480V, 3-Phase																All Equip. On		MODE-1 SUMMER			MODE-2 WINTER			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
100	x	Light Fixture: 4ft- LED 4000K	Light-1-6, 20-22		9	Ceiling		1	Kenall	FES8-48-1-67L40K-DCC-2-DV-XH	120	1	5.0	603	3"x8"x48.75"		1. Rated: 120-277V, 67W, 50/60Hz, 4000K. 2. Dimmable, 0-10V.	603	0.4%	603	0.4%	1	603	0.4%	1	603	1.2%	1	603	0.5%	1.00
101	x	Light Fixture: 4ft- LED 4000K	Light-7-13		6	Ceiling		2	Kenall	FES8-48-1-67L40K-DCC-2-DV-XH	120	1	3.4	402	3"x8"x48.75"		1. Rated: 120-277V, 67W, 50/60Hz, 4000K. 2. Dimmable, 0-10V.	402	0.3%	402	0.3%	1	402	0.3%	1	402	0.8%	1	402	0.4%	1.00
102	x	Light Fixture: 4ft- LED 4000K	Light-14-19		6	Ceiling		3	Kenall	FES8-48-1-67L40K-DCC-2-DV-XH	120	1	3.4	402	3"x8"x48.75"		1. Rated: 120-277V, 67W, 50/60Hz, 4000K. 2. Dimmable, 0-10V.	402	0.3%	402	0.3%	1	402	0.3%	1	402	0.8%	1	402	0.4%	1.00
103	x	Light Fixture: Exterior LED	LGT-1 thru LGT-11		11	Exterior		1,2,3	Cooper Lighting	XTOR3B-W	120	1	2.4	286	6.75"x5.75"x4"		1. Rated: 120-277V, 26W, 50/60Hz, 4000K.	286	0.2%	286	0.2%	1	286	0.2%	1	286	0.6%	1	286	0.3%	1.00
104																															
105																															
106													Lighting Subtotal:	1,693			Subtotal:	1,693	1.2%	1,693	1.2%		1,693	1.2%		1,693	3.5%		1,693	1.5%	
107																				Mode-1			Mode-2			Mode-3			Mode-4		
108													TOTAL Volt Amps:	143,687			TOTAL VA:	143,687	100.0%	143,687	100.0%		143,687	100.0%		48,321	33.6%		111,158	77.4%	
109																		All Equip. On		MODE-1 SUMMER			MODE-2 WINTER			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		

Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER 120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ???KVA/???KW Available Utility Power: 120/208V, 750KVA New Utility Power for HVAC: 277/480V, 3-Phase		•				•										All Equip. On		MODE-1 One A/C Unit On Per Module Heaters On			MODE-2 Two A/C Units On Per Module Heaters Off			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
1		**HVAC SYSTEM**		•				•																							
2	E	Horizontal Fan Coil Unit, 1.79 tons cooling. ESTIMATE	FAN COOL-4		5	HVAC	Entry Room	4	Genteq Motors/Regal Beloit		208	3	2.5	912	2410x1069x570mm 94.9"x40.1"x22.4"	277 kg 610 lbs	1. Estimate Fan Cool Motor: Marathon, 5KCR46JN0087Y, 1/3hp. 2. Operating Voltage Range: 120/240V, 50/60Hz, 1-Ph. 3. Rated Load Amps: 4/1.9A, 480/456VA. 4. Has two Fan Cool Motors. Assume both On 100%, 0.912KVA. 5. Cooling capacity adjusted by amount of chilled water flowing thru coils. 6. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	912	4.6%	912	5.3%	1	912	4.6%	1	0	0.0%	0	912	5.9%	1.00
3	E	Horizontal Fan Coil Unit, 0.54 tons cooling. ESTIMATE	FAN COOL-5		4	HVAC	Office-1 (Front)	4	Genteq Motors/Regal Beloit	Model: 70005990	208	3	2.5	912	2410x1069x570mm 94.9"x40.1"x22.4"	277 kg 610 lbs	1. Estimate Fan Cool Motor: Marathon, 5KCR46JN0087Y, 1/3hp. 2. Operating Voltage Range: 120/240V, 50/60Hz, 1-Ph. 3. Rated Load Amps: 4/1.9A, 480/456VA. 4. Has two Fan Cool Motors. Assume both On 100%, 0.912KVA. 5. Cooling capacity adjusted by amount of chilled water flowing thru coils. 6. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	912	4.6%	0	0.0%	0	912	4.6%	1	0	0.0%	0	912	5.9%	1.00
4	E	Horizontal Fan Coil Unit, 0.63 tons cooling. ESTIMATE	FAN COOL-6		4	HVAC	Workspace	5	Genteq Motors/Regal Beloit	Model: 70005990	208	3	2.5	912	2410x1069x570mm 94.9"x40.1"x22.4"	277 kg 610 lbs	1. Estimate Fan Cool Motor: Marathon, 5KCR46JN0087Y, 1/3hp. 2. Operating Voltage Range: 120/240V, 50/60Hz, 1-Ph. 3. Rated Load Amps: 4/1.9A, 480/456VA. 4. Has two Fan Cool Motors. Assume both On 100%, 0.912KVA. 5. Cooling capacity adjusted by amount of chilled water flowing thru coils. 6. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	912	4.6%	912	5.3%	1	912	4.6%	1	0	0.0%	0	912	5.9%	1.00
5	E	Horizontal Fan Cool Unit, 0.23 tons cooling. ESTIMATE	FAN COOL-7		4	HVAC	Office-2 (Rear)	5	Genteq Motors/Regal Beloit	Model: 70005990	208	3	2.5	912	2410x1069x570mm 94.9"x40.1"x22.4"	277 kg 610 lbs	1. Estimate Fan Cool Motor: Marathon, 5KCR46JN0087Y, 1/3hp. 2. Operating Voltage Range: 120/240V, 50/60Hz, 1-Ph. 3. Rated Load Amps: 4/1.9A, 480/456VA. 4. Has two Fan Cool Motors. Assume both On 100%, 0.912KVA. 5. Cooling capacity adjusted by amount of chilled water flowing thru coils. 6. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	912	4.6%	0	0.0%	0	912	4.6%	1	0	0.0%	0	912	5.9%	1.00
6	E	Horizontal Fan Cool Unit, 2.25 tons cooling. ESTIMATE	FAN COOL-8		5,6	HVAC	BSL-2 Lab	6	Genteq Motors/Regal Beloit	Model: 70005990	208	3	8.7	3,128			1. Rated 120/208-240V, 9.6/6.8A, 50/60Hz, 3/4hp per motor. 2. 230V, 6.8A, 1.564KVA, 50Hz, per motor at 4.9 tons. 3. Has two Fan Cool Motors. Assume both on at 100%, 3.128KVA. 4. Cooling capacity adjusted by amount of chilled water flowing thru coils. 5. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	3,128	15.7%	3,128	18.2%	1	3,128	15.7%	1	0	0.0%	0	3,128	20.2%	1.00
7	E	Horizontal Fan Coil Unit, 0.85 tons cooling. ESTIMATE	FAN COOL-9		5,6	HVAC	Mech Room-2	6	Genteq Motors/Regal Beloit	Model: 70005990	208	3	2.5	912			1. Estimate Fan Cool Motor: Marathon, 5KCR46JN0087Y, 1/3hp. 2. Operating Voltage Range: 120/240V, 50/60Hz, 1-Ph. 3. Rated Load Amps: 4/1.9A, 480/456VA. 4. Has two Fan Cool Motors. Assume both On 100%, 0.912KVA. 5. Cooling capacity adjusted by amount of chilled water flowing thru coils. 6. Estimate adjusted for 277V, 60Hz, 2-Ph, assume same KVA.	912	4.6%	0	0.0%	0	912	4.6%	1	0	0.0%	0	912	5.9%	1.00
8	E	Exhaust Fan Motor ESTIMATE	EF-4		1	HVAC	BSL-2 Lab	5	Continental Fan	XR250-2B42-11	120	1	2.3	280	6.9" Dia. X 3.9"D		1. Rated: 115V, 2.4A, 280W, 60Hz.	280	1.4%	280	1.6%	1	280	1.4%	1	0	0.0%	0	280	1.8%	1.00
9	E	Exhaust Fan Motor ESTIMATE	EF-5		1	HVAC	Work Area	4	Continental Fan	XR250-2B42-11	120	1	2.3	280	6.9" Dia. X 3.9"D		1. Rated: 115V, 2.4A, 280W, 60Hz.	280	1.4%	280	1.6%	1	280	1.4%	1	0	0.0%	0	280	1.8%	1.00
10																															
11													**HVAC Subtotal:**	**8,248**			**HVAC Subtotal:**	**8,248**	**41.3%**	**5,512**	**32.0%**		**8,248**	**41.3%**		**0**	**0.0%**		**8,248**	**53.2%**	
12		**COMPUTER SYSTEM**						•																							
13											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
14	E	Laptop Computer ESTIMATE	LAPTOP-1		1	Computer	Work Area		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
15	E	Laptop Computer ESTIMATE	LAPTOP-2		1	Computer	Work Area		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
16	E	Laptop Computer ESTIMATE	LAPTOP-3		1	Computer	Work Area		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
15	E	Laptop Computer ESTIMATE	LAPTOP-4		1	Computer	Work Area		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
16	E	Laptop Computer ESTIMATE	LAPTOP-5		1	Computer	Office		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
17	E	Laptop Computer ESTIMATE	LAPTOP-6		1	Computer	BSL-2 LAB-2		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
18	E	Laptop Computer ESTIMATE	LAPTOP-7		1	Computer	BSL-2 LAB-2		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
19	E	Laptop Computer ESTIMATE	LAPTOP-8		1	Computer	BSL-2 LAB-2		Hewlett Packard	Elitebook 840G3	120	1	0.5	65	0.83"x13.35"x9.33" 21x339x237 mm	3.5 lbs 1.6 kg	1. Rated Power Supply: 65W Smart AC Adapter.	65	0.3%	65	0.4%	1	65	0.3%	1	65	0.6%	1	33	0.2%	0.50
20	E	Multifunction Printer, Scanner, Fax	PRINTER/FAX-1		1	Computer	Office		Hewlett Packard	Officejet Pro 8710	120	1	0.3	35	13.4"x19.7"x15.9"	25.4 lbs	1. Rated: 100-240V, 50/60Hz, 35W max.	35	0.2%	35	0.2%	1	35	0.2%	1	35	0.3%	1	18	0.1%	0.50
21	E	Multifunction Printer, Scanner, Fax	PRINTER/FAX-1		1	Computer	Office		Hewlett Packard	Officejet Pro 8710	120	1	0.3	35	13.4"x19.7"x15.9"	25.4 lbs	1. Rated: 100-240V, 50/60Hz, 35W max.	35	0.2%	35	0.2%	1	35	0.2%	1	35	0.3%	1	18	0.1%	0.50
22	E	Multifunction Printer, Scanner, Fax	PRINTER/FAX-1		1	Computer	Office		Hewlett Packard	Officejet Pro 8710	120	1	0.3	35	13.4"x19.7"x15.9"	25.4 lbs	1. Rated: 100-240V, 50/60Hz, 35W max.	35	0.2%	35	0.2%	1	35	0.2%	1	35	0.3%	1	18	0.1%	0.50
23	E	Multifunction Printer, Scanner, Fax	PRINTER/FAX-1		1	Computer	Office		Hewlett Packard	Officejet Pro 8710	120	1	0.3	35	13.4"x19.7"x15.9"	25.4 lbs	1. Rated: 100-240V, 50/60Hz, 35W max.	35	0.2%	35	0.2%	1	35	0.2%	1	35	0.3%	1	18	0.1%	0.50
24																															
25													**Computer Subtotal:**	**660**			**Computer Subtotal:**	**660**	**3.3%**	**660**	**3.8%**		**660**	**3.3%**		**660**	**5.6%**		**330**	**2.1%**	
26		**GERMFREE EQUIPMENT**						•																							
27											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
28											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
29											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
30													**GF Equip Subtotal:**	**0**			**GF Equipment Subtotal:**	**0**	**0.0%**	**0**	**0.0%**		**0**	**0.0%**		**0**	**0.0%**		**0**	**0.0%**	
31		**MONTORING SYSTEMS/ALARM**						•																							
32	E	Intercom System ESTIMATE			1	Intercom	Mech Room		AiPhone	PS-1225UL (Power Supply)	120	1	0.7	82	6.56"x3.56"x2" 167x90x152 mm	0.95 lbs 0.43 kg	1. Intercom Power Supply Rating: 100-240VAC, 82VA, 50/60Hz.	82	0.4%	82	0.5%	1	82	0.4%	1	82	0.7%	1	21	0.1%	0.25
33	E	Fire & Burglar Alarm Systems ESTIMATE			1	Fire- Burglar	Mech Room		Napco	GEMC-COMBO32KT	120	1	3.0	360	24"Hx14.25"x6"D		1. 32 Point Fire & Burglar devices. 2. Need to get power supply to operate at 230V, 50Hz.	360	1.8%	360	2.1%	1	360	1.8%	1	360	3.1%	1	90	0.6%	0.25

Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER		•				•																							
		120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ??KVA/???KW Available Utility Power: 120/208V, 750KVA. New Utility Power for HVAC: 277/480V, 3-Phase																All Equip. On		MODE-1 One A/C Unit On Per Module Heaters On			MODE-2 Two A/C Units On Per Module Heaters Off			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
34																															
35													**Monitoring Subtotal:**	**442**			**Monitoring Subtotal:**	**442**	**2.2%**	**442**	**2.6%**		**442**	**2.2%**		**442**	**3.8%**		**111**	**0.7%**	
36		**POWER BACKUP/CONDITIONING**						•																							
37	x	UPS, 3KVA/2.1KW (For Class II BSC, BSC-4)	UPS-5		1	Equipment	BSL-2 Lab-2	5	Falcon Electric	SSG3KRM-1TU	120	1	3.3	390	3.5"Hx19"Wx21.3"D per module	103 lbs. 47 kg	1. Efficiency 87%; 13% losses = 390W. 2. UPS loss = 390W 3. Two modules: Inverter Module & Battery Module. 4. Occupies 4U rackmount units.	390	2.0%	390	2.0%	1	390	2.0%	1	390	3.3%	1	390	2.5%	1.00
38	x	UPS, 3KVA/2.1KW (For Class II BSC, BSC-5)	UPS-6		1	Equipment	BSL-2 Lab-2	6	Falcon Electric	SSG3KRM-1TU	120	1	3.3	390	3.5"Hx19"Wx21.3"D per module	103 lbs. 47 kg	1. Efficiency 87%; 13% losses = 390W. 2. UPS loss = 390W 3. Two modules: Inverter Module & Battery Module. 4. Occupies 4U rackmount units.	390	2.0%	390	2.0%	1	390	2.0%	1	390	3.3%	1	390	2.5%	1.00
39											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
38	x	UPS, 2KVA/1.8KW	UPS-8		1	Equipment			Tripp Lite	SMART1500RMXL2UA	120	1	1.1	135	3.4"x17.25"x17.2" 86.5x438x436 mm	43.4 lbs 19.7 kg	1. Efficiency 93%; 7% losses = 135W. 2. UPS loss = 135W 3. Occupies 2U rackmount units.	135	0.7%	135	0.7%	1	135	0.7%	1	135	1.2%	1	135	0.9%	1.00
39																															
40													**UPS Subtotal:**	**915**			**UPS Subtotal:**	**915**	**4.6%**	**915**	**5.3%**		**915**	**4.6%**		**915**	**7.8%**		**915**	**5.9%**	
41		**LAB EQUIPMENT - CUSTOMER SPECIFIC**						•																							
42	x	Class II BSC, Type A2, 4ft	BSC-4		1	Equipment	BSL-2 LAB-2	5	NuAire	NU-425-400	120	1	2.8	333	63"x53.7"x32.9" 1600x1364x836 mm	500 lbs 277 kg	1. Rated: 115V, 2.9A, 60Hz.	333	1.7%	333	1.9%	1	333	1.7%	1	333	2.8%	1	167	1.1%	0.50
43	x	Class II BSC, Type A2, 4ft	BSC-5		1	Equipment	BSL-2 LAB-2	6	NuAire	NU-425-400	120	1	2.8	333	63"x53.7"x32.9" 1600x1364x836 mm	500 lbs 277 kg	1. Rated: 115V, 2.9A, 60Hz.	333	1.7%	333	1.9%	1	333	1.7%	1	333	2.8%	1	167	1.1%	0.50
44	x	Autoclave (Top Loading, 1.1 cu ft/32L)	AUTOCLAVE-3		1	Equipment	BSL-2 LAB-2	5	Yamato Scientific America	SN310	277	2	8.7	2,400	10.9"x9.5"x17" 277x242x432 mm	20 lbs 9.1 kg	1. Rated 200-240V, 8.5-10A, 50/60Hz.	2,400	12.0%	2,400	13.9%	1	2,400	12.0%	1	2,400	20.5%	1	1,200	7.7%	0.50
45	x	Luminex Multiplex Assay Bead Analyzer ESTIMATE	LUMINEX		1	Equipment	BSL-2 LAB-2	6	Luminex	Magpix	120	2	8.0	960	17"x6.5"x23.5" 430x165x600 mm	38.5 lbs 17.5 kg	1. Rated: 110-120V, 50/60Hz, 200-240V, 585W/960VA. 2. Power found in MAGPIX Install & User Manual, pg 46, P/N 89-00002-00-517, Rev-C.	960	4.8%	960	5.6%	1	960	4.8%	1	960	8.2%	1	480	3.1%	0.50
46	x	PCR Workstation	PCR STATION-3		1	Equipment	BSL-2 LAB-2	6	Lab Companion	PW-01	120	2	2.2	264	38"x28"x24" 964x720x605 mm	123.9 lbs 56.2 kg	1. Rated 120V, 60Hz, 2.2A, 264W.	264	1.3%	264	1.5%	1	264	1.3%	1	264	2.3%	1	132	0.9%	0.50
47	x	Refrigerated Centrifuge	CFUGE-1		1	Equipment	BSL-2 LAB-2	6	Eppendorf	5430R	120	2	8.8	1,050	11.4"x15"x25.2" 290x380x640 mm	123.5 lbs 56.2 kg	1. Rated: 120V, 50/60Hz, 1050W	1,050	5.3%	1,050	6.1%	1	1,050	5.3%	1	1,050	9.0%	1	525	3.4%	0.50
48		Nucleic Acid Extraction System ESTIMATE			1	Equipment	BSL-2 LAB-2	6	Roche Molecular Diagnostics	ManNA Pure 24 Catalog No. 07209519001	208	2	2.2	450	31.5"x37"x26.8" 800x940x680 mm	220 lbs 100 kg	1. Basis of Estimate: MagNA Pure 96 2. BOE Rated: 200-240V, 450W, 50/60Hz.	450	2.3%	450	2.6%	1	450	2.3%	1	450	3.8%	1	225	1.5%	0.50
49	x	Microcentrifuge	MICRO CFUGE-4		1	Equipment	BSL-2 LAB-2	6	VWR	75838-336	120	2	2.1	250	5.9"x8.7"x10.6"		1. 100-240V, 50/60Hz, 250W, per Tech Support.	250	1.3%	250	1.5%	1	250	1.3%	1	250	2.1%	1	125	0.8%	0.50
50	x	Microcentrifuge	MICRO CFUGE-5		1	Equipment	BSL-2 LAB-2	6	VWR	75838-336	120	2	2.1	250	5.9"x8.7"x10.6"		1. 100-240V, 50/60Hz, 250W, per Tech Support.	250	1.3%	250	1.5%	1	250	1.3%	1	250	2.1%	1	125	0.8%	0.50
51	x	Dry Block Heater	BLK HTR-3		1	Equipment	BSL-2 LAB-2	6	VWR	460-0184	208	2	1.6	327	7"x7.9"x15.4" 178x200x391 mm	7 lbs 3.2 kg	1. Rated: 230V, 1.65A, 400W, 50/60Hz 2. Derated to 208V: 208V, 1.57A, 327W 3. UK Plug	327	1.6%	327	1.9%	1	327	1.6%	1	327	2.8%	1	164	1.1%	0.50
52	x	Dry Block Heater	BLK HTR-4		1	Equipment	BSL-2 LAB-2	6	VWR	460-0184	208	2	1.6	327	7"x7.9"x15.4" 178x200x391 mm	7 lbs 3.2 kg	1. Rated: 230V, 1.65A, 400W, 50/60Hz 2. Derated to 208V: 208V, 1.57A, 327W 3. UK Plug	327	1.6%	327	1.9%	1	327	1.6%	1	327	2.8%	1	164	1.1%	0.50
53											120	2	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.50
54																															
55													**Lab Equip Subtotal:**	**6,944**			**Lab Equipment Subtotal:**	**6,944**	**34.8%**	**6,944**	**40.3%**		**6,944**	**34.8%**		**6,944**	**59.3%**		**3,472**	**22.4%**	
56		**APPLIANCES**						•																							
57	x	Refrigerator/Freezer Combo, 4.5 cu ft/4.2 cu ft	REFRIG-6 FREEZER-6		1	Appliance	???		VWR International	10819-926	120	1	3.1	373	66.75"x23.75"x24.5"	200 lbs 91 kg	1. Refrigerator: 115V, 1.74A, 60Hz, 200VA. 2. Freezer: 115V, 1.5A, 60Hz, 173VA. 3. Requires 3" minimum clearance behind refrigerator	373	1.9%	373	2.2%	1	373	1.9%	1	373	3.2%	1	280	1.8%	0.75
58	x	Ice Maker, Air Cooled, Self-Contained	ICE MAKER		1	Appliance			Hoshizaki	F-330BAH	120	1	6.4	771	39"x24"x26"	330 lbs	1. Rated 115V, 6.7A, 60Hz, 1-Ph, 771VA	771	3.9%	771	4.5%	1	771	3.9%	1	771	6.6%	1	578	3.7%	0.75
59	x	Remote Water Purifier System	PURIFIER		1	Appliance			Millipore	Direct-Q 5UV P/N ZRQSVR5WW	120	1	0.7	80	21.3"x11.4"x15"	26.8 lbs	1. Rated 100-250V, 50/60Hz. 2. Per Datasheet: 100V, 0.56A, 80VA; 120V, 0.56A, 80VA; 230V, 0.31A, 80VA.	80	0.4%	80	0.5%	1	80	0.4%	1	80	0.7%	1	60	0.4%	0.75
60											120	1	0.0	0	0			0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.75
61											120	1	0.0	0	0			0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.75
62											120	1	0.0	0	0			0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	0.75
63																															
64																															
65													**Appliance Subtotal:**	**1,224**			**Appliance Subtotal:**	**1,224**	**6.1%**	**1,224**	**7.1%**		**1,224**	**6.1%**		**1,224**	**10.5%**		**918**	**5.9%**	
66		**CCTV VIDEO SYSTEM**						•																							
67											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
68											120	1	0.0	0				0	0.0%	0	0.0%	1	0	0.0%	1	0	0.0%	1	0	0.0%	1.00
69																															
70													**CCTV Subtotal:**	**0**			**CCTV Subtotal:**	**0**	**0.0%**	**0**	**0.0%**		**0**	**0.0%**		**0**	**0.0%**		**0**	**0.0%**	
71		**LIGHTING**						•																							
72	E	Light Fixture: 4ft- LED 4000K	Light-1-6		6	Ceiling		4	Kenall	FES8-48-1-67L40K-DCC-2-DV-XH	120	1	3.4	402	3"x8"x48.75"		1. Rated: 120-277V, 67W, 50/60Hz, 4000K. 2. Dimmable, 0-10V.	402	2.0%	402	2.3%	1	402	2.0%	1	402	3.4%	1	402	2.6%	1.00
73	E	Light Fixture: 4ft- LED 4000K	Light-7-12		6	Ceiling		5	Kenall	FES8-48-1-67L40K-DCC-2-DV-XH	120	1	3.4	402	3"x8"x48.75"		1. Rated: 120-277V, 67W, 50/60Hz, 4000K. 2. Dimmable, 0-10V.	402	2.0%	402	2.3%	1	402	2.0%	1	402	3.4%	1	402	2.6%	1.00
74	E	Light Fixture: 4ft- LED 4000K	Light-13-18		6	Ceiling		6	Kenall	FES8-48-1-67L40K-DCC-2-DV-XH	120	1	3.4	402	3"x8"x48.75"		1. Rated: 120-277V, 67W, 50/60Hz, 4000K. 2. Dimmable, 0-10V.	402	2.0%	402	2.3%	1	402	2.0%	1	402	3.4%	1	402	2.6%	1.00
75	E	Light Fixture: 4ft- LED 4000K	LGT-1 thru LGT-12		12	Exterior		4,5,6	Cooper Lighting	XTOR3B-W	120	1	2.6	312	6.75"x5.75"x4"		1. Rated: 120-277V, 26W, 50/60Hz, 4000K.	312	1.6%	312	1.8%	1	312	1.6%	1	312	2.7%	1	312	2.0%	1.00
76																															
77																															
78													**Lighting Subtotal:**	**1,518**			**Lighting Subtotal:**	**1,518**	**7.6%**	**1,518**	**8.8%**		**1,518**	**7.6%**		**1,518**	**13.0%**		**1,518**	**9.8%**	

Line		Description	Ref	AC Panel	Qty	System	Zone	Module	Mfg	Mfg P/N	Voltage	Poles	Full Load Amps	Total Power VA/Watts	Dimensions HxWxD	Weight	Notes	Total VA(Watts)	Percent KW	Mode-1 VA(Watts)	Mode-1 VA(Watts)	ON/OFF (1 or 0)	Mode-2 VA(Watts)	Mode-2 VA(Watts)	ON/OFF (1 or 0)	Mode-3 VA(Watts)	Mode-3 VA(Watts)%	ON/OFF (1 or 0)	Mode-4 VA(Watts)	Mode-4 VA(Watts)	Duty Cycle (0-1)
		MAIN POWER		•				•																							
		120V/208V, 60Hz, 3-Phase; 277V/480V,60Hz, 3-Phase Generator: 277/480V, ???A, 60Hz, ???KVA/???KW Available Utility Power: 120/208V, 750KVA. New Utility Power for HVAC: 277/480V, 3-Phase																All Equip. On		MODE-1 One A/C Unit On Per Module Heaters On			MODE-2 Two A/C Units On Per Module Heaters Off			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		
79																				Mode-1			Mode-2			Mode-3			Mode-4		
80													TOTAL Volt Amps:	19,951			TOTAL VA:	19,951	100.0%	17,215	86.3%		19,951	100.0%		11,703	58.7%		15,512	77.7%	
81																		All Equip. On		MODE-1 One A/C Unit ON/Module Heaters On			MODE-2 Two A/C Units On, Heaters Off			MODE-3 Equipment Loads			MODE-4 Duty Cycled Loads		

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN	6/2/17	RK



19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTE 5: THE ENERGY MONITOR REQUIRES A DRY CONTACT SIGNAL FROM THE ATS INDICATING WHEN THE ATS CHANGES STATE FROM NORMAL TO EMERGENCY AND EMERGENCY BACK TO NORMAL. THE BMS CONTROLLER USES THIS SIGNAL TO RESTART THE BMS SYSTEM WHENEVER THERE IS A POWER LOSS.

NOTE 4: 277/480V WIRE COLOR CODE:
1. PHASE-1, BROWN
2. PHASE-2, ORANGE
3. PHASE-3, YELLOW
4. NEUTRAL, GRAY
5. GROUND, GREEN/YELLOW

120/208V WIRE COLOR CODE:
1. PHASE-1, BLACK
2. PHASE-2, RED
3. PHASE-3, BLUE
4. NEUTRAL, WHITE
5. GROUND, GREEN/YELLOW

NOTE 3: ENERGY MONITOR SENSES 3-PHASE VOLTAGE AND USES CURRENT TRANSFORMERS TO MEASURE 3-PHASE CURRENT.

NOTE 2: "ATS STATE" IS A DRY CONTACT, 2-WIRE SIGNAL FROM THE ATS WHICH REPRESENTS ATS IS IN GENERATOR STATE WHEN CONTACTS ARE CLOSED.

NOTE 1: MDP MAIN CIRCUIT BREAKER RATING IS 250A.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: R. KITAOKA	4/19/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

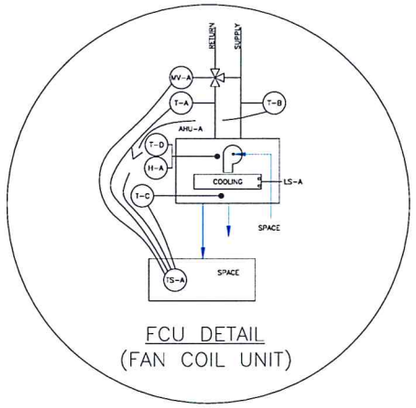
LINE DIAGRAM, AC POWER DISTRIBUTION, PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 906-2089-00 REV. 1

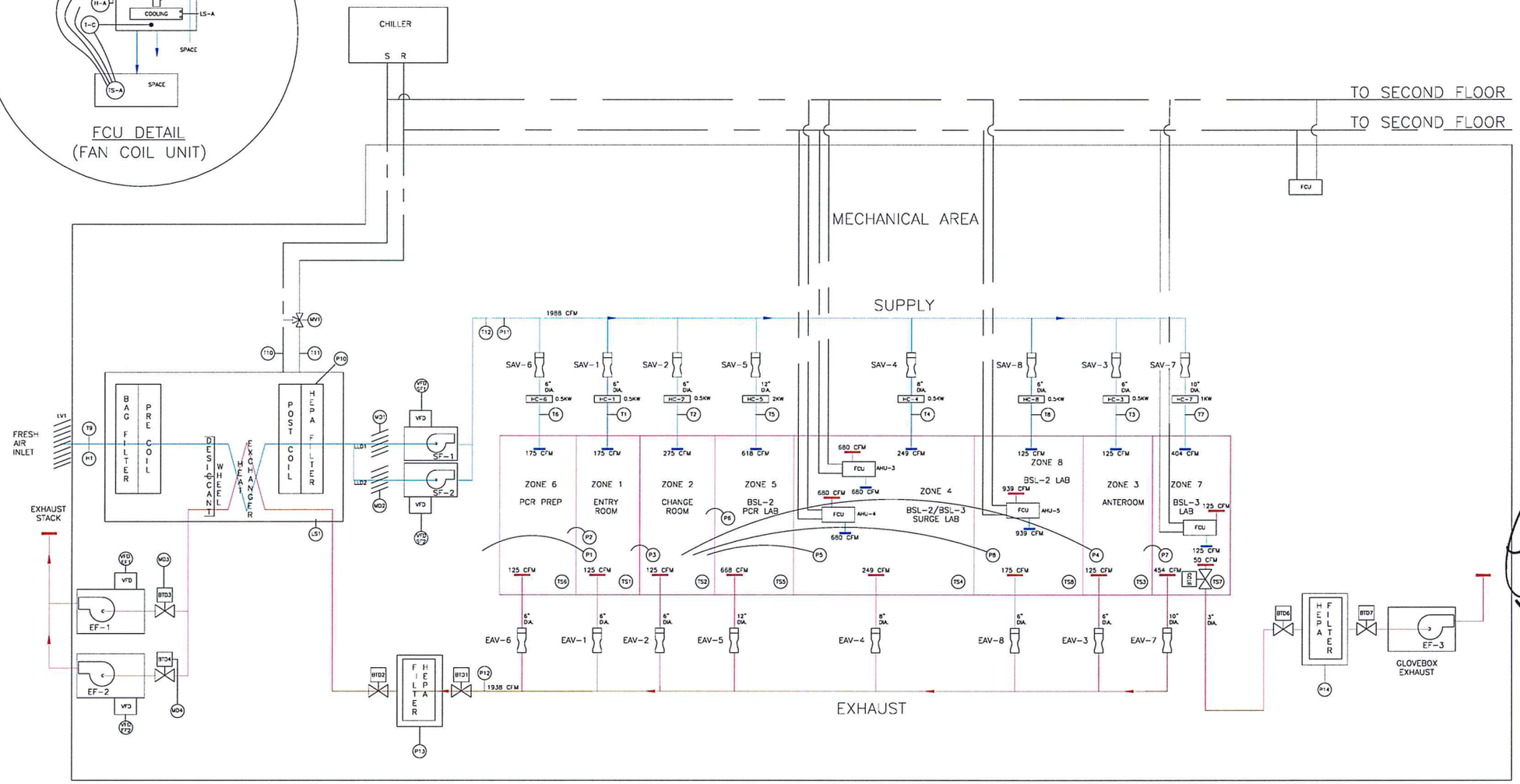
SCALE | FILE NO. 906-2089-00 | SHEET 1 OF 1

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/24/17	KJ	PM
2	UPDATED AHU NAMES	06/2/17	KJ	PM
3	UPDATED AHU COMPONENTS	06/21/17	BAS	MAE

LEGEND			
AHU	AIR HANDLER UNIT	P	PRESSURE DIFFERENTIAL SENSOR
BTD	BUBBLE TIGHT DAMPER	SAV	SUPPLY AIR VALVES
EAV	EXHAUST AIR VALVE	SF	SUPPLY FAN
EF	EXHAUST FAN	T	TEMPERATURE SENSOR
H	HUMIDITY	TS	ROOM THERMOSTAT
HC	HEATING COIL	VFD	VARIABLE FREQUENCY DRIVE
LS	LEVEL SENSOR	LLD	LOW LEAK DAMPER
MD	MOTORIZED DAMPER	FCU	FAN COIL UNIT
MV	MOTORIZED VALVE	LV	LOUVER



FCU DETAIL
(FAN COIL UNIT)



19JUL17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. ALL DUCTWORK SHALL BE 18/20 GA TYPE 304 STAINLESS STEEL ALL WELDED CONSTRUCTION AND LEAK TESTED ON SITE ACCORDING TO SMACNA HVAC DUCT LEAKAGE TEST MANUAL.

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K. JOHNSON	05/23/17
APPROVAL: M.EWACHIW	05/24/17
MATERIAL N/A	
FINISH N/A	

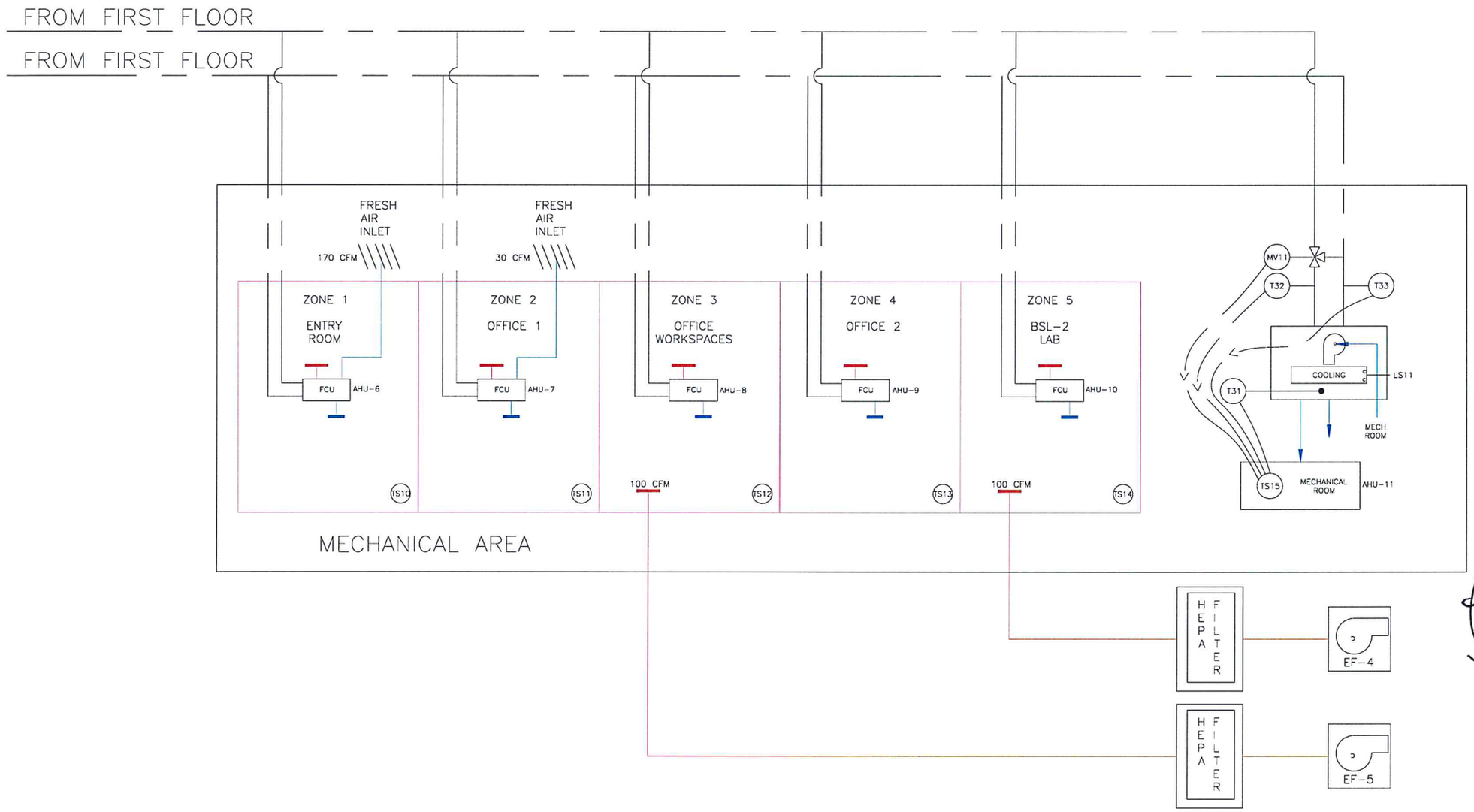
Germfree Laboratories

SCHEMATIC, HVAC SYSTEM
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 909-0041-00 REV. 3

SCALE N/A FILE NO. SHEET 1 OF 2

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	05/24/17	KJ	PM
2	UPDATED AHU NAMES	06/2/17	KJ	
3	UPDATED AHU COMPONENTS	06/21/17	BAS	MAE



19 JUL 17

APPROVAL DRAWING

NO CHANGES

CUSTOMER SIGNATURE:

APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. OPERATION DEPICTED IN BSL-2 MODE IN ZONE 3
2. EF-5 IS NOT OPERATED WHEN ZONE 3 SERVES AS OFFICE SPACE

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: K.JOHNSON	05/23/17
APPROVAL: M.EWACHIW	05/24/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

SCHEMATIC, HVAC SYSTEM
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 909-0041-00 REV. 3

SCALE N/A FILE NO. SHEET 2 OF 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	INITIAL DESIGN.	6/8/17	RK

APPROVAL DRAWING

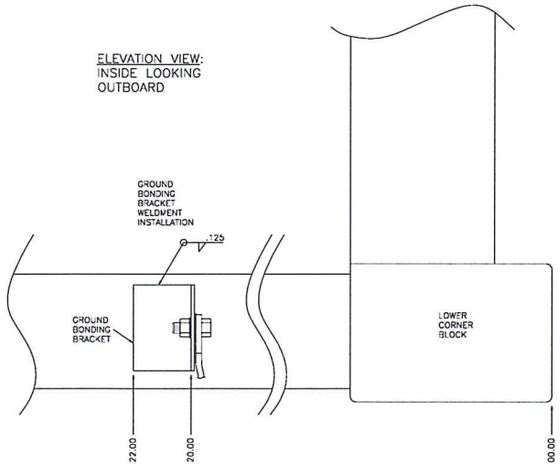
NO CHANGES

APPROVED WITH CHANGES

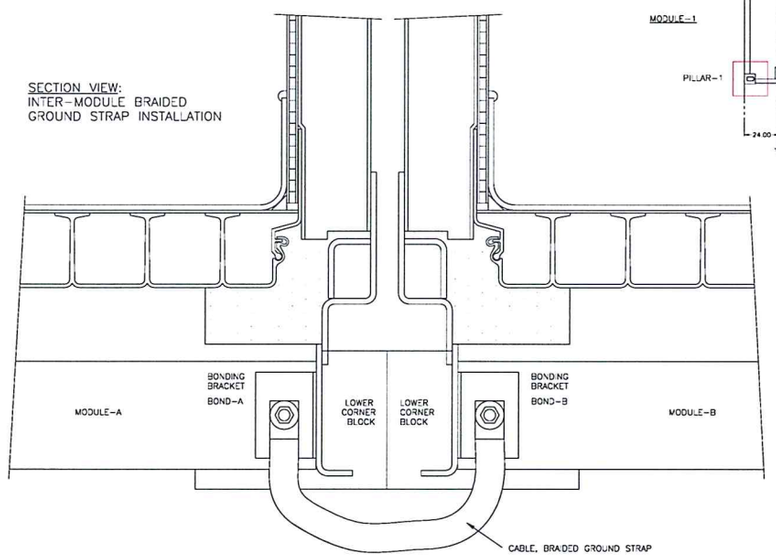
REJECTED WITH MARK-UPS

19 Jul 17

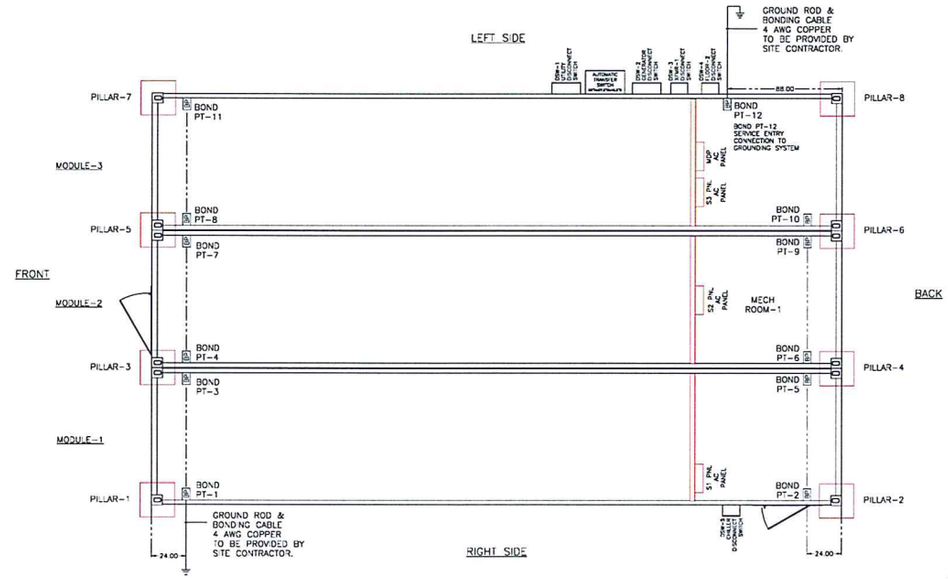
ELEVATION VIEW:
INSIDE LOOKING OUTBOARD



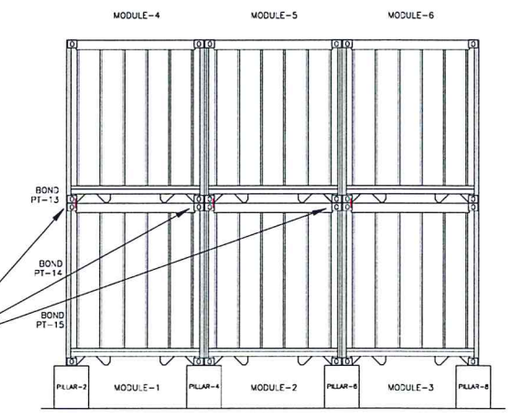
SECTION VIEW:
INTER-MODULE BRAIDED GROUND STRAP INSTALLATION



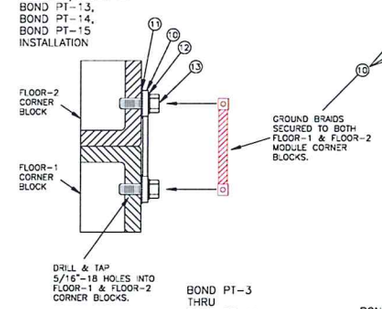
GROUND BONDING LOCATIONS



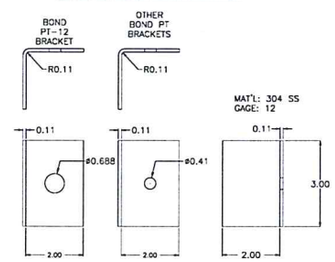
EXTERIOR BACK



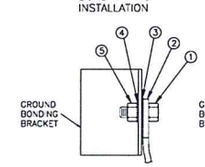
FLOOR-1/FLOOR-2 BOND PT-13, BOND PT-14, BOND PT-15 INSTALLATION



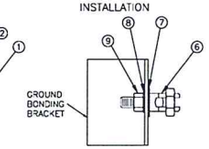
GROUND BONDING BRACKET



BOND PT-3 THRU BOND PT-10 INSTALLATION



BOND PT-12 & BOND PT-1 INSTALLATION



GERMFREE TO SUPPLY THE FOLLOWING:
- BONDING BRACKETS
- GROUND BRAIDED STRAPS
- HARDWARE (TO CONNECT STRAPS AND BRACKETS)

[REFER TO ITEMS IN BILL OF MATERIAL LISTED BELOW]

PROVIDED BY SITE CONTRACTOR:
- GROUND RODS & WIRE TO BOND PT-1 & BOND PT-12.

ITEM	P/N	DESCRIPTION	QTY
13	130-0079-00	BOLT, 5/16"-18x1.25"L, HEX HEAD, FULL THREAD.	6
12	122-0089-00	WASHER, 5/16", 316 SS, INTERNAL TOOTH LOCK, 0.61" OD.	6
11	122-0032-00	WASHER, 5/16" SS LARGE OD FLAT, 0.344"x0.875".	6
10	583-5003-00	CABLE, BRAIDED GROUND STRAP, 5.9" LONG, 0.34" HOLE DIA, 316 STAINLESS STEEL, 31.57 KCMIL AWG.	3
9	121-0083-00	NUT, 5/8"-11, SS, HEX, HEAVY, 1-1/16" FLATS.	2
8	122-0083-00	WASHER, LOCK, EXT. STAR, 5/8", SS, 1.07"OD.	2
7	122-0082-00	WASHER, FLAT, 5/8", SS, 1.5"OD.	2
6	116-0103-01	CONN, GND POST, CABLE TO FLAT, #1-#4/0 STRDD OR SOLID, 5/8"-11 STUD, 2-WIRE.	2
5	121-0061-00	NUT, 3/8"-16, SS, HEX, HEAVY, 11/16" FLATS.	8
4	122-0057-00	WASHER, LOCK, EXT. STAR, 3/8", 18-8 SS, 0.7"OD.	8
3	122-0034-00	WASHER, FLAT, 3/8" SS, .406"x1"x.050"	8
2	583-5001-01	CABLE, BRAIDED GROUND STRAP, 18" LONG, 0.375" HOLE DIA, TINNED CU, #4 AWG.	4
1	130-0047-00	BOLT, HEX, 3/8"-16x1", 316 SS, FULL THREAD	8

NOTE 5: BOND PT-2 & BOND PT-11 ARE BONDING POINTS TO CONNECT TO ADDITIONAL GROUND RODS IF REQUIRED.

NOTE 4: CONNECT BOND PT-1 & BOND PT-12 TO GROUND RODS INSTALLED BY SITE CONTRACTOR.

NOTE 3: SERVICE ENTRY & LAB GROUND RODS TO BE PROVIDED BY SITE CONTRACTOR.

NOTE 2: CONNECT BOND PT-12 TO SERVICE ENTRY GROUNDING SYSTEM & LAB GROUNDING SYSTEM.

NOTE 1: SERVICE ENTRY GROUNDING SYSTEM GROUND RESISTANCE SHALL BE 25 OHMS OR LESS; RECOMMEND 5 OHMS OR LESS SINCE LAB HAS ELECTRONIC EQUIPMENT. GROUND RESISTANCE TO BE VERIFIED BY SITE CONTRACTOR.

REFERENCE DOCUMENTS		
LINE	KIT/DWG	DESCRIPTION
1	233-1102-02	KIT, GROUNDING & BONDING

NOTE 7: TIGHTEN NUT TO 8 FOOT-POUNDS (11 NEWTON-METERS).

NOTE 6: HARDWARE INSTALLATION SEQUENCE IS IMPORTANT.

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±
.XXX = ±
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: R. KITAOKA	6/8/17
APPROVAL:	
MATERIAL	
FINISH	

Germfree Laboratories

LOCATIONS, GROUNDING & BONDING, PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 910-0081-00 REV. 2

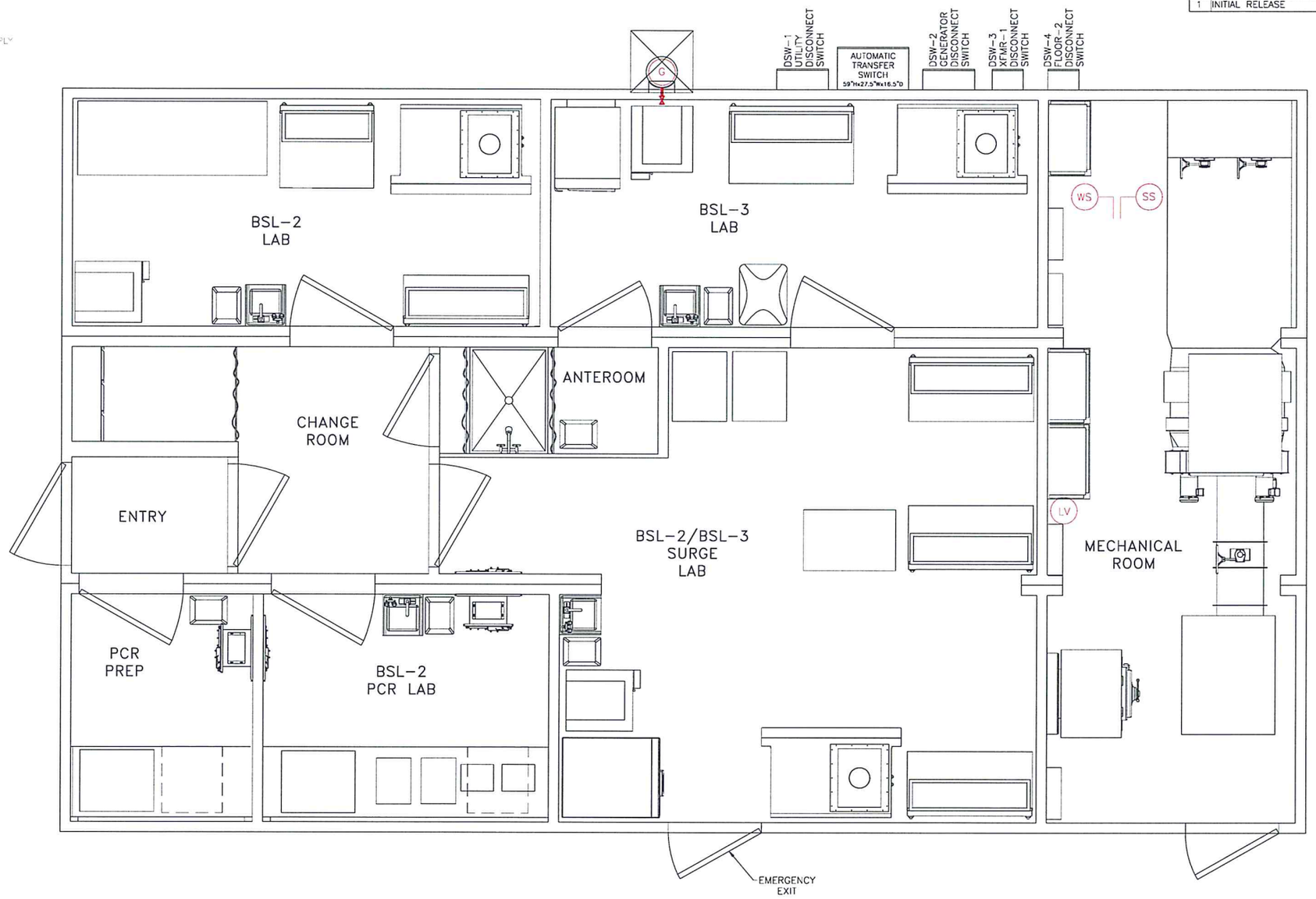
SCALE | FILE NO. 910-0081-00 | SHEET 1 OF 1

C — GAS CYLINDERS LOCATION

SS — 3" SANITARY SEWER

WS — 3/4" FRESH WATER SUPPLY

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/15/17	BAS	MAE



PLAN VIEW

19JUL17

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. REFER TO 905-0094-00 AND 906-2089-00 FOR ELECTRICAL UTILITY DETAILS

NEXT ASSY:

WIRE LIST:

PARTS LIST:

UNLESS OTHERWISE SPECIFIED: TOLERANCES: .XX = ±.03 .XXX = ±.010 FRACTIONS = ±1/16 ANGLES = ±1° DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING.

SIGNATURES	DATE
DRAWN: D. SERLE	06/15/17
APPROVAL: M. EWACHIW	06/15/17
MATERIAL N/A	
FINISH N/A	

Germfree Laboratories

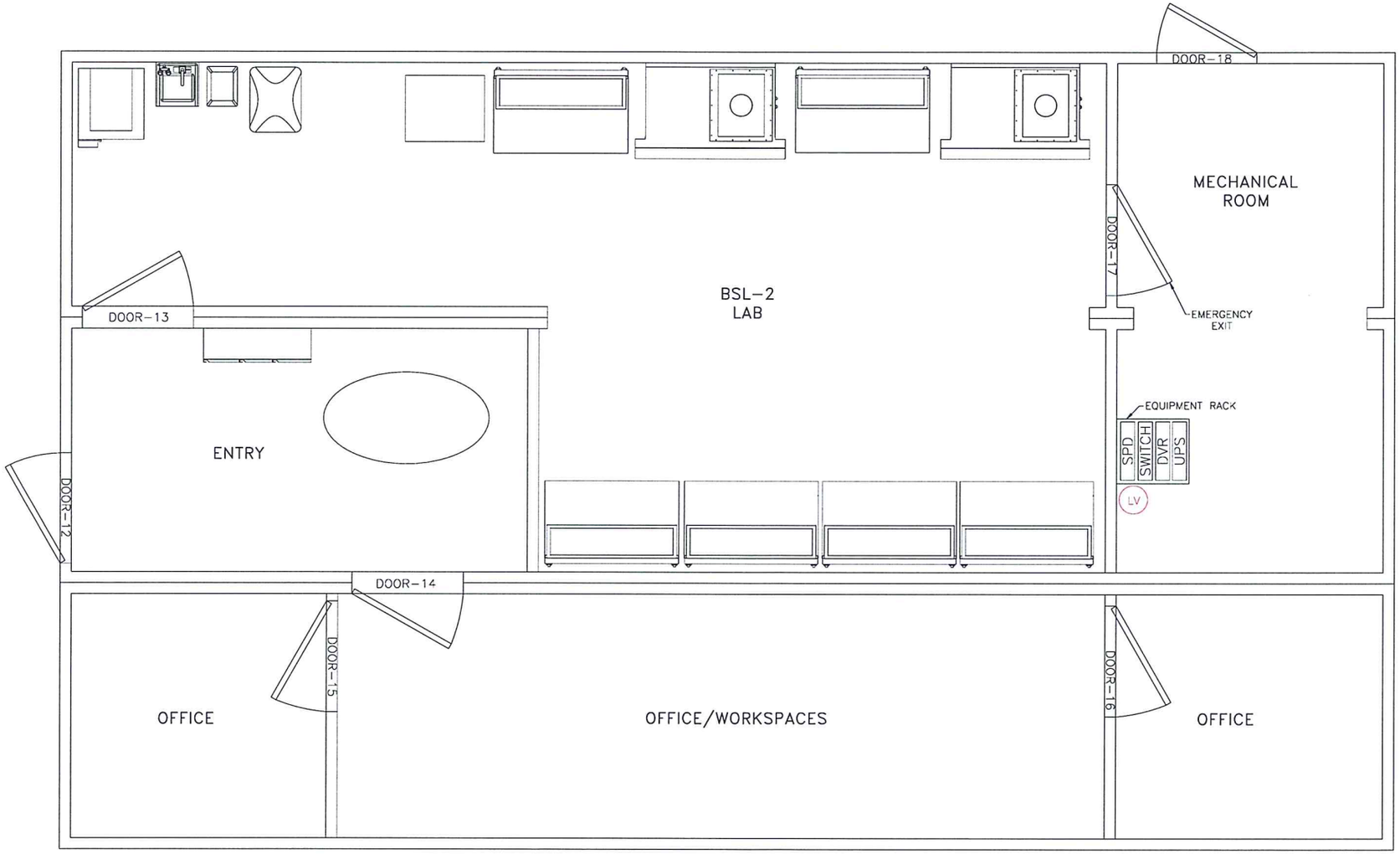
LOCATIONS UTILITIES
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 910-0083-00 REV. 1

SCALE N/A FILE NO. SHEET 1 OF 2

(LV) - LOW VOLTAGE CONNECTION LOCATIONS

REVISIONS				
REV	DESCRIPTION	DATE	DRAWN BY	APPROVED
1	INITIAL RELEASE	06/15/17	BAS	MAE



PLAN VIEW

193047

APPROVAL DRAWING

☐ NO CHANGES

CUSTOMER SIGNATURE:

☐ APPROVED WITH CHANGES

CUSTOMER SIGNATURE:

☐ REJECTED WITH MARK-UPS

CUSTOMER SIGNATURE:

NOTES:

1. REFER TO 905-0094-00 AND 906-2089-00 FOR ELECTRICAL UTILITY DETAILS

NEXT ASSY:	
WIRE LIST:	
PARTS LIST:	

UNLESS OTHERWISE SPECIFIED:
TOLERANCES:
.XX = ±.03
.XXX = ±.010
FRACTIONS = ±1/16
ANGLES = ±1°
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

SIGNATURES		DATE
DRAWN:	B. SERLE	06/15/17
APPROVAL:	M. EWACHIW	06/15/17
MATERIAL	N/A	
FINISH	N/A	

Germfree Laboratories

LOCATIONS UTILITIES
PD16011-USVI MODULAR BSL-3 LAB

DRAWING NO. 910-0083-00 REV. 1

SCALE N/A FILE NO. SHEET 2 OF 2