TECHNICAL SUPPORT CENTER
Utah Department Of Environmental Quality

Division of Facilities Construction and Management
DFCM PROJECT NO. 17235310

FACILITIES PROGRAM

PREPARED BY:

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OCTOBER 2016

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

REVIEW & SIGNATURE PAGE

Department of Environmental Quality Technical Support Center
Review Signatures

We, the representatives for State of Utah Department of Environmental Quality, have reviewed the Program for the Department of Environmental Quality Technical Support Center and hereby sanction that this Program adequately represents our request for a facility to fulfill our mission and programmatic needs. We further acknowledge that all appropriate parties involved in the programming effort have reviewed this document for completeness and accuracy.

Brad T Johnson 10/27/2016

Brad Johnson — Date
Deputy Director

Division of Facilities Construction & Management, State of Utah
Review Signatures

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10-27-16

Matt Boyer — Date
Project Manager

ACKNOWLEDGEMENTS

The following is a list of individuals who assisted with the preparation of this Program.

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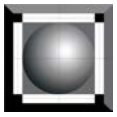

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

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1.0 EXECUTIVE SUMMARY

1.1 MISSION STATEMENT PROJECT JUSTIFICATION

The mission of the Utah Department of Environmental Quality (DEQ) is to safeguard and improve Utah's air, land and water through balanced regulation.

Laboratory and field work associated with environmental protection are an essential function of the agency and are critical to the accomplishment of its mission. Important decisions associated with environmental protection and compliance with regulatory standards hinge on the accuracy of this analytical data.

The existing air monitoring facility is in disrepair, is not in a convenient location, and was not designed to accommodate the field and analytical needs of the Division of Air Quality. Retrofitting the existing site to meet the needs of the division would be very costly and would not solve all of the problems with the site. The field support facility for the Division of Water Quality is in a different location and although it is in good condition, consolidation to the TSC would allow for sharing of resources and improve efficiency of the department. Facilities and resources for the other divisions in DEQ are dispersed at various locations in the Multi Agency State Office Building and are insufficient to meet the agency's needs. Transferring these resources to the TSC will also allow for sharing of resources and improved efficiency.

Construction of a new Technical Support Center (TSC) would allow DEQ to ensure that the facility meets the standards necessary to produce defensible data and ensure protection of public health and compliance with regulatory standards. It will also improve the agency efficiency and allow DEQ Divisions to share resources in a facility that is in close proximity to the DEQ offices.

1.0 EXECUTIVE SUMMARY

1.2 PROJECT DESCRIPTION

The Technical Support Center (TSC) will be approximately 21,600 ft^2 and will include warehouse space, a filter room, a wet chemistry laboratory, instrument calibration rooms, laboratory sample preparation areas, field preparation areas, instrument storage areas, and equipment and supplies storage.

The warehouse space will primarily be used for indoor work and storage of vehicles and boats that are used in the field. Large enclosed trailers will be equipped in the warehouse area for deployment into the field as mobile air monitoring stations. Field sampling vans, boats on trailers, AATVs and equipment trailers will also be stored in the warehouse area.

The filter room will be used to weigh filters that are collected from air monitoring sites throughout the state. It must be environmentally controlled to meet federal requirements for air sample testing. These requirements include HEPA filtration, maintaining humidity levels between 30-40% within 5%, a temperature of 70° within 2°, and the room must be vibration-free.

The laboratory areas will be used to prepare instruments for deployment into the field, and calibration and repair of instruments as needed. Some limited wet chemistry and preparation of samples prior to shipping to laboratories will also be performed in the laboratory areas. Potentially hazardous compressed gases, such as nitrogen, hydrogen, and carbon monoxide will also be stored at the site for use in calibration and instrument preparation.

DEQ staff will routinely use this facility to prepare for field work. All of the divisions in DEQ have instruments, sampling equipment, and supplies that are used in the field. This facility will be used to store all of these resources and must be adequate to meet all of the needs of the department.

EXECUTIVE SUMMARY

1.3 BUILDING PROGRAM SUMMARY

The Department of Environmental Quality Technical Support Center will consist of the following major program elements:

COMMON AREAS & CIRCULATION:	**2,840 SF**
DIVISION OF AIR QUALITY:	**12,100 SF**
DIVISION OF WATER QUALITY:	**4,800 SF**
DIVISION OF DRINKING WATER:	**310 SF**
DIVISION OF ENVIRONMENTAL RESPONSE AND REMEDIATION:	**540 SF**
DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL:	**970 SF**
TOTAL AREA:	**21,560 SF**

A summary of the areas and requirements follows in Section 1.4. Further explanations of the major programmed areas and their requirements can be found in Section 3 of this program. To meet the programmatic needs for the Department of Environmental Quality Technical Support Center the building size is to be between 18,000 and 21,600 gross square feet.

EXECUTIVE SUMMARY

1.4 PROGRAMMED SPACE ALLOCATION & REQUIREMENTS

DEQ TECHNICAL SUPPORT CENTER
PROGRAM SPACE ALLOCATION REQUIREMENTS

DIVISION	ROOM	AREA	TOTAL
WATER QUALITY	WAREHOUSE	4000	
	LABORATORY	500	
	UTILITY	15	
	OFFICE	145	
	HALLWAY	140	
	RESTROOM	100	
		4900	4900
AIR QUALITY			
	WET LAB	400	
	GAS LAB	2000	
	PARTICULATE LAB	2000	
	FILTER ROOM	350	
	EQUIPMENT STORAGE	400	
	FREEZER	100	
	OFFICE SPACE	300	
	WAREHOUSE	4000	
	LOADING DOCK	400	
	SHIPPING & RECEIVING	200	
	BATHROOMS/SHOWERS	200	
	CLOSET	60	
	ICE MACHINE	90	
	DRINKING FOUNTAIN	4	
	SUPPLY CLOSET	120	
	BREAK ROOM	180	
	CONFERENCE / TRAINING	300	
	ROOF SHELTER	220	
	E.V. PARKING	300	
	ELEVATOR	60	
	WATER FILTRATION ROOM	100	
	HALLWAYS	0	
		11784	11784

WASTE MANAGEMENT & RADIATION CONTROL			
	FIELD SAMPLING EQUIPMENT STORAGE	250	
	FIELD SAMPLING PREPARATION & SAMPLE STORAGE	150	
	GAMMA SPECTROSCOPY	250	
	PROGRAM MATERIALS STORAGE	150	
		800	800
DRINKING WATER			
	OFFICE	300	300
ENVIRONMENTAL RESPONSE AND REMEDIATION			
	SAMPLE PREP ROOM	300	
	EQUIPMENT STORAGE	300	
		600	600
TOTAL DIVISION AREAS WITHOUT NET TO GROSS FACTOR			**18384**
REQUIRED ADDITIONAL SPACES			
	COMMON LABORATORY	400	
	TEL/COM ROOM	80	
	JANITOR'S ROOM	50	
	ENTRY VESTIBULES	150	
	STAIRWAY	200	
		880	880
AREA WITH ADDITIONAL SPACES			**19264**
INTERNAL CIRCULATION & EXTERIOR WALLS	NET TO GROSS FACTOR @ 1.12		1.12
GROSS AREA			**21575.68**

EXECUTIVE SUMMARY

1.5 DEQ TECHNICAL SUPPORT CENTER COST MODEL (ARCHITECTS)

SITE CONSTRUCTION

SITE COST		$ 700,000.00

BUILDING CONSTRUCTION

Architectural Cost		$ 1,140,000.00
Structural Cost		$ 1,228,200.00
Mechanical Cost		$ 467,000.00
Electrical Cost		$ 567,000.00
Impact & Connection Fees		$ 50,000.00
Subtotal		**$ 4,102,200.00**
General Conditions	8%	$ 328,176.00
Overhead & Profit	6%	$ 246,132.00
Bonds	1%	$ 41,022.00
Total Building Construction Cost		**$ 4,717,530.00**
Design / Contingency	5%	**$ 235,876.00**

TOTAL ESTIMATED PROJECT COST **$ 4,953,406.00**

ESTIMATED CONSTRUCTION COST PER SQUARE FOOT = $229/ SF

1.0 EXECUTIVE SUMMARY

1.6 PROJECT SCHEDULE

1.0 EXECUTIVE SUMMARY

1.6 PROJECT SCHEDULE

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER
PROPOSED PROJECT SCHEDULE

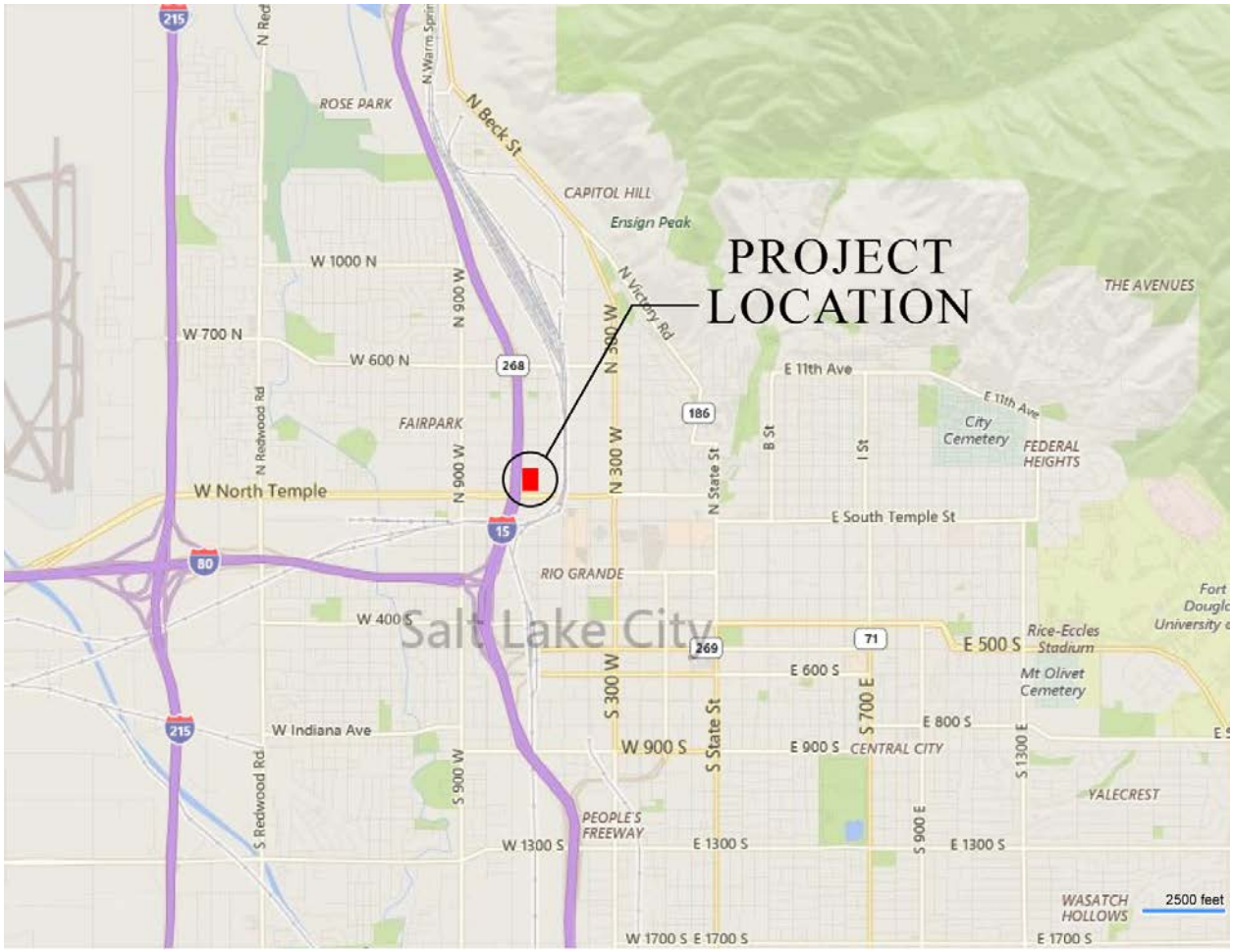
	2016			2017													2018												2019											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SOLICITATION FOR DESIGN																																							
Solicitation Announced																																							
Short List																																							
Design Interviews																																							
Design Award																																							
DESIGN																																							
Concept Design																																							
Design Development																																							
Construction Documents																																							
PERMIT REVIEWS																																							
Permit Issued																																							
CONSTRUCTION SOLICITATION																																							
VBS Solicitation Announced																																							
VBS Short List																																							
Bid Period																																							
VBS Contractor Interviews																																							
VBS Construction Award																																							
CONSTRUCTION																																							
15 Month Completion																																							
COMMISSIONING																																							
FF& E INSTALLATION																																							
OCCUPANCY																																							

2.0 SITE ANALYSIS

2.1 VICINITY MAP

The property is located in east of Interstate 15 and north of North temple Street in the north central area of Salt Lake City, Utah.

NORTH



SOUTH

2.0 SITE ANALYSIS

2.1 SITE LOCATION

The new DEQ Technical Support Center property is located on the State of Utah Redwood Campus east of the Utah Library for the Blind and Disabled.

NORTH

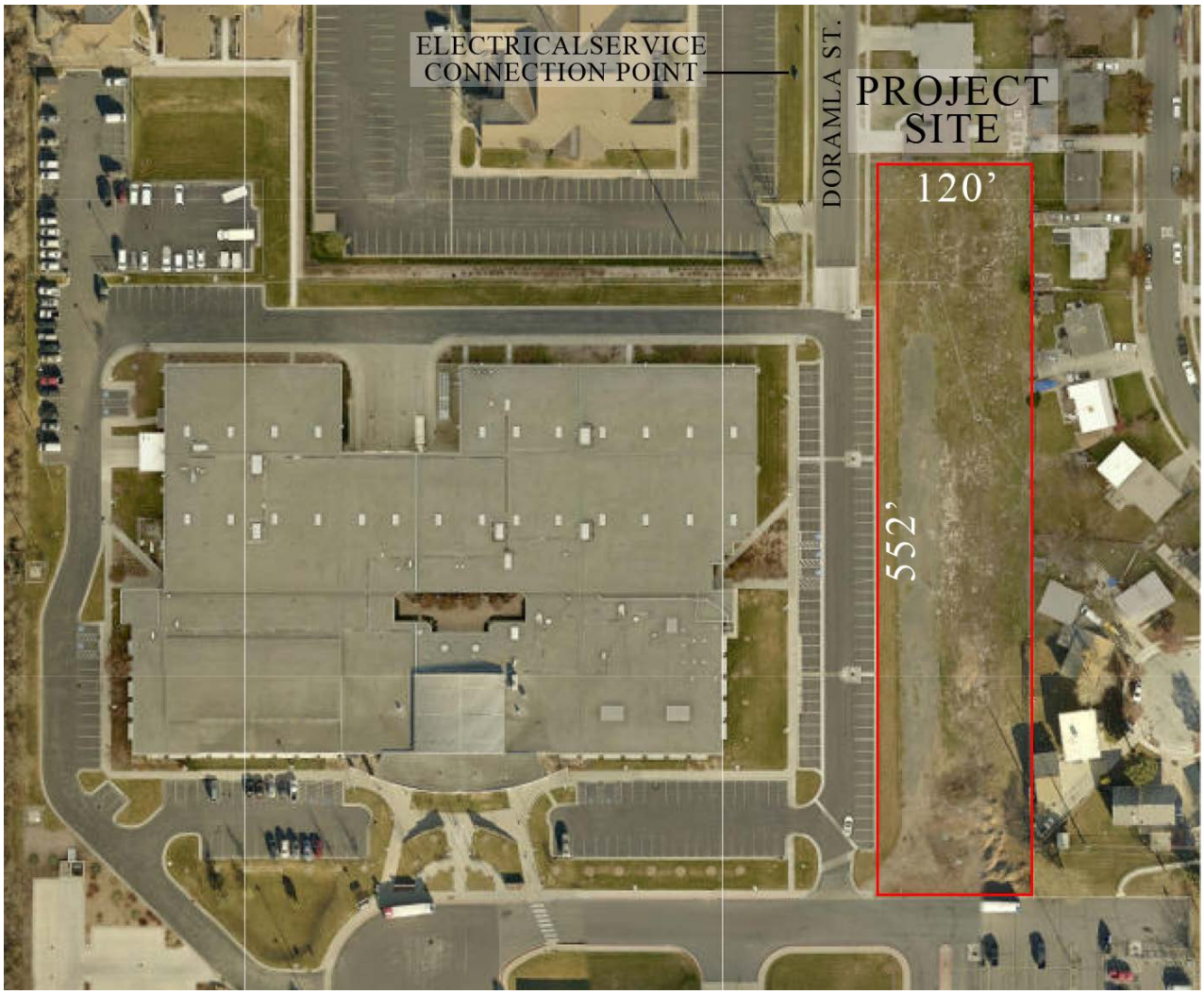
SOUTH

2.0 SITE ANALYSIS

2.1 PROJECT SITE

The 1.5 acre site is bordered on the north and east by residential properties. There is an access road and parking for the Library west of the property and an additional access road south of the property. The property is relatively flat with less than three feet of slope from north to south. There are existing residential fences in various states of disrepair east of the property. Some slope from fill has been created along this eastern fence line and will need to be taken into account in the design.

NORTH



SOUTH

2.0 SITE ANALYSIS

2.2 EXISTING SITE CONDITIONS & PHYSICAL CHARACTERISTICS

The property has a north to south slope of less than 24 inches that will need to be considered in the construction design. The land is currently a vacant lot located at approximately 250 North 1950 West in Salt Lake City, Utah. The most striking geographic features in the area are the Oquirrh Mountains to the west and Wasatch Mountains to the east of the site.

Temperatures in in Salt Lake City are average in the state. The average daytime temperature is 82°F in June, 90°F in July and 89°F in August. Temperatures over 99°F have been recorded. Average winter temperatures are moderate with average high temperature of 40°F in December, 38°F in January as the coldest month and 44°F in February. Average winter low temperature are 27°F in December, 26°F in January as the coldest month and 31°F in February. Recorded high temperature occasionally exceed 100°F and recorded low temperatures occasionally reach 0°F.

This Salt Lake Valley area is also relatively dry, averaging just over 18 inches of rainfall precipitation per year with an average annual snowfall of 47 inches. The wettest months for rainfall are March, April and May. The driest months are July and August.

The implications of these prevailing weather conditions for the construction are average for the State of Utah. They include:

1. Native, draught-tolerant plant should be utilized in landscaping. Water-hungry grasses should be kept to a minimum.

2. Air conditioning units should be sized and positioned to ensure that comfortable conditions for the staff are maintained during extreme heat periods.

3. If the budget permits, roof surface solar panels can be a great opportunity to take advantage of prolonged sunny days and reduce energy consumption.

4. Exterior surfaces (materials and colors) should be considered to minimize heat conduction to interior areas in the summer months.

5. The design should take into account the need for snow removal and storage on site.

2.0 SITE ANALYSIS

2.3 SITE UTILITIES

IMPACT AND CONNECTION FEES
The Contractor is responsible to pay for all impact and connection fees.

Salt Lake City Public Works approximate connection fees are as follows:

Water Connection Fee:	$ 11,776.00
2" Water Meter:	$ 2,323.21
Sanitary Sewer:	$ 2,000.00

Salt Lake City Public Works Storm Water Management: In as much as the Redwood Campus property was designed to accommodate and comply with the Storm Water Management requirements of Salt Lake City, and the new development of the DEQ Technical Support Center will be connected to the existing system connection and impact fees may be required.

Questar Gas Company approximate cost to connect to the existing onsite service line is as follows: $ 5,000.00
Note: A more precise cost will be developed during the design phase.

Rocky Mountain Power: A service request by the owner has been initiated for Rocky Mountain Power to begin the process to determine the connection fees for electrical service. See Section 3.5 Electrical for additional information.

WATER
There is an existing 8-inch Salt Lake City Public Utilities culinary water main located in the access road South of the property. It is anticipated that the Project will require a new 1 1/2" water line and meter for culinary water. The culinary water line will provide service to the Laboratories, Rest Rooms, Break Room, Janitors Room, drinking fountains, exterior hose bibs and landscape sprinkler connections associated with the new building. In addition, a 6 to 8 inch non metered culinary water line will be required to service the automatic fire sprinkler system. The Contractor is to coordinate with Salt Lake City Public Utilities for connections to the existing mains, fire flow analysis scheduling and to provide a new water meter for the building. Landscaping sprinkler piping shall directly connect to water main on site after the meter. Provide backflow protection and frost protection as required by the utility provider. Maintain and protect existing utilities including water mains and lines to adjacent properties throughout the project. The contractor is also required to coordinate with DFCM's Redwood Complex Facilities Coordinator, the adjacent property owners, and other adjacent properties for any work done outside the property lines of the DEQ Technical Support Center property which may impact their respective properties.

2.0 SITE ANALYSIS

2.3 SITE UTILITIES

POWER

Power to the facility will be coordinated with Rocky Mountain Power (RMP). It is expected that power for the facility will be connected to the ground sleeve north of the building along North Doralma Street access road at 1930 West. Requirements for connection will be coordinated with Rocky Mountain Power. The utility service from Rocky Mountain Power are estimated to be 600-amp 480/277-volt to serve the new 21,600 square foot building.

See Section 3.5 Electrical/ Security /Telecommunications & Data Systems

SANITARY SEWER

There is an existing sanitary sewer main south of the property in the access roadway. It is anticipated that the new on-site sanitary sewer line will connect to the existing main in the southern section of the site. The Contractor is to coordinate with Salt Lake City Public Utilities, the sanitary sewer utility provider, for connection to the existing sanitary sewer main. The contractor is also required to coordinate with DFCM's Redwood Complex Facilities Coordinator, for any work done outside the property lines of the DEQ Technical Support Center property.

STORM WATER

There are an existing storm sewer lines south and west of the property. It is anticipated that storm water produced on the new site will be retained in the yard storage and parking areas or discharged into the existing storm sewer system. The Contractor is to coordinate with Salt Lake City Public Utilities, the Storm Water utility provider, for requirements to install a new off-site piped connection to the existing storm sewer main in East Center Street or to sheet flow into the system via a new Contractor provided and installed off-site curb and gutter installation.

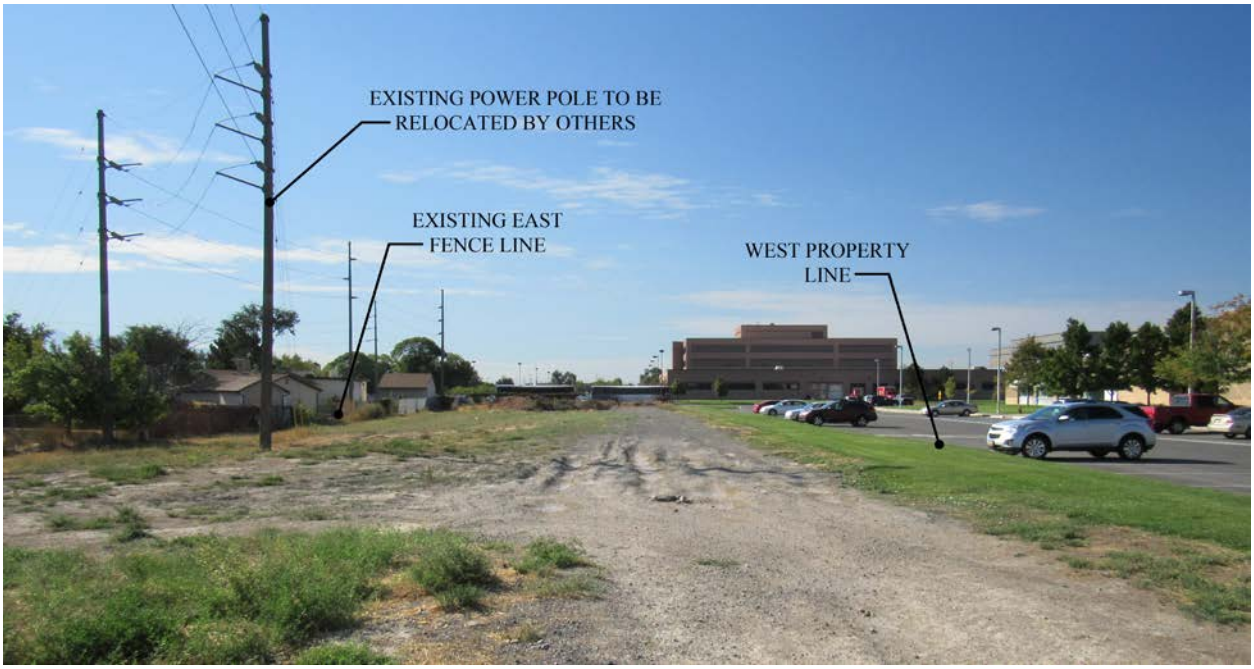
NATURAL GAS

The Contractor is to coordinate with Questar Gas Company, the utility provider, for connection to the existing natural gas main.

2.0 SITE ANALYSIS

2.4 DEQ TECHNICAL SUPPORT CENTER SITE PHOTOS

1. VIEW OF PROPERTY FROM SOUTHWEST



2. VIEW SOUTH FROM PROPERTY

2.0 SITE ANALYSIS

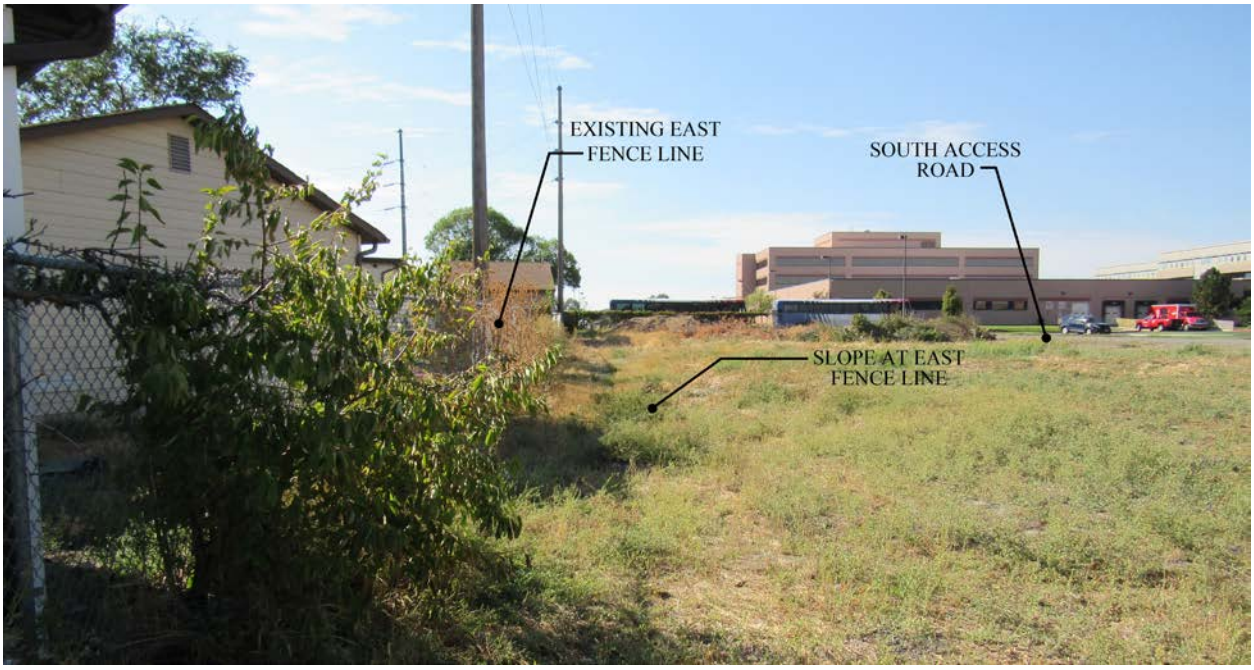
2.4 DEQ TECHNICAL SUPPORT CENTER SITE PHOTOS

3. VIEW NORTH FROM PROPERTY

4. VIEW WEST FROM PROPERTY

2.0 SITE ANALYSIS

2.4 DEQ TECHNICAL SUPPORT CENTER SITE PHOTOS



5. VIEW SOUTHEAST FROM PROPERTY

6. VIEW NORTHEAST FROM PROPERTY

2.0 SITE ANALYSIS

2.4 DEQ TECHNICAL SUPPORT CENTER SITE PHOTOS

7. VIEW EAST FROM PROPERTY

8. STORM WATER INLETS AND CURBS AND GUTTERS TO REMAIN. MAINTAIN AND PROTECT TYPICAL.

2.0 SITE ANALYSIS

2.5 DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER SOILS REPORT

See Attachment

3.0 BUILDING REQUIREMENTS

3.1 ARCHITECTURAL PLANNING ISSUES

3.1.1 BUILDING MASSING

The single story massing of the building elements should reflect the varying nature of the of the element functions. The Division of Air Quality Warehouse area will require a clear interior height of 20'-0". This will likely require a building height of approximately 25'. The Division of Air Quality also requires a Penthouse area with stair and elevator access to access and monitor air sampling equipment. The height of this building element is expected to be approximately 40'.

The other building functions only require an interior clear height of 12'-0". A building height of approximately 18' to 20' is anticipated for those areas.

Coherent Building Design: All sides of a building may have a visual or other impact, and shall be coherently designed and treated. A facade not related to the rest of the building (false front or storefront) shall be avoided. A consistent level of detail and finish on all sides of a building shall be provided.

Wall Variations: When possible, continuous building wall surfaces shall be relieved with variations of wall planes or overhangs that create shadow areas and add visual interest. **Care should be taken to avoid massing variations which will negatively impact the internal functions on the facility.**

Visual Patterns: The building should have shadow relief created by recesses or projections. Recesses may include entryways or window openings. Projections may include sun screens, entrances, or covered walkways.

Architectural Details: Building elements that enrich the character of a building are encouraged. Attention to detail, including all building and architectural design elements shall be required.

Mechanical Equipment: Air conditioning units, generators and other auxiliary mechanical and building equipment shall be placed at locations where they will be least intrusive in terms of noise, appearance and odors, particularly for adjacent properties and public rights of way. Screening walls, landscaping and other screening treatments may be used to minimize the visibility of required mechanical equipment from public streets and adjoining properties. All building mounted mechanical or communications equipment shall be a color to make it as unobtrusive as possible. If located on or adjacent to a building wall, the color of all mechanical and communications equipment shall blend with the color and design details of the building.

Building Materials and Textures: Exterior building materials shall be compatible with those predominantly used in the surrounding area. Restraint should be used in the number of different exterior building materials selected. The following materials are recommended for use on

exterior walls: Brick, Integrally colored split faced or honed face Concrete Masonry Units, Exposed Architectural concrete or board formed concrete and Architectural Metal Composite Panels.

> **Note:** Stucco, synthetic masonry, synthetic stone, cultured stone and asphalt shingles, and standard concrete block are not acceptable building materials for this facility.

3.0 BUILDING REQUIREMENTS

3.1 ARCHITECTURAL PLANNING ISSUES

3.1.2 EXTERNAL RELATIONSHIPS/CIRCULATION

The DEQ Technical Support Center will consist of a 20,600 square foot building to accommodate the five Technical Support Divisions of the Department of Environmental Quality. The Divisions are the Division of Air Quality, Water Quality, Drinking Water, Environmental Response and Remediation and Waste Management and Radiation Control. All of the Divisions except the Division of Drinking Water require external access into their respective areas.

EXTERNAL RELATIONSHIPS/CIRCULATION
Although the internal relationships of each Division are separated, the external circulation of the Divisions should be shared. There should be a minimum of four distinct accesses to and from the site.

1. A west access point is anticipated for deliveries and visitor's entrance. This point will also proved a required exit. The State Library has agreed to give up two parking stalls to accommodate the west access point.

2. The second point of access and egress should be located in line with the roadway north of the State Library for the Blind. This access area will provide an entrance and exit for larger trucks and vehicles. Since the Division of Air Quality requires a dock area for semi truck deliveries and close proximity to an outdoor storage yard, it is recommended that Air Quality be located in proximity to the northern site access point. The State Library has agreed to give up three to four parking stalls to accommodate the northwest access point. This access point should be provided with a security gate which can be locked after business hours.

3. The third access point located in the southeast corner of the site will provide a general use entry and exist point. Since the Divisions require external access, it is recommended that an interior access road be provided to the north and south areas of the site. This internal roadway will provide access to a central common entry as well as entries to the various Divisions. Since equipment is loaded and unloaded from the vehicles used by the each division, parking in close proximity to the Divisions exterior access is required.

4. The fourth access point should be located in the southeast corner of the property. The Division of Water Quality requires maneuvering space for vehicles towing boats. A "loop" road will minimize the need to backup trailers in the main circulation area. The State Library was unwilling to give up additional parking stalls to accommodate a southwest access point.

EXTERNAL SITE SECURITY /CIRCULATION

The site should be secured with a combination of fences and gates. Gates should be located at each vehicular access point. The gates should be designed to be locked after hours. If required by the building official, "man gates" should be provided to comply with exiting requirements. An 8'-0" chain link security fence should be installed to connect to the building at the south and west property lines. A solid 8'-0" masonry or textured concrete fence is to be install at locations where the property adjoins residential areas.

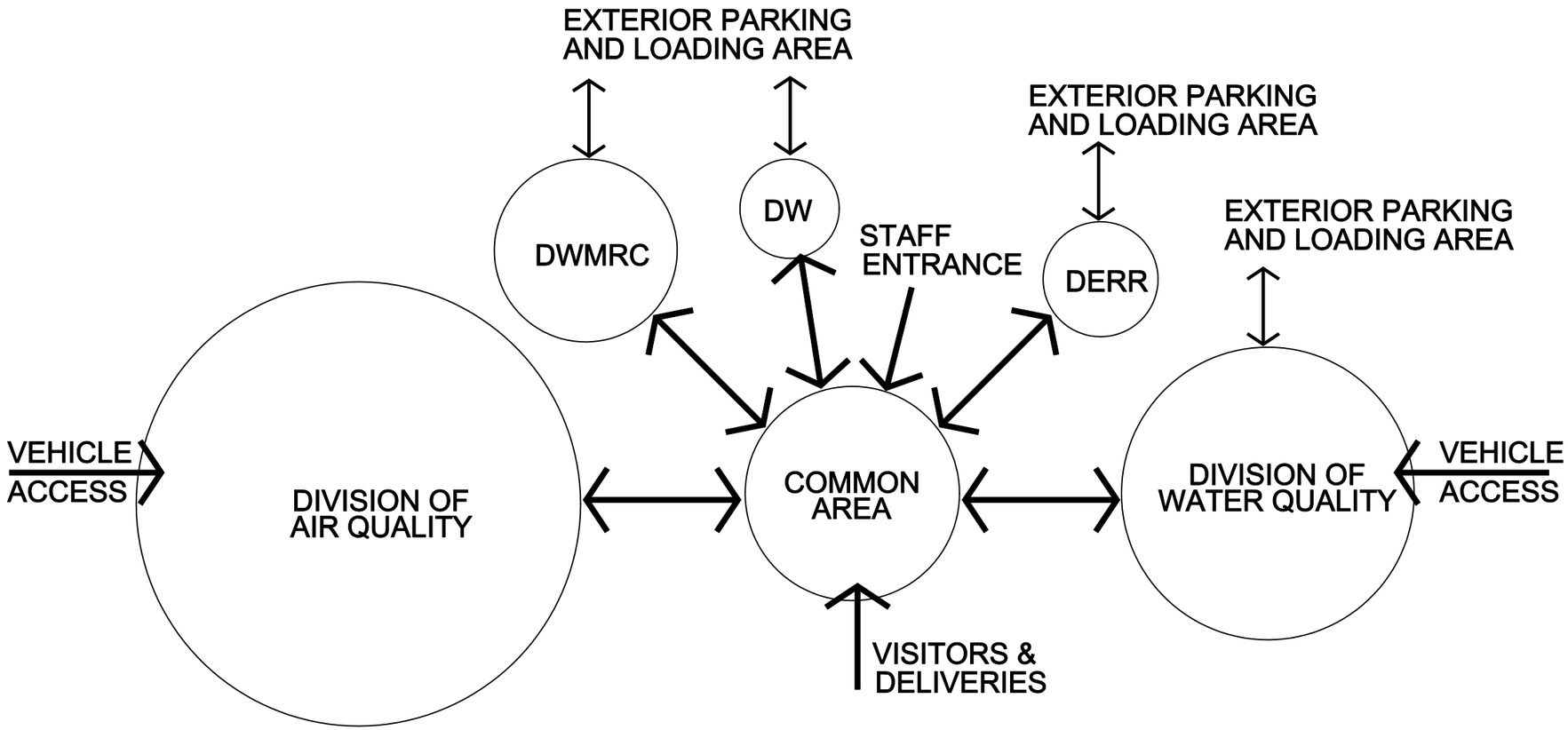
3.1.3 INTERNAL RELATIONSHIPS/CIRCULATION

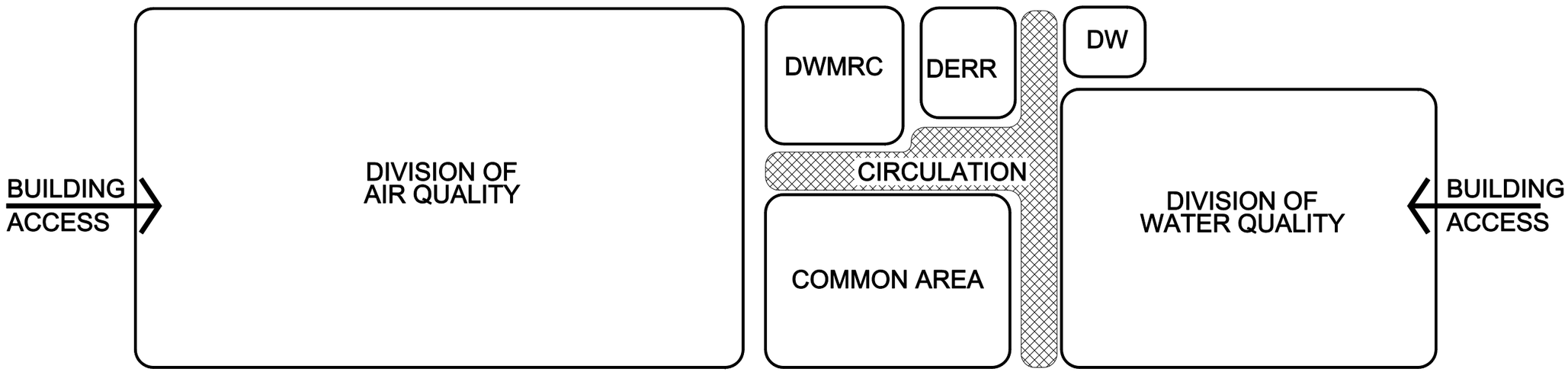
DIVISION INTERNAL RELATIONSHIPS & CIRCULATION

The DEQ Technical Support Center internal relationships for the Divisions is connected by the common use areas. An interior common use hallway connects each Division to the common use Restrooms, Shower Rooms, Conference Room, Break Room, Janitors Room, Data/Communications Room and the Common Laboratory. Common use functions such as drinking fountains, vending and ice machines should be located in this area. The common use hallway should also access the delivery/visitor's entry and the loading and unloading area used by the Divisions. The common use hallway should be configured to provide the requires exiting for the building. **See 6.2 Attachments Site Specific Diagrams**.

STAFF INTERNAL RELATIONSHIPS & CIRCULATION

Access to the various areas of the building for the staff should be unencumbered. In order to move equipment from one area to another it is critical that minimum hallway space of 66 to 72 inches be maintained. The interaction between Divisions is minimal and will generally be concentrated in the Common Laboratory, Break Room and Conference / Training Room.
See 6.2 Attachments Site Specific Diagrams.





DEQ TECHNICAL SUPPORT CENTER INTERNAL RELATIONSHIP DIAGRAMS

SCALE: 0 8' 16' 32' 48'

3.0 BUILDING REQUIREMENTS

3.1 ARCHITECTURAL PLANNING ISSUES

3.1.4 CODES STANDARDS & REGULATIONS

The New DEQ Technical Support Center is an IBC 2015 TYPE B and S-1 mixed Occupancy. The construction is required to be non-combustible and at a minimum is to meet IBC TYPE II-B Construction requirements.

The materials, design and construction of new new DEQ Technical Support Center will conform to the standards established by the Utah State Division of Facilities, Construction, and Management (DFCM), and the State of Utah High Performance Building Standard (HPBS). Furthermore, it will conform to all building, accessibility codes and requirements, and the energy codes adopted by the State of Utah at the time of design and construction, whether or not they are specifically referenced in this document.

It is the responsibility of the Design Team and the Architect of Record to verify and utilize all the latest revisions, editions and adopted versions. If there are conflicting standards, code provisions and/or regulations, the most stringent will govern unless such requirement is waived in writing by the Utah State Division of Facilities Construction and Management.

In addition, the Design Team and Architect of Record will be required to coordinate their efforts with the Utah Department of Environmental Quality personnel and DFCM.

3.1.4.1 CODES AND REFERENCES

The State of Utah requires consultants to use the latest editions of codes and standards adopted by the Utah State Building Official. All requirements including State Amendments to the Codes are located at: http://www.dfcm.utah.gov/downloads/bldg_official/codes_in_use.pdf

Current Codes include but are not limited to:

- **2015 edition of the International Building Code (IBC), to include Appendix J, Issued by the International Code Council.**
- **2014 edition of the National Electrical Code (NEC), issued by the National Fire Protection Association.**
- **2015 edition of the International Plumbing Code (IPC), issued by the International Code Council.**
- **2015 edition of the International Mechanical Code (IMC), issued by the International code Council.**
- **2015 edition of the International Residential Code (IRC), Issued by the International Code Council.**
- **2015 edition of the International Energy Conservation Code (IECC), issued by the International Code Council.**
- **2015 edition of the International Fuel Gas Code (IFGC), issued by the International Code Council**

3.0 BUILDING REQUIREMENTS

3.1 ARCHITECTURAL PLANNING ISSUES

3.1.5 TESTING, INSPECTIONS AND COMMISSIONING

3.1.5.a Testing and Inspections shall meet the following requirements:
DFCM Standard Construction Documents Contractor's Agreement and
The General Conditions of the Contract Section 9.1.1. Tests and Inspections

TESTS AND INSPECTIONS
9.1.1 IN GENERAL. Tests, inspections and approvals of portions of the Work required by approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations, resolutions or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise specifically set forth in the Contract Documents or agreed to by the DFCM in writing, the DFCM shall contract for such tests, inspections and approvals with an independent entity, or with the appropriate public authority, and the DFCM shall bear all related costs of tests, inspections and approvals except as provided below. If any of the Work is required to be inspected or approved by the terms of the Contract Documents or by any public authority, the Contractor shall, at least two working days prior to the time of the desired inspection, and following the procedures established by the DFCM, request such inspection or approval to be performed. The Contractor shall give the A/E timely notice of when and where tests and inspections are to be made so that the A/E may observe such procedures

ENVELOPE TEST &COMMISSIONING
The Envelope Tests and Commissioning shall be provided by an independent Consultants hired by DFCM. Services provided by the Envelope Tests and Commissioning Agents are a part of the State of Utah High Performance Building Standard (HPBS). Details of the Envelope Tests and Commissioning Agent's Services are located on the DFCM website:

http://www.dfcm.utah.gov/dfcm-standard-documents.html

3.0 BUILDING REQUIREMENTS

3.2 BUILDING DESIGN CRITERIA

3.2.1 ARCHITECTURAL

MASONRY & STONEWORK

- Masonry if used as part of the interior or exterior finishes of the building is to be a minimum of 3" thick. Thin set "faux" brick is not acceptable.

- Concrete Masonry units if used as part of the interior or exterior finishes of the building are at a minimum to be tinted. Exterior CMU are to be tinted split face CMU or tinted honed CMU. Exposed interior CMU are to be painted in warehouse areas and tinted and honed when exposed in common areas

INTERIOR ARCHITECTURAL WOODWORK

Interior architectural woodwork shall include, but not be limited to the following:

- Built-in base cabinets with drawers and/or shelves.
- Built-in sink cabinets with drawers and shelves.
- Built-in upper wall cabinets with shelves.
- Built-in base cabinets with acid resistant counter tops
- Built-in base and upper cabinets with lockable drawers and doors.

All cabinets, including drawers and shelves, shall be laminate clad (plastic-covered) using high pressure decorative laminate, complying with AWI Section 400 and its Division 400B “Laminate Clad Cabinets”. Concealed hardware shall comply with the requirements of ANSI/BHMA A156.9.

Acid resistant counter tops shall be Laboratory Grade Phenolic Resin.

SHEET WATERPROOFING

- If building spaces are located below the adjacent exterior grade, provide and install a foundation drain system and associated filter fabric and self adhered rubberized waterproofing membrane.

INSULATION

- Foundation wall insulation (supporting backfill). Extruded Polystyrene Board Insulation comply with ASTM C 578 for Type indicated; with 5-year aged r-values of 5.4 and 5 at 40 and 75 deg. F (4.4 and 23.9 deg. C), respectively.

- Board-type building insulation, concealed - Polyisocyanurate Foam Board Insulation: Rigid boards of minimum 2.0 lb./cu. ft. density polyisocyanurate based foam core, permanently bonded to roofing felt facer sheets. Provide in thickness required to achieve a minimum aged "R value" of 30.

- Blanket-type building insulation. Faced Mineral Fiber Blanket/Batt Insulation: to comply with ASTM C 665 for Type III, Class A (blankets with reflective vapor-retarder membrane facing with flame spread of 25 or less); foil-membrane on one face w/ fibers manufactured from glass. Thickness as required to achieve a minimum "R value" of 19.

- Sound blanket-type building insulation. Sound blanket type insulation shall be constructed of inorganic glass fibers.

ROOFING

Roofing materials, thicknesses, practices and warranties shall comply with State of Utah DFCM Standard Documents, Design Management Reference Documents, 3. DFCM Design Manual-Current Version, 3.0 DFCM Requirements, Subsection 3.3 Architectural, Paragraph C. New Roofing Requirements.

DOORS

- EXTERIOR DOORS
  a. Insulated, painted hollow metal doors and painted hollow metal frames:
     (1) Hollow metal frames shall be galvanized and fabricated from 14-gauge steel and conform to Commercial Standard CS242-62 or PS4-65.
     (2) Hollow metal doors shall be fabricated with face sheets of 16-gauge material, spot welded to 20-gauge reinforcing channels (18-gauge at edges).

  b. Aluminum storefront door and integral window systems shall have thermal break construction with tempered, insulating glazing (1” thick insulating glass in windows) and automatic electric door operators in designated locations. Frames shall be 2” x 4 1/2” nominal dimension with a minimum wall thickness of 0.080 inches.

  c. Overhead, insulated, motorized sectional door with the following:

     (1) Construct door sections from galvanized, structural quality carbon steel sheets complying with ASTM A446, Grade A or ASTM A526.

     (2) Steel sheet thickness 16-gauge, exterior section face ribbed.

     (3) Heavy duty steel hinges, rust-resistant hardware, heavy duty rollers and locking device.

(4) Electric door operator of size and capacity as recommended by door manufacturer and with remote control station, electrically actuated automatic bottom bar, auto-reversing safety function and sensors.

(5) Two (2) 5" x 24" laminated glass sections per door.

- INTERIOR DOORS

a. Wood doors shall be 1 3/4" thick solid core wood with minimum finish of plain sliced oak veneer. Doors shall comply with NWWDA 1.S.1 and AWI "Architectural Woodwork Quality Standards".

- INSULATED STEEL OVERHEAD DOORS

a. Overhead, insulated, motorized sectional door with the following:

(1) Construct door sections from galvanized, structural quality carbon steel sheets complying with ASTM A446, Grade A or ASTM A526.

(2) Steel sheet thickness 16-gauge, exterior section face ribbed.

(3) Heavy duty steel hinges, rust-resistant hardware, heavy duty rollers and locking device.

(4) Electric door operator of size and capacity as recommended by door manufacturer and with remote control station, electrically actuated automatic bottom bar, auto-reversing safety function and sensors.

(5) Two (2) 5" x 24" laminated glass sections per door.

WINDOWS AND WINDOW TREATMENTS

- WINDOWS –
  a. Aluminum windows, both fixed and operable, shall have thermal break construction with 1" insulating "Low E" glazing and comply with the requirements of AAMA Grade and Performance Class HC40. Frames shall be 2" x 4 1/2" nominal dimension with a minimum wall thickness of 0.080 inches.
     (1) Rooms designated for dementia patients shall have 1" insulating glazing with "Low E" glass exterior and "Lexan", 0.075" vinyl or 0.075" polycarbonate interior.
- BLINDS – 2" wide vinyl or plastic horizontal blinds.

WALL FINISHES AND TREATMENTS

- Gypsum board with Level 4 in all areas and Level 3 finish in non public areas such as storage and mechanical rooms over minimum 20 gauge metal studs or heavy gauge steel framing members, painted minimum one (1) coat primer, one (1) coat undercoat and one (1) coat interior latex eggshell.

- Porcelain or ceramic tile complying with ANSI A137.1 “American National Standard Specifications for Ceramic Tile”, with a nominal thickness of 5/16”. The Minimum size for ceramic wall tile is to be 12" x 24".

- Medium density particle board wainscot, 5/8” thick (FRP shall not be used as a wainscot material).

CEILINGS

- Gypsum board over minimum 20 gauge metal studs, suspended ceiling system or heavy gauge steel framing members, painted minimum one (1) coat primer, one (1) coat undercoat and one (1) coat interior latex eggshell finish coat.

- Gypsum board over heavy gauge steel framing members, painted minimum one (1) coat primer, one (1) coat undercoat and one (1) coat epoxy enamel finish coat.

- Acoustic ceiling tile (ACT) materials and practices shall comply with State of Utah DFCM Standard Documents, Design Management Reference Documents,
  3. DFCM Design Manual-Current Version, 3.0 DFCM Requirements, Subsection 3.3 Architectural, Paragraph A. Suspended Ceiling Systems. Systems shall be as follows:

  a. Suspension system shall be 15/16” exposed white-faced, T-grid system.

  b. Acoustic tile panels shall be 24” x 24” or 24” x 48” panels, 3/4” thick, with factory-applied vinyl latex paint, flush or tegular, perforated, scored or fissured.

  c. Acoustic tile panels shall be 24” x 24” or 24” x 48” panels, 3/4” thick, with factory-applied vinyl faced membrane, imperforated for "clean room" applications. To be used in Laboratories and Filter Room.

- Painted exposed structure, minimum one (1) coat primer, one (1) coat egg shell off white undercoat and one (1) coat off white interior latex eggshell finish coat.

HARDWARE

- ELECTRONIC CARD READERS CARD
  a. All exterior public access doors including man doors at Technology Labs, man doors at the Receiving Area, Administrative Suite entry doors, Health Science Administration Suite entry doors, Testing Area entry door, Student Services entry doors shall have electronic card readers which are connected to the Building Security System.

FINISH HARDWARE

- Aluminum storefront doors and partition doors shall have hardware provided by the manufacturer. Minimum of three heavy-duty hinges per door, NRP hinges at outswinging doors.

- Hollow metal and wood doors shall have, as a minimum, the following hardware:

  a. Hinges (three (3) per door) shall be 4.5 x 4.5 metal hinges. Provide non-removable pins and security studs on all hinges on all exterior and outswinging doors.

  b. Locks and operators shall have ADA compliant lever handles and high security cylinders which comply with performance requirements for Grade 1 cylinders as listed in ANSI A156.5. Locks shall have minimum 1/2" throw on cylinders and deadbolts. Locks shall be Schlage "AL" series or equal.

  c. Closers shall be Sargent "1430" series or equal.

  d. Silencers shall be Rockwood 608 or equal.

  e. Door stops shall be Rockwood 409 or equal.

  f. Stainless steel kickplates shall be Rockwood, Quality or equal.

  g. Exit devices shall be Von Duprin or equal.

  h. Peepholes shall be Ives wide angle or equal.

  i. Weatherstripping shall be Pemko 303AV or equal.

  All hardware shall meet current ADA standards.

FLOORING MATERIALS AND FLOOR TREATMENTS

- Non-slip, solid, heat welded sheet acid resistant high performance vinyl with coved base, meeting the following criteria:

  a. Homogeneous.

  b. Total Thickness 2 mm. Wear layer to be .85mm, with an embossed register texture.

  c. 10-year limited commercial wear warranty.

- Carpet tile with carpet base, meeting the following criteria:

  a. Carpet tile to be selected from the State of Utah Carpet Contract.

  b. Carpet fiber and carpet tile backing shall be “cradle to cradle” material that are 100% recyclable, and must have been in current manufacturer’s running line for 10 years.

  c. Type 6 solution dyed nylon that is 100% recyclable, with a superior built in colorfastness.

  d. Non-PVC backed carpet tile that is 100% recyclable.

  e. Non-Polyurethane backed carpet tile that is 100% recyclable.

  f. Carpet tile backing to be a thermoplastic polyolefin carpet tile backing and must have multiple installation in like applications in Utah that have been installed for 10 years (no PVC). The dense backing is superior for traffic with rolling wheels.

  g. Carpet tile manufacture must have an in-house recycling program that will recycle the carpet tile back into carpet tile at no expense to the owner at the end of its life cycle (the fiber is recycled into fiber and the backing is recycled in carpet tile backing).

- Walk-off entry tile – provide a walk-off entry system made of carpet tiles that will meet LEED standards and offers a “Cradle-to-Cradle” solution, and offer non-PVC backed carpet tiles.

- Slip-resistant porcelain, quarry or ceramic tile complying with ANSI A137.1 “American National Standard Specifications for Ceramic Tile”, with a nominal thickness of 5/16”, with base of similar material.

- Moisture retarders: slabs on or below grade to receive floor coverings shall have a moisture retarder installed below the slab.

- Sealed concrete with 4" high rubber base with minimum thickness of 0.125" and inside and outside corners with 4" returns.

- Sealed concrete with epoxy paint and 4" high rubber base with minimum thickness of 0.125" and inside and outside corners with 4" returns.

  The General Contractor is responsible to test and notify the flooring contractor in writing when the rate of vapor emissions, from the concrete slab that is measured with ASTM F-1869 and ASTM F2170 testing methods, is at an acceptable level of vapor emission as outlined in the floor covering specifications.

METAL LOCKERS – double-tier lockers, 12" wide x 12" deep x 72", with sloped top and "Z" type metal base. Lockers shall be constructed of commercial grade sheet steel as follows:

a. Body and shelf, minimum 24-gauge.
b. Door frames, minimum 16-gauge.
c. Tops and trim, minimum 18-gauge.

TOILET ACCESSORIES

- Mirror with minimum 18-gauge, 1/2" x 1/2" x 1/2" stainless steel channel frame and stainless steel shelf, minimum 24" wide by 36" tall, American Specialties 0620 or equal.
- Grab bars, 1 1/2" diameter, American Specialties 3100 Series or equal.
- Surface mounted soap dispenser, American Specialties 0342 or equal.
- Surface-Mounted Multi-Roll Tissue Dispenser, American Specialties 0030 or equal.

CORNER GUARDS

- Provide and install heavy-duty pre manufactured retainer mounted high impact stainless steel Corner Guards at **all** exposed gypsum board outside corners. The corner guards shall 48" high w/ minimum 3" wings. Typical

EXTERIOR SIGNAGE

- Provide and install all required traffic signs including but not limited to:
  1. Accessible Parking Signs
  2. Stop Signs
  3. Speed Signs
  4. Seatbelt Signs
  5. Wayfinding Directional Signs

INTERIOR SIGNAGE

- Provide and install a complete interior signage package including but not limited to:
    1. Wayfinding Directional Signs
    2. Building Directory
    3. Floor Directory
    4. ADA Compliant Signage
    5. Room Numbers
    6. Room Functions
    7. Department Identification
    8. Office Identification Function & Occupant's Name
    9. Restroom Signage
    10. NFPA Regulatory Signage
    11. Maximum Occupancy Signage
    12. Evacuation Maps

FIRE EXTINGUISHER CABINETS

- Provide and install fully recessed stainless steel Fire Extinguisher Cabinets with solid door & Larson-Loc as manufactured by Larsen's Manufacturing Company or prior approved equal.
-

CEILING MOUNTED PROJECTORS

- Provide and install Panasonic Ceiling Mounted Projector Model #PT-LZ370U 3LCD Projector or prior approved equal in the Conference Room.

PROJECTION SCREENS

- Provide and install Da-Lite Model #79015EL Cosmopolitan Electrol Motorized Projection Screen (54"x96") or prior approved equal in the Conference Room

SPECIAL CONSTRUCTION

SECURITY SYSTEM

- Provide and install a complete Security System with forced entry monitors at all exterior entries. Provide a minimum of 12 motion sensors to be located as determined by the final design.

SECURITY CCTV SYSTEM

- Provide and install a complete CCTV System in at all exterior entances and a general facility CCTV System. Central Control shall be in the DEQ Facilities Office. The Systems shall include at a minimum a 16 channel HD DVR with 10 1080p HD cameras located as directed by DEQ, splitters, wiring, programming, one 32 inch HD LED Monitor and accessories as needed for a complete system. Systems shall be as approved on State Contract or prior approved equal.

AUTOMATIC FIRE SPRINKLER SYSTEMS

- Provide and install a complete Automatic Fire Sprinkler System as required by NFPA 13 2013 Edition and the Utah State Fire Code including Design, Testing, and Fire Alarms.
- All piping above ground shall be Schedule 40 domestic steel pipe and fittings.
- Coordinate interface with Culinary Kitchen Hoods.
- Work provided by others:
    1. Fire Hydrants - by Plumbing Contractor.
    2. Concrete Work - by General Contractor.
    3. Access Doors - by General Contractor.
    4. Painting of sprinkler piping - By Mechanical and/or Painting Contractor.
    5. Color coding or pipe identification - By Mechanical Contractor.
    6. Wiring of flow switches and gate valve supervisory switches - By Electrical Contractor

EQUIPMENT

FREE STANDING MOTORIZED BRIDGE CRANE

- **14' wide x 20' long x 18' high motorized 10 ton single cell free standing bridge crane.**

CONVEYING EQUIPMENT

SERVICE ELEVATOR

- **2500# capacity, 100 fpm "Roomless" Front Opening Elevator w/ minimum interior cab dimensions of 6'-5" x 4'-3".**

3.2.2 MECHANICAL

Per Section 3.4 of this Program and
DFCM's Standard Construction Documents and Requirements

3.2.3 ELECTRICAL

Per Section 3.5 of this Program and
DFCM's Standard Construction Documents and Requirements

3.0 BUILDING REQUIREMENTS

3.2 BUILDING DESIGN CRITERIA

3.2.2 SPACE PLANNING ISSUES

3.2.2.1 ENTRY VESTIBULES

The Entry Vestibules should be an open floor space with easy access to exterior parking and loading areas and provide required exits from the Common Area circulation hallway. A minimum of two 36" wide automatic entry door are required at each vestibule. The entry should be light and airy with an entry matt connection the entry doors. The Entry doors should not be separated by a sufficient distance to minimize drafts. Security cameras should be provided at all exterior doors. A monitor displaying the security camera views is to located at the Air Quality Offices.

3.2.2.2 COMMON AREA HALLWAY

The Common Area Hallway should be an open floor space with easy access to the Entry Vestibule, Conference Room, Common Laboratory, Rest Rooms, Janitor's Room, Tele/Data Room and General Storage Room. The Common Area Hallway should provide convenient access to exits and shared functions for all Divisions. Clearstories and translucent skylights are encouraged.

3.2.2.3 CONFERENCE / TRAINING ROOM

The Conference/Training Room should be an enclosed space with easy access to all Divisions. Additional adjacencies without direct access include the Rest Rooms, Storage Area, Break Area, Storage Room and Janitor's Room. Natural light is desired using windows. The floor of the Conference/Training Room should be carpeted.

3.2.2.4 BREAK AREA

The Break Area should be an enclosed area accessible to all Divisions. It should have easy access to the Rest Rooms, General Storage Room, and Conference Room. Natural light is to be provided using windows. Space should be provided for dining table and chairs.

3.2.2.5 DIVISION AREAS

Each of the five Divisions is a separate entity connected only by the Common Area functions and Hallway. Interaction among the Divisions will primarily take place in the Conference/Training Room, Common Laboratory and Break Room.

3.2.2.7 BUILDING SECURITY

The new Technical Support Center must be designed with respect to the safety and security of all the building occupants and it's contents.

3.2.2.4.1 Physical Security Elements

Extra consideration needs to be given to perimeter security. Where windows are provided, not only must they meet the stringent State High Performance Building Standard, they must also provide security. To this end, laminated glass is to be used for all glazed opening on the building facade. Landscaping should provide a subtle pathway to the building entries while discouraging access to other building elements. Exterior entry/exit doors should be card access.

3.2.2.4.1 Electronic Security Elements

The Security System for the new facility should include motion sensors, break glass sensors, high definition security cameras and monitors. The system should be designed to be monitored at multiple locations including the Air Quality Office and DEQ Facilities Office. It should also be designed to be monitored at the designated DEQ administrative locations.

3.0 BUILDING REQUIREMENTS

3.3 STRUCTURAL

STRUCTURAL DESIGN PROGRAM
NEW TECHNICAL SUPPORT CENTER
250 NORTH 1950 WEST, SALT LAKE CITY, UTAH
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

The structural design for the new Technical Center must integrate the program requirements into a structural system that accommodates the space and functional requirements of the facility while also satisfying the established budgetary constraints. The structural systems and construction materials used in the design must provide the required structural performance, fire rating requirements, and incorporate sustainability considerations.

Structural System Overview
For the purposes of this program, structural systems have been chosen and outlined here to define construction parameters consistent with the programming requirements. Alternate structural systems that satisfy the specific program requirements may be proposed.

Building Structure
The new Technical Center will be a one story structure with a small second level at the stairway to the roof shed and rooftop testing area. The structure will house labs, warehouse, offices, and testing areas. The building's structural system shall be noncombustible. The selection of structural systems must favor those systems that can facilitate the construction schedule.

In consideration of these parameters and other program requirements a favorable structural system would include metal roof deck on steel roof joists supported on exterior masonry bearing walls and interior steel beams and columns. The lateral load resisting system would consist of a metal deck roof diaphragm and shear walls of reinforced masonry. The exterior masonry shearwalls would be supplemented with interior masonry shearwalls located at strategic locations in order to break the diaphragm into two or possibly three sub-diaphragms.

Foundations and geotechnical requirements
A geotechnical report for the Technical Center will be provided. Initial findings indicate the soils at the site include highly compressible soils in the in the near surface areas with a zone susceptible to liquefaction roughly at 10 feet in depth. The foundations will require removal of some unconsolidated compressible soils and replacement of these soils with structural fill. A foundation system must be selected that will accommodate the final geotechnical recommendations with regard to the liquefaction potential and the natural compressible soils at the site. One possible system would include spread footings supported on helical piers.

The design of the slab on grade shall consider the use and loading associated with the various functions in the facility. Special consideration must be given to the vibration sensitive equipment in the Filter Room. Coordination with the equipment specifications is required. The design of the slab under this equipment may require a thicker slab than the surrounding area with an isolation joint between the supporting slab and the adjacent slabs.

Structural Codes and Design Criteria

The design standards to be used for this project shall be the 2015 version of the International Building Code (IBC), the current editions of the referenced standards, and the Minimum Design Loads for Buildings ASCE 7-10. The project shall also conform to the State of Utah Amendments to the IBC and to the most current edition of the DFCM Design Standards.

The structural design criteria to be used shall conform to the above referenced standards. The following design criteria have been established as minimum requirements based upon the programmed facility.

Structural Design Loads

1. Gravity Loads
    a. Dead Loads: weight of construction
    b. Live loads:

Snow Load:

Ground Snow Load (Pg)	43 PSF
Importance Factor (I)	1.0

Wind Loads

Basic wind speed	115 mph
Exposure Category	C
Importance Factor	1.0

Seismic Loads:

Occupancy Category	II
Site Soil Classification	D
Importance Factor	1.0
Mapped Spectral Response Accelerations	
Short Period (Ss)	0.1.617
Long Period (S_1)	0.560
Design Spectral Response Accelerations	
Short Period (S_{DS})	1.078
Long Period (S_{D1})	0.560

3.0 BUILDING REQUIREMENTS

3.4 MECHANICAL / PLUMBING / FIRE PROTECTION

MECHANICAL SPECIFIC REQUIREMENTS

DFCM Design Manual (http://dfcm.utah.gov/)

CODES – Current and/or Adopted

International Building Code
International Mechanical Code
International Plumbing Code
International Fire Code
International Fuel Gas Code
International Energy Conservation Code
International Hospital and Health Care Facilities Code
Utah State Boiler Code
NFPA 13

Note: Most restrictive code will apply.

STANDARDS

ASHRAE Guidelines and Standards
ASPE Guidelines and Standards
SMACNA Standards
USGBC Standards

BUILDING PERFORMANCE REQUIREMENTS

Fundamental Building Systems Commissioning. DFCM will engage a Commissioning Agent that is not an individual directly responsible for project design or employed by one of the designers. Commissioning Agent shall ensure that fundamental building components are installed and calibrated to operate as intended.
Building Envelope Performance: The building envelope shall be designed to reduce the envelope performance factor by 10 percent or more to what is required by ASHRAE Standard 90.1 and verified by the use of IEEC ComCheck software. Mechanical systems in addition to meeting the requirements of ASHRAE standard 90.1 shall be designed to obtain a minimum of 2½ EA LEED points in the Credit in terms of energy reduction (“This is not a LEED project”). A DOE 2 building simulation program will not be used to verify points. DFCM has entered an agreement

with Rocky Mountain Power for incentive savings using the FinAnswer program. Rocky Mountain Power will engage an independent Energy Specialist with a minimum of 3 years' experience with hourly energy modeling. The Energy Specialist shall perform the energy analysis according to ASHRAE 90.1-2009 Appendix G. The Energy Specialist will in addition to performing the energy analysis for incentive savings, will verify the 2 ½ EA LEED points have been achieved.

Ventilation Systems. Designer shall provide mechanical ventilation system according to ASHRAE Standard 62. Mechanical ventilation system shall have the capability to operate continuously during occupancy and designed not to be easily shut-down or otherwise defeated, such as blocked registers.

Drainage Systems. Designer shall design roof drainage, surface grades, storm drainage system, HVAC system, and other systems to avoid accumulation of standing water around/or in the building.

Mold Prevention during Construction. Contractor shall ensure porous type building materials, insulation, and fabric, is kept dry to prevent the growth of mold and bacteria. Materials that have been affected by mold shall be abated or replaced. Building insulation that is damp or wet for min. of 2 hours shall be replaced.

Filtration Media Replacement before Occupancy. Contractor shall ensure that filtration media is replaced before occupancy.

Thermal Comfort. Designer shall ensure that thermal comfort requirements are according to ASHRAE Standard 55.

DESIGN TEMPERATURES

Winter / Summer
Outdoor Temperature 0ºF/96º DB/66º WB
Common Area Laboratory, Conference Room, Common Area, Staff Break Area, Air Quality Equipment Storage, Air Quality Compliance Storage, Offices, and Water Quality Lab:
Inside Temperature 68ºF 74ºF DB
Air Quality Particulate Lab, Air Quality Gas Lab, Air Quality Filter Room Vestibule, Air Quality Filter Room, and Air Quality Wet Lab,
Inside Temperature 68ºF 74ºF DB, 35% RH +/- 5%.
Trailer Repair and Vehicle Storage, and Water Quality Boat and Equipment Storage:
Inside Temperature 68ºF 78ºF DB.

VENTILATION

Ventilation is to be provided in compliance with the 2015 International Mechanical Code and ASHRAE Standard 62.1. CO2 sensors shall be provided for demand controlled ventilation in the

office areas and to trigger ventilation systems in the Trailer Repair and Vehicle Storage, and Water Quality Boat and Equipment Storage

HVAC SYSTEMS

High efficiency Gas fired/DX rooftop units with VFD controlled or ECM motors, economizers and CO2 sensors for demand controlled ventilation serve the Common Area Laboratory, Conference Room, Common Area, Staff Break Area, Air Quality Equipment Storage, Air Quality Compliance Storage, Offices, and Water Quality Lab functional areas.

A separate RTU shall be provided for the following tempering zones:

- Gamma Spectroscopy, Program Storage, Field Prep Storage, Waste Management Office, Environmental Response Office, and Drinking Water Quality Office.
- Common Area Lab, and Water Quality Lab.
- Conference Room, General Storage, Break Room, Janitors Room,
- Air Quality Equipment Storage, Air Quality Compliance Storage, Air Quality Offices, and Men's and Women's toilet rooms and showers.

High efficiency Gas fired/DX rooftop units with VFD controlled or ECM motors, economizers, CO2 sensors for demand controlled ventilation, and Humidifiers serve the Air Quality Particulate Lab, Filter Room, Filter Room Vestibule, Air Quality Gas Lab, and Air Quality Wet Lab

A separate RTU shall be provided for the following tempering zones:

- Air Quality Particulate Lab, Filter Room, Filter Room Vestibule.
    - *Provide separate Fan Coil Unit and Condensing unit with hot gas bypass to the coil and electronic hot gas modulation valve and ceiling mounted HEPA filter.*
    - *Cascade airflow from Filter Room to Vestibule, to Particulate lab.*
    - *Pull FCU inlet air from the Particulate Lab*
    - *Filter room design requirements: 70 °F +/- 2°F and 35% RH +/- 5%.*
    - *Pressurize Filter Room 0.05" WC positive with respect to Vestibule and vestibule 0.05" WC positive with respect to Particulates Lab.*
    - *Room must be vibration free.*
- Air Quality Gas Lab, and Air Quality Wet Lab

Air Quality Warehouse and Water Quality Boat and Equipment Storage require repair garage ventilation. Each of these functional areas is served by a separate evaporative cooled, direct fired natural gas fired makeup air unit, CO2 sensor activation with manual override and ventilation exhaust fan, a unit heater, a storage exhaust fan, and six reversible 52" diameter ceiling fans. Locate the Air Quality Warehouse make up air unit on the lower roof adjacent to the warehouse and sidewall the supply air in.

EXHAUST SYSTEMS

Water Quality Lab has a laboratory fume hood, provide a roof mounted centrifugal exhaust fan and wall switch next to hood.

Men's and Women's toilet and shower rooms, provide a centrifugal exhaust fan the runs when the building is occupied.

Air Quality Warehouse and Water Quality Boat and Equipment Storage , provide a ventilation side wall exhaust fan interlocked with make-up air unit with CO2 sensor activation with manual override and a separate sidewall storage area exhaust fan, and six reversible 52" diameter ceiling fans in each functional area.

Provide separate controllable exhaust system for each private bathroom. Every public restroom, laundry, linen area, hair/nail salon and isolation rooms shall be exhausted to provide and meet ventilation and freshness requirements. Grease hoods with grease ductwork and exhaust fans with grease trap shall be provided in kitchen. Provide a smoke exhaust system for all common areas and areas of refuse to meet current code requirements and provide occupant safety.

HUMIDITY CONTROL SYSTEMS

The following functional areas require humidification and dehumidification to maintain 35% relative humidity, +/- 5%:

- Air Quality Particulate Lab
- Filter Room
- Filter Room Vestibule
- Air Quality Gas Lab
- Air Quality Wet Lab

AIR DISTRIBUTION SYSTEMS

Ductwork shall by galvanized steel and comply with SMACNA Standards. Ductwork should be oversized to reduce operating cost. Ductwork from the kitchen hood should be welded black iron water tight and sloped from the exhaust fan down to the hood. Ductwork from the dishwasher should be aluminum or stainless steel, sealed water tight, and insulated in concealed areas to reduce condensing of the exhaust air.

DATA/COMMUNICATION ROOMS SYSTEMS

Provide 24/7 cooling systems powered by back-up system with each area sized to meet load requirements with-in room. Systems shall be separately controllable.

ELEVATOR EQUIPMENT ROOMS SYSTEMS

Provide 24/7 cooling systems powered by back-up system with each area sized to meet load requirements with-in room. Systems shall be separately controllable.

AUTOMATIC TEMPERATURE CONTROL SYSTEMS

Direct Digital Controls (DDC) with temperature and humidity sensors as required. System shall be able to connect remotely to the web.

FIRE SPRINKLING SYSTEMS

Provide an Automatic wet-pipe sprinkler system. Piping will be standard fire approved weight piping with mechanical couplings, threaded joints or welded joints. Areas exposed to freezing shall be protected as required with either a dry system or glycol system. The Kitchen hood fire suppression system is to be provided by the hood manufacturer and interlocked into fire alarm.

PLUMBING SYSTEMS

Provide building shutoff valve and reverse pressure principle backflow preventer at water service entry.

Provide a high efficiency gas fired water heater with integral storage tank. Circulate hot water as required. Set the water heater to generate 140° F. Provide an ASSE 1070 anti scald device at each hot water fixture. Set maximum water temperature outlet to 110 °F.

Provide automatic valves for water closets, urinals, and lavatories.

Provide hose bibs in each toilet room.

Provide hose bibs and wall hydrants in Air Quality Warehouse and Water Quality Boat and Equipment Storage functional areas.

Insulate Roof and Overflow drain bowls.

Provide deionized water and ultra pure water. Circulate as required and use compatible materials.

3.0 BUILDING REQUIREMENTS

3.5 ELECTRICAL/ SECURITY /TELECOMMUNICATIONS & DATA SYSTEMS

ELECTRICAL SPECIFIC REQUIREMENTS

Follow requirements set forth in the DFCM Design Manual (http://dfcm.utah.gov/),

Applicable Codes and Standards (adopted codes as applicable):

ADA, Americans with Disabilities Act
IECC International Energy Conservation Code 2015
EIA/TIA, Electronics Industries Association/Telecommunications Industry Association
IBC International Building Code 2015
IFC International Fire Code 2015
IESNA, Illuminating Engineering Society of North America
NFPA, National Fire Protection Association (applicable sections including but not limited to):
NFPA 70, National Electrical Code 2014
NFPA 72, National Fire Alarm Code
UL, Underwriters Laboratories

Note: The DFCM requirements are specific and comprehensive. The project will be designed and constructed in strict compliance with the above standards.

Electrical Criteria

The new approximately 21,600 square foot DEQ building is estimated to have a 600-amp 480Y/277-volt electrical utility service from Rocky Mountain Power. Communications service conduits for entry into the building will be coordinated with Century Link and will be brought from the nearest Century Link communications connection point on site.

Power Pole Relocation

There are existing 46kV high voltage power poles that are crossing the north side of the site. The guy wires are in the way of the construction of the building and are taking up the parking lot area. Coordination of the construction of the building will need to be made with Rocky Mountain Power until Rocky Mountain Power has been able to relocate the high voltage lines to around the building. It is anticipated that prior to construction a new engineered steel corner structure will be placed at the north east corner of the site and the overhead lines will be relocated to allow access to the parking lot. The two existing poles and their associated guy wires will be removed.

Power Service

Power to the facility will be coordinated with Rocky Mountain Power (RMP). It is expected that power for the facility will be connected to the 12,470-volt ground sleeve (sectionalizer) across North Doralma Street (on the west side of the street) to the north of the site. New conduits will be placed in accordance with Rocky Mountain Power Electric Service Requirements (ESR). Contractor shall coordinate the requirements for all easements and road crossings. A new pad vault will be provided and coordinated with the RMP's transformer size. The transformer will be located in an island at the northeast corner of the building. Conduits from the transformer, a 600-amp CT cabinet, and a EUSERC rated meter base, and a 600-amp, 480/277V, 3-phase exterior main disconnect will be provided on the secondary feed from the transformer to the building.

Power Distribution

Power will be distributed through distribution panels, dry-type step down transformers, and branch panelboards located in the facility. Specialty power for lab area equipment will be provided as coordinated with the DEQ equipment. Power will be coordinated and provided to each piece of mechanical equipment. Standard receptacle outlets will be provided throughout the facility and specialty outlets or disconnects will be provided based on specialty equipment requirements (lab equipment, bridge crane, ice machines, freezers, refrigerators, ovens, etc.). All devices located in hazardous areas will be listed and classified for use in those areas.

Emergency Standby Generator

An emergency standby generator will be provided for the building to maintain power to select building equipment including, but not limited to refrigerators, freezers, communications equipment, select user defined loads, and select mechanical equipment. An automatic transfer switch (ATS) will be provided in the electrical equipment area to transfer loads from the normal to the emergency power sources. A bypass isolation type transfer switch will be provided to allow controlled maintenance of the ATS without having to have a prolonged outage on the emergency backed up systems. It is anticipated that the generator will be between 40kW and 60kW. The final sizing of the generator will be determined based on the required loads to be backed up. The generator will be located outside with a sound attenuated weatherproof enclosure and will have a 24-hour base mounted fuel tank.

Energy Saving

The electrical design will exceed the energy requirements in ASHREA 90.1 and IECC 2015 by at least 10%. Equipment will be designed to comply with the DFCM High Performance Building Standard. Design team will work with Rocky Mountain Power under the FinAnswer program and with Questar where appropriate to ensure the facility qualifies for the utilities incentive programs. Electrical and mechanical systems should be designed in an integrated way to ensure that systems are not oversized.

Interior Lighting

Interior lighting will comply with the Illuminating Engineering Society of North America (IESNA) recommended levels. Energy efficient controls will be provided for the lighting to maximize the energy efficiency of the lighting systems in compliance with the requirements of

IECC 2015. Energy efficient LED light fixtures will be used to meet and exceed the IECC 2015 energy code requirements by at least 10%. Daylighting will be incorporated in required daylighting zones to automatically dim the lights near windows in accordance with IECC 2015.

Exterior Lighting

Light poles will be required in the parking areas. The poles will be cutoff type LED fixtures. The foot candle in parking lot will be a minimum of 1.0 foot candles average and will comply with the recommendations of IESNA. Building mounted lighting will be provided around the facility to ensure proper lighting for security, wayfinding and task oriented activities associated with the operation of the facility. Power for building signage will be coordinated and provided on the building or on the site as required.

Communications

Communications to the facility will be provided by Century Link communications. It is expected that communications to the facility will be connected to one of the communications pedestals on the east side of the facility site near the neighboring houses. Two 4" conduits will run from one of the pedestals to a designated communications area within the building. One of the 4" conduits will have inner-duct for fiber. The communications area will be located in the facility such that no data run exceed 100-meters (300-feet). Voice/data cabling within the building will be provided by DFCM. Locations for wireless access points throughout the facility will be indicated. All raceways within the building will comply with DFCM requirements.

Fire Alarm System

A fully addressable fire alarm system will be installed to comply with the International Fire Code, NFPA 72, and the additional requirements of the State Fire Marshal. The fire alarm system will run in conduit. The fire alarm system will consist of manual pull stations, detectors, indicating devices (horn/strobes) and monitoring points for the fire protection system as required. The Fire Alarm Control Panel will be located in and approved location near the entry of the building. System shall meet all requirements of the DFCM design standards. Contractor must verify acceptable manufacturers for the fire alarm system equipment with DFCM.

Security, Access Control, Intercom and CCTV

Raceways for Security, Access Control, Intercom and CCTV systems will be provided. Exact locations for devices will be coordinated with DFCM and the User during design.

Access Control

Card access will be provided to the facility on all exterior and select interior doors to secure the building and select lab areas from unauthorized entry.

Intrusion Detection

An intrusion detection system will be provided and devices will be located in select lab areas, filter rooms and sensitive storage areas.

Video Surveillance System (CCTV)

A network based CCTV system will be provided with cameras to monitor and record activity in the equipment yard storage area, and other select areas within the building. Exact areas for cameras will be coordinated with DFCM and the User during design. Raceways will be provided for the CCTV system.

Doorbell/Intercom

A doorbell/intercom system with a programmable dialer will be provided to communicate between select building entries, the phone system, with additional intercom devices in the conference room and break room.

Individual Space Requirements:

Lab Areas: Power and data locations will be provided for all lab areas where the use of lab equipment will be used. Devices will be shown as coordinated with equipment layouts.

Air Quality Warehouse Area: General purpose outlets will be provided and distributed within the space to accommodate powered cleaning equipment and general use and will be coordinated with any shelving systems to maintain accessibility to the outlets. Power will be provided for specialty equipment such as ovens, bridge crane, ice machine, etc. Task lighting will be provided at the work benches.

Water Quality Boat and Equipment Storage Area: General purpose outlets will be provided and distributed within the space to accommodate powered cleaning equipment and general use and will be coordinated with any shelving systems to maintain accessibility to the outlets. Power will be provided for specialty equipment such as freezers, refrigerators, ice machine, etc. Task lighting will be provided at the work benches.

Support Areas: Power will be provided for support equipment. General outlets will be located throughout support areas to allow for flexibility. Power for special equipment (microwaves, freezers, refrigerators, lab equipment, etc.) will be provided in these areas as coordinated with DFCM and the User.

Mechanical Equipment Areas: Power will be coordinated and provided for all mechanical equipment. Outlets will be provided within 25-feet of all exterior mounted mechanical equipment to support servicing of the equipment.

3.0 BUILDING REQUIREMENTS

3.6 LANDSCAPING

LANDSCAPE DESIGN CRITERIA

Outdoor Space Types & Features
The landscape design should match the existing landscaping on the Redwood Complex.

Site Accessibility
All exterior sidewalks shall meet ADA criteria for slope and landings. In addition, all other site paths shall meet ADA criteria. All usable outdoor spaces shall be fully accessible.

LANDSCAPE & SITE DESIGN CONSIDERATIONS

Plant and Landscape Materials:
The landscape plant materials should match the existing landscaping on the Redwood Complex.

Irrigation:
Irrigation should match and tie into the existing systems.

Site Lighting:
Lighting is to be provided at all exterior exits and walks for security and safety. High cut-off fixtures should be used to avoid light wash pollution to the residential areas as well as to adjacent properties.

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5.0 INDIVIDUAL SPACE REQUIREMENTS

4.0 INDIVIDUAL SPACE REQUIREMENTS

COMMON AREAS

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DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: ENTRY VESTIBULES

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Entrance Vestibules	Temperature Min/Max	Per Code
Building Zone	Site Exterior to Common Area	Humidity Min/Max	Per Code
Programmed Area	80 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	2	Min. Outside Air/Hr	Per Code
Adjacency	Parking / Common Hallway	Max. Noise Level	NA
Access	Staff & Delivery Parking/ADA Access	Air Pressure Min/Max	Per Code
Separation	None	Controls	Central
Occupants	Varies		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Entry Matt	Sink	NA
Ceiling	Painted Gypsum Board	Lavatory	NA
Minimum Ceiling Height	19' Clear Height	Toilet	NA
Walls	Painted GWB / Accent Material	Shower	NA
Base / Wainscot	Rubber Base	Floor Drain	NA
Door / Size	36" double w/ Automatic Opener	Central Bath Tub	NA
Hardware	By Manufacturer w/Card Reader	Eye Wash	NA
Window / Operation	Proximity to Fixed Window Desired	Drinking Fountain	NA
Window Treatment	Clear Glass	Ice / Water Connection	NA
Casework / Cabinetry	NA	Floor Sink	NA
Natural Light	NA	Utility Sink	NA
FURNISHINGS		**ELECTRICAL**	
Table	NA	General Lighting	Yes
Chair	NA	Specialty Lighting	NA
Sofa	NA	Outlets	NA
Desk	NA	Special Outlets	NA
Other	NA	Emergency Power	NA
		Security Lighting	NA
EQUIPMENT		**TELEPHONE / DATA / SECURITY / AV**	
Flat Screen TV	NA	Telephone / Data	NA
Lockers	NA	Emergency Assistance	NA
Oven / Range	NA	Call Station	NA
Refrigerator	NA	Pull Cord Station	NA
Dishwasher	NA	Media / Cable TV	NA
Disposal	NA	Internet Connection	NA
Washing Machine	NA	Wireless Internet	NA
Clothes Dryer	NA	Intercom	Yes
Bench	NA	Alarm / Security	Motion Detectors / Break Glass
Other	NA	Security Camera	Security Cameras & Monitors
Time Clock	NA	Card Reader Lock	NA
		Wireless Clock	NA

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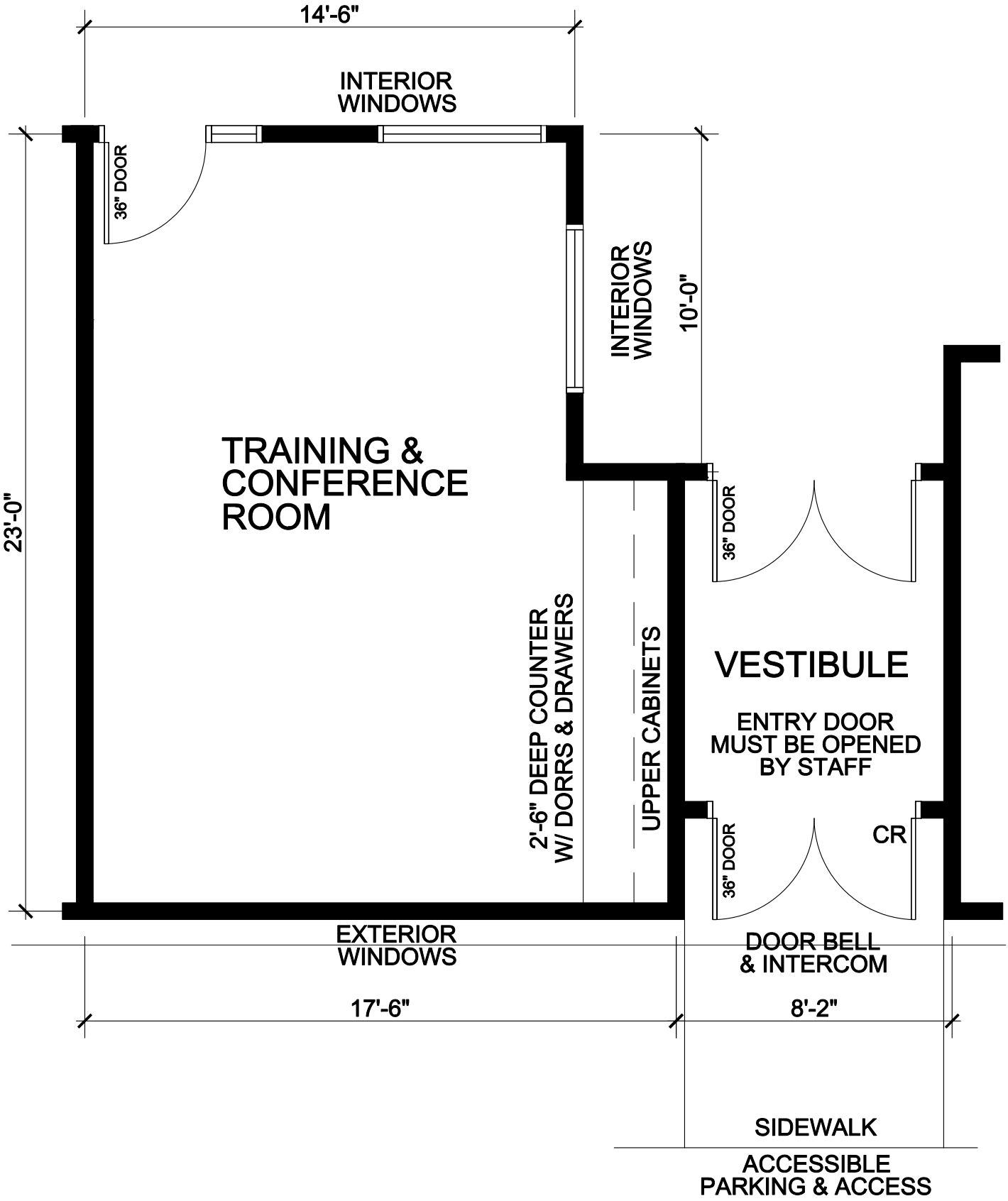
INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: CONFERENCE ROOM

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Conferences & tRAINING	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Common Area	Humidity Min/Max	NA
Programmed Area	350 SF Minimum	Min. Air Change/Hr	10 MINIMUM
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	All Divisions	Max. Noise Level	35
Access	Main Hallway	Air Pressure Min/Max	
Separation	Warehouse Area	Controls	Central
Occupants	18		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Carpet Tile	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Carpet	Floor Drain	
Door / Size	SCWD / 3'-0" x 7'-0"	Central Bath Tub	
Hardware	Office	Eye Wash	
Window / Operation	N/A	Drinking Fountain	
Window Treatment	N/A	Ice / Water Connection	
Casework / Cabinetry	12' Built-in Upper & lower Cabinet	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table	(OF&I)	General Lighting	30fc General / 30fc Task
Chair	(OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	(1) Floor and (1) TV
Other		Emergency Power	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV	Wall-mounted (OFCI)	Telephone / Data	Floor and Wall
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	Yes
Disposal		Internet Connection	Yes
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	Yes
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



TRAINING & CONFERENCE ROOM

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

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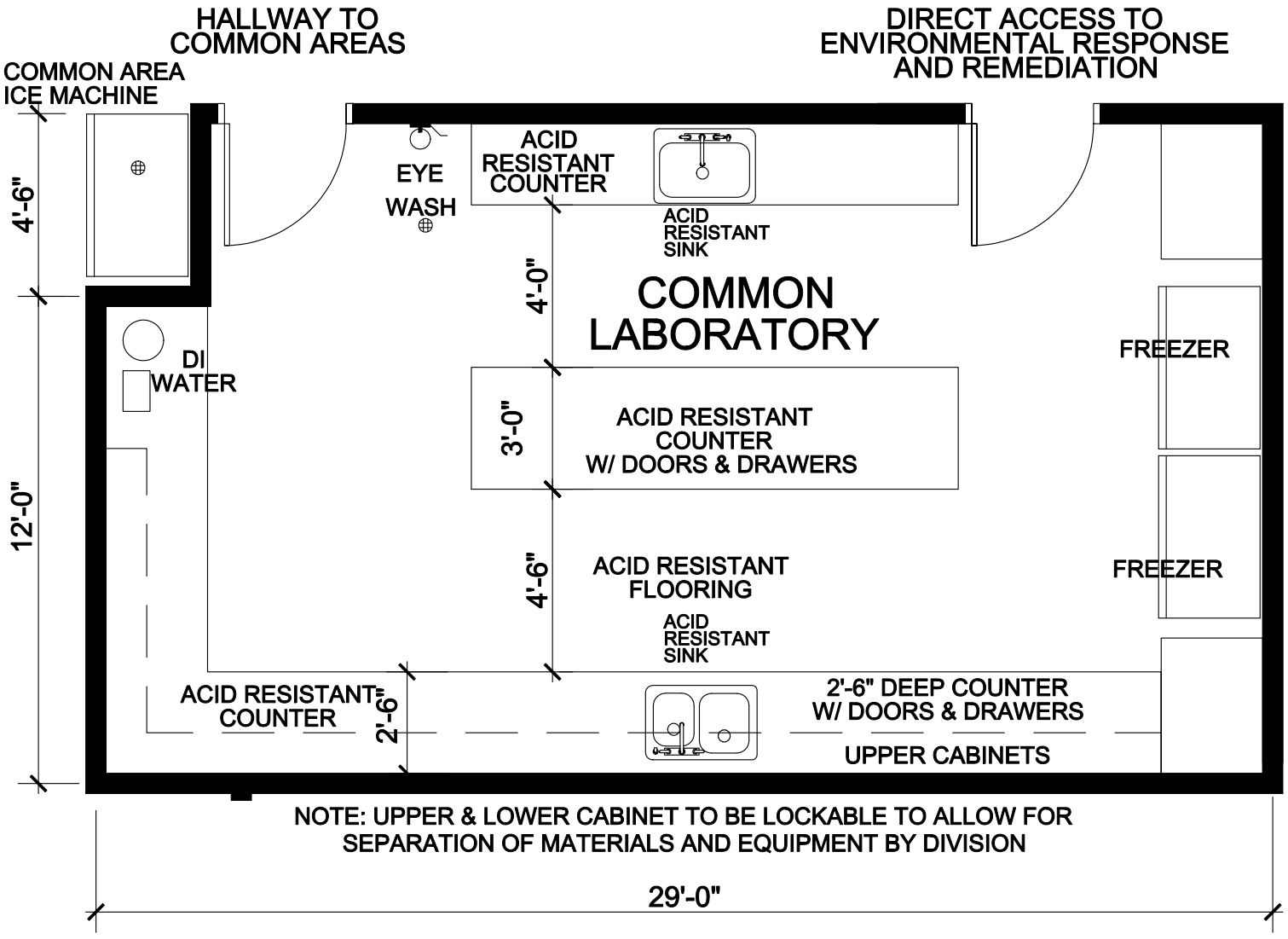
INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: COMMON AREA LAB

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Multi Division Lab	Temperature Min/Max	68 ° Minimum 72 °Maximum
Building Zone	Common Area	Humidity Min/Max	Per Code
Programmed Area	450 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	All Divisions	Max. Noise Level	34 DB
Access from	Common Hallway / Environmental Response	Air Pressure Min/Max	Per Code
Separation from	Air Quality Warehouse	Controls	Individual Room w/ Backup
Occupants	7 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Slip & acid resistant sheet vinyl	Sink	Number: 1 Type: LG single Faucet: GN Number: 1 Type: double Faucet: GN
Ceiling	ACT	Water Filtration Type	DI & Ultra Pure Water
Minimum Ceiling Height	10'	Lavatory	
Walls	Washable Paint	Toilet	
Base / Wainscot	Cove	Shower	
Door / Size	2 - 36"wx84"h	Floor Drain / Floor Sink	Floor Drain @ eye wash
Hardware	Office	Eye Wash	Yes
Keying Type	Card Access	Drinking Fountain	
Window / Operation		Ice / Water Connection	
Window Treatment		Utility Sink	
Casework / Cabinetry	AR Perimeter lab counters w/drawers &	Compressed Air	Yes
	doors & upper cabinets w/glass doors Center island w/AR top & drawers		
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	4 - OF&I	Specialty Lighting	Task
Sofa		Outlets	Convenience outlets @ walls 110
Desk	Built-in	Special Outlets	Power @ island
Other		Emergency Power	
Lab Stools	4 - OF&I	Equipment Loads	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Landline
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer	2 - OF&I	Media / Cable TV	
Dishwasher	Yes	Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench		Card Reader Lock	Yes
Time Clock		Wireless Clock	1
Fume Hood	1 - OF&I	CCTV - Web-based	
Deionized Water Filtration	Yes	Door Bell	@ Dock & West Doors
Ultra Pure Water Filtration	Yes		

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



COMMON LABORATORY

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

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INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: BREAK ROOM

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Staff Break Room	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Common Area	Humidity Min/Max	NA
Programmed Area	280 SF Minimum	Min. Air Change/Hr	10 MINIMUM
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	All Divisions / Conference Room	Max. Noise Level	35
Access	Common Area Hallway	Air Pressure Min/Max	
Separation	Air Quality Warehouse	Controls	Central
Occupants	12		
Utilization	8 hrs/day 7 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	Yes
Ceiling	Painted Gypsum Wallboard/Paint	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Rubber	Floor Drain	
Door / Size	SCWD / 3'-0" x 7'-0"	Central Bath Tub	
Hardware	Passage	Eye Wash	
Window / Operation	Required	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	Yes
Casework / Cabinetry	9'-0" Upper and Lower	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table	2 – 42" Diameter OF&I	General Lighting	30fc General / 30fc Task
Chair	8 - OF&I	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	GFCI
Other		Emergency Power	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator	Yes	Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	Yes
Bench		Alarm / Security	
Microwave	(OF&I)	Card Reader Lock	
Time Clock		Wireless Clock	Yes
Coffee Machine	(OF&I)		

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water

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INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: TELE/DATA ELECTRICAL ROOM

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Telephone and Data Room	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Common Area	Humidity Min/Max	Per Code
Programmed Area	35 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Common Areas	Max. Noise Level	Per Code
Access	Common Area Hallway	Air Pressure Min/Max	Per Code
Separation	None	Controls	Central
Occupants	Varies		
Utilization	10 hrs/day 6 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	NA
Ceiling	ACT	Lavatory	NA
Minimum Ceiling Height	15' Clear Height	Toilet	NA
Walls	Painted Gypsum Wallboard/Paint	Shower	NA
Base / Wainscot	Rubber Base	Floor Drain	Yes
Door / Size	Hollow Metal 3'-0" x &'7-0"	Water Heater	NA
Hardware	Keyed	Eye Wash	NA
Window / Operation	Fixed Window Desired	Drinking Fountain	NA
Window Treatment	NA	Ice / Water Connection	NA
Casework / Cabinetry	4x8 Painted Plywood for Tele/Data	Floor Sink	NA
		Utility Sink	Yes
FURNISHINGS		**ELECTRICAL**	
Table	NA	General Lighting	Yes
Chair	NA	Specialty Lighting	NA
Sofa	NA	Outlets	Convenience outlets @ walls
Desk	NA	Special Outlets	NA
Other	NA	Emergency Power	Yes
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV	NA	Telephone / Data	Yes
Lockers	NA	Emergency Assistance	NA
Oven / Range	NA	Call Station	NA
Refrigerator	NA	Pull Cord Station	NA
Dishwasher	NA	Media / Cable TV	NA
Disposal	NA	Internet Connection	NA
Washing Machine	NA	Wireless Internet	NA
Clothes Dryer	NA	Intercom	NA
Bench	NA	Alarm / Security	NA
Other	NA	Security Camera	NA
Time Clock	NA	Card Reader Lock	NA
Mop Rack	NA	Wireless Clock	NA

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INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: GENERAL STORAGE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Common General Storage	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Administration Support Area	Humidity Min/Max	NA
Programmed Area	120 SF Minimum	Min. Air Change/Hr	10 MINIMUM
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	Janitor's Closet	Max. Noise Level	35
Access	Common Hallway	Air Pressure Min/Max	
Separation	Public	Controls	Central
Occupants	0		
Utilization	8 hrs/day 7 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Vinyl	Floor Drain	
Door / Size	SCWD / 3'-0" x 7'-0"	Central Bath Tub	
Hardware	Storage	Eye Wash	
Window / Operation	N/A	Drinking Fountain	
Window Treatment	N/A	Ice / Water Connection	
Casework / Cabinetry	Shelving 18" deep x 84" high OF&I	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair		Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	
Washing Machine		Wireless Internet	
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	

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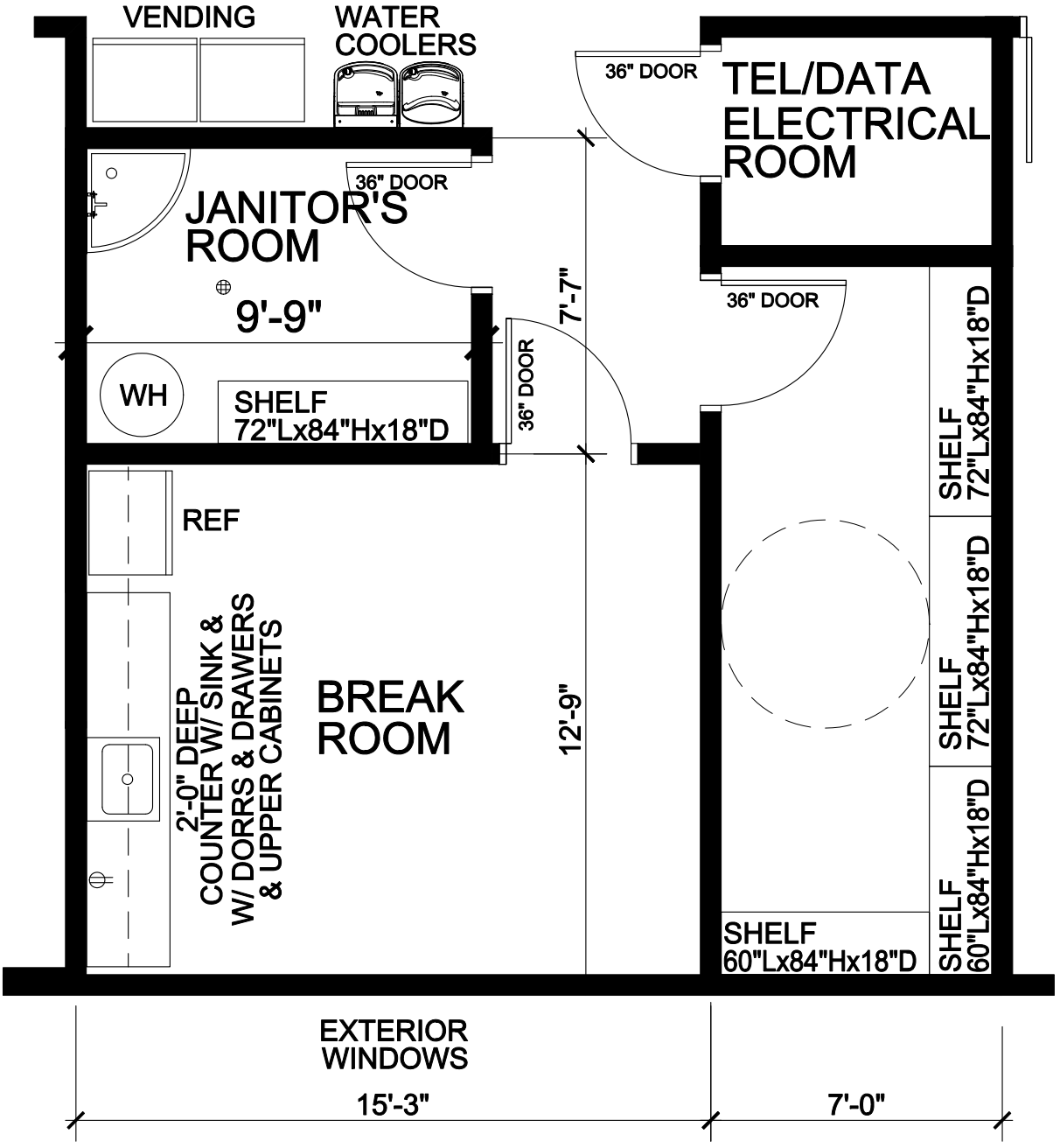
INDIVIDUAL SPACE REQUIREMENTS ■ JANITOR'S ROOM

ROOM NAME: JANITOR'S ROOM

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Janitorial Equipment & Storage	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Transition Area	Humidity Min/Max	Per Code
Programmed Area	75 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Common Areas / Restrooms	Max. Noise Level	Per Code
Access	Common Area Hallway	Air Pressure Min/Max	Per Code
Separation	None	Controls	Central
Occupants	Varies		
Utilization	10 hrs/day 6 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Sealed Concrete	Sink	NA
Ceiling	ACT	Lavatory	NA
Minimum Ceiling Height	15' Clear Height	Toilet	NA
Walls	Painted GWB	Shower	NA
Base / Wainscot	Rubber Base / Tile to 5' @ Utility Sink	Floor Drain	Yes
Door / Size	Hollow Metal 3'-0" x &'7-0"	Water Heater	60 Gallon Gas Fired
Hardware	Keyed	Eye Wash	NA
Window / Operation	Fixed Window Desired	Drinking Fountain	NA
Window Treatment	NA	Ice / Water Connection	NA
Casework / Cabinetry	Shelving OF&I	Floor Sink	NA
		Utility Sink	Yes
FURNISHINGS		**ELECTRICAL**	
Table	NA	General Lighting	Yes
Chair	NA	Specialty Lighting	NA
Sofa	NA	Outlets	Convenience outlets @ walls
Desk	NA	Special Outlets	NA
Other	NA	Emergency Power	NA
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV	NA	Telephone / Data	NA
Lockers	NA	Emergency Assistance	NA
Oven / Range	NA	Call Station	NA
Refrigerator	NA	Pull Cord Station	NA
Dishwasher	NA	Media / Cable TV	NA
Disposal	NA	Internet Connection	NA
Washing Machine	NA	Wireless Internet	NA
Clothes Dryer	NA	Intercom	NA
Bench	NA	Alarm / Security	Yes - Break Glass
Other	NA	Security Camera	NA
Time Clock	NA	Card Reader Lock	NA
Mop Rack	Wall Mounted above Utility Sink	Wireless Clock	NA

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)



TEL/DATA ELECTRICAL ROOM COMMON STORAGE, VENDING, BREAK ROOM, & JANITOR'S ROOM

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: MENS & WOMENS REST ROOMS

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Restrooms	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Common Area	Humidity Min/Max	Per Code
Programmed Area	170 SF Minimum Each	Min. Air Change/Hr	Per Code
Number Required	2 Each	Min. Outside Air/Hr	Per Code
Adjacency	Common Area / Shower	Max. Noise Level	NA
Access	Common Area Hallway	Air Pressure Min/Max	Per Code
Separation	Division Areas	Controls	Central
Occupants	Up to 5 (5)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Thick Set 12x12 Ceramic Tile	Sink	NA
Ceiling	Painted Gypsum Board	Lavatory	Wall Mount
Minimum Ceiling Height	9' Minimum / 15' Maximum	Toilet	Floor Mount
Walls	Painted GWB above 8'	Shower	
Base / Wainscot	Coved Ceramic Tile Base w/ minimum 12x24 Ceramic Tile to 8'	Floor Drain	Yes
Door / Size	3'-0" x &'7-0" Solid Core Wood Door	Central Bath Tub	NA
Hardware	Number Pad & Keyed w/occupied sign	Eye Wash	NA
Window / Operation	Fixed Window Desired	Drinking Fountain	Provide ADA & Standard Water Cooler Adjacent to Rest Rooms
Window Treatment	NA	Ice / Water Connection	NA
Casework / Cabinetry	NA	Floor Sink	NA
		Utility Sink	NA
FURNISHINGS		**ELECTRICAL**	
Table	NA	General Lighting	Yes
Chair	NA	Specialty Lighting	NA
Sofa	NA	Outlets	Provide 1 GFI outlet / room
Desk	NA	Special Outlets	NA
Other	NA	Emergency Power	NA
EQUIPMENT		**TELEPHONE / DATA / SECURITY / AV**	
Flat Screen TV	NA	Telephone / Data	NA
Lockers	NA	Emergency Assistance	NA
Oven / Range	NA	Call Station	NA
Refrigerator	NA	Pull Cord Station	NA
Dishwasher	NA	Media / Cable TV	NA
Disposal	NA	Internet Connection	NA
Washing Machine	NA	Wireless Internet	NA
Clothes Dryer	NA	Intercom	NA
Bench	NA	Alarm / Security	Brake Glass
Other	NA	Security Camera	NA
Time Clock	NA	Card Reader Lock	NA
		Wireless Clock	NA

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)

FACILITIES PROGRAM
NEW WEST VALLEY DABC STORE
6262 SOUTH 5600 WEST, WEST VALLEY, UTAH
UTAH DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL

INDIVIDUAL SPACE REQUIREMENTS ■ COMMON AREA

ROOM NAME: MENS & WOMENS SHOWER ROOMS

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Staff Showers	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Common Area	Humidity Min/Max	Per Code
Programmed Area	60 SF Minimum Each	Min. Air Change/Hr	Per Code
Number Required	2 Each	Min. Outside Air/Hr	Per Code
Adjacency	Common Area	Max. Noise Level	NA
Access	Restrooms	Air Pressure Min/Max	Per Code
Separation	Division Areas	Controls	Central
Occupants	1		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Thick Set 12x12 Ceramic Tile	Sink	NA
Ceiling	Painted Gypsum Board	Lavatory	NA
Minimum Ceiling Height	9' Minimum / 15' Maximum	Toilet	NA
Walls	Painted GWB above 8'	Shower	Yes
Base / Wainscot	Coved Ceramic Tile Base w/ minimum 12x24 Ceramic Tile to 8'	Floor Drain	Yes
Door / Size	3'-0" x &'7-0" Solid Core Wood Door	Central Bath Tub	NA
Hardware	Number Pad & Keyed w/occupied sign	Eye Wash	NA
Window / Operation		Drinking Fountain	
Window Treatment	NA	Ice / Water Connection	NA
Casework / Cabinetry	NA	Floor Sink	NA
		Utility Sink	NA
FURNISHINGS		**ELECTRICAL**	
Table	NA	General Lighting	Yes
Chair	NA	Specialty Lighting	NA
Sofa	NA	Outlets	Provide 1 GFI outlet / room
Desk	NA	Special Outlets	NA
Other	NA	Emergency Power	NA
EQUIPMENT		**TELEPHONE / DATA / SECURITY / AV**	
Flat Screen TV	NA	Telephone / Data	NA
Lockers	NA	Emergency Assistance	NA
Oven / Range	NA	Call Station	NA
Refrigerator	NA	Pull Cord Station	NA
Dishwasher	NA	Media / Cable TV	NA
Disposal	NA	Internet Connection	NA
Washing Machine	NA	Wireless Internet	NA
Clothes Dryer	NA	Intercom	NA
Bench	NA	Alarm / Security	Brake Glass
Other	NA	Security Camera	NA
Time Clock	NA	Card Reader Lock	NA
		Wireless Clock	NA

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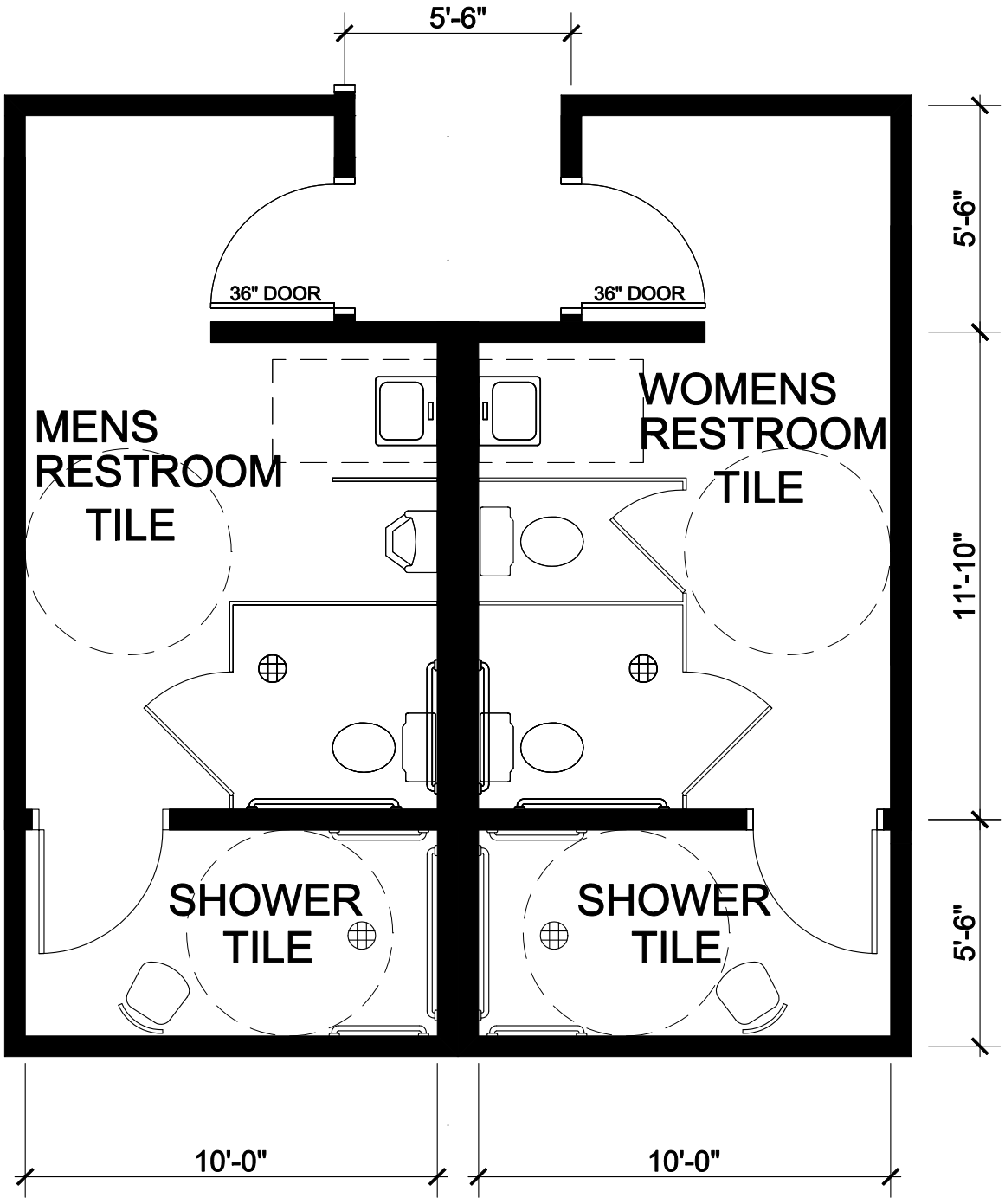


RESTROOMS & SHOWER ROOMS

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

4.0 INDIVIDUAL SPACE REQUIREMENTS

DIVISION OF AIR QUALITY

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY WAREHOUSE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Trailer repair & vehicle storage	Temperature Min/Max	68 ° Minimum 78 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	NA
Programmed Area	4000 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Air Quality / equipment storage	Max. Noise Level	34 DB
Access from	Air Quality hallway & exterior	Air Pressure Min/Max	
Separation from	Other Divisions	Controls	Central
Occupants	24 Maximum	Exhaust Fans	Automatic w/sensor
Utilization	8 hrs/day 5 days/week	Ceiling Fans	6 large Reversible
ARCHITECTURAL		**PLUMBING**	
Floor	Sealed Concrete / Slope to doors	Sink	Number: 1 Type: Shop Faucet: w/hose
Ceiling	Painted Structure	Water Filtration Type	
Minimum Ceiling Height	20'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot		Shower	
Door / Size	1-3'x7' Insulated Hollow Metal, 1-8'x12', 1-12'x16', 2-10'x12' Insulated motorized steel overhead	Floor Drain / Floor Sink	Floor drain @ Ice Machine
Hardware	Entry	Eye Wash	
Keying Type	Card Access	Drinking Fountain	Adjacent to sink
Window / Operation	Exterior Fixed	Ice / Water Connection	Yes
Window Treatment		Utility Sink	Yes
Casework / Cabinetry	Shelving OF&I	Compressed Air	Yes
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	OF&I	Specialty Lighting	Task lighting @ work bench
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	220 @ ovens & 6 @ west wall
Other		Emergency Power	
Lab Stools		Equipment Loads	
Work Bench	1 Work Bench OF&I	Dedicated Circuits	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes @ Dock Area
Lockers	###? OF&I	Emergency Assistance	
Oven / Range	2 Ovens OF&I	Call Station	
Refrigerator	1 OF&I	Pull Cord Station	
Freezer	2 OF&I	Media / Cable TV	
Dishwasher		Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Bridge Crane	10 ton free standing bridge crane lift	Alarm / Security	Yes
Bench		Card Reader Lock	Yes
Ice Machine	1 Large Commercial OF&I	Wireless Clock	
Fume Hood		CCTV - Web-based	Yes @ Yard Storage
Deionized Water Filtration		Door Bell	Yes @ Dock @ West door w/Phone #s
Ultra Pure Water Filtration		Computer	
Scissor Lift	8000# 5'W x 8'L Hydraulic Lift		

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water

DIVISION OF AIR QUALITY

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/10" = 1'-0"

0 2' 4' 8' 16' 24'

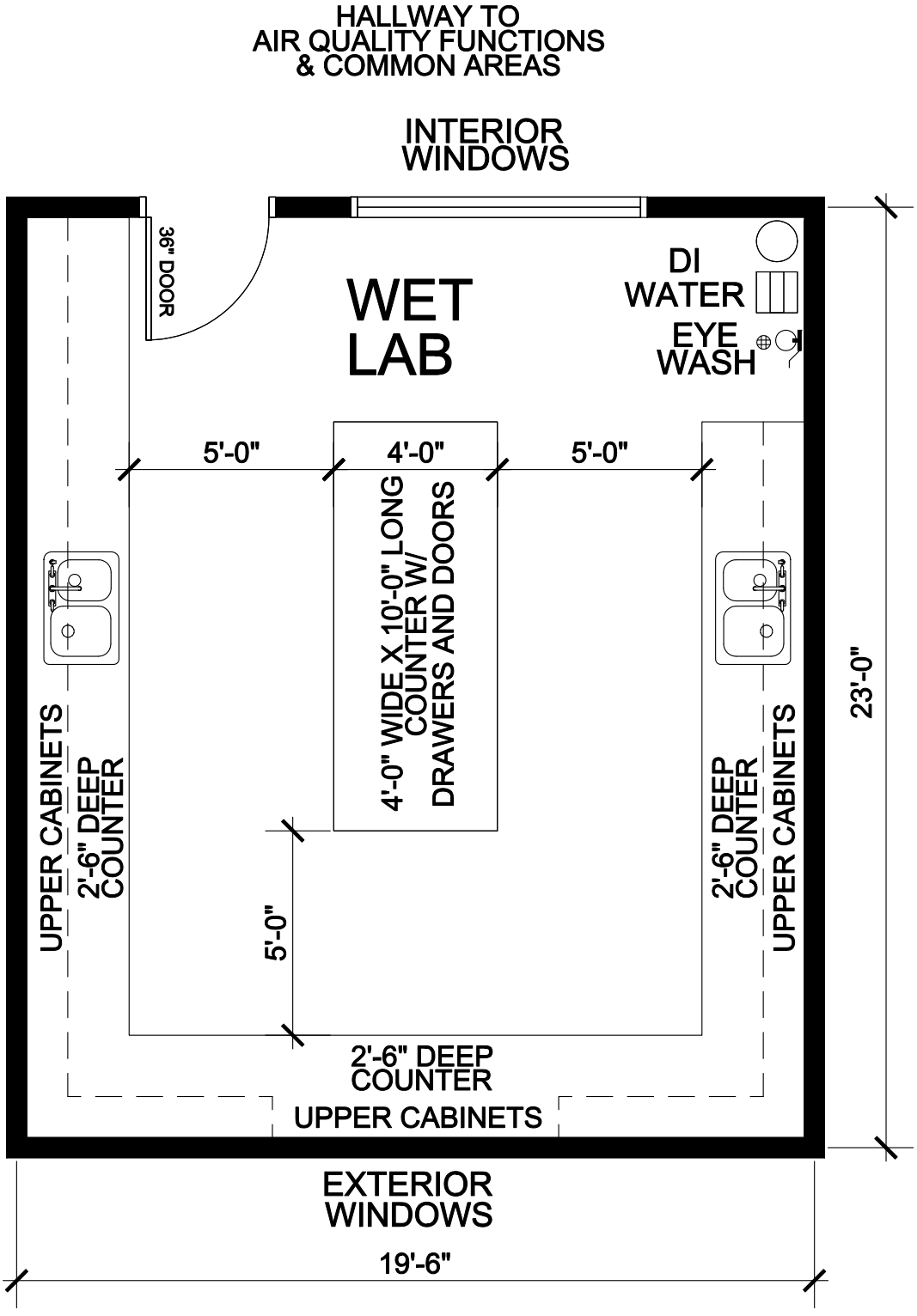
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY WET LAB

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Wash Filter Holders, Equipment & Parts	Temperature Min/Max	68 ° Minimum 72 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	35% Constant
Programmed Area	400 SF Minimum	Min. Air Change/Hr	?? Minimum
Number Required	1	Min. Outside Air/Hr	?? Minimum
Adjacency	Common Area Gas & Particle Labs	Max. Noise Level	34 DB
Access from	Air Quality Hallway	Air Pressure Min/Max	?? # Positive
Separation from	Air Quality Warehouse	Controls	Individual Room w/ Backup
Occupants	10 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Waterproof	Sink	Number: 2 Type: double Faucet: GN
Ceiling	ACT	Water Filtration Type	DI & Ultra Pure Water
Minimum Ceiling Height	10'	Lavatory	
Walls	Washable Paint	Toilet	
Base / Wainscot	Cove	Shower	
Door / Size	36"wx84"h	Floor Drain / Floor Sink	Central Floor Drain
Hardware	Office	Eye Wash	Yes
Keying Type	Card Access	Drinking Fountain	
Window / Operation	Exterior Fixed / Interior Fixed	Ice / Water Connection	
Window Treatment	2" Horizontal @ Exterior	Utility Sink	
Casework / Cabinetry	Perimeter lab counters w/drawers &	Compressed Air	Yes
	doors & upper cabinets w/glass doors		
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair		Specialty Lighting	Task
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	220 for oven
Other		Emergency Power	
Lab Stools	3 - OF&I	Equipment Loads	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Landline
Lockers		Emergency Assistance	
Oven / Range	Oven w/ 220 outlet	Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher	Yes	Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench	??? Lab Stools	Card Reader Lock	Yes
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration	Yes	Door Bell	@ Dock & West Doors
Ultra Pure Water Filtration	Yes		

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



AIR QUALITY WET LAB

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

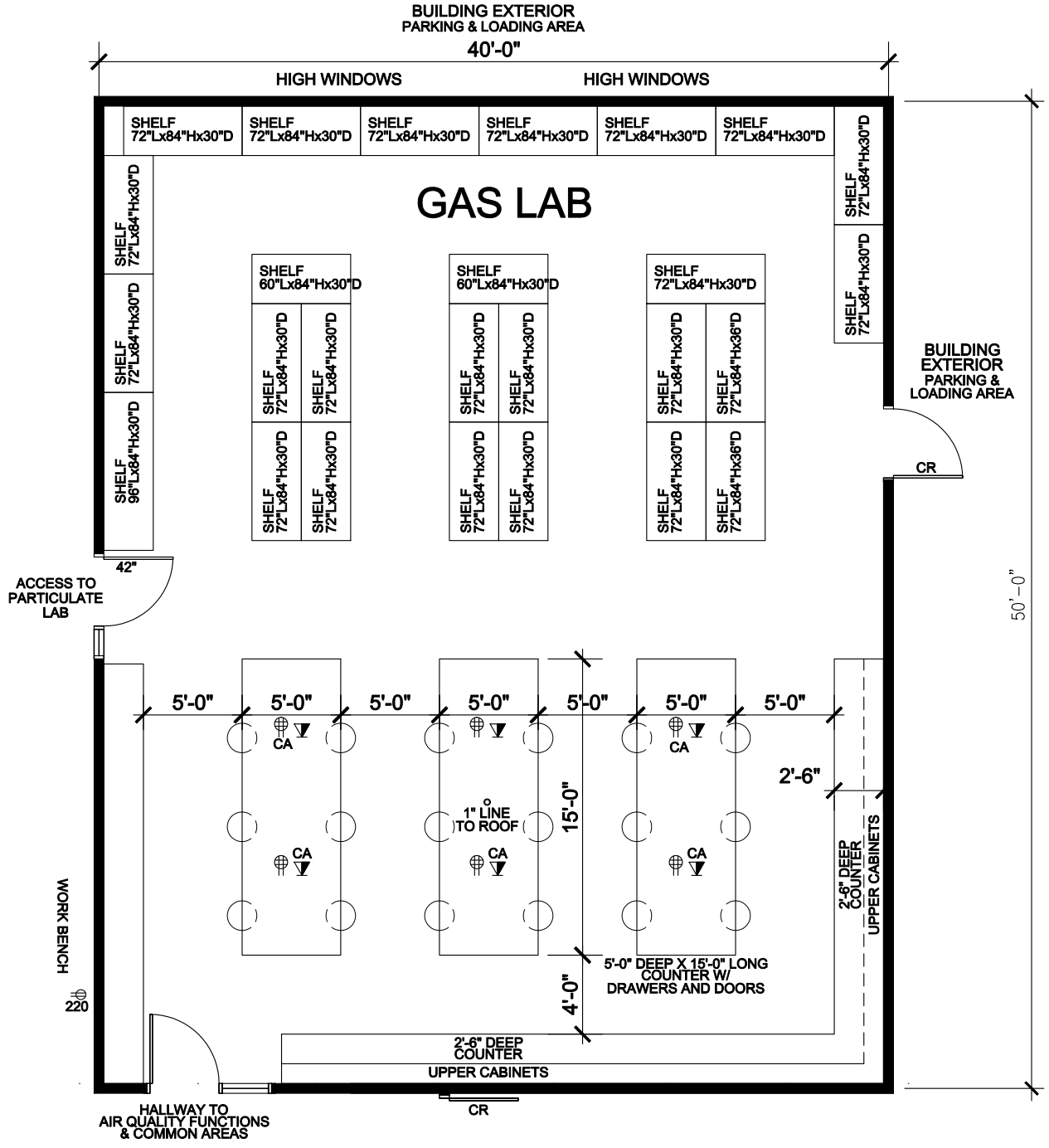
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY GAS LAB

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Calibrate, repair, store, test instruments	Temperature Min/Max	68 ° Minimum 74 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	35% ± Constant
Programmed Area	2000 SF Minimum	Min. Air Change/Hr	?? Minimum
Number Required	1	Min. Outside Air/Hr	?? Minimum
Adjacency	Common Area, Particulate Lab	Max. Noise Level	34 DB
Access from	Air Quality Hallway / Particulate Lab	Air Pressure Min/Max	?? # Positive
Separation from	Air Quality Warehouse	Controls	Central
Occupants	20 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Non conductive Sheet Vinyl	Sink	Number: Type: Faucet:
Ceiling	ACT	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot	Cove	Shower	
Door / Size	42"wx84"h	Floor Drain / Floor Sink	
Hardware	Office	Eye Wash	
Keying Type	Card Access	Drinking Fountain	
Window / Operation	Exterior Fixed / Interior Fixed	Ice / Water Connection	
Window Treatment	2" Horizontal @ Exterior	Utility Sink	
Casework / Cabinetry	Lab counters w/drawers &	Compressed Air	Yes Suspended & Retractable
	doors & upper cabinets w/glass doors		
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	3 - OF&I	Specialty Lighting	Task over work benches
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	Pods of Outlets 3"O.C. @ work benches
Other		Emergency Power	
Lab Stools	3 - OF&I	Equipment Loads	
Work Bench	3 - 32" high (Seems low 42")	Dedicated Circuits	110 power @ Pods on dedicated circuits
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Multiple Landlines w/separate phone #s
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	Yes @ Work Bench pods
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	Yes
Bench		Card Reader Lock	Yes
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration		Door Bell	@ Dock & West Doors
Ultra Pure Water Filtration		Computer	1 - OF&I ??

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



AIR QUALITY GAS LAB

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

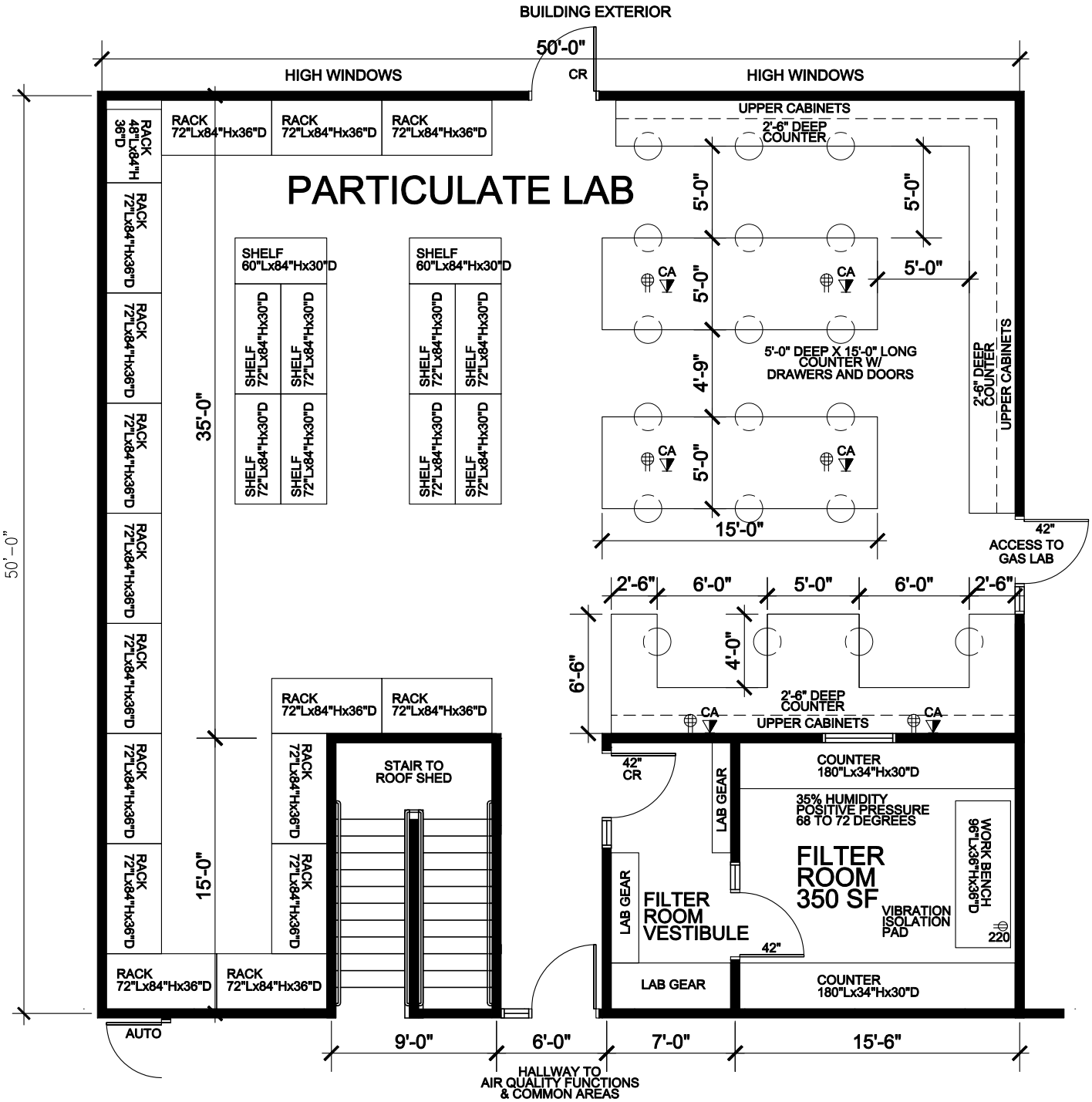
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY PARTICULATE LAB

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Calibrate, repair, store & test equipment	Temperature Min/Max	68 ° Minimum 74 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	35% ± Constant
Programmed Area	2000 SF Minimum	Min. Air Change/Hr	?? Minimum
Number Required	1	Min. Outside Air/Hr	?? Minimum
Adjacency	Common Area, Gas & Filter Room	Max. Noise Level	34 DB
Access from	Air Quality Hallway / Gas Lab	Air Pressure Min/Max	?? # Negative
Separation from	Air Quality Warehouse	Controls	Central
Occupants	20 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Non conductive Sheet Vinyl	Sink	Number: Type: Faucet:
Ceiling	ACT	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot	Cove	Shower	
Door / Size	36"wx84"h	Floor Drain / Floor Sink	
Hardware	Office	Eye Wash	
Keying Type	Card Access	Drinking Fountain	
Window / Operation	Exterior Fixed / Interior Fixed	Ice / Water Connection	
Window Treatment	2" Horizontal @ Exterior	Utility Sink	
Casework / Cabinetry	Lab counters w/drawers &	Compressed Air	Yes Suspended & Retractable
	doors & upper cabinets w/glass doors		
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	2 - OF&I	Specialty Lighting	Task over work benches
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	Pods of Outlets 3"O.C. @ work benches
Other		Emergency Power	
Lab Stools	4 - OF&I	Equipment Loads	
Work Bench	32" high (Seems low 42")	Dedicated Circuits	110 power @ Pods on dedicated circuits
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Multiple Landlines w/separate phone #s
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	Yes @ Work Bench pods
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench		Card Reader Lock	Yes
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration		Door Bell	@ Dock & West Doors
Ultra Pure Water Filtration		Computer	1 - OF&I ??

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



AIR QUALITY PARTICULATE LAB

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY FILTER ROOM VESTIBULE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Air Quality testing	Temperature Min/Max	68 ° Minimum 72 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	35% Constant
Programmed Area	See Filter Room	Min. Air Change/Hr	?? Minimum
Number Required	1	Min. Outside Air/Hr	?? Minimum
Adjacency	Filter Room / Particulate Lab	Max. Noise Level	34 DB
Access from	Particulate Lab	Air Pressure Min/Max	?? # Positive
Separation from	All other areas	Controls	Individual Room w/ Backup
Occupants	4 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Non conductive waterproof	Sink	Number: Type: Faucet:
Ceiling	Non conductive	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Washable / fiber free / nonconductive	Toilet	
Base / Wainscot	NA	Shower	
Door / Size	42"wx84"h	Floor Drain / Floor Sink	
Hardware	Office	Eye Wash	
Keying Type	Card Access	Drinking Fountain	
Window / Operation	NA	Ice / Water Connection	
Window Treatment	NA	Utility Sink	
Casework / Cabinetry	Perimeter lab equipment storage	Compressed Air	
FURNISHINGS		**ELECTRICAL**	
Table	Work Benches - OF&I	General Lighting	30fc General / 30fc Task LED
Chair	Nonconductive - OF&I	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Lab Stools		Equipment Loads	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	Yes
Clothes Dryer		Alarm / Security	Yes
Bench		Card Reader Lock	Yes
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration			
Ultra Pure Water Filtration			

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

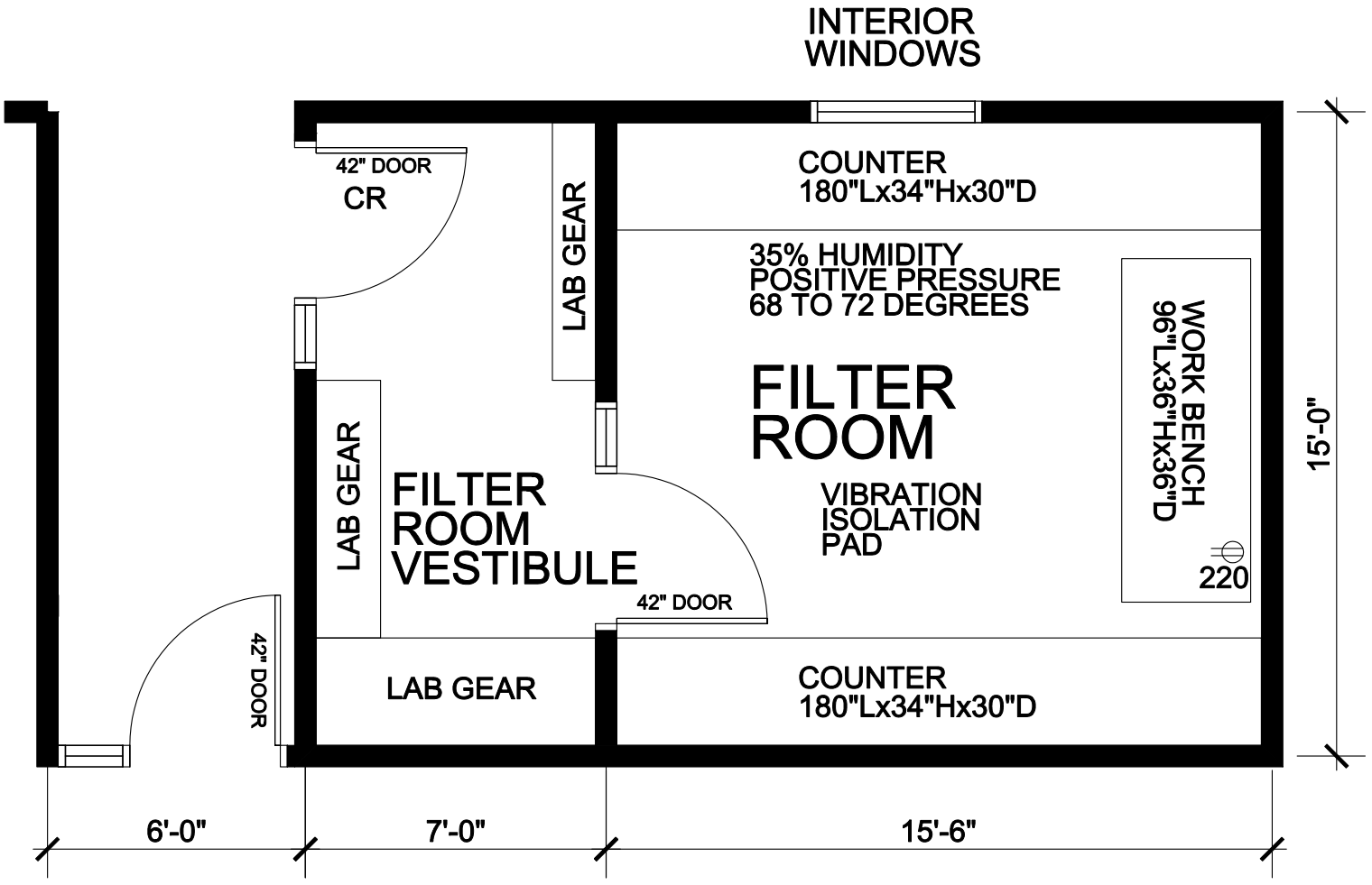
INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY FILTER ROOM

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Air Quality testing	Temperature Min/Max	68 ° Minimum 72 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	35% Constant
Programmed Area	350 SF Minimum	Min. Air Change/Hr	?? Minimum
Number Required	1	Min. Outside Air/Hr	?? Minimum
Adjacency	Particulate Lab	Max. Noise Level	34 DB
Access from	Filter Room Vestibule	Air Pressure Min/Max	?? # Positive
Separation from	All other areas by Vestibule	Controls	Individual Room w/ Backup
Occupants	4 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Non conductive	Sink	Number: Type: Faucet:
Ceiling	Non conductive	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Washable / fiber free / nonconductive	Toilet	
Base / Wainscot	NA	Shower	
Door / Size	42"wx84"h	Floor Drain / Floor Sink	
Hardware	Office	Eye Wash	
Keying Type	Card Access	Drinking Fountain	
Window / Operation	1" Insulated Thermally Broken Frame	Ice / Water Connection	
Window Treatment	NA	Utility Sink	
Casework / Cabinetry	Perimeter Work Benches	Compressed Air	
	Vibration Isolation for entire room		
FURNISHINGS		**ELECTRICAL**	
Table	Work Benches - OF&I	General Lighting	30fc General / 30fc Task LED
Chair	Nonconductive - OF&I	Specialty Lighting	Task
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	110 & 220 dedicated circuits
Other		Emergency Power	Required 110 & 220
Lab Stools		Equipment Loads	??
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	Yes
Clothes Dryer		Alarm / Security	Yes
Bench		Card Reader Lock	Yes
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration			
Ultra Pure Water Filtration			

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water

PARTICULATE LAB



HALLWAY TO
AIR QUALITY FUNCTIONS
& COMMON AREAS

AIR QUALITY FILTER ROOM

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

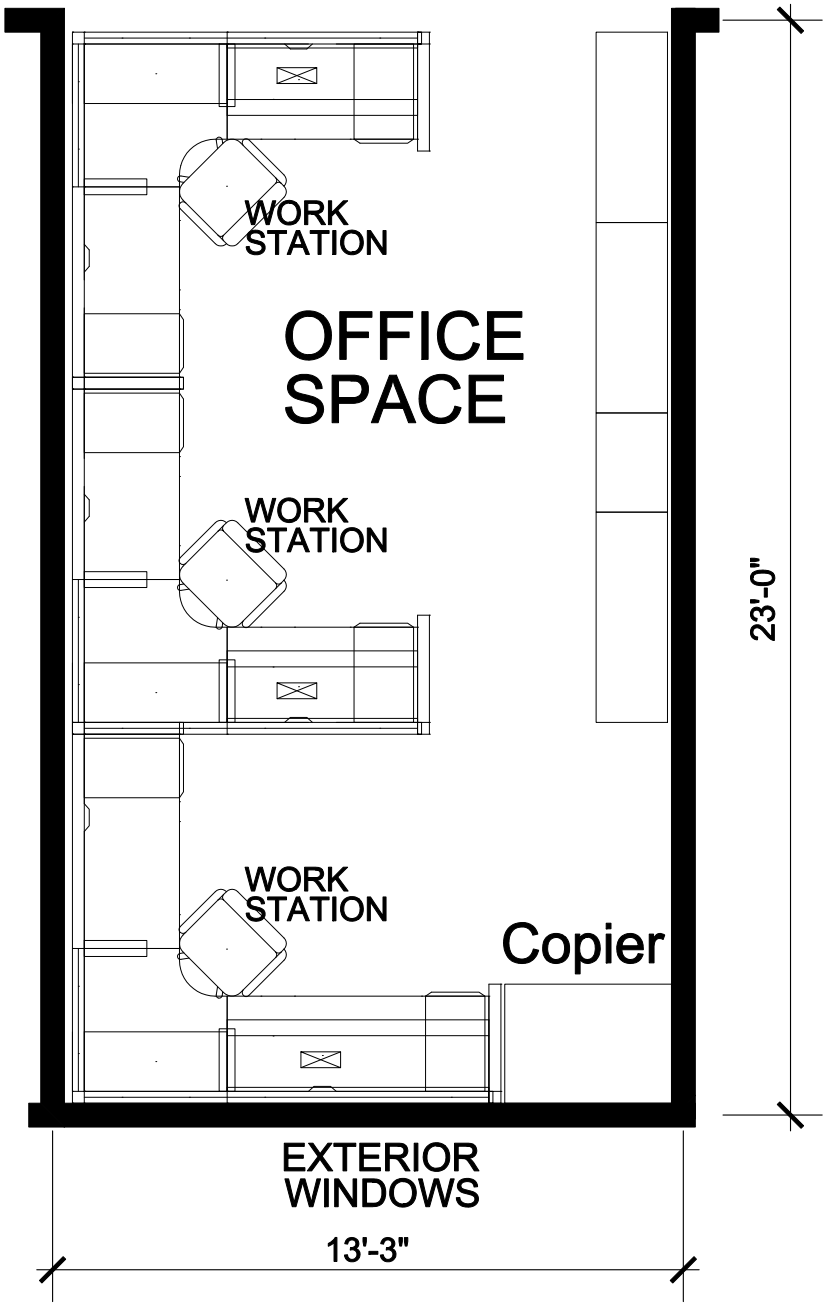
INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: OFFICE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Supervisors Group Office	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Air Quality Area	Humidity Min/Max	NA
Programmed Area	300 SF Minimum	Min. Air Change/Hr	10 MINIMUM
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	Air Quality Areas	Max. Noise Level	35
Access	Air Quality hallway	Air Pressure Min/Max	
Separation	Warehouse	Controls	Central
Occupants	Up to six (6)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Carpet Tile	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Carpet	Floor Drain	
Door / Size		Central Bath Tub	
Hardware		Eye Wash	
Window / Operation	Required / Fixed Exterior	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	
Casework / Cabinetry	N/A	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table	(OF&I)	General Lighting	30fc General / 30fc Task
Chair	3 (OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk	3 (OF&I)	Special Outlets	
Other		Emergency Power	
Shelving	(OF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)

HALLWAY TO
AIR QUALITY FUNCTIONS
& COMMON AREAS



AIR QUALITY OFFICE

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY EQUIPMENT STORAGE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Storage of equipment & tools	Temperature Min/Max	68 ° Minimum 74 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	NA
Programmed Area	400 SF Minimum	Min. Air Change/Hr	10 Minimum
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	Air Quality Warehouse	Max. Noise Level	34 DB
Access from	Air Quality Warehouse	Air Pressure Min/Max	
Separation from	Other Divisions	Controls	Central
Occupants	8 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Concrete	Sink	Number: Type: Faucet:
Ceiling	Painted Structure	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot	Vinyl	Shower	
Door / Size	Double 36"w x 84"h	Floor Drain / Floor Sink	
Hardware	Office	Eye Wash	
Keying Type	Keyed	Drinking Fountain	
Window / Operation		Ice / Water Connection	
Window Treatment		Utility Sink	
Casework / Cabinetry	Shelving OF&I	Compressed Air	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	OF&I	Specialty Lighting	Task lighting @ work bench
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Lab Stools		Equipment Loads	
Work Bench	1 Work Bench OF&I	Dedicated Circuits	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench		Card Reader Lock	
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration		Door Bell	
Ultra Pure Water Filtration		Computer	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water

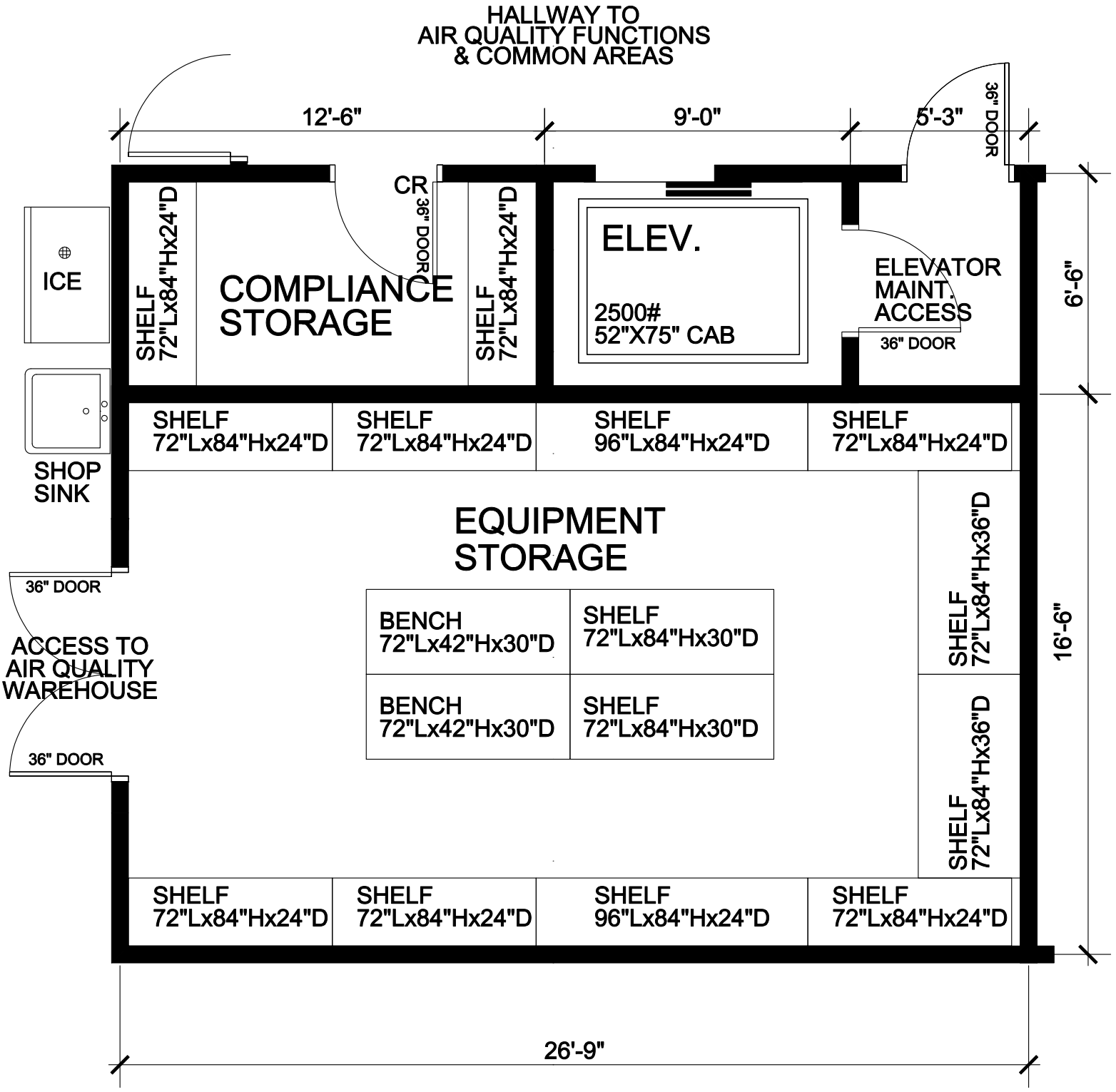
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY COMPLIANCE STORAGE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Secure Storage of Samples	Temperature Min/Max	68 ° Minimum 74 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	NA
Programmed Area	80 SF Minimum	Min. Air Change/Hr	10 Minimum
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	Common Area / Air Quality Warehouse	Max. Noise Level	34 DB
Access from	Air Quality Hallway	Air Pressure Min/Max	
Separation from	Other Divisions	Controls	Central
Occupants	2 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Concrete or Carpet	Sink	Number: Type: Faucet:
Ceiling	ACT	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot	Vinyl	Shower	
Door / Size	36"wx84"h	Floor Drain / Floor Sink	
Hardware	Office	Eye Wash	
Keying Type	Card Access	Drinking Fountain	
Window / Operation		Ice / Water Connection	
Window Treatment		Utility Sink	
Casework / Cabinetry	Shelving	Compressed Air	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair		Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Lab Stools		Equipment Loads	
		Dedicated Circuits	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	
Disposal		Wireless Internet	
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench		Card Reader Lock	
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration		Door Bell	
Ultra Pure Water Filtration		Computer	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



EQUIPMENT STORAGE
COMPLIANCE STORAGE & ELEVATOR

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

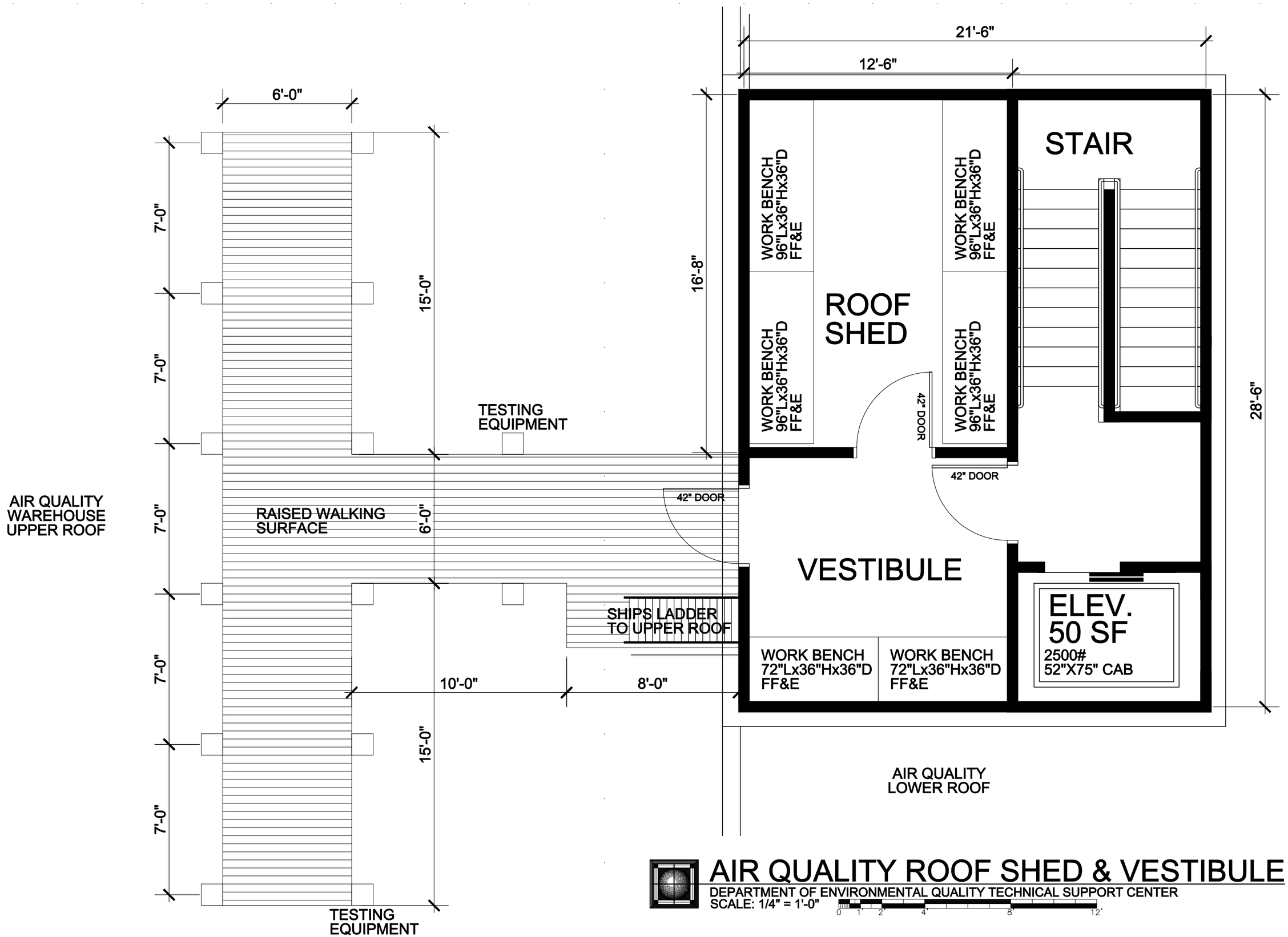
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ AIR QUALITY DIVISION

ROOM NAME: AIR QUALITY ROOF SHED & VESTIBULE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Storage of equipment & tools for roof mounted testing equipment	Temperature Min/Max	68 ° Minimum 74 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	NA
Programmed Area	350 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	NA
Adjacency	Air Quality Labs	Max. Noise Level	34 DB
Access from	Air Quality Hallway Stair & Elevator	Air Pressure Min/Max	
Separation from	Air Quality Warehouse	Controls	Central
Occupants	5 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Concrete	Sink	Number: Type: Faucet:
Ceiling	Painted Structure	Water Filtration Type	
Minimum Ceiling Height	10'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot	Vinyl	Shower	
Door / Size	Double 42"w x 84"h	Floor Drain / Floor Sink	
Hardware	Storage Room / Exterior Entry	Eye Wash	
Keying Type	Keyed	Drinking Fountain	
Window / Operation		Ice / Water Connection	
Window Treatment		Utility Sink	
Casework / Cabinetry	Shelving OF&I	Compressed Air	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair		Specialty Lighting	Task lighting @ work bench
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Lab Stools		Equipment Loads	
Work Bench	1 Work Bench OF&I	Dedicated Circuits	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher		Internet Connection	
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench		Card Reader Lock	
Time Clock		Wireless Clock	
Fume Hood		CCTV - Web-based	
Deionized Water Filtration		Door Bell	
Ultra Pure Water Filtration		Computer	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



AIR QUALITY ROOF SHED & VESTIBULE

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

4.0 INDIVIDUAL SPACE REQUIREMENTS

DIVISION OF WATER QUALITY

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ WATER QUALITY DIVISION

ROOM NAME: WATER QUALITY BOAT & EQUIPMENT STORAGE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Trailer repair & vehicle storage	Temperature Min/Max	60 ° Minimum 78 °Maximum
Building Zone	Air Quality Area	Humidity Min/Max	NA
Programmed Area	4725 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Water Quality Lab	Max. Noise Level	34 DB
Access from	Water Quality hallway & exterior	Air Pressure Min/Max	
Separation from	Other Divisions	Controls	Central
Occupants	24 Maximum	Exhaust Fans	Automatic w/sensor
Utilization	8 hrs/day 5 days/week	Ceiling Fans	6 large Reversible
ARCHITECTURAL		**PLUMBING**	
Floor	Sealed Concrete / Slope to doors	Sink	Number: 1 Type: Shop Faucet: w/hose
Ceiling	Painted Structure	Water Filtration Type	
Minimum Ceiling Height	20'	Lavatory	
Walls	Paint	Toilet	
Base / Wainscot	Plywood to 8'	Shower	
Door / Size	1 - 3'x7' , Insulated Hollow Metal, 1 - Double 3'x7' , Insulated HM Exterior 2 -20'w x 14'h Insul motorized overhead	Floor Drain / Floor Sink	Floor drain @ Ice Machine
Hardware	Entry	Eye Wash	
Keying Type	Card Access	Drinking Fountain	
Window / Operation	Exterior Fixed	Ice / Water Connection	Yes
Window Treatment		Utility Sink	Yes
Casework / Cabinetry	Shelving OF&I	Compressed Air	Yes
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	OF&I	Specialty Lighting	Task lighting @ work bench
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	6 - 220 outlets
Other		Emergency Power	Yes @ Freezers & Refrigerators
Lab Stools		Equipment Loads	
Work Bench		Dedicated Circuits	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator	2 OF&I	Pull Cord Station	
Freezer	4 OF&I	Media / Cable TV	
Dishwasher		Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Bridge Crane		Alarm / Security	Yes
Bench		Card Reader Lock	Yes
Ice Machine	1 Large Commercial OF&I	Wireless Clock	1
Fume Hood		CCTV - Web-based	
Deionized Water Filtration		Door Bell	Yes @ Dock @ West door w/Phone #s
Ultra Pure Water Filtration		Computer	
Scissor Lift	8000# 5'W x 8'L Hydraulic Lift		

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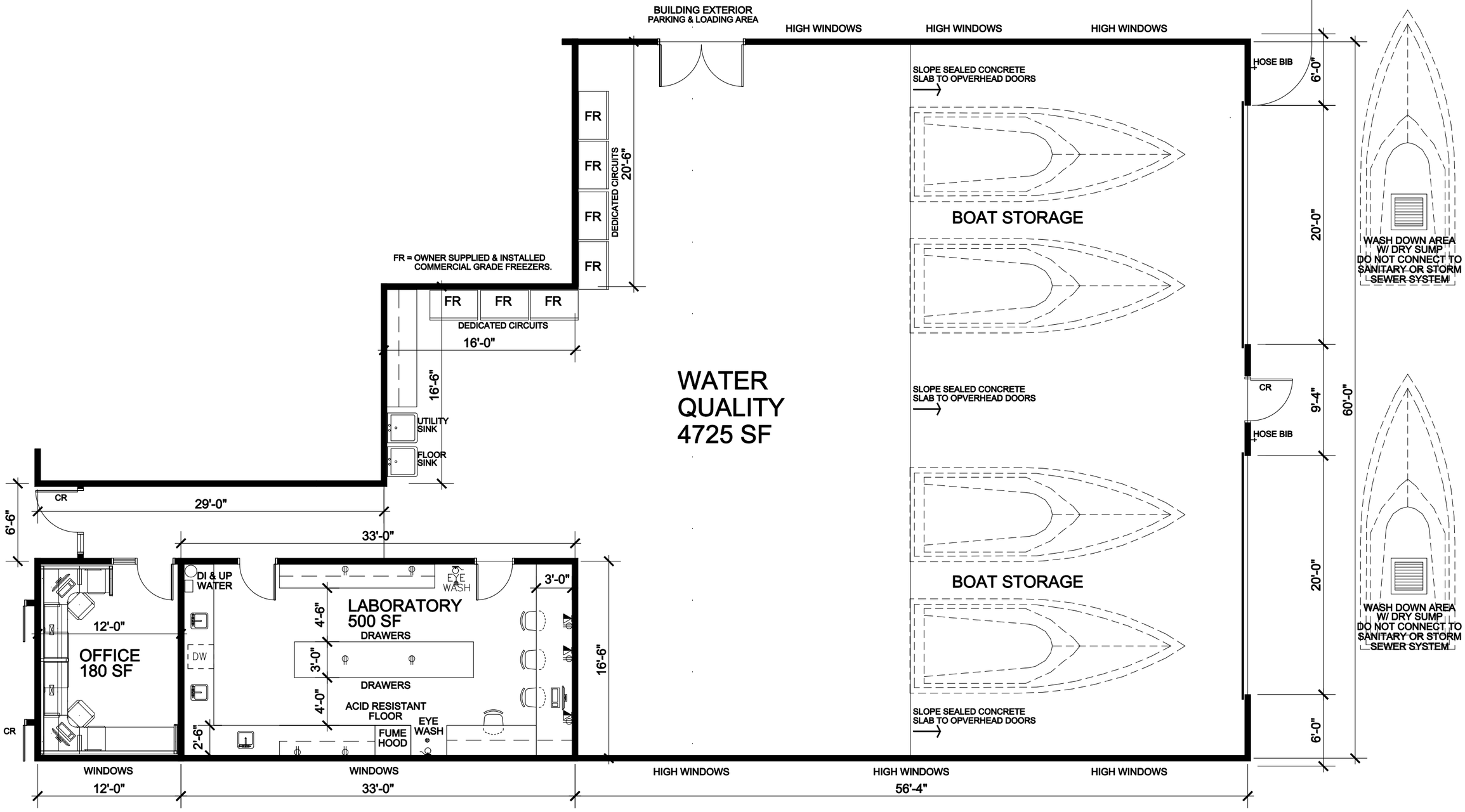
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



DIVISION OF WATER QUALITY

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

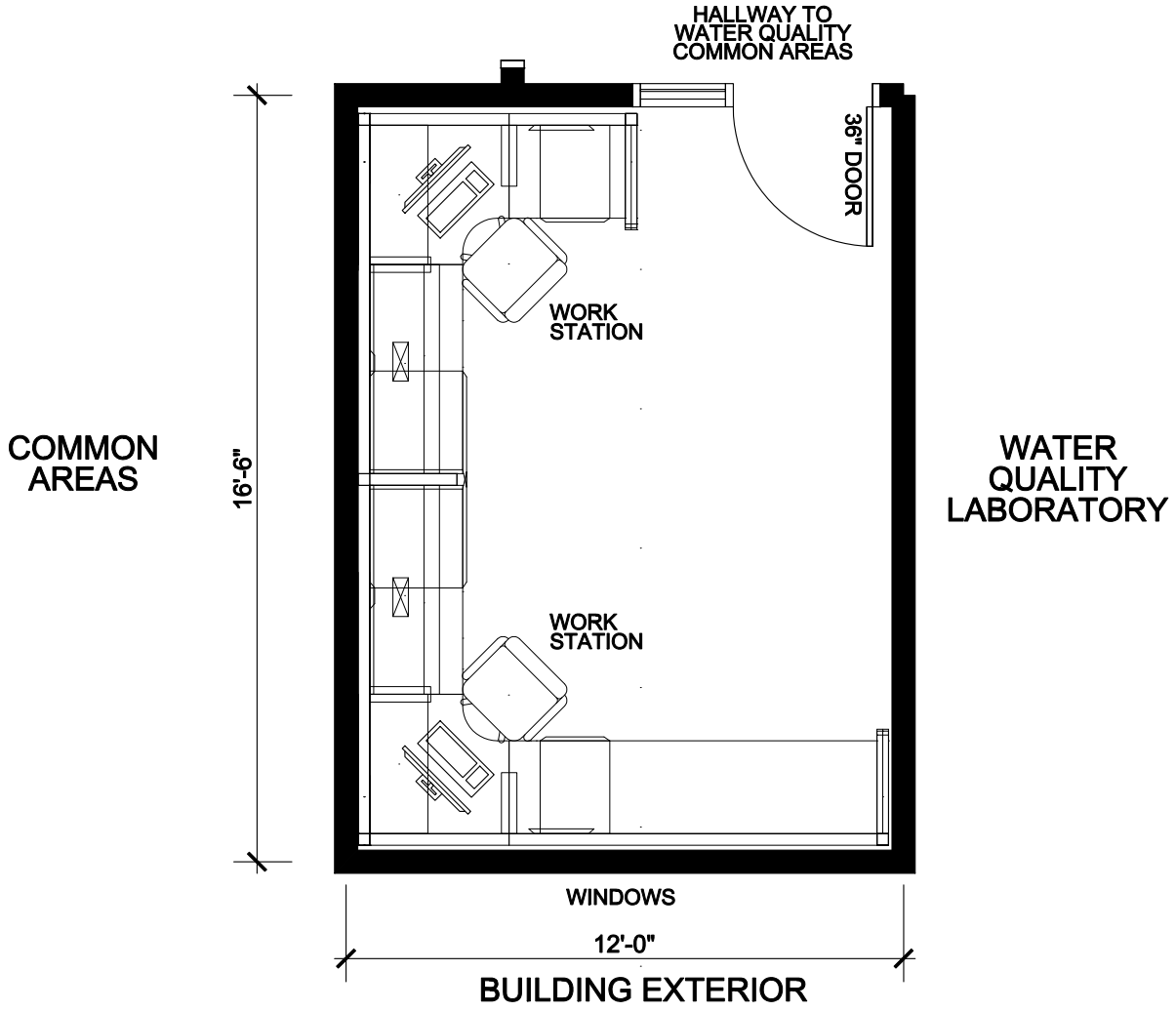
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ WATER QUALITY DIVISION

ROOM NAME: OFFICE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Supervisors Group Office	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Water Quality Area	Humidity Min/Max	Per Code
Programmed Area	300 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Water Quality Lab & Boat Storage	Max. Noise Level	35
Access	Air Quality hallway	Air Pressure Min/Max	
Separation	Warehouse	Controls	Central
Occupants	Up to six (6)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Carpet Tile	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Carpet	Floor Drain	
Door / Size	36" x 84" SCWD	Central Bath Tub	
Hardware		Eye Wash	
Window / Operation	Required / Fixed Exterior	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	
Casework / Cabinetry	N/A	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair	2 (OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk	2 (OF&I)	Special Outlets	
Other		Emergency Power	
Shelving	(OF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	1
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)



WATER QUALITY OFFICE

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

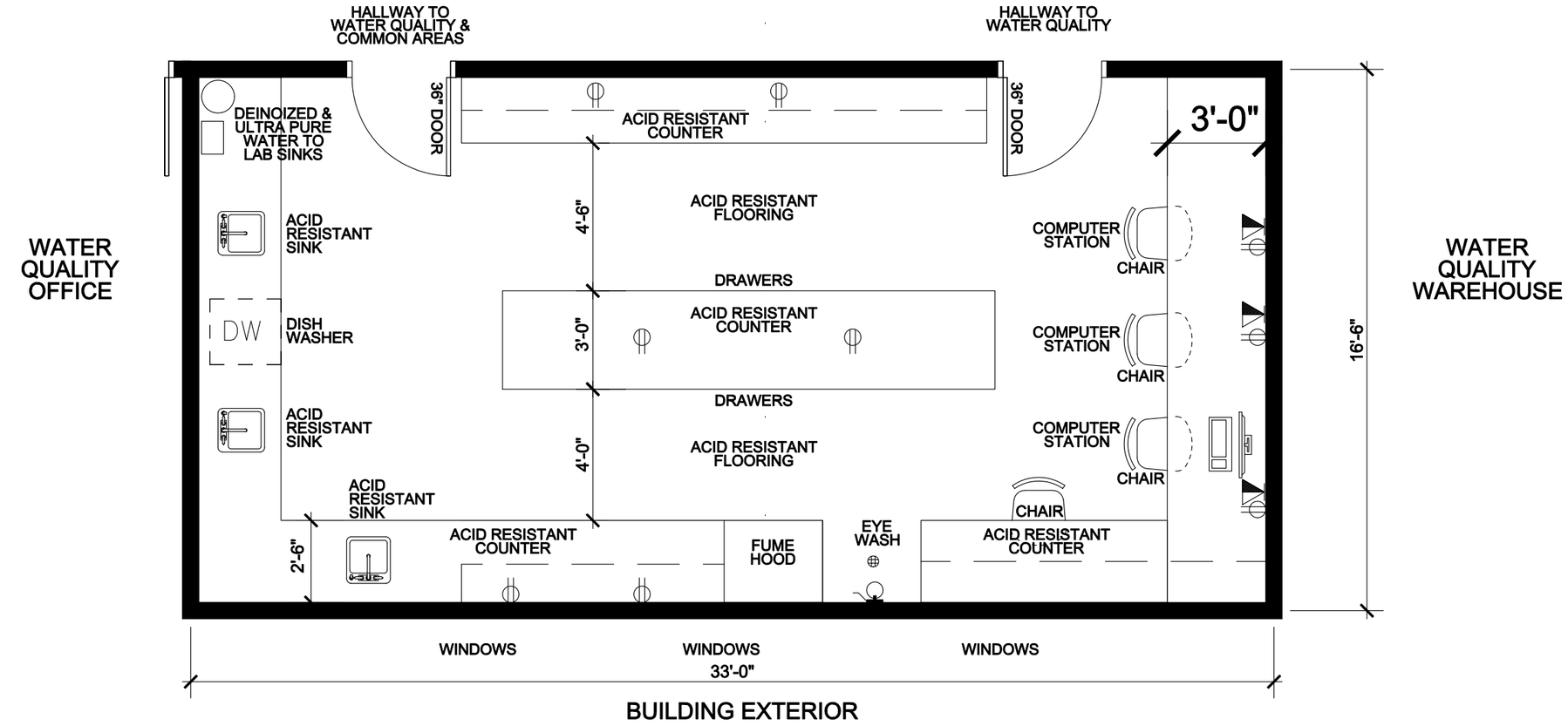
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ WATER QUALITY DIVISION

ROOM NAME: WATER QUALITY LAB

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Wash Filters, Equipment & Parts	Temperature Min/Max	68 ° Minimum 72 °Maximum
Building Zone	Water Quality Area	Humidity Min/Max	Per Code
Programmed Area	500 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Boat Storage & Water Quality Office	Max. Noise Level	34 DB
Access from	Water Quality Hallway	Air Pressure Min/Max	Per Code
Separation from	Air Quality Warehouse	Controls	Individual Room w/ Backup
Occupants	7 Maximum		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Slip & acid resistant sheet vinyl	Sink	Number: 3 Type: LG single Faucet: GN
Ceiling	ACT	Water Filtration Type	DI & Ultra Pure Water
Minimum Ceiling Height	10'	Lavatory	
Walls	Washable Paint	Toilet	
Base / Wainscot	Cove	Shower	
Door / Size	36"wx84"h	Floor Drain / Floor Sink	Central Floor Drain
Hardware	Office	Eye Wash	Yes
Keying Type	Card Access	Drinking Fountain	
Window / Operation	Exterior Fixed / Interior Fixed	Ice / Water Connection	
Window Treatment	2" Horizontal @ Exterior	Utility Sink	
Casework / Cabinetry	Perimeter lab counters w/drawers &	Compressed Air	Yes
	doors & upper cabinets w/glass doors		
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task LED
Chair	4 - OF&I	Specialty Lighting	Task
Sofa		Outlets	Convenience outlets @ walls 110
Desk	Built-in	Special Outlets	Power @ island
Other		Emergency Power	
Lab Stools	4 - OF&I	Equipment Loads	
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Landline
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Freezer		Media / Cable TV	
Dishwasher	Yes	Internet Connection	Yes
Disposal		Wireless Internet	Yes
Washing Machine		Intercom	
Clothes Dryer		Alarm / Security	
Bench	??? Lab Stools	Card Reader Lock	Yes
Time Clock		Wireless Clock	1
Fume Hood	1 - OF&I	CCTV - Web-based	
Deionized Water Filtration	Yes	Door Bell	@ Dock & West Doors
Ultra Pure Water Filtration	Yes		

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



WATER QUALITY LABORATORY

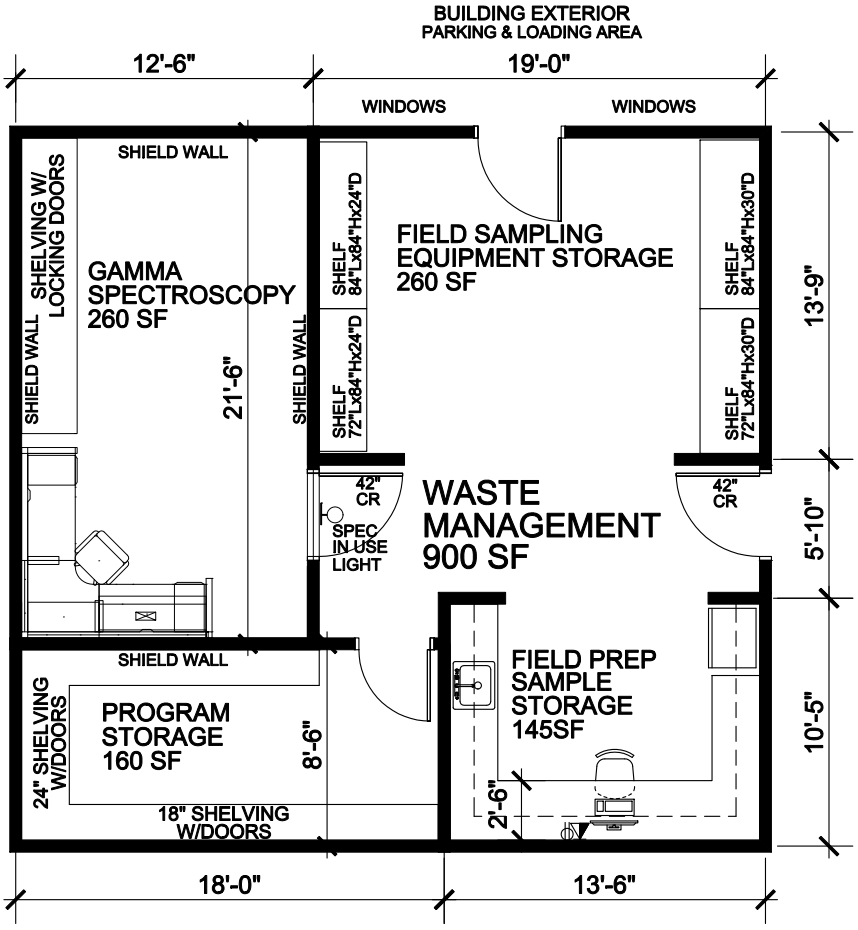
DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

4.0 INDIVIDUAL SPACE REQUIREMENTS

DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL



DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

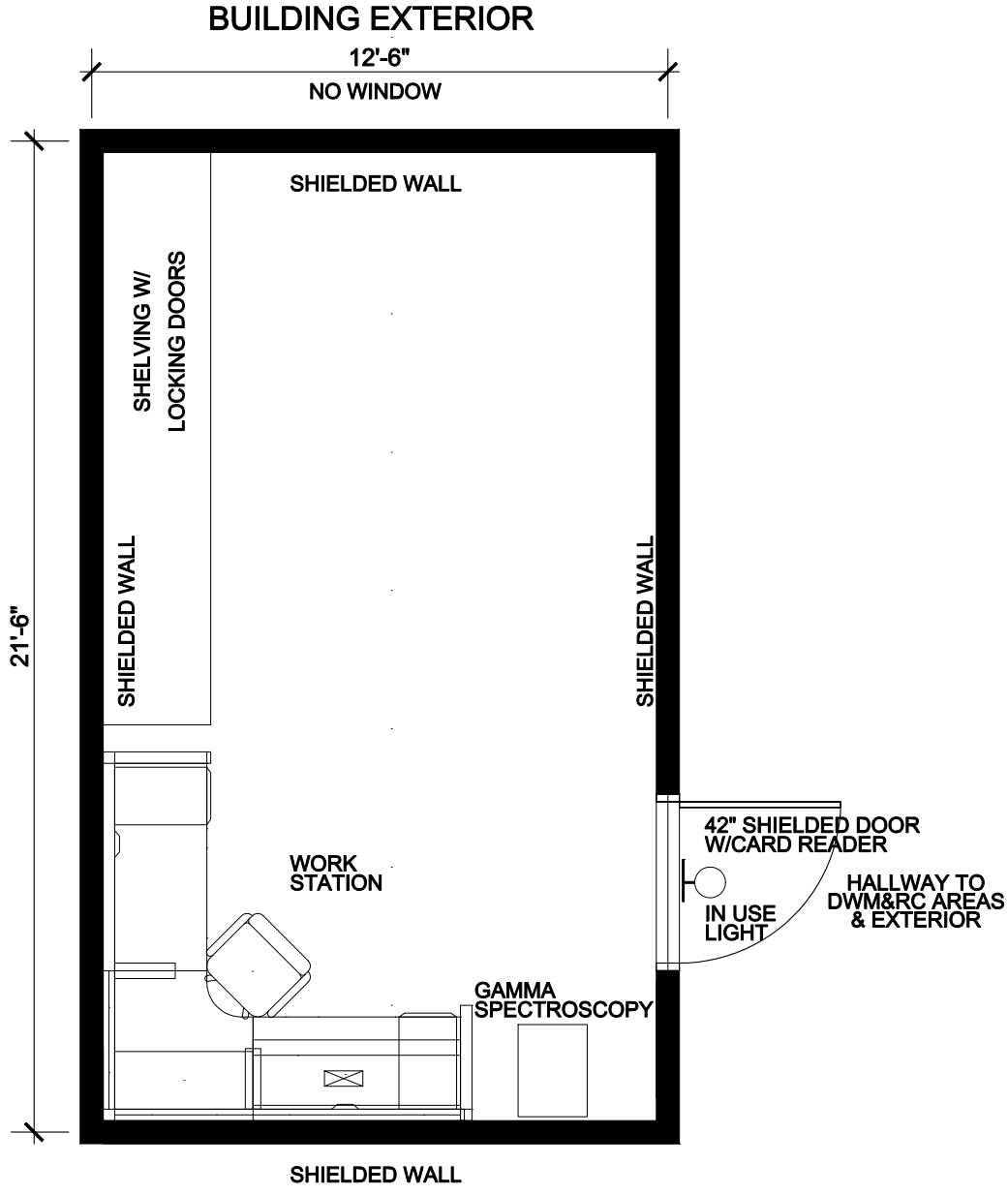
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■
WASTE MANAGEMENT AND RADIATION CONTROL DIVISION

ROOM NAME: GAMMA SPECTROSCOPY

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Office Gamma Spectroscopy Testing	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Waste Management & Radiation Control	Humidity Min/Max	Per Code
Programmed Area	250 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	WM&RC Field Sampling & Storage	Max. Noise Level	35
Access	WM&RC hallway	Air Pressure Min/Max	
Separation	Normally occupied spaces	Controls	Central
Occupants	Up to 4 (4)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	Carpet Tile	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Carpet	Floor Drain	
Door / Size	42" x 84" Shielded SCWD	Central Bath Tub	
Hardware	Office	Eye Wash	
Window / Operation	No windows in this room	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	
Casework / Cabinetry	N/A	Floor Sink	
Special Wall Treatment	All four walls are to be shielded for radiation created by Gamma Spectroscopy Testing	Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair	2 (OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk	2 (OF&I)	Special Outlets	
Other		Emergency Power	
Shelving	(OF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	1
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)



DEDICATED CIRCUIT W/ UNINTERRUPTED
POWER REQUIRED FOR GAMMA SPECTROSCOPY

GAMMA SPECTROSCOPY

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

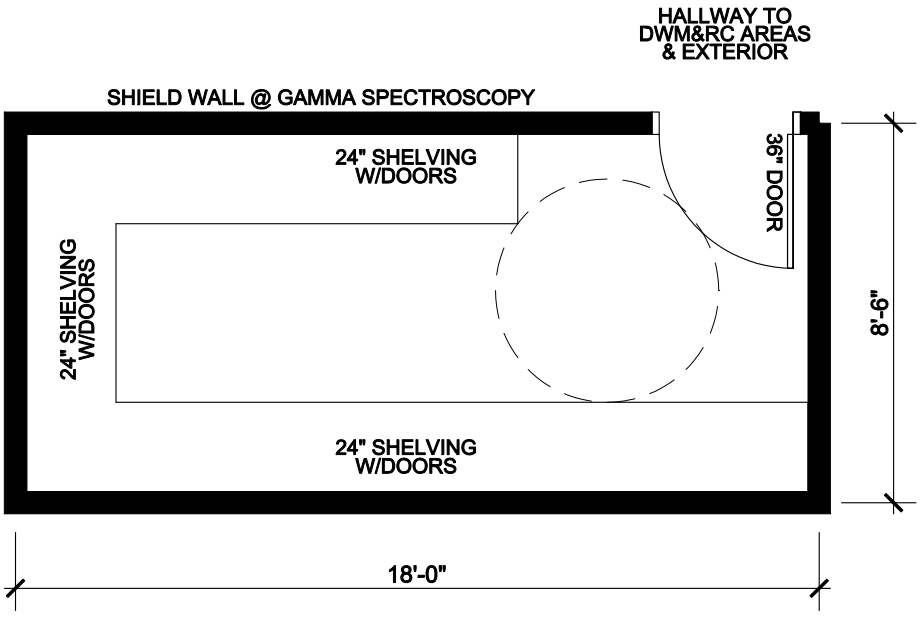
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■
WASTE MANAGEMENT AND RADIATION CONTROL DIVISION

ROOM NAME: PROGRAM STORAGE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Program Materials Storage	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Waste Management & Radiation Control	Humidity Min/Max	Per Code
Programmed Area	150 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	WM&RC Functions	Max. Noise Level	35
Access	WM&RC hallway -Exterior Parking	Air Pressure Min/Max	
Separation	Non WM&RC Functions	Controls	Central
Occupants	Up to 4 (4)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Rubber	Floor Drain	
Door / Size	36" x 84" SCWD	Central Bath Tub	
Hardware	Storage Room Lockset	Eye Wash	
Window / Operation		Drinking Fountain	
Window Treatment		Ice / Water Connection	
Casework / Cabinetry	Locked Storage Cabinets w/ Shelves	Floor Sink	
Special Wall Treatment	Walls adjacent to Gamma Spectroscopy are to be shielded for radiation .	Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair		Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Shelving	(CF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	
Washing Machine		Wireless Internet	
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	
Printer		CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)



PROGRAM STORAGE

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

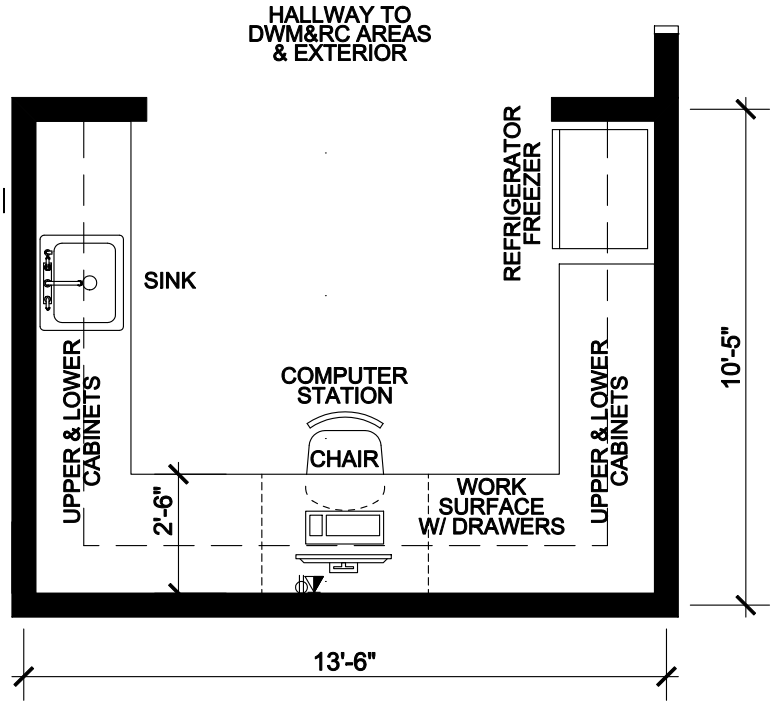
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■
WASTE MANAGEMENT AND RADIATION CONTROL DIVISION

ROOM NAME: FIELD SAMPLING PREPARATION & SAMPLE STORAGE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Field Sampling Preparation & Storage	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Waste Management & Radiation Control	Humidity Min/Max	Per Code
Programmed Area	150 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	WM&RC Functions	Max. Noise Level	35
Access	WM&RC hallway	Air Pressure Min/Max	
Separation	Non WM&RC Functions	Controls	Central
Occupants	Up to 4 (4)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	Number: 1 Type: M Single Faucet: GN
Ceiling	ACT	Water Filtration Type	DI Water
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Rubber	Floor Drain	
Door / Size	42" x 84" Galvanized Hollow Metal	Central Bath Tub	
Hardware	Exterior Lockset w/ Card Reder	Eye Wash	
Window / Operation	Windows w/ blinds	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	
Casework / Cabinetry	Perimeter lab counters w/drawers &	Floor Sink	
	doors & upper cabinets w/locks	Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair	1 (OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Shelving	(CF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator	1 (OF&I)	Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Computer Station	1 (OF&I)	Card Reader Lock	
Time Clock		Wireless Clock	1
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



FIELD PREP SAMPLE STORAGE

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

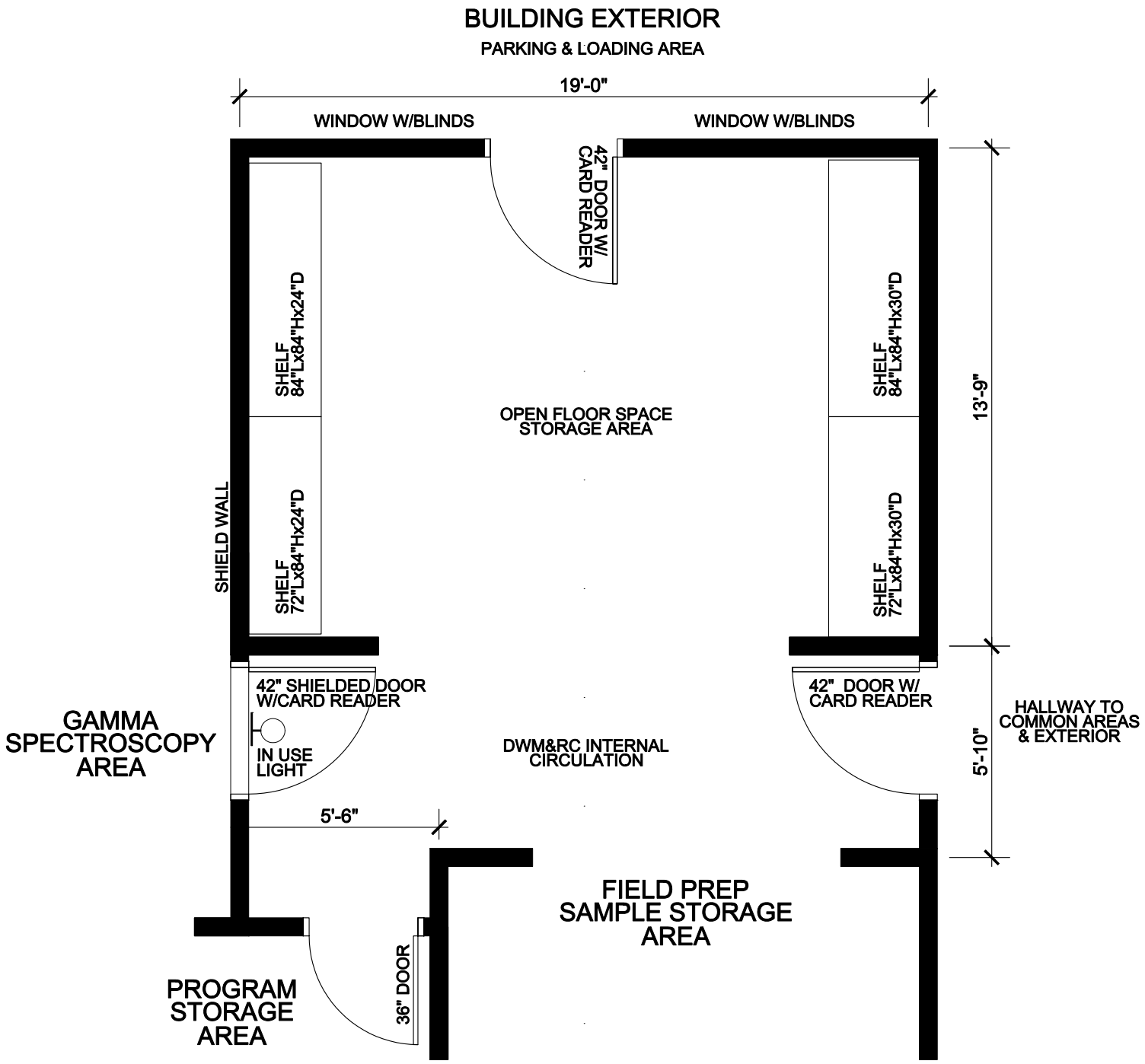
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■
WASTE MANAGEMENT AND RADIATION CONTROL DIVISION

ROOM NAME: FIELD SAMPLING EQUIPMENT STORAGE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Sampling Equipment Storage	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Waste Management & Radiation Control	Humidity Min/Max	Per Code
Programmed Area	250 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	WM&RC Functions	Max. Noise Level	35
Access	WM&RC hallway -Exterior Parking	Air Pressure Min/Max	
Separation	Non WM&RC Functions	Controls	Central
Occupants	Up to 4 (4)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Rubber	Floor Drain	
Door / Size	42" x 84" Galvanized Hollow Metal	Central Bath Tub	
Hardware	Exterior Lockset w/ Card Reder	Eye Wash	
Window / Operation	Windows w/ blinds	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	
Casework / Cabinetry	N/A	Floor Sink	
Special Wall Treatment	Walls adjacent to Gamma Spectroscopy are to be shielded for radiation .	Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair		Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk		Special Outlets	
Other		Emergency Power	
Shelving	(CF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Washing Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	1
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)



FIELD SAMPLING EQUIPMENT STORAGE & INTERNAL CIRCULATION

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

4.0 INDIVIDUAL SPACE REQUIREMENTS

DIVISION OF ENVIRONMENTAL RESPONSE AND REMEDIATION

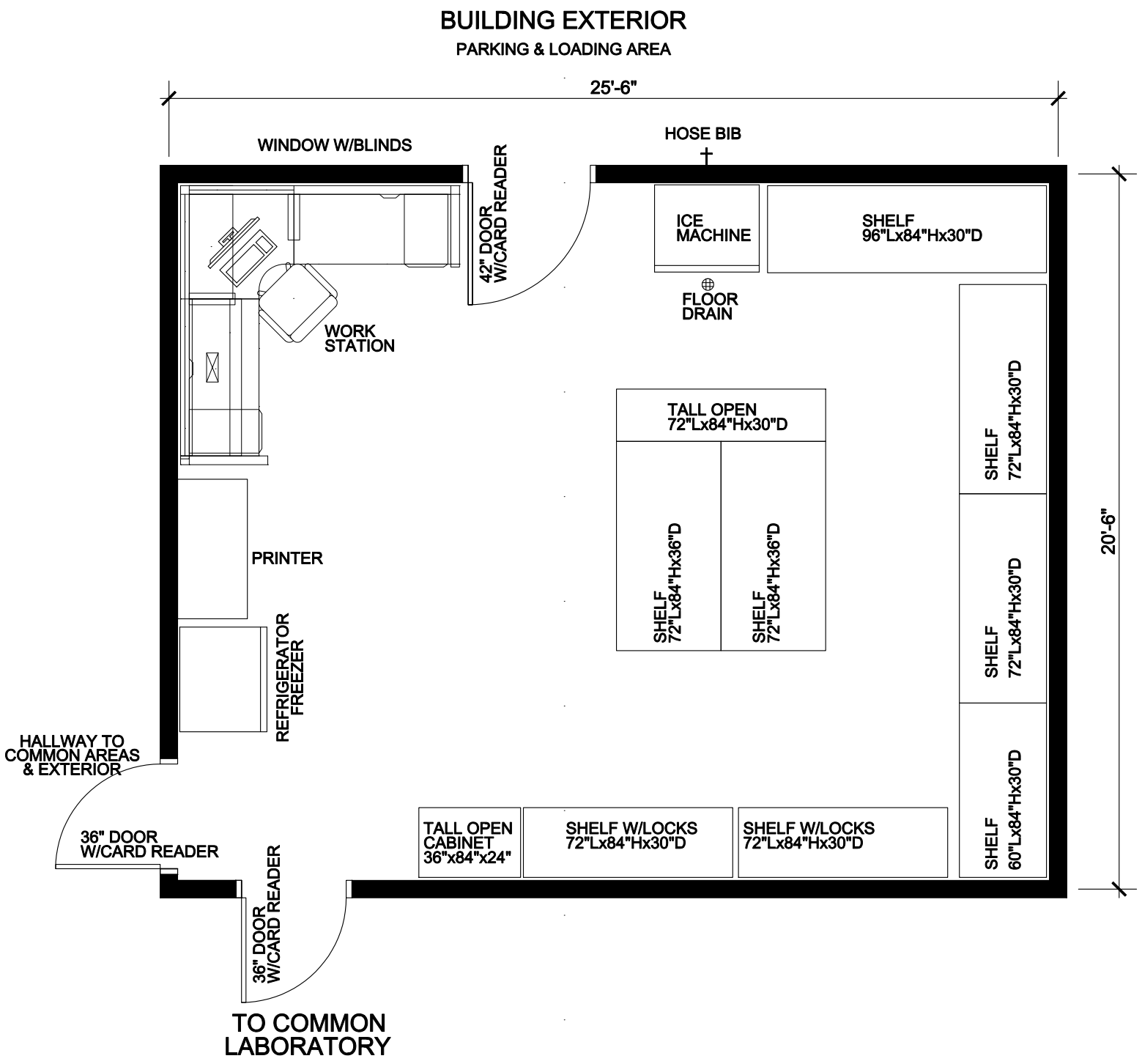
FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ ENVIRONMENTAL RESPONSE

ROOM NAME: ENVIRONMENTAL RESPONSE OFFICE

GENERAL REQUIREMENTS		**MECHANICAL**	
Use / Function	Division Office	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Drinking Water Quality Area	Humidity Min/Max	Per Code
Programmed Area	500 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Common Lab & Common Area	Max. Noise Level	35
Access	Common Hallway / Exterior Door	Air Pressure Min/Max	
Separation	Warehouse	Controls	Central
Occupants	Up to six (6)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Vinyl	Floor Drain	1 @ Ice Machine
Door / Size	36" x 84" SCWD / 42"x84" Insul HM	Central Bath Tub	
Hardware		Eye Wash	
Window / Operation	Required / Fixed Exterior	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	Yes
Casework / Cabinetry	N/A	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair	2 (OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk	1 (OF&I)	Special Outlets	
Other		Emergency Power	
Shelving	(OF&I)		
Work Bench			
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator	1 (OF&I)	Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Ice Machine	1 (OF&I)	Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water



DIVISION OF ENVIRONMENTAL RESPONSE AND REMEDIATION

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

4.0 INDIVIDUAL SPACE REQUIREMENTS

DIVISION OF DRINKING WATER

FACILITIES PROGRAM
DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

INDIVIDUAL SPACE REQUIREMENTS ■ DRINKING WATER DIVISION

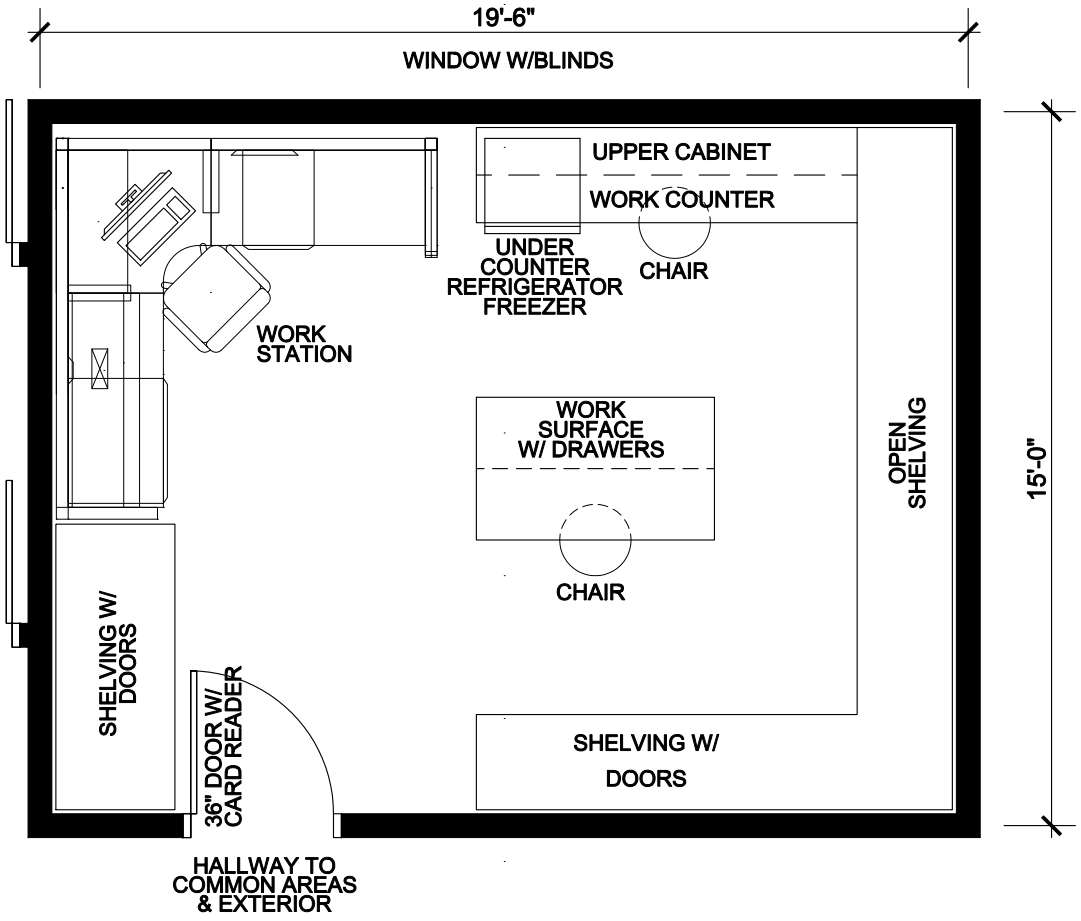
ROOM NAME: DRINKING WATER QUALITY OFFICE

GENERAL REQUIREMENTS		MECHANICAL	
Use / Function	Division Office	Temperature Min/Max	68° Minimum 74°Maximum
Building Zone	Drinking Water Quality Area	Humidity Min/Max	Per Code
Programmed Area	300 SF Minimum	Min. Air Change/Hr	Per Code
Number Required	1	Min. Outside Air/Hr	Per Code
Adjacency	Common Lab & Common Area	Max. Noise Level	35
Access	Common Hallway	Air Pressure Min/Max	
Separation	Warehouse	Controls	Central
Occupants	Up to six (6)		
Utilization	8 hrs/day 5 days/week		
ARCHITECTURAL		**PLUMBING**	
Floor	VCT	Sink	
Ceiling	ACT	Lavatory	
Minimum Ceiling Height	9'-0"	Toilet	
Walls	Painted Gypsum Wallboard/Paint	Shower	
Base / Wainscot	Vinyl	Floor Drain	
Door / Size	36" x 84" SCWD	Central Bath Tub	
Hardware		Eye Wash	
Window / Operation	Required / Fixed Exterior	Drinking Fountain	
Window Treatment	2" Horizontal Blinds	Ice / Water Connection	
Casework / Cabinetry	N/A	Floor Sink	
		Utility Sink	
FURNISHINGS		**ELECTRICAL**	
Table		General Lighting	30fc General / 30fc Task
Chair	2 (OF&I)	Specialty Lighting	
Sofa		Outlets	Convenience outlets @ walls 110
Desk	1 (OF&I)	Special Outlets	
Other		Emergency Power	
Shelving	(OF&I)		
Work Bench	1 (OF&I)		
EQUIPMENT		**TELEPHONE / DATA / SECURITY**	
Flat Screen TV		Telephone / Data	Yes
Lockers		Emergency Assistance	
Oven / Range		Call Station	
Refrigerator		Pull Cord Station	
Dishwasher		Media / Cable TV	
Disposal		Internet Connection	Yes 3 minimum
Ice Machine		Wireless Internet	Yes
Clothes Dryer		Intercom	
Bench		Alarm / Security	
Other		Card Reader Lock	
Time Clock		Wireless Clock	
Printer	1 (OF&I)	CCTV Access Cable	

* Owner Furnished Contractor Installed (OFCI) Contractor Furnished & Installed (CF&I) Owner Furnished & Installed (OF&I)
GN Goose Neck AR Acid Resistant DI Deionized Water UPW Ultra Pure Water

BUILDING EXTERIOR

PARKING & LOADING AREA



DIVISION OF DRINKING WATER

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8' 12'

5.0 COST ESTIMATE

COST ESTIMATE

DEPARTMENT OF ENVIRONMENTAL QUALITY
TECHNICAL SUPPORT CENTER COST ESTIMATE

CATEGORY	BUILDING AREA	COST/SQ FT	TOTAL COST
GENERAL CONDITIONS	21,600 SF	$35.06	$757,296.00
EXCAVATION	21,600 SF	$28.92	$624,672.00
LANDSCAPE	21,600 SF	$0.86	$18,576.00
PAVING	21,600 SF	$4.43	$95,688.00
CONCRETE	21,600 SF	$20.46	$441,936.00
FLOOR SEAL	21,600 SF	$1.47	$31,752.00
MASONRY	21,600 SF	$18.11	$391,176.00
JOIST & DECK	21,600 SF	$4.52	$97,632.00
STEEL	21,600 SF	$5.00	$108,000.00
MILL WORK	21,600 SF	$8.32	$179,712.00
ROOFING	21,600 SF	$7.22	$155,952.00
INSULATION	21,600 SF	$2.27	$49,032.00
METAL WALL PANELS	21,600 SF	$1.06	$22,896.00
GLASS & GLAZING	21,600 SF	$2.78	$60,048.00
FIXED EQUIPMENT AND SHELVING	21,600 SF	$3.50	$75,600.00
AUTO DOORS	21,600 SF	$0.50	$10,800.00
DOORS & HARDWARE	21,600 SF	$4.69	$101,304.00
FRAMING / DRYWALL	21,600 SF	$6.43	$138,888.00
CERAMIC TILE	21,600 SF	$1.87	$40,392.00
CARPET / FLOORING	21,600 SF	$4.03	$87,048.00
PAINTING	21,600 SF	$4.27	$92,232.00
LOCKERS	21,600 SF	$0.00	$0.00
O M DOORS & SEALS	21,600 SF	$0.23	$4,968.00
HVAC	21,600 SF	$13.24	$285,984.00
PLUMBING	21,600 SF	$8.42	$181,872.00
ELECTRICAL	21,600 SF	$22.17	$478,872.00
SUB TOTAL			**$4,532,328.00**
OTHER ESTIMATED EXPENSE			
RELOCATE POWER LINE BY OTHERS	$140,000.00		
BLOCK SCREEN WALL		$90,000.00	
GEO PIERS		$100,000.00	
EMERGENCY GENERATOR		$80,000.00	
10 TON FREE STANDING BRIDGE CRANE		$60,000.00	
ELEVATOR TO 25' AFF		$60,000.00	
CONNECTION & IMPACT FEES		$50,000.00	
SUB TOTAL			**$440,000.00**
TOTAL ESTIMATED CONSTRUCTION COST			**$4,972,328.00**

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6.0 ATTACHMENTS

6.1 GEOTECHNICAL INVESTIGATION

GORDON
GEOTECHNICAL
ENGINEERING, INC.

REPORT
GEOTECHNICAL STUDY
PROPOSED
DEQ TECHNICAL SUPPORT CENTER (TSC)
250 NORTH 1950 WEST
SALT LAKE CITY, UTAH CITY

October 28, 2016

Job No. 059-003-16

Prepared for:
Utah Department of Environmental Quality
% Frank Murdock Jr. Architect & Associates
975 East 100 South, Suite 100
Salt Lake City, Utah 84102

Prepared by:
Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123
Tel: 801-327-9600
Fax: 801-327-9601
www.gordongeotech.com

October 28, 2016
Job No. 059-003-16

Utah Department of Environmental Quality
% Frank Murdock Jr. Architect & Associates
975 East 100 South, Suite 100
Salt Lake City, Utah 84102

Attention: Mr. Frank Murdock

Ladies and Gentlemen:

Re: Report
Geotechnical Study
Proposed DEQ Technical Support Center (TSC)
250 North 1950 West
Salt Lake City, Utah City

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our detailed geotechnical study performed at the site of proposed DEQ Technical Support Center (TSC) to be constructed at 250 North 1950 West in Salt Lake City, Utah. The general location of the site with respect to major topographic features and existing facilities, as of 1998, is presented on Figure 1, Vicinity Map. A more detailed location of the site with respect to adjoining facilities, parking lots, and roadways, on an air photograph base, is presented on Figure 2, Area Map. A detailed layout of the site is presented on Figure 3, Site Plan. The locations of the borings drilled in conjunction with this study are also presented on Figure 3.

During the course of this study, many of the conclusions and recommendations summarized herein were presented to the representatives of the design team.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of our study were planned in discussions between Mr. Frank Murdock, project architect, and Mr. Bill Gordon of Gordon Geotechnical Engineering, Inc. (G^2).

In general, the objectives of this study were to:

1. Accurately define and evaluate the subsurface soil and groundwater conditions across the site.

2. Provide appropriate foundation, earthwork, pavement, and geoseismic parameters and recommendations to be utilized in the design and construction of the proposed facility.

In accomplishing these objectives, our scope has included the following:

1. A field program consisting of the drilling, logging, and sampling of 5 exploration borings to depths extending to 5.0 to 41.5 feet.

2. A laboratory testing program.

3. An office program consisting of the correlation of available data, engineering analyses, and the preparation of this summary report.

1.3 AUTHORIZATION

Authorization was provided verbally for our Professional Services Agreement No. 16.0710 dated July 21, 2016.

1.4 PROFESSIONAL STATEMENTS

Supporting data upon which our recommendations are based are presented in subsequent sections of this report. Recommendations presented herein are governed by the physical properties of the soils encountered in the exploration borings, measured and projected groundwater conditions, and the layout and design data discussed in Section 2., Proposed Construction, of this report. If subsurface conditions other than those described in this report are encountered and/or if design and layout changes are implemented, G^2 must be informed so that our recommendations can be reviewed and amended, if necessary.

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

2. PROPOSED CONSTRUCTION

The layout and design of the proposed structure is in the planning stages. It is, however, known that the structure will be one to one-extended level in height, slab-on-grade, and of light steel-frame and masonry construction with adjoining pavement for access parking and storage.

Within the structure will be an independent concrete slab which will be designed to be "vibration free" and will be used for the calibration of sensitive equipment. The remainder of the floor slab will be of standard construction.

Maximum anticipated column and wall loads are 60 kips and 6 kips per lineal foot, respectively. Floor slab loads are projected to be 150 to 200 pounds per square foot.

3. INVESTIGATIONS

3.1 FIELD PROGRAM

In order to define and evaluate the subsurface soil and groundwater conditions across the site, 5 exploration borings were drilled to depths ranging from 5.0 to 41.5 feet with a rubber tire truck-mounted drill rig equipped with hollow-stem augers. Locations of the borings are presented on Figure 3.

The field portion of our study was under the direct control and continual supervision of an experienced member of our geotechnical staff. During the course of the drilling operations, a continuous log of the subsurface conditions encountered was maintained. In addition, relatively undisturbed and small disturbed samples of the typical soils encountered were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications have been supplemented by subsequent inspection and testing in our laboratory. Detailed graphical representation of the subsurface conditions encountered is presented on Figures 4A through 4E, Log of Borings. Soils were classified in accordance with the nomenclature described on Figure 5, Unified Soil Classification System.

A 3.25-inch outside diameter, 2.42-inch inside diameter drive sampler (Dames & Moore) was utilized in the majority of the subsurface sampling at the site. Additionally, a 2.0-inch outside diameter, 1.38-inch inside diameter drive sampler (SPT) was utilized at select locations and depths. The blow counts recorded on the boring logs were those required to drive the sampler 12 inches with a 140-pound hammer dropping 30 inches.

Following completion of drilling operations, one and one-quarter-inch diameter slotted PVC pipe was installed in Borings B-1, B-2, and B-3 in order to provide a means of monitoring the groundwater fluctuations.

3.2 LABORATORY TESTING

3.2.1 General

In order to provide data necessary for our engineering analyses, a laboratory testing program was performed. The program included moisture and density, partial gradation, consolidation, and chemical tests. The following paragraphs describe the tests and summarize the test data.

3.2.2 Moisture and Density Tests

To aid in classifying the soils and to help correlate other test data, moisture and density tests were performed on selected undisturbed samples. The results of these tests are presented on the boring logs, Figures 4A through 4E.

3.2.3 Partial Gradation Tests

To aid in classifying the soils and to provide general index parameters, partial gradation tests were performed upon representative samples of the soils encountered in the exploration borings. The results of the tests are tabulated below:

	Percent Passing	
Sieve Size	**B-1 @ 8.0'**	**B-3 @ 9.5'**
No. 200	25.7	27.5
Soils Classification	SM	SM

3.2.4 Consolidation Tests

To provide data necessary for our settlement analyses, a consolidation test was performed upon two representative samples of the soils encountered at the site. The data obtained from this test was used to calculate foundation movements which could occur under anticipated foundation loadings. Based upon data obtained from the consolidation test, the silty clay soils are moderately over-consolidated and will exhibit moderately low compressibility characteristics when loaded beneath the over-consolidated pressure. Detailed results of the tests are maintained within our files and can be transmitted to you, at your request.

3.2.5 Chemical Tests

To determine if the site soils will react detrimentally with concrete, chemical tests were performed on a representative sample of the soils. The results of the chemical tests are tabulated below:

Boring No.	Depth (feet)	Soil Classification	pH	Total Water Soluble Sulfate (ppm)
B-1	3.0	CL-FILL	7.52	3,570

4. SITE CONDITIONS

4.1 SURFACE

The site is an open undeveloped parcel blanketed by non-engineered fill in a few areas and a moderate growth of grasses and weeds. To the north and east there is an approximately 577 feet high terrain and then residential home and yards. To the immediate west is an at-grade asphalt concrete parking lot and then the Utah State Library for the Blind building to the immediate south is more asphalt concrete parking.

The overall site is relatively flat with maximum overall relief of two to three feet.

Representative photographs of the site area are shown on Figures 6A and 6B, Photographs.

4.2 SUBSURFACE SOIL AND GROUNDWATER

At all boring locations surficial fills consisting of silty clays with some fine sand and gravels and silty fine and coarse gravels with some silt were encountered. The fills extend to depths ranging from three to five and one-half feet. The fills consist predominantly of silty clays with some occasional sands and gravels. In Boring B-3, the upper one foot of the fill consist of silty fine to coarse sand and gravel. The fill is most likely associated with previous construction in the area and will exhibit variable and, in some cases, poor engineering characteristics.

The fills are underlain by natural silty clays with some fine sand and fine sandy clays grading to clayey fine sand. These soils will exhibit moderate strength and compressibility characteristics. A definitive topsoil layer between the top of the projected natural soils and fills was not observed. Silty clays extended to the depths penetrated in Borings B-4 and B-5 to five feet. In the remaining borings the clayey fine sands/fine sandy clays are, in turn, underlain by a layer of silty fine sands and relatively clean fine to fine to medium sand which extend to depths ranging from 10.5 feet in Boring B-1 to 16.0 feet in Boring B-3. These sands are generally loose to

medium dense. Some of these sands will liquefy during a major seismic event. This will result in significant total and differential settlements.

Underlying the sands in Borings B-1 and B-2 is a layer of silty clay which extends to depths ranging from 27.0 feet in Boring B-1 to the depth penetrated in Boring B-2, 21.5 feet. These clays are generally medium stiff and only moderately over-consolidated. When loaded below the over-consolidated pressure, the clays will exhibit relatively low compressibility characteristics. When more highly loaded, the clays become highly compressible.

In Boring B-1 at a depth of 27.0 feet and extending to a depth of 39.0 feet is an additional layer of sand which is generally medium dense and non-liquefiable. Underlying this sand and extending to the depths penetrated, 41.5 feet, is a soft silty clay which is moderately compressible.

Immediately following drilling operations, groundwater was measured at depths ranging from 7 to 11 feet below existing grade. Seasonal and longer-term groundwater fluctuations on the order of one-half to two feet are projected with the highest seasonal levels generally occurring during the late spring and early summer months.

5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

In conjunction with this study, we encountered potentially liquefiable saturated sands in the near-surface soil sequence across the site. It is our recommendation that these sands be improved in-situ in order to reduce the potential for liquefaction during a major seismic event. Ultimately the structure may be supported upon conventional spread and continuous wall footings placed over rammed aggregate piers/Geopiers®. These rammed aggregate piers/Geopiers® will not only improve the saturated sandy soil against liquefaction but improve the soil so that the building can be supported upon conventional spread and continuous wall footings. The saturated sandy soils were found to extend to maximum depth of 16 feet.

The site was also found to be blanketed by three to five and one-half feet of non-engineered fills which were probably placed in conjunction with previous construction in the area. These fills are not unsuitable for the direct support of the foundations and floor slabs. The upper fill soils must be removed in conjunction with site development and replaced with compacted granular structural fill. In summary, the subsurface conditions encountered at the site are poor when related to the non-engineered fills and potentially liquefiable sands but with proper improvement will be suitable to support the relatively light loads associated with the proposed structure and floor slab loads.

In the following sections, detailed discussions pertaining to rammed aggregate piers/Geopiers®, conventional spread and continuous foundations, lateral resistance and pressure, floor slabs, earthwork, pavements, and the geoseismic setting of the site are provided.

5.2 RAMMED AGGREGATE PIERS/GEOPIERS®

5.2.1 Design Data

Ground improvement using rammed aggregate piers/Geopiers® will control settlements and allow for the structure to be supported upon conventional spread and wall foundations. As an added benefit the foundations may be proportioned using a higher bearing pressure and some of existing non-engineered fills may potentially remain in place. It should be noted, however, that the existing non-engineered fills will need to either be removed or improved with rammed aggregate piers/Geopiers® some of the floor slab areas as well. More details are presented in see Section 5.6, Floor Slabs.

Rammed aggregate piers/Geopiers® are constructed by drilling a 24- or 30-inch diameter hole through the non-engineered fills, the natural silty clay soils, and the saturated sand soil then building a bottom bulb of clean, open-graded stone using a beveled, high-energy tamper.

The rammed aggregate piers/Geopiers® shaft is constructed on top of the bottom bulb using well-graded highway base course stone placed in thin lifts (12 inches compacted thickness). Rammed aggregate piers/Geopiers® shaft lengths for this project will likely extend to a depth of approximately 10 to 16 feet from the existing ground surface. The result of construction is a reinforced zone of soil directly under the footings and selected floor slab that allows for the construction of shallow spread footings proportioned for a relatively high bearing pressure. Rammed aggregate piers/Geopiers® elements are spaced singularly under continuous footings or in close groups to support concentrated column loads.

The installer should provide a rammed aggregate piers/Geopiers® layout and detailed design calculations sealed by a professional engineer licensed in the State of Utah. The design calculations should demonstrate that rammed aggregate piers/Geopiers® soil reinforcement is designed to control settlement to magnitudes within the criteria for this project.

Names and numbers for contacts for these systems are below:

Geopiers® Foundation Company
David Plehn @ 801-269-8012

Nicholson Construction Company
Ryan Hall @ 801-296-5899

Jones Drilling & Shoring
Paul Hammond @ 801-280-2908

Malcolm Drilling Company
Scott Chambers @ 801-972-1126

Hayward Baker Inc.
Todd E. Ross @ 801-363-0546

Representatives of G^2 would be more than happy to sit down with representatives of the design-build team and these contractors to further discuss the available options.

5.3 SPREAD AND CONTINUOUS WALL FOUNDATIONS

5.3.1 Design Data

After the installation of the rammed aggregate piers/Geopiers® conventional spread and continuous wall foundations may then be installed. For design, the following parameters are provided:

Minimum Recommended Depth of Embedment for Frost Protection	- 30 inches
Minimum Recommended Depth of Embedment for Non-frost Conditions	- 15 inches
Recommended Minimum Width for Continuous Wall Footings	- 18 inches
Minimum Recommended Width for Isolated Spread Footings	- 24 inches
Recommended Net Bearing Pressure for Real Load Conditions	- 3,500 pounds per square foot
Bearing Pressure Increase for Seismic Loading	- 50 percent

The term “net bearing pressure” refers to the pressure imposed by the portion of the structure located above lowest adjacent final grade. Therefore, the weight of the footing and backfill to lowest adjacent final grade need not be considered. Real loads are defined as the total of all

dead plus frequently applied live loads. Total load includes all dead and live loads, including seismic and wind.

5.3.2 Installation

The potentially liquefiable sands extend to depths ranging from 9.5 to 16.0 feet. The upper limit of the sand is generally encountered at depths of five to eight feet. The majority of the structure will be supported upon continuous wall foundations. It is recommended that one row of rammed aggregate piers/Geopiers® be installed beneath the centerline of the continuous wall foundations with a second and third parallel lines of rammed aggregate piers/Geopiers® be installed staggered between the centerline piers at a distance of four feet from the centerline of the footings. In some areas where there are clusters of proposed continuous wall foundations it may be more prudent to install rammed aggregate piers/Geopiers® under the entire floor slab area at approximately five-foot centers.

5.3.3 Settlements

Maximum settlements of foundations designed and installed in accordance with recommendations presented herein and supporting maximum anticipated loads as discussed in Section 2., Proposed Construction, are anticipated to be on the order of three-quarter to one-half of an inch.

Approximately 60 percent of the quoted settlement should occur during construction.

5.4 LATERAL RESISTANCE

Lateral loads imposed upon foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footings and the supporting soils. In determining frictional resistance, a coefficient of 0.42 should be utilized. Passive resistance provided by properly placed and compacted granular structural fill above the water table may be considered equivalent to a fluid with a density of 300 pounds per cubic foot. Below the water table, this granular soil should be considered equivalent to a fluid with a density of 150 pounds per cubic foot.

A combination of passive earth resistance and friction may be utilized provided that the friction component of the total is divided by 1.5.

5.5 LATERAL PRESSURES

For more rigid walls that are not more than six feet in height, such as loading dock bulkheads, elevator pits, etc., three-quarter- to one-inch minus clean gap-graded gravel should be used as backfill extending out at least 18 inches back of the wall. The gravel should be procedurally

compacted and may be considered equivalent to a lateral pressure with an equivalent fluid density of 45 pounds per cubic foot.

For seismic loading, a uniform pressure of 100 pounds per square foot should be added.

5.6 FLOOR SLABS

In all cases, we recommend that floor slabs be underlain by four inches of properly compacted aggregate base, an underlying layer of filter fabric, such as Mirafi 500X or 600X, and a bottom four-inch layer of clean open-graded crushed one-half- to three-quarter-inch gravel which will act as a capillary break. Settlements of lightly loaded floor slabs should be negligible.

A portion of the floor slab approximately 20 foot square will be used for vibration calibration and testing. It is essential that this portion of the floor be totally independent of the adjacent floor slabs. This floor slab must be underlain by the rammed aggregate piers/Geopiers® on four-foot centers in order to control settlements associated with liquefaction and to "stiffen" the underlying soils. Specific analysis must be performed on the slab in this area depending upon the inputs provided by the owner. It is, however, our experience that this slab will be at least two feet thick and reinforced.

5.7 EARTHWORK

5.7.1 Site Preparation

Preparation of the site will include the removal of surface vegetation, topsoil, and at least two feet of the existing non-engineered fills which blanket the site. Vegetation and other deleterious materials should be removed from the site. Stripped topsoil will be unsuitable for structural fill but may be stockpiled for subsequent landscaping purposes. The underlying silty clay fills should also be removed from the site area since they will be extremely difficult to properly re-utilized as structural fill. Once the desired subgrade elevation has been achieved and before the placement of floor slabs and/or structural fill for floor slabs and pavements, the exposed subgrade should be proofrolled by running over the surface continuously at least three times with a loaded 10-wheeler truck. If zones of excessive deformation are encountered, they should be further removed to a depth of two feet and replaced with coarse granular fill consisting of one- to one and one-half-inch crushed gravels or recycled concrete.

5.7.2 Excavations

Temporary construction excavations not exceeding four feet may be constructed with near-vertical sideslopes. Excavations deeper than six feet are not anticipated and penetrating cohesive soils can be constructed with sideslopes of one-half horizontal to one vertical. If granular soils are encountered, especially beneath the water table. Significantly flatter sideslopes will be required.

All excavations must be inspected periodically by qualified personnel. If any signs of instability are noted, immediate remedial action must be initiated.

5.7.3 Structural Fill

Structural fill utilized as replacement fill beneath floor slabs and pavements and as backfill over utilities should consist of silty fine to coarse sands and gravels. For structural site grading fill, which is fill placed over fairly large open areas to raise the overall site grade, the maximum particle size can be four inches. In confined areas, the maximum particle size should be restricted to two and one-half inches. The maximum amount of fines; that is, material passing the No. 200 sieve, should be restricted to 18 percent.

5.7.4 Fill Placement and Compaction

All structural fill placed beneath foundations must be compacted to at least 95 percent of the maximum dry density as determined by the AASHTO[1] T-180 (ASTM[2] D-1557) compaction criteria. All other structural fills not exceeding two feet in thickness should be compacted to at least 90 percent of the above-defined criteria.

5.7.5 Utility Trenches

All utility trench backfill material below structurally loaded facilities (flatwork, floor slabs, roads, etc.) should be placed at the same density requirements established for structural fill. If the surface of the backfill becomes disturbed during the course of construction, the backfill should be proofrolled and/or properly compacted prior to the construction of any exterior flatwork over a backfilled trench. Proofrolling may be performed by passing moderately loaded rubber tire-mounted construction equipment uniformly over the surface at least twice. If excessively loose or soft areas are encountered during proofrolling, they should be removed to a maximum depth of two feet below design finish grade and replaced with structural fill.

Most utility companies and City-County governments are now requiring that Type A-1 or A-1-a (AASHTO Designation – basically granular soils with limited fines) soils be used as backfill over utilities. These organizations are also requiring that in public roadways the backfill over major utilities be compacted over the full depth of fill to at least 96 percent of the maximum dry density as determined by the AASHTO T-180 (ASTM D-1557) method of compaction. We recommend that as the major utilities continue onto the site that these compaction specifications are followed.

The natural fine-grained cohesive soils are not recommended for use as trench backfill.

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1 American Association of State Highway and Transportation Officials
2 American Society for Testing and Materials

5.8 PAVEMENTS

The natural fine-grained soils will exhibit poor pavement support characteristics when saturated or nearly saturated. Considering the clayey silts as the design subgrade soils and the projected traffic conditions, the following pavement sections are recommended:

Parking Areas

(Moderate Volume of Automobiles and Light Trucks
with Occasional Medium-Weight and No Heavy-Weight Trucks)
[1 to 2 equivalent 18-kip axle loads per day]

Flexible Pavements:
(Asphalt Concrete)

2.5 inches	Asphalt concrete
7.0 inches	Aggregate base course
Over	Properly prepared structural site grading fill extending to properly prepared non-engineered fill and/or natural subgrade soils

Rigid Pavements:
(Non-reinforced Concrete)

5.0 inches	Portland cement concrete (non-reinforced)
4.0 inches	Aggregate base course
Over	Properly prepared structural site grading fill extending to properly prepared non-engineered fill and/or natural subgrade soils

Roadway Areas

(Moderate Volume of Automobiles and Light Trucks
with Occasional Medium-Weight and Heavy-Weight Trucks)
[5 to 8 equivalent 18-kip axle loads per day]

Flexible Pavements:
(Asphalt Concrete)

3.0 inches	Asphalt concrete
8.0 inches	Aggregate base course
Over	Properly prepared structural site grading fill extending to properly prepared non-engineered fill and/or natural subgrade soils

Rigid Pavements:
(Non-reinforced Concrete)

6.0 inches	Portland cement concrete (non-reinforced)
4.0 inches	Aggregate base course
Over	Properly prepared structural site grading fill extending to properly prepared non-engineered fill and/or natural subgrade soils

For dumpster pads, we recommend a pavement section consisting of six and one-half inches of Portland cement concrete, four inches of aggregate base course, over properly prepared natural subgrade or site grading structural fills.

Asphalt concrete and base course components should meet the requirements and be placed in accordance with the Utah Department of Transportation specifications.

The above rigid pavement sections are for non-reinforced Portland cement concrete. Construction of the rigid pavement should be in sections 10 to 12 feet in width with construction or expansion joints or one-quarter depth saw-cuts on no more than 12-foot centers. Saw-cuts must be completed within 24 hours of the “initial set” of the concrete and should be performed under the direction of the concrete paving contractor. The concrete should have a minimum 28-day unconfined compressive strength of 4,000 pounds per square inch and contain 6 percent ±1 percent air-entrainment.

5.9 GEOSEISMIC SETTING

5.9.1 General

As of July 2016, the State of Utah has adopted the International Building Code (IBC) 2015. The IBC 2015 code determines the seismic hazard for a site based upon 2008 mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class. The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

The structure must be designed in accordance with the procedure presented in Section 1613, Earthquake Loads, of the IBC 2015 edition.

5.9.2 Faulting

Based on our review of available literature, no active faults pass through or immediately adjacent to the site.

5.9.3 Soil Class

For dynamic structural analysis, the Site Class D - Stiff Soil Profile as defined in Table 20.3-1, Site Classification, of ASCE 7-10 April 6, 2011 can be utilized.

5.9.4 Ground Motions

The IBC 2015 code is based on 2008 USGS mapping, which provides peak values of short and long period accelerations (S_S, S_1) for the Site Class B-C boundary for the Maximum Considered Earthquake (MCE). This Site Class B-C boundary represents a hypothetical bedrock surface and must be corrected for local soil conditions. The following table summarizes the peak ground and short and long period accelerations for this site for a MCE event and incorporates a soil amplification factor for a Site Class D soil profile in the second column. Based on the site latitude and longitude (40.7766 degrees north and 111.9458 degrees west, respectively), the values for this site are tabulated below:

Spectral Acceleration Value, T Seconds	**Site Class D [adjusted for site class effects] (% g)**
Peak Ground Acceleration	67.0
0.2 Seconds, (Short Period Acceleration)	S_{MS} = 160.5
1.0 Seconds (Long Period Acceleration)	S_{M1} = 83.9

The IBC 2015 code design accelerations (S_{DS} and S_{D1}) are based on multiplying the above accelerations (S_{MS} and S_{M1}) for the MCE event by two-thirds (⅔).

5.9.5 Liquefaction

Analysis indicate that many of the saturated sands encountered at five to eight feet will liquefy during a major seismic event. Resulting settlements could be three to four inches. Soil improvement as previously discussed will, therefore, be required beneath footings and vibration sensitive slab.

5.10 CEMENT TYPES

The laboratory tests indicate that the site soils contain significant amounts of water soluble sulfates. Therefore, all concrete which will be in contact with the site soils should be prepared using Type II cement. As alternatives:

1. Type I or IA cement may be utilized provided that the mix is enriched by one bag of cement per cubic yard.

2. A standard Type I or IA mix may be utilized if the mix contains 10 to 15 percent Pozzolan.

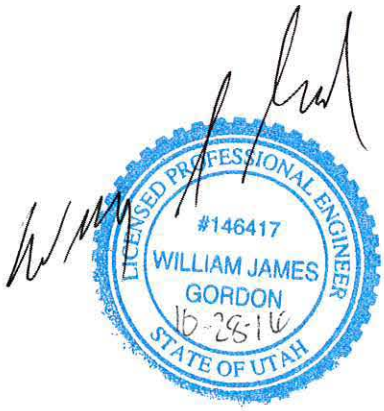
We appreciate the opportunity of providing this service for you. If you have any questions or require additional information, please do not hesitate to contact us.

Respectfully submitted,

Gordon Geotechnical Engineering, Inc.

William J. Gordon, State of Utah No. 146417
Professional Engineer

WJG:sn

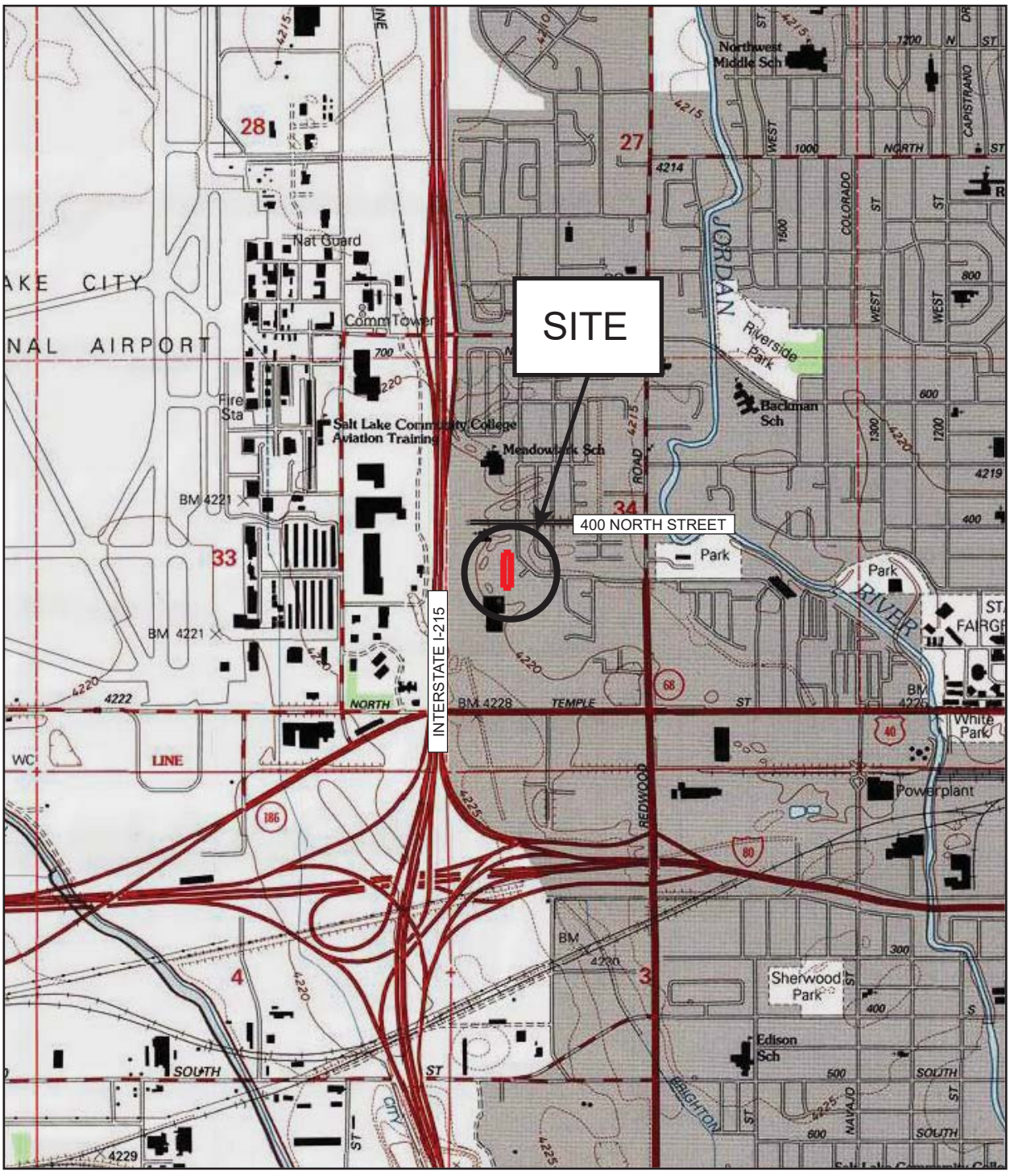


Encl. Figure 1, Vicinity Map
Figure 2, Area Map
Figure 3, Site Plan
Figures 4A through 4E, Log of Borings
Figure 5, Unified Soil Classification System
Figures 6A and 6B, Photographs

Addressee (3 + email)

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
JOB NO. 059-003-16

GORDON GEOTECHNICAL ENGINEERING, INC.



SCALE IN FEET
1000 0 1000 2000

FIGURE 1
VICINITY MAP

REFERENCE:
USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP
TITLED "SALT LAKE CITY NORTH, UTAH", DATED 1998

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
JOB NO. 059-003-16

GORDON GEOTECHNICAL ENGINEERING, INC.

INTERSTATE I-215

DORALMA STREET

UTAH STATE LIBRARY FOR THE BLIND

PROPOSED BUILDING FOOTPRINT

OVERALL SITE

Taurus Cir

#1
#2
#3
#4
#5
#6
#7

see Figures 6A and 6B, Photographs

450 N 1950 W

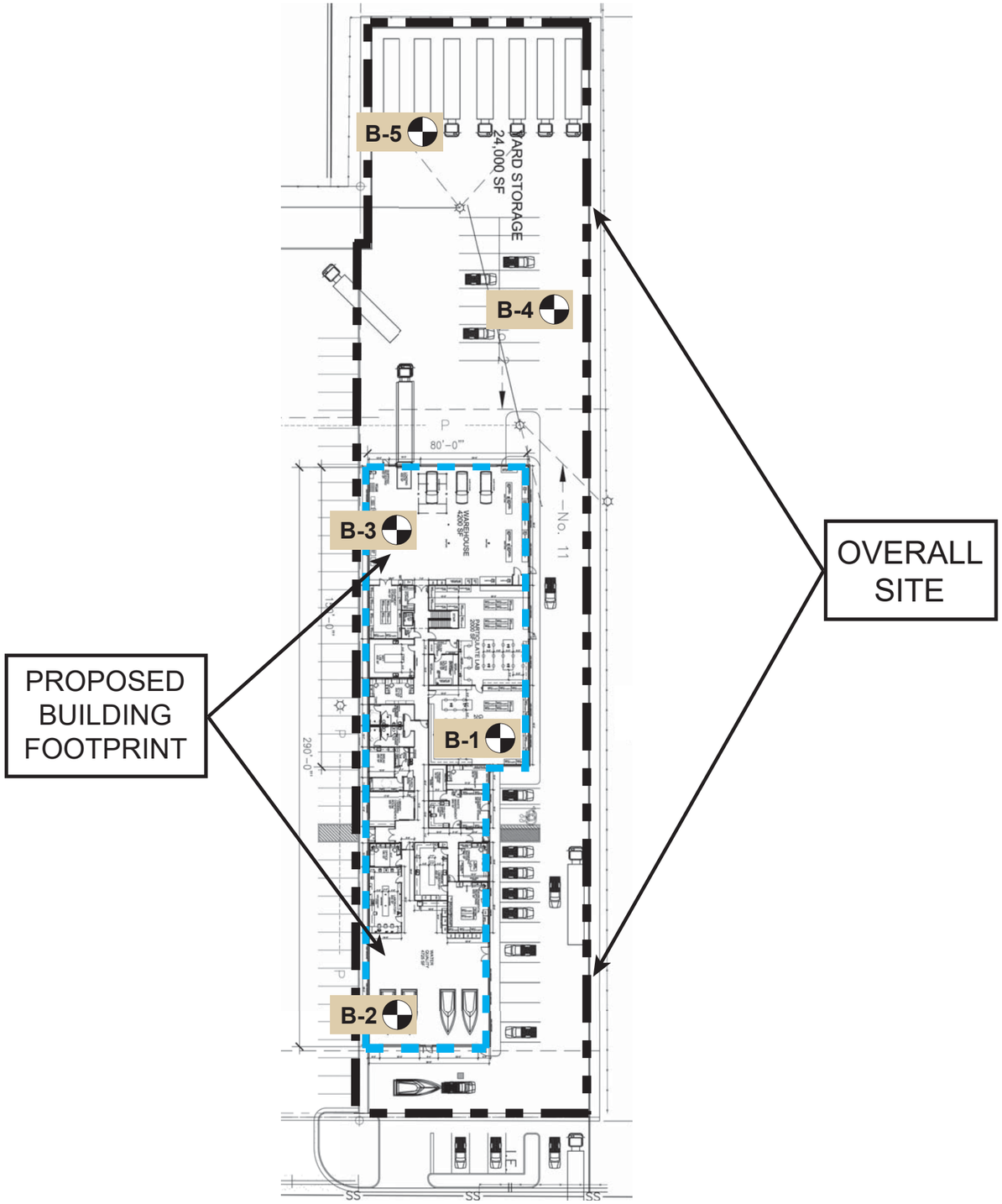
REFERENCE:
ADAPTED FROM AERIAL PHOTOGRAPH
DOWNLOADED FROM 2016 GOOGLE EARTH
IMAGERY DATED JULY 8, 2016

FIGURE 2
AREA MAP

SCALE: feet 1000
meters 300

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
JOB NO. 059-003-16

GORDON GEOTECHNICAL ENGINEERING, INC.



NOT TO SCALE

REFERENCE:
ADAPTED FROM DRAWING PROVIDED BY CLIENT, NOT DATED

FIGURE 3
SITE PLAN

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123

BOREHOLE B-1

Project Name: Proposed DEQ Technical Support Center (TSC)
Project No.: 059-003-16
Location: 250 North 1950 West, Salt Lake City, Utah
Client: Utah Department of Environmental Quality
Drilling Method: 3.75" ID Hollow-Stem Auger
Date Drilled: 09-30-16
Elevation: ---
Water Level: 7.0' (09-30-16)
Remarks:

DESCRIPTION	DEPTH (FT.)	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
SILTY CLAY, FILL with some fine sand; major roots (topsoil) to 3"; brown and dark brown (CL-FILL)									moist loose
		D	18						stiff
CLAYEY FINE SAND with occasional up to 4" thick layers of silty fine sand; brownish-gray (SC)	5	D	14						very moist loose
									saturated
FINE TO MEDIUM SAND with trace silt; brownish-gray (SP)		D	19	25.7	96	1.5			saturated loose
SILTY CLAY with some fine sand; gray (CL)	10	SPT	2						saturated soft
		D	P	58.1	66				
	15	D	5						medium stiff
grades with occasional up to 4" thick layers of silty fine sand	20	SPT	2						soft
	25								

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for a proper understanding of the nature of the subsurface material.

FIGURE 4A

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123

BOREHOLE B-1

Project Name: Proposed DEQ Technical Support Center (TSC)
Project No.: 059-003-16
Location: 250 North 1950 West, Salt Lake City, Utah
Client: Utah Department of Environmental Quality
Drilling Method: 3.75" ID Hollow-Stem Auger
Date Drilled: 09-30-16
Elevation: ---
Water Level: 7.0' (09-30-16)
Remarks:

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
grades with occasional up to 1"-2" inch thick layers of silty fine sand			25		D	6						medium stiff
SILTY FINE SAND gray (SM)			30		SPT	30						saturated medium dense
			35		SPT	23						
SILTY CLAY with some fine sand; gray (CL)			40		SPT	3						saturated soft
Stopped drilling at 40.0'. Stopped sampling at 41.5'. Installed slotted PVC pipe to 15.0'.			45 50									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for a proper understanding of the nature of the subsurface material.

FIGURE 4A
(con't)

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123

BOREHOLE B-2

Project Name: Proposed DEQ Technical Support Center (TSC)
Project No.: 059-003-16
Location: 250 North 1950 West, Salt Lake City, Utah
Client: Utah Department of Environmental Quality
Drilling Method: 3.75" ID Hollow-Stem Auger
Date Drilled: 09-30-16
Elevation: ---
Water Level: 7.5' (09-30-16)
Remarks:

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
SILTY CLAY, FILL with some fine sand; major roots (topsoil) to 3"; brown (CL-FILL)												moist loose
					D	37						stiff
FINE SANDY CLAY grading CLAYEY FINE SAND brown (CL)			5		D	18						moist stiff
												saturated
SILTY FINE SAND brown (SM)					SPT	5						saturated loose
SILTY CLAY with occasional up to 2" thick layers of silty fine sand; gray (CL)			10									saturated medium stiff
					D	P	30.9	91				
grades with trace fine sand			15									
					D	P						
Stopped drilling at 20.0'. Stopped sampling at 21.5'. Installed slotted PVC pipe to 21.5'.			20 25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for a proper understanding of the nature of the subsurface material.

FIGURE 4B

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123

BOREHOLE B-3

Project Name: Proposed DEQ Technical Support Center (TSC)
Project No.: 059-003-16
Location: 250 North 1950 West, Salt Lake City, Utah
Client: Utah Department of Environmental Quality
Drilling Method: 3.75" ID Hollow-Stem Auger
Date Drilled: 09-30-16
Elevation: ---
Water Level: 11.0' (09-30-16)
Remarks:

DESCRIPTION	DEPTH (FT.)	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
SILTY FINE AND COARSE GRAVEL, FILL with some fine to coarse sand; brown (GM/SM-FILL)		B							moist loose
SILTY CLAY, FILL with some fine sand and fine gravel; brown (CL-FILL)		D	58	10.9	105				moist hard
	5	D	62	34.6	63				
SILTY CLAY with some fine sand; dark brown (CL)		D	9						moist very stiff stiff
SILTY FINE SAND brown (SM)	10	SPT	12	36.7		27.5			very moist medium dense saturated
FINE TO COARSE SAND with trace silt; gray (SP)	15	SPT	22						saturated medium dense
SILTY CLAY with some fine sand; gray (CL)	20	SPT	3						saturated soft
Stopped drilling at 19.0'. Stopped sampling at 20.5'. Installed slotted PVC pipe to 20.5'.	25								

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for a proper understanding of the nature of the subsurface material.

FIGURE 4C

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123

BOREHOLE B-4

Project Name: Proposed DEQ Technical Support Center (TSC)
Project No.: 059-003-16
Location: 250 North 1950 West, Salt Lake City, Utah
Client: Utah Department of Environmental Quality
Drilling Method: 3.75" ID Hollow-Stem Auger
Date Drilled: 09-30-16
Elevation: ---
Water Level: No groundwater encountered.
Remarks:

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
SILTY CLAY, FILL with some fine sand; major roots (topsoil) to 2"; brown (CL-FILL)												moist loose
					B							stiff
SILTY CLAY with some fine sand; dark brown (CL)												moist stiff
			5		B							
Stopped drilling at 5.0'. Stopped sampling at 5.0'. No groundwater encountered at time of drilling.			10 15 20 25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for a proper understanding of the nature of the subsurface material.

FIGURE 4D

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123

BOREHOLE B-5

Project Name: Proposed DEQ Technical Support Center (TSC)
Project No.: 059-003-16
Location: 250 North 1950 West, Salt Lake City, Utah
Client: Utah Department of Environmental Quality
Drilling Method: 3.75" ID Hollow-Stem Auger
Date Drilled: 09-30-16
Elevation: ---
Water Level: No groundwater encountered.
Remarks:

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
SILTY CLAY, FILL with some fine sand and occasional fine and coarse gravel; major roots (topsoil) to 2"; brown (CL-FILL)												moist loose
					B							very stiff
SILTY CLAY with some fine sand; dark brown (CL)												moist stiff
			5		B							
Stopped drilling at 5.0'. Stopped sampling at 5.0'. No groundwater encountered at time of drilling.			10 15 20 25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for a proper understanding of the nature of the subsurface material.

FIGURE 4E

GORDON GEOTECHNICAL ENGINEERING, INC.

UNIFIED SOIL CLASSIFICATION SYSTEM

FIELD IDENTIFICATION PROCEDURES				GRAPH SYMBOL	LETTER SYMBOL [1]	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS More than half of material is larger than No. 200 sieve size. [2] (The No. 200 sieve size is about the smallest particle visible to the naked eye)	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size. (For visual classifications, the 1/4" size may be used as equivalent to the No. 4 sieve size.)	CLEAN GRAVELS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes.		GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			Predominantly one size or a range of sizes with some intermediate sizes missing.		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).		GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
			Plastic fines (for identification procedures see CL below).		GC	Clayey gravels, poorly graded gravel-sand-clay mixtures.
	SANDS More than half of coarse fraction is smaller than No. 4 sieve size. (For visual classifications, the 1/4" size may be used as equivalent to the No. 4 sieve size.)	CLEAN SANDS (Little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes.		SW	Well graded sands, gravelly sands, little or no fines.
			Predominantly one size or a range of sizes with some intermediate sizes missing.		SP	Poorly graded sands, gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).		SM	Silty sands, poorly graded sand-silt mixtures.
			Plastic fines (for identification procedures see CL below).		SC	Clayey sands, poorly graded sand-clay mixtures.
	IDENTIFICATION PROCEDURES ON FRACTION SMALLER THAN No. 40 SIEVE SIZE					
			DRY STRENGTH (CRUSHING CHARACTERISTICS) / DILATANCY (REACTION TO SHAKING) / TOUGHNESS (CONSISTENCY NEAR PLASTIC LIMIT)			
FINE GRAINED SOILS More than half of material is smaller than No. 200 sieve size. (The No. 200 sieve size is about the smallest particle visible to the naked eye)	SILTS AND CLAYS Liquid limit less than 50		None to slight / Quick to slow / None		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sand with slight plasticity.
			Medium to high / None to very slow / Medium		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			Slight to medium / Slow / Slight		OL	Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS Liquid limit greater than 50		Slight to medium / Slow to none / Slight to medium		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			High to very high / None / High		CH	Inorganic clays of high plasticity, fat clays.
			Medium to high / None to very slow / Slight to medium		OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS			Readily identified by color, odor, spongy feel and frequently by fibrous texture.		Pt	Peat and other highly organic soils.

[1] Boundary classifications: —Soils possessing characteristics of two groups are designated by combinations of group symbols. For example GW—GC, well graded gravel—sand mixture with clay binder.
[2] All sieve sizes on this chart are U.S. standard.

GENERAL NOTES

1. In general, Unified Soil Classification Designations presented on the logs were evaluated by visual methods only. There rore, actual designations (based on laboratory testing) may differ.
2. Lines seperating strata on the logs represent approximate boundaries only Actual transitions may be gradual.
3. Logs represent general soil conditions observed at teh point of exploration onthe date indicated.
4. No warranty is provided as to the continuity of soil conditions between individual sample locations.

FINE - GRAINED SOIL

CONSISTENCY	SPT (blows/ft)	TORVANE UNDRAINED SHEAR STRENGTH (tsf)	POCKET PENETROMETER UNCONFINED COMPRESSIVE STRENGTH (tsf)	FIELD TEST
Very Soft	<2	<0.125	<0.25	Easily penetrated several inches by Thumb. Squeezes through fingers.
Soft	2 - 4	0.125 - 0.25	0.25 - 0.5	Easily penetrated 1 " by Thumb . Molded by light finger pressure.
Medium Stiff	4 - 8	0.25 - 0.5	0.5 - 1.0	Penetrated over 1/2 " by Thumb with moerate effort. Molded by strong finger pressure.
Stiff	8 - 15	0.5 - 1.0	1.0 - 2.0	Indented about 1/2 " by Thumb but penetrated only with great effort
Very Stiff	15 - 30	1.0 - 2.0	2.0 - 4.0	Readily indented by Thumbnail
Hard	>30	>2.0	>4.0	Indented with difficulty by Thumbnail

LOG KEY SYMBOLS

- Bulk / Bag Sample
- Standard Penetration Split Spoon Sampler
- Rock Core
- Water Level
- Thin Wall
- No Recovery
- 3-3/4" ID D&M Sampler
- 3" ID D&M Sampler
- California Sampler

COARSE -GRAINDE SOIL

APPERENT DENSITY	SPT (blows/ft)	RELATIVE DENSITY (%)	FIELD TEST
Very Loose	<4	0 - 15	Easily penetrated with 1/2 " reinforcing rod pushed by hand
Loose	4 - 10	15 - 35	Difficult to penetrated with 1/2 " reinforcing rod pushed by hand
Medium Dense	10 - 30	35 - 65	Easily penetrated a foot with 1/2 " reinforcing rod driven with 5-lb hammer
Dense	30 - 50	65 - 85	Difficult to penetrated a foot with 1/2 " reinforcing rod driven with 5-lb hammer
Very Dense	>50	85 - 100	Penetrated only a few inches with 1/2 " reinforcing rod driven with 5-lb hammer

STRATIFICATION

DESCRIPTION	THICKNESS
SEAM	1/16 - 1/2 "
LAYER	1/2 - 12 "

DESCRIPTION	THICKNESS
Occasional	One or less per foot of thickness
Frequent	More than on per foot of thichness

CEMENTATION

DESCRIPTION	DESCRIPTION
Weakely	Crumbles or breaks with handling of slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumbles or breaks with finger pressure

MODIFIERS

DESCRIPTION	%
Trace	<5
Some	5 - 12
With	>12

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible water, usually soil below Water Table

FIGURE 5

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
JOB NO. 059-003-16

GORDON GEOTECHNICAL ENGINEERING, INC.

#1 View east.

#2 View north.

#3 View northeast.

#4 View southeast.

Locations and direction, see Figure 2, Area Map

FIGURE 6A
PHOTOGRAPHS

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
JOB NO. 059-003-16

GORDON GEOTECHNICAL ENGINEERING, INC.

#5 View northeast.

#6 View southeast.

#7 View north.

Locations and direction, see Figure 2, Area Map

FIGURE 6B
PHOTOGRAPHS

6.0 ATTACHMENTS

6.2 SITE SPECIFIC RELATIONSHIP DIAGRAMS

552'

20'

120'

DEQ TECHNICAL SUPPORT CENTER SITE

SCALE: 0 8' 16' 32' 48'

552'

20'

120'

UNPAVED OUTDOOR STORAGE YARD

UNPAVED OUTDOOR STORAGE YARD

ACCESS ROAD

SITE ACCESS

PARKING & MANEUVERING AREA

DIVISION OF AIR QUALITY

DWMRC

DW

DERR

DIVISION OF WATER QUALITY

COMMON AREA

SITE ACCESS

SITE ACCESS

DEQ TECHNICAL SUPPORT CENTER SITE USE DIAGRAM

SCALE: 0 8' 16' 32' 48'

6.0 ATTACHMENTS

6.3 BRIDGING DOCUMENTS

DEQ TECHNICAL SUPPORT CENTER SITE BRIDGING DOCUMENT

SCALE: 1" = 16'-0"
0 10' 20' 30' 40' 50'

552'-0"

SCREEN WALL

SCREEN WALL

SCREEN WALL

GRAVEL YARD STORAGE

ASPHALT YARD STORAGE

120'-3"

80'-0"

WAREHOUSE 4200 SF

PARTICULATE LAB 2000 SF

GAS LAB 2000 SF

WATER QUALITY 4725 SF

TRANSFORMER & EMERGENCY GENERATOR AREA

FENCE

GATES

150'-0"

290'-0"

GATES

FENCE

GATES

I.E. = 4215.39

N

UTAH STATE
LIBRARY FOR THE BLIND
250 N 1950 W, SALT LAKE CITY, UT

No. 3

I.E. = 4215.00

I.E. = 4215.16

21" RCP STORM DRAIN

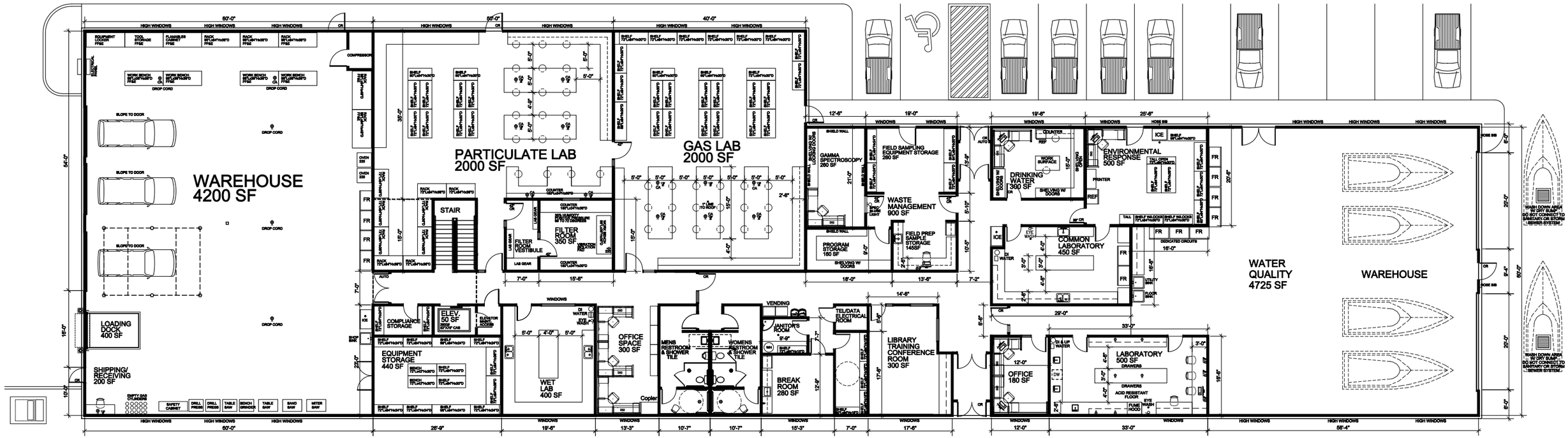
15" RCP STORM DRAIN

SS

SD

W 8"

GS



BRIDGING DOCUMENT FLOOR PLAN

DEPARTMENT OF ENVIRONMENTAL QUALITY TECHNICAL SUPPORT CENTER

SCALE: 1/30" = 1'-0"

0 6' 12' 24' 48' 72'