Southern Nevada Health District
700 S. MARTIN L. KING BLVD | LAS VEGAS | NV 89106

BSL–3 Laboratory – Interior Improvements Basis of Design

EWINGCOLE PROJECT NUMBER: 20230523

February 20, 2024
Rev 1 May 10, 2024

401 West A Street, Suite 320, San Diego, CA 92101 **TEL** 949.417.7550 **ewingcole.com**

CONTENTS

TAB 1 - EXECUTIVE SUMMARY

BSL–3 Laboratory – Interior Improvements BOD

EXECUTIVE SUMMARY

1.1 PROJECT EXECUTIVE SUMMARY

Southern Nevada Health District (SNHD) awarded EwingCole the design and engineering for the BSL-3 Laboratory Project located at 700 South MLK Boulevard in Las Vegas, NV. The revised scope is a laboratory building program for 12,600 NSF of space. This revised scope was approved on March 26, 2024, and this revised program is included in the BOD update.

The program includes two-stories of spaces for the SNHD Network with both floors connected to the South side of the current building on the parcel. The program includes the following spaces: Biology Whole Genome Sequencing (WGS) Lab Suite, BSL-3 Lab Suite and the Clinical Microbiology Lab Suite. These essential program areas are supported by amenity, administration and building support areas to complete the program for the building. The project kickoff was held on September 15, 2023 and the Room Data Sheets (RDS's) documenting the program were final issued on January 7, 2024. These were updated once after this issuance and are included in this Basis of Design as an Appendix Section.

The site is 1.4 Acres and currently supports the existing 15,000 SF building as shown here:

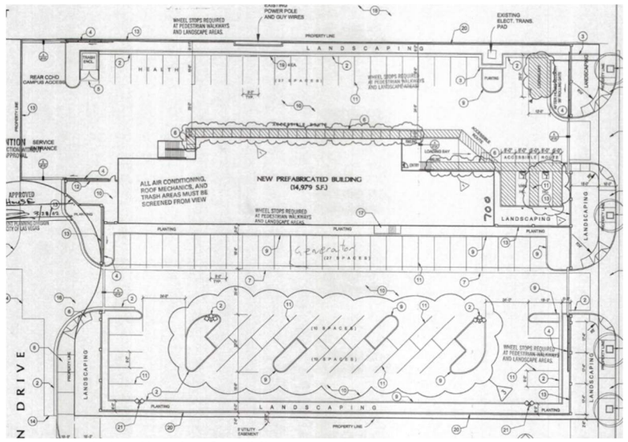


Figure 1 Existing Site Plan & Building Footprint

The new building will almost double the area on the site and together will support the SNHD's mission "To assess, protect, and promote the health, the environment, and the well-being of southern Nevada communities, residents, and visitors." The Health District is one of the largest local public health organizations in the United States, serving more than 2.3 million residents and safeguarding the public health of more than 40 million visitors to Las Vegas annually.

Overall, the project accommodates a current headcount of 45 FTE's that is expected to grow to 60 FTE's once the new facility is occupied. These projections reflect the SNHD teams assumptions for ongoing projects and initiatives to be served by their group and this project space.

The proposed program and resulting plan layouts for both floors are based on extensive user meetings over the past four months. Participation included key stakeholders from Dr. Kan's laboratory group and Sean Beckhams facilities group. Additionally, input from SNHD's EHS provided oversight and direction.

The room adjacencies were developed during the programming phase and were used to align the building floor plans and as that first step in developing the test-fits and then the Approved Conceptual Design Floor Plans for the building. The Adjacency Diagrams are shown here:

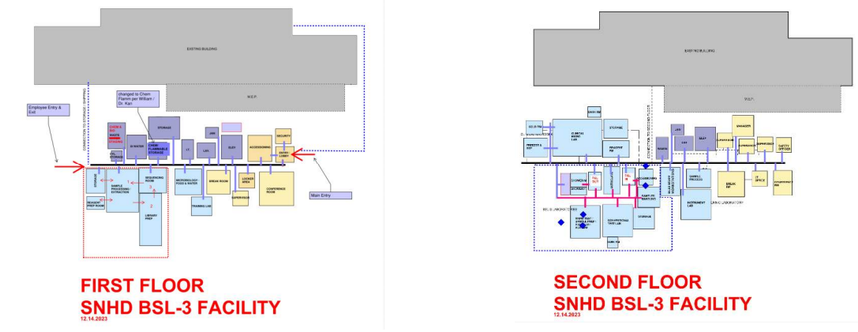


Figure 2 Adjacency Diagrams

The revised floor plans for the revised scope of the project, as approved on March 26, 2024, are included in the Appendix of this report and shown here:

Figure 3 - Approved First Floor Plan

EXECUTIVE SUMMARY

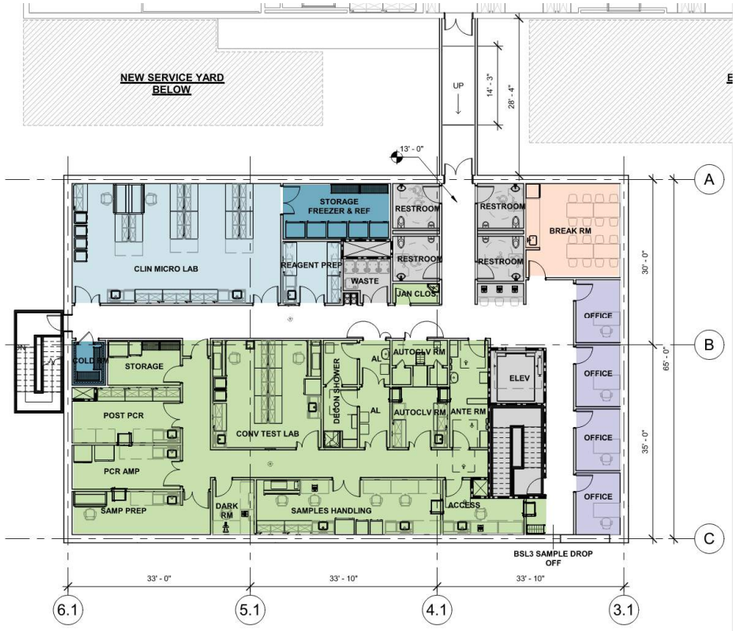


Figure 4 - Approved Second Floor Plan

Programming Summary

The programming effort to date has resulted in the following distribution of square footages for each floor of the building.

RDS No.			Total NSF	Total GSF
		Total First Floor Building	**5,075**	**6,329**
		Total Second Floor Building	**4,396**	**6,276**
		Total Building	**9,471**	**12,605**

Figure 5 Space Square Footage Summary

The overall space tabulations of the programming are noted here and are further defined in the 03 Architecture section of this BOD:

RDS No.			SF/Rm	# of Rms	Total NSF	Total GSF
ENTRY / AMENITY						
1.1		Entry Vestibule / Lobby	80	1	94	118
~~1.1~~		~~Lobby~~	125	0	0	0
~~1.1~~		~~Security Room~~	~~140~~	~~0~~	~~0~~	~~0~~
1.1		Accessioning	245	1	142	178
1.2		Locker Area	30	1	49	61
		ENTRY / AMENITY Subtotal			285	356
LABORATORIES						
		~~Laboratory Response Network Chemical (LRN-C) LABORATORY SUITE~~				
~~1.3~~		~~Instrument Lab~~	~~400~~	~~0~~	~~0~~	~~0~~
~~1.3~~		~~Gas Cylinder Closet~~	~~20~~			
~~1.5~~		~~Sample Processing Lab~~	~~200~~	~~0~~	~~0~~	~~0~~
		Molecular Bio - Whole Genome Sequencing (WGS) Suite				
1.4		Sample Processing Lab	325	1	385	501
1.4		Pre-Library Prep	600	1	665	865
1.4		Sequencing Room	450	1	513	667
~~1.4~~		~~Mol Bio Storage Room~~	0	0	0	0
1.4		Post Library Prep Room	370	1	416	541
		LABORATORY Subtotal			1,979	2,573
OFFICES & CONFERENCE ROOMS						
1.6		Supervisor Offices (Genome Sequencing WGS)	100	1	100	120
1.7		Conference Room	500	1	216	259
1.8		Break Room	240	1	137	164
		OFFICES & CONFERENCE Subtotal			453	544
BUILDING SUPPORT						
~~1.9~~		~~Men's & Women's Restrooms~~	~~220~~	~~2~~	~~314~~	~~393~~
1.10		Elevator & Elevator Equipment Room	210	1	190	228
1.11		IT Server Room	100	1	92	110
~~1.12~~		~~Stairs, Internal~~	~~190~~	~~1~~	~~225~~	~~281~~
1.12		Stairs, External	190	0	0	0
1.13		Janitor's Closet	60	1	30	36
1.14		Biological Waste Staging / Chemical Waste Staging	200	1	105	126
~~1.14~~		~~Chemical Waste Staging~~	~~100~~	~~0~~	~~0~~	~~0~~
1.15		Gas Cylinder Storage	50	1	68	82
1.16		Chemical & Flammable Storage	150	1	187	224
1.17		General Storage Room	200	1	131	157
1.17		MPOE (8' x 10')	80	1	56	67
1.17		Fire Riser Room (8' x 10')	80	1	65	78
~~1.18~~		~~Main Electrical Room (18' x 28')~~	~~500~~	~~1~~	~~390~~	~~468~~
1.18		Mechanical Room / DI Water Room (18' x 28')	500	1	505	606
~~1.19~~		~~DI Water Room~~	~~200~~	~~0~~	~~0~~	~~0~~
~~1.19~~		~~LN2 Fill Station~~	~~100~~	~~0~~	~~0~~	~~0~~
		BUILDING SUPPORT Subtotal			2,358	2,857

Figure 6 First Floor Space Tabulation

EXECUTIVE SUMMARY

RDS No.			SF/Rm	# of Rms	Total NSF	Total GSF
ENTRY / AMENITY						
		ENTRY / AMENITY Subtotal			0	0
LABORATORIES						
	BSL-3 LABORATORY SUITE					
2.1		Accessioning Room (BSL-3)	120	1	113	147
2.1		Sample Handling Room (BSL-3)	325	1	330	429
2.1		Lab Storage Room (BSL-3)	150	1	106	138
2.1		Conventional Test Lab (BSL-3)	420	1	378	491
2.1		**Rapid Test Lab Suite (BSL-3)** Sample Prep	160	1	194	252
2.1		**Rapid Test Lab Suite (BSL-3)** PCR Amplification	160	1	156	203
2.1		**Rapid Test Lab Suite (BSL-3)** Post PCR	210	1	185	241
2.1		Dark Room (BSL-3)	60	1	75	98
2.2		Personnel Air Lock (PAL) In (BSL-3)	130	1	135	176
2.2		Decontamination Autoclave Area (BSL-3)	225	1	193	251
2.2		Personnel Air Lock (PAL) Out & Equipment Air Lock (BSL-3)	150	1	106	138
2.2		PAL Out Decontamination Shower (BSL-3)	160	1	119	155
2.2		BSL Staff Area	160	1	32	42
~~**2.3**~~	~~**Training Lab**~~	~~Training Lab~~	~~160~~	~~0~~	~~0~~	~~0~~
~~**2.4**~~	~~**Environmental Microbiology (EM)**~~	~~Microbiology - Food & Water~~	~~400~~	~~0~~	~~0~~	~~0~~
	CLINICAL MICROBIOLOGY LABORATORY SUITE					0
2.5		Clinical Micro lab	800	1	816	1,061
~~**2.5**~~		~~Dark Room~~	~~60~~	~~0~~	~~0~~	~~0~~
2.5		Lab Storage / Freezer and Refrigerator Room	120	1	196	255
2.5		Reagent Prep Room	180	1	118	153
~~**2.6**~~		~~Freezer and Refrigerator Room~~	~~175~~	~~0~~	~~0~~	~~0~~
2.6		Walk-in Cold Room	100	1	32	42
		LABORATORY Subtotal			3,284	4,269
OFFICES & CONFERENCE ROOMS						
2.7		Laboratory Manager	200	1	92	115
2.7		IT Office	100	1	90	113
2.7		Safety Officer	100	1	90	113
2.7		Supervisor's Office	100	1	90	113
~~**2.8**~~		~~Conference Room~~	~~200~~	~~0~~	~~0~~	~~0~~
2.9		Break Room	300	1	288	360
		OFFICES & CONFERENCE Subtotal			468	585
BUILDING SUPPORT						
2.10		Men's & Women's Restrooms	220	2	314	393
2.11		Elevator	80	1	80	96
2.12		Stairs, Internal	190	1	158	198
2.12		Stairs, External	190	0	0	0
2.13		Janitor's Closet	60	1	30	36
2.14		Waste Area	100	1	62	74
2.14		Circulation	100	1	500	625
		BUILDING SUPPORT Subtotal			644	1,421
WAREHOUSE						
		Loading Dock	500	0	0	0
		Shipping Area	150	0	0	0
		WAREHOUSE Subtotal			0	0

Figure 7 Second Floor Space Tabulation

1.2 EXECUTIVE SUMMARY BACKGROUND BY DISCIPLINE

Listed below are the key items by discipline section that are further defined in this BOD report.

Code Tab 2
- Defined Construction Type
- Building Occupancy
- Allowable Area & Height
- Hazardous Materials
- Plumbing Fixture Calculation

Architecture Tab 3
- Program Overview
- Space Tabulation
- Architectural Finishes

Structure Tab 4
- Structural System for building

Mechanical Tab 5
- Defined mechanical criteria and HVAC options to address the BSL laboratories

Electrical Tab 6
- Building electrical requirements

Plumbing & Fire Protection Tab 7
- Building plumbing & fire protection requirements

Process
- No process scope is included in this BOD report.

1.3 NEXT STEPS/PATH FORWARD/OPEN ITEMS

This BOD report has been revised to provide additional information for the issuance of the 50% Design Development documents that are being used for General Contractor selection.

TAB 2 - CODE ANALYSIS

BSL–3 Laboratory – Interior Improvements BOD

CODE ANALYSIS

2.1 INTRODUCTION

As part of the Basis-of-Design / Programming phase of the project, EwingCole has executed a detailed review of applicable building codes to understand their impact on the design, foster informed decision-making, and ultimately help ensure a code-compliant project. This section of the report is intended to summarize this complex aspect of the project in a simplified manner and highlight the major code-related considerations shaping the project.

2.2 APPLICABLE CODES

The 2021 IBC, IFC, 2018 IRC, IEBC, IECC, UPC, UMC, ISPSC and the 2017 NEC codes have been adopted by the city of Las Vegas.

The 2021 International Building Code (IBC) and International Fire Code (IFC) were adopted in September 2022. The effective date of these codes is March 23, 2023.

- 2021 International Building Code and Amendments
- 2021 International Fire Code and Amendments
- 2018 International Energy Conservation Code and Amendments
- 2018 Uniform Mechanical Code and Amendments
- 2017 National Electrical Code and Amendments, NFPA 70
- 2018 Uniform Plumbing Code and Amendments
- American National Standards Institute (ANSI): Applicable Sections
- ASCE 7-16 Supplement 1 Minimum Design Loads for Buildings and Other Structures
- ACI 318-19 Building Code Requirements for Structural Concrete
- AISC 341-16 Seismic Provisions for Structural Steel Buildings
- AISC 360-16 Specification for Structural Steel Buildings
- AISI S100-16/S1-18 Specification for the Design of Cold-formed Structural Steel Members
- AWS D1.1-15 Structural Welding Code for Steel
- ASHRAE Standard 15: Safety Code for Mechanical Refrigeration
- ASHRAE Standard 62.1: Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1: Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings
- ASHRAE Standard 170: Ventilation of Health Care Facilities
- ASHRAE Handbooks, Latest Editions
- National Fire Protection Association (NFPA): All Applicable Standards
- ASME B31 Code for Pressure Piping

2.3 CONSTRUCTION TYPE

Chapter 6 of the International Building Code (IBC) sets forth requirements for construction type. Applicable to alterations, the assignment of construction type is intended to establish the hourly fire-resistance ratings of the major structural and non-structural components of the building, including structural frame, roof, walls, partitions etc. and the building's fire separation distance. Correct classification of the building by construction type is essential, since many code requirements, such as building height and area, are dependent on it. If a building is placed in the wrong construction type, for example in a higher category than required, it would result in higher than necessary construction costs. If it is incorrectly categorized into a lower type of construction, it will not be built in a manner that accounts for the risks inherent to its size and function.

Our analysis of the existing building has led to the classification of Type VB, per Table 601 of the IBC. The primary structural frame is steel, non-protected. These conditions categorize the building under Type V.

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV				TYPE V	
	A	B	A	B	A	B	A	B	C	HT	A	B
Primary structural frame[f] (see Section 202)	3[a, b]	2[a, b, c]	1[b, c]	0[c]	1[b, c]	0	3[a]	2[a]	2[a]	HT	1[b, c]	0
Bearing walls												
Exterior[e, f]	3	2	1	0	2	2	3	2	2	2	1	0
Interior	3[a]	2[a]	1	0	1	0	3	2	2	1/HT[g]	1	0
Nonbearing walls and partitions Exterior	See Table 705.5											
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	0	0	0	See Section 2304.11.2	0	0
Floor construction and associated secondary structural members (see Section 202)	2	2	1	0	1	0	2	2	2	HT	1	0
Roof construction and associated secondary structural members (see Section 202)	1 1/2[b]	1[b, c]	1[b, c]	0[c]	1[b, c]	0	1 1/2	1	1	HT	1[b, c]	0

Table 705.5 evaluates the separation distance between buildings and the fire-resistance rating of the exterior walls based on the building occupancy. In the case of the existing building the occupancies include Groups B (Business) and S-1 (moderate hazard storage.) The exterior walls are non-bearing, with unprotected windows (i.e. not fire-resistance rated or equipped with opening protectives such as fire shutters.) The existing building is separated from the proposed building by twenty-nine feet, confirming that Type VB is the correct construction type.

TABLE 705.5
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE[a, d, g]

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H[e]	OCCUPANCY GROUP F-1, M, S-1[f]	OCCUPANCY GROUP A, B, E, F-2, I, R[i], S-2, U[h]
X < 5[b]	All	3	2	1
5 ≤ X < 10	IA, IVA	3	2	1
	Others	2	1	1
10 ≤ X < 30	IA, IB, IVA, IVB	2	1	1[c]
	IIB, VB	1	0	0
	Others	1	1	1[c]
X ≥ 30	All	0	0	0

2.4 BUILDING OCCUPANCY GROUPS

The IBC requires that all "structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed" in Chapter 3. Based on the program, the building's main programmatic functions will include laboratories for testing and research, offices, and storage spaces. The laboratories and

office areas qualify as Business Group B. The storage areas qualify as Moderate-hazard Storage Group S-1. EwingCole recommends that the building be designed as Mixed, Separated Occupancy B/S-1 per the requirements of Chapter 5, Section 508.4 Under this designation, there is no requirement to separate the B and S-1 occupancies from each other by fire-resistance rated walls, partitions or barriers. This is clearly indicated by Table 508.4 which shows the no separation required for these occupancies in a fully-sprinklered building.

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)[f]

OCCUPANCY	A, E		I-1[a], I-3, I-4		I-2		R[a]		F-2, S-2[b], U		B[e], F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1[a], I-3, I-4	1	2	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	2	NP	2	NP	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R[a]	1	2	1	NP	2	NP	N	N	1[c]	2[c]	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2[b], U	N	1	1	2	2	NP	1[c]	2[c]	N	N	1	2	NP	NP	3	4	2	3	2	NP
B[e], F-1, M, S-1	1	2	1	2	2	NP	1	2	1	2	N	N	NP	NP	2	3	1	2	1	NP
H-1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	N	NP	NP	NP	NP	NP	NP	NP
H-2	3	4	3	NP	3	NP	3	NP	3	4	2	3	NP	NP	N	NP	1	NP	1	NP
H-3, H-4	2	3	2	NP	2	NP	2	NP	2	3	1	2	NP	NP	1	NP	1[d]	NP	1	NP
H-5	2	NP	2	NP	2	NP	2	NP	2	NP	1	NP	NP	NP	1	NP	1	NP	N	NP

IBC Section 304 allows for the designation of research and testing laboratories as Group B occupancy. This will be the approach used for this project.

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Laboratories: testing and research

The Laboratory suite Option will not be considered as it references a Group B Educational occupancy.

[F] LABORATORY SUITE. A fire-rated, enclosed laboratory area providing one or more laboratory spaces within a Group B educational occupancy that includes ancillary uses such as offices, bathrooms and corridors that are contiguous with the laboratory area, and are constructed in accordance with Section 428.

2.5 ALLOWABLE BUILDING AREA & HEIGHT

EwingCole has analyzed the allowable building area for the mixed-use, separated occupancies scenario described above. We have confirmed that the proposed design is compliant with the requirements of Chapter 508 the IBC, and will allow for ample flexibility regarding the relative proportions of the proposed B and S-1 occupancy areas. Our analysis accounted for allowable increases for open building frontage and sprinkler protection. In short, the code requires that on each floor, the sum of the ratios of the actual area divided by the allowable area for each occupancy shall not exceed 1. Per the current layout, the equations are:

B Occupancy: 9,892 actual SF / 54,000 allowable SF = 0.19
S-1 Occupancy: 3,563 actual SF / 54,000 allowable SF = 0.07
Sum of the ratios = **0.26** (sum < 1 complies)

Again, should the above ratios evolve within reasonably anticipated ranges, it should not present any problems in terms of compliance with building allowable area.

Chapter 504 sets limits on building height based upon occupancy classification, sprinkler system protection, and type of construction. Based on these criteria, the allowable height is 60 feet. The existing building and the new proposed are well within that limitation.

TABLE 504.3
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE[a]

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION												
	See Footnotes	Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A, B, E, F, M, S, U	NS[b]	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	270	180	85	85	70	60

The proposed two-story building is compliant to the maximum building height of 60 feet.

2.6 LIFE SAFETY

Exit Capacity

An initial review of the planned building's total exit capacity has been excluded. Exit capacity will be assessed against the approved test fit layout.

2.7 ACCESSIBILITY

Accessibility requirements for this facility will be governed by Chapter 11 of the IBC and will apply to all common-use portions of the facility from the accessible parking spaces to the building interior. Limited-access spaces such as mechanical rooms, electrical rooms, and potentially BSL-3 areas are not required to comply.

The existing parking facilities are excluded from this assessment at this time. Parking modifications will be reassessed as the siting of the facility is approved and the new parking requirements are confirmed.

Plumbing fixture quantities have been evaluated, and the number of fixtures has been determined per Chapter 29 of the IBC. The minimum number of accessible fixtures required by Chapter 11 has also been confirmed

and are indicated on the floor plans. Minimum clear space for the fixtures, shower and sinks has been accounted for on the floor plan as well. Refer to Section 3.11 for fixture calculations.

Key accessibility requirements affecting layout have been captured as part of the detailed code analysis. This information, along with accessibility diagrams, will be included with the Life Safety and G series drawings for easy reference as the project progresses through detailed design.

2.8 HAZARDOUS MATERIALS

The work conducted by the SNHD teams in this facility will need to be confirmed to determine the extent of the hazardous materials in place , including materials classified by the model codes as posing physical hazards and health hazards. These materials will need to be assessed for storage and open use to determine the requirements. SNHD will need to provide EwingCole with their hazardous material inventory to asses the needs of any control areas.

This data forms the basis of this analysis, and informs our strategy for developing a sound engineering strategy to safely deal with these hazards in a code-compliant, risk-mitigating manner.

The strategy for this facility is to employ control areas as the method for achieving proper distribution of hazardous materials within the building. The building code defines control areas as "*spaces within a building where quantities of hazardous materials not exceeding the maximum allowable quantities per control area are stored, dispensed, used or handled.*" It is important to note that if these maximum allowable quantities (MAQ) were to be exceeded, then the space would need to be classified as high-hazard occupancy. Employing control areas will allow Gilead to avoid the added costs and design limitations associated with an H occupancy. The code sets forth specific criteria for the design of control areas. These requirements include;

- Control areas shall be separated from each other by 1-hour fire barriers.
- The percentage of MAQ of hazardous materials for each control area shall be in accordance with Table 414.22. of the CBC.
- Up to four control areas are permitted within the building.

The following chart indicates the MAQ per control area. The amounts shown include increases for storage in approved containers and cabinets, and the presence of an automatic fire sprinkler system in the building.

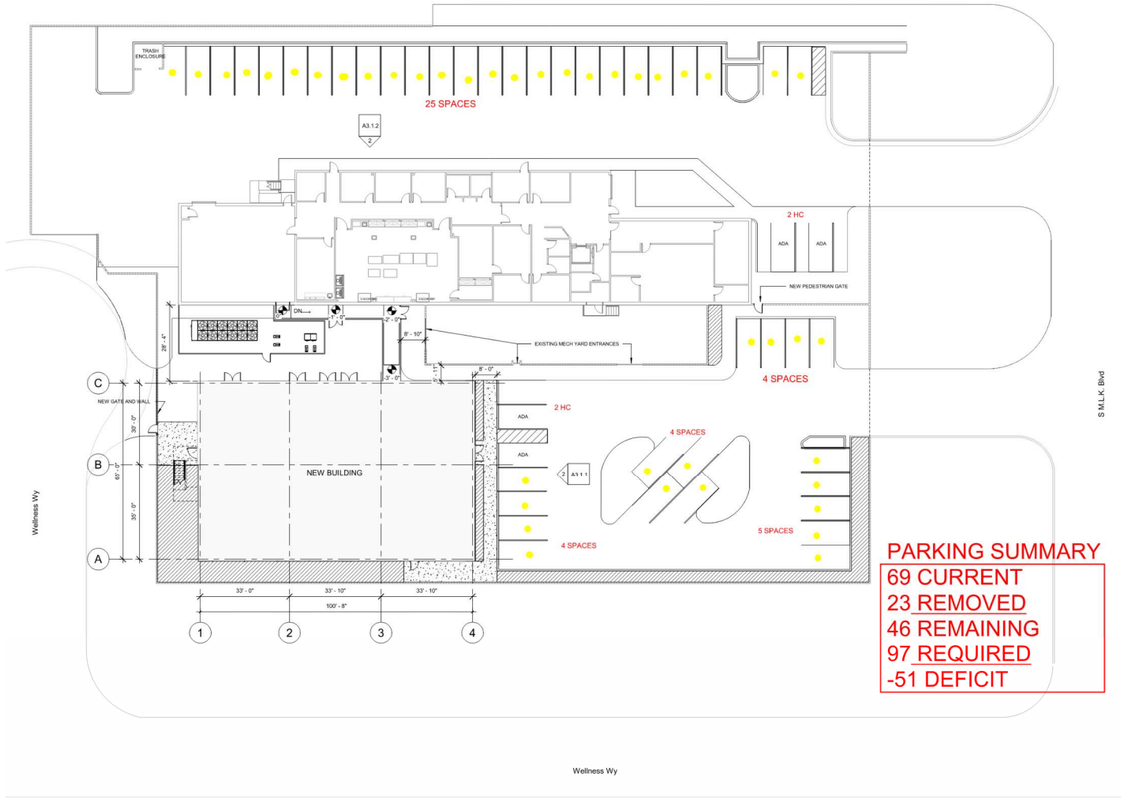
ALLOWABLE QUANTITIES PER CONTROL AREA					
Physical Hazards		**Allowable Storage**		**Allowable in Use**	
Material	Class	MAQ	Unit	MAQ	Unit
Combustible Liquid	IIIB	NL	gal	NL	gal
Cryogenic, Inert	NA	NL	-	NL	-
Flammable Liquid	IB & IC	240	gal	60	gal
Organic Peroxide	I, II, III, IV, V	varies	-	varies	-
Oxidizing Gas	Gaseous	3000	cu.ft.	NA	cu.ft.
Health Hazards		**Allowable Storage**		**Allowable in Use**	
Material	Class	MAQ	Unit	MAQ	Unit
Corrosives	Solid	10000	lbs	2000	lbs
	Liquid	1000	gal	200	gal
Highly Toxics	N/A	20	lbs	6	lbs
Toxics	N/A	1000	lbs	250	lbs

CODE ANALYSIS

2.9 **PARKING**

The original build for the site included 84 parking spaces on both the north and south sides of the building. Past renovations have created additional site enclosures to the south of the building resulting in a loss of fifteen spaces for a current parking count of 69 spaces. The footprint of the new building will remove an additional 23 spaces resulting in 46 spaces available on the current parcel. The requirements for both buildings are ~93 spaces resulting in a deficit of ~47 spaces. Discussions with the SNHD operations have determined that there is a proximal lot with remote parking spaces available for parking.

Existiing Building				
Occupancy	Use	Ratio	SF	Required Parking
B	Office	4:1000	12,000	48
S-1	Warehousing	1.5:1000	1,700	3
Total				**51**
New Building				
Occupancy	Use	Ratio	SF	Required Parking
B	Office	4:1000	11,500	46
S-1	Warehousing	1.5:1000	-	0
Total				**46**
Combined Need				
Original Parking Count				84
Current Parking Count				69
Parking Impacted by New Building				-23
New Proposed Count (on-site)				46
Total Required Parking				97
Deficit				**-51**



• Open item 1: Confirm access to the remote parking lot for the additional spaces needs.

CODE ANALYSIS

2.10 PLUMBING FIXTURE CALCULATIONS

Fixture requirements have been reviewed for this building, with the minimum counts based on the requirements stated in Chapter 29 of the IBC, and minimum accessible fixture counts based on Chapter 11B of the IBC, i.e. the Accessibility Code. The charts below illustrate the calculations.

OCCUPANCY GROUP	LOAD FACTOR (TABLE 1004.5)	FLOOR AREA	TTL. OCCUP.	MEN (50%)	WOMEN (50%)
B	150	10,031	67	40	40
S1	300	2418	9	4	4
ACCESSORY STORAGE,RESTROOMS, CIRCULATION (EXCLUDED)	300	3463	12	3.3	3.3
TOTAL		**8,986 SF**	**76**	**38**	**38**

Number of occupants to be served by plumbing fixtures based on occupancy, per IBC Chapter 29

PLUMBING FIXTURE COUNT - IPC TABLE 403.1 - TOTAL							
	MENS			WOMENS			UNISEX
	REQ'D	PRV'D	DIFF.	REQ'D	PRV'D	DIFF.	PRV'D
WATER CLOSETS	1.68	2		1.68	2		4
URINALS		4		N/A			
SubTotal		6		N/A			N/A
LAVATORIES	1.05	2		1.1	2	0	4
	COMMON FACILITIES						
DRINKING FOUNTAINS	0.67	1	0.0				
SERVICE SINK	1	2	1				

Minimum required plumbing fixtures based on occupant load and use, per IBC Chapter 29

TAB 3 - ARCHITETURE

BSL–3 Laboratory – Interior Improvements BOD

ARCHITECTURAL DESIGN

3.1 OVERVIEW & METHODOLOGY

The goal of the lab programming and planning effort is to reach consensus with the user and operational groups on the individual lab requirements, including equipment, utilities, casework and room layout, resulting in finalization of the Room Data sheets (RDS) and using these with adjacency information to develop the conceptual floor plans for the facility. The RDS's and the approved Conceptual Design Floor Plans included in this report serve as the basis for further engineering system design, preliminary cost evaluation and overall schedule alignment for the project. The completion of this architectural programming is a precursor for subsequent stages of the project. to

Lab planning sessions were accomplished in a series of structured meetings over a four-month period. The user group meetings included key stakeholders from Dr. Kan's laboratory group and Sean Beckhams facilities group. Additionally, input from SNHD's EHS provided oversight and direction.

3.2 PROGRAM OVERVIEW

The program expands the capabilities of SNHD and the new building will double the area on the site and will support the SNHD's mission "To assess, protect, and promote the health, the environment, and the well-being of southern Nevada communities, residents, and visitors." The Health District is one of the largest local public health organizations in the United States, serving more than 2.3 million residents and safeguarding the public health of more than 40 million visitors to Las Vegas annually.

Overall, the project accommodates a current headcount of 45 FTE's that is expected to grow to 60 FTE's once the new facility is occupied. These projections reflect the SNHD teams assumptions for ongoing projects and initiatives to be served by their group and this project space.

3.3 SPACE TAB / FUNCTIONAL REQUIREMENTS

The proposed space program is summarized here:

RDS No.		SF/Rm	# of Rms	Total NSF	Total GSF
FIRST FLOOR SUMMARY				**NSF**	**GSF**
	ENTRY / AMENITY			285	356
	LABORATORIES			1,979	2,573
	OFFICES & CONFERENCE ROOMS			453	544
	BUILDING SUPPORT			2,358	2,857
	WAREHOUSE			0	0
	Total First Floor Building			**5,075**	**6,329**

RDS No.		SF/Rm	# of Rms	Total NSF	Total GSF
SECOND FLOOR SUMMARY					
	ENTRY / AMENITY			0	0
	LABORATORIES			3,284	4,269
	OFFICES & CONFERENCE ROOMS			468	585
	BUILDING SUPPORT			644	1,421
	WAREHOUSE			0	0
	Total Building Second Floor			**4,396**	**6,276**
	Total Building			**9,471**	**12,605**

Figure 1 Space Tab Summary

3.4 LABORATORY PLANNING

3.4.1 FIRST FLOOR

Main deliveries to the laboratory will continue to be located at the existing loading dock, but couriers will have the ability to deliver samples to the new laboratory by checking-in with security, and then supplying the samples to Accessioning.

The laboratory team will triage the samples and prepare to distribute to the appropriate laboratory. The first floor laboratories include the Molecular Biology Lab (WGS).

The balance of the first floor includes Offices, Breakroom, Conference Room, Laboratory Support spaces such as Gas Cylinder Storage, Chemical/Flammable Storage and Waste, and Building Support spaces such as Mechanical and Electrical Rooms, as well as other building spaces essential for the building to be fully operational.

A corridor extends from the new addition to the existing facility connecting to the existing Stock Room.

Figure 2 First Floor Plan

RDS No.			SF/Rm	# of Rms	Total NSF	Total GSF
ENTRY / AMENITY						
1.1		Entry Vestibule / Lobby	80	1	94	118
~~1.1~~		~~Lobby~~	125	0	0	0
~~1.1~~		~~Security Room~~	~~140~~	~~0~~	~~0~~	~~0~~
1.1		Accessioning	245	1	142	178
1.2		Locker Area	30	1	49	61
		ENTRY / AMENITY Subtotal			285	356
LABORATORIES						
		~~Laboratory Response Network Chemical (LRN-C) LABORATORY SUITE~~				
~~1.3~~		~~Instrument Lab~~	~~400~~	~~0~~	~~0~~	~~0~~
~~1.3~~		~~Gas Cylinder Closet~~	~~20~~			
~~1.5~~		~~Sample Processing Lab~~	~~200~~	~~0~~	~~0~~	~~0~~
		Molecular Bio - Whole Genome Sequencing (WGS) Suite				
1.4		Sample Processing Lab	325	1	385	501
1.4		Pre-Library Prep	600	1	665	865
1.4		Sequencing Room	450	1	513	667
1.4		~~Mol Bio Storage Room~~	0	0	0	0
1.4		Post Library Prep Room	370	1	416	541
		LABORATORY Subtotal			1,979	2,573
OFFICES & CONFERENCE ROOMS						
1.6		Supervisor Offices (Genome Sequencing WGS)	100	1	100	120
1.7		Conference Room	500	1	216	259
1.8		Break Room	240	1	137	164
		OFFICES & CONFERENCE Subtotal			453	544
BUILDING SUPPORT						
~~1.9~~		~~Men's & Women's Restrooms~~	~~220~~	~~2~~	~~314~~	~~393~~
1.10		Elevator & Elevator Equipment Room	210	1	190	228
1.11		IT Server Room	100	1	92	110
~~1.12~~		~~Stairs, Internal~~	~~190~~	~~1~~	~~225~~	~~281~~
1.12		Stairs, External	190	0	0	0
1.13		Janitor's Closet	60	1	30	36
1.14		Biological Waste Staging / Chemical Waste Staging	200	1	105	126
~~1.14~~		~~Chemical Waste Staging~~	~~100~~	~~0~~	~~0~~	~~0~~
1.15		Gas Cylinder Storage	50	1	68	82
1.16		Chemical & Flammable Storage	150	1	187	224
1.17		General Storage Room	200	1	131	157
1.17		MPOE (8' x 10')	80	1	56	67
1.17		Fire Riser Room (8' x 10')	80	1	65	78
~~1.18~~		~~Main Electrical Room (18' x 28')~~	~~500~~	~~1~~	~~390~~	~~468~~
1.18		Mechanical Room / DI Water Room (18' x 28')	500	1	505	606
~~1.19~~		~~DI Water Room~~	~~200~~	~~0~~	~~0~~	~~0~~
~~1.19~~		~~LN2 Fill Station~~	~~100~~	~~0~~	~~0~~	~~0~~
		BUILDING SUPPORT Subtotal			2,358	2,857

Figure 3 First Floor Space Tabulation

3.4.2 SECOND FLOOR

The second floor houses the main BSL3 Laboratory Suite. Samples received on the first floor accessioning that are to be analyzed under a BSL3 Laboratory environment, are transported to the second floor via the building's elevator and delivered to the BSL3 Sample Drop Off, where an interlocked sample pass-through to a BSL3 Accessioning, receives the samples for distribution to the appropriate lab: Rapid Test Lab Suite (Sample Prep, PCR Amplification, Post PCR), and Conventional Testing Lab. The BSL3 Suite layout has been developed with procedures for authorized personnel entry into the Suite via dedicated Air Lock, and upon exit, a dedicated Air Lock, and if necessary, a Decontamination Shower. A dedicated Autoclave decontaminates hazardous waste material and appropriate PPE, i.e. PAPRs, prior to leaving the Suite.

In addition to the BSL3 Suite, the second floor contains Microbiology laboratory spaces that are BSL2. Samples accessioned on the first floor that are destined for the second floor labs, are also transported via the building's elevator, where they are delivered to the Clinical Microbiology Lab.

The balance of the second floor includes Offices, Breakroom, Conference Room, Laboratory Support spaces such as Reagent Prep, and Waste.

A corridor extends from the new addition to the existing facility connecting to the existing laboratory adjacent to the existing BSL3 Lab.

Figure 4 Second Floor Plan

RDS No.			SF/Rm	# of Rms	Total NSF	Total GSF
ENTRY / AMENITY						
		ENTRY / AMENITY Subtotal			0	0
LABORATORIES						
	BSL-3 LABORATORY SUITE					
2.1		Accessioning Room (BSL-3)	120	1	113	147
2.1		Sample Handling Room (BSL-3)	325	1	330	429
2.1		Lab Storage Room (BSL-3)	150	1	106	138
2.1		Conventional Test Lab (BSL-3)	420	1	378	491
2.1		**Rapid Test Lab Suite (BSL-3)** Sample Prep	160	1	194	252
2.1		**Rapid Test Lab Suite (BSL-3)** PCR Amplification	160	1	156	203
2.1		**Rapid Test Lab Suite (BSL-3)** Post PCR	210	1	185	241
2.1		Dark Room (BSL-3)	60	1	75	98
2.2		Personnel Air Lock (PAL) In (BSL-3)	130	1	135	176
2.2		Decontamination Autoclave Area (BSL-3)	225	1	193	251
2.2		Personnel Air Lock (PAL) Out & Equipment Air Lock (BSL-3)	150	1	106	138
2.2		PAL Out Decontamination Shower (BSL-3)	160	1	119	155
2.2		BSL Staff Area	160	1	32	42
~~2.3~~	~~**Training Lab**~~	~~Training Lab~~	~~160~~	~~0~~	~~0~~	~~0~~ 0
~~2.4~~	~~**Environmental Microbiology (EM)**~~	~~Microbiology - Food & Water~~	~~400~~	~~0~~	~~0~~	~~0~~ 0
	CLINICAL MICROBIOLOGY LABORATORY SUITE					0
2.5		Clinical Micro lab	800	1	816	1,061
~~2.5~~		~~Dark Room~~	~~60~~	~~0~~	~~0~~	~~0~~
2.5		Lab Storage / Freezer and Refrigerator Room	120	1	196	255
2.5		Reagent Prep Room	180	1	118	153
~~2.6~~		~~Freezer and Refrigerator Room~~	~~175~~	~~0~~	~~0~~	~~0~~
2.6		Walk-in Cold Room	100	1	32	42
		LABORATORY Subtotal			3,284	4,269
OFFICES & CONFERENCE ROOMS						
2.7		Laboratory Manager	200	1	92	115
2.7		IT Office	100	1	90	113
2.7		Safety Officer	100	1	90	113
2.7		Supervisor's Office	100	1	90	113
~~2.8~~		~~Conference Room~~	~~200~~	~~0~~	~~0~~	~~0~~
2.9		Break Room	300	1	288	360
		OFFICES & CONFERENCE Subtotal			468	585
BUILDING SUPPORT						
2.10		Men's & Women's Restrooms	220	2	314	393
2.11		Elevator	80	1	80	96
2.12		Stairs, Internal	190	1	158	198
2.12		Stairs, External	190	0	0	0
2.13		Janitor's Closet	60	1	30	36
2.14		Waste Area	100	1	62	74
2.14		Circulation	100	1	500	625
		BUILDING SUPPORT Subtotal			644	1,421
WAREHOUSE						
		Loading Dock	500	0	0	0
		Shipping Area	150	0	0	0
		WAREHOUSE Subtotal			0	0

Figure 5 Second Floor Space Tabulation

3.5 SPACE STANDARDS - LABS & SUPPORT

Most labs have been organized around a standard planning module of ten to eleven feet which, when doubled, provides a space with a central island bench and two perimeter walls for bench or floor equipment. This basic planning module can be enlarged to create large open lab environments that can accommodate a variety of equipment, while keeping a 5-foot aisle between benches or equipment, including refrigerators, freezers, biosafety cabinets, or fume hoods.

Casework in the labs is based on the Kewaunee Enterprise System and Kewaunee Alpha System. Both systems offer height adjustability of the countertop to accommodate equipment size or ergonomic needs. Where back-to-back fume hoods, BSC's or equipment occur, the Alpha System provides a panel that can be used as a utility cavity; this is also preferred at laboratory sinks when they occur in an island bench. Utility access is both wall and ceiling accessed and is designed to be integrated into the casework via pre-engineered components. Wall shelving can be open or enclosed. Both systems can accommodate necessary seismic requirements.

Further discussion and development of casework for all labs will occur during the next phases of design.

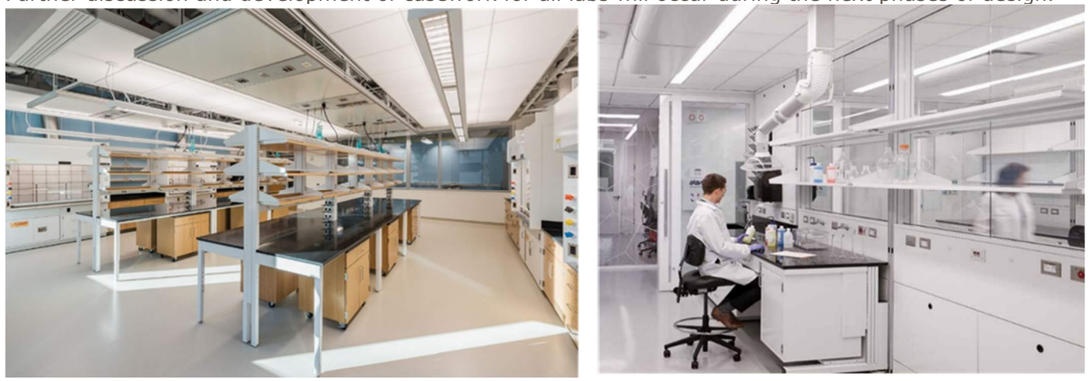


Figure 6 Installation views of the Enterprise System (left) and Alpha System (right).

ARCHITECTURAL DESIGN

3.6 ARCHITECTURAL FINISHES

LABORATORY FINISH MATERIALS

All laboratory finishes, including floors, walls, ceilings, doors, casework, furniture (lab stools/chairs), etc. shall be of non-porous materials. During the next design phase, the design team will analyze all SNHD's chemicals, media, solutions, etc, used in their laboratories, as well as their cleaning and sanitizing protocols, to ensure that the finishes specified for the labs can be easily sanitized, and are resistant to degradation from chemicals and disinfectants.

Floors:
General Labs shall have seamless vinyl flooring (preferred) or vinyl composition tile (VCT) that allows for decontamination with liquid disinfectants and provides spill containment.

BSL2-3 Laboratories shall have a seamless floor with integral coved base, such as welded sheet vinyl or a seamless epoxy flooring system.

Walls:
BSL2 Labs shall be constructed of metal studs and gypsum wall board (GWB) and shall be level four finished with latex epoxy paint.

BSL3 Suite shall be constructed of metal studs and GWB and shall be level 4 finished and painted with epoxy paint or other specialized coatings appropriate for the specific laboratory spaces. Paints and/or coatings shall be compatible with the SNHD's sanitizing and decontamination protocols. (The metal studs shall be provided with adequate backing at the appropriate heights to ensure proper attachment of casework and other equipment.) Moisture-resistant GWB shall be specified in areas with damp and high-humidity areas such as the Decontamination Autoclave area and restroom wet walls.

All penetrations through the GWB, such as electrical outlets, control systems, etc. shall be fully gasketed and sealed using FDA approved sealants for containment environments.

Ceilings:
All labs up to and including BSL2 Labs shall be non-microbial vinyl faced Acoustical Ceiling Tiles (ACT) that are smooth surfaced, and scrubbable, suitable for laboratory environments.

The BSL3 Suite shall be a monolithic hard surface, cleanable ceiling, such as GWB. Moisture-resistant GWB shall be specified in areas with damp and high-humidity areas such as the Decontamination Autoclave area. The GWB shall be finished with epoxy paint.

All penetrations through the GWB ceiling, such as fire sprinklers, shall be fully gasketed and sealed using FDA approved sealants for containment environments.

Doors:
BSL2 Labs shall be metal doors and frames.

BSL3 Suite shall be metal doors and frames, will all frames to be flush with the GWB and fully sealed with appropriately FDA-approved sealants. All doors shall be self-closing.

During the next design phase, EwingCole and SNHD will define the appropriate access controls, i.e. card readers, facial recognition, etc. for each door for both BSL 2 & 3 Labs.

Casework:
All labs up to and including BSL2 Labs shall be designed with flexible, modular steel casework system, with mobile undercabinet storage. Fixed casework will be used only at where sinks are required. Casework benchtops shall be a smooth, impervious such as phenolic or epoxy resin, to be determined by EwingCole and SNHD during the next design phase.

The BSL3 Suite shall be designed with flexible, phenolic resin or stainless steel modular casework system, with mobile undercabinet storage. Fixed casework will be used only at where sinks are required. Casework benchtops and tables shall stainless steel in aseptic environments.

During the next design phase, EwingCole and SNHD will also define the appropriate under and above cabinet storage for both BSL 2 & 3 Labs.

3.6.1 INTERIOR FINISH SUMMARY

GENERAL BUILDING FINISH MATERIALS

ENTRY / QUIET ZONE

FLOOR: LARGE FORMAT PORCELAIN TILE & **WALK-OFF CARPET TILE** (EXAMPLE: ERGON ARCHITECT RESIN)
BASE: 4" HIGH RUBBER BASE
WALLS: PAINT
CEILING: PAINTED GWB

OFFICES

FLOOR: CARPET TILE (EXAMPLE: BENTLEY MILLS TELEPORT)
BASE: 4" HIGH RUBBER BASE
WALLS: PAINT
CEILING: 2' x 2' ACOUSTICAL CEILING TILE (EXAMPLE: ARMSTRONG HIGH NRC - LYRA 8730PB SQUARE TEGULAR)
EXTERIOR WINDOW: MANUAL ROLLER SHADE – LIGHT FILTERING FABRIC

MEETING ROOM

FLOOR: CARPET TILE (EXAMPLE: BENTLEY MILLS COHORT)
BASE: 4" H RUBBER BASE
WALLS: PAINT, WRITABLE WALL PAINT (ONE WALL) OR WHITEBOARD
CEILING: 2' x 2' ACOUSTICAL CEILING TILE (EXAMPLE: ARMSTRONG HIGH NRC - LYRA 8730PB SQUARE TEGULAR)

OPEN COLLABORATION

FLOOR: CARPET TILE (EXAMPLE: BENTLEY MILLS TELEPORT), LUXURY VINYL TILE AT COFFEE POINT
BASE: 4" H RUBBER BASE
WALLS: PAINT, CEILING MOUNTED ACOUSTICAL SCREEN WITH TRACK (EXAMPLE: FILZFELT)
CEILING: 2' x 2' ACOUSTICAL CEILING TILE (EXAMPLE: ARMSTRONG HIGH NRC - LYRA 8730PB

ARCHITECTURAL DESIGN

SQUARE TEGULAR)

BREAK ROOM

FLOOR: **PORCELAIN TILE**
BASE: 4" HIGH RUBBER BASE
WALLS: PAINT, GLAZED CERAMIC TILE BACKSPLASH (EXAMPLE: CE.SI. COLORI)
CEILING: PAINTED GWB, **WOOD GRILLE CEILING PANELS (EXAMPLE: GEOMETRIK)**
MILLWORK: SOLID SURFACE COUNTERTOP (EXAMPLE DUPONT CORIAN), PLAM CABINETRY (EXAMPLE: WILSONART)
EXTERIOR WINDOW: MANUAL ROLLER SHADE – LIGHT FILTERING FABRIC

MOTHER'S ROOM

FLOOR: **PORCELAIN TILE**
BASE: 4" H RUBBER BASE
WALLS: PAINT, GLAZED CERAMIC TILE AT SINK (EXAMPLE: CE.SI. COLORI)
CEILING: ACOUSTICAL CEILING TILE (EXAMPLE: ARMSTRONG CALLA)
MILLWORK: SOLID SURFACE COUNTER TOP (EXAMPLE: DUPONT CORIAN), PLAM CABINETRY (EXAMPLE: WILSONART)

RESTROOMS / SHOWER

FLOOR: LARGE FORMAT PORCELAIN TILE (EXAMPLE: ERGON ARCHITECT RESIN)
BASE: 6" H TILE BASE
WALLS: GLAZED CERAMIC TILE (EXAMPLE: CE.SI. COLORI)
CEILING: PAINTED GWB
MILLWORK: SOLID SURFACE COUNTER TOP (EXAMPLE DUPONT CORIAN), UNDERCOUNTER PLAM DOORS (EXAMPLE: WILSONART)

JANITOR CLOSET

FLOOR: SEAMLESS RESIN (EXAMPLE: STONHARD STONCLAD GS)
BASE: 4" H COVE BASE
WALLS: EPOXY PAINT, PARTIAL HEIGHT RIGID SHEET WALL PROTECTION (EXAMPLE: C/S ACROVYN)
CEILING: PAINTED GWB

MDF / IDF

FLOOR: STATIC DISSIPATIVE TILE (EXAMPLE: ROPPE ESD)

BASE: 4" RUBBER BASE
WALLS: PAINT
CEILING: EXPOSED,OPEN TO ABOVE, OR 2' x 4' ACOUSTICAL CEILING TILE (EXAMPLE: ARMSTRONG DUNE)

ELECTRICAL / MECH.

FLOOR: EPOXY PAINT OR SEALED CONCRETE

BASE: 4" HIGH RUBBER BASE
WALLS: PAINT
CEILING: EXPOSED

LAB CORRIDORS / CENTRAL LAB COAT STATION / CRYO STORAGE / CONSUMABLES

FLOOR: HOMOGENEOUS SHEET VINYL, SEAMLESS, LIQUID TIGHT
(EXAMPLE: GERFLOR MIPOLAM SYMBIOZ)
BASE: 4" RUBBER BASE
WALLS: PAINT (EPOXY AT LAB CORRIDOR)
SST CORNER GUARDS (AS NEEDED)
CEILING: VINYL FACED ACOUSTICAL TILE (EXAMPLE: ARMSTRONG ULTIMA HEALTH ZONE)

COLD ROOM

FLOOR: HOMOGENEOUS SHEET VINYL, SEAMLESS, LIQUID TIGHT
(EXAMPLE: GERFLOR MIPOLAM SYMBIOZ)
BASE: 4" INTEGRAL BASE
WALLS: 4" INSULATED PANEL SYSTEM
CEILING: 4" INSULATED PANEL SYSTEM

LABORATORIES

FLOOR: HOMOGENEOUS SHEET VINYL, SEAMLESS, LIQUID TIGHT *
(EXAMPLE: GERFLOR MIPOLAM SYMBIOZ)
BASE: 6" HIGH INTEGRAL BASE
WALLS: EPOXY PAINT, SST CORNER GUARDS (AS NEEDED)
CEILING: VINYL FACED ACOUSTICAL TILE (EXAMPLE: ARMSTRONG ULTIMA HEALTH ZONE) *
EXTERIOR WINDOW: MANUAL ROLLER SHADE – LIGHT FILTERING FABRIC

LN2 STORAGE

FLOOR: HOMOGENEOUS SHEET VINYL, SEAMLESS, LIQUID TIGHT
(EXAMPLE: GERFLOR MIPOLAM SYMBIOZ)
BASE: 6" HIGH METAL BASE
WALLS: PAINT, PARTIAL HEIGHT RIGID SHEET WALL PROTECTION (EXAMPLE: C/S ACROVYN)
CEILING: VINYL FACED ACOUSTICAL TILE (EXAMPLE: ARMSTRONG ULTIMA HEALTH ZONE)

REAGENT PREP

FLOOR: SEAMLESS RESIN (EXAMPLE: STONHARD STONCLAD GS)
BASE: 6" HIGH INTEGRAL BASE
WALLS: EPOXY PAINT, PARTIAL HEIGHT RIGID SHEET WALL PROTECTION (EXAMPLE: C/S ACROVYN), SST CORNER GUARDS (AS NEEDED)
CEILING: VINYL FACED ACOUSTICAL TILE (EXAMPLE: ARMSTRONG ULTIMA HEALTH ZONE)

ARCHITECTURAL DESIGN

CONSU MABLES, PPE SUPPLIES, BOTTLED GASES/OUT-GOING BIOHAZARD & GENERAL WASTE / LAB GASES / EQUIPMENT STORAGE

FLOOR: SEAMLESS RESIN (EXAMPLE: STONHARD STONCLAD GS)
BASE: 4" HIGH RUBBER BASE
WALLS: PAINT, PARTIAL HEIGHT RIGID SHEET WALL PROTECTION (EXAMPLE: C/S ACROVYN)
CEILING: 2' x 4' ACOUSTICAL CEILING TILE (EXAMPLE: ARMSTRONG DUNE)

HAZARDOUS WASTE HOLDING

FLOOR: STATIC CONDUCTIVE SEAMLESS RESIN (EXAMPLE: STONHARD STONCHEM 822)
BASE: 6" HIGH INTEGRAL BASE
WALLS: EPOXY PAINT, PARTIAL HEIGHT RIGID SHEET WALL PROTECTION (EXAMPLE: C/S ACROVYN)
CEILING: VINYL FACED ACOUSTICAL TILE (EXAMPLE: ARMSTRONG ULTIMA HEALTH ZONE)

BIO-WASTE HOLDING

FLOOR: SEAMLESS RESIN (EXAMPLE: STONHARD STONCLAD GS)
BASE: 6" HIGH INTEGRAL BASE
WALLS: EPOXY PAINT, PARTIAL HEIGHT RIGID SHEET WALL PROTECTION (EXAMPLE: C/S ACROVYN)
CEILING: VINYL FACED ACOUSTICAL TILE (EXAMPLE: ARMSTRONG ULTIMA HEALTH ZONE)

TAB 4 - STRUCTURAL

BSL–3 Laboratory – Interior Improvements BOD

STRUCTURAL

4.1 APPLICABLE CODES AND STANDARDS

The design and installation of new structural systems shall adhere to the latest prevailing codes, standards and guidelines including but not limited to the following:

- IBC 2021 International Building Code 2021
- ASCE 7-16 Supplement 1 Minimum Design Loads for Buildings and Other Structures
- ACI 318-19 Building Code Requirements for Structural Concrete
- AISC 341-16 Seismic Provisions for Structural Steel Buildings
- AISC 360-16 Specification for Structural Steel Buildings
- AISI S100-16/S1-18 Specification for the Design of Cold-formed Structural Steel Members
- AWS D1.1-15 Structural Welding Code for Steel

4.2 EXISTING BUILDING

The existing building consists of a two-story steel structure at center with one-story portions @ east and west sides. The first floor is elevated between 1.5’ to 3’ above adjacent finish grade @ south side. The 2nd floor consists of 3” normal weight concrete above 2” , 20-gauge Vulcraft deck. The deck @ 2nd floor is supported by steel beams running in north -south direction spaced at maximum 7’-3” supported by steel girders running in east -west direction and steel columns. The low roofs @ east and west sides consist of 1 ½” , 20-gauge Vulcraft deck supported by steel beams running in north- south direction spaced at maximum 6’-4” supported by steel girders and columns. The high roof @ center of the building consist of 1 ½” , 20-gauge Vulcraft deck supported by steel trusses running in north- south direction spaced at maximum 7’-3” supported by steel girders and columns. The lateral system for the entire structure utilizes ordinary steel brace frames in east-west direction . Ordinary Steel Moment Frames @ 2nd floor and @ low roof and Truss Frames @ high roof are used as lateral system in north- south direction. The existing building is designed based on 1997 UBC.

4.3 DESIGN CRITERIA

The following load criteria will be utilized in analysis of the existing and new structural systems.

Risk Category II

5.3.1 Design Dead Loads

Rooftop Mechanical Equipment Weight of Equipment

5.3.2 Design Live Loads

Design Live Loads to be supported shall be as follows:

Offices	50 psf
Corridors	100 psf
Walkways, Stairs, public areas	100 psf
Partition	20 psf
Roof Live Load	20 psf

4.3.3 Wind Load Criteria

Basic Wind Speed, V	99 mph
Exposure Category	C
Importance Factor, I_W	1.0
Internal Pressure Coefficient	GCpi=+/-0.18

4.3.4 Seismic Load Criteria

Importance Factor, I_E	1
Short Period Mapped Spectral Response Acceleration, S_S	.567g
1-Second Mapped Spectral Response Acceleration, S_1	.189g
Soil Site Class	D, Default
Short Period Spectral Response Coefficient, S_{DS}	.509g
1-Second Period Spectral Response Coefficient, S_{D1}	.28g
Seismic Design Category	D
Seismic Component Importance Factor, I_P	1

4.3.5 Snow Load Criteria

Ground snow load 5 PSF

4.4 STRUCTURAL SYSTEMS

For concrete work scope, the following minimum 28-day compressive strengths, f'_c, shall be specified:

- Interior column footings 4000 psi
- Equipment pads, slab on grade patching, and miscellaneous concrete 4000 psi

For reinforced concrete scope, reinforcement shall meet the following ASTM specifications:

- Deformed reinforcing bars A615, Grade 60

For steel scope, the following ASTM specifications shall be followed:

- Wide Flange Shapes A992, Grade 50
- Base Plates, Moment Plates, Gusset Plates, and Splice Plates A572, Grade 50
- Hollow Structural Steel Shapes A500, Grade B (46 ksi)
- Structural Steel Angles, Channels, and other Plates A36

4.4.1 Superstructure

The new addition will be a two-story steel structure that will be separated from existing building by seismic joint along the south side of the existing building. The first floor consists of a 5” thick slab on grade that will be approximately 3 feet below the first floor of the existing building. There will be a ramp at the first floor connecting new building to the existing building . The second floor consists of 3¼” L.W.C. over 2” deck supported by steel beams , girders, and columns. The new second floor will be approximately 9” above the second floor of the existing building. The second floor will be connected to the existing second floor with seismic separations. The roof consists of 2” deck supported by steel

beams , girders, and columns. Special Moment Resisting Frames or Special Concentric Brace Frames will be used as the lateral system.

4.4.2 Foundation

At this time there is no soils report for this project. The new foundations would most likely include isolated pad footings for interior columns and grade beams for moment frames or brace frames. The top of new column pads and grade beams will be a minimum of 12” below the lowest adjacent grade. The top of the new footings will be at the same elevation of the existing footing.

4.4.3 Rooftop Equipment Support

To facilitate the planned fit-out of the associated spaces, exhaust fans and Ahu’s will be located on the roof of new building. Please refer to the Mechanical Section of this report for more information regarding the equipment. The new mechanical units will be seismically anchored to the roof .

4.4.4 Equipment Anchorage

At varies locations in new planned fit-out there will be equipment that requires both vertical (gravity) analysis of new support members as well as seismic anchorage analysis to determine required equipment anchorage to laterally stabilize these specific pieces of equipment in the event of an earthquake such as freezers, refrigerators, hood, package units, exhaust fans, etc. An equipment yard will be provided to support Chiller, generator, and other mechanical equipment units.

TAB 5 - MECHANICAL

BSL–3 Laboratory – Interior Improvements BOD

MECHANICAL

5.1 APPLICABLE CODES AND REFERENCE STANDARDS

- 2021 International Building Code and Amendments
- 2018 International Energy Conservation Code and Amendments
- 2018 Uniform Mechanical Code and Amendments
- American National Standards Institute (ANSI): Applicable Sections
- ASHRAE Standard 15: Safety Code for Mechanical Refrigeration
- ASHRAE Standard 62.1: Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1: Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings
- ASHRAE Standard 170: Ventilation of Health Care Facilities
- ASHRAE Handbooks, Latest Editions
- National Fire Protection Association (NFPA): All Applicable Standards
- ASME B31 Code for Pressure Piping

5.2 ENVIRONMENTAL DESIGN CRITERIA

Outdoor Design Conditions

Site Location: Las Vegas, NV
Climactic Location: Las Vegas McCarran, NV
36.1º Lat., 115.2º Long., 2180 ft. Elevation

Summer

Dry Bulb Temperature: 120°F
Wet Bulb Temperature: 71°F
Source: Summer – 2021 ASHRAE Handbook; 0.4% (db and wb) with safety factor to address maximum conditions observed on-site.

Winter

Dry Bulb Temperature: 32.8°F

Source: Winter - 2021 ASHRAE Handbook; 99.6%.

Indoor Design Conditions

Offices:

Temperature (Cooling):	72ºF ± 2ºF
Temperature (Heating):	70ºF ± 2ºF

Laboratories (BSL-2)

Temperature (Cooling):	72ºF ± 2ºF
Temperature (Heating):	70ºF ± 2ºF
Relative Humidity (summer and winter):	30% to 65% RH
Minimum Air Changes per Hour (ACH):	6 ACH
Room Pressure Relationship:	Negative to Office Spaces

Laboratories (BSL-3)

Temperature (Cooling):	68ºF ± 2ºF
Temperature (Heating):	68ºF ± 2ºF
Relative Humidity (summer and winter):	30% to 65% RH
Minimum Air Changes per Hour (ACH):	6 ACH
Room Pressure Relationship:	Negative to BSL-2 labs and to Office Spaces

Electrical/Mechanical Rooms

Temperature (Cooling)	75ºF ± 2ºF
Temperature (Heating)	70ºF ± 3ºF

Telecom Rooms

Temperature (Cooling)	72ºF ± 2ºF
Temperature (Heating)	70ºF ± 2ºF
Relative Humidity (summer and winter)	20% to 60% RH (not controlled)

5.3 VENTILATION

The minimum outside air quantities for selected areas will be in accordance with ASHRAE Standard 62.1.

The actual outside air quantities will be calculated based on the greater requirement of occupancy, minimum dilution requirements, exhaust make-up, or pressurization criteria.

5.4 SOUND CRITERIA

Indoor: The design of the mechanical system will be based on a maximum space noise criteria (NC) as listed below:

Space	Maximum Design Noise Criteria (NC)
Open Offices	NC 40-45
Private Offices/Conf Rooms	NC 30-35
Corridors/Circulation	NC 40-45
Laboratories with Fume Hoods	NC 50-55
Laboratories without Fume Hoods	NC 45-50

Maximum air velocities through net free area of terminal device will be based on a maximum of 500 feet per minute, and the air velocity of the duct connected directly to the air terminal will be based on 500 to 600 feet per minute.

5.5 HVAC LOADS

Heat gains from building envelope, people, lighting, and equipment will be calculated based on the process or activity requirements of each space, which will be utilized for load calculations. Occupancy loads will be based on current occupancy conditions and code maximum occupancy comparisons. Load calculations will be performed using Carrier Hourly Analysis Program. All criteria used to develop load

calculations will be based on available information or industry standards as dictated by ASHRAE guidelines.

5.6 FILTRATION

New air handling units serving office areas will contain a pre-filter assembly consisting of a 30-35% efficiency (MERV 8) pre-filter and final filter based on ≥90% efficient (MERV 14).

New air handling units serving labs will be equipped with the following filter configuration:

- Pre-Filter, ≥30% efficient, MERV 8
- Final Filter, ≥95%, MERV 15

The use of a carbon filter section in the air handler will be evaluated to address odor issues being experienced inside the building.

5.7 HVAC SYSTEM

The air distribution for this space will connect to the major equipment described in the Shell & Core section of the Basis of Design report. The major Shell & Core equipment includes the following:

- Dedicated variable air volume air handler(s) will serve the BSL 2 laboratory spaces. **(Further review with SNHD and their Environmental Health & Safety Officer is required to verify that the work performed and materials handled in labs do not require 100% outside air.)**
- Dedicated constant air volume air handler(s) will serve the BSL 3 laboratory spaces (100% outside air).
- Dedicated variable air volume air handler will serve the office spaces.
- Fans will provide exhaust air for BSL 2 labs and lab equipment (BSCs, fume hoods).
- Fans will provide exhaust air for general BSL 3 room exhaust and lab equipment (BSCs).
- Roof curb mounted centrifugal fan(s) will serve restrooms, waiting area, interview room, storage, and locker room.
- Dedicated spark resistant exhaust fan will serve the Chem Flammable Storage area.
- Mini ductless split systems will condition the Telecoms and Elevator Rooms.
- Gas detection systems will be required for the Chem Flammable Storage room and Cryo areas.
- Audible and visual alarms will monitor room pressure in BSL-3 lab spaces.
- DDC controls will be specified for all new HVAC equipment. All new controls will interface with the existing building automation system (Automated Logic).

5.8 AIR DISTRIBUTION

All ductwork will be constructed as recommended in SMACNA Duct Construction and Leakage Test Standards, latest version.

Materials of construction for all supply air, return air, and general room BSL 2 lab exhaust will be G90 galvanized steel.

Exhaust ducts that are connected directly to fume hoods or those dedicated to biosafety cabinets will be constructed of ASTM A 480 Type 316 stainless steel. Lab exhaust serving BSL-3 suites shall be Type 316 stainless steel. Stainless steel lab exhaust ductwork will need to be welded.

No flexible duct is allowed in the BSL-3 suites. Hard connections shall be required from supply and exhaust air valves to supply and exhaust registers and bio-safety cabinets.

All medium-pressure supply and exhaust air ductwork from the fan to the air volume control boxes will be designed to 4-inch positive or negative pressure classification and use TDF or Ductmate joints to obtain Seal Class A, Leakage Class 6 for rectangular ductwork. Lab exhaust ductwork will require welded connections.

All low-pressure supply, return, and exhaust ductwork will be designed to 2-inch positive or negative pressure classification and use TDF or Ductmate joints to obtain Seal Class A, Leakage Class 6 for rectangular ductwork. Exhaust ducts connected directly to fume hoods shall meet 3-inch negative pressure classification.

The maximum aspect ratio should not exceed 8 to 1 at any time. Branch ductwork connected directly to diffusers or grilles should be sized at 500 fpm, as well as the maximum face velocity of the diffuser or grille, unless the performance data requires a different velocity.

Duct smoke detectors will be required in the main return air and exhaust air plenum for air-conditioning systems with capacity greater than 2,000 cubic feet per minute.

The laboratory spaces will all have pressure independent air volume control terminals for both, supply air and exhaust air, to maintain required room pressure relationships and maintain a safe environment for the researchers. The air terminals will be designed to operate in variable air volume mode, where possible. The air terminals will be part of a laboratory airflow control system (LACS), which will interface with the building automation system.

BSL-3 lab will require air volume control terminals with the capability of providing gas-tight isolation should decontamination be required. Access to the gas-tight dampers shall be from outside the BSL-3 space.

Biological safety cabinets (BSCs) are anticipated to be all Class II/Type A2. Class II/Type A2 BSCs will be recirculated within the room. A general exhaust register can be placed directly above the BSC to capture the heat rejected from the BSC as well as to provide the flexibility to connect the BSC to the duct system if required in the future. If a fully (100%) exhausted biosafety cabinets (Class II/Type B2) are required, a dedicated exhaust fan serving the individual BSC will be required.

Low exhaust air intakes (in addition to the ceiling mounted intake grilles) will be required in the Chemical and Flammable Storage, Gas Cylinder Storage, Biological and Chemical Waste rooms, LN2 Fill Station, and any spaces with LN2 freezers. Additional low wall exhaust air intakes may be required as the design progresses.

Supply air will be delivered to the labs using radial pattern perforated face diffusers (Titus Tri-Tec).

Supply air distributions serving the office spaces will include variable air volume air terminals with reheat coils for room temperature control.

Laboratory airflow control system basis of design: **Phoenix Controls**
Office space supply air VAV box basis of design: **Price, Titus**
Diffusers, grilles, registers basis of design: **Price, Titus**

5.9 PIPING MATERIALS

All piping will be constructed as recommended by ANSI, ASME, NFPA and/or the governing building code.

Chilled water piping will be constructed of Type L Copper Tubing (size 2 inches and smaller) or Carbon Steel Schedule 40 (size greater than 2 inches). Joints will be soldered or welded.

Hot water piping will be constructed of Type L Copper Tubing (size 2 inches and smaller) or Carbon Steel Schedule 40 (size greater than 2 inches). Joints will be soldered or welded.

Isolation valves will be used to isolate various parts of the distribution system for flexibility and ease of maintenance while limiting disturbance to operating areas of the facility. Isolation valves will be either ball valves (2 inches and less) or butterfly valves (2 ½ inch and greater). High performance valves will be used in certain locations where reliability and critical isolation is required.

Hydronic Pipe Sizing:

a. Size hydronic piping for a minimum of 2 ft/sec velocity for air removal.

b. Pipes passing through or in ceilings above occupied space: Size for a maximum of 4 ft/sec velocity up to 2 ½ inch pipe. Then use maximum of 4 ft/100 ft WPD limited to a maximum 4 ft/sec velocity for piping 3 inch and greater up to 6 inch. Then use 6 ft/sec maximum velocity for piping 8 inch and larger.

Hot water piping to reheat coils: Minimum branch pipe size serving a reheat coil is 3/4-inches.

5.10 GAS DETECTION SYSTEM

Gas detection systems will be required in all areas containing asphyxiation hazards and explosion hazards. The gas detection system(s) will utilize stack lights for local audio/visual alarm inside and outside the room and will be extended to the building automation system for additional remote alarming. The stack lights can be configured as follows: R=Danger, Y=Caution, G=Normal, B=Release. The following gas detection systems will be required:

- O2 deficiency for LN2 Fill Station and Gas Cylinder Storage Room
- CO2, He, Ar monitoring in Gas Cylinder Storage Room
- Low Explosive Limit (LEL) monitoring for Chemical & Flammable Storage Room

Other rooms may require gas detection and those spaces will be identified as the design progresses.

5.11 CONTROLS

The building automation system (BAS) will incorporate the control and monitoring of all components of the building HVAC system. The BAS will be specified to meet BACnet ASHRAE 135 requirements.

The BAS will integrate multiple building functions including equipment supervision and alarm management, and will consist of stand-alone DDC controllers, stand-alone application specific controllers, and integration of control elements.

Controllers for equipment requiring stand-by power shall also be supplied with stand-by power.

The air distribution system will be designed to include laboratory airflow control system (LACS), which will utilize supply and exhaust air terminals to maintain room temperature requirements, as well as room pressure relationships. The laboratory controls will be designed to interface with the BAS. Laboratories can be designed to meet thermal load requirements or provide minimum ventilation requirements, while maintaining room pressure relationships. In addition, a local display will be located at the entry door of each BSL-3 room to display the differential pressure.

The LACS will include room pressure indicators for BSL-3 spaces.

Basis of design: **Automated Logic**

5.12 SUSTAINABLE DESIGN

The design will strive to utilize the most relevant and economically feasible technologies to reduce total building energy consumption and environmental impact. The following design features related to the mechanical systems will be included:

- Low duct velocity (<1500 fpm) for supply/return/exhaust risers and mains where possible.
- Occupied/Unoccupied setback of temperature and minimum ventilation setback within office spaces.
- Demand control ventilation for high occupancy areas such as Break Room, Conference Room, etc.
- Variable air volume laboratory airflow control system that reduces ventilation based on demand load in the space during occupied periods.
- Variable air volume supply air terminal units will be specified for the office spaces.
- Occupied/Unoccupied setback of minimum ventilation within lab spaces.
- Refrigerants utilized in chiller systems and split systems will be selected with low global warming potential and low ozone depletion potential.

TAB 6 - ELECTRICAL

BSL–3 Laboratory – Interior Improvements BOD

ELECTRICAL

6.1 APPLICABLE CODES AND STANDARDS

The design and installation of all electrical and low voltage work shall adhere to the latest site policies/procedures and shall be in accordance with all prevailing codes, standards and guidelines as listed below.

- 2021 International Building Code and Amendments
- 2017 National Electrical Code and Amendments, NFPA 70
- 2021 International Fire Code and Amendments
- 2018 International Energy Conservation Code and Amendments
- 2019 Emergency and Stand-by Power Systems Standard, NFPA 110
- Underwriter's Laboratories, Inc. (UL)
- National Electrical Manufacturer's Association (NEMA)
- American National Standards Institute (ANSI)
- National Electrical Safety Code, ANSI C2
- Americans with Disabilities Act (ADA) Accessible Guidelines for Building and Facilities

6.2 EXISTING CONDITIONS

6.2.1 Existing Normal Electrical Distribution

The existing building utility power is served by NV Energy from an outdoor pad mounted utility transformer located near the trash enclosure on the high side parking lot. The transformer feeds the 120/208V, 3P – 2000A main service board 'MSA' located in the utility yard on the low side of the building. The 'MSA' main service switchboard distributes utility power via (3)three circuit breakers with (1)one spare breaker. Per the obtained record drawings, 'MSA' has a connected load of 1956A on a rated 2000A board. See Table 1 at the end of this section.

The 120/208V, 3P – 2000A Main Service Switchboard 'MSA' distributes power downstream through the noted circuit breakers:
- (1)1200A/3P* – Distribution Switchboard 'MSB' via ATS-MSB
- (1)800A/3P – Panel '2M' via ATS-2M
- (1)800A/3P – Power Panel 'EDP' via ATS-X
- (1)400A/3P – Spare

*Note, the obtained record drawings show Switchboard 'MSB' with connected load of 1221A on a rated 1200A board. The connected load exceeds the rating of the board.

The utility bills were obtained from SNHD, noting the peak demand of each billing cycle for most of the 2023 calendar year. See Table 2 at the end of this section. Based upon the received data received, the maximum peak demand load in 2023 has been 232kW or 644A, occurring between 06.15.2023 – 07.18.2023. (Table 2 notes missing data for 01.18.2023 – 02.15.2023, but typically draws less energy during this time) Based on the peak demand, with Electrical Code required 125% multiplier, there is 805A on the rated 2000A Main Service Board 'MSA'. Remaining capacity for future expansion should also consider the connected loads of the distribution.

The connected loads from the latest obtained record drawings show a connected load of 1956A, which is very close to the 2000A rating of the Main Service Switchboard 'MSA'. See Table 1 at the end of this section. The service is at capacity based on connected load.

6.2.2 Existing Emergency/Standby Electrical Distribution

The existing main service board is completely backed up by (2)two stand-by diesel generators. One unit is rated for 200kW and the other unit is rated for 750kW.

The older 200kW diesel generator feeds an 800A, 120/208V, 3P panelboard 'EDP' via 'ATS-X'. 'EDP' provides power to generator accessories, HVAC equipment, and Panel 'E2A':
- (1)30A/3P – EF-1a
- (1)50A/3P – EF-2
- (1)30A/3P – EF-1b
- (1)30A/3P – HVAC Controls
- (1)175A/3P – AHU-1
- (1)100A/3P – Panel 'E2A'
- (1)60A/2P – Generator Accessories

The connected loads from the latest obtained record drawings and readings show a connected load of 81kW or 224A. No meter readings are available to portray real demand loads, but there is some remaining connected load capacity on this generator/board.

The 750kW diesel generator feeds a 2000A, 120/208V, 3P distribution switchboard 'DB-EDS'. 'DB-EDS' distributes power downstream:
- (1)1200A/3P* – Distribution Switchboard 'MSB' via ATS-MSB
- (1)800A/3P – Power Panel 'EDP' via ATS-X
- Other loads not noted on obtained record drawings

*Note, the obtained record drawings show Switchboard 'MSB' with connected load of 1221A on a rated 1200A board. The connected load exceeds the rating of the board.

The connected loads from the latest obtained record drawings and readings show a connected load of 623.5kW or 1732A. No meter readings are available to portray real demand loads, but there is some remaining connected load capacity on this generator/board.

There is no centralized uninterruptible power supply (UPS) system for the building. Local UPS units shall be provided for equipment requiring uninterruptible power.

Emergency power for emergency lighting and exits in building shall be provided through a centralized lighting battery inverter.

ELECTRICAL

6.3 IMPACT OF PROPOSED RENOVATIONS

6.3.1 Normal Electrical Distribution

The Electrical NV Energy service to the existing building is at capacity. A new service to the new building would be necessary to accommodate the Electrical needs of the new building.

The new Electrical service shall be coordinated with the NV Energy. The existing service is 120/208V,3P, but can be coordinated to provide 277/480V,3P service to the site. The higher voltage would reduce the size of the electrical equipment and would reduce voltage drop to larger equipment and/or equipment that is further in distance.

SNHD noted that the service voltage for the existing building was based on rates with NV Energy. SNHD has no objections to coordinating a new service at 277/480V,3P for the new building since building needs have changed from a warehouse to laboratory space.

Utilizing the areas for the proposed space types along with estimated power densities, load projections were compiled for the new building. The projected load for the new building is approximately 538.1kW or 647.5A @480V/3P. The new building would have a Main Switchboard rated for a minimum of 800A @480V/3P. The Main switchboard would be sized at a minimum of 2000A if service voltage were 208V/3P.

See Table 3 at the end of this section for detailed projections and analysis of the electrical loads. The sizing and loads used are intended to convey the overall design approach and will need to be verified during the detailed phases of the project.

Note, SNHD has expressed interest in consolidating the utility services as well as the stand-by generators on site. Further discussions with SNHD would be necessary to discuss the impacts of a service upgrade of the existing building in lieu of an additional service for the new building. A service upgrade and infrastructure consolidation would require facility downtime and cost/time for procurement and installation of larger Electrical equipment that will impact the existing building.

6.3.2 Emergency/Standby Electrical Distribution

SNHD noted the new building shall be completely backed up a stand-by power similar to the existing building. A new 750kW stand-by generator is necessary to back-up the new Main Switchboard of the new building. See Table 3 at the end of this section for detailed projections and analysis of the electrical loads, since the stand-by power load calculations shall match the normal utility power. The generator shall be located so that exhaust does not affect air for the mechanical systems.

6.4 ADDITIONAL ELECTRICAL ASSESSMENTS

6.4.1 Uninterruptable Power Supply (UPS) Systems

There is no centralized uninterruptible power supply (UPS) system for the building.

6.4.2 Emergency Lighting Inverters

All code-required egress lights and exit signs are currently provided with their own individual batteries. Central lighting inverters or battery systems involve less maintenance, have longer lifespans than their local counterparts, and are the preferred choice for larger facilities. It is recommended that a central lighting inverter/battery system be installed to provide the 90 minutes of operation on loss of normal power. The size can be confirmed during detailed design, but it is estimated that the building would require approximately a 6kVA system.

6.4.3 EV Chargers

SNHD shall have a meeting to confirm EV charger requirements. SNHD to provide direction. EV chargers will draw a considerable amount of energy from either the limited remaining capacity on the existing building service or the new service for the new building. EC recommends that EV chargers shall not be included as part of the design at this time as resources could be used for more critical items.

6.4.4 Solar PV

Discussion with SNHD could possibly use PV panels to shade the HVAC equipment during extremely hot days, but not a critical item. EC recommends that solar provisions shall not be included as part of the design at this time as resources could be used for more critical items.

6.5 ELECTRICAL EQUIPMENT, CABLING AND DEVICE STANDARDS

6.5.1 Branch Circuit Cabling

Branch circuit conductors will be 600V single stranded (solid for #10AWG and smaller) copper THHN type conductors. All home run conductors shall be #12AWG minimum. Multi-wire branch circuit homeruns shall not use shared neutral conductors. In general, all receptacle, appliances, computer, equipment and lighting branch circuits will have dedicated neutrals per circuit.

All general receptacle and lighting circuits shall be 20-ampere circuits, minimum, fed by 20-ampere circuit breakers, minimum.

6.5.2 Equipment Insulated Ground Conductor

An insulated equipment ground conductor sized in accordance with NEC will be installed within all feeders and branch circuits.

6.5.3 Branch Circuit Raceways

All conduits shall be galvanized rigid steel (RGS), intermediate metal (IMC), electrical metallic tubing (EMT), rigid aluminum, or PVC coated based on the classification of the area per the NEC. Fittings shall be compression-type and of the same material as the conduit. Minimum size of electrical conduit shall be 3/4". MC Cable will be allowed for lighting whips as outlined by the specifications.

6.5.4 Boxes

The minimum junction box size will be 4" x 4" x 2-1/8", with appropriate device ring. Seal conduit entries in all junction box in necessary areas where classified or in areas designed as classified spaces. Installation of junction boxes "back to back" will be not acceptable. Allow minimum of 6" horizontal separation. Comply with NEC requirements for installation of boxes in fire-resistance rated partitions.

6.5.5 General Power and Communications

Wall mounted receptacles for office power and other common areas shall be provided in all four walls and as required for furniture, desk, office equipment, drinking fountains, etc. Receptacles shall be 125V, 20A, NEMA 5-20R or as required for specific equipment connections. Communications outlets will be provided in all offices, for all required office equipment, and other locations as required by the owner and codes. Receptacles and outlets are mounted 18" above finished floor, above counter, or at equipment specific heights.

6.5.6 Wiring Devices

Receptacles and switches will be UL listed, heavy-duty type, with receptacles having a thermoplastic yoke. Receptacles served with stand-by power system will have a red yoke and those fed from the normal power system will have a white yoke. Device faceplates will be stainless steel type within all laboratory areas and white thermoplastic nylon for all other areas. Faceplates will be labeled with panel and circuit numbers for identification.

6.5.7 Voltage Drop

Branch circuit conductors will be sized as required to minimize the voltage drop to maximum 3%. Feeder conductors will be sized to limit the voltage drop in both feeder and branch circuits to maximum 5% as recommended by the NEC.

6.5.8 Motor Electrical Rating and Types

All motors shall be provided with local disconnects that are capable of being locked out.

All motors greater than one-half horsepower will be 460 volt rated, three phase and specified as premium efficiency motors. All motors controlled by variable frequency drives will be inverter duty rated motors with higher insulation characteristics as specified by the mechanical engineer.

Standard, non-VFD motor control will be controlled by combination starters with integral motor circuit protectors (MCP) installed within existing motor control centers or as stand-alone units. Variable frequency drives and associated filters will be provided as required for other motors as defined by the mechanical scope of work.

To mitigate harmonics generated by variable frequency drives, the drives manufacturer will provide VFDs with 5% AC line reactors and DC choke, as well as any filters as required in order to meet IEEE 519 recommendations for acceptable harmonic distortion levels at the service entrance (point of common coupling).

6.5.9 Grounding

A complete equipment grounding system will be provided such that all metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, metal fences, and all other conductive items operate continuously at ground potential and provide a low impedance path to ground for possible fault currents.

An insulated equipment ground conductor sized in accordance with NEC will be installed within all feeders and branch circuits. Grounding conductor will be run with the related phase and neutral conductors. The ground conductor will be appropriately terminated at the utilization equipment as well as on the conduit and at the panelboard ground bus. The equipment grounding system will not rely on the metallic raceways for grounding continuity.

6.6 LIGHTING AND LIGHTING CONTROLS

Illumination design criteria for the interior of the facility will be based on recommended standards per the Illuminating Engineering Society of North America (IESNA). All lighting will be designed meet or exceed the requirements of IECC 2018.

Illumination Criteria

Maintained illumination levels for areas within the facility will be based on the latest design criteria from the IES which recommends the follow:

Laboratories (task)	50 - 60 footcandles (fc) average (general), 50-70 fc average
Electrical / Mechanical Rooms	30 fc average

6.6.1 Luminaires

Laboratories will be composed of recessed-type LED luminaires. These fixtures will be sealed and gasketed in laboratory spaces.

Mechanical/Electrical/Plumbing Equipment Rooms will be provided with suspended LED strip lights with acrylic lenses. Utility closets will be provided with similar fixtures or wall mounted LEDs depending on ceiling conditions and utility routing.

Exit signs will be edge-lit LED type, located in all paths of egress. Emergency/night lighting will be provided by circuits from the 'Emergency' lighting panel and will provide the required 1 fc average maintained along the path of egress. These fixtures will be controlled along with the normal power light fixtures. UL924 relays will be used to automatically turn on any emergency egress lights in the event of a power outage.

6.6.2 Lighting Controls

Lighting controls will be compliant with the requirements of the Energy Code, ensuring all lights are connected to circuits which have automatic on/off control. Local zone occupancy sensors will be provided in order to comply with these requirements.

Spaces shall include flush mount ceiling occupancy sensors for automatic control of lighting, with local on/off/raise/lower low voltage wall station(s) at room entry location(s). Zone control devices shall be provided above adjacent accessible ceilings as required to provide zoned control of the normal and emergency lighting within the space. Lighting shall be programmed in the head-end network lighting control system.

Support Spaces shall include occupancy sensor control with local on/off/raise/lower low voltage wall station device. Coordinate mounting type and placement of occupancy sensors with equipment and ceiling type within the space.

6.7 LOW VOLTAGE SYSTEMS

6.7.1 Telecommunications System

Voice/data outlet (workstation) cables will be provided from the MDF/IDF room to the various voice/data outlets as required throughout the space. Each voice/data outlet will include a 4S backbox, single gang ring, and 3/4" conduit up to the accessible ceiling.

6.7.2 Equipment Monitoring System (EMS)

All refrigerators, freezers, incubators and other noted equipment shall connect to environmental monitoring system. The system requires connectivity points adjacent to each monitored equipment.

Table 1: 'MSB' Connected Load Summary

Utility	Main Service Switchboard 'MSA'		
	Description	Load (kVA)	Amperage (A)
1	(E) ATS-MSB	440	1221.0
2	(E) ATS-2M	184.0	511.1
3	(E) ATS-X	81.0	224.0
4	Spare		0.0
	Total (Per obtained record drawings)	705.0	1956.0
	*Board is rated for 2000A		

ELECTRICAL

Table 2: Utility Bills

Utility Bills		
Date	Load (kW)	Load (Amps)
06.16.22 - 07.18.22	205	569
07.18.22 - 08.16.22	197	547
08.16.22 - 09.15.22	219	608
09.15.22 - 10.14.22	168	467
10.04.22 - 11.15.22	144	400
11.15.22 - 12.15.22	109	303
12.15.22 - 01.18.23	106	294
Missing	0	0
02.15.23 - 03.17.23	112	311
03.17.23 - 04.17.23	142	394
04.17.20 - 05.16.23	147	408
05.16.23 - 06.15.23	160	444
06.15.23 - 07.18.23	232	644
07.18.23 - 08.16.23	227	631
08.16.23 - 09.15.23	198	550
09.15.23 - 10.17.23	147	408
10.17.23 - 11.15.23	141	392
11.15.23 - 12.15.23	102	283
11.27.23 - 12.27.23 (kW not noted)		0

Table 3: New Building Projected Load Calculations – Utility Power And Generator Stand-by (Complete Back-Up)

Space Type	First Floor (SF)	Second Floor (SF)	Power Density (W/SF)	Total (kW)
Entry / Amenity	850	0	15	12.8
Laboratories	3188	4950	50	406.9
Office & Conference Rooms	1080	1440	20	50.4
Building Support	834	594	30	42.8
Warehouse	1680	0	15	25.2

Total	538.1	kW
	647.5	A @480V/3P
	1798.7	A @208V/3P

TAB 7 - PLUMBING

BSL–3 Laboratory – Interior Improvements BOD

PLUMBING/FIRE PROTECTION

7.1 APPLICABLE CODES AND STANDARDS

The design and installation of all drainage and service piping shall adhere to the latest site policies/procedures and shall be in accordance with all prevailing codes, standards and guidelines as listed below.

- 2021 Las Vegas and Henderson Building Code
- 2021 Las Vegas and Henderson Fire Code
- 2018 Las Vegas Energy Code
- 2018 Las Vegas Plumbing Code (or referred to as the Plumbing Code (PC))
- ADAAG – American Disabilities Accessibility Act – Accessibility Guidelines
- ANSI B31.9 - Building Services Piping
- ANSI Z358.1 - Emergency Eyewash and Shower Equipment
- American Society for Testing and Materials
- ASCE – Minimum Design Loads for Buildings and Other Structures – Section 13.6
- Factory Mutual Standards and Engineering Guidelines
- NFPA 13 Installation of Sprinkler Systems
- NFPA 54 National Fuel Gas Code
- NFPA 99 Health Care Facilities Handbook
- Southern Nevada Health District (SNHD); Client standards and design requirements

7.2 DESIGN CRITERIA

7.2.1 Sanitary Waste and Vent System

Sanitary waste and vent will be provided in conformance to Chapter 7 of the Las Vegas Plumbing Code.

- **703.1 Minimum Size**
  The minimum sizes of vertical, horizontal, or both drainage piping shall be determined from the total of drainage fixture units (DFU) connected thereto, and additionally, in the case of vertical drainage pipes, in accordance with their length.

- **708.1 General**
  Horizontal drainage piping shall be run in practical alignment and a uniform slope of not less than 1/4 inch per foot or 2 percent toward the point of disposal provided that, where it is impractical due to the depth of the street sewer, to the structural features, or to the arrangement of a building or structure to obtain a slope of 1/4 inch per foot or 2 percent, such pipe or piping 4 inches or larger in diameter shall be permitted to have a slope of not less than 1/8 inch per foot or 1 percent, where first approved by the Authority Having Jurisdiction.

- **709.1 General**
  Where practicable, plumbing fixtures shall be drained to the public sewer or private sewage disposal system by gravity.

- **710.2 Sewage Discharge**
  Drainage piping serving fixtures that are located below the crown level of the main sewer shall discharge into an approved watertight sump or receiving tank, so located as to receive the sewage or wastes by gravity. From such sump or receiving tank, the sewage or other liquid wastes shall be lifted and discharged into the building drain or building sewer by approved ejectors, pumps, or other equally efficient approved mechanical devices.

- **714.1 Unlawful Practices**
  It shall be unlawful for a person to deposit, by means whatsoever, into a plumbing fixture, floor drain, interceptor, sump, receptor, or device which is connected to a drainage system, public sewer, private sewer, septic tank, or cesspool, ashes; cinders; solids; rags; flammable, poisonous, or explosive liquids or gases; oils; grease; and whatsoever that is capable of causing damage to the public sewer, private sewer, or private sewage disposal system.

7.2.2 Distribution System

A separate waste and vent system will be provided within the building to serve plumbing fixtures and equipment. These services will be required in location where fixtures are present.

All new sanitary waste piping will be located below the floor slab or above the ceiling with vertical sanitary and vent stacks, located in chases as required. Accessibility shall be available to all cleanouts in the drainage piping. Sanitary building drainage will drain by gravity to the new sewer main provided in base building scope of work.

The design of the building sanitary drainage system will minimize the amount of under slab piping or floor penetrations. Drainage flow rates and pipe sizes shall be based on drainage fixture unit values of the actual fixtures and allowances as prescribed in the Las Vegas Plumbing Code.

Piping System Materials:

Above Ground
Pipe: ASTM A74, ASTM A888, CISPI 301 Cast Iron Hubless Pipe
Fitting: CISPI 301 Hub-less Fittings
Joints: Heavy-duty shielded couplings meeting ASTM 1540 or FM 1680, with stainless steel shield and neoprene gasket. Couplings shall be a minimum of 4-band type, unless FM 1680 approved otherwise.

Below Ground:
Pipe: ASTM A74, Cast Iron Extra-Heavy Soil Pipe
Fitting: ASTM A74, Hub & Spigot, Cast Iron Extra-Heavy Soil Pipe Fittings
Joints: ASTM C 564, Rubber Gaskets for Cast Iron Soil Pipe and Fittings

7.2.3 Storm Drainage System

Storm drainage will be provided in conformance to Chapter 11 of the Las Vegas Plumbing Code.

7.2.4 Distribution System

Storm drainage will be provided in base building scope of work.

7.2.5 Special Waste

Highly concentrated (non-diluted) acids, solvents and radioactive materials will be containerized by the Owner for proper, off-site disposal. No provisions will be made in the design of the plumbing systems for containment, conveying, and/or disposal of special wastes.

7.2.6 Laboratory Waste and Vent System

Chemical waste and vent will be provided in conformance to Chapter 8 of the Las Vegas Plumbing Code.

- **811.1 Pretreatment**
  Chemical or liquid industrial wastes that are likely to damage or increase maintenance costs on the sanitary sewer system, detrimentally affect sewage treatment or contaminate surface or subsurface waters shall be pretreated to render them innocuous before discharge into a drainage system. Detailed construction documents of the pretreatment facilities shall be required by the Authority Having Jurisdiction.

  Piping conveying industrial, chemical, or process wastes from their point of origin to sewer-connected pretreatment facilities shall be of such material and design as to adequately perform its intended function to the satisfaction of the Authority Having Jurisdiction. Drainage discharge piping from pretreatment facilities or interceptors shall be in accordance with standard drainage installation procedures.

  Copper or copper alloy tube shall not be used for chemical or industrial wastes as defined in this section.

- **811.2 Waste and Vent Pipes**
  Each waste pipe receiving or intended to receive the discharge of a fixture into which acid or corrosive chemical is placed, and each vent pipe connected thereto, shall be constructed of chlorinated polyvinyl chloride (CPVC), polypropylene (PP), polyvinylidene fluoride (PVDF), chemical-resistant glass, high-silicon iron pipe, or lead pipe with a wall thickness of not less than 1/8 of an inch (3.2 mm); an approved type of ceramic glazed or unglazed vitrified clay; or other approved corrosion-resistant materials. CPVC pipe and fittings shall comply with ASTM F2618. PP pipe and fittings shall comply with ASTM F1412 or CSA B181.3. PVDF pipe and fittings shall comply with ASTM F1673 or CSA B181.3. Chemical-resistant glass pipe and fittings shall comply with ASTM C1053. High-silicon iron pipe and fittings shall comply with ASTM A861.

- **811.6 Chemical Vent**
  No chemical vent shall intersect vents for other services.

- **811.7 Discharge**
  Chemical wastes shall be discharged in a manner approved by the Authority Having Jurisdiction.

A dedicated laboratory waste drainage and vent system will be provided to drain laboratory sinks and cup sinks and will be piped separately from the sanitary drainage system. Laboratory waste drainage will be collected and conveyed by gravity to an effluent treatment system. Requirements of treatment and/or containment system will be provided by SNHD/end-user to ensure design provides adequate environmental safety and compliance with PC and Authority Having Jurisdiction.

The effluent leaving the treatment process shall be monitored and provided with sampling port prior to connecting to building drainage system.

Laboratory waste piping will be located below the floor slab or above the ceiling with vertical laboratory waste and vent stacks located in chases as required. Complete accessibility shall be available to all cleanouts in the laboratory waste drainage piping.

The design of the laboratory waste system will minimize the amount of under slab piping. The drainage flow rates and pipe sizes will be based on drainage fixture unit values of the actual fixtures and appropriate code factors and allowances as prescribed in the Las Vegas Plumbing Code – Chapter 7.

Piping System Materials:

Pipe: ASTM F1412, ASTM D4101, ASTM D635 Schedule 40 Flame Retardant Polypropylene
Fitting: ASTM F1412, ASTM D4101, ASTM D635 Schedule 40 Flame Retardant Polypropylene
Joints: ASTM D2657 Socket Fusion, ASTM F1290 Electrofusion, or ASTM D2657 Butt Fusion

7.2.7 Potable Water System

Potable water will be provided in conformance to Chapter 6 of the Las Vegas Plumbing Code.

- **601.2 Hot and Cold Water Required**
  Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each plumbing fixture shall be provided with an adequate supply of potable running water piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection. Water closets and urinals shall be flushed using an approved flush tank or flushometer valve.

- **602.3 Backflow Prevention**
  No plumbing fixture, device, or construction shall be installed or maintained, or shall be connected to a domestic water supply, where such installation or connection provides a possibility of polluting such water supply or cross-connection between a distributing system of water for drinking and domestic purposes and water that becomes contaminated by such plumbing fixture, device, or construction unless there is provided a backflow prevention device approved for the potential hazard.

- **608.2 Excessive Water Pressure**
  Where static water pressure in the water supply piping is exceeding 80 psi (552 kPa), an approved-type pressure regulator preceded by an adequate strainer shall be installed and the static pressure reduced to 80 psi (552 kPa) or less. Pressure regulator(s) equal to or exceeding 1-1/2 inches (40 mm) shall not require a strainer. Such regulator(s) shall control the pressure to water outlets in the building unless otherwise approved by the Authority Having Jurisdiction. Each such regulator and strainer shall be accessibly located aboveground or in a vault equipped with a properly sized and sloped boresighted drain to daylight, shall be protected from freezing, and shall have the strainer readily accessible for cleaning without removing the regulator or strainer body or disconnecting the supply piping.

  Pipe size determinations shall be based on 80 percent of the reduced pressure where using Table

610.4.

An approved expansion tank shall be installed in the potable water distribution piping downstream of each such regulator to prevent excessive pressure from developing due to thermal expansion and to maintain the pressure setting of the regulator. Expansion tanks used in potable water systems intended to supply drinking water shall comply with NSF 61. The expansion tank shall be properly sized and installed in accordance with the manufacturer's installation instructions and listing. Systems designed by registered design professionals shall be permitted to use approved pressure relief valves in lieu of expansion tanks provided such relief valves have a maximum pressure relief setting of 100 psi (689 kPa) or less.

7.2.8 Distribution System

New potable/domestic water service will be provided in base building scope of work.

The potable/domestic hot water system will have gas fired, water heaters provided in base building scope of work. Potable hot water will be distributed through the building to supply plumbing fixtures, only, and will be provided with circulating pump system to return potable hot water, from the furthest fixtures, back to hot water heater(s) to maintain hot water delivery in the system.

Potable cold water, hot water and hot water return piping will be routed through the facility to plumbing fixtures, as required. Shutoff valves will be provided to isolate areas, laboratory spaces and fixtures for maintenance purposes. Base of distribution risers will be provided with drain valves. Branch takeoff, from risers, will be provided with shutoff valves.

Potable cold water, hot water, and hot water return piping will be provided with insulation and appropriate jacket, as per Las Vegas Energy Code Section C404.

The potable cold water will be provided to plumbing fixtures and safety equipment as required. The potable water branch piping will be sized to maintain 35 psig at the most hydraulically remote equipment or fixture connection and a minimum pressure of 30 psig at the most remote safety shower or flush valve.

Water (cold) velocity in the potable water distribution piping will not exceed 8 feet per second and provisions will be made to arrest water hammer where required. System capacities for potable water will be based on water fixture unit (WFU) values with appropriate factors and actual equipment demands as prescribed in Chapter 6 of the Las Vegas Plumbing Code.

The entire potable water systems will be sterilized with a hydrochloride solution per the Las Vegas Plumbing Code – Chapter 6 - Section 609.9.

New or repaired potable water systems shall be disinfected prior to use where required by the Authority Having Jurisdiction. The method to be followed shall be that prescribed by the Health Authority or, in case no method is prescribed by it, the following:

- The pipe system shall be flushed with clean, potable water until potable water appears at the points of the outlet.
- The system or parts thereof shall be filled with a water-chlorine solution containing not less than 50 parts per million of chlorine, and the system or part thereof shall be valved-off and allowed to stand for 24 hours; or, the system or part thereof shall be filled with a water-chlorine solution containing not less than 200 parts per million of chlorine and allowed to stand for 3 hours.
- Following the allowed standing time, the system shall be flushed with clean, potable water until the chlorine residual in the water coming from the system does not exceed the chlorine residual in the flushing water.
- The procedure shall be repeated where it is shown by a bacteriological examination made by an approved agency that contamination persists in the system.

These services will be required in any location were plumbing fixtures are present.

Piping System Materials:

Pipe:	Seamless Copper Tube, ASTM B88, Type K Hard/drawn temper
Fitting:	Wrought copper solder cup type fittings, ANSI/ASME B16.22 or B16.18
Joints:	ASTM B32 lead-free solder with ASTM B813 water soluble flux
Valves:	Bronze body, two-piece, full-port, stainless steel ball and stem with soldered ends

7.2.9 Non-Potable Water System

Non-potable water system will be provided for laboratory water, process water and mechanical/utility water demand. Non-potable water will be taken from potable water source and will be protected with, reduced pressure zone backflow preventers (ASSE 1013), to protect the building water supply.

Non-potable hot water system will have gas fired, water heaters in the Mechanical Room. Non-potable hot water will be distributed through to laboratory spaces and will be provided with circulating pump system to return potable hot water, from the furthest fixtures, back to hot water heater(s) to maintain hot water delivery in the system.

Non-potable cold water, hot water and hot water return piping will be routed through the facility to laboratory fixtures, or where required. Shutoff valves will be provided to isolate areas, laboratory spaces and fixtures for maintenance purposes. Base of distribution risers will be provided with drain valves. Branch takeoff, from risers, will be provided with shutoff valves.

Non-potable cold water, hot water, and hot water return piping will be provided with insulation and appropriate jacket, as per Las Vegas Energy Code Section C404.

The non-potable water piping will be sized to maintain 35 psig at the most hydraulically remote lab equipment connection and a minimum pressure of 30 psig at the most remote point of connection.

Water (cold) velocity in the non-potable water distribution piping will not exceed 8 feet per second and provisions will be made to arrest water hammer, where required. System capacities for non-potable water shall be based on actual equipment demands.

The entire potable and non-potable water systems will be sterilized with a hydrochloride solution per the Las Vegas Plumbing Code – Chapter 6 - Section 609.9.

Piping System Materials:

Pipe:	Seamless Copper Tube, ASTM B88, Type K Hard/drawn temper

Fitting: Wrought copper solder cup type fittings, ANSI/ASME B16.22 or B16.18
Joints: ASTM B32 lead-free solder with ASTM B813 water soluble flux
Valves: Bronze body, two-piece, full-port, stainless steel ball and stem with soldered ends

7.2.10 Potable and Non-Potable Hot Water System

A dedicate hot water system will be provided for potable water and non-potable water use. Each system will have gas fired, modular, tankless water heaters with expansion tank. Potable and non-potable water will distribute independently in respective systems. Each hot water system will be distributed through the building to supply respective plumbing fixtures, laboratory sinks, process and utility equipment and will be provided with circulating pump system to return hot water, from the furthest fixtures, back to respective hot water heater(s) to maintain hot water delivery in the system.

The hot water piping will be sized to maintain 35 psig at the most hydraulically remote lab equipment connection and a minimum pressure of 30 psig at the most remote lavatory. Water velocity in the hot water distribution piping will not exceed 8 feet per second and provisions will be made to arrest water hammer. System capacities for hot water shall be based on fixture unit values with appropriate factors of actual equipment demands.

The entire hot water systems, potable and non-potable, will be sterilized with a hydrochloride solution per the Las Vegas Plumbing Code – Chapter 6 - Section 609.9.

Piping System Materials:

Pipe: Seamless Copper Tube, ASTM B88, Type K Hard/drawn temper
Fitting: Wrought copper solder cup type fittings, ANSI/ASME B16.22 or B16.18
Joints: ASTM B32 lead-free solder with ASTM B813 water soluble flux
Valves: Bronze body, two-piece, full-port, stainless steel ball and stem with soldered ends

7.2.11 Tepid Water Supply

Potable cold and hot water will be extended to each emergency showers and eyewashes with ANZI Z358.1 thermostatic mixing valve to provided tepid water. The temperature of the water will be delivered at 85°F or as directed by SNHP or Environmental Health and Safety (EHS) officer.

Tepid water supply piping will be sized to maintain a minimum pressure of 30 psig at the most remote safety shower. Water velocity in the distribution piping will not exceed 8 feet per second. System capacities for cold water will be based on actual equipment demands of the eyewashes and safety showers.

Valves on supply lines will be provided with lock shield type covers.

Tepid water piping will be sterilized with a hydrochloride solution per the Las Vegas Plumbing Code – Chapter 6 - Section 609.9.

Piping System Materials:

Pipe: Seamless Copper Tube, ASTM B88, Type K Hard/drawn temper
Fitting: Wrought copper solder cup type fittings, ANSI/ASME B16.22 or B16.18
Joints: ASTM B32 lead-free solder with ASTM B813 water soluble flux
Valves: Bronze body, two-piece, full-port stainless steel ball and stem with soldered ends

7.2.12 Purified Water System

The building distribution system shall be designed on the basis of 2 gpm per laboratory outlet, with diversity factors applied based on the number of outlets and on actual demands of equipment requiring this service.

Reverse osmosis (RO) or deionized water (DI) distribution piping shall be sized to maintain a minimum supply water velocity of 5 fps and minimum return water velocity of 3 fps. Turbulent flow shall be maintained at all times in the system to prevent microbial growth. The distribution loop shall operate continuously; branch lines to terminal end use points shall also be continuously circulated. All outlets off the RO or DI system will be kept to a maximum of four pipe diameters to minimize dead legs in the system.

The exact water quality of the central system will be provided by SNHD/end-user. The following are the water quality parameters for USP 27 and the different ASTM grades. The anticipated water quality will be one of the aforementioned grades.

Piping System Materials:

Pipe: Stainless steel sanitary tubing, Type 316, Schedule 10 ASTM A270, ASTM A450, ANSI B36.19M, ASME/ANSI B46.1, with a surface finish of 20 µ-in Ra inside diameter and 30 µ-in Ra outside diameter
Fitting: Stainless steel sanitary fittings, Type 316, Schedule 10 ASTM A270, ASTM A450, ASME/ANSI B46.1.
Joints: Sanitary butt weld method such as orbital welding or sanitary mechanical joint (clean joint), as required based on fluid quality.
Valves: Three-piece, high purity tri-clamp end 316 Stainless steel ball valve, ASTM A351 CF8M with PTFE seals.

Pipe: Un-pigmented polypropylene pipe, ASTM D4101, ASTM D2837, SDR 11 or Schedule 80, individual cap, sealed bag or ends
Fitting: Natural polypropylene, un-pigmented ASTM D4101, furnished in sealed nitrogen-charged bag. Socket fusion style or IR butt fusion without use of embedded coils.
Joints: IR butt fusion, welded, or approved crevice free fusion system
Valves: Diaphragm, Spigot ends for 2” and smaller, flanged ends for larger than 2”

USP 27 Pharmaceutical Grade Water

(update similar to USP 23)			
Organics		<	0.5 ppm
Conductivity		<	1.3 µs/cm @ 25ºC in-line measurement
Endotoxins			
	Purified Water		No Specification
	WFI	<	0.2 EU/ml
Bacteria (Guideline Only)			
	Purified Water	<	100 cfu/ml
	WFI	<	10 cfu/100 ml

American Society for Testing Materials (ASTM)

ASTM Type:	I	II	III	IV
Conductivity (µs/cm @ 25ºC)	0.055	1.0	0.25	5.0
Resistivity @ 25ºC Meg./cm	18.3	1	4	0.2
Total Silica (mg/l)	3	3	500	-
Total Organic Carbon (mg/l)	10	50	200	-
Chlorides (mg/l)	1	5	10	50
Sodium (mg/l)	1	5	10	50
pH	-	-	-	5.0-8.0

ASTM Subtype:	A	B	C
Bacteria (cfu/100 ml)	1	10	1000
Endotoxins (EU/ml)	<0.03	0.25	N/A

7.2.13 Natural Gas

New natural gas service will be provided in base building scope of work.

The natural gas distribution piping will be routed in the ceiling space or on the roof, with connections being made to each area requiring service. Depending on the provided gas pressure to the site, gas regulators may be required at the equipment and will be vented to the exterior.

The design will be based on supplying low pressure natural gas; the system will be installed in accordance with the Las Vegas Plumbing Code – Chapter 12 or the latest edition of NFPA 54.

Piping System Materials:

Pipe: Carbon steel pipe, ASTM A53 or A106, Grade B, Type S seamless or Type E electric resistance welded, Schedule 40

Fitting: Malleable iron threaded fittings; ANSI B16.3Fiitings shall be 125 lbs. minimum for pressures less than 75 psi and 300 lbs. for over 75 psi.

Joints: Threaded using American Standard for Pipe Threads, ANSI B2.1 with thread sealant or Teflon tape material especially listed compatible with system contents, pipe materials, and operating conditions.

Valves: 2-1/2" and smaller, bronze ball valves

7.2.14 Cylinder Gases

High-pressure, cylinder gases (helium, carbon dioxide, nitrogen) will be designed with fully-automatic, regulator, change over manifold system, able to switch from primary cylinder bank to secondary bank.

The cylinder gases, manifolds and distribution piping will originate in a mechanical space or closet with each gas being piped centrally to the areas requiring this service. Compressed helium, carbon dioxide and nitrogen gases will be piped through in-wall, recessed, valve box, accessible on corridor side, prior to routing through laboratory area, to respective outlets. Valve box will provide easy access to shut-off compressed gases supply laboratory space.

Piping System Materials:

Pipe: ASTM B819 Copper tube, cleaned and degreased for oxygen service, Type L Hard/drawn temper, factory nitrogen charged and ends capped.

Fitting: Wrought copper solder cup type fittings, ANSI/ASME B16.22, factory cleaned and degreased for oxygen service.

Joints: BCuP 2, 3, 4, or 5 brazed joints without flux to NFPA Level 1 system standards and ASSE series 6000 installation procedure, including clean, dry nitrogen purge.

Valves: Bronze/brass, three-piece, full-port with chrome plated brass ball and extension ends for brazing, cleaned for oxygen service.

7.2.15 Laboratory Vacuum System

Any vacuum requirement will be generated from local or point-of-use vacuum pumps provided by SNHD.

7.2.16 Laboratory Compressed Air System

A central, compressed air system will be provided for laboratory use. The laboratory compressed air will be oil-less, multiplex. factory packaged system consisting of scroll type compressors, desiccant dryers, dew point meter receiver tank and control panel. Compressed air system will be sized for N+1 to provide.

The building distribution system will be designed on the basis of 1 SCFM and shall be a minimum of ½" per laboratory outlet with diversity factors applied based on the number of outlets and on actual demands of equipment requiring this service.

Laboratory compressed air will be provided at no more than 50 psi to each outlet, unless otherwise directed by SNHD. The compressed air branch distribution piping will be designed on actual SCFM usages with diversity factors applied.

PLUMBING/FIRE PROTECTION

The distribution system will be sized to limit air velocities to 4,000 fpm with the maximum pressure drop to the furthest outlet of not more than 5 psig at estimated peak flow conditions. The building distribution system for compressed air will be cleaned and installed in accordance with NFPA 99.

Piping System Materials:

Pipe: Seamless Copper Tube, ASTM B88, Type L Hard/drawn temper
Fitting: Wrought copper solder cup type fittings, ANSI/ASME B16.22 or B16.18
Joints: BCuP 2, 3, 4, or 5 brazed joints
Valves: Bronze/brass, three-piece, full-port with chrome plated brass ball and extension ends for brazing, cleaned for oxygen service.

7.2.17 Liquid (cryogenic) Nitrogen (LN2)

Liquid nitrogen source, in portable tanks, dispensing to cryogenic freezers, will be provided by SNHD/end-user.

7.2.18 BSL-3 Laboratory Space

Required potable water in BSL-3 laboratory spaces, will be protected with RPP (ASSE 1013) type backflow preventer, located outside of the containment space. Potable hot water will not be circulated and will be provided with electric, self-regulating, temperature maintenance cable, as required by PC.

Non-potable water, required in BSL-3 laboratory spaces, will be supplied from non-potable water system, protected with double check valve (ASSE 1015) for added protection, located outside of the containment space. Non-potable hot water will not be circulated and will be provided with electric, self-regulating, temperature maintenance cable, as required by PC.

Dedicated compressed gases will be provided for BSL-3 laboratory spaces. High-pressure cylinders with regulator manifold will be located in close proximity, outside of containment space. Compressed gas piping will be provided with check valve and will be piped through in-wall, recessed, valve box, accessible on corridor side, prior to routing through the containment area, to respective outlets. Valve box will provide easy access to shut-off compressed gases supply laboratory space.

Purified water, provided into BSL-3 space, will dead-end and will not circulate through or out of containment space.

Effluent decontamination system (EDS) will be provided to sterilize or decontaminate pathogen/microorganism in drainage effluent from fixtures in BSL-3 laboratory spaces. EDS will be thermal, batch type, having a fill tank with thermal heating tank, utilizing steam generated by steam boiler, in mechanical scope. EDS unit will be provided in a dedicated room, for containment, on the first floor. Drainage piping from fixtures to EDS will be double-wall containment system with associated leak detection. Requirement of EDS will be coordinated and confirmed with SNHD.

All piping into BSL-3 containment shall be secured to prevent movement that may compromise the barrier. Service piping will be provided with shutoff valve, immediately outside of containment barrier.

7.2.19 Fire Protection

Fire protecting systems will be designed to meet Building and Fire Code package, NFPA referenced codes as well as the insurance industry standards. Systems will include wet-pipe type sprinkler systems. and a digital Fire Detection and Alarm system.

The entire building will be fully sprinkled with automatic sprinkler systems being the primary type of suppression. The term fully sprinkled is defined in the Building Code – Chapter 9 - Section 903.3.1.

The fire protection contractor shall be required to complete contractor's material and test certificates for fire protection piping and submit them to the Owners insurance company, local fire marshal and the design professional.

All sprinklers shall be laid out and installed in symmetrical patterns; sprinklers located in the ceiling tiles shall be positioned in the center of the tile.

The various sprinkler system zones, throughout the building, will be designed and installed in accordance with the hydraulic design criteria listed in the following table.

Occupancy/Area	Classification of Sprinkler	Design Density (gpm/sq.ft)	Design Area (sq.ft)	Area Per Sprinkler (sq.ft)
Office/Corridors	Quick Response	0.10	1,500	225
Labs	Quick Response	0.20	2,500	130
Mechanical Areas	Quick Response	0.20	2,500	130

Provide quick-response concealed sprinklers with ordinary temperature rating in areas with finished ceilings. Provide white sprinkler cover plates to match ceiling color. Provide quick response standard up-right or pendant heads in areas with no ceiling. Clean rooms and similar spaces shall be provided with concealed pendant heads with gasket.

Sprinkler heads shall be rated at 135°F in all conditioned area, mechanical areas shall be rated for 165°F and other hot equipment areas shall be 212°F.

All piping, fittings, devices and their installation shall comply with the requirements of NFPA 13, and the local Authority Having Jurisdiction. All material and equipment will be UL Listed and FM approved for fire protection service.

Piping System Materials:

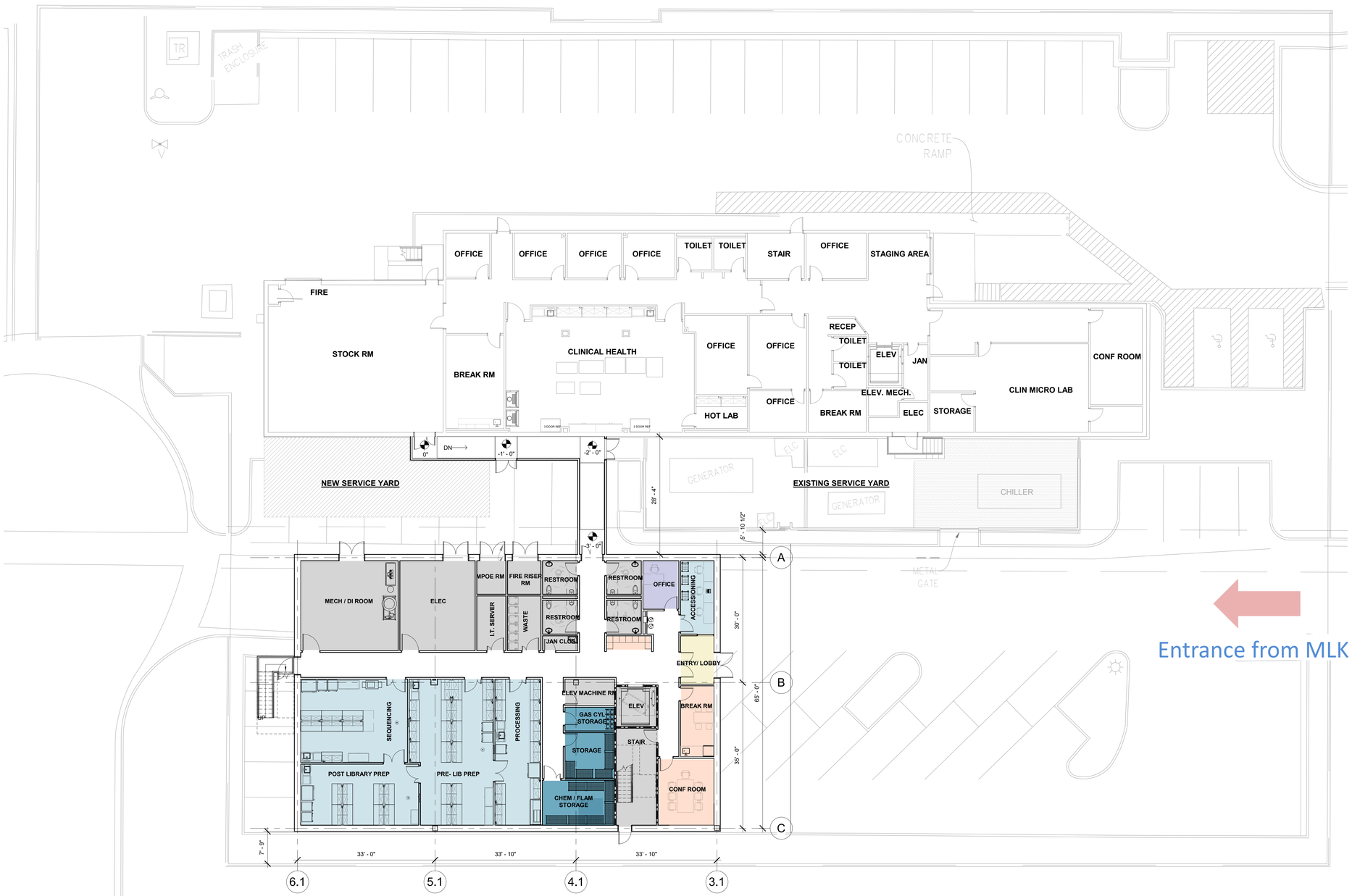
Pipe/Fittings: Black steel pipe, ASTM A53/A53M, Type B. Pipe ends may be factory or field formed to match joining methods.
Joints: Roll-grooved joints. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606.

7.2.20 Seismic Requirements

Seismic system for piping and equipment shall be constructed based on ASCE – Minimum Design Loads for Buildings and Other Structures – Section 13.6 and Las Vegas and Henderson Building Code.

TAB 8 - APPENDIX

BSL–3 Laboratory – Interior Improvements BOD



1 LEVEL 1 FLOOR PLAN- Presentation
SCALE: 3/32" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

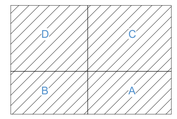
latitude33 PLANNING & ENGINEERING

SNHD Southern Nevada Health District

LEGEND

- LAB SPACE
- GATHERING SPACE
- PRIVATE OFFICE
- PUBLIC ENTRY
- SUPPORT SPACE
- LAB SUPPORT SPACE

KEY PLAN



PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

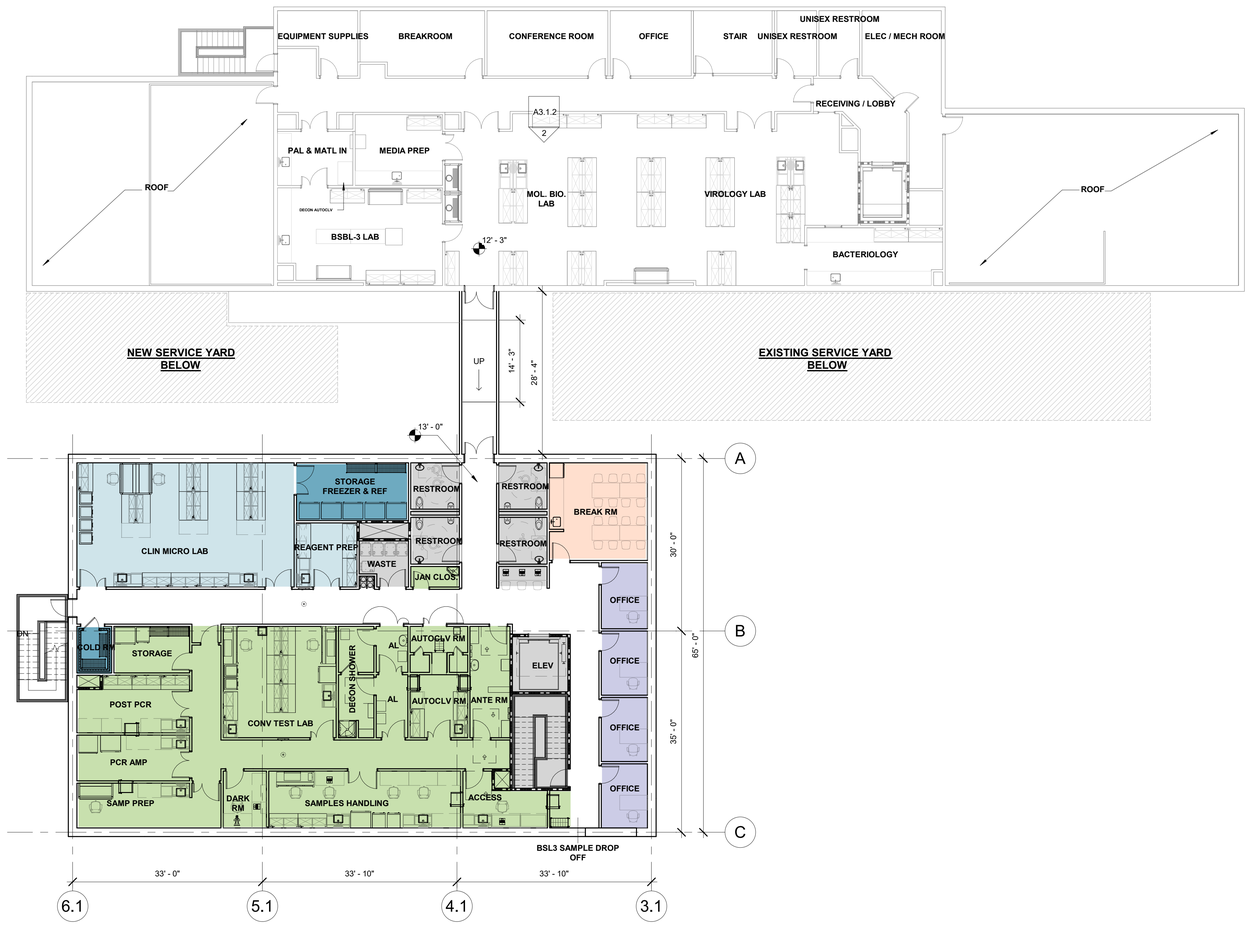
Southern Nevada Health District
700 South M.L.K. Blvd
Las Vegas, NV 89106

DRAWN BY	RM	DATE	03.29.2024
PROJECT NO.	20230523	SCALE	3/32" = 1'-0"

DRAWING NAME
SNHD BSL3 LAB - FLOOR PLAN LEVEL 1

FLOOR/SECTION PHASE

DRAWING NO.
A2.20



1 LEVEL 2 FLOOR PLAN- Presentation
SCALE: 3/32" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

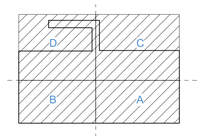
latitude33 PLANNING & ENGINEERING

SNHD Southern Nevada Health District

LEGEND

- LAB SPACE
- GATHERING SPACE
- PRIVATE OFFICE
- BSL3 SUITE
- SUPPORT SPACE
- LAB SUPPORT SPACE

KEY PLAN



PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. Blvd
Las Vegas, NV 89106

DRAWN BY	RM	DATE	03.29.2024
PROJECT NO.	20230523	SCALE	3/32" = 1'-0"

DRAWING NAME
SNHD BSL3 LAB - FLOOR PLAN LEVEL 2

FLOOR/SECTION PHASE

DRAWING NO.
A2.21

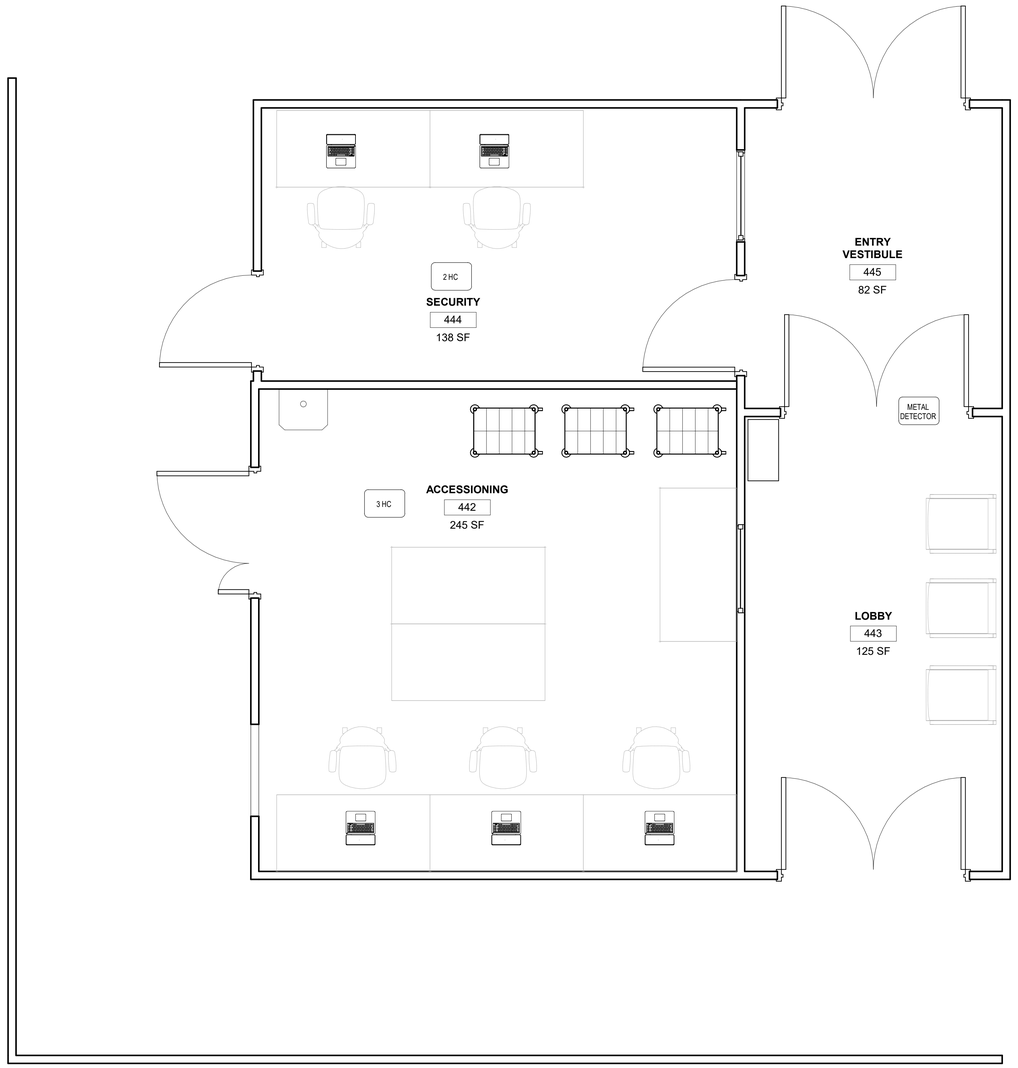
SNHD BSL Project
Space Tabulation
First Floor

RDS No.			SF/Rm	# of Rms	Total NSF	Total GSF
FIRST FLOOR SUMMARY					**NSF**	**GSF**
		ENTRY / AMENITY			285	356
		LABORATORIES			1,979	2,573
		OFFICES & CONFERENCE ROOMS			453	544
		BUILDING SUPPORT			2,358	2,857
		WAREHOUSE			0	0
		Total First Floor Building			**5,075**	**6,329**
ENTRY / AMENITY						
1.1		Entry Vestibule / Lobby	80	1	94	118
~~1.1~~		~~Lobby~~	125	0	0	0
~~1.1~~		~~Security Room~~	~~140~~	~~0~~	~~0~~	~~0~~
1.1		Accessioning	245	1	142	178
1.2		Locker Area	30	1	49	61
		ENTRY / AMENITY Subtotal			285	356
LABORATORIES						
		~~Laboratory Response Network Chemical (LRN-C) LABORATORY SUITE~~				
~~1.3~~		~~Instrument Lab~~	~~400~~	~~0~~	~~0~~	~~0~~
~~1.3~~		~~Gas Cylinder Closet~~	~~20~~			
~~1.5~~		~~Sample Processing Lab~~	~~200~~	~~0~~	~~0~~	~~0~~
		Molecular Bio - Whole Genome Sequencing (WGS) Suite				
1.4		Sample Processing Lab	325	1	385	501
1.4		Pre-Library Prep	600	1	665	865
1.4		Sequencing Room	450	1	513	667
1.4		~~Mol Bio Storage Room~~	0	0	0	0
1.4		Post Library Prep Room	370	1	416	541
		LABORATORY Subtotal			1,979	2,573
OFFICES & CONFERENCE ROOMS						
1.6		Supervisor Offices (Genome Sequencing WGS)	100	1	100	120
1.7		Conference Room	500	1	216	259
1.8		Break Room	240	1	137	164
		OFFICES & CONFERENCE Subtotal			453	544
BUILDING SUPPORT						
~~1.9~~		~~Men's & Women's Restrooms~~	~~220~~	~~2~~	~~314~~	~~393~~
1.10		Elevator & Elevator Equipment Room	210	1	190	228
1.11		IT Server Room	100	1	92	110
~~1.12~~		~~Stairs, Internal~~	~~190~~	~~1~~	~~225~~	~~281~~
1.12		Stairs, External	190	0	0	0
1.13		Janitor's Closet	60	1	30	36
1.14		Biological Waste Staging / Chemical Waste Staging	200	1	105	126
~~1.14~~		~~Chemical Waste Staging~~	~~100~~	~~0~~	~~0~~	~~0~~
1.15		Gas Cylinder Storage	50	1	68	82
1.16		Chemical & Flammable Storage	150	1	187	224
1.17		General Storage Room	200	1	131	157
1.17		MPOE (8' x 10')	80	1	56	67
1.17		Fire Riser Room (8' x 10')	80	1	65	78
~~1.18~~		~~Main Electrical Room (18' x 28')~~	~~500~~	~~1~~	~~390~~	~~468~~
1.18		Mechanical Room / DI Water Room (18' x 28')	500	1	505	606
~~1.19~~		~~DI Water Room~~	~~200~~	~~0~~	~~0~~	~~0~~
~~1.19~~		~~LN2 Fill Station~~	~~100~~	~~0~~	~~0~~	~~0~~

SNHD BSL Project
Space Tabulation
2 nd Floor Second Floor

RDS No.		SF/Rm	# of Rms	Total NSF	Total GSF
SECOND FLOOR SUMMARY					
	ENTRY / AMENITY			0	0
	LABORATORIES			3,284	4,269
	OFFICES & CONFERENCE ROOMS			468	585
	BUILDING SUPPORT			644	1,421
	WAREHOUSE			0	0
	Total Building Second Floor			**4,396**	**6,276**
	Total Building			**9,471**	**12,605**

ENTRY / AMENITY						
		ENTRY / AMENITY Subtotal			0	0
LABORATORIES						
	BSL-3 LABORATORY SUITE					
2.1		Accessioning Room (BSL-3)	120	1	113	147
2.1		Sample Handling Room (BSL-3)	325	1	330	429
2.1		Lab Storage Room (BSL-3)	150	1	106	138
2.1		Conventional Test Lab (BSL-3)	420	1	378	491
2.1		**Rapid Test Lab Suite (BSL-3)** Sample Prep	160	1	194	252
2.1		**Rapid Test Lab Suite (BSL-3)** PCR Amplification	160	1	156	203
2.1		**Rapid Test Lab Suite (BSL-3)** Post PCR	210	1	185	241
2.1		Dark Room (BSL-3)	60	1	75	98
2.2		Personnel Air Lock (PAL) In (BSL-3)	130	1	135	176
2.2		Decontamination Autoclave Area (BSL-3)	225	1	193	251
2.2		Personnel Air Lock (PAL) Out & Equipment Air Lock (BSL-3)	150	1	106	138
2.2		PAL Out Decontamination Shower (BSL-3)	160	1	119	155
2.2		BSL Staff Area	160	1	32	42
	~~**Training Lab**~~					~~0~~
~~**2.3**~~		~~Training Lab~~	~~160~~	~~0~~	~~0~~	~~0~~
	~~**Environmental Microbiology (EM)**~~					~~0~~
~~**2.4**~~		~~Microbiology - Food & Water~~	~~400~~	~~0~~	~~0~~	~~0~~
	CLINICAL MICROBIOLOGY LABORATORY SUITE					0
2.5		Clinical Micro lab	800	1	816	1,061
~~**2.5**~~		~~Dark Room~~	~~60~~	~~0~~	~~0~~	~~0~~
2.5		Lab Storage / Freezer and Refrigerator Room	120	1	196	255
2.5		Reagent Prep Room	180	1	118	153
~~**2.6**~~		~~Freezer and Refrigerator Room~~	~~175~~	~~0~~	~~0~~	~~0~~
2.6		Walk-in Cold Room	100	1	32	42
		LABORATORY Subtotal			3,284	4,269
OFFICES & CONFERENCE ROOMS						
2.7		Laboratory Manager	200	1	92	115
2.7		IT Office	100	1	90	113
2.7		Safety Officer	100	1	90	113
2.7		Supervisor's Office	100	1	90	113
~~**2.8**~~		~~Conference Room~~	~~200~~	~~0~~	~~0~~	~~0~~
2.9		Break Room	300	1	288	360
		OFFICES & CONFERENCE Subtotal			468	585
BUILDING SUPPORT						
2.10		Men's & Women's Restrooms	220	2	314	393
2.11		Elevator	80	1	80	96
2.12		Stairs, Internal	190	1	158	198
2.12		Stairs, External	190	0	0	0
2.13		Janitor's Closet	60	1	30	36
2.14		Waste Area	100	1	62	74
2.14		Circulation	100	1	500	625
		BUILDING SUPPORT Subtotal			644	1,421



1 Environmental Microbiology (EM)
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

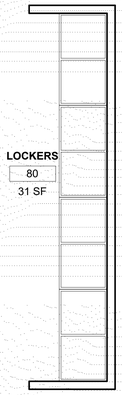
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

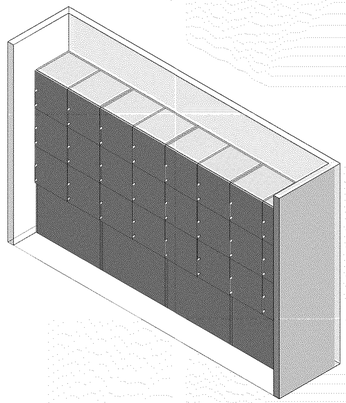
DRAWING NAME
ENTRY

FLOOR/SECTION PHASE

DRAWING NO.
A1.1



1 ROOM DATA SHEETS - LOCKERS
SCALE: 1/2" = 1'-0"



2 ROOM DATA SHEET - LOCKERS
SCALE:

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
ROOM DATA SHEET - LOCKERS

FLOOR/SECTION PHASE

DRAWING NO.
A1.2

FIRST FLOOR

1 EM MICROBIOLOGY SUITE
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
MOLECULAR BIOLOGY WHOLE GENOME SEQUENCING (WGS) SUITE

FLOOR/SECTION PHASE | DRAWING NO.
A1.4

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL								DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-01	Tecan DreamPrep 480	F	Tecan	2204010727		46.28 x 36.34 x 77.8	B						100-240 VAC			Yes																	80%...	
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Tecan Computer	F	Tecan		X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Bench for Tecan Prep and Computer	1	NA			36 x 60 x 30										Yes																			
1	Molecular Bio/WGS	Pre-Library Prep	1.4	1.46	104-02	Eppendorf 5075t NGS Solution	1	Eppendorf	New		43 x 25 x 32	B						110-240V, 50-60...			Yes																		55-75% - humidity requirement
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Eppendorf 5075t NGS Computer	1	Eppendorf	New	X		B									Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-03	BioFire- A	1	BioFire	2FA01878		29 x 18 x 11.5	B						100-240...			Yes																		20-80% - humidity requirement
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-04	BioFire- B	1	BioFire	2FA01775		29 x 18 x 11.5	B						100-240...			Yes																		20-80% 0 humidity requirement
1	Molecular Bio/WGS	Pre-Library Prep	1.4			BioFire Computer, bench 1	1	BioFire	BioFire	X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4			BioFire Mini Centrifuge	1	ThermoFisher	1204 1045			B		110-240V, 50/60 Hz, 0.35A																											
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Genie 2 Vortex- BioFire	1	ThermoFisher	2-464916			B						120 VAC																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4	1.42	104-05	AirClean Laminar Flow Hood #1	1	ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or 230VAC50 Hz																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4	1.43	104-06	AirClean Laminar Flow Hood #2	1	ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4	1.44	104-07	Refrigerator	1	ThermoFisher	10383137		30 x 54 x 80	F						115V, 60Hz, 5.8A...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4	1.45	104-08	Freezer (-80°C)	1	VWR	2.022E+13		37 x 47 x 77	F						115V, 60Hz																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Computer	1	SNHD	IT-03646	X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Computer	1	SNHD	IT-03652	X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Computer	1	SNHD	IT-03720	X		B									Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-09	Centrifuge	1	ThermoFisher	5810R		26 x 24 x __	B						120V/50-60Hz,...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-10	SimpliAmp Thermal Cycler- 1	1	ThermoFisher	2280018011857		18.11 x 9.45 x 8.27	B						100-240V, 50-60...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-11	SimpliAmp Thermal Cycler- 2	1	ThermoFisher	2280021050195		18.11 x 9.45 x 8.27	B						100-240V, 50-60...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-12	Qubit 4-B	1	ThermoFisher	2322622050152		10 x 5.4 x 2.2	B						100-240 VAC																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-13	Qubit 4-C	1	ThermoFisher	2322622130187		10 x 5.4 x 2.2	B						100-240 VAC																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Centrifuge Corning Mini -1	1	ThermoFisher	HC221AH0004150			B						110-240V, 50/60...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Centrifuge Corning Mini -2	1	ThermoFisher	HC21BAH0002656			B						110-240V, 50/60...																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Genie 2 Vortex-1	1	ThermoFisher	2-485158			B						120 VAC																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Genie 2 Vortex-2	1	ThermoFisher	2-363973			B						120 VAC																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-14	Digital Shaking Dry bath	1	ThermoFisher	JAKT27005		13.1 x 10.9 x 6.7	B						120V, 60Hz																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4		104-15	Mini Heat Block	1	ThermoFisher	137-16031-22120024		6 x 6 x 6	B						120-230V, 1A																						
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Wall cabinet - storage shelving	2		New		48 x 21 x 84	W																											
1	Molecular Bio/WGS	Pre-Library Prep	1.4			Wall cabinet - storage shelving	1		New request		48 x 24 x __	W																											
1	Molecular Bio/WGS	Processing Room	1.4	1.41	104.2-01	BSC 6' Class II Type A 2	1	ThermoFisher	84809082603		33 x 78 x 63 (With Exhaust Grill) Base/stand is 36in tall W.S.	F						115V,60Hz, 14A, 1PH																						
1	Molecular Bio/WGS	Processing Room	1.4		104.2-02	Printer/scanner/copier	1	Kyocera	NA		48 x 36 x __	B						120V/60Hz 12.0A			Yes																		
1	Molecular Bio/WGS	Processing Room	1.4		104.2-04	Refrigerator - 2		VWR	CAT# 13400518PM3		8 x 10 x 12.7	F						115V, 60Hz, 8.8 A, 1PH																						
1	Molecular Bio/WGS	Processing Room	1.4	1.44A	104.2-03	Freezer #2 (-20°C)		ThermoFisher	CPS-21242257-2209		28 x 31 x 74	F						115V, 60Hz, 6.0A, 1PH																						
1	Molecular Bio/WGS	Processing Room	1.4			BioFire Printer and sample prep, bench 2	1	Kyocera	03348-16-09076			B						12V																						
1	Molecular Bio/WGS	Reagent Prep Room	1.4	1.41C		AirClean Laminar Flow Hood #1	1	ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or...																						
1	Molecular Bio/WGS	Post Library Prep	1.4	1.42C	104.3-01	Refrigerator	1	VWR	10791-616 New...			F						115 V, 5.4A																						
1	Molecular Bio/WGS	Post Library Prep	1.4	1.43C	104.3-02	Freezer (-20°C)	1	ThermoFisher	CPS-21242270-2209...		28 x 31 x 74	F						115V, 60Hz, 6.0A...																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Qubit 4-A		ThermoFisher	2322622010606		10 x 5.4 x 2.2	B						100-240 VAC																						
1	Molecular Bio/WGS	Post Library Prep	1.4		104.3-03	SimpliAmp Thermal Cycler- 3		ThermoFisher	2280020118317		18.11 x 9.45 x 8.27	B						100-240V, 50-60...																						
1	Molecular Bio/WGS	Post Library Prep	1.4		104.3-04	SimpliAmp Thermal Cycler- 4		ThermoFisher	2280021050225		18.11 x 9.45 x 8.27	B						100-240V, 50-60...																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Mini Heat Block		ThermoFisher	137-16031-22120024		6 x 6 x 6	B						120-230V, 1A																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Mini Centrifuge Corning -3		ThermoFisher	HC199AG0002956			B						110-240V, 50/60 Hz, 0.35A																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Mini Centrifuge VWR Galaxy		ThermoFisher	3070231			B						110-240V, 50/60 Hz, 0.35A																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Genie 2 Vortex-3		ThermoFisher	2-466540			B						120 VAC																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Digital Shaking Dry bath		ThermoFisher	JAKT27005		13.1 x 10.9 x 6.7	B						120V, 60Hz																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Centrifuge		ThermoFisher	5810R		26 x 24 x __	F						120V/50-60Hz, 15A																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Computer		SNHD	IT-03434	X		B						12V			Yes																		
1	Molecular Bio/WGS	Post Library Prep	1.4			Computer		SNHD	IT-03377	X		B						12V			Yes																		
1	Molecular Bio/WGS	Post Library Prep	1.4			Printer - WGS (Small)		Kyocera	192-168-92145			B						12V			Yes																		
1	Molecular Bio/WGS	Post Library Prep	1.4			NanoDrop UV-Vis Spectrophotometer		ThermoFisher	CAT# 13400518PM3		8 x 10 x 12.7	B						12V			Yes																		35-65%
1	Molecular Bio/WGS	Post Library Prep	1.4			Bioanalyzer			New request			B																											
1	Molecular Bio/WGS	Post Library Prep	1.4	1.46A	104.3-05	AirClean Laminar Flow Hood #3		ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or...																						
1	Molecular Bio/WGS	Post Library Prep	1.4			Wall cabinet - storage shelving	1		New request		48 x 21 x 84	W																											
1	Molecular Bio/WGS	Sequencing Room	1.4	1.47B		Flammable storage cabinet		Fisher	17-988-476		47 x 18 x __	F						12V																						
1	Molecular Bio/WGS	Sequencing Room	1.4	1.42A	104.4-01	Refrigerator - 2		VWR	CAT# 13400518PM3		8 x 10 x 12.7	F						115V, 60Hz, 8.8 A, 1PH																						
1	Molecular Bio/WGS	Sequencing Room	1.4	1.43A	104.4-02	Freezer #1 (-20°C)		ThermoFisher	CPS-21242270-2209		28 x 31 x 74	F						115V, 60Hz, 6.0A, 1PH																						
1	Molecular Bio/WGS	Sequencing Room	1.4	1.45A	104.4-03	Freezer #11 (-20°C)		VWR	GDM-49-SCI-HC-TSL01		23 x 24 x 73	F						115V, 60Hz, 3.0A, 1PH																						
1	Molecular Bio/WGS	Sequencing Room	1.4	1.41B	104.4-04	MiSeq-1		Illumina	M05339		22.2 x 27 x 20.6	B						90-264V AC at...			Yes																		30-75%
1	Molecular Bio/WGS	Sequencing Room	1.4	1.42B	104.4-05	MiSeq-2		Illumina	M06025		22.2 x 27 x 20.6	B						90-264V AC at...			Yes																		30-75%
1	Molecular Bio/WGS	Sequencing Room	1.4	1.43B	104.4-06	MiSeq-3		Illumina	M07275		22.2 x 27 x 20.6	B						90-264V AC at...			Yes																		30-75%
1	Molecular Bio/WGS	Sequencing Room	1.4	1.44B	104.4-07	NextSeq 2000		Illumina	VH00785		22.2 x 27 x 20.6	B						90-264V AC at...			Yes																		20-80%
1	Molecular Bio/WGS	Sequencing Room	1.4	1.45B	104.4-08	MilliQ IQ 7000 (sink and DI required)		MilliQ	F1KB27921N		30.3 x 13.4 x 20.5	W						100-240V,...																	X		X			
1	Molecular Bio/WGS	Sequencing Room	1.4			Computer and prepping		SNHD	New Request			B						12V			Yes																		
1	Molecular Bio/WGS	Sequencing Room	1.4			Computer and prepping		SNHD	New Request			B						12V			Yes																		
1	Molecular Bio/WGS	Sequencing Room	1.4	1.46B		Wall cabinet - storage shelving	1		New request		48 x 21 x 84	W																											
1	Molecular Bio/WGS	Sequencing Room	1.4			Corrosive/flammable storage cabinet	1	Fisher	17-988-476		47 x 18 x __	F																											
1	Molecular Bio/WGS	Mol Bio Storage Room	1.4			Metro Wire shelving	9	Metro			48 x 18 x 60	F																											

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY Author DATE 01.18.2024

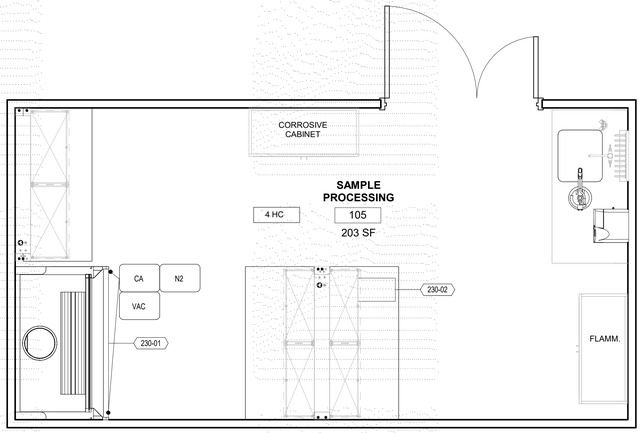
PROJECT NO. 20230523 SCALE

DRAWING NAME

MOLECULAR BIOLOGY WHOLE GENOME SEQUENCING (WGS) SUITE EQUIPMENT

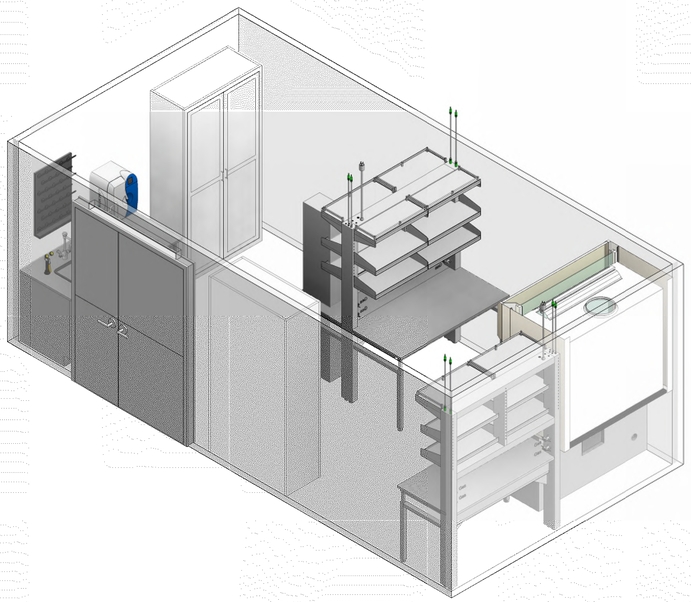
FLOOR/SECTION PHASE DRAWING NO.

A1.4B

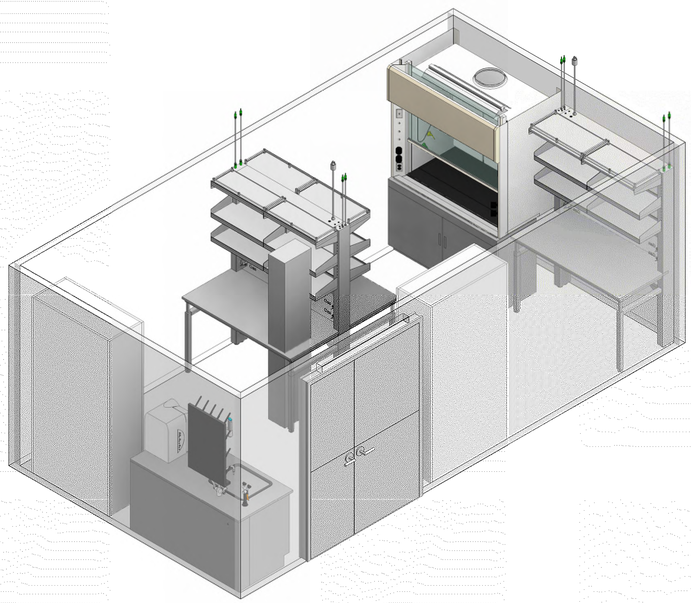


1 SAMPLE PROCESSING
SCALE: 1/2" = 1'-0"

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL						DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	LRN-C Laborator...	Sample Processing Lab	2.3			Mobile lab bench with...	4				61x33x80	F																											
2	LRN-C Laborator...	Sample Processing Lab	2.3	2.31	230-01	Chemical Fume Hood (FH)...	1	Labconco	10050061		60 x 32 x 66	F						220						X	X			X										
2	LRN-C Laborator...	Sample Processing Lab	2.3			Sink	1					F																										
2	LRN-C Laborator...	Sample Processing Lab	2.3		230-02	Analytical scale	2	OHAUS Explorer	H-4737		9.06 X 15.5 X 13.76	B						120 V																					
2	LRN-C Laborator...	Sample Processing Lab	2.3			Balance TBD	1	OHAUS Scout	H-5852		7 X 6	B						120V																					
2	LRN-C Laborator...	Sample Processing Lab	2.3			pH meter	1	Thermo...			7 X 4 X 10	B						120V																					
2	LRN-C Laborator...	Sample Processing Lab	2.3			Flammable storage cabinet	1				43 X 34 X 65	F																											
2	LRN-C Laborator...	Sample Processing Lab	2.3			Corrosive Cabinet	1				43 X 18 X 65	F																											



2 SAMPLE PROCESSING ROOM
SCALE:



3 SAMPLE PROCESSING ROOM_2
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

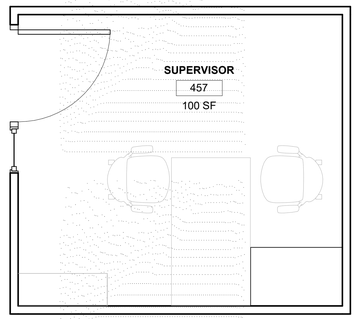
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
SAMPLE PROCESSING LAB

FLOOR/SECTION PHASE

DRAWING NO.
A1.5



1 1ST FLOOR SUPERVISOR OFFICE
SCALE: 1/2" = 1'-0"

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL						DATA			LAB SERVICES	LAB GAS SERVICES				HVAC			LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LINKS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
1	Offices &...	Supervisor Office	1.6			Office Desk	1				60 x 33 x 30	F																											
1	Offices &...	Supervisor Office	1.6			Hutch	1				48 x 37 x 30	F																											
1	Offices &...	Supervisor Office	1.6			Bookcase	1				36 x 12 x 72	F																											
1	Offices & Conference Rooms	Supervisor Office	1.6			L-return desk	1				30 x 30 x 48	F																											
1	Offices & Conference Rooms	Supervisor Office	1.6			Chair	1					F																											

2 1ST FLOOR SUPERVISOR OFFICE
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

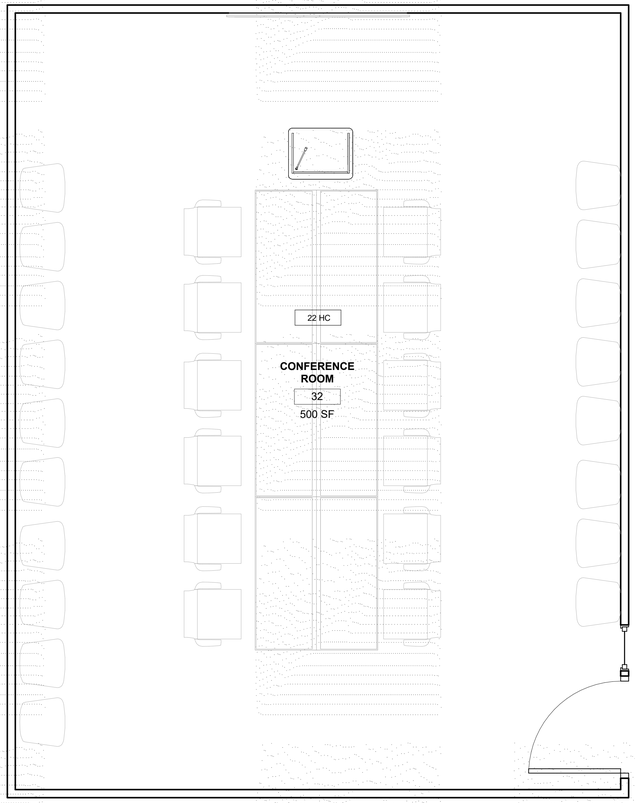
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
SUPERVISOR OFFICE

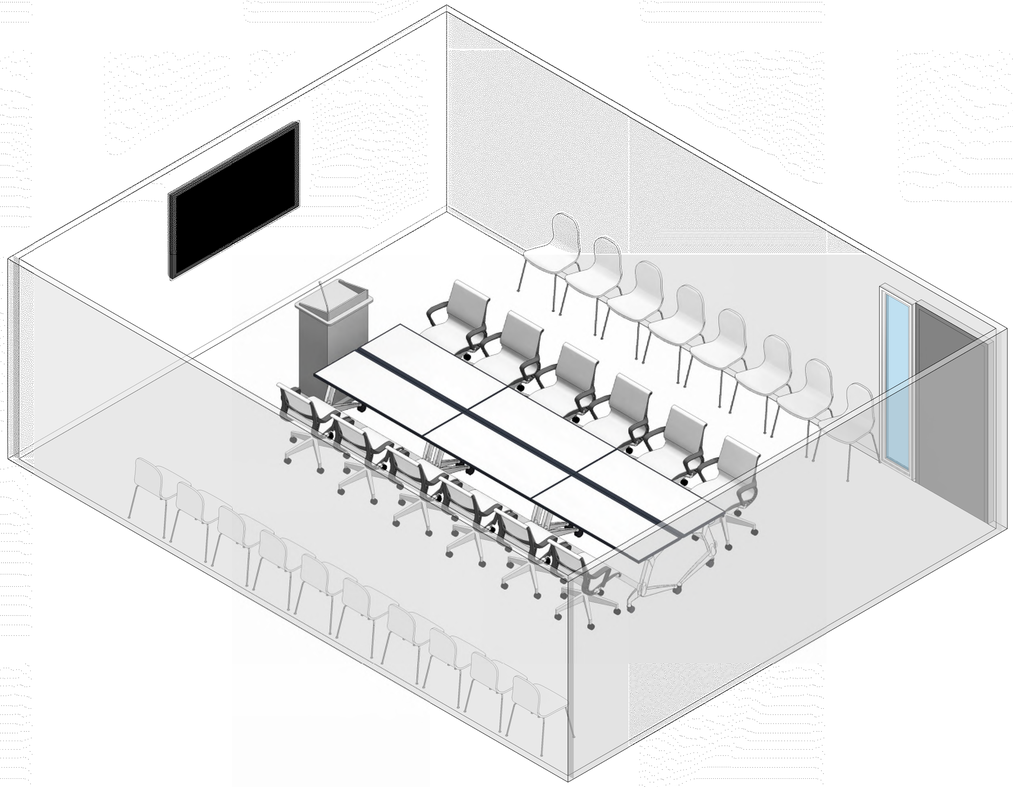
FLOOR/SECTION PHASE

DRAWING NO.
A1.6



1 1ST FLOOR CONFERENCE ROOM
SCALE: 1/2" = 1'-0"

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES	LAB GAS SERVICES				HVAC			LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip- Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	HHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
1	Offices & Conference...	Conference Room	1.7			Conference table TBD	1				96 x 48 x 30	F																											
1	Offices & Conference...	Conference Room	1.7			Chair	30				20 x 20 x 30	F																											
1	Offices & Conference...	Conference Room	1.7			Speaking Lectern Stand	1				15.2 x 24 x 44.25	F																											
1	Offices & Conference...	Conference Room	1.7			Whiteboard	2				72 x 40	W																											
1	Offices &...	Conference Room	1.7			TV screen 75" TBD	1					W																											
1	Offices &...	Conference Room	1.7			Computer desk	1					F																											
1	Offices &...	Conference Room	1.7			Computer	1																															
1	Offices &...	Conference Room	1.7			Telephone for conference	1																															



2 Conference Room
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

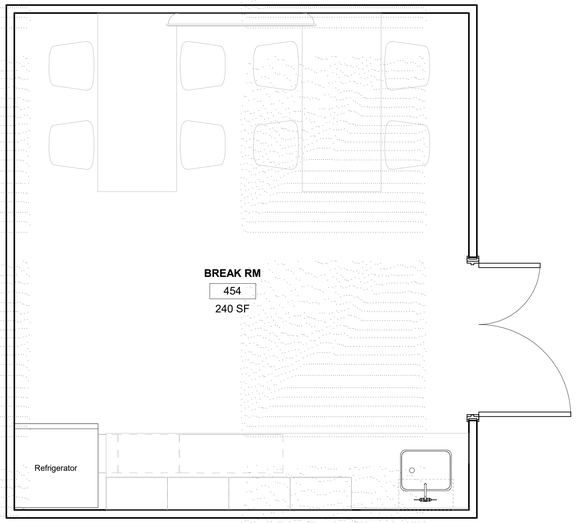
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
CONFERENCE ROOM

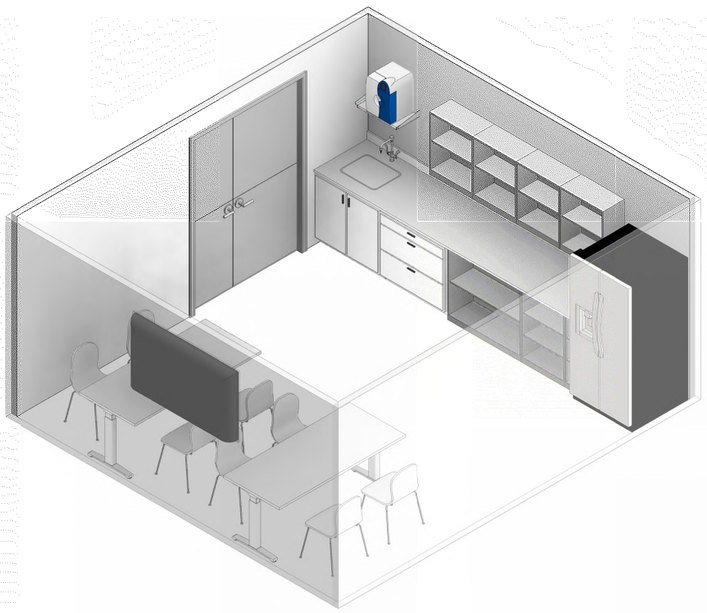
FLOOR/SECTION PHASE

DRAWING NO.
A1.7



1 ROOM DATA SHEETS - 1ST FLOOR BREAK ROOM
SCALE: 1/2" = 1'-0"

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES				HVAC			LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac-Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
1	Offices &...	Break Room	1.8																																			
1	Offices &...	Break Room	1.8			Table	2				72 x 30 x 29	F																										
1	Offices &...	Break Room	1.8			Chair	12				20 x 20 x 30	F																										
1	Offices &...	Break Room	1.8			Refrigerator	1				35 x 32 x 70	F																										
1	Offices &...	Break Room	1.8			Kitchen bench	1				130 x 25 X 36	F																										
1	Offices &...	Break Room	1.8			Kitchen cabinet	1					W																										



2 1ST FLOOR BREAK ROOM
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

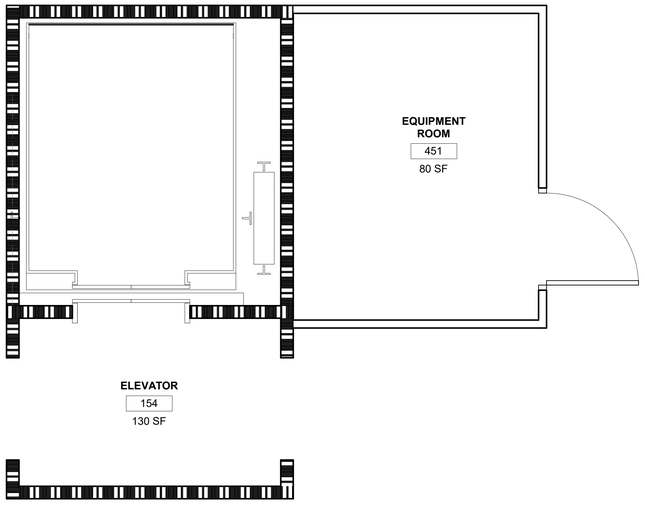
REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY RM
DATE 01.18.2024
PROJECT NO. 20230523
SCALE 1/2" = 1'-0"
DRAWING NAME
BREAK ROOM

FLOOR/SECTION PHASE
DRAWING NO.
A1.8



1 ROOM DATA SHEETS - ELEVATOR AND EQUIPMENT ROOM FIRST FLOOR
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

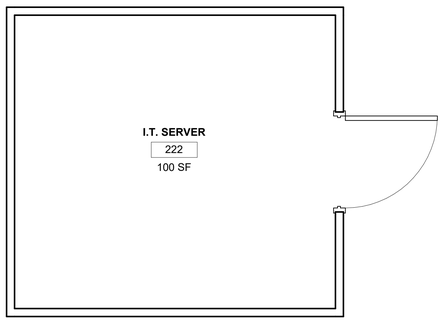
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
ELEVATOR FIRST FLOOR

FLOOR/SECTION PHASE

DRAWING NO.
A1.10



1 IT SERVER
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

1/23/2024 10:10:00 AM Autodesk Docs://20230523 - South Nevada Health District MLK BSL-3 LAB/20230523_A22_CENTRAL.rvt

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

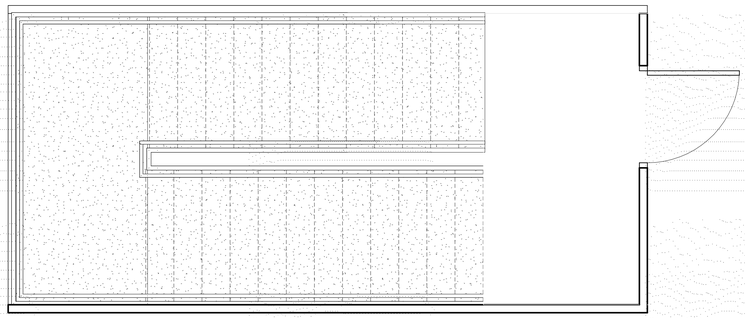
DRAWING NAME

IT SERVER

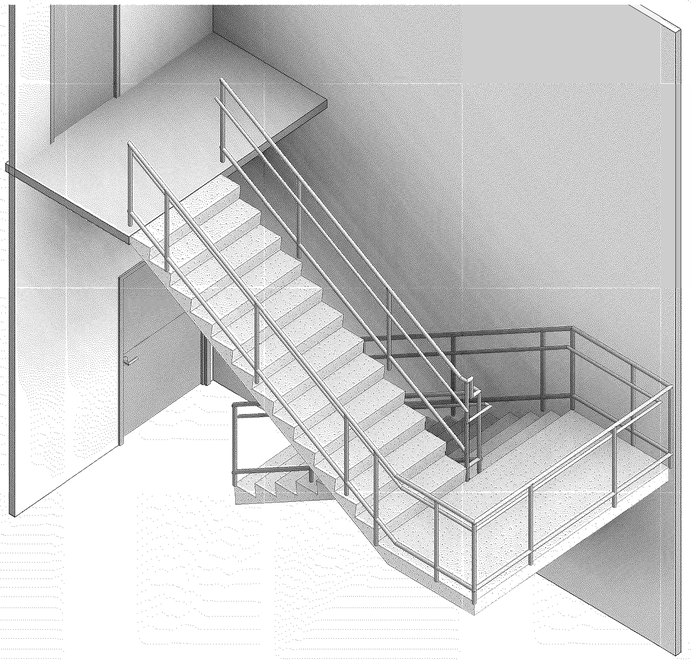
FLOOR/SECTION PHASE

DRAWING NO.

A1.11



2 ROOM DATA SHEETS - STAIRS CONECTING 16FT
SCALE: 1/2" = 1'-0"



1 STAIRS
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

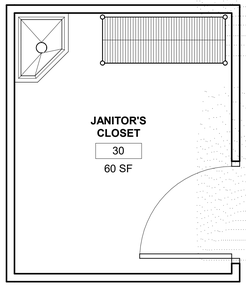
DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME

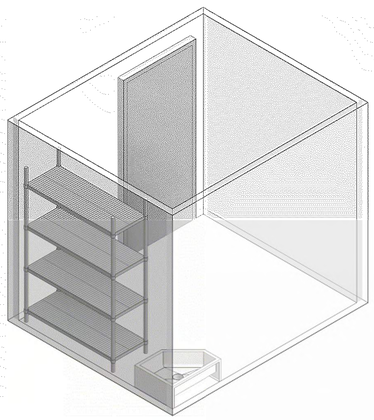
STAIRS - FIRST & SECOND FLOOR

FLOOR/SECTION PHASE

DRAWING NO.
A1.12



1 JANITOR'S CLOSET
SCALE: 1/2" = 1'-0"



2 JANITOR CLOSET
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

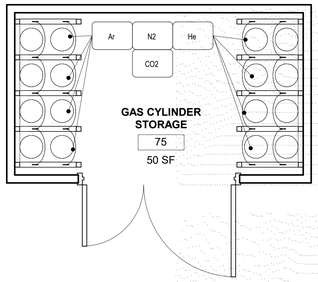
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
JANITOR CLOSET

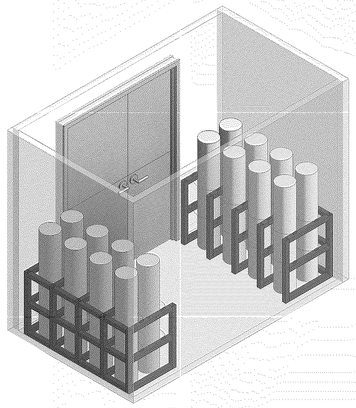
FLOOR/SECTION PHASE

DRAWING NO.
A1.13



1 GAS TANK STORAGE
SCALE: 1/2" = 1'-0"

	ROOM/LOCATION ATTRIBUTES	EQUIPMENT SPECIFICATION:				IT	SIZE, MOUNTING & WEIGHT			ELECTRICAL							DATA			LAB SERVICES	LAB GAS SERVICES					HVAC			LIQUIDS					FURNISHED / INSTALLED / REMARKS			
Equipment Number	Room	Equipment Description (comprehensive list)	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions (WITHOUT clearances) W x D x H	Mounting	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	PCHW - Pr. Chilled Wate...	MW - Municipal Water	LN2 - Liquid Nitrogen	O F / O I	O F / C I	C F / C I	SPECIFICATION DETAILS / REMARKS
	Gas Cylinder Storage																																				
		Gas cylinder wall-mount bracket																																			
	Record Storag Room																																				
		Stand alone Shelve	4				60 X 24 X 72																														
	Storage																																				
		Stand alone Shelve	6				60 X 24 X 72																														
	DI water Room																																				



2 GAS TANK STORAGE
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

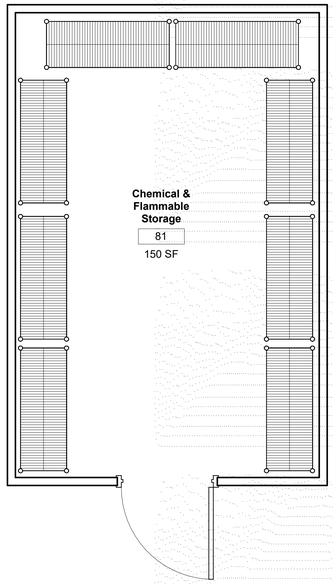
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
GAS CYLINDER STORAGE

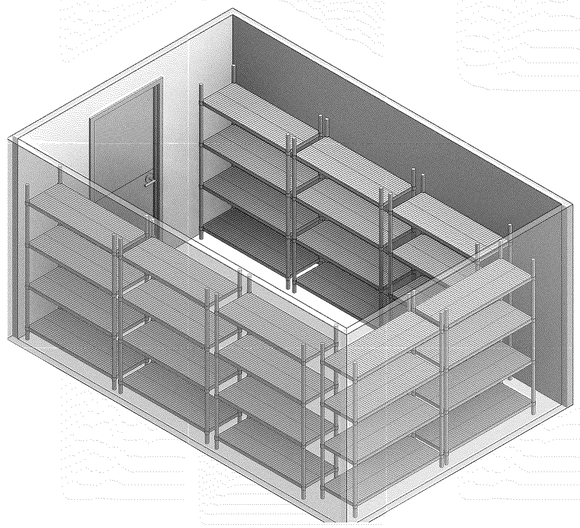
FLOOR/SECTION PHASE

DRAWING NO.
A1.15



1 Chemical & Flammable Storage
SCALE: 1/2" = 1'-0"

	ROOM/LOCATION ATTRIBUTES	EQUIPMENT SPECIFICATION:				IT	SIZE, MOUNTING & WEIGHT			ELECTRICAL							DATA			LAB SERVICES	LAB GAS SERVICES				HVAC			LIQUIDS				FURNISHED / INSTALLED / REMARKS				
Equipment Number	Room	Equipment Description (comprehensive list)	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions (WITHOUT clearances) W x D x H	Mounting	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	PCHW - Pr. Chilled Wate...	MW - Municipal Water	LN2 - Liquid Nitrogen	O F / O I	O F / C I	C F / C I	SPECIFICATION DETAILS / REMARKS
	Gas Cylinder Storage																																				
		Gas cylinder wall-mount bracket																																			
	Record Storag Room																																				
		Stand alone Shelve	4				60 X 24 X 72																														
	Storage																																				
		Stand alone Shelve	6				60 X 24 X 72																														
	DI water Room																																				



3 Chemical & Flammable Storage
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

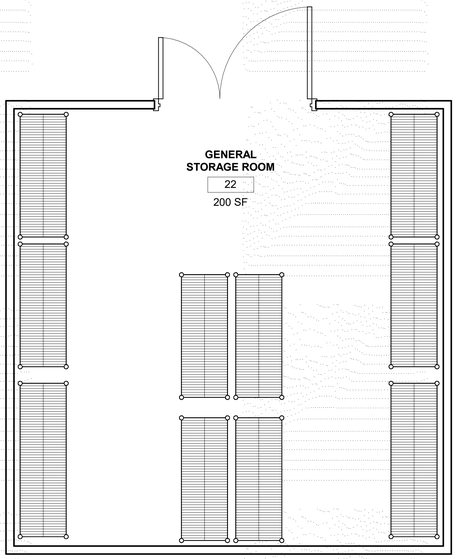
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

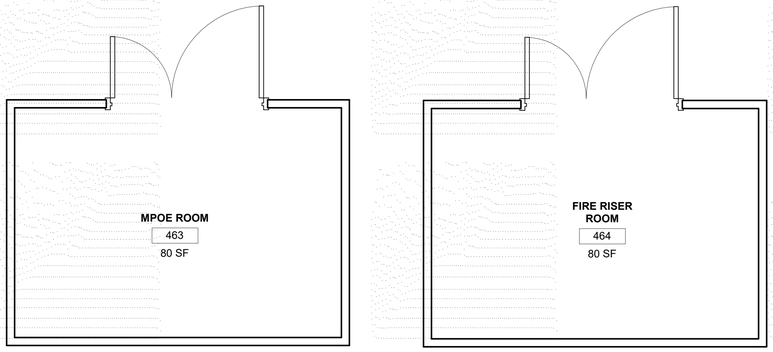
DRAWING NAME
CHEMICAL & FLAMMABLE STORAGE

FLOOR/SECTION PHASE

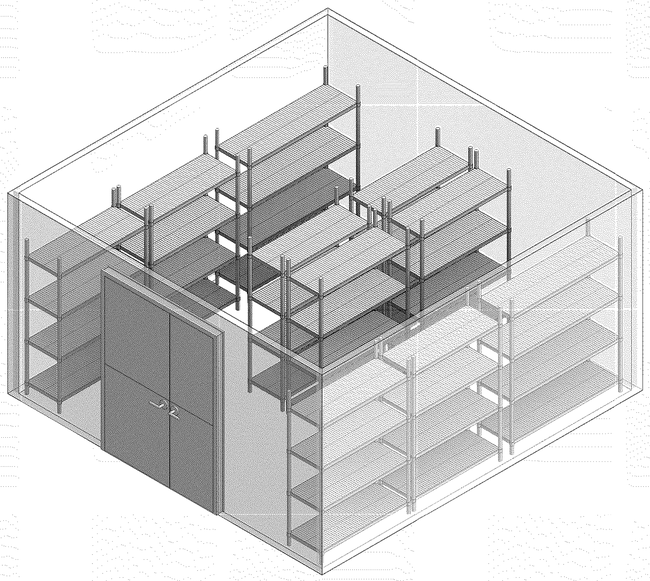
DRAWING NO.
A1.16



1 TYPICAL LAB STORAGE
SCALE: 1/2" = 1'-0"



3 MPOE ROOM / FIRE RISER ROOM
SCALE: 1/2" = 1'-0"



2 TYPICAL LAB STORAGE
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

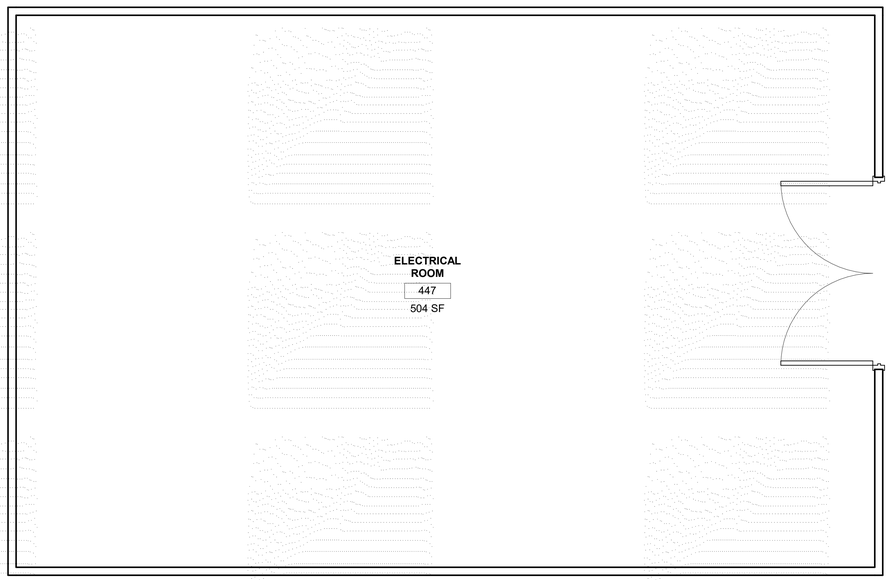
DRAWING NAME

STORAGE, MPOE, FIRE RISER

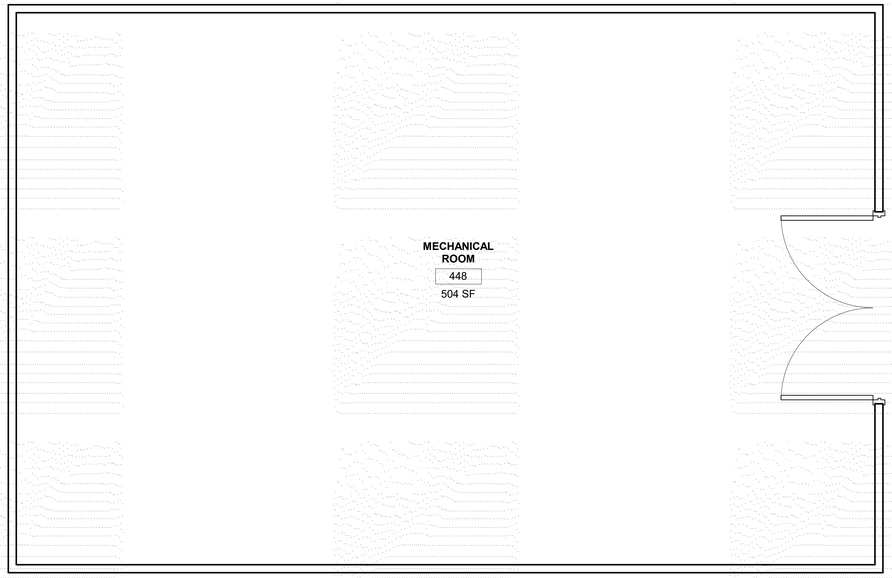
FLOOR/SECTION PHASE

DRAWING NO.

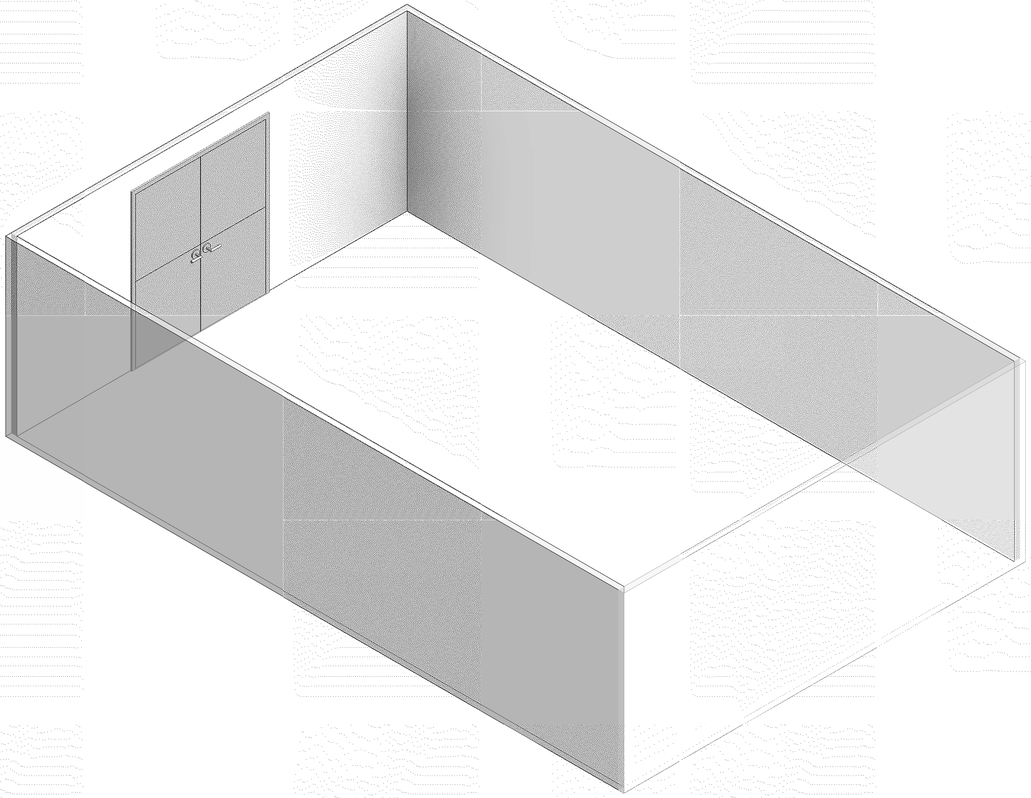
A1.17



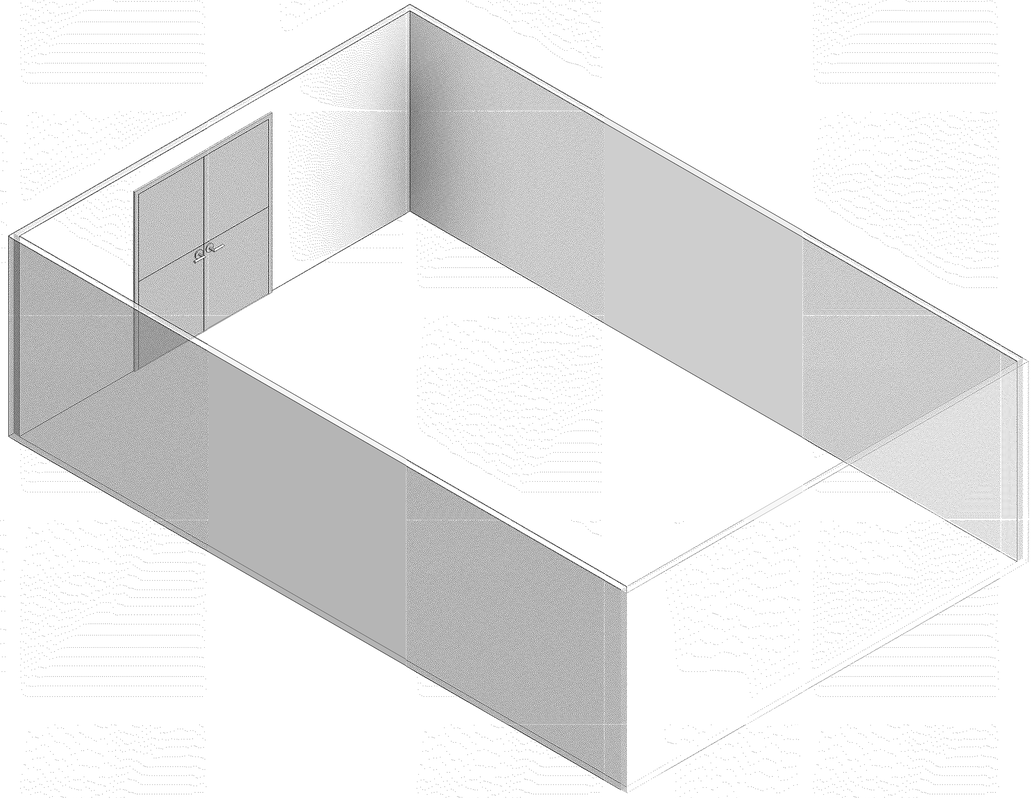
1 ROOM DATA SHEETS - ELECTRICAL
SCALE: 1/2" = 1'-0"



2 ROOM DATA SHEETS - MECHANICAL
SCALE: 1/2" = 1'-0"



3 1ST ELECTRICAL ROOM
SCALE:



4 1ST MECHANICAL
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

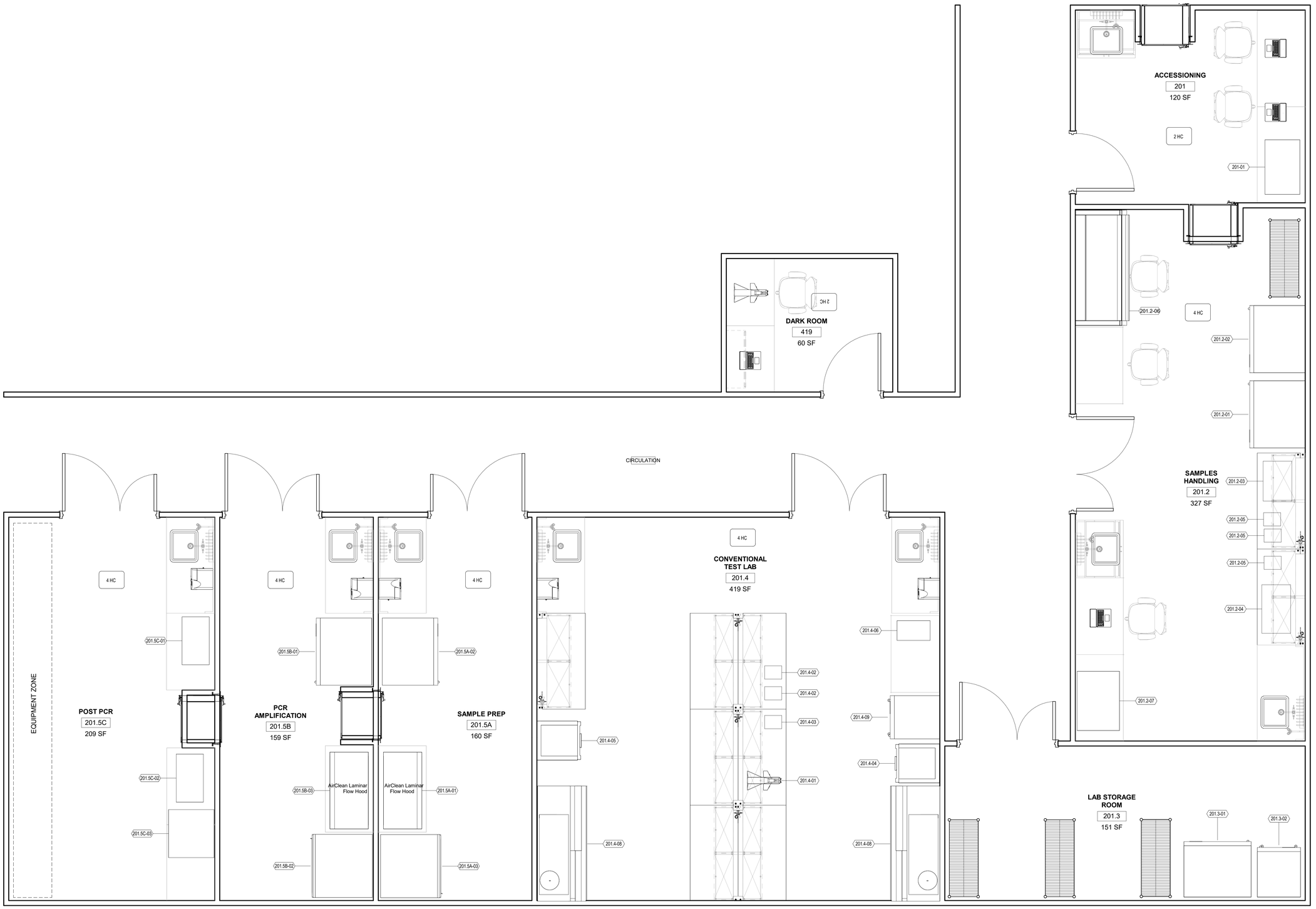
DRAWING NAME

MECHANICAL & ELECTRICAL ROOM

FLOOR/SECTION PHASE

DRAWING NO.
A1.18

1/23/2024 10:19:37 AM Autodesk Docs://20230523 - South Nevada Health District MLK BSL-3 LAB/20230523_A22_CENTRAL.rvt



NOT FOR CONSTRUCTION

BSL-3 LABORATORY SUITE
SCALE: 1/2" = 1'-0"

1/23/2024 10:10:43 AM Autodesk Docs://20230523 - South Nevada Health District MLK BSL-3 LAB/20230523_A22_CENTRAL.rvt

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
BSL-3 LABORATORY SUITE

FLOOR/SECTION PHASE

DRAWING NO.
A2.1

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL								DATA			LAB SERVICES		LAB GAS SERVICES				HVAC				LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_	201-01	Printer		Kyocera (SNPHLCOL211)	64263		22 x 34 x 30	B						120V/12.3A/60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Lab Desk	3					F																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Computer	2					B																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Barcode printer	1					B																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Printer	1					B																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Sink	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Lab Chair	2					F																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Freestanding storage shelving	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	2.1_		Compact Glove Boxes	1	Thomas Scientific			24 x 43 x 31	W																											
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.12A	201.2-01	Freezer (-20°C)	2	Fisher Scientific (-20 C,...	309N003		23 x 25 x 34	F						115V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.11A	201.2-02	Freezer (-80°C)	1	REVCO (-80 C, BIG)...	UIEN-20034-UN		42 x 35 x 78	F						115V /...																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A		Eppendorf	1		535022887		7 x 10 x 7	B						100/240 V 50/60...																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A		Vortex	2	Scientific Industries	2-363969		5 x 7 x 7	B						120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A	201.2-03	Centrifuge	1	Eppendorf 5430R	5428CH017240		18 x 25 x 12	B						120 V / 12 A/ 50-...																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A	201.2-04	Centrifuge	1	Eppendorf 5810R	5811FO679612		28 x 27 x 15	B						120 V / 12 A/ 50-...																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A	201.2-05	Centrifuge	1	Thermo Fisher	43028656		8 x 9 x 6	B						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A	201.2-05	Centrifuge	1	Thermo Fisher	120509119		8 x 9 x 6	B						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A	201.2-05	Centrifuge	1	Thermo Fisher	3041071		8 x 9 x 6	B						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.13A	201.2-06	BSC 6'...	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_	201.2-07	MagNA Pure 24	1		07359489001C		37 x 27x 32		220					100-125V / 50/60 Hz																					Humidity 30-80% (non-condensing)
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1			Lab Bench	3					F																											
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1			Lab Stool	3					F																											
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A		Freestanding storage shelving	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	2.1_A		Combo Eye Wash & Safety Shower	1																																
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1			Computer	1					B																											
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		BIOFIRE 2.0 1 (top)	1		2FA09441		10 x 15.5 x 6.5	B						100-240VAC 50-60Hz																					15°C to 30°C @ 20 to 80% humidity (non-condensing)
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		BIOFIRE 2.0 2 (Bottom)	1		2FA09927		10 x 15.5 x 6.5	B						100-240VAC...																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_	201.5B-03	ABI 7500 FAST – A	1		275011241		17 x 30 x 23	B						100-120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_	201.5C-01	ABI 7500 FAST – B	1		275030012		17 x 30 x 23	B						100-120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_	201.5A-01	QuantStudio DX – 1	1		287880441		31 x 29 x 29	B						100-120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_	201.5C-02	QuantStudio DX – 2	1		287880451		31 x 29 x 29	B						100-120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_	201.5C-03	QuantStudio DX – 3	1		278210710		31 x 29 x 29	B						100-120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Versa Plate washer	1		888-704893R		10 x 17 x 16	B						100/240 V 50/60 Hz																					relative humidity is between 10% and 80%, non-condensing
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Victor Nivo	1		HH35L1019371		8 x 20 x 10	B	29					100/240 V 50/60...																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Vortex	2	Scientific Industries	2-363969		5 x 7 x 7	B						120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Fisher ANA Multitube Vortexer	1		170814002		16 x 12 x 17	B						100-120V /...																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Eppendorf	1		535022887		7 x 10 x 7	B						100/240 V 50/60...																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Wallac Plate Shake (DELFIA)	1		40407961		10 x 16 x 6	B						100-120V/50-60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Mixer BTlabSystems (3D Rotating)	1		BL-E45-1055		13 x 10 x 10	B						120V/ 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Centrifuge	1	Thermo Fisher	100610245		8 x 9 x 6	B						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Printer(BIOFIRE)	1	Kyocera (BIOFIRE)	65392		20 x 27 x 18	B						120V/12.3A/60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1	2.1_		Printer for MP-24	1	HP (MP-24)	PHDBG01745		17 x 18 x 15	B						110-127V/6.4A/5...																					
2	BSL3 Laboratory Suite	BSL-3 Sample Prep (Rapid Test Lab)	2.1	2.11D	201.5A-01	BSC 6'...	1					F																											
2	BSL3 Laboratory Suite	BSL-3 PCR Amplification (Rapid Test Lab)	2.1	2.11E	201.5B-01	Refrigerator (4°C)	2					F																											
2	BSL3 Laboratory Suite	BSL-3 PCR Amplification (Rapid Test Lab)	2.1	2.12E	201.5B-02	Freezer (-20°C)	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		201.4-01	Microscope	1	Olympus	2M46208		14 × 15 × 19	B						100-240V/2.5A/5...																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		201.4-02	Vortex	2	Scientific Industries	2-363969		5 x 7 x 7	B						120V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		201.4-03	Centrifuge	1	Eppendorf	535022887		7 x 10 x 7	B						100/240 V 50/60...																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	2.15C	201.4-04	Incubator	1	Fisher Brand #3	300120807		27 x 26 x 35	ST						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	2.13C	201.4-05	Incubator	1	Fisher Brand #5	404N0001		28 x 27 x 40	ST						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	2.14C	201.4-06	Incubator	1	Thermo Fisher #10	IMC 40487819		13 x 21 x 17	B						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		201.4-07	Dry Bath Incubator # 11	1		402N0099		10 x 11 x 9	B						115 V / 50-60 Hz																					
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1			Lab Desk	2					F																											
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1			Lab Chairs	3					F																											
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	2.11C	201.4-08	BSC 6' Confirm Class & Type	2					F																			NA								
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1			Sink	2					F																											
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1			Combo Eye Wash & Safety Shower	1					W																											
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	2.12C	201.4-09	Refrigerator 4°C	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Lab Storage Room	2.1		201.3-01	Freezer (-20°C)	1	Fisher Scientific (-20 C,...	309N003		23 x 25 x 34	F						115V / 60Hz																					
2	BSL3 Laboratory Suite	BSL-3 Lab Storage Room	2.1		201.3-02	Freezer(-80°C)	2	REVCO (-80 C, BIG)...	UIEN-20034-UN		42 x 35 x 78	F						115V /...																					
2	BSL3 Laboratory Suite	BSL-3 Lab Storage Room	2.1			Storage shelving	4					F																											
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1																																			
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1			Fluorescence microscope	1					B																											
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1			Lab Desk	2					F																											
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1			Chair	1					F																											
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1			Computer	1					B																											

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

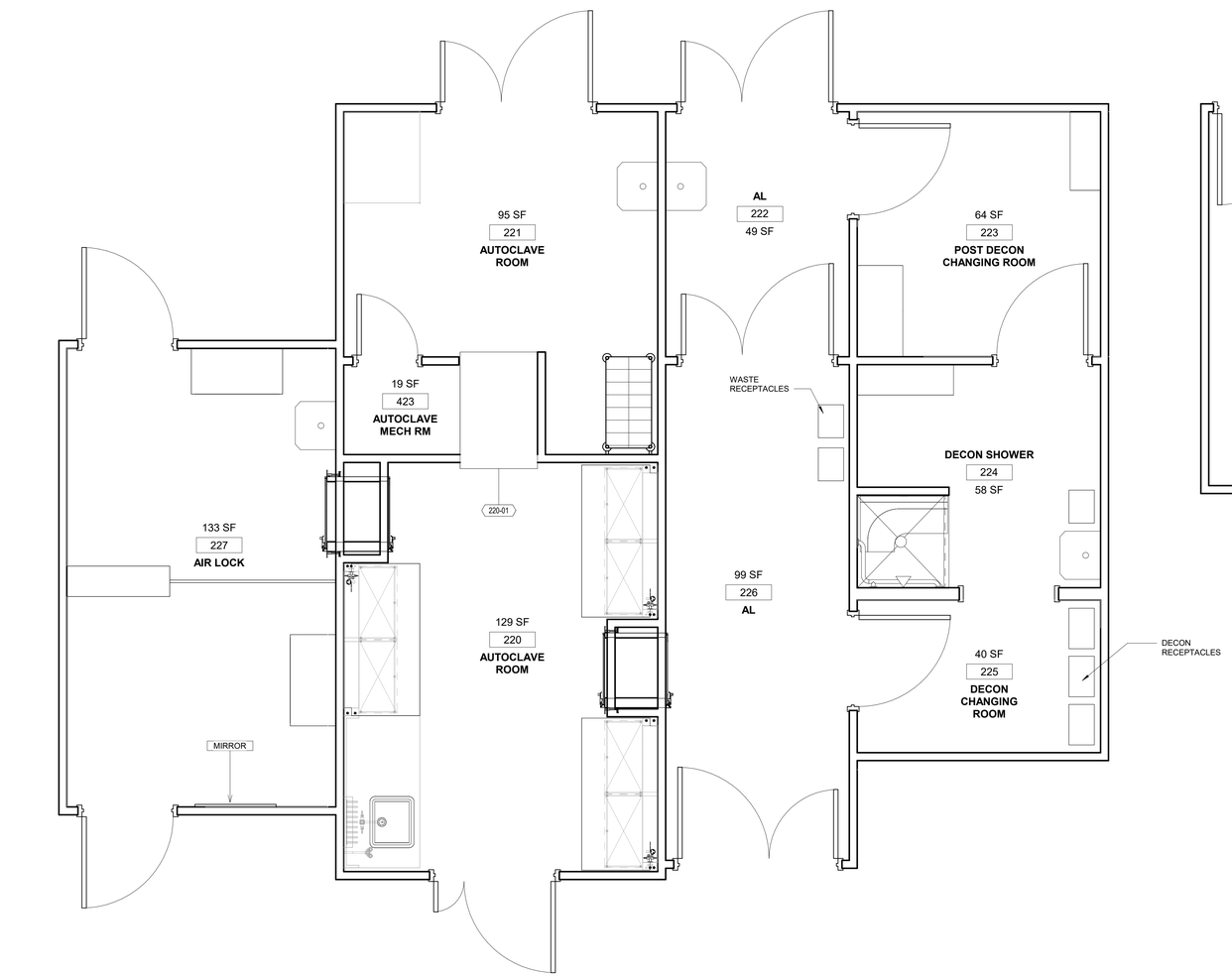
NO.	BY	DESCRIPTION	DATE

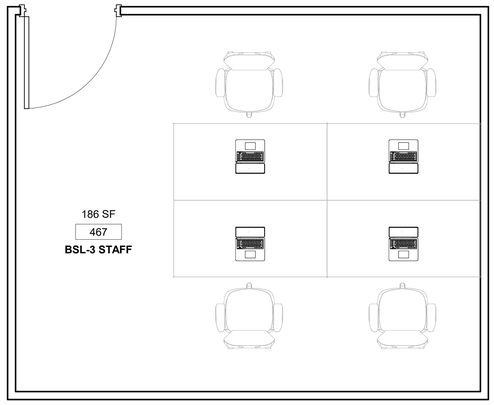
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY Author DATE 01.18.2024
PROJECT NO. 20230523 SCALE
DRAWING NAME
BSL-3 LABORATORY SUITE EQUIPMENT

FLOOR/SECTION PHASE DRAWING NO.
A2.1B

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	HWW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2																																				
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2			PPE storage shelving	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2			Bench	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2			Hand wash sink	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2			Cardreader						W																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2			PAPR Storage						W																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2																																				
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) Out &...	2.2																																				
2	BSL3 Laboratory Suite	BSL-3 PAL Out Decontamination Shower	2.2			Freestanding storage shelving	1					F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)...	2.2																																				
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2		220-01	Double door autoclave	1					F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2			Lab Sink						F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2			SS casework & SS shelving						F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2			SS racking						F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Clean Side)	2.2																																				
2	BSL3 Laboratory Suite	MAL Out Autoclave (Clean Side)	2.2																																				





1 BSL-3 PAL IN - PAL OUT
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

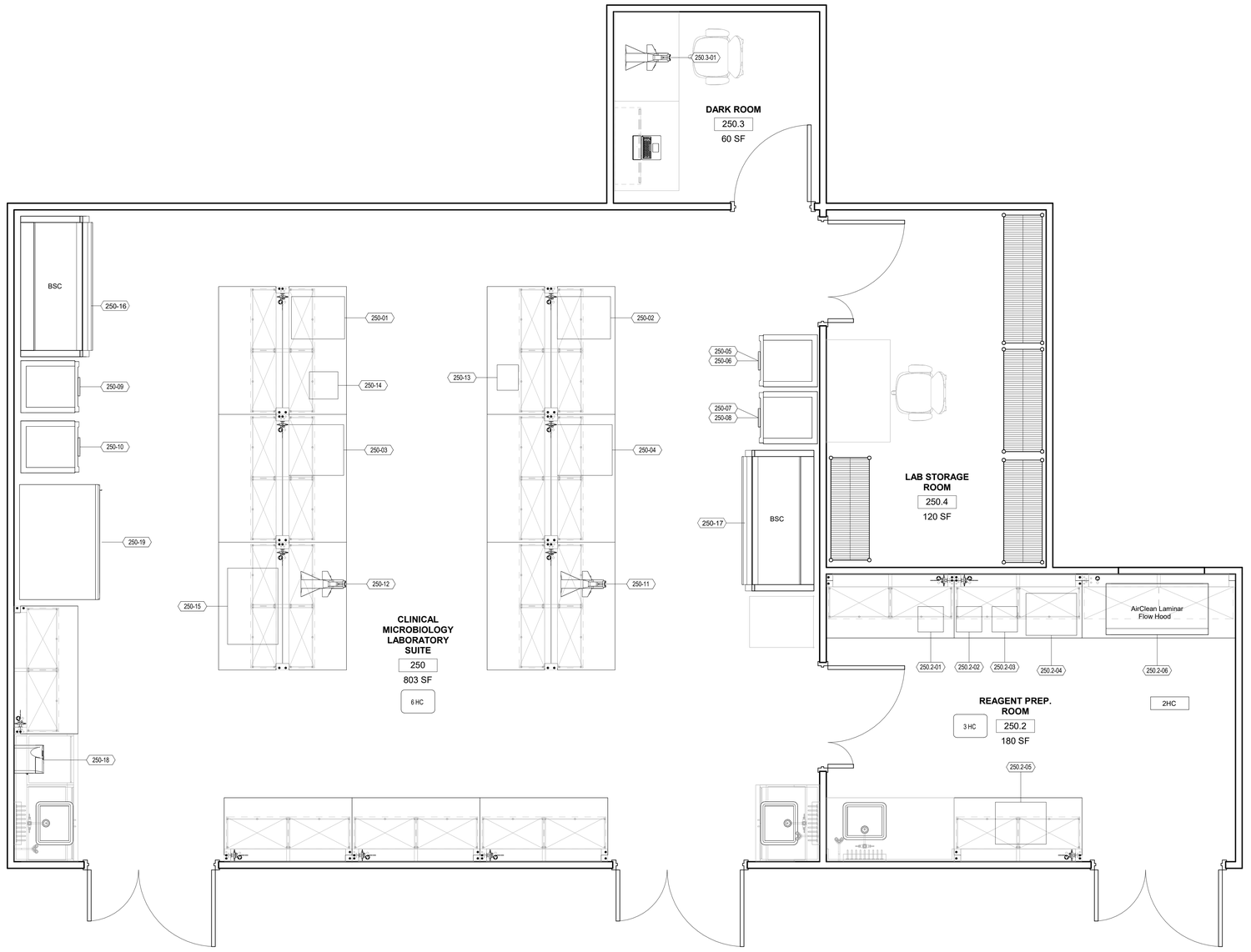
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
BSL-3 PAL IN PAL OUT

FLOOR/SECTION PHASE

DRAWING NO.
A2.2



1 CLINICAL MICROBIOLOGY LABORATORY SUITE
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	Author	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
CLINICAL MICROBIOLOGY LABORATORY SUITE

FLOOR/SECTION PHASE

DRAWING NO.
A2.5

		ROOM/LOCATION ATTRIBUTES			EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL								DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-01	Bruker MALDI-TOF #1 (Benchtop)	1	Maldi Biotyper Sirius	1865142.702		20 x 25 x 42	B						110																						
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-02	Bruker MALDI-TOF #2 (Benchtop)	1	Maldi Biotyper Sirius	1865142.702		20 x 25 x 42	B																												
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-03	QIACube #1 (Benchtop)	1	Qiagen	30004		24 x 26 x 23	B																												
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-04	QIACube #2 (Benchtop)	1	Qiagen	30004		24 x 26 x 23	B						110																						
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.51	250-05	Incubator CO_2 37°C, #2	1	Fisher Brand	43089882		27 x 26 x 34	ST						110												X									
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.52	250-06	Incubator CO_2 37°C, #TBD	1	Fisher Brand	43089882		27 x 26 x 34	ST																		X									
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.53	250-07	Incubator 30°C, #4	1	Thermo Scientific	311N0002		23 x 24 x 39	ST						110												X									
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.54	250-08	Incubator 42°C, #8	1	Panasonic	15040096		24 x 23 x 22	ST						110												X									
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.55	250-09	Incubator 37°C, #9	1	Thermo Scientific	300249499		32 x 38 x 79	F						110																					
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.56	250-10	Incubator 25°C, #10	1	Thermo Scientific	IMC40492658		18 x 10 x 17	ST						110												X									
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5		250-11	Microscope Olympus Bx43 (Benchtop)	1	Olympus			15 x 15 x 24	B						110																					
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-12	Microscope (Benchtop)	1	Olympus			15 x 15 x 24	B																											
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-13	Slide/Card mixer (Benchtop)	1	Cole-Parmer	JAKT27010		12 x 10 x 8	B						110																					
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5		250-14	Eppendorf centrifuge (Benchtop)	1	Eppendorf	541721065		13 x 13 x 8	B						110																					
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5		250-15	Sensititre Instrument	1	Thermo Scientific			36 x 24 x 30	B																											
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5	2.57	250-16	BSC 6'...	2				78 x 33 x 63	F																											
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5	2.58	250-17	BSC 4'...																																	
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5			Sink	2					F																											
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5			Double Door Deli Refrigerator	1					F																											
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	2.59	250-18	MilliiQ IQ 7000 (sink and DI required)	1				21 x 14 x 21	W																								X		X			
2	Clinical Microbiology Lab...	Clinical Micro lab	2.5			Mobile lab bench with shelves	8				61 x 33 x 80	F																											
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5			Lab Chair	8				28 x 28 x 46	F																											
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5			Desktop Computer	8					B																											
2	Clinical Microbiology Lab Suite	Lab Storage Room	2.5			Freestanding shelving	4				48 x 24 x 72	F																											
2	Clinical Microbiology Lab Suite	Lab Storage Room	2.5			Desk	1				48 x 24 x 30	F																											
2	Clinical Microbiology Lab Suite	Lab Storage Room	2.5			Chair	1				29 x 28 x 46	F																											
2	Clinical Microbiology Lab...	Dark Room	2.5		250.3-01	Fluorescence microscope (on desk)	1				14 × 15 × 19	B																											
2	Clinical Microbiology Lab...	Dark Room	2.5			Computer	1					B																											
2	Clinical Microbiology Lab...	Dark Room	2.5			Desk	1				48 x 24 x 30	F																											
2	Clinical Microbiology Lab...	Dark Room	2.5			Chair	1				28 x 28 x 46	F																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5	2.51C	250-01	BSC 4'...	1				52x33x63	F																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5			Mobile lab bench	2				61x33x80	F																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5			Lab Chair	28x 46				28x 28 X 46	F																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5			Sink	1					F																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5			Wall Cabinet (for reagent storage)	1				48 x 21 x 84	W																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5		250.2-01	Balance	2				12 x 12 x 18	B																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5		250.2-02	PH meter	1				12 x 12 x 18	B																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5		250.2-03	Mixer	1				12 x 12 x 6	B																											
2	Clinical Microbiology Lab...	Reagent Prep Room	2.5		250.2-04	Microwave	1				24 x 20 x 18	B																											
2	Clinical Microbiology Lab Suite	Reagent Prep Room	2.5		250.2-05	Autoclave (Benchtop)	1				24 x 20 x 18	B																											
2	Clinical Microbiology Lab Suite	Reagent Prep Room	2.5			Storage Shelving	3	Metro			48 x 24 x 72	F																											
2	Clinical Microbiology Lab Suite	Reagent Prep Room	2.5			Storage Shelving	3	Metro			48 x 24 x 72	F																											

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

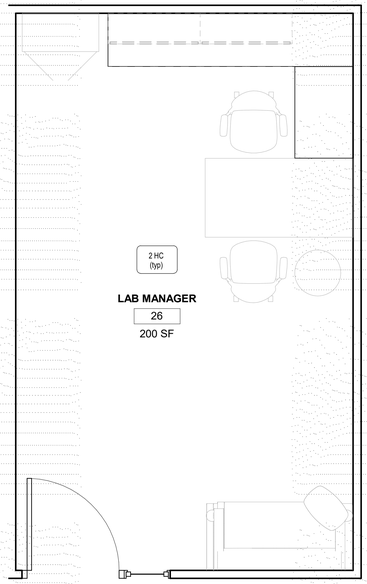
REVISIONS

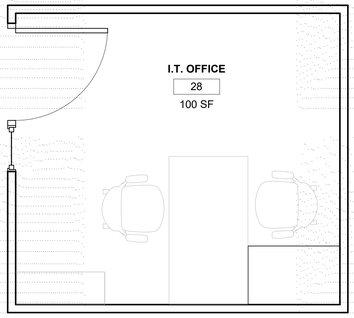
NO.	BY	DESCRIPTION	DATE

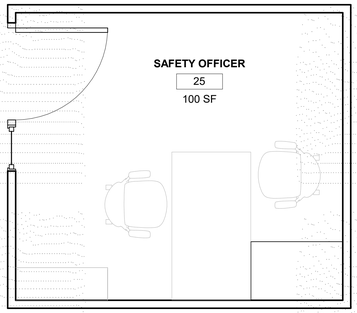
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

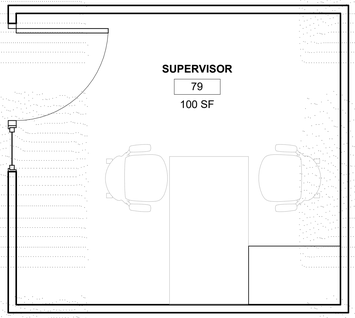
DRAWN BY Author DATE 01.18.2024
PROJECT NO. 20230523 SCALE
DRAWING NAME
CLINICAL MICROBIOLOGY LAB SUITE EQUIPMENT

FLOOR/SECTION PHASE DRAWING NO.
A2.5B



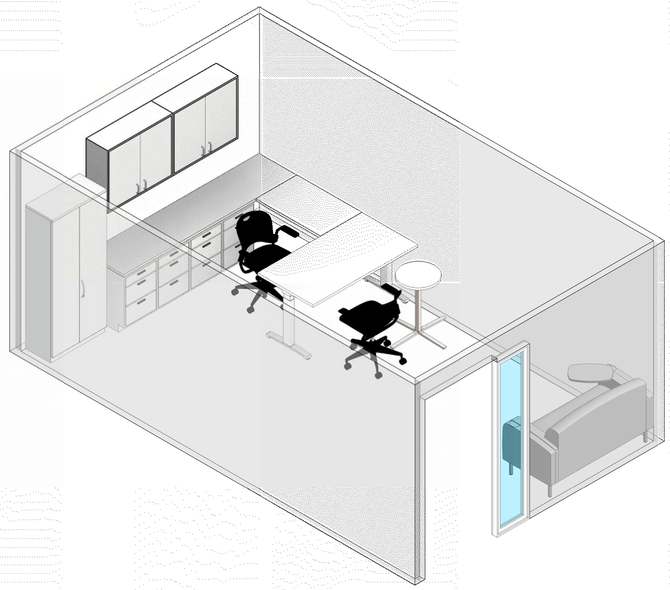






1 OFFICES
SCALE: 1/2" = 1'-0"

	ROOM/LOCATION ATTRIBUTES					EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT		ELECTRICAL						DATA		LAB SERVIC...	LAB GAS SERVICES				HVAC			LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	Offices & Conference...	Safety Officer Office	2.7			Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference...	Safety Officer Office	2.7			Hutch	1				48 x 37 x 30	F																												
2	Offices &...	Safety Officer Office	2.7			Bookcase	1				36 x 12 x 72	F																												
2	Offices &...	Safety Officer Office	2.7			L-return desk	1				30 x 30 x 48	F																												
2	Offices &...	Safety Officer Office	2.7			Chair	1					F																												
2	Offices &...	Laboratory Manager Office	2.7			Office Desk	1				60 x 33 x 30	F																												
2	Offices &...	Laboratory Manager Office	2.7			Hutch	1				48 x 37 x 30	F																												
2	Offices &...	Laboratory Manager Office	2.7			Bookcase	1				36 x 12 x 72	F																												
2	Offices &...	Laboratory Manager Office	2.7			L-return desk	1				30 x 30 x 48																												
2	Offices &...	IT Office	2.7			Chair	1					F																												
2	Offices &...	IT Office	2.7			Office Desk	1				60 x 33 x 30	F																												
2	Offices &...	IT Office	2.7			Hutch	1				48 x 37 x 30	F																												
2	Offices &...	IT Office	2.7			Bookcase	1				36 x 12 x 72	F																												
2	Offices &...	IT Office	2.7			L-return desk	1				30 x 30 x 48	F																												
2	Offices & Conference...	IT Office	2.7			Chair	1																																
2	Offices & Conference...	Supervisor Office	2.7			Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference...	Supervisor Office	2.7			Hutch	1				48 x 37 x 30	F																												
2	Offices & Conference...	Supervisor Office	2.7			Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference...	Supervisor Office	2.7			L-return desk	1				30 x 30 x 48																												
2	Offices & Conference...	Supervisor Office	2.7			Chair	1					F																												
2	Offices & Conference...	Supervisor Office	2.7			Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference...	Supervisor Office	2.7			Hutch	1				48 x 37 x 30	F																												
2	Offices & Conference...	Supervisor Office	2.7			Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference...	Supervisor Office	2.7			L-return desk	1				30 x 30 x 48	F																												
2	Offices & Conference...	Supervisor Office	2.7			Chair	1																																



2 OFFICES
SCALE:

3 OFFICES
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

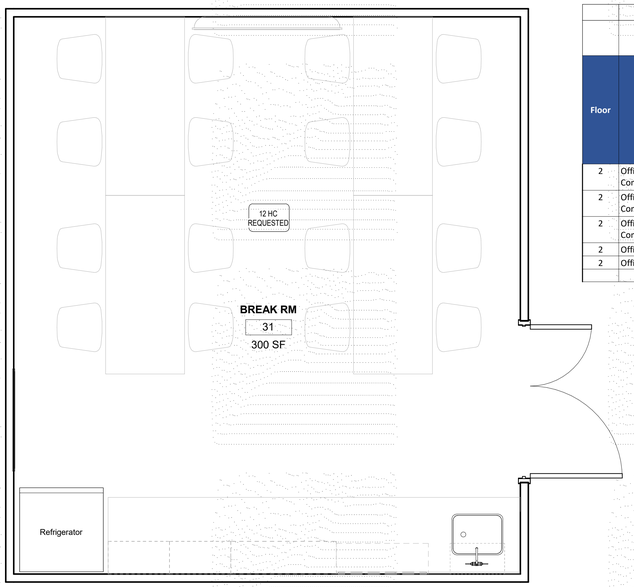
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
2ND FLOOR OFFICES

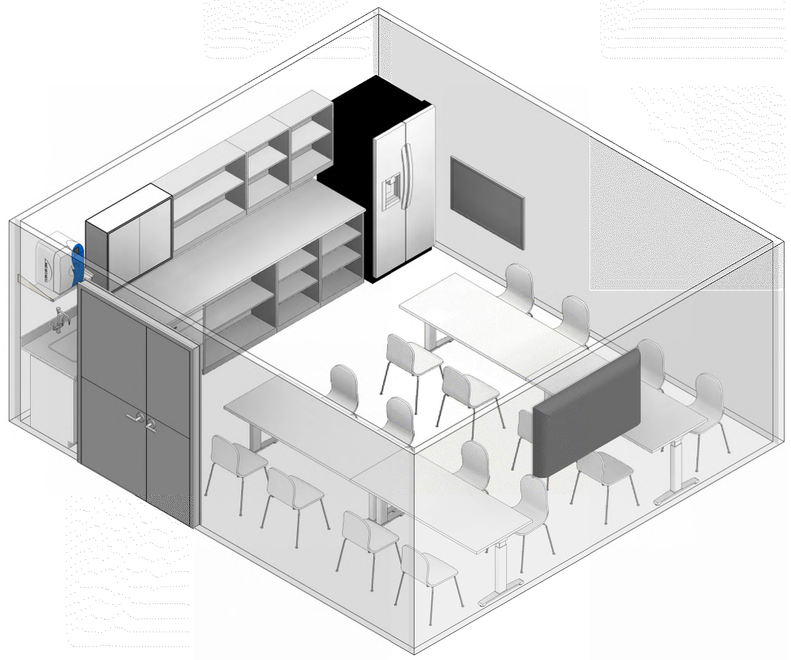
FLOOR/SECTION PHASE

DRAWING NO.
A2.7



1 BREAK ROOM
SCALE: 1/2" = 1'-0"

		ROOM/LOCATION ATTRIBUTES				EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT		ELECTRICAL							DATA		LAB SERVICES	LAB GAS SERVICES				HVAC			LIQUIDS				
Floor	Group	Room	Room Data Sheet Number	Equip. Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in Inches (WITHOUT clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power...	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	Offices & Conference Rooms	Break Room	2.9			Table	2				72 x 30 x 29	F																												
2	Offices & Conference Rooms	Break Room	2.9			Chair	12				20 x 20 x 30	F																												
2	Offices & Conference Rooms	Break Room	2.9			Refrigerator	1				35 x 32 x 70	F																												
2	Offices &...	Break Room	2.9			Kitchen bench	1				130 x 25 x 36	F																												
2	Offices &...	Break Room	2.9			Kitchen cabinet	1					W																												



2 BREAK ROOM
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA
401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

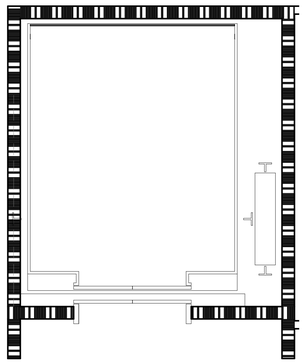
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
2ND FLOOR BREAK ROOM

FLOOR/SECTION PHASE

DRAWING NO.
A2.9



ELEVATOR

154

130 SF

1 ROOM DATA SHEETS - ELEVATOR
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

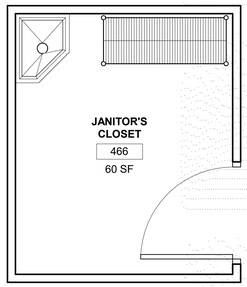
DRAWING NAME

ELEVATOR SECOND FLOOR

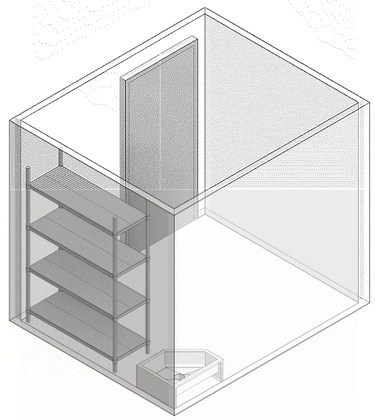
FLOOR/SECTION PHASE

DRAWING NO.

A2.11



1 ROOM DATA SHEETS - 2ND FLOOR JANITOR'S CLOSET
SCALE: 1/2" = 1'-0"



2 2ND FLOOR JANITOR CLOSET
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

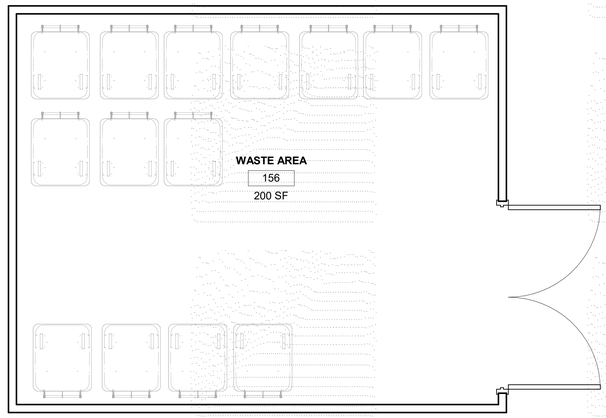
Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

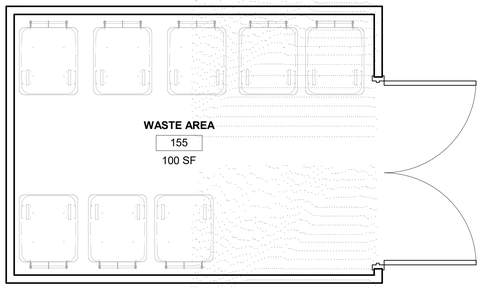
DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
2ND FLOOR JANITOR'S CLOSET

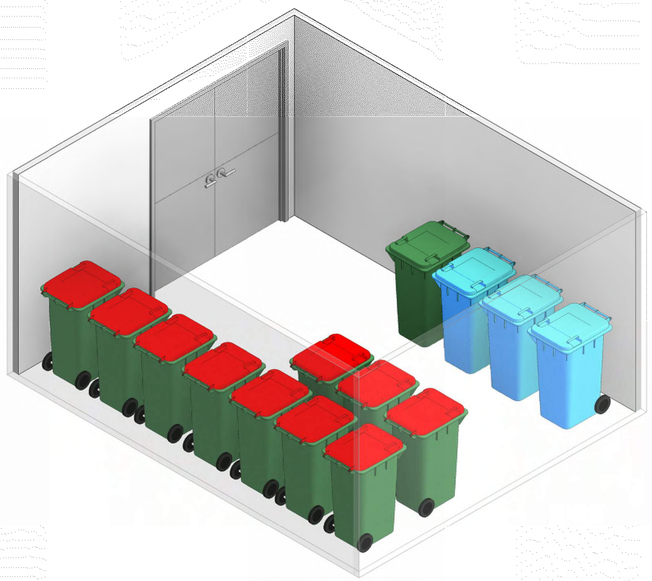
FLOOR/SECTION PHASE

DRAWING NO.
A2.13

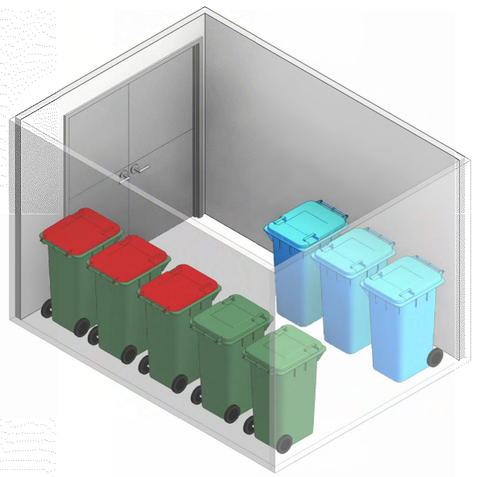




1 ROOM DATA SHEETS - WASTE AREAS
SCALE: 1/2" = 1'-0"



3 1ST FLOOR WASTE AREA
SCALE:



2 2ND FLOOR WASTE AREA
SCALE:

NOT FOR CONSTRUCTION

EC NEVADA

401 West A Street, Suite 320
San Diego, CA 92101
Tel: 949-417-7550

CONSULTANTS

SNHD Southern Nevada Health District

KEY PLAN

PRINCIPAL
David Keith
RESEARCH PLANNER
Steph Vargas
ARCHITECT
Fernando Iribarren
ARCHITECTURAL DESIGNER
Ricardo Molina

REVISIONS

NO.	BY	DESCRIPTION	DATE

Southern Nevada Health District
700 South M.L.K. BLVD
Las Vegas, NV 89106

DRAWN BY	RM	DATE	01.18.2024
PROJECT NO.	20230523	SCALE	1/2" = 1'-0"

DRAWING NAME
2ND FLOOR WASTE AREAS

FLOOR/SECTION PHASE

DRAWING NO.
A2.14

		ROOM/LOCATION ATTRIBUTES			EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES						HVAC				LIQUIDS					FURNISHED / INSTALLED / REMARKS
Floor	Group	Room	Room Data Sheet Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / laptop	Equipment Dimensions in inches (*WITHOUT* clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
1	LRN-C Laboratory Suite	Instrument Lab	1.3	240-01	Chemical Fume Hood (FH) 5'	1	Labconco	10050061		60 x 32 x 66	F						220						X	X			X												
1	LRN-C Laboratory Suite	Instrument Lab	1.3		Mobile lab bench with shelves	6				61 x 33 x 80	F																												
1	LRN-C Laboratory Suite	Instrument Lab	1.3		Gas cylinder wall-mount bracket	6					W																												
1	LRN-C Laboratory Suite	Instrument Lab	1.3		Mobile lab bench without shelves	4					F																												
1	LRN-C Laboratory Suite	Instrument Lab	1.3		Sink	2					W																											
1	LRN-C Laboratory Suite	Instrument Lab	1.3		Sink Drying Rack	2					F																											
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-01	Tecan DreamPrep 480	F	Tecan	2204010727		46.28 x 36.34 x 77.8	B						100-240 VAC			Yes																		80%	
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Tecan Computer	F	Tecan		X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Bench for Tecan Prep and Computer	1	NA			36 x 60 x 30										Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-02	Eppendorf 5075t NGS Solution	1	Eppendorf	New		43 x 25 x 32	B						110-240V, 50-60			Yes																		55-75% - humidity requirement
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Eppendorf 5075t NGS Computer	1	Eppendorf	New	X		B									Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-03	BioFire- A	1	BioFire	2FA01878		29 x 18 x 11.5	B						100-240 VAC/50-			Yes																		20-80% - humidity requirement
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-04	BioFire- B	1	BioFire	2FA01775		29 x 18 x 11.5	B						100-240 VAC/50-			Yes																		20-80% 0 humidity requirement
1	Molecular Bio/WGS	Pre-Library Prep	1.4		BioFire Computer, bench 1	1	BioFire	BioFire	X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4		BioFire Mini Centrifuge	1	ThermoFisher	1204 1045			B		110-240V, 50/60 Hz, 0.35A																										
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Genie 2 Vortex- BioFire	1	ThermoFisher	2-464916			B						120 VAC																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-05	AirClean Laminar Flow Hood #1	1	ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or 230VAC50 Hz																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-06	AirClean Laminar Flow Hood #2	1	ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-07	Refrigerator	1	ThermoFisher	10383137		30 x 54 x 80	F						115V, 60Hz, 5.8A,																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-08	Freezer (-80°C)	1	VWR	2.022E+13		37 x 47 x 77	F						115V, 60Hz																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Computer	1	SNHD	IT-03646	X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Computer	1	SNHD	IT-03652	X		B						12V			Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Computer	1	SNHD	IT-03720	X		B									Yes																		
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-09	Centrifuge	1	ThermoFisher	5810R		26 x 24 x __	B						120V/50-60Hz,																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-10	SimpliAmp Thermal Cycler- 1	1	ThermoFisher	2280018011857		18.11 x 9.45 x 8.27	B						100-240V, 50-60																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-11	SimpliAmp Thermal Cycler- 2	1	ThermoFisher	2280021050195		18.11 x 9.45 x 8.27	B						100-240V, 50-60																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-12	Qubit 4-B	1	ThermoFisher	2322622050152		10 x 5.4 x 2.2	B						100-240 VAC																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-13	Qubit 4-C	1	ThermoFisher	2322622110187		10 x 5.4 x 2.2	B						100-240 VAC																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Centrifuge Corning Mini -1	1	ThermoFisher	HC221AH0004150			B						110-240V, 50/60																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Centrifuge Corning Mini -2	1	ThermoFisher	HC21BAH0002656			B						110-240V, 50/60																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Genie 2 Vortex-1	1	ThermoFisher	2-485158			B						120 VAC																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Genie 2 Vortex-2	1	ThermoFisher	2-363973			B						120 VAC																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-14	Digital Shaking Dry bath	1	ThermoFisher	JAKT27005		13.1 x 10.9 x 6.7	B						120V, 60Hz																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4	104-15	Mini Heat Block	1	ThermoFisher	137-16031-22120024		6 x 6 x 6	B						120-230V, 1A																					
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Wall cabinet - storage shelving	2		New		48 x 21 x 84	W																											
1	Molecular Bio/WGS	Pre-Library Prep	1.4		Wall cabinet - storage shelving	1		New request		48 x 24 x __	W																											
1	Molecular Bio/WGS	Processing Room	1.4	104.2-01	BSC 6' Class II Type A 2	1	ThermoFisher	84809082603		33 x 78 x 63 (With Exhaust Grill) Base/stand is 36in tall W.S.	F						115V,60Hz, 14A, 1PH																					
1	Molecular Bio/WGS	Processing Room	1.4	104.2-02	Printer/scanner/copier	1	Kyocera	NA		48 x 36 x __	B						120V/60Hz 12.0A			Yes																		
1	Molecular Bio/WGS	Processing Room	1.4	104.2-04	Refrigerator - 2		VWR	CAT# 13400518PM3		8 x 10 x 12.7	F						115V, 60Hz, 8.8 A, 1PH																					
1	Molecular Bio/WGS	Processing Room	1.4	104.2-03	Freezer #2 (-20°C)		ThermoFisher	CPS-21242257-2209		28 x 31 x 74	F						115V, 60Hz, 6.0A, 1PH																					
1	Molecular Bio/WGS	Processing Room	1.4		BioFire Printer and sample prep, bench 2	1	Kyocera	03348-16-09076			B						12V																					
1	Molecular Bio/WGS	Post Library Prep	1.4	104.3-01	Refrigerator	1	VWR	10791-616 New			F						115 V, 5.4A																					
1	Molecular Bio/WGS	Post Library Prep	1.4	104.3-02	Freezer (-20°C)	1	ThermoFisher	CPS-21242270-2209		28 x 31 x 74	F						115V, 60Hz, 6.0A,																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Qubit 4-A		ThermoFisher	2322622010606		10 x 5.4 x 2.2	B						100-240 VAC																					
1	Molecular Bio/WGS	Post Library Prep	1.4	104.3-03	SimpliAmp Thermal Cycler- 3		ThermoFisher	2280020118317		18.11 x 9.45 x 8.27	B						100-240V, 50-60																					
1	Molecular Bio/WGS	Post Library Prep	1.4	104.3-04	SimpliAmp Thermal Cycler- 4		ThermoFisher	2280021050225		18.11 x 9.45 x 8.27	B						100-240V, 50-60																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Mini Heat Block		ThermoFisher	137-16031-22120024		6 x 6 x 6	B						120-230V, 1A																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Mini Centrifuge Corning -3		ThermoFisher	HC199AG0002956			B						110-240V, 50/60 Hz, 0.35A																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Mini Centrifuge VWR Galaxy		ThermoFisher	3070231			B						110-240V, 50/60 Hz, 0.35A																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Genie 2 Vortex-3		ThermoFisher	2-466540			B						120 VAC																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Digital Shaking Dry bath		ThermoFisher	JAKT27005		13.1 x 10.9 x 6.7	B						120V, 60Hz																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Centrifuge		ThermoFisher	5810R		26 x 24 x __	F						120V/50-60Hz, 15A																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Computer		SNHD	IT-03434	X		B						12V			Yes																		
1	Molecular Bio/WGS	Post Library Prep	1.4		Computer		SNHD	IT-03377	X		B						12V			Yes																		
1	Molecular Bio/WGS	Post Library Prep	1.4		Printer - WGS (Small)		Kyocera	192-168-92145			B						12V			Yes																		
1	Molecular Bio/WGS	Post Library Prep	1.4		NanoDrop UV-Vis Spectrophotometer		ThermoFisher	CAT# 13400518PM3		8 x 10 x 12.7	B						12V			Yes																		35-65%
1	Molecular Bio/WGS	Post Library Prep	1.4		Bioanalyzer			New request			B																											
1	Molecular Bio/WGS	Post Library Prep	1.4	104.3-05	AirClean Laminar Flow Hood #3		ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or																					
1	Molecular Bio/WGS	Post Library Prep	1.4		Wall cabinet - storage shelving	1		New request		48 x 21 x 84	W																											
1	Molecular Bio/WGS	Sequencing Room	1.4		Flammable storage cabinet		Fisher	17-988-476		47 x 18 x __	F						12V																					
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-01	Refrigerator - 2		VWR	CAT# 13400518PM3		8 x 10 x 12.7	F						115V, 60Hz, 8.8 A, 1PH																					
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-02	Freezer #1 (-20°C)		ThermoFisher	CPS-21242270-2209		28 x 31 x 74	F						115V, 60Hz, 6.0A, 1PH																					
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-03	Freezer #11 (-20°C)		VWR	GDM-49-SCI-HC-TSL01		23 x 24 x 73	F						115V, 60Hz, 3.0A, 1PH																					
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-04	MiSeq-1		Illumina	M05339		22.2 x 27 x 20.6	B						90-264V AC at			Yes																		30-75%
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-05	MiSeq-2		Illumina	M06025		22.2 x 27 x 20.6	B						90-264V AC at			Yes																		30-75%
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-06	MiSeq-3		Illumina	M07275		22.2 x 27 x 20.6	B						90-264V AC at			Yes																		30-75%
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-07	NextSeq 2000		Illumina	VH00785		22.2 x 27 x 20.6	B						90-264V AC at			Yes																		20-80%
1	Molecular Bio/WGS	Sequencing Room	1.4	104.4-08	MilliQ IQ 7000 (sink and DI required)		MilliQ	F1KB27921N		30.3 x 13.4 x 20.5	W						100-240V,																			X		X		
1	Molecular Bio/WGS	Sequencing Room	1.4		Computer and prepping		SNHD	New Request			B						12V			Yes																		
1	Molecular Bio/WGS	Sequencing Room	1.4		Computer and prepping		SNHD	New Request			B						12V			Yes																		
1	Molecular Bio/WGS	Sequencing Room	1.4		Wall cabinet - storage shelving	1		New request		48 x 21 x 84	W																											
1	Molecular Bio/WGS	Sequencing Room	1.4		Corrosive/flammable storage cabinet	1	Fisher	17-988-476		47 x 18 x __	F																											
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5		Mobile lab bench with shelves	4				61x33x80	F																											

SOUTHERN NEVADA HEALTH DISTRICT EQUIPMENT LIST

		ROOM/LOCATION ATTRIBUTES			EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					FURNISHED / INSTALLED / REMARKS
Floor	Group	Room	Room Data Sheet Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (*WITHOUT* clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5	230-01	Chemical Fume Hood (FH) 5'	1	Labconco	10050061		60 x 32 x 66	F						220						X	X			X												
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5		Sink	1					F																											
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5	230-02	Analytical scale	2	OHAUS Explorer	H-4737		9.06 X 15.5 X 13.76	B						120 V																							
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5		Balance TBD	1	OHAUS Scout	H-5852		7 X 6	B						120V																							
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5		pH meter	1	Thermo Scientific			7 X 4 X 10	B						120V																							
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5		Flammable storage cabinet	1				43 X 34 X 65	F																												
1	LRN-C Laboratory Suite	Sample Processing Lab	1.5		Corrosive Cabinet	1				43 X 18 X 65	F																												
1	Offices & Conference	Supervisor Office	1.6		Office Desk	1				60 x 33 x 30	F																												
1	Offices & Conference	Supervisor Office	1.6		Hutch	1				48 x 37 x 30	F																												
1	Offices & Conference	Supervisor Office	1.6		Bookcase	1				36 x 12 x 72	F																												
1	Offices & Conference Rooms	Supervisor Office	1.6		L-return desk	1				30 x 30 x 48	F																												
1	Offices & Conference Rooms	Supervisor Office	1.6		Chair	1					F																												
1	Offices & Conference Rooms	Conference Room	1.7		Conference table TBD	1				96 x 48 x 30	F																												
1	Offices & Conference Rooms	Conference Room	1.7		Chair	30				20 x 20 x 30	F																												
1	Offices & Conference Rooms	Conference Room	1.7		Speaking Lectern Stand	1				15.2 x 24 x 44.25	F																												
1	Offices & Conference Rooms	Conference Room	1.7		Whiteboard	2				72 x 40	W																												
1	Offices & Conference	Conference Room	1.7		TV screen 75" TBD	1					W																												
1	Offices & Conference	Conference Room	1.7		Computer desk	1					F																												
1	Offices & Conference	Conference Room	1.7		Computer	1																																
1	Offices & Conference	Conference Room	1.7		Telephone for conference	1																																
1	Offices & Conference	Break Room	1.8																																			
1	Offices & Conference	Break Room	1.8		Table	2				72 x 30 x 29	F																												
1	Offices & Conference	Break Room	1.8		Chair	12				20 x 20 x 30	F																												
1	Offices & Conference	Break Room	1.8		Refrigerator	1				35 x 32 x 70	F																												
1	Offices & Conference	Break Room	1.8		Kitchen bench	1				130 x 25 X 36	F																												
1	Offices & Conference	Break Room	1.8		Kitchen cabinet	1					W																												
1	Building Support	Men's & Women's Restrooms	1.9																																			
1	Building Support	Elevator	1.10																																			
1	Building Support	IT Server Room	1.11																																			
1	Building Support	Exit Stairs	1.12																																			
1	Building Support	Janitor's Closet	1.13																																			
1	Building Support	Biological Waste Staging	1.14																																			
1	Building Support	Chemical Waste Staging	1.14																																			
1	Building Support	Gas Cylinder Storage	1.15		Gas cylinder wall-mount bracket						W																												
1	Building Support	Chemical & Flammable Storage	1.16																																			
1	Building Support	General Storage Room	1.17																																			
1	Building Support	MPOE	1.17																																			
1	Building Support	Fire Riser Room	1.17																																			
1	Building Support	Main Electrical Room	1.18																																			
1	Building Support	Main Mechanical Room	1.18																																			
1	Building Support	DI Water Room	1.19																																			
1	Building Support	LN2 Fill Station	1.19																																			
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1	201-01	Printer		Kyocera (SNPHLCOL211)	64263		22 x 34 x 30	B						120V/12.3A/60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Lab Desk	3					F																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Computer	2					B																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Barcode printer	1					B																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Printer	1					B																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Sink	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Lab Chair	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Freestanding storage shelving	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Accessioning Room	2.1		Compact Glove Boxes	1	Thomas Scientific			24 x 43 x 31	W																												
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-01	Freezer (-20°C)	2	Fisher Scientific (-20 C,	309N003		23 x 25 x 34	F						115V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-02	Freezer (-80°C)	1	REVCO (-80 C, BIG)	UIEN-20034-UN		42 x 35 x 78	F						115V /																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Eppendorf	1		535022887		7 x 10 x 7	B						100/240 V 50/60																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Vortex	2	Scientific Industries	2-363969		5 x 7 x 7	B						120V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-03	Centrifuge	1	Eppendorf 5430R	5428CH017240		18 x 25 x 12	B						120 V / 12 A/ 50-																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-04	Centrifuge	1	Eppendorf 5810R	5811FO679612		28 x 27 x 15	B						120 V / 12 A/ 50-																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-05	Centrifuge	1	Thermo Fisher	43028656		8 x 9 x 6	B						115 V / 50-60 Hz																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-05	Centrifuge	1	Thermo Fisher	120509119		8 x 9 x 6	B						115 V / 50-60 Hz																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-05	Centrifuge	1	Thermo Fisher	3041071		8 x 9 x 6	B						115 V / 50-60 Hz																							
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-06	BSC 6'	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1	201.2-07	MagNA Pure 24	1		07359489001C		37 x 27x 32		220					100-125V / 50/60 Hz																							Humidity 30-80% (non-condensing)
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Lab Bench	3					F																												
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Lab Stool	3					F																												
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Freestanding storage shelving	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Combo Eye Wash & Safety Shower	1																																	
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Computer	1					B																												
2	BSL3 Laboratory Suite	BSL-3 Sample Handing Room	2.1		Printer for MP-24	1	HP (MP-24)	PHDBG01745		17 x 18 x 15	B						110-																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab Post PCR	2.1	201.5C-01	ABI 7500 FAST – A	1		275011241		17 x 30 x 23	B						100-120V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab Post PCR	2.1	201.5C-02	ABI 7500 FAST – B	1		275030012		17 x 30 x 23	B						100-120V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab Post PCR	2.1	201.5C-03	QuantStudio DX – 3	1		278210710		31 x 29 x 29	B						100-120V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1		Fisher ANA Multitube Vortexer	1		170814002		16 x 12 x 17	B						100-120V / 50-																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1		Eppendorf	1		535022887		7 x 10 x 7	B						100/240 V 50/60																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1		Mixer BTlabSystems (3D Rotating)	1		BL-E45-1055		13 x 10 x 10	B						120V/ 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab TBD	2.1		Centrifuge	1	Thermo Fisher	100610245		8 x 9 x 6	B						115 V / 50-60 Hz																							
2	Molecular Bio/WGS	BSL-3 Rapid Test Lab Sample Prep	2.1	201.5A-01	AirClean Laminar Flow Hood		ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or																							
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab Sample Prep	2.1	201.5A-02	Refrigerator (4°C)	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Rapid Test Lab Sample Prep	2.1	201.5A-03	Freezer (-20°C)	1					F																												
2	BSL3 Laboratory Suite	BSL-3 PCR Amplification (Rapid Test Lab)	2.1	201.5B-01	Refrigerator (4°C)	1					F																												

SOUTHERN NEVADA HEALTH DISTRICT EQUIPMENT LIST

		ROOM/LOCATION ATTRIBUTES			EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					FURNISHED / INSTALLED / REMARKS
Floor	Group	Room	Room Data Sheet Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (*WITHOUT* clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	BSL3 Laboratory Suite	BSL-3 PCR Amplification (Rapid Test Lab)	2.1	201.5B-02	Freezer (-20°C)	1					F																												
2	Molecular Bio/WGS	BSL-3 PCR Amplification (Rapid Test Lab)	2.1	201.5B-03	AirClean Laminar Flow Hood		ThermoFisher	CAT# AC648LFUVC		24 x 48 x 31	B						110VAC 60 Hz or																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Versa Plate washer	1		888-704893R		10 x 17 x 16	B						100/240 V 50/60 Hz																							relative humidity is between 10% and 80%, non-condensing
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Printer(BIOFIRE)	1	Kyocera (BIOFIRE)	65392		20 x 27 x 18	B						120V/12.3A/60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Victor Nivo	1		HH35L1019371		8 x 20 x 10	B	29					100/240 V 50/60																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Vortex	2	Scientific Industries	2-363969		5 x 7 x 7	B						120V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-01	Microscope	1	Olympus	2M46208		14 × 15 × 19	B						100-																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-02	Vortex	2	Scientific Industries	2-363969		5 x 7 x 7	B						120V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Wallac Plate Shake (DELFIA)	1		40407961		10 x 16 x 6	B						100-120V/50-																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-03	Centrifuge	1	Eppendorf	535022887		7 x 10 x 7	B						100/240 V 50/60																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-04	Incubator	1	Fisher Brand #3	300120807		27 x 26 x 35	ST						115 V / 50-60 Hz																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-05	Incubator	1	Fisher Brand #5	404N0001		28 x 27 x 40	ST						115 V / 50-60 Hz																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-06	Incubator	1	Thermo Fisher #10	IMC 40487819		13 x 21 x 17	B						115 V / 50-60 Hz																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		BIOFIRE 2.0 1 (top)	1		2FA09441		10 x 15.5 x 6.5	B						100-240VAC 50-60Hz																							15°C to 30°C @ 20 to 80% humidity (non-condensing)
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		BIOFIRE 2.0 2 (Bottom)	1		2FA09927		10 x 15.5 x 6.5	B						100-240VAC 50-																							
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Lab Desk	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Lab Chairs	3					F																												
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-08	BSC 6' Confirm Class & Type	2					F																			NA										
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Sink	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1		Combo Eye Wash & Safety Shower	1					W																												
2	BSL3 Laboratory Suite	BSL-3 Conventional Test Lab	2.1	201.4-09	Refrigerator 4°C	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Lab Storage Room	2.1	201.3-01	Freezer (-20°C)	1	Fisher Scientific (-20 C,	309N003		23 x 25 x 34	F						115V / 60Hz																							
2	BSL3 Laboratory Suite	BSL-3 Lab Storage Room	2.1	201.3-02	Freezer(-80°C)	2	REVCO (-80 C, BIG)	UIEN-20034-UN		42 x 35 x 78	F						115V /																							
2	BSL3 Laboratory Suite	BSL-3 Lab Storage Room	2.1		Storage shelving	4					F																												
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1																																			
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1		Fluorescence microscope	1					B																												
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1		Lab Desk	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1		Chair	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Dark Room	2.1		Computer	1					B																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2																																			
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2		PPE storage shelving	2					F																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2		Bench	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2		Hand wash sink	1					F																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2		Cardreader						W																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2		PAPR Storage						W																												
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) In	2.2																																			
2	BSL3 Laboratory Suite	BSL-3 Personnel Air Lock (PAL) Out &	2.2																																			
2	BSL3 Laboratory Suite	BSL-3 PAL Out Decontamination Shower	2.2		Freestanding storage shelving	1					F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side) Disinfection	2.2																																			
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2	220-01	Double door autoclave	1					F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2		Lab Sink						F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2		SS casework & SS shelving						F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Dirty Side)	2.2		SS racking						F																												
2	BSL3 Laboratory Suite	MAL Out Autoclave (Clean Side)	2.2																																			
2	BSL3 Laboratory Suite	MAL Out Autoclave (Clean Side)	2.2																																			
2	BSL3 Laboratory Suite	MAL Out Autoclave (Clean Side)	2.2		Dry Bath Incubator # 11	1		402N0099		10 x 11 x 9	B						115 V / 50-60 Hz																							
2	Training Laboratory	Training Lab	2.3		Mobile lab bench	3				61 x 33 x 80	F																												
2	Training Laboratory	Training Lab	2.3	105-01	BSC 6'	1				78 x 33 x 63	F																												
2	Training Laboratory	Training Lab	2.3		Lab Chair	4				28 x 28 x 46	F																												
2	Training Laboratory	Training Lab	2.3		Wall Cabinet						W																												
2	Training Laboratory	Training Lab	2.3	105-02	Incubators (stacked)	2					ST																												
2	Environmental	Microbiology - Food & Water	2.4	103-01	CO_2 Incubator 37°C TBD (stacked)	1	Fisher Brand	43089882		27 x 26 x 34	ST																												
2	Environmental	Microbiology - Food & Water	2.4	103-02	Incubator 30°C (stacked)	1	Thermo Scientific	311N0002		23 x 24 x 39	ST						110																							
2	Environmental	Microbiology - Food & Water	2.4	103-03	Incubator 42°C	1	Panasonic	15040096		24 x 23 x 22	F						110																							
2	Environmental	Microbiology - Food & Water	2.4	103-04	Incubator 37°C	1	Thermo Scientific	300249499		32 x 38 x 79	F						110																							
2	Environmental Microbiology	Microbiology - Food & Water	2.4	103-05	Incubator 25°C	1	Thermo Scientific	IMC40492658		18 x 10 x 17	ST						110																							
2	Environmental Microbiology	Microbiology - Food & Water	2.4	103-06	BSC 6' Confirm Class & Type	1				78 x 33 x 63	ST																												
2	Environmental	Microbiology - Food & Water	2.4	103-07	Chemical Fume Hood (FH) 5'	1	Labconco	10050061		60 x 32 x 66	F						220						X	X			X											
2	Environmental Microbiology	Microbiology - Food & Water	2.4	103-08	Refrigerator - 1	1	ThermoFisher	10383137		30 x 54 x 80	F						115V, 60Hz, 5.8A, 1PH																							
2	Environmental	Microbiology - Food & Water	2.4	103-09	BSC 6'	1					F																												
2	Environmental	Microbiology - Food & Water	2.4		Mobile lab bench with shelves	4				61 x 33 x 80	F																												
2	Environmental	Microbiology - Food & Water	2.4		Lab Chair	4				28 x 28 x 46	F																												
2	Environmental	Microbiology - Food & Water	2.4		Desktop Computer	4					B																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-01	Bruker MALDI-TOF #1 (Benchtop)	1	Maldi Biotyper Sirius	1865142.702		20 x 25 x 42	B						110																							
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-02	Bruker MALDI-TOF #2 (Benchtop)	1	Maldi Biotyper Sirius	1865142.702		20 x 25 x 42	B																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-03	QIACube #1 (Benchtop)	1	Qiagen	30004		24 x 26 x 23	B																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-04	QIACube #2 (Benchtop)	1	Qiagen	30004		24 x 26 x 23	B						110																							
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-05	Incubator CO_2 37°C, #2	1	Fisher Brand	43089882		27 x 26 x 34	ST						110													X										
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-06	Incubator CO_2 37°C, #TBD	1	Fisher Brand	43089882		27 x 26 x 34	ST																			X										
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-07	Incubator 30°C, #4	1	Thermo Scientific	311N0002		23 x 24 x 39	ST						110													X										
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-08	Incubator 42°C, #8	1	Panasonic	15040096		24 x 23 x 22	ST						110													X										
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-09	Incubator 37°C, #9	1	Thermo Scientific	300249499		32 x 38 x 79	F						110																							
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-10	Incubator 25°C, #10	1	Thermo Scientific	IMC40492658		18 x 10 x 17	ST						110													X										
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-11	Microscope Olympus Bx43 (Benchtop)	1	Olympus			15 x 15 x 24	B						110																							

SOUTHERN NEVADA HEALTH DISTRICT EQUIPMENT LIST

		ROOM/LOCATION ATTRIBUTES			EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					FURNISHED / INSTALLED / REMARKS
Floor	Group	Room	Room Data Sheet Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (*WITHOUT* clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-12	Microscope (Benchtop)	1	Olympus			15 x 15 x 24	B																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-13	Slide/Card mixer (Benchtop)	1	Cole-Parmer	JAKT27010		12 x 10 x 8	B						110																						
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-14	Eppendorf centrifuge (Benchtop)	1	Eppendorf	541721065		13 x 13 x 8	B						110																						
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-15	Sensititre Instrument	1	Thermo Scientific			36 x 24 x 30	B																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-16	BSC 6'	2				78 x 33 x 63	F																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-17	BSC 4'																																		
2	Clinical Microbiology Lab	Clinical Micro lab	2.5		Sink	2					F																												
2	Clinical Microbiology Lab	Clinical Micro lab	2.5	250-19	Double Door Deli Refrigerator	1					F																												
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5	250-18	MilliQ IQ 7000 (sink and DI required)	1				21 x 14 x 21	W																								X		X			
2	Clinical Microbiology Lab	Clinical Micro lab	2.5		Mobile lab bench with shelves	8				61 x 33 x 80	F																												
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5		Lab Chair	8				28 x 28 x 46	F																												
2	Clinical Microbiology Lab Suite	Clinical Micro lab	2.5		Desktop Computer	8					B																												
2	Clinical Microbiology Lab Suite	Lab Storage Room	2.5		Freestanding shelving	4				48 x 24 x 72	F																												
2	Clinical Microbiology Lab Suite	Lab Storage Room	2.5		Desk	1				48 x 24 x 30	F																												
2	Clinical Microbiology Lab Suite	Lab Storage Room	2.5		Chair	1				29 x 28 x 46	F																												
2	Clinical Microbiology Lab	Dark Room	2.5	250.3-01	Fluorescence microscope (on desk)	1				14 × 15 × 19	B																												
2	Clinical Microbiology Lab	Dark Room	2.5		Computer	1					B																												
2	Clinical Microbiology Lab	Dark Room	2.5		Desk	1				48 x 24 x 30	F																												
2	Clinical Microbiology Lab	Dark Room	2.5		Chair	1				28 x 28 x 46	F																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5	250.2-06	AirClean Laminar Flow Hood	1				52x33x63	F																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5		Mobile lab bench	2				61x33x80	F																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5		Lab Chair	1				28x 28 X 46	F																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5		Sink	1					F																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5		Wall Cabinet (for reagent storage)	1				48 x 21 x 84	W																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5	250.2-01	Balance	2				12 x 12 x 18	B																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5	250.2-02	PH meter	1				12 x 12 x 18	B																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5	250.2-03	Mixer	1				12 x 12 x 6	B																												
2	Clinical Microbiology Lab	Reagent Prep Room	2.5	250.2-04	Microwave	1				24 x 20 x 18	B																												
2	Clinical Microbiology Lab Suite	Reagent Prep Room	2.5	250.2-05	Autoclave (Benchtop)	1				24 x 20 x 18	B																												
2	Clinical Microbiology Lab Suite	Reagent Prep Room	2.5		Storage Shelving	3	Metro			48 x 24 x 72	F																												
2	Clinical Microbiology Lab Suite	Freezer & Refrigerator (Lab Support) Equipment Room	2.6	260-01	Freezer #13 (-80°C)	1	Thermo Scientific	1.16081E+15		36 x 39 x 78	F						110																						
2	Clinical Microbiology Lab Suite	Freezer & Refrigerator (Lab Support) Equipment Room	2.6	260-02	Freezer #13 (-80°C)	1	Thermo Scientific	1.16081E+15		36 x 39 x 78	F																												
2	Clinical Microbiology Lab Suite	Freezer & Refrigerator (Lab Support) Equipment Room	2.6	260-03	Freezer #TBD -20°C (FUTURE)	1	Fisher Scientific			30 x 52 x 83	F																												
2	Clinical Microbiology Lab Suite	Freezer & Refrigerator (Lab Support) Equipment Room	2.6	260-04	Refrigerator #3	1	Fisher Scientific	306N0010		30 x 52 x 83	F						110																						
2	Clinical Microbiology Lab Suite	Freezer & Refrigerator (Lab Support) Equipment Room	2.6	260-05	Refrigerator #7	1	Fisher Scientific	1817080706497		30 x 52 x 83	F						110																						
2	Clinical Microbiology Lab Suite	Freezer & Refrigerator (Lab Support) Equipment Room	2.6	260-06	Refrigerator #10	1	Fisher Scientific	158526601160531		32 x 52 x 80	F						110																						
2	Clinical Microbiology Lab	Freezer & Refrigerator (Lab Support)	2.6	260-07	Refrigerator #TBD						F																												
2	Clinical Microbiology Lab Suite	Walk-in Cold Room	2.6		Dedicated shelving/storage					48 x 24 x 72	F																												
2	Offices & Conference Rooms	Safety Officer Office	2.7		Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference Rooms	Safety Officer Office	2.7		Hutch	1				48 x 37 x 30	F																												
2	Offices & Conference	Safety Officer Office	2.7		Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference	Safety Officer Office	2.7		L-return desk	1				30 x 30 x 48	F																												
2	Offices & Conference	Safety Officer Office	2.7		Chair	1					F																												
2	Offices & Conference	Laboratory Manager Office	2.7		Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference	Laboratory Manager Office	2.7		Hutch	1				48 x 37 x 30	F																												
2	Offices & Conference	Laboratory Manager Office	2.7		Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference	Laboratory Manager Office	2.7		L-return desk	1				30 x 30 x 48																												
2	Offices & Conference	IT Office	2.7		Chair	1					F																												
2	Offices & Conference	IT Office	2.7		Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference	IT Office	2.7		Hutch	1				48 x 37 x 30	F																												
2	Offices & Conference	IT Office	2.7		Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference	IT Office	2.7		L-return desk	1				30 x 30 x 48	F																												
2	Offices & Conference Rooms	IT Office	2.7		Chair	1																																
2	Offices & Conference Rooms	Supervisor Office	2.7		Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		Hutch	1				48 x 37 x 30	F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		L-return desk	1				30 x 30 x 48																												
2	Offices & Conference Rooms	Supervisor Office	2.7		Chair	1					F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		Office Desk	1				60 x 33 x 30	F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		Hutch	1				48 x 37 x 30	F																												

SOUTHERN NEVADA HEALTH DISTRICT EQUIPMENT LIST

		ROOM/LOCATION ATTRIBUTES			EQUIPMENT SPECIFICATION				IT	SIZE, LOCATION & WEIGHT			ELECTRICAL							DATA			LAB SERVICES		LAB GAS SERVICES					HVAC				LIQUIDS					FURNISHED / INSTALLED / REMARKS
Floor	Group	Room	Room Data Sheet Number	NEW Equip. Number	Equipment Description	Quantity	Manufacturer	Model	PC / Laptop	Equipment Dimensions in inches (*WITHOUT* clearances) W x D x H	Location	Weight	Voltage	Amps	Phase	Hertz	Power Supply	Power (VA)	NEMA Conn.	Dedicated Data	PCS Monitor	LIMS	CDA - Clean Dry Air (psi)	Vacuum	HE - Helium	Ultra High Purity N2	N2 - Nitrogen Gas	O2 - Oxygen	CO2 - Carbon Dioxide (psi)	HVAC Supply Ventilation	Ducted Exhaust	Snorkel	Vac Pump Cabinet	ICW - Industrial Cold Water	IHW - Industrial Hot Water	DI Water	MW - Municipal Water	LN2 - Liquid Nitrogen	SPECIFICATION DETAILS / REMARKS
2	Offices & Conference Rooms	Supervisor Office	2.7		Bookcase	1				36 x 12 x 72	F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		L-return desk	1				30 x 30 x 48	F																												
2	Offices & Conference Rooms	Supervisor Office	2.7		Chair	1																																
2	Offices & Conference Rooms	Conference Room	2.8		Conference table TBD	1				96 x 48 x 30	F																												
2	Offices & Conference Rooms	Conference Room	2.8		Chair	8				20 x 20 x 30	F																												
2	Offices & Conference Rooms	Conference Room	2.8		Speaking Lectern Stand	1				15.2 x 24 x 44.25	F																												
2	Offices & Conference Rooms	Conference Room	2.8		Whiteboard	2				72 x 40	W																												
2	Offices & Conference Rooms	Conference Room	2.8		TV screen 60" TBD	1					W																												
2	Offices & Conference Rooms	Conference Room	2.8		Computer desk	1					F																												
2	Offices & Conference Rooms	Conference Room	2.8		Computer	1																																
2	Offices & Conference Rooms	Conference Room	2.8		Telephone for conference	1																																
2	Offices & Conference Rooms	Break Room	2.9		Table	2				72 x 30 x 29	F																												
2	Offices & Conference Rooms	Break Room	2.9		Chair	12				20 x 20 x 30	F																												
2	Offices & Conference Rooms	Break Room	2.9		Refrigerator	1				35 x 32 x 70	F																												
2	Offices & Conference	Break Room	2.9		Kitchen bench	1				130 x 25 x 36	F																												
2	Offices & Conference	Break Room	2.9		Kitchen cabinet	1					W																												
2	Building Support	Men's & Women's Restrooms	2.10																																			
2	Building Support	Elevator	2.11																																			
2	Building Support	Exit Stairs	2.12																																			
2	Building Support	Janitor's closet	2.13																																			
2	Building Support	Waste Area	2.14																																			