

MEMORANDUM

TO: Asa Mintz, PE
FROM: Michael Richard, P.E.
DATE: March 15, 2024
SUBJECT: Summary of Design and Bidding Services for the ISWM Facility

We have prepared the following fee summary utilizing the current conceptual cost estimate and industry standards for professional services for a facility of this type. The estimated construction cost of the approximately 27,800 square foot facility, associated site work, and ancillary support structures is \$19,742,000 or \$711 per square foot (not including soft costs which add approximately 27% to the overall cost). This estimate is based on costs escalated to 2025.

Based on this information, the total anticipated professional fees for Architectural & Engineering (A&E) and Owner's Project Manager (OPM) are as follows:

Phase	A&E Fees	OPM Fees	Total Fees
Schematic Design (25% design level)	\$ 397,000	\$ 49,000	\$ 446,000
Design Development (60% design level)	\$ 556,000	\$ 69,000	\$625,000
Final Design (100% design level)	\$ 636,000	\$ 79,000	\$715,000
Bidding	\$ 68,000	\$ 63,000	\$131,000
Construction Administration	\$ 613,000	\$ 529,000	\$1,142,000
TOTAL	\$ 2,270,000	\$ 789,000	\$3,059,000

To assist in developing an understanding of the anticipated level of effort and the fee for the A&E design and bidding services for the new Facility, we have prepared the following summary describing the anticipated scope of services required to prepare the necessary design documents and administer bid phase services. These services have been separated into basic and special services and are based in part on past similar Facility experience as well as the American Institute of Architects (AIA) Document B163 Standard Form of Agreement which identifies typical services.

BASIC SERVICES

1. Design - preparation of design documents to include contract plans and specifications to be utilized to publicly bid and construct a new Facility. Plans and specifications will be prepared for each project discipline including:
 - a. Civil/Site
 - b. Structural
 - c. Architectural
 - d. Fire Protection

- e. Plumbing
- f. Heating, Ventilation, and Air Conditioning
- g. Electrical
- h. Technology

These documents will be advanced in three (3) phases as outlined below:

- a. Schematic Design (25% design level) – preparation of basic building and site plans supplemented with design narratives which become the basis of design for the remaining phases of the project.
 - b. Design Development (60% design level) - preparation of design development documents for the above-mentioned disciplines consisting of plans, outline specifications, and cost estimates which further develop the details of the schematic design plans and establish the scope, relationship, forms, size, and appearance of the project by means of plans, sections, elevations, typical construction details, and sketches.
 - c. Final Design (100% design level) - preparation of complete working plans, specifications, and cost estimates in sufficient detail to permit firm bids in open competition for construction of the project. Documents will include drawings and specifications that establish in detail the quality levels of materials and systems required for the project.
2. Bid Assistance - assist the Town with the bidding process including, but not limited to:
- 1. Prepare bidding notices
 - 2. Attend pre-bid conference
 - 3. Contractor prequalification support services
 - 4. Review bidder questions and issue addenda responses
 - 5. Assist in the bid opening
 - 6. Review low bidder qualifications
 - 7. Provide recommendations for award

SPECIAL SERVICES

The following are considered special services which are provided above and beyond the basic services described above. These services are considered special services since they will vary from project to project depending on site specific and building specific conditions.

- 1. Geotechnical – subsurface drilling services to assess the subsurface conditions. The work includes collecting samples and having them analyzed by laboratory for soil classification and potential reuse. This will provide the design team with suitable information to design the building foundation system and will allow the design team to prepare a soils management plan for the proper handling and disposal of any excess excavation material.
- 2. Survey - Preparation of a final existing conditions plan, topographical, and boundary survey for use in preparing civil/site development drawings and supporting permitting services.
- 3. Industrial Equipment Design - design of specialty industrial support equipment for operations including, but not limited to:
 - a. Monorail cranes
 - b. Bridge cranes
 - c. Small shop/maintenance equipment (drill press, hydraulic press, grinder, workbenches, etc.) as identified in the Schematic Design documents
 - d. Material storage systems (heavy duty shelving, cantilever racks, etc.)

- e. Flammable and specialty storage equipment
- f. Heavy duty vehicle lifts
- g. Light duty vehicle lifts
- h. Lubrication distribution system
- i. Source capture exhaust system
- j. Manual vehicle wash system with manual pressure wash
4. Sustainable Component Design - design of sustainable design elements may include, but is not limited to:
 - a. Provisions in the building system to accommodate future photovoltaic system (structural load capacity)
 - b. HVAC heat recovery system
 - c. Rainwater harvesting system
 - d. Waste oil heating equipment
5. Independent Cost Estimates - Preparation of independent cost estimates by a specialty firm to support the Engineer's estimates. Independent estimates will be completed at the Schematic Design phase, Design Development phase, and 80% Construction Documents phase. Each estimate will be compared to the Engineer's estimate and reconciled accordingly.
6. Soils Management Plan – to include preparation of specifications for the proper removal, management, and disposal of excess excavation.
7. Local Approval Coordination & Permitting - to include the preparation of documentation necessary to obtain local building official and fire official approvals as well as required permitting from local Planning Department and Conservation Commission.

A typical municipal facility project which has been designed in accordance with Massachusetts General Laws, Chapter 149, sections 44A - 44M will include bid packages for the following trades:

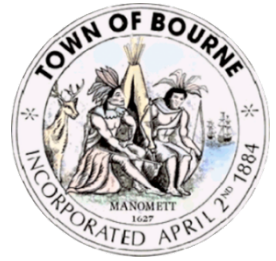
- General Contractor
- Masonry
- Miscellaneous and Ornamental Iron
- Waterproofing, Dampproofing, and Caulking
- Metal Windows
- Glass and Glazing
- Tile
- Acoustical Tile
- Resilient Floors
- Painting
- Elevator
- Fire Protection
- Heating, Ventilation & Air Conditioning
- Electrical

A typical plan set for a facility of this size and scope is 150 to 180 full size drawings with approximately 2,500 pages of technical specifications.



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FEASIBILITY STUDY REPORT



March 7, 2024

TOWN OF
Bourne
MASSACHUSETTS

Integrated Solid Waste Management Facility



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I. Introduction

The Town of Bourne retained the services of Weston & Sampson to prepare a feasibility study to identify the current and future needs of the Integrated Solid Waste Management facility located at 201 MacArthur Blvd. The study included assessing the existing facilities to identify building and operational needs, interviewing staff, identifying current and future programmatic needs and space requirements, developing conceptual site layout alternatives, and preparing an opinion of probable total project cost.

II. Program Assessment

The project team prepared a program assessment to identify the future needs of the Integrated Solid Waste Management facility at a new location. The assessment began with a kick-off discussion and interviews with key workforce personnel, followed by visits to the current facility to document and evaluate existing conditions, vehicle and industrial equipment requirements, and to gain an understanding of the existing facility operations.

The staff interviews were conducted and supported by Weston & Sampson's knowledge of industry practices and familiarity with solutions which have been implemented on other recently constructed municipal facilities of similar operations and anticipated building types. A copy of our staff interview notes is included in Appendix A.

Integrated Solid Waste Management Facility- Existing Conditions:

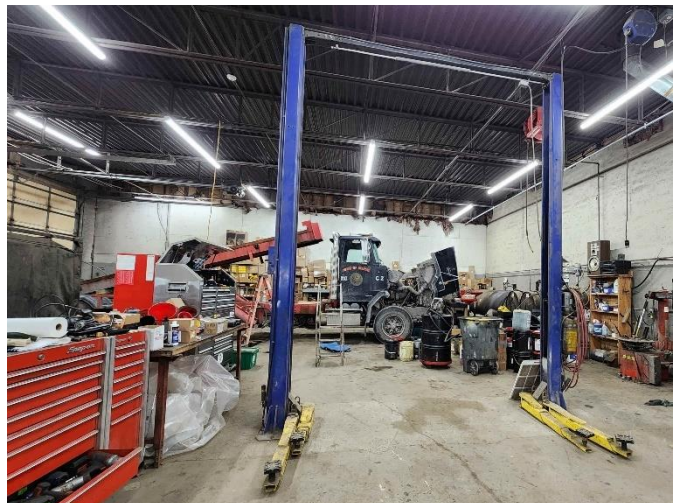
The Integrated Solid Waste Management Facility operations are currently located at 201 MacArthur Blvd. The large site consists of a number of different areas:

- A. Liquid waste storage areas 1 and 2: Liquid waste tanks where waste liquid is stored and then transferred off-site by tanker trucks.

- B. Vehicle Storage and Maintenance Facility: Approximately 10,000 SF, single story, concrete block garage building constructed in the 1970's (which is nearing the end of its useful life, see photo).



- C. The building lacks the proper areas needed to store the temperature-sensitive equipment and emergency vehicles inside, away from the elements. The building lacks adequate basic employee facilities, i.e. an appropriate restroom, separate accessible men's and women's lockers and bathrooms, and an employee muster/break area. The maintenance area is undersized and lacks safe clearances around the work areas to access and maintain the equipment (see photo).



- D. Transfer Building 1 – approximately 10,000 SF solid waste transfer station area.
- E. DPW Salt Shed – The salt shed, originally built when the site was part of the Bourne DPW facility, is approximately 4,000 SF and is used for excess salt storage for the Town DPW, as well as salt storage for the ISWM. The amount of on-site salt storage required is expected to be reduced when the ISWM facility is relocated to the new site.
- F. Mobile trailer/ offices – 3,600 SF +/- mobile trailer area that houses the administrative and employee facilities. The offices and common spaces are well kept but undersized for the needs of the facilities and their operations (see photo).
- Inadequate basic employee facilities to support the staff.
 - Lack of proper men's and women's rooms.
 - No lunchroom, and kitchen appliances are stacked against the wall in the office area.
 - Inadequate lighting.



- G. Transfer building 2 – approximately 10,000 SF solid waste transfer station area
- H. The current ISWM facility has undergone minimal upgrades over its lifetime which contributes to operational inefficiencies that impact the level of service the department can provide the community.

Due to the approved, phased, multi-year expansion of the Integrated Solid Waste Management Facility operations that is envisioned to encompass the entire existing site, the need to relocate the offices, employee facilities and vehicle maintenance areas to a 4.2 acre Parcel 9 site to the south of the current location was identified. Because of their current age, poor physical condition, obsolete internal configuration, and conflicts with the future ISWM expansion, it was determined that renovating or relocating the existing maintenance building, salt shed, and portable office trailers would not provide value to the project as part of a future facility.

Preliminary Programming Interviews

Staff interviews: The staff interviews conducted by the Project Team focused on identifying all user groups that will occupy the new facility to understand the operations and services that will occur at the new site. The discussions addressed staffing requirements and space needs for office and shop operations, fleet maintenance, parts and materials, equipment, and vehicles. The information obtained during these interviews included discussions of space deficiencies in the existing facilities which impact day-to-day operations (refer to Appendix A).

A summary of the departmental organization and fleet inventory is as follows:

ISWM Staffing Summary

Division/ Department	Workforce	Future	Lockers	Parking
Administration	5 FT	-	5	5
Landfill/C&D Transfer	9 FT	2	11	15
Residential Recycling Center/ Single Stream Transfer	6 FT	2	8	10
Vehicle Maintenance	3 FT	1	4	5
TOTAL:	23	5	28	35

ISWM Fleet Summary

Fleet Inventory Summary	
Large Vehicles	25
Medium Vehicles (pick-up trucks, skid steers)	5
Equipment	N/I
TOTAL	30

Industrial equipment interview: An interview was conducted by Weston & Sampson with members of the Maintenance Staff to review and gain a better understanding of the industrial equipment and operational criteria used in the facility operations (refer to Appendix B). The resulting provisions for accommodation of industrial equipment and operations have been included in the new ISWM facility program.

Space Needs & Room Data Sheets

The data obtained from the operations and equipment analysis and interviews were compiled and analyzed by Weston & Sampson. The process also included developing a comprehensive space allocation matrix of individual rooms and spaces for each major facility function, including offices, office support areas, employee facilities, utility support spaces, equipment and gear storage, workshops, parts and material storage, fleet maintenance, fuel dispensing, vehicle wash, and fleet storage. The analysis also included diagrammatic floor plans and 3D views for each individual room or space listed in the program matrix. The spaces were then modified following meetings and feedback from the facility staff.

An initial space needs assessment dated 1/29/23 was completed based in findings from the staff

interviews, site observations, and additional discussions with the operators. The space needs assessment identified an initial program requirement for a new ISWM Facility of about 26,620 SF. The results of the initial space needs assessment were then reviewed by the project team and ISWM staff to identify efficiencies and improvements, and as a result the program requirements for the facility were increased to about 31,107 SF. The final Space Needs Summary is included in Appendix C; the final iteration of the Room Data Sheets is included in Appendix D. The following table provides a breakdown of the programmatic space needs as outlined in the Space Needs Summary:

Building Program:	Area (sf)
Office and Support Areas	3,525
Employee Facilities (incl basement)	6,842
Vehicle Maintenance & Shops	9,086
Mezzanine Areas	2,000
Open Canopy Storage	832
Vehicle Storage	4,200
Wash Pad - Outdoor	1,300
Total Building Areas	27,785

Not included in the building program totals above are unconditioned exterior equipment areas of the proposed facility, the Fuel Island and Salt Shed, which make up about 3,322 SF of the total program in the Space Needs Assessment Summary. The results of the programming exercise provided guidance for the development of conceptual site design alternatives.

III. Conceptual Design Alternatives

The existing Parcel 9 site is about 4.2 acres and to the south of the existing ISWM site and consists of Barnstable and Plymouth series soil types. The site is not part of any MA Zone 2 wellhead protection areas, no wetlands are present, and it does not conflict with flood zones. The Town is looking to receive approval to expand into the remaining 8-acres to the east of Parcel 9 (for a full

12-acre expansion). For the purposes of this study, Weston & Sampson kept within the 4.2 parcel for the Site Concept process (until confirmation of additional acreage is available). The residential recycling center will also be relocated to a separate area of Parcel 9; a schematic preliminary layout of the residential recycling center provided by the ISWM staff indicates that approximately 1.5~1.9 acres are needed for the residential recycling center. Refer to Appendix E.

Based on the results of the space needs assessment, the Project Team prepared conceptual site plan options for the development of a new facility. The project team identified different scenarios to support operational needs while also considering possible budget constraints.

The conceptual plans were prepared with the following operational considerations in mind:

- Areas to be easily accessed from the access road.
- Arrange interior spaces to provide efficient workflow and circulation patterns.
- Provide access to office and staff facilities from the parking area, make them accessible to the public.
- Provide a relocated residential recycling center facility, with separate circulation paths for public visitors and private vendors/ISWM staff.
- Provide full access and safe vehicle movement around the perimeter of the facility; provide a separate non-paved access path to the maintenance facility to allow for compactor and bulldozer access without the need to travel on or across paved surfaces.
- Provide interior vehicle storage area for up to 4 large vehicles.
- Provide an expanded yard area for large vehicle maneuvering.
- Provide safe and functional access to/from the future transfer station operations area in the adjacent parcel.

Initial site concept plan layouts were prepared by developing “First Fit Plans”. These Site Concept Plans were developed for each of the major space categories for the new facility as follows:

- Office and Support Areas.
- Employee Facilities.

- Workshops and Vehicle Maintenance.
- Covered Wash Pad, covered canopy for equipment storage.
- Vehicle / Equipment Indoor Storage (heated interior storage).
- Fuel Island.
- Salt Shed.
- Employee and Visitor Parking.
- Residential Recycling Center.
- Future Transfer Facility.

The project team presented possible solutions by initially diagramming four site concept scenarios.

- Site Concept A1 dated 2/15/24 shows the ISWM facility located at the south end of the parcel, without an access road extending to the adjacent east parcel. It takes up about 1.9 acres of the site, leaving about 1.5 acres for the recycling center. Refer to Appendix F.
- Site Concept A2 dated 2/15/24 is similar to A1 with the facility on the south of the parcel but changes the layout around to allow for a full access road, it takes up about 2.0 acres, with the recycling center on about 1.0 acres. Refer to Appendix F.
- Site Concept B1 dated 2/15/24 locates the new facility on the north end of the property on about 1.7 acres, with the recycling center to the south on 1.4 acres, the access road ends at the recycling center. Refer to Appendix G.
- Site Concept B2 dated 2/15/24 locates the new facility on the north end of the property on about 1.6 acres, with the recycling center to the south on about 1.5 acres, the access road extends to the east parcel. Refer to Appendix G.

These concept site plans were reviewed with the ISWM staff to gain a better understanding of the priorities for a new facility and solicit feedback on the site layout preferences. Site Concept A1 was the staff's preferred initial approach, which provided circulation of traffic and public access to the administration area from the northeastern point of the site. The concept needed adjustment and two additional concepts were prepared:

- Site Concept A3 dated 2/21/24 located the vehicle maintenance facility adjacent to the dozer path, with the dozer path widening at the building to allow some room around a dozer or compactor for working. The indoor vehicle storage forms an “ell” to allow for a yard in front of the doors to the two main vehicle buildings. The offices and employee areas are to the west with a parking lot for 39 autos along the west side of the site. Refer to Appendix H.
- Site Concept A4 dated 2/21/24 is similar but places the offices and employee facilities to the west of the site, with a parking lot for 39 autos in the NW corner. Refer to Appendix H.

After review with ISWM staff, site concept A4 needed further adjustment and one additional site concept was prepared:

- Site Concept A5 dated 3/04/24: This concept provided direct access to the maintenance facility for dozers and compactors via a gravel path; provided access path all around; adjusted the orientation of the administration offices to face the parking area; moved the employee facilities adjacent to the vehicle maintenance facility. After review, it was decided to include a walk-out full basement storage area below the employee facility area. Refer to Appendix I.

After completing these assessments of the various scenarios and conceptual site design, Site Concept Plan A5 was selected as a cost effective and efficient building layout that considers the various site preferences and limitations.

IV. Conceptual Cost Estimate

A conceptual cost estimate was prepared based on Site Concept A5, using square foot costs, unit prices, and allowances based on historical data for similar facilities. In general, the opinion of probable cost estimate assumes the use of cost-effective building systems, durable finishes, and

efficient equipment, as identified in the estimate worksheet and generally following industry standards for new construction of this type.

Some of the general assumptions for the cost estimate are:

- Construction incorporates pre-engineered metal buildings, with partial masonry wall finish and concrete protection walls for the vehicle storage, maintenance areas, and shops.
- Factory foam-insulated architectural metal wall panels and standing seam metal roofing.
- Appropriate industrial equipment for vehicle maintenance operations.
- Site improvements, including septic system, storm water management, paving, sidewalks, and gravel pathways.
- A new fuel island and salt shed.
- Upgrades to provide a net-zero energy-efficient building design as recommended by Cape Light Compact (a geo-thermal ground-source heat pump system was recommended).
- Soft costs for Owner, including design fees, OPM fees, furnishings and other related costs.
- Contingency allowance for unanticipated design / construction costs.

Energy-efficient design: An allowance is included in the total cost for energy-efficient components as recommended by the Cape Light Compact, a non-profit organization with a mission to serve Cape Cod towns through the delivery of proven energy efficient programs and competitive electricity supply. During a Teams call with Weston & Sampson on January 23, 2024, the CLC recommended that the proposed project attempt to use the MassSave Path 1 Zero Net Energy and Low Energy Use Intensity Buildings pathway, which provides incentives to help pay for low energy use equipment and systems, such as air or ground source heat pumps, LED lighting, and highly efficient thermal envelopes for building construction. The use of energy-efficient components increases the capital costs of the facility but are then offset over time by the reduced energy footprint of the facility. Refer to Appendix J.

A full build-out for the Integrated Solid Waste Management Facility's programmatic space needs

resulted in an estimated total project cost of approximately \$25 million. These estimated costs for new building construction, site improvements and project soft costs are based on similar construction projects for which bid prices are available, supplemented by cost data obtained from published sources. It is assumed that this project will be publicly bid under Massachusetts Chapter 149 requirements. Prices are based on 2023 costs and account for annual escalation until the year 2025.

Due to the preliminary nature of the current site concept for this project, many budget items are based on general building costs per square foot and site development costs per acre. Estimates include a design contingency to allow for scope adjustments identified during design development. In addition, the estimate includes a construction contingency to account for potential unforeseen conditions which may be discovered during construction. The conceptual opinion of probable total project cost based on the town's preferred site alternative is found in Appendix K dated 2/28/24.

Closing

It has been a pleasure for Weston & Sampson to be involved in the initial planning for this interesting and demanding project and to prepare this report. Please review the summary and appendices that have been prepared for the project to date, and feel free to contact our office with any questions, comments, or if you need additional information.

Town of Mashpee
POLICE DEPARTMENT
Police Department Space Needs & Feasibility Study

Report

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Appendix A

Staff Interview Meeting Notes

Client: TOWN OF BOURNE

Project Name: FEASIBILITY STUDY FOR NEW ISWM OFFICE & MAINTENANCE BUILDING(S)

Project Number: ENG23-3191

Meeting Date: November 27, 2023, 9:00 AM

Location: ISWM Facility, 201 MacArthur Boulevard; Bourne, MA 02532

Attendees:

- Dan Barrett, ISWM General Manager
- Asa Mintz, ISWM Operations Manager
- Phil Goddard, ISWM Manager of Facility Compliance & Technology Development
- Weston & Sampson Engineers: Michael Richard, John Comeau, Paul Rudolph, Frederick Soule

GENERAL SITE INFORMATION

- Acquired / cleared 4.2 acres SOUTH of existing site.
 - Made up of Barnstable Sandy Loam – “farmland of statewide importance”.
 - Site is not part of any MA Zone 2 wellhead protection areas.
 - No wetlands present.
 - Site does not conflict with flood zones.
 - Looking to acquire remaining 8-acres EAST (Full 12-acres) – W&S to design within 4.2 parcel until confirmation of additional acreage is available.
- Water: Underground water main travels from MacArthur Blvd. below access road and supplies office trailer, maintenance shed, fire suppression cistern. Extension necessary to new facility.
- Property has fire suppression system along access road. Water is stored in underground cistern and uses diesel pump in Fire Pump House for fire suppression system that goes to transfer and recycling buildings via underground piping. System will need to be extended to new office and maintenance facility location.
- Power: Underground primary electric service comes in at main entrance and travels around property perimeter at NORTH and EAST sides of property; transformers are provided at maintenance garage and office area for secondary electric service. Electric service extension necessary for new facility.
- Communications: Property has buried fiber optic cables for IT and uses wireless system to communicate to existing maintenance garage from office; maintained by Town IT Department.
- Recycling facility: The residential recycling center will need to be incorporated into the new 4.2-acre parcel. Upper section for residents to fill recycling receptacles and lower area for staff to empty receptacles is desired. Separate travel paths should be provided to separate residents and Town/vendor access; Asa Mintz (OM) provided an initial site layout showing recycle area which needs further refinement.

- Path for heavy equipment: A separate travel path for heavy equipment (i.e., bulldozer, compactor) to access maintenance facility is required. Path should have suitable base material for heavy-duty equipment.
- Zoning: The site is zoned for “Business” use, which will not need to be changed, however it will be subject to site plan review by the Town; the site location for the office & recycling facility has 12-foot town setbacks along both SOUTH & WEST sides of site.
- Largest source of material contributing to current landfill is combustion ash from SEMASS waste-to energy facility.

TIMELINE

- (3) month feasibility study – Town meeting 1st week of May for full design approval.
- 2.5-year plan (Building constructed by July 2026) SOUTH expansion to accommodate new facility that will combine Office & Vehicle Maintenance space.
 - Including workshops, *storage / vehicle storage*, employee facilities, locker rooms, training room / break room, etc.
- Vertical landfill will relocate to current site office and transfer facilities.
- Facility has an operating existing budget of \$18M with \$12M-13M in expenses – ISWM is a separate, fully self-funded independent operation.
- Report will discuss:
 - Sustainable design ideas that comply with energy code.
 - Solar ready roof areas.
 - Standby generators – Oil or propane depending on building size & requirements.
 - Utilization of landfill gas – discussion of small fueling islands with diesel & gasoline.
 - Potential obstructions and roadblocks to getting the project constructed on time, such as. Shortage of critical parts, supply chains, etc.

PROPOSED OFFICE BUILDING

- (28-30) Total positions (23) Currently staffed (5) Current vacancies (3) Women employees
- (5) Offices requested – heavy duty carpet tile separation between dirty / clean boots.
 1. General Manager (with meeting table).
 2. Operations Manager.
 3. Manager of Facilities Compliance & Tech Development.
 4. Assistant Coordinator Finance & Recycling.
 5. Secretary.
- Public Conference Room (12-15 people) – Reference Bourne DPW for sizing.
- Public Reception Area front door with security to access offices (floor mats for clean boot entrance).
- Flexible Training Room (Large enough to fit entire staff).
- IT Room with dedicated HVAC system.
- Long-term File / Archive Storage (private lower level if two-tiered building arrangement).
- Office supply room.
- Mud-entrance for operations staff (air-lock vestibule to control dust).
- Locker Rooms (Male & Female) w/ showers – resilient epoxy / resilient linoleum sheet or tile flooring.

- Break Room / Coffee Bar – resilient epoxy / resilient linoleum sheet or tile flooring.
- Accessible Bathrooms (Male & Female).
- Janitors Closet.
- Uniform storage area (mechanics).
- Review heating / cooling options (air source heat pumps, ground source heat pumps, solar, etc).
- Septic system: Provide nitrogen reducing septic to meet Title V.
- Seagull protection system on roof (Flynn Pest Control).

MAINTENANCE / STORAGE BUILDING

- Existing Maintenance building is ~~60' X 120'~~ 50' x 200' (poured concrete bar joists supporting metal deck / membrane roof – No isolation in walls, minimal in roof).
- Russell Conway, Maintenance Crew Chief; currently (3) mechanics, (1) future skilled laborer (provided coveralls – washer & dryer considered).
- Facility needed for maintenance, disassembly and storage of equipment (most vehicles do not require indoor storage).
- 28) vehicles; almost all serviced & maintained on site some sent offsite for occasional repairs.
- Bay Floor Systems options (flooring system to be cleanable / washable):
 - Railroad iron flooring.
 - Concrete floor w/ iron filling tire bays.
- Main doors should be 16' Tall X 16' Wide.
- Need Service Bay for heavy equipment; Bulldozers (13.5' width blade) and Compactor vehicles (steel chopper wheels 82K lbs.).
- Discussion of mobile column lifts + bridge crane (W&S to work with Russell Conway to determine lifting capacity requirements) – mentioned 8,000 lbs, maybe more capacity needed to lift heavy equipment.
- Compressed air for machinery.
- Indoor Workspaces:
 - Welding / Fabrication Area (separate from maintenance area).
 - Carpentry.
 - Hydraulic hose pipes.
 - Plumbing.
 - Tire changing machine (Store +/- 24 truck size tires).
- Indoor Storage Space (Utilization of mezzanine for parts & equipment storage):
 - Argon gas.
 - Propane.
 - Acetylene.
 - Oxygen.
 - Nitrogen.
 - Waste oil.
 - Hydraulic fluid.
 - Gear oil.
 - Transmissions fluid.
 - Antifreeze (55-gallon drums).

- Steel bar & plate storage.
 - Vehicle parts storage.
- Outdoor Storage Space:
 - Road salt (100 CY) – Currently shared with DPW. Existing wood salt storage will need to be replaced.
 - Provide outdoor wash bay with containment drain or drainage back to landfill, potential canopy / roof to avoid rainwater infiltrating drain system.

END

Appendix B

Industrial Equipment Meeting Notes

Client: TOWN OF BOURNE

Project Name: FEASIBILITY STUDY FOR NEW ISWM OFFICE & MAINTENANCE BUILDING(S)

Project Number: ENG23-3191

Meeting Date: January 10, 2024, 10:30 AM

Location: ISWM Facility, 201 MacArthur Boulevard; Bourne, MA 02532

Attendees:

- Daniel Barrett, ISWM General Manager
- Asa Mintz, ISWM Operations Manager
- Phil Goddard, ISWM Manager of Facility Compliance & Technology Development
- Russell Conway – Maintenance Crew Chief
- Weston & Sampson Engineers: Tyler Cofelice, Frederick Soule

GENERAL

- The team currently consists of three mechanics, and there is no anticipated need to increase this number in the foreseeable future.
- The current shop layout features the following bays:
 - Bay 1 – Dedicated to Preventative Maintenance.
 - Bay 2 – Used as a Fabrication Bay.
 - Bay 3 – Used for Maintenance of Longer Vehicles.
- The existing maintenance bay measures 50 feet in depth and 110 feet in length, with a vertical clearance of 14 feet.
- The longest vehicles maintained are the roll-off truck(s) and the vacuum truck, each approximately 40 feet in length.
- The minimum size for the overhead doors in the new facility should be 16 feet wide and 16 feet tall. Additionally, one larger overhead door should be included, either 18 or 20 feet wide.
- In the future, if the facility becomes a transfer station, there might be a purchase of a Milton 980 Loader (dimensions: 31.08 feet long with the bucket on the ground, 10.58 feet wide over tires, 12.35 feet tall to the top of the cab).
- Include both 1/2-inch and 3/8-inch compressed air reels in all bays.
- A designated area near the entrance to the maintenance bays for parts deliveries is desired.
- A canopy storage area is needed with shelving and an area to store equipment attachments, such as mower attachments for a skid steer and snow plows, which are currently stored outdoors.

- Access to at least one overhead door via a compacted dirt surface is necessary for bringing tracked vehicles into the building.
- It is unlikely that the compactor would be brought inside the maintenance bays for servicing.
- The possibility of using metallic toppers or metal shake concrete floors in the garage was considered. However, Weston & Sampson advised opting for a high-strength concrete floor (approximately 7,000 psi) that can be maintained over time. To help reduce costs and prevent damage to the concrete floor, it's recommended to use floor protection mats under tracked vehicles.
- A shared office space for mechanics near the maintenance bays is needed to store reference materials and for computer access.
- Mechanics generate their own work orders, which are then provided to the admin staff for entry into the computer tracking system.
- If the maintenance bays are equipped with radiant floor heating, there will be no need to burn waste oil for heat. Consequently, waste oil would be disposed of rather than burned.
- The new facility requires a new fuel system for both diesel and gasoline. The existing system has a capacity of 3,000 gallons of diesel fuel, and they currently source gasoline from the DPW facility. A detailed discussion will be scheduled to further discuss the fuel systems.
- Needs cylinder storage cabinets for oxygen, acetylene and propane cylinders; approximately 20 cylinders are currently stored at existing facility.
- Future facility growth may include adding a bulldozer and compactor to the fleet.

BRIDGE CRANE

- The inclusion of an overhead bridge crane is necessary; after discussion it was noted that a 10-ton bridge crane would offer adequate lifting capacity for the facility's requirements.
- The bridge crane should cover the following areas:
 - Repair Bays.
 - Fabrication Bay.
 - Mezzanine.

LIFTS

- Incorporate an 18,000-pound capacity two-post lift into the design.

FLUIDS

- Bulk storage tanks should be provided for the following fluids:
 - 10W-30 motor oil: 350 gallons.
 - Hydraulic Fluid: 350 gallons.
 - 30W motor oil: 350 gallons.
 - 50W motor oil: 350 gallons.

- The following fluids are to be stored in 55-gallon drums. Each fluid type stored in drums to be equipped with a trolley cart that includes a hose reel and a pneumatic drum pump:
 - 15W-40 motor oil.
 - Windshield washer fluid.
 - Two types of gear oil.
 - Transmission fluid.
 - Antifreeze.
- Additional fluids stored on-site include:
 - DEF Fluid: 300-gallon tote (located in maintenance bay near OHD).
 - Redux: 300-gallon totes (typically 2-3 of these are stored).
- Install a 500-gallon waste oil tank and a 150-gallon waste antifreeze tank.
- Incorporate a waste oil and waste antifreeze pump-out station, which should include an oil filter drain box. The pump-out systems will empty waste fluid caddies and transfer the fluids overhead into the bulk storage tanks located in the fluid storage room.
- An oil filter crusher is not required.
- The facility currently utilizes 2,500 gallons of waste oil per year for heating purposes in the existing facility.
- Fluids are not filtered before being filled into vehicles. Fluid samples are sent to Milton CAT for testing to ensure vehicle performance.
- Include a parts storage shelf in the fluid storage room for miscellaneous 5-gallon buckets.
- Ensure additional space in the fluid storage room for miscellaneous drums of hazardous waste, with enough room to store up to 4 - 55-gallon drums.
- When draining fluids from vehicles, the maximum volume collected is typically 40 gallons. Source waste oil caddies (both tall and low profile) that can hold up to 40 gallons of fluid.

HYDRAULIC HOSE

- A new crimper has recently been purchased.
- Die sets are stored in cabinets; provide new cabinet to store die sets in.
- All existing equipment can be relocated to the new facility, to be placed on new workbenches.
- Install three new hydraulic hose reel storage racks to accommodate a total of 9 hose reels.
- The facility works with hydraulic hoses ranging in size from ¼ inch to 1¼ inches.

TIRE MAINTENANCE

- The loader tire storage area needs to be at least 8 feet tall, 12 feet wide, and 6 feet deep. These loader tires could be stored under a covered storage area.
- There is a requirement for a new tire changer and tire balancer, suitable for handling tires with rims up to 24 inches in diameter.

- Currently, there is an 8-foot by 20-foot Conex box used for storing truck tires. Ideally, these tires should be stored on tire storage shelves located on the mezzanine.
- A request has been made for an inflation cage large enough to accommodate truck tires.

WELDING EQUIPMENT / FABRICATION BAY

- Welding equipment should be situated in the fabrication bay.
- The facility stores long metal stock in 20-foot lengths and 8x4 foot sheets of metal in the fabrication bay.
- The existing cantilever rack, currently used to store 20-foot lengths of metal and in good condition, can be relocated to the new facility. Loader cutting edges should be stored near the fabrication bay, ideally under the bridge crane.
- There is a requirement for a portable weld fume extractor to aid in metal fabrication projects.
- In the fabrication shop, they use equipment such as metal band saws, a drill press, pedestal grinders, metal cut-off tools, and a welding bench.
- There is a plan to add a hydraulic shop press to the fabrication shop.
- It is preferred to position the welding bay on the opposite side of the garage from the preventative maintenance bay.
- The existing metal bandsaw should be positioned in the fabrication bay, adjacent to the metal stock area.
- The media blaster, with dimensions of 4 feet wide by 4 feet long, should be located near the fabrication shop.

PUMP MAINTENANCE SHOP

- A pump repair shop is needed, which should include parts storage and space for a workbench.
- Presently, pump parts are stored in two separate areas: one for metal fittings and another for plastic fittings. Both parts storage areas should be situated within the pump maintenance room.
- A portable pipe welding cart, currently in use, should also be stored in the pump repair shop.

MISCELLANEOUS EQUIPMENT

- The parts washer should be situated near the waste fluid pump-out stations.
- The facility has a radial arm saw and a table saw for woodworking. Space needs to be allocated to accommodate this equipment.

PARTS STORAGE

- Currently, there is approximately 40 linear feet of shelving dedicated to filter storage. It is necessary to provide parts shelving for filter storage that is 3 feet deep.
- Cubby storage is required for nuts and bolts, and miscellaneous drawer storage should be provided to replace existing filing cabinets.

- Storage for replacement cutting teeth for buckets/blades is needed.

VEHICLE STORAGE

In addition to the requirements of the maintenance facility, indoor vehicle storage is required to protect equipment, prevent freezing during cold weather, and to be ready during an emergency; the following equipment is stored indoors:

- Two water trucks.
- Vacuum truck.
- Sweeper.

END

Appendix C

Space Needs Summary

Building Requirements

Area	Description	Proposed SF	Existing SF	Room Data #	Room / Area		Dims. size
					length	width	
Office & Office Support Areas	Vestibule / Public Entrance / Reception	205		A1	--	--	--
	Admin Open Office (1 Admin Staff - Secretary)	300		A2	15	20	300
	Office 1 - General Manager	224		A3.1	14	16	224
	Office 2 - Operations Manager	224		A3.2	14	16	224
	Office 3 - Manager of Facilities Compliance & Tech	224		A3.3	14	16	224
	Office 4 - Assistant Coordinator Finance & Recycling	224		A3.4	14	16	224
	Public Conference Room (12-15 cap)	320		A4	16	20	320
	Copy/File/Mail Area	180		A5	15	12	180
	File Storage	224		A6	16	14	224
	Small Supply Closet	24		A7	4	6	24
	Office Supply Room	72		A8	12	6	72
	IT Data/ Telephone Room	108		A9	12	9	108
	Mens' Room	50		A10.1	6.67	7.5	50
	Women's Room	50		A10.2	6.67	7.5	50
	Janitor Closet	36		A11	6	6	36
Subtotal:		2,465	-				
Area Grossing Factor (10%):		247	-				
Circulation (30%):		813	-				
TOTAL:		3,525	-				
Employee Facilities	Staff Entrance / Mudroom	56		B1	7	8	56
	Male Locker/Shower/Toilet	735		B2.1	24.5	30	735
	Female Locker/Shower/Toilet	180		B2.2	10	18	180
	Muster/ Training Room (30 cap.)	640		B3	32	20	640
	Field Equipment Storage	40		B4	4	10	40
	Uniform Storage Area	28		B5	4	7	28
	Break room	285		B6	19	15	285
	Break/Training/Muster Room Storage Closet	96		B7	12	8	96
	Main Electric Room	140		B8	10	14	140
	Plumbing/Fire Protection Room	192		B9	12	16	192
	Basement Storage/Walk out	2,376			44	54	2,376
Subtotal:		4,768	-				
Area Grossing Factor (10%):		477	-				
Circulation (30%):		1,573	-				
TOTAL:		6,818	-				
SUB-TOTAL-OFFICE & EMPLOYEE AREAS:		10,343					

Building Requirements

Area	Description	Proposed SF	Existing SF	Room Data #	Room / Area		Dims. size
					length	width	
Vehicle Maintenance	Maintenance Bay 1-Welding Bay	1,500		C1	25	60	1,500
	Maintenance Bay 2-Repair Bay	1,500		C1	25	60	1,500
	Maintenance Bay 3-Large Repair Bay	1,620		C1	27	60	1,620
	Maintenance Bay 4	1,500		C1	25	60	1,500
	(Vehicle storage area noted below)	-					-
	Mechanic's Office / Reference Room	256		C3	16	16	256
	Crew Chief's Office	256		C3A	16	16	256
	Hydraulic Hose Shop	100		C4	10	10	100
	Fluid Storage Room	416		C5	16	26	416
	Pump Maintenance Shop	400		C6	20	20	400
	Compressor Room	150		C7	15	10	150
	Parts & Gas Storage	168		C8	12	14	168
	Mezzanine Storage	941		C9	58.8	16	941
	Mezzanine Parts Storage	522		C10	18	29	522
	Mezzanine Tire Storage & Shop	288		C11	16	18	288
	Exterior Canopy Storage Area	722		C12	18	40	720
	Subtotal:	10,339	-				
	Area Grossing Factor (5%):	517	-				
	Circulation (10%):	1,086	-				
	TOTAL VEHICLE MAINTENANCE AREAS:	11,941	-				
Exterior equipment	Wash Pad - Outdoor	1,300		D1	26	50	1,300
	Fuel Island	2,322		D2	54	43	2,322
	Salt Shed	1,000		D3	27.8	36	1,000
	Subtotal:	4,622	-				
	Circulation:	n/a	n/a				
	TOTAL EXTERIOR EQUIPMENT AREAS:	4,622	-				
Vehicle & Equipment Storage	Vehicle / Equipment Storage	4,000		C2	50	80	4,000
	Subtotal:	4,000	-				
	Area Grossing Factor (5%):	200	-				
	Circulation:	n/a	n/a				
	TOTAL VEHICLE STORAGE AREAS:	4,200	-				
PROPOSED FACILITY TOTAL:		31,107					

Building Requirements

Area	Description	Proposed SF	Existing SF	Room Data #	Room / Area		Dims. size
					length	width	
<u>Staffing</u>		Current	Future				
ISWM Workforce		18	5				
ISWM Administration		5	-				
Total:		23	5				
<u>Vehicles (in heated vehicle storage area)</u>		Current	Future				
Sweeper, vacuum truck, tanker x 2		4	-				
Subtotal:		4	-				
TOTAL (to be housed in new storage area):		4					

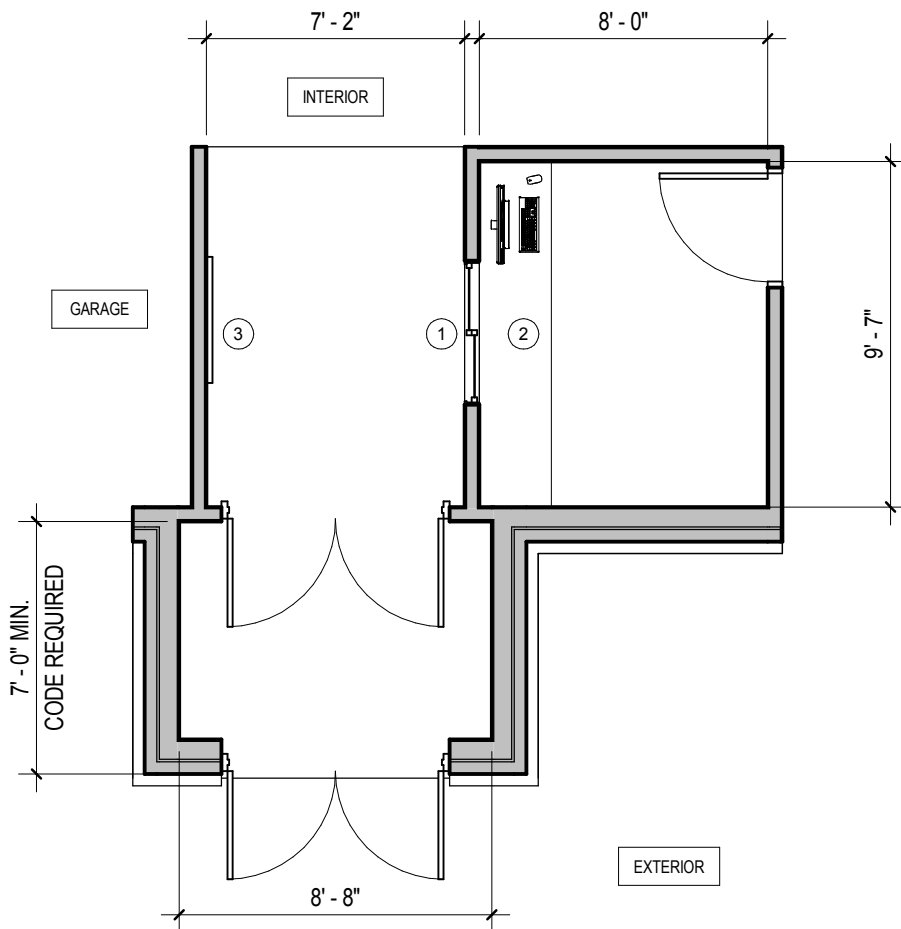
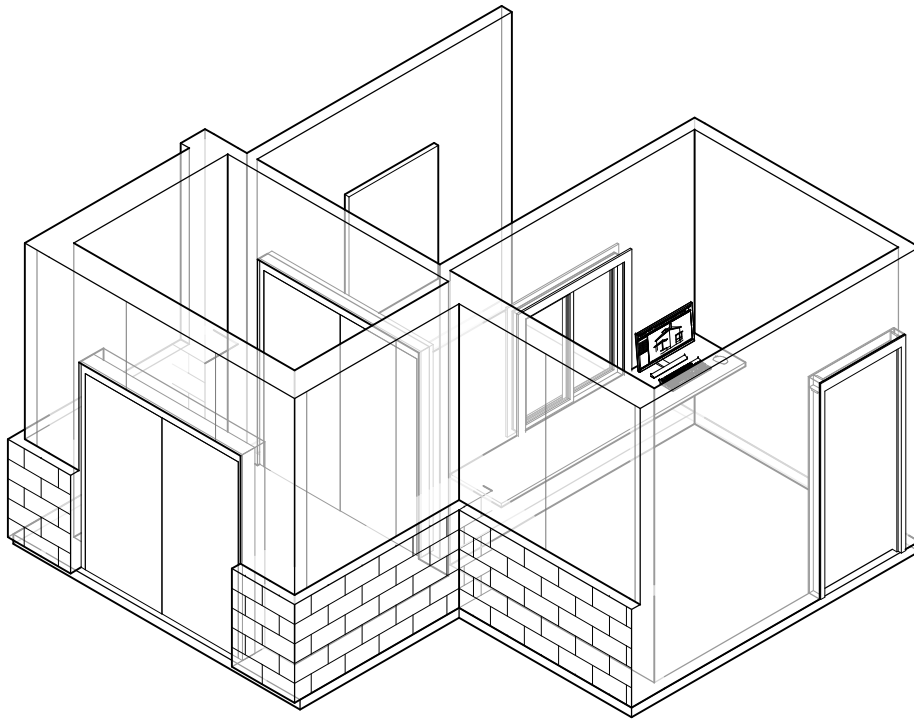
Site Requirements

Name	Description
Circulation	Paved public vehicle access to maintenance facility and parking area, public vehicle access to residential recycling area, separate travel path to recycling area and maintenance facility for ISWM staff and vendors, separate gravel travel path from landfill operations to maintenance facility for compactors & bulldozers
Parking	Paved parking for 39 passenger vehicles (visitor and staff parking, 270 SF per vehicle)
Residential Recycling Center	Relocated recycling center with access for Town residents
Salt Shed	150 ton capacity salt shed
Dumpster	Not required
Fueling Operations	Fuel Island and Canopy
Septic system	On-site nitrogen filtering septic system
Electric service	Extend existing underground primary line to site, provide new transformer
Heating & Cooling	Recommended to provide net-zero facility per Cape Light Compact/Mass Save (i.e. ground-source heat pump), no fossil fuels
Water supply	Extend existing water line to site
Fire suppression system	Extend existing fire-suppression system to site
Transfer facility	Access to future transfer facility to be considered
Pest protection	Provide rooftop seagull protection system; provide vector & rodent controls

Total Site Size:	4.2 AC
Min. Required ISWM Facility Site Size (acres):	2.0 AC
Non-ISWM facility areas (recycling center, setbacks, drives, RR, etc):	2.2 AC

Appendix D

Room Data Sheets



VESTIBULE / PUBLIC ENTRANCE / RECEPTION - 205 SF
 $3/16" = 1'-0"$

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALL BOARD, PAINTED

FLOORS: CERAMIC TILE

MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS
- TEL / DATA OUTLET JACKS
- HEATING / COOLING
- OCCUPANCY SENSORS FOR LIGHTING CONTROLS
- NATURAL LIGHTING W/ WINDOWS

COMPONENTS:

1. RECEPTION WINDOW
2. COUNTER
3. PUBLIC DISPLAY BOARD

DRAFT

ROOM FINISHES:

CEILING: ACOUSTICAL CEILING
TILE

WALLS: GYPSUM BOARD,
PAINTED

FLOORS: CARPET TILE

MEP/DATA REQUIREMENTS:

ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

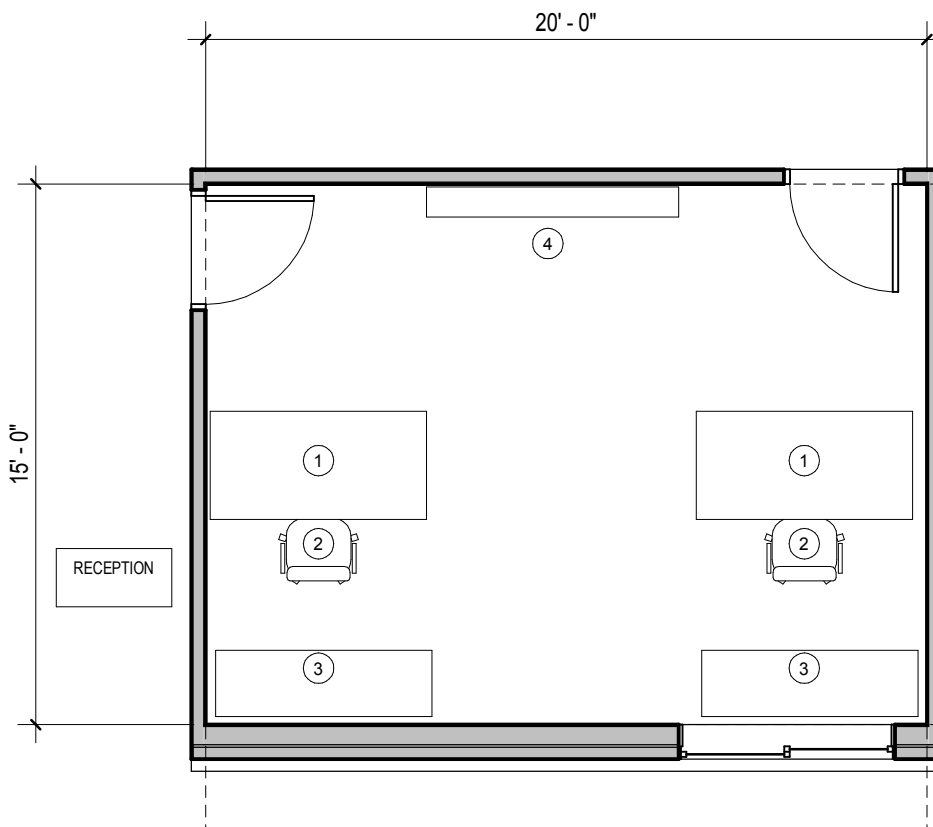
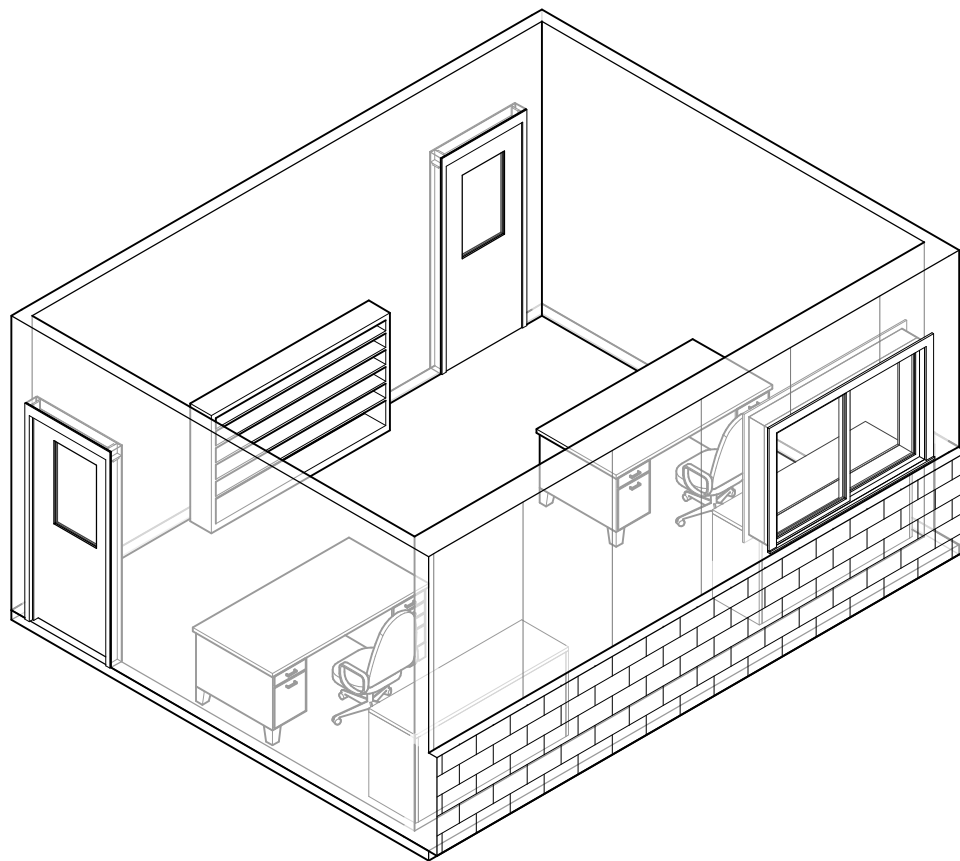
NATURAL LIGHTING W/ WINDOWS

OCCUPANCY SENSORS FOR
LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

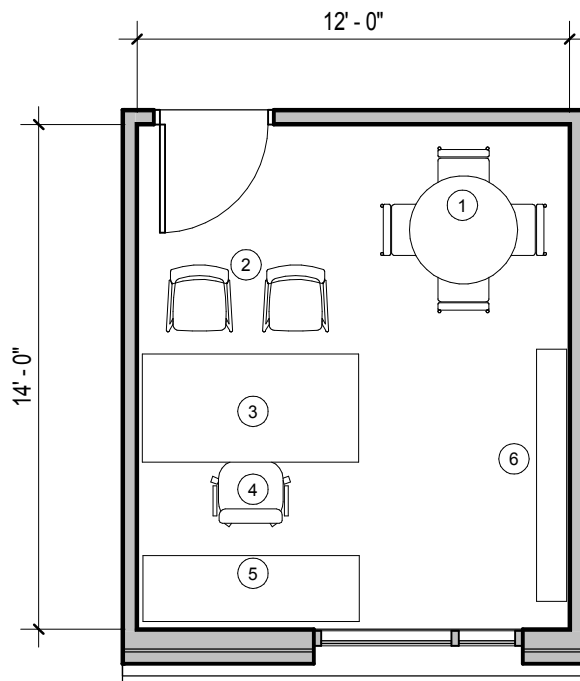
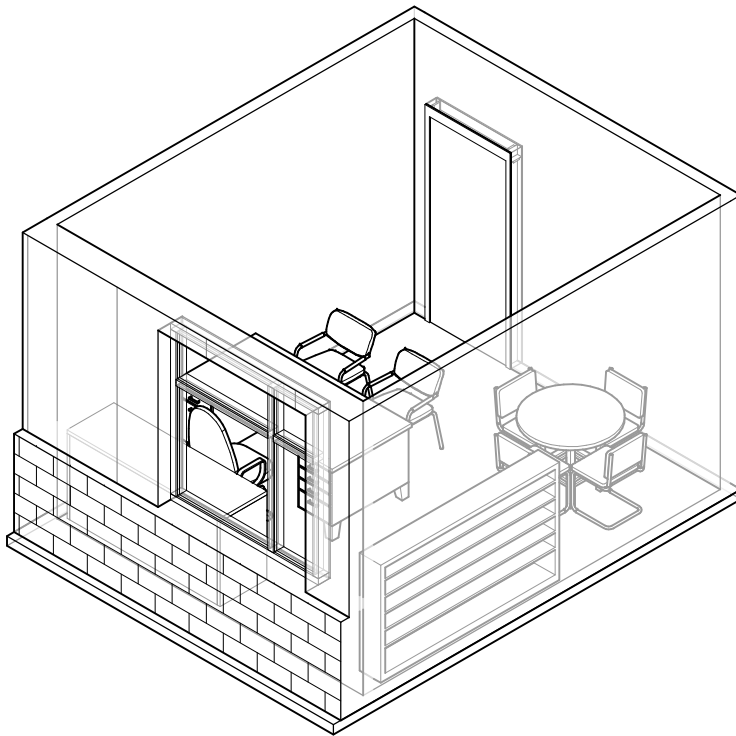
1. (2) WORKSTATIONS
2. (2) EXECUTIVE CHAIRS
3. (2) FILE STORAGE
4. (1) BOOKSHELF



ADMIN OPEN OFFICE - 300 SF

3/16" = 1'-0"

DRAFT



GENERAL MANAGER OFFICE - 224 SF
 $\frac{3}{16}'' = 1'-0''$

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILES

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

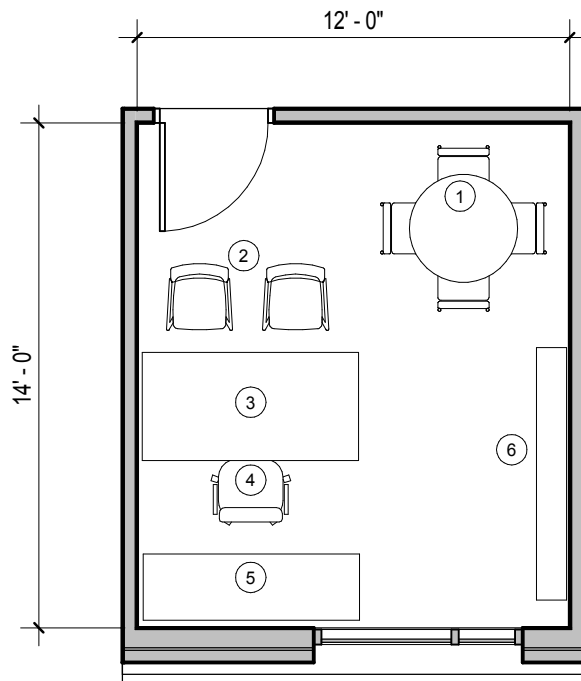
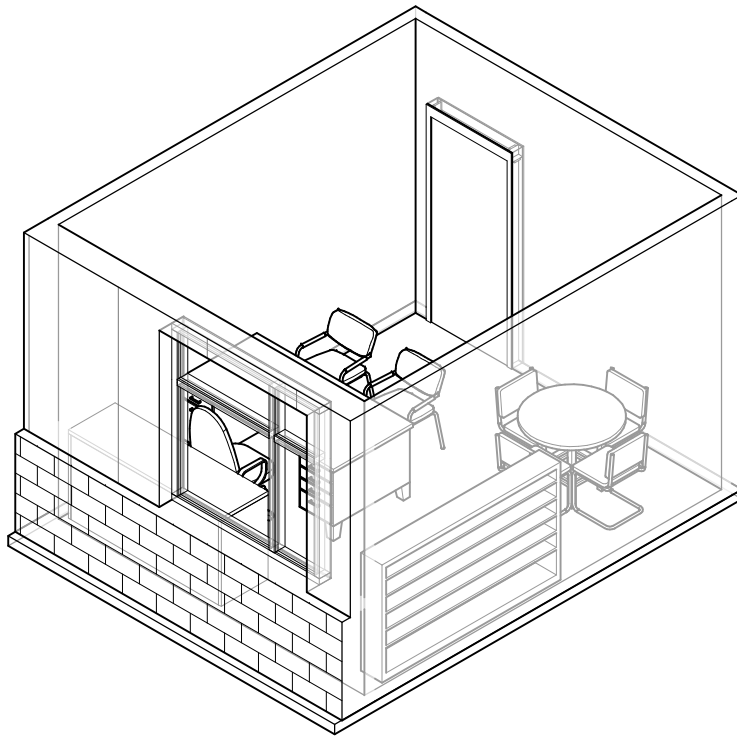
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. TABLE AND 4 CHAIRS
2. (2) GUEST CHAIRS
3. DESK
4. EXECUTIVE CHAIR
5. CREDENZA
6. BOOKSHELF

DRAFT



OPERATIONS MANAGER OFFICE - 224 SF
3/16" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILES

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

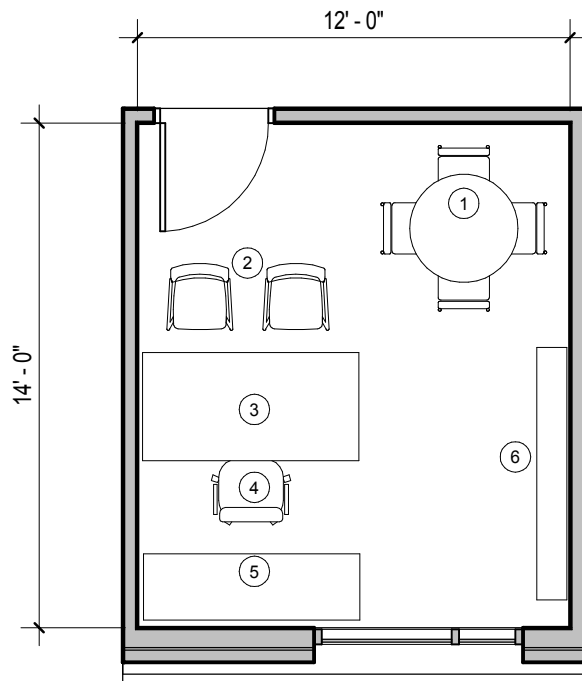
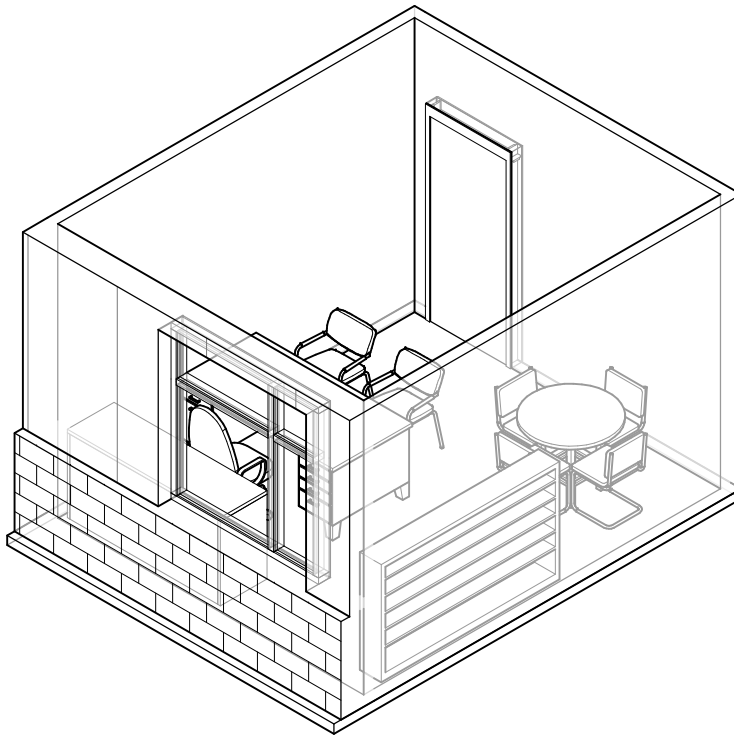
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. TABLE AND 4 CHAIRS
2. (2) GUEST CHAIRS
3. DESK
4. EXECUTIVE CHAIR
5. CREDENZA
6. BOOKSHELF

DRAFT



MANAGER OF FAC. COMPLIANCE & TECH OFFICE - 224 SF
 3/16" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

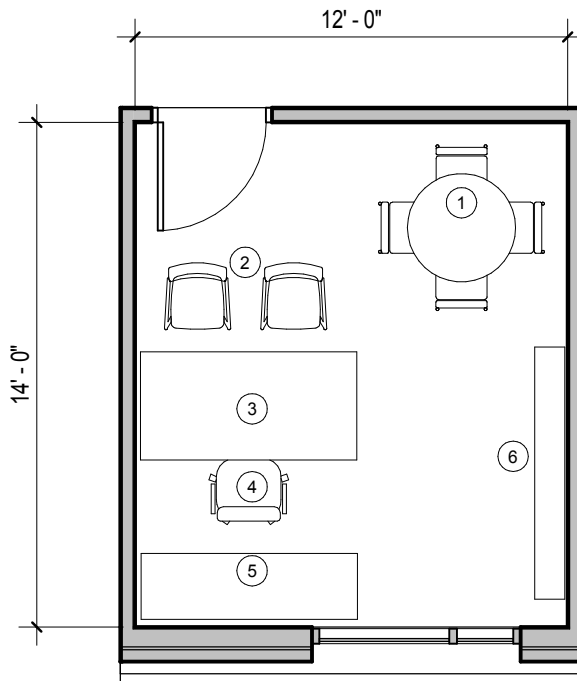
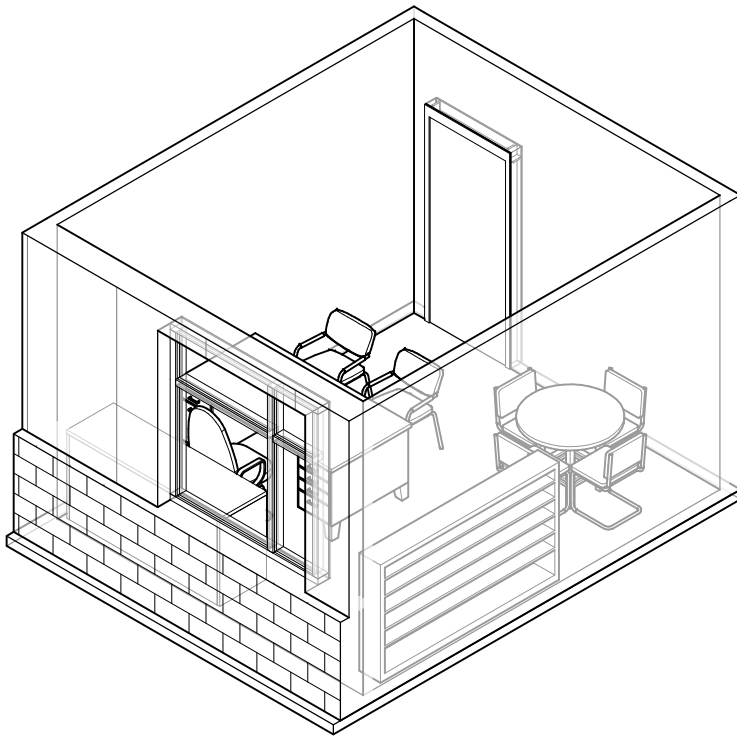
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. TABLE AND 4 CHAIRS
2. (2) GUEST CHAIRS
3. DESK
4. EXECUTIVE CHAIR
5. CREDENZA
6. BOOKSHELF

DRAFT



ASST. COORDINATOR FINANCE & RECYCLING OFFICE - 224 SF
 3/16" = 1'-0"

ROOM FINISHES:

CEILING: ACT TILE

WALLS: GWB, PAINTED

FLOORS: CARPET TILE

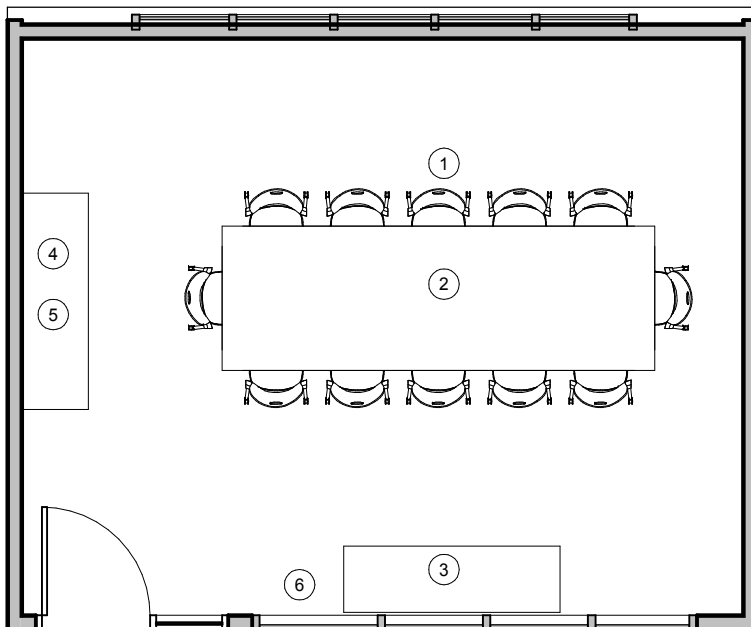
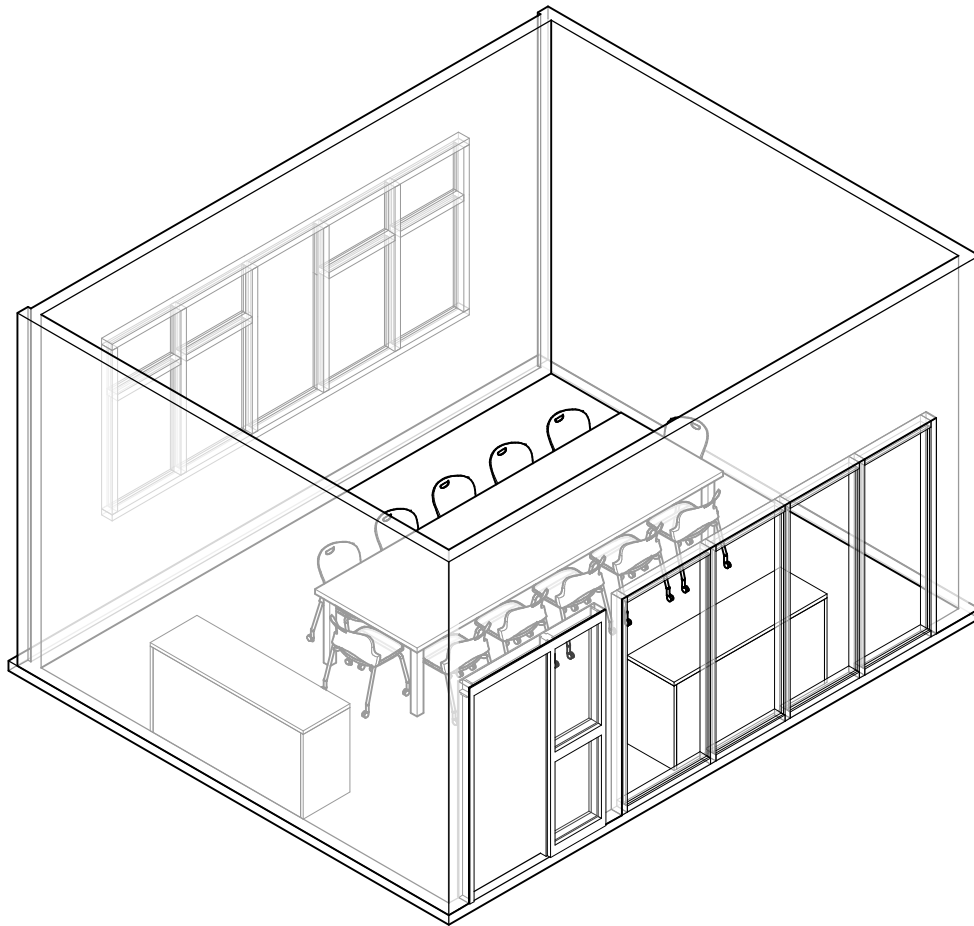
MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS
 TEL/DATA OUTLET JACKS
 NATURAL LIGHTING W/ WINDOWS
 OCCUPANCY SENSORS FOR LIGHTING CONTROLS
 HEATING / COOLING

COMPONENTS:

1. TABLE AND 4 CHAIRS
2. (2) GUEST CHAIRS
3. DESK
4. EXECUTIVE CHAIR
5. CREDENZA
6. BOOKSHELF

DRAFT



PUBLIC CONFERENCE ROOM - 320 SF
 3/16" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

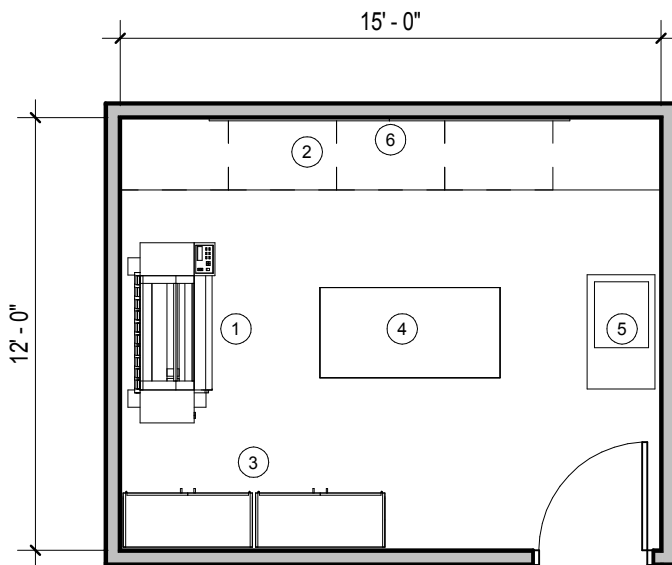
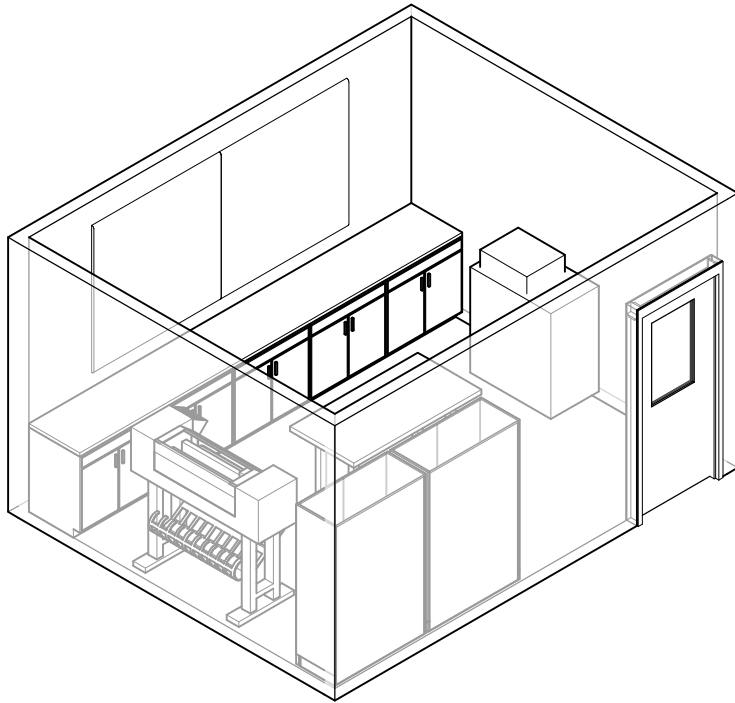
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (12) CHAIRS
2. 5' x 12' CONFERENCE TABLE
3. CREDENZA
4. CABINET
5. PROJECTION OR VIDEO SCREEN
6. GLASS INTERIOR WALL

DRAFT



COPY / FILE / MAIL AREA - 180 SF
 $\frac{3}{16}'' = 1'-0''$

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

HEATING

COOLING

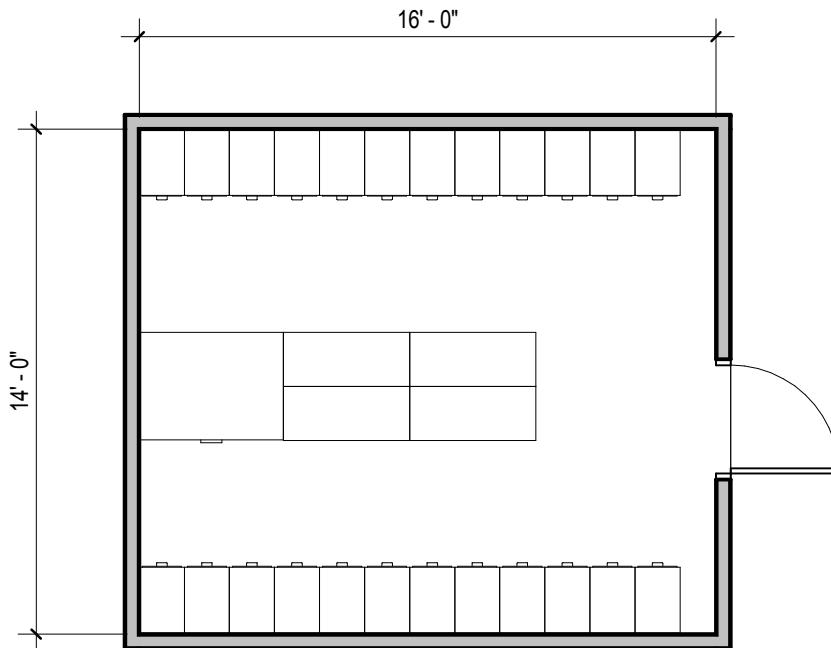
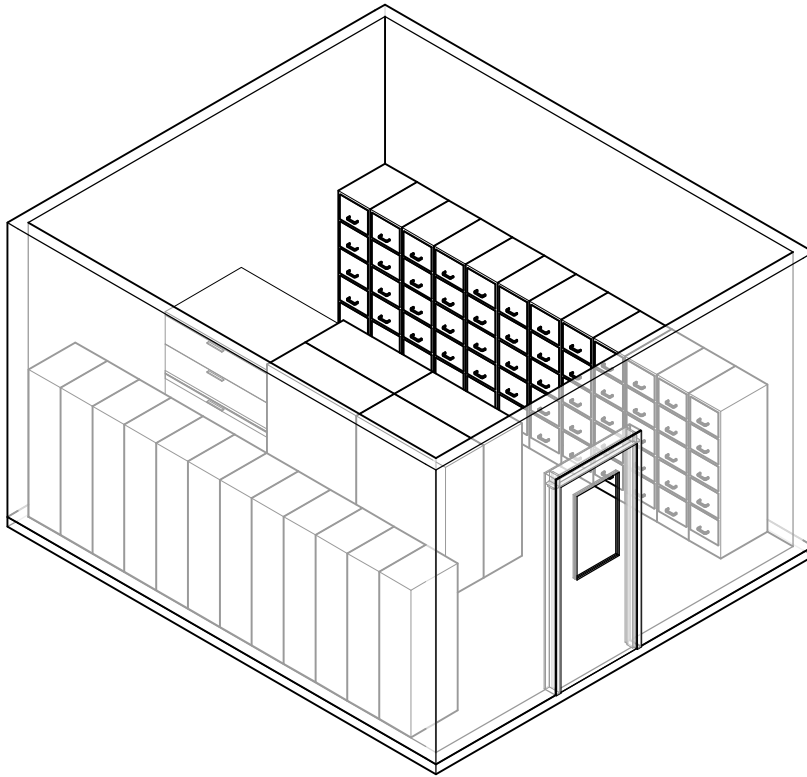
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. PLOTTER
2. WORK COUNTER & BASE CABINETS (BELOW)
3. SUPPLY CABINET
4. LAYOUT TABLE
5. PRINTER
6. BULLETIN BOARD

DRAFT



② FILE STORAGE - 224 SF -2
3/16" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD/ PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

LIGHTING

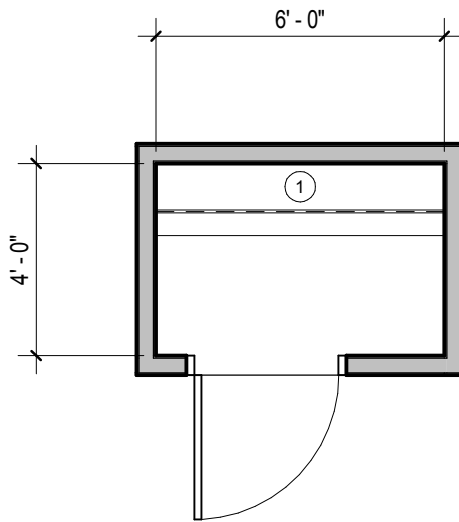
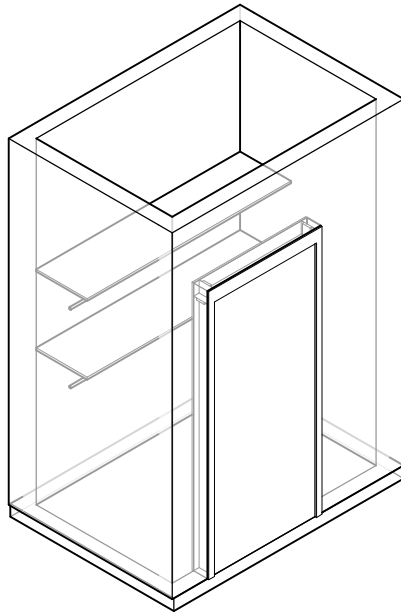
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (24) 5-DRAWER FILE CABINETS
2. (4) FLAT FILES, STACKED 3-HIGH
3. (4) LATERAL FILE CABINETS
42" W x 18" D x 54" H

DRAFT



SMALL SUPPLY CLOSET - 24 SF
 1/4" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

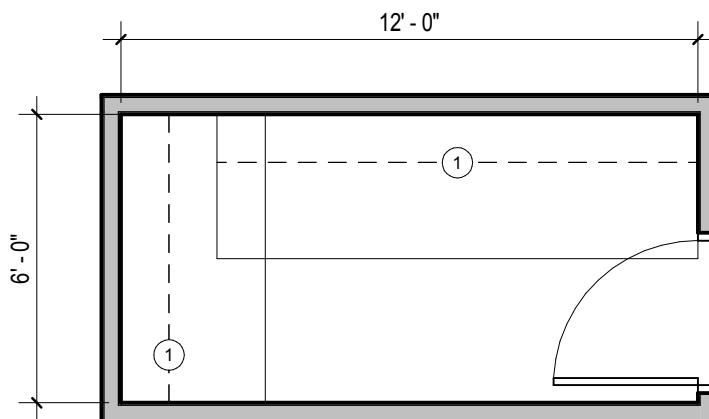
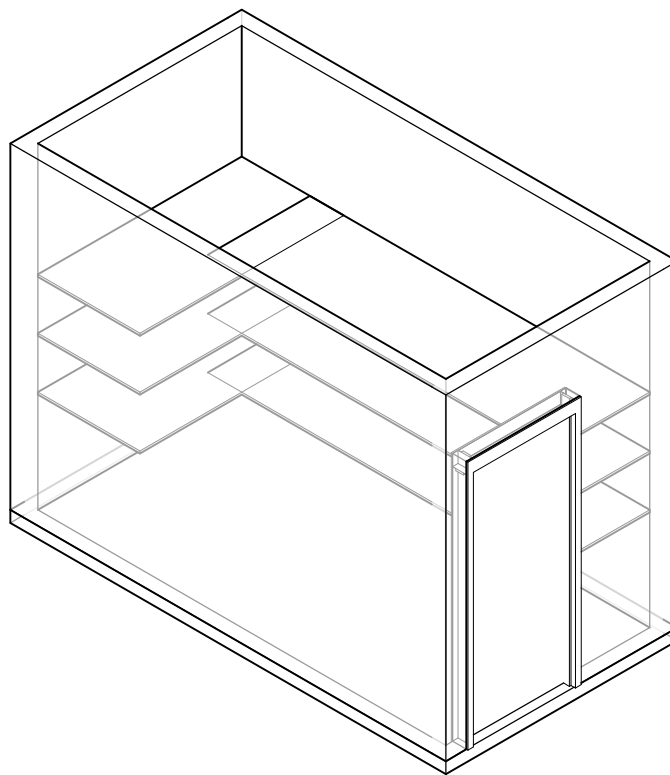
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVING

DRAFT



OFFICE SUPPLY ROOM - 72 SF
1/4" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

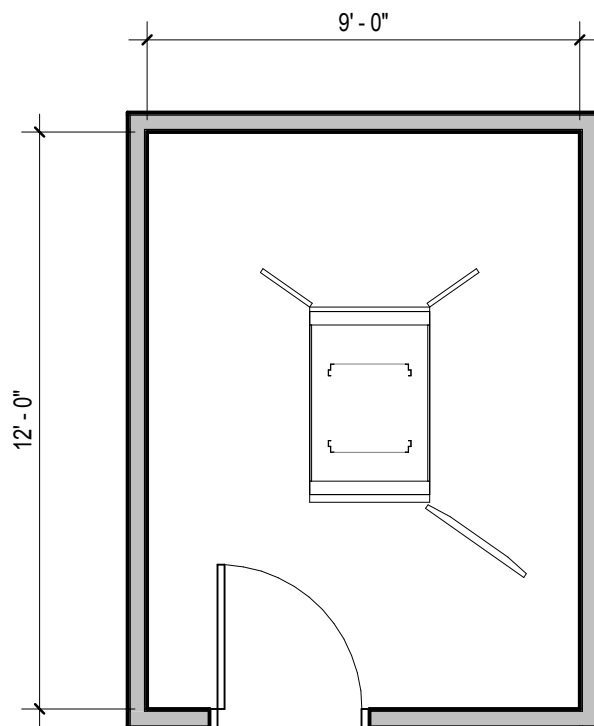
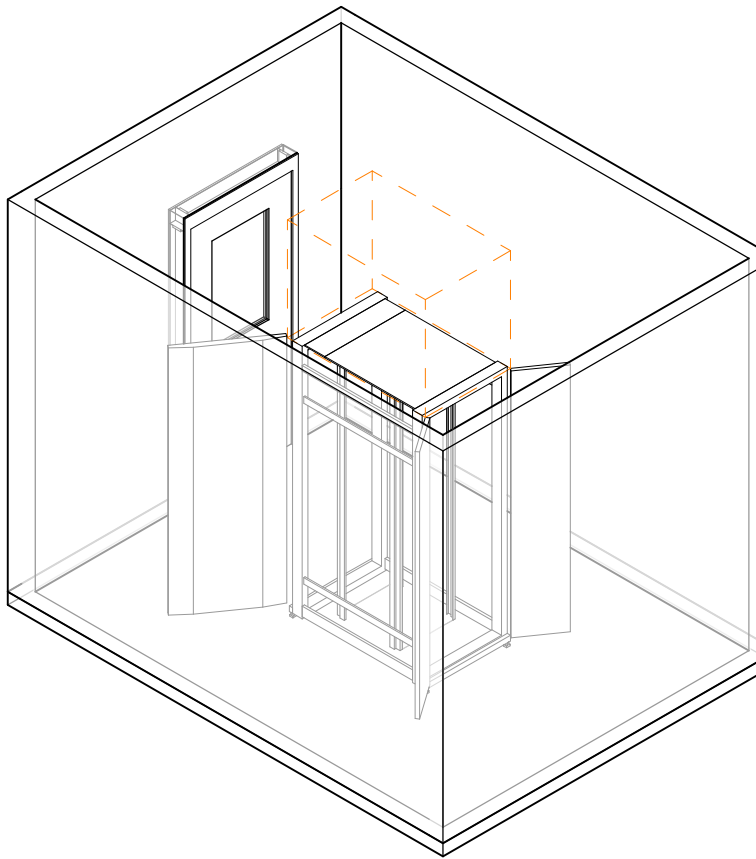
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS
- TEL/DATA JACKS

COMPONENTS:

1. WALL MOUNTED SHELVING

DRAFT



IT DATA / TELEPHONE ROOM - 108 SF
1/4" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: PLYWOOD, PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

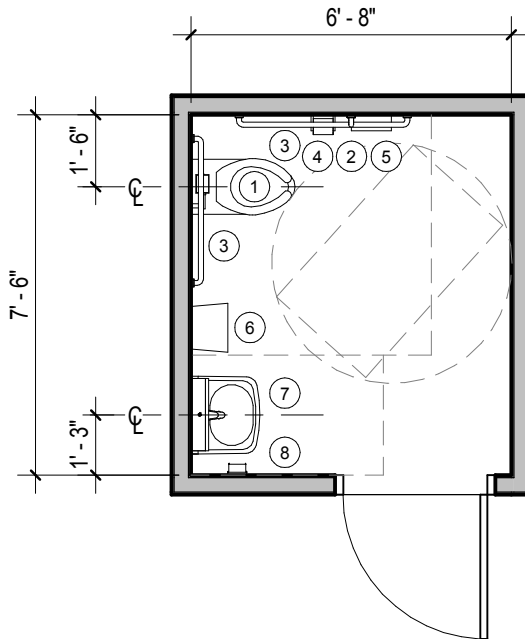
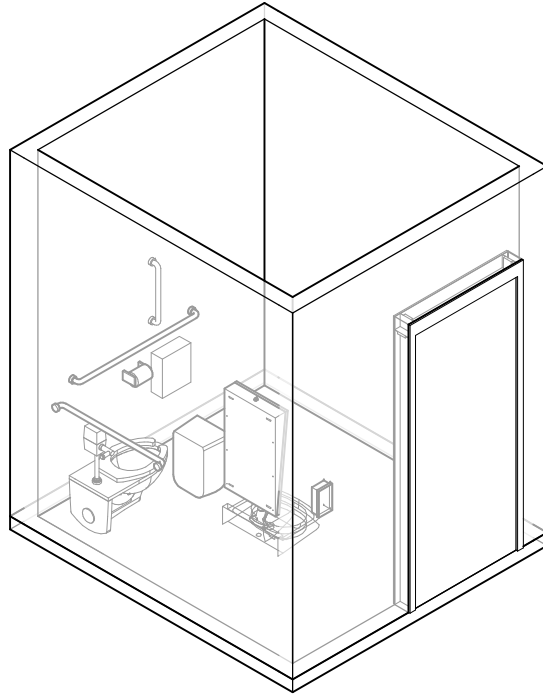
DATA OUTLET JACKS

RACK-MOUNTED POWER PER IT DEPT

COMPONENTS:

1. DATA RACK
2. PLYWOOD BACK BOARD FOR BUILDING SYSTEM COMPONENTS (SECURITY, CABLE, ETC.)

DRAFT



UNISEX TOILET FACILITY (MA) - 50 SF
1/4" = 1'-0"

ROOM FINISHES:

CEILING: MOISTURE RESISTANT
CEILING TILE

WALLS: CERAMIC TILE /
MOISTURE-RESISTANT
GYPSUM WALLBOARD,
PAINTED

FLOORS: CERAMIC TILE

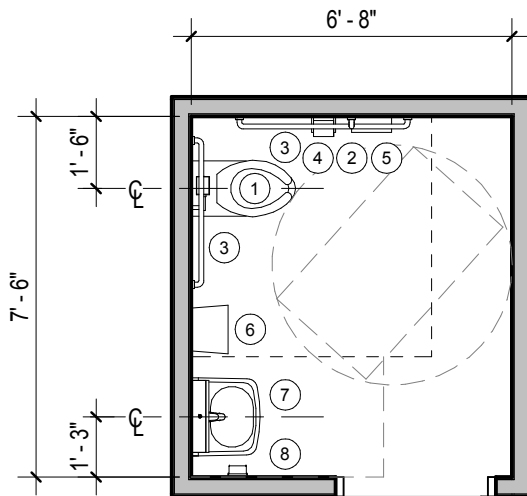
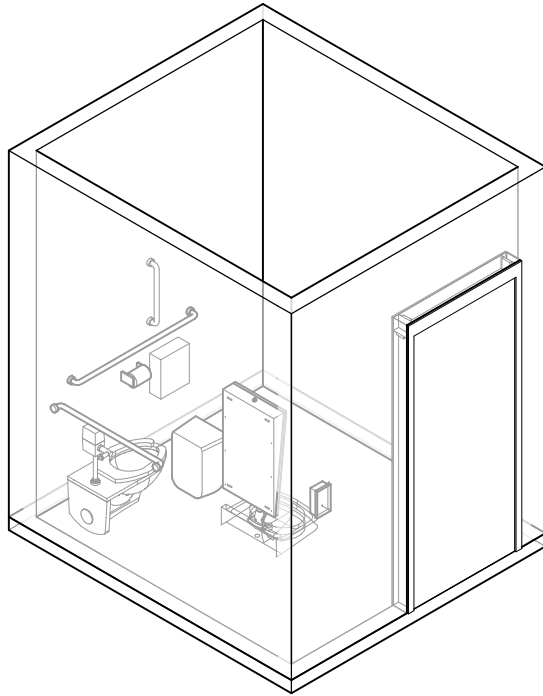
MEP/DATA REQUIREMENTS:

- GFI ELECTRICAL OUTLETS
- HEATING / COOLING
- OCCUPANCY SENSORS
FOR LIGHTING CONTROLS

COMPONENTS:

1. WALL-HUNG TOILET
2. 18" VERTICAL GRAB BAR
3. 42" HORIZONTAL GRAB BARS
4. TOILET PAPER DISPENSER
5. SANITARY NAPKIN DISPOSAL
RECEPTACLE
6. PAPER TOWEL DISPENSER
7. WALL-HUNG SINK & MIRROR
8. SOAP DISPENSER

DRAFT



UNISEX TOILET FACILITY (MA) - 50 SF (2)
1/4" = 1'-0"

ROOM FINISHES:

CEILING: MOISTURE RESISTANT
CEILING TILE

WALLS: CERAMIC TILE /
MOISTURE RESISTANT
GYPSUM WALLBOARD,
PAINTED

FLOORS: CERAMIC TILE

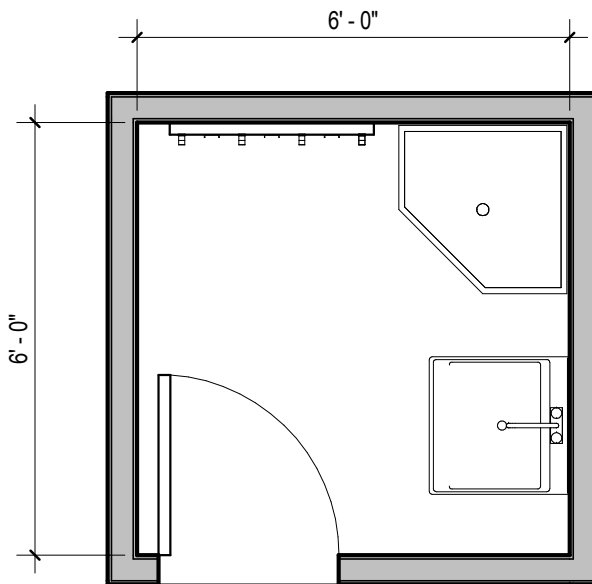
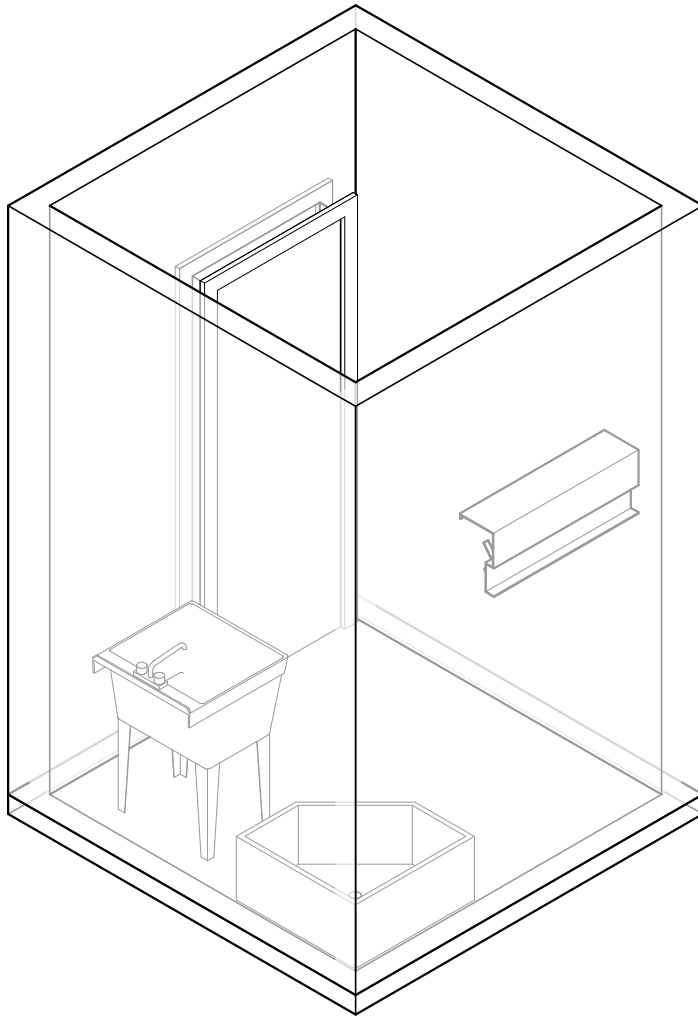
MEP/DATA REQUIREMENTS:

- GFI ELECTRICAL OUTLETS
- HEATING / COOLING
- OCCUPANCY SENSORS FOR
LIGHTING CONTROLS

COMPONENTS:

1. WALL-HUNG TOILET
2. 18" VERTICAL GRAB BAR
3. 42" HORIZONTAL GRAB BARS
4. TOILET PAPER DISPENSER
5. SANITARY NAPKIN DISPOSAL
RECEPTACLE
6. PAPER TOWEL DISPENSER
7. WALL-HUNG SINK & MIRROR
8. SOAP DISPENSER

DRAFT



JANITOR CLOSET - 36 SF
 $3/8" = 1'-0"$

ROOM FINISHES:

CEILING: MOISTURE RESISTANT
CEILING TILE

WALLS: CERAMIC TILE /
MOISTURE RESISTANT
GYPSUM WALLBOARD,
PAINTED

FLOORS: CERAMIC TILE

MEP/DATA REQUIREMENTS:

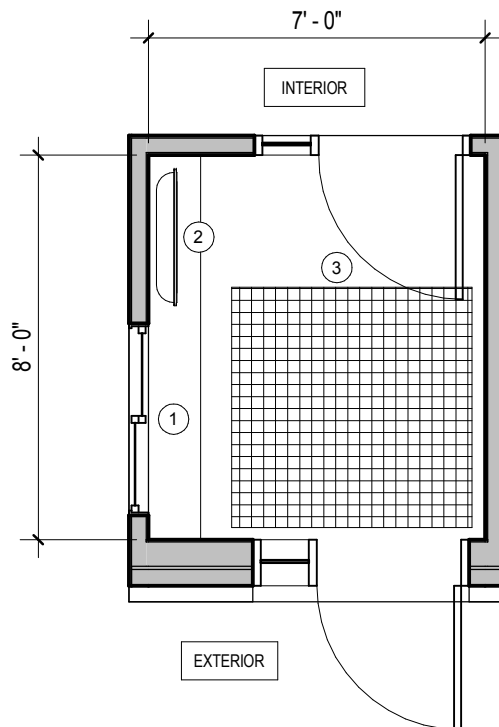
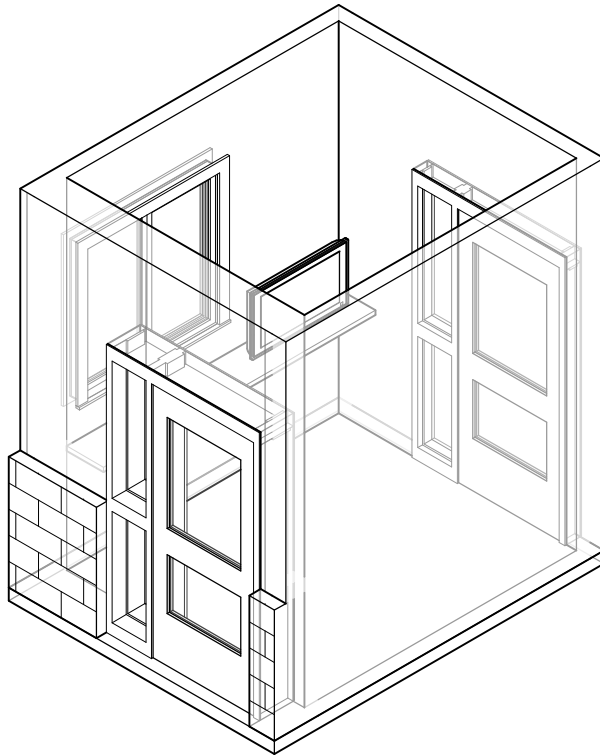
DUPLEX ELECTRICAL OUTLETS

OCCUPANCE SENSORS FOR
LIGHTING CONTROLS

COMPONENTS:

1. FRP PANELING AT SINK
2. UTILITY SINK & DRAIN
3. UTILITY SHELF W/
MOP & BROOM HOLDERS

DRAFT



STAFF ENTRANCE - 56 SF
 1/4" = 1'-0"

ROOM FINISHES:

CEILING: GYPSUM BOARD,
PAINTED

WALLS: GYPSUM WALLBOARD,
PAINTED

FLOORS: CERAMIC TILE

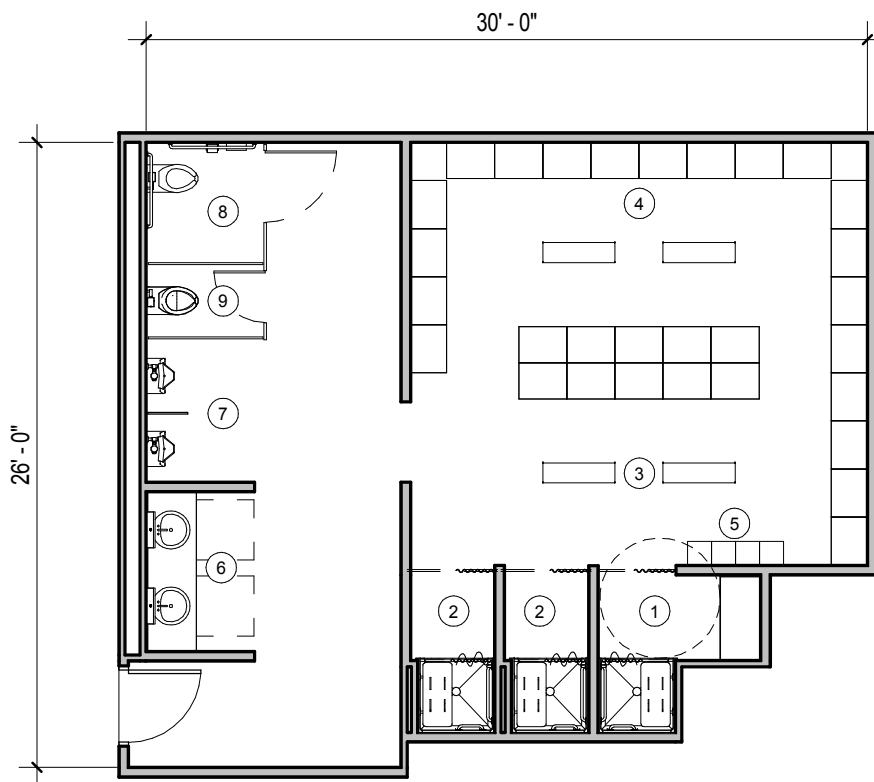
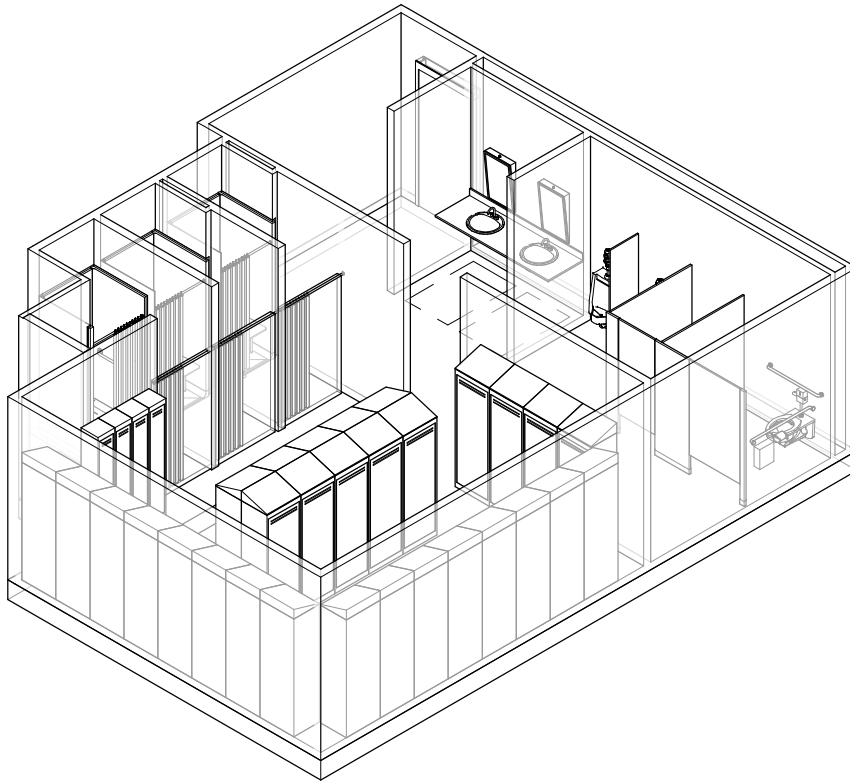
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS
- TEL / DATA OUTLET JACKS
- HEATING / COOLING
- OCCUPANCY SENSORS
FOR LIGHTING CONTROLS
- NATURAL LIGHTING W/ WINDOWS

COMPONENTS:

1. CHECK-IN COUNTER AND
SLIDE WINDOW
2. KIOSK FOR STAFF USE
3. FLOOR GRATE

DRAFT



MALE LOCKER ROOM (3) - 735 SF
1/8" = 1'-0"

ROOM FINISHES:

CEILING: MOISTURE RESISTANT
CEILING TILE

WALLS: CEILING TILE /
MOISTURE RESISTANT
GYPSUM WALLBOARD,
PAINTED

FLOORS: NON-SLIP VINYL TILE

MEP/DATA REQUIREMENTS:

GFI ELECTRICAL OUTLETS

OCCUPANCY SENSORS FOR
LIGHTING CONTROLS

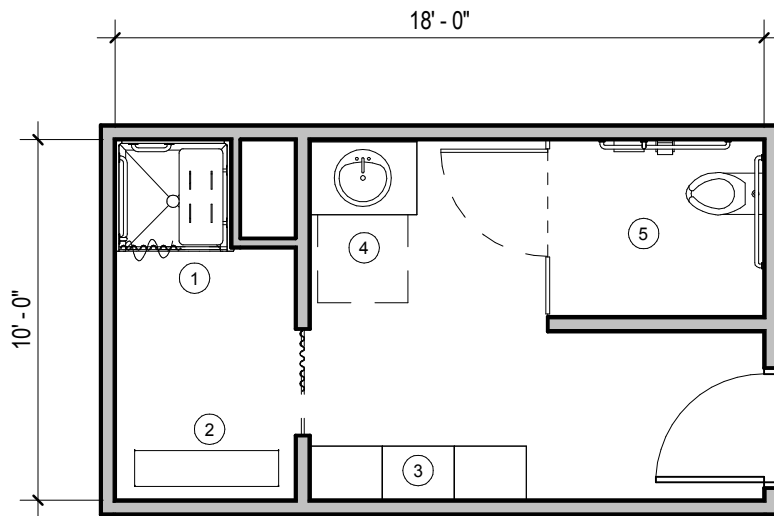
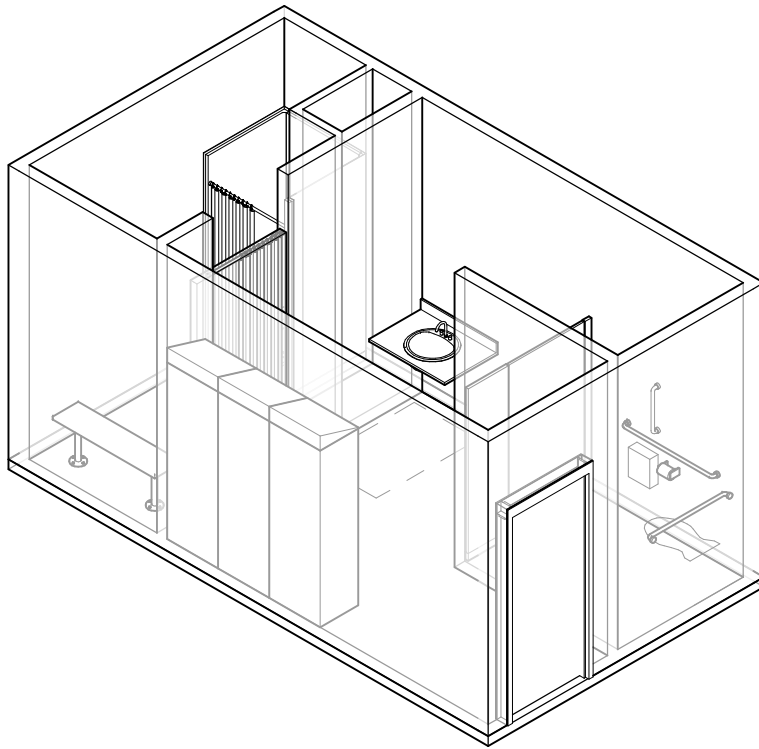
HEATING

COOLING

COMPONENTS:

1. (1) ADA SHOWER STALL
2. (2) STANDARD SHOWER STALLS
3. (4) BENCHES
4. (3) 18" X 24" LOCKERS
5. (4) 12" X 12" SEASONAL
LOCKERS
6. (2) COUNTER, SINK & MIRROR
7. (2) WALL HUNG URINAL
8. (1) ADA STALL
9. (1) STANDARD STALL

DRAFT



FEMALE LOCKER ROOM - 180 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING: MOISURE-RESISTANT
CEILING TILE

WALLS: CERAMIC TILE /
MOISTURE-RESISTANT
GYPSUM WALLBOARD,
PAINTED

FLOORS: NON-SLIP VINYL TILE

MEP/DATA REQUIREMENTS:

GFI ELECTRICAL OUTLETS

OCCUPANCY SENSORS FOR
LIGHTING CONTROLS

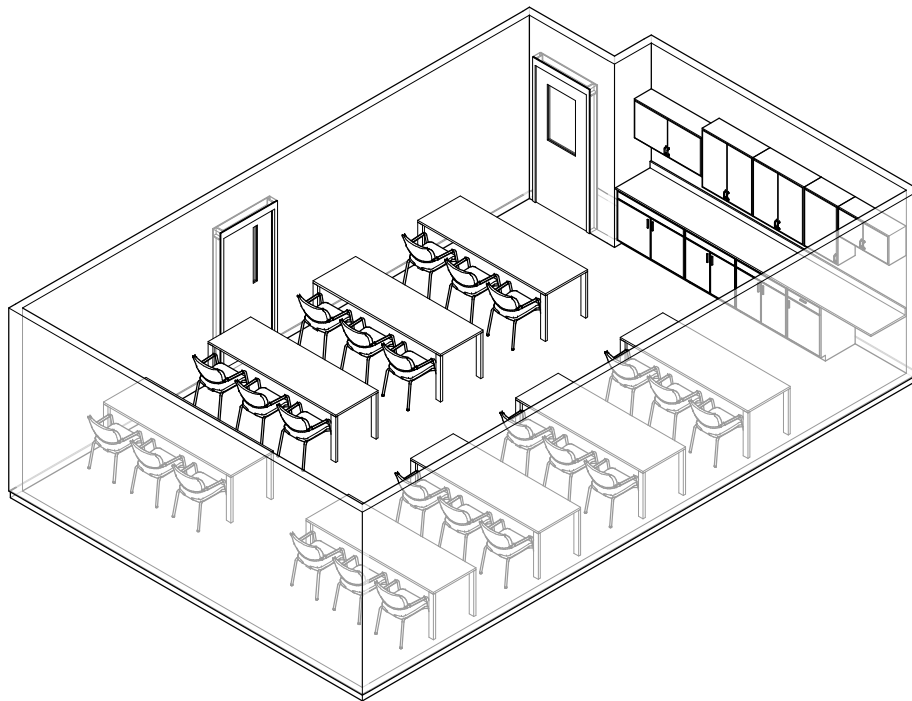
HEATING

COOLING

COMPONENTS:

1. ADA SHOWER STALL
2. BENCH
3. (3) 18" X 24" LOCKERS
4. COUNTER, SINK & MIRROR
5. ADA STALL

DRAFT



ROOM FINISHES:

CEILING: CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

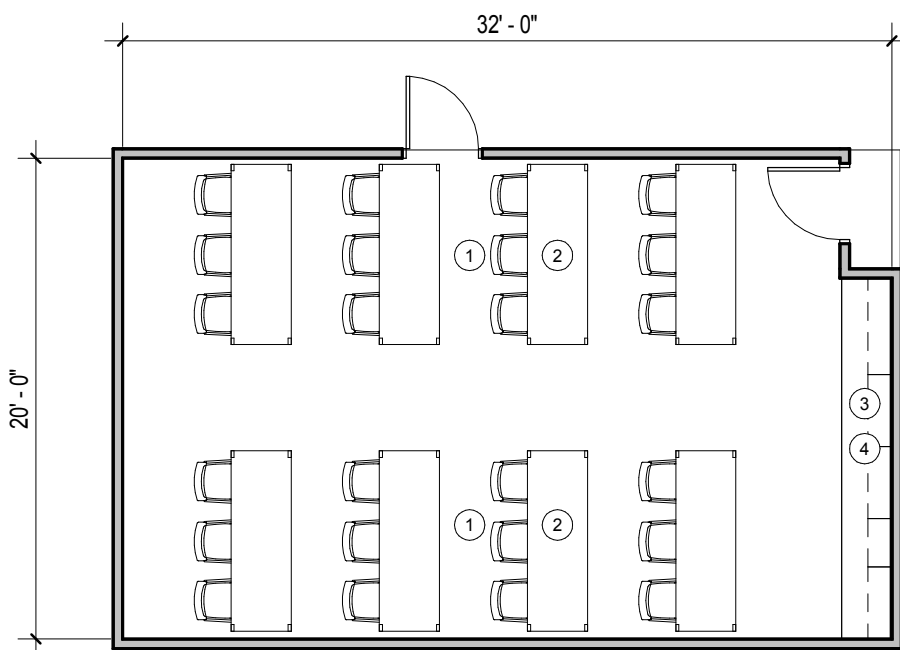
NATURAL LIGHTING W/ WINDOWS

OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

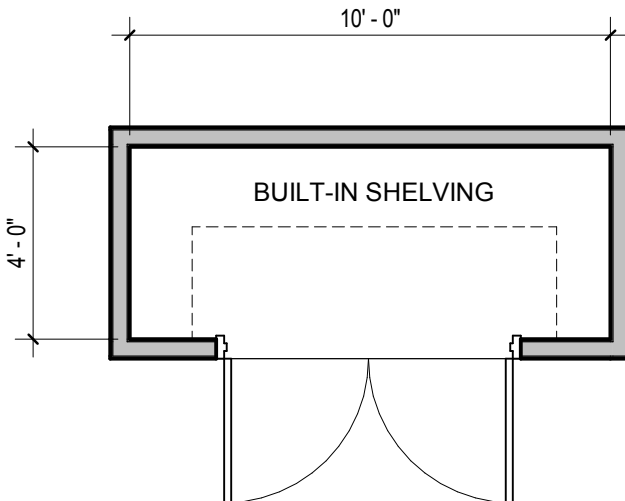
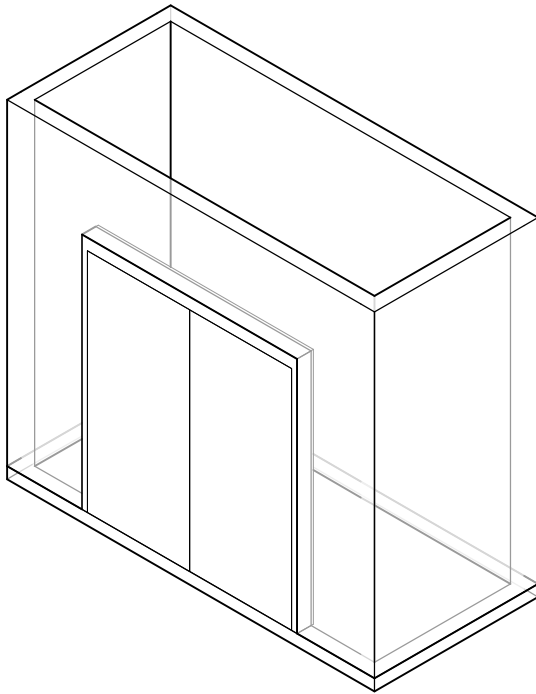
1. (24) TASK CHAIRS
2. (8) TABLES
3. STORAGE CABINETS
4. WALL MOUNTED TELEVISION OR VIDEO SCREEN



MUSTER / TRAINING ROOM - 640 SF

1/8" = 1'-0"

DRAFT



STORAGE CLOSET - 40 SF
 1/4" = 1'-0"

ROOM FINISHES:

CEILING: CEILING TILE

WALLS: GYPSUM WALLBOARD,
PAINTED

FLOORS: VINYL FLOORING

MEP/DATA REQUIREMENTS:

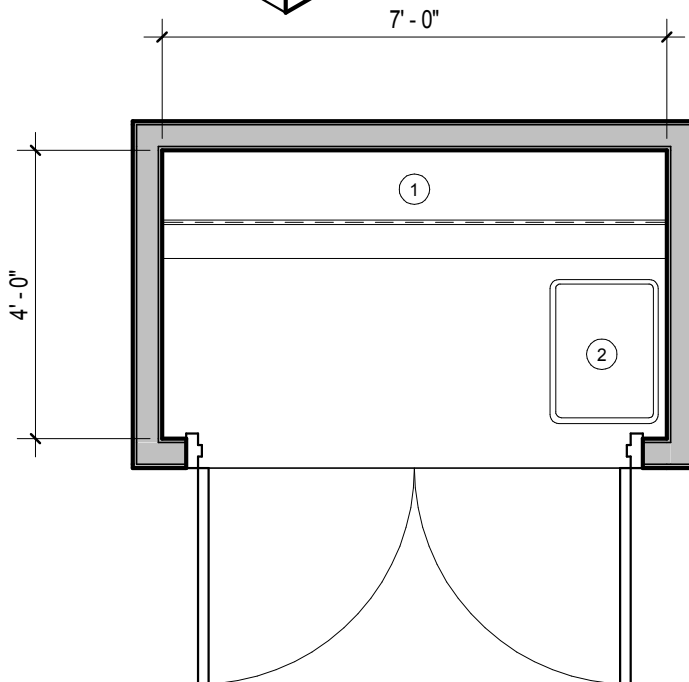
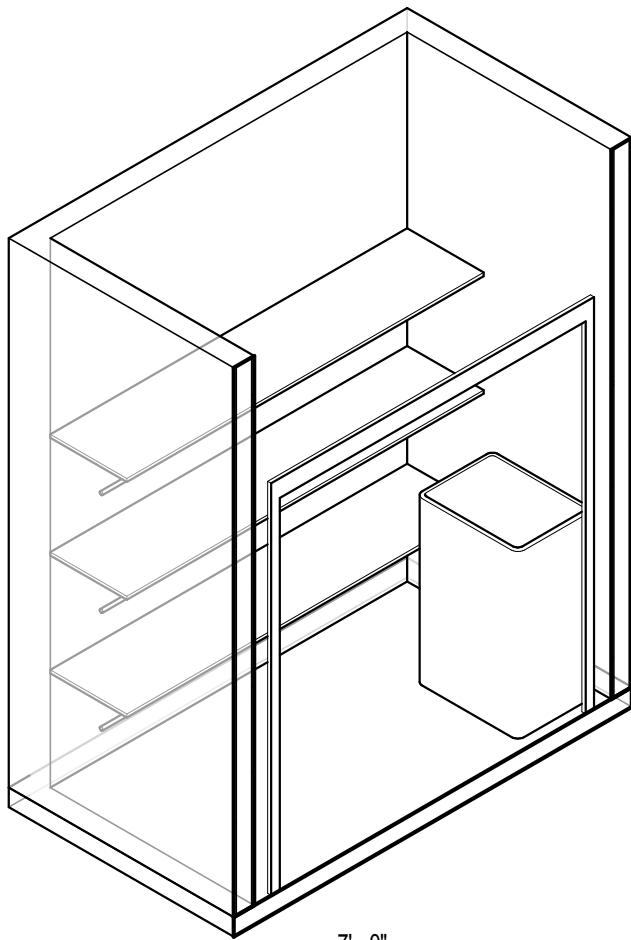
GFI ELECTRICAL OUTLETS

OCCUPANCY SENSOR FOR
LIGHTING CONTROL

COMPONENTS:

BUILT-IN SHELVING

DRAFT



UNIFORM STORAGE - 28 SF
 $3/8" = 1'-0"$

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

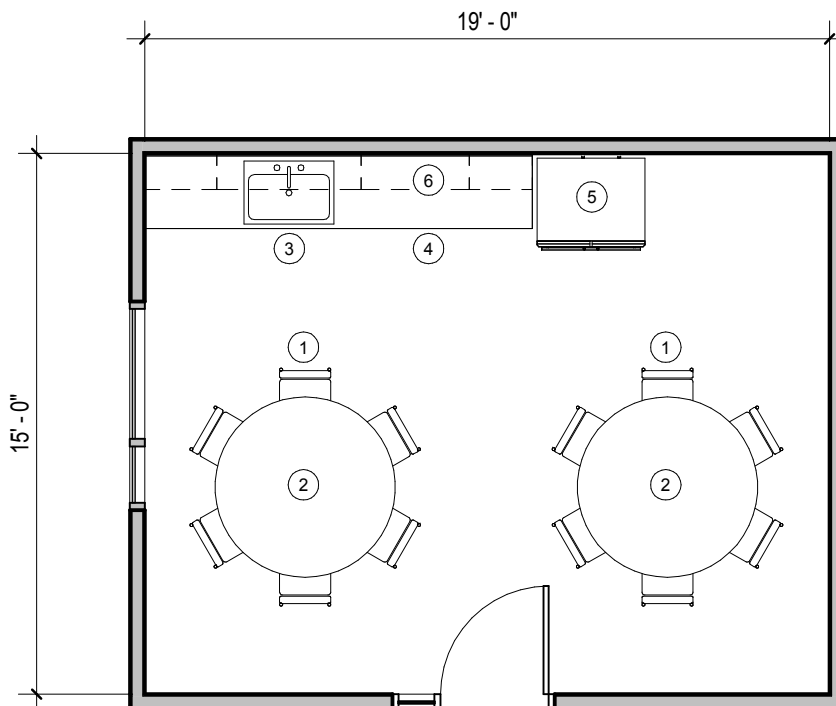
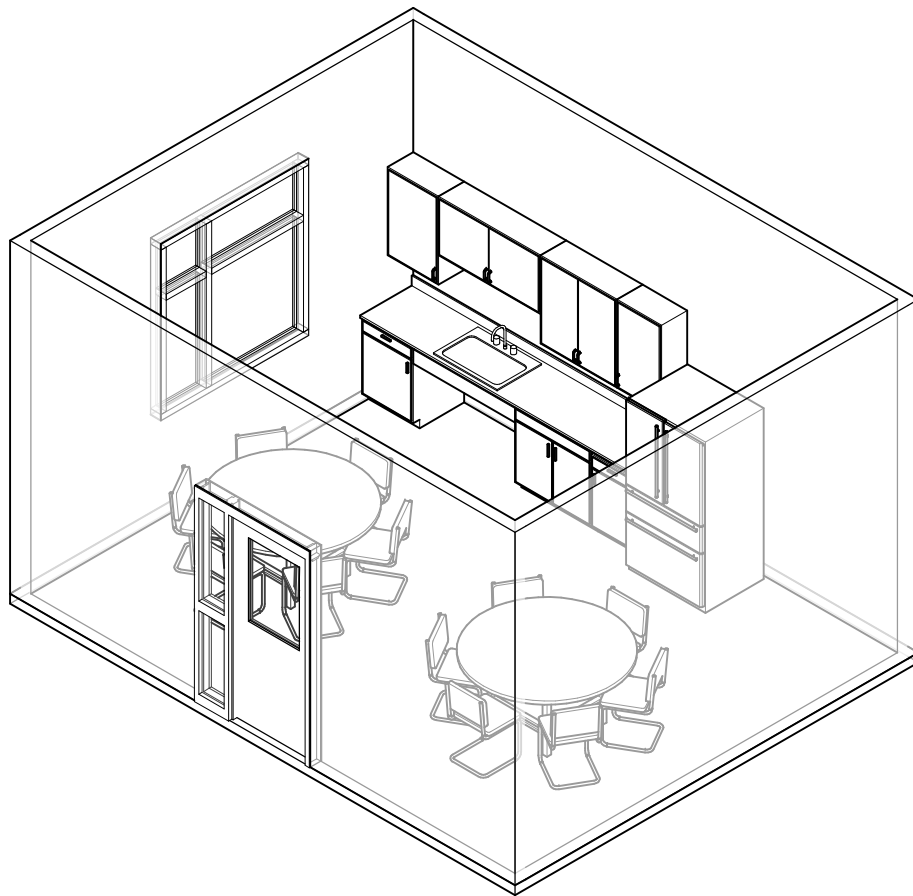
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVING
2. LAUNDRY BASKET

DRAFT



BREAK ROOM - 285 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

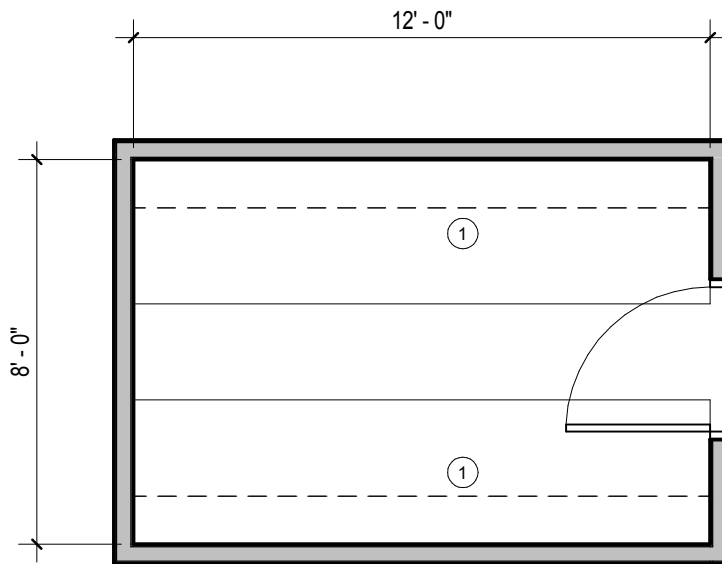
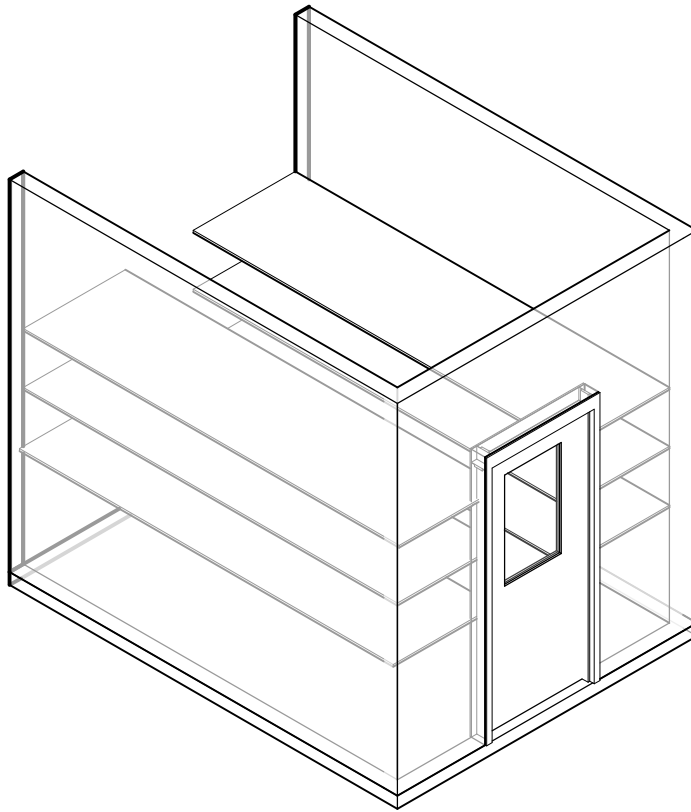
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (12) CHAIRS
2. (2) 60" DIA TABLES
3. ACCESSIBLE KITCHEN SINK
4. BASE CABINETS, COUNTER, & WALL HUNG CABINETS
5. REFRIGERATOR
6. MICROWAVE

DRAFT



BREAK/ TRAINING/ MUSTER RM STORAGE CL-96 SF
 1/4" = 1'-0"

ROOM FINISHES:

CEILING: ACOUSTIC CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

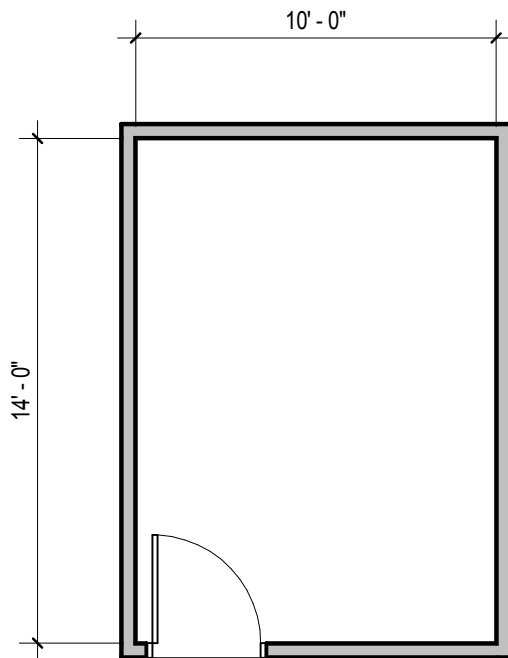
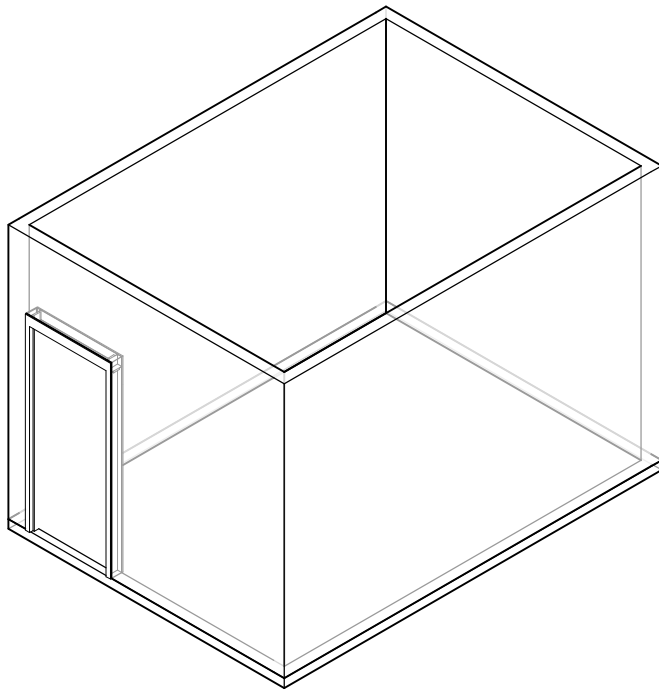
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVEING

DRAFT



MAIN ELECTRIC ROOM - 140 SF

$\frac{3}{16}'' = 1'-0''$

ROOM FINISHES:

CEILING: MOISTURE-RESISTANT
CEILING TILE

WALLS: PLYWOOD, PAINTED

FLOORS: CONCRETE

MEP/DATA REQUIREMENTS:

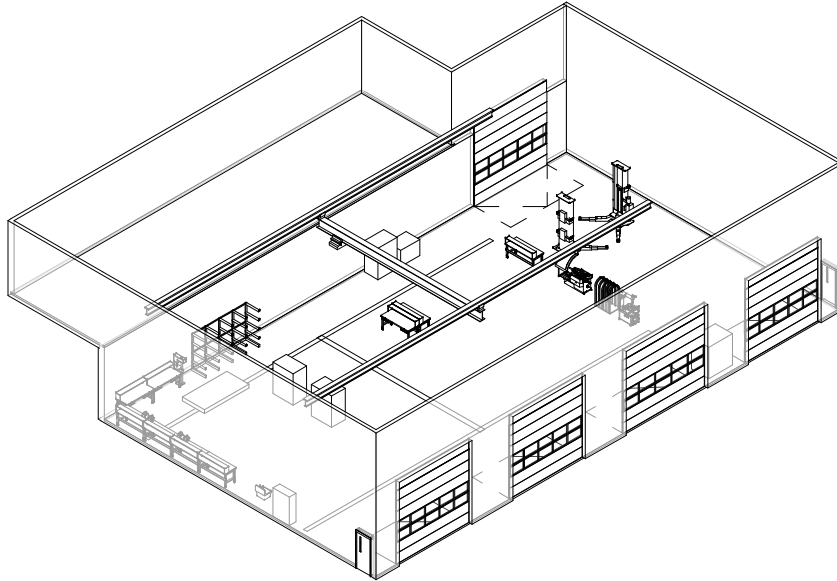
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

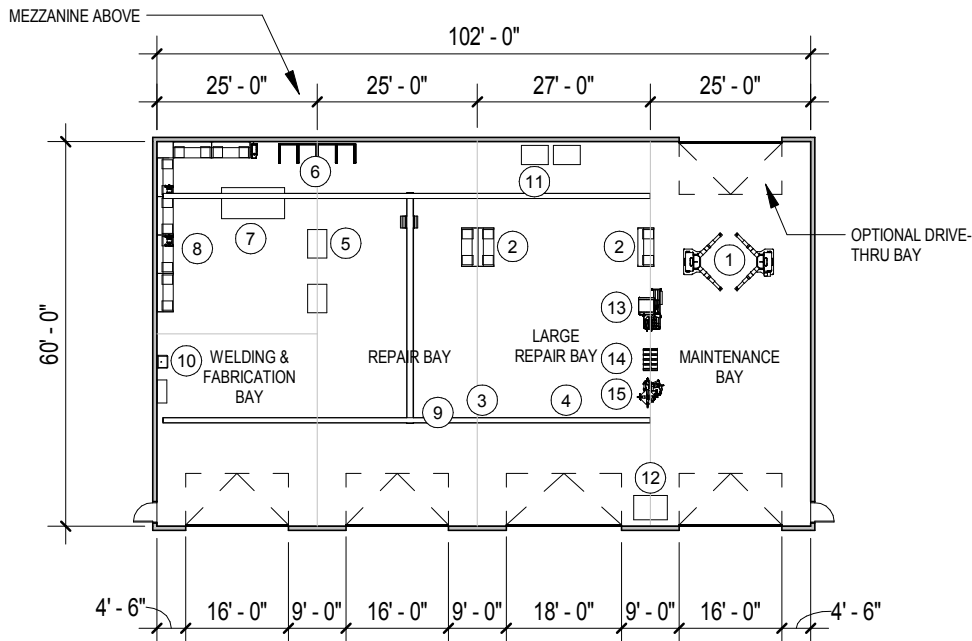
1. WALL MOUNTED PANELS

DRAFT



NOTES:

- 20 FT CLEARANCE TO BRIDGE CRANE HIGH HOOK HEIGHT.
- 16'-0" HEIGHT OVERHEAD DOORS
- FLOOR DRAINS TO INTERCEPTORS
- TWO MEANS OF EGRESS
- BRIDGE CRANE COVERAGE OVER MEZZANINE NOT SHOWN FOR CLARITY



MAINTENANCE BAYS - 6,120 SF

1" = 30'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: METAL PANEL /
CONCRETE, PAINTED

FLOORS: SEALED CONCRETE

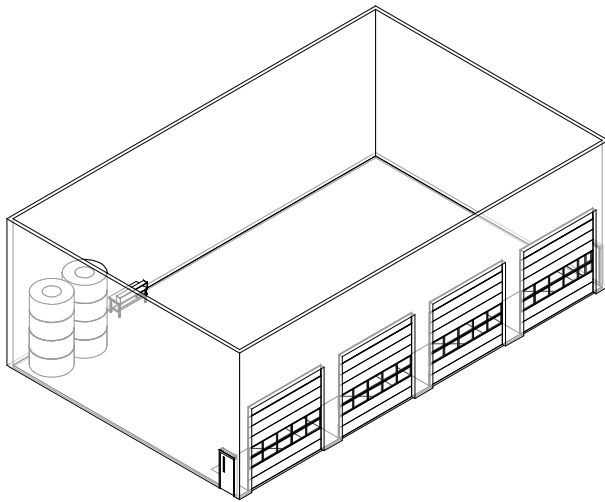
MEP/DATA REQUIREMENTS:

- HEATING (RADIANT FLOOR)
- DUPLEX ELECTRICAL OUTLETS
- SPECIALITY EQUIP. ELECTRICAL OUTLETS
- DATA OUTLET JACKS
- VENTILATION

COMPONENTS:

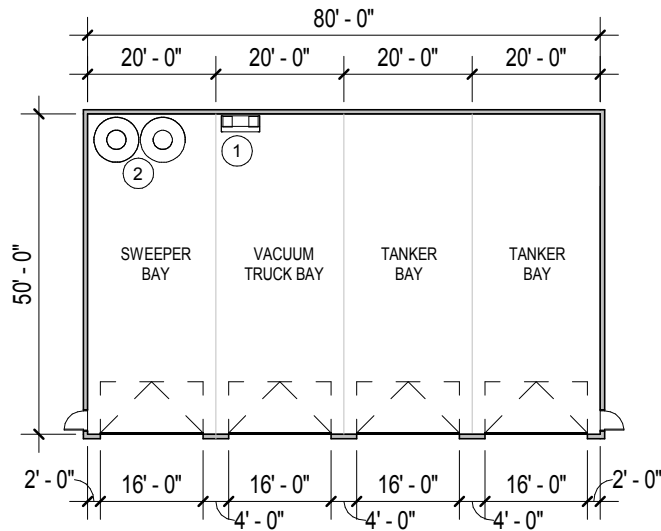
1. TWO POST LIFT (18,000 LBS)
2. (8) WORK BENCH, TOOLBOX
3. OVERHEAD REEL BANK FOR FLUIDS (MAINTENANCE BAY)
4. REELS FOR 1/2" & 3/8" COMPRESSED AIR (ALL BAYS)
5. DRILL PRESS
6. CANTILEVER FLAT STOCK STORAGE
7. WELDING BENCH
8. EQUIPMENT: PEDESTAL GRINDER, METAL BANDSAW, MEDIA BLASTER, WELDING SCREENS, WELDER, FUME EXTRACTOR, RACK WITH 20' FLAT STOCK
9. OVERHEAD 10 TON BRIDGE CRANE (ABOVE 3 BAYS)
10. UTILITY SINK
11. WASTE OIL & WASTE ANTI-FREEZE PUMP-OUT & PARTS WASHER
12. DEF FLUID 300 GAL TOTE
13. TIRE BALANCING MACHINE
14. TIRE INFLATION CAGE
15. TIRE CHANGING MACHINE

DRAFT



NOTES:

- 18 FT MIN. HEIGHT
- 16'-0" HEIGHT OH DOORS
- FLOOR DRAINS TO INTERCEPTORS
- 2 MEANS OF EGRESS



VEHICLE STORAGE BAYS - 4,000 SF

1" = 30'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: METAL PANEL /
CONCRETE, PAINTED

FLOORS: SEALED CONCRETE

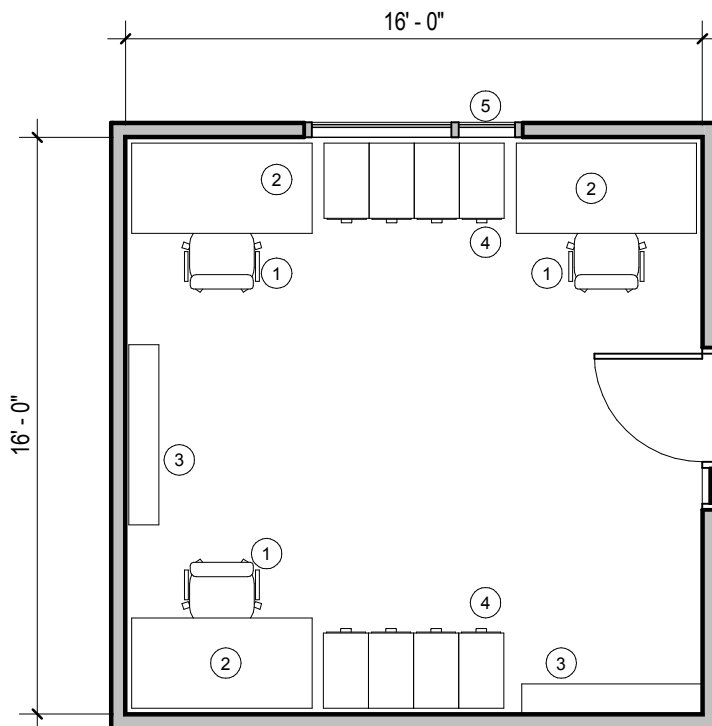
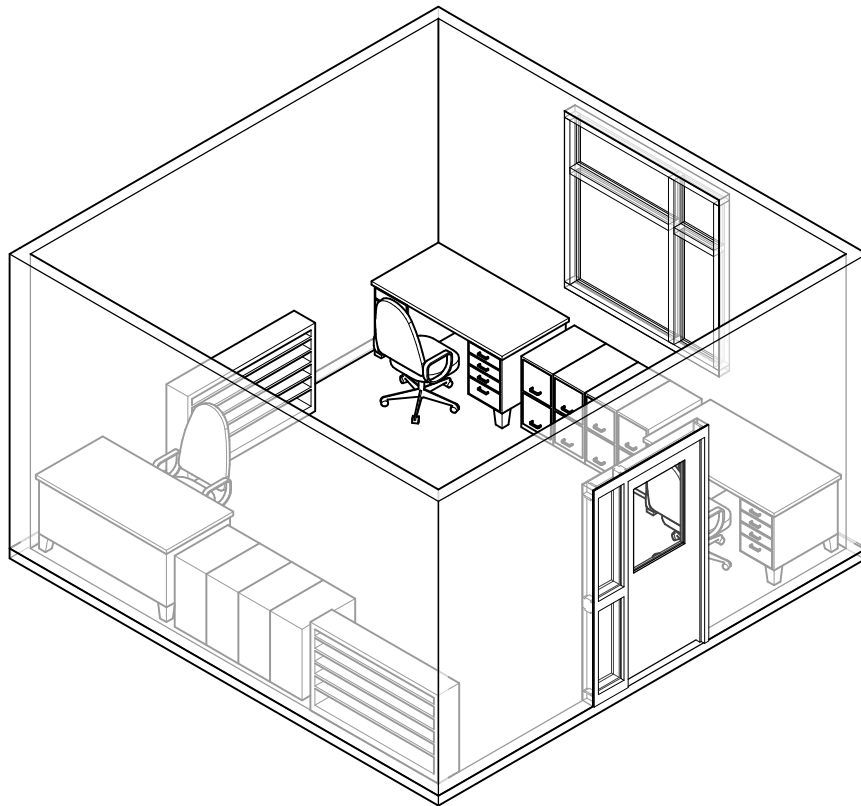
MEP/DATA REQUIREMENTS:

- HEATING (HEAT-PUMP)
- DUPLEX ELECTRICAL OUTLETS
- DATA OUTLET JACK
- VENTILATION

COMPONENTS:

1. WORKBENCH & TOOLBOX
2. LOADER TIRE STORAGE

DRAFT



MECHANIC'S OFFICE - 256 SF
 $3/16" = 1'-0"$

ROOM FINISHES:

CEILING: CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

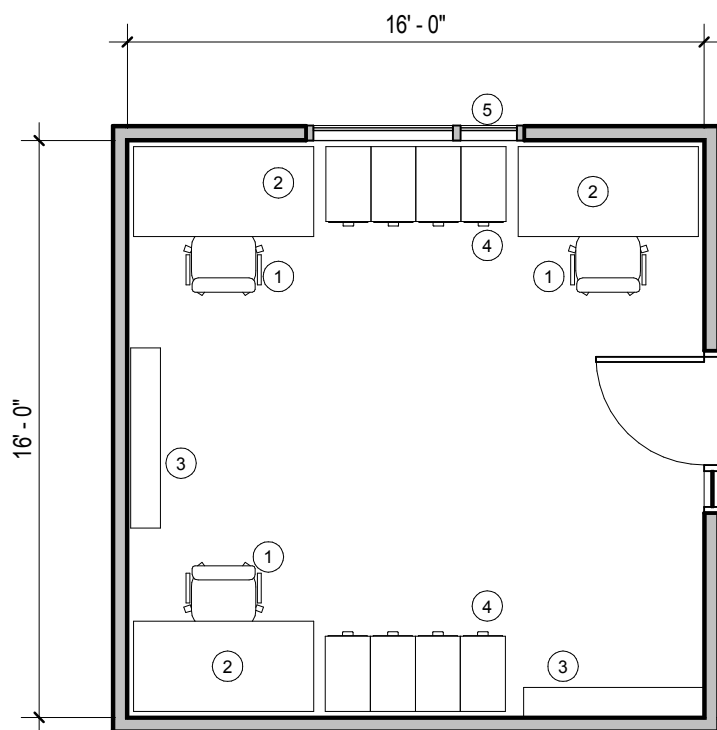
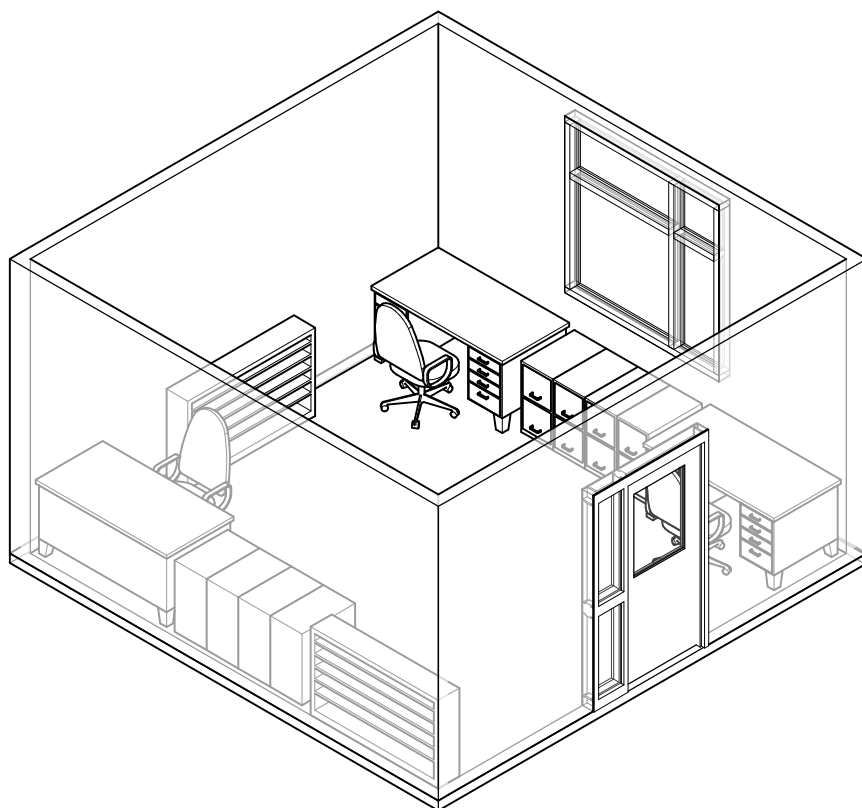
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (3) EXECUTIVE CHAIRS
2. (3) WORKSTATIONS
3. BOOKCASE
4. FILE CABINET
5. WINDOW VIEWING TO MAINTENANCE BAYS

DRAFT



CREW CHIEF OFFICE - 256 SF
 3/16" = 1'-0"

ROOM FINISHES:

CEILING: CEILING TILE

WALLS: GYPSUM WALLBOARD, PAINTED

FLOORS: VINYL TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

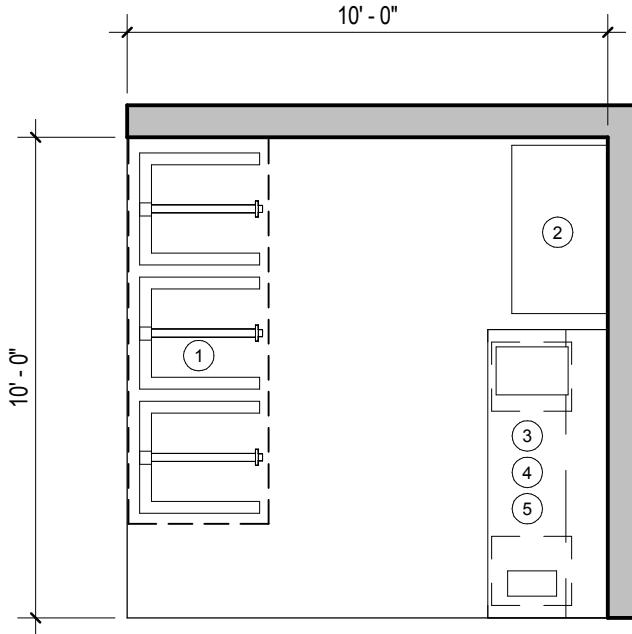
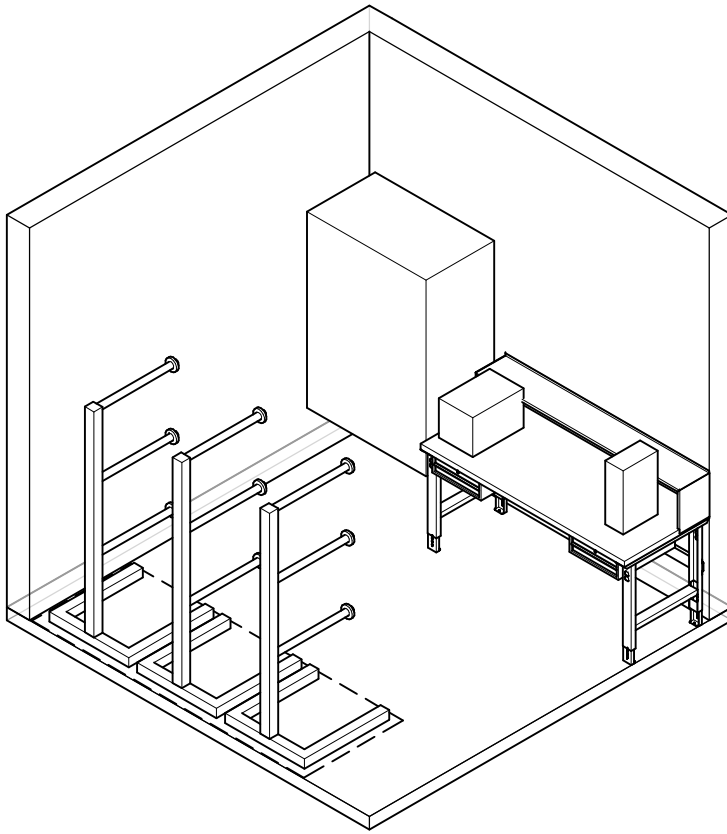
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING/COOLING

COMPONENTS:

1. (3) EXECUTIVE CHAIRS
2. (3) WORKSTATIONS
3. BOOKCASE
4. FILE CABINET
5. WINDOW VIEWING TO MAINTENANCE BAYS

DRAFT



HYDRAULIC HOSE SHOP - 100 SF
1/4" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

FLOORS: SEALED CONCRETE

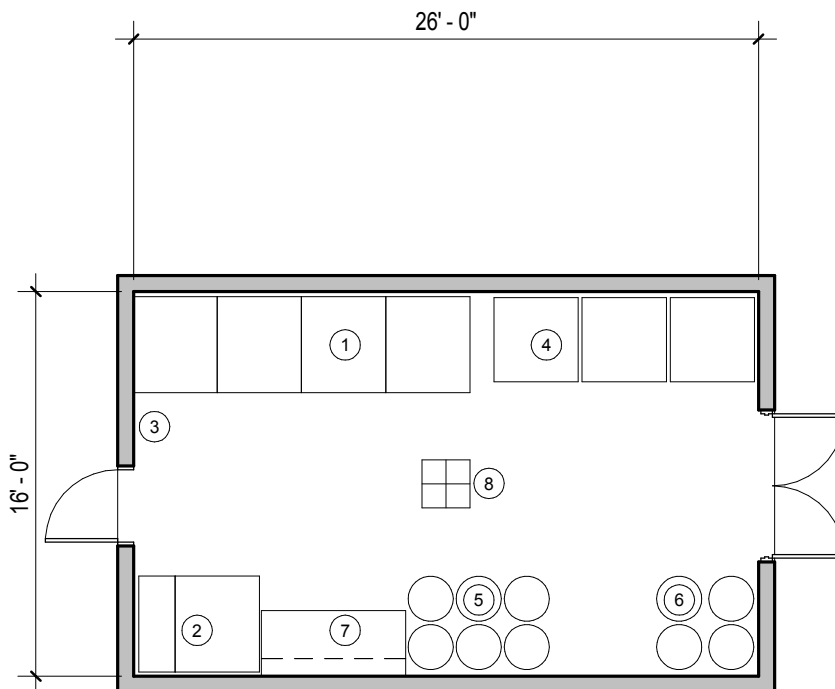
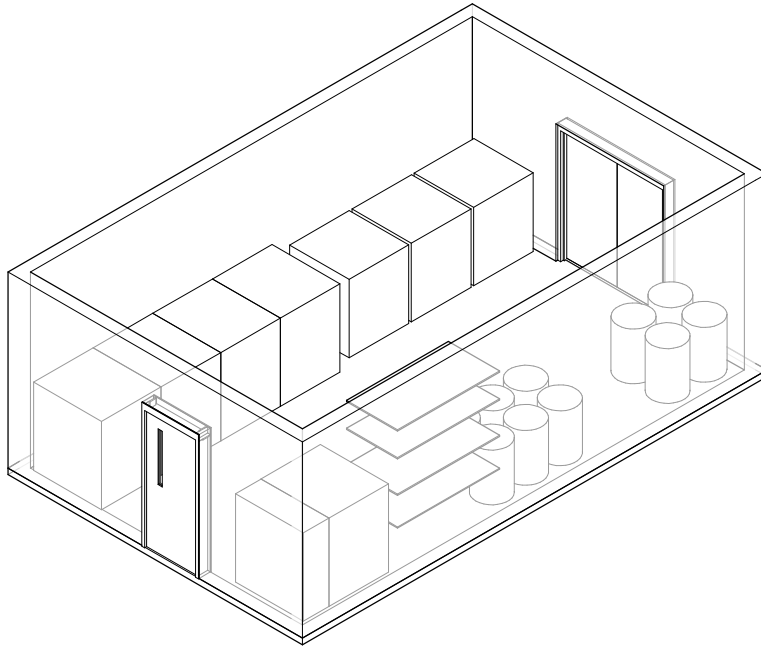
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. HYDRAULIC HOSE REEL STORAGE RACK
2. WALL-MOUNTED CABINET FOR CRIMPER DIE-SETS
3. HOSE CUT OFF SAW
4. HOSE CRIMPER
5. HYDRAULIC HOSE WORK BENCH

DRAFT



FLUID STORAGE ROOM - 416 SF
1/8" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

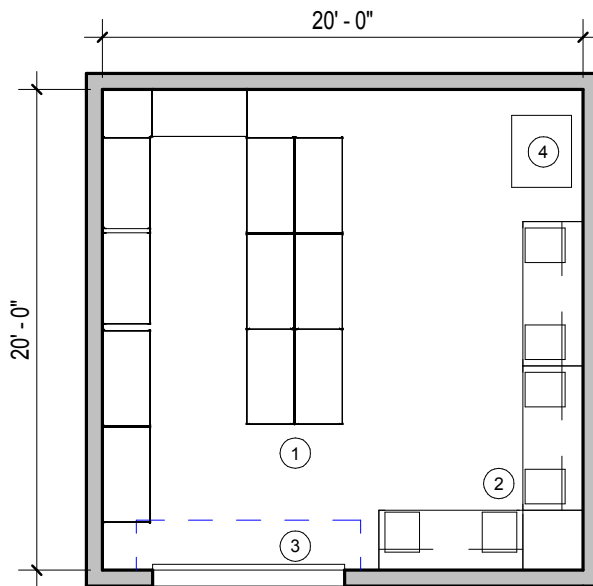
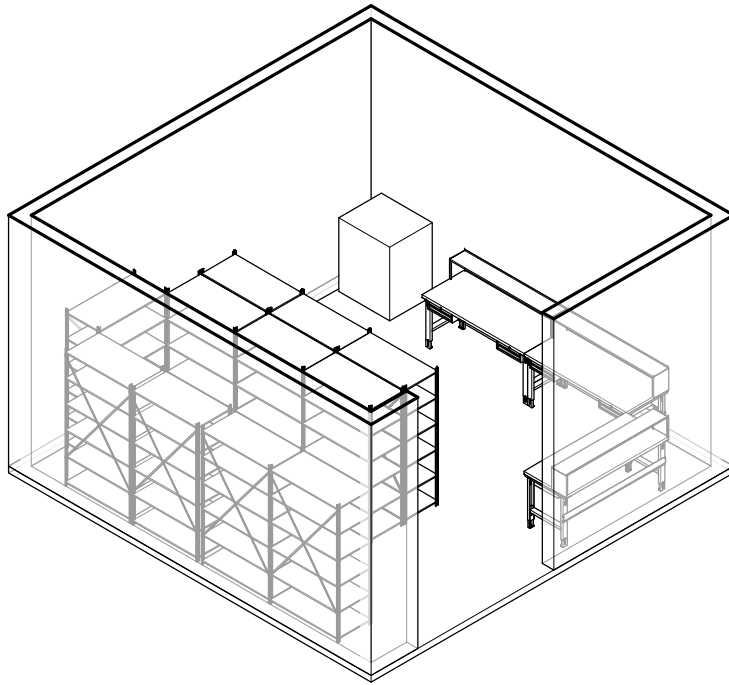
FLOORS: SEALED CONCRETE

MEP/DATA REQUIREMENTS:

- HEATING
- GFI ELECTRICAL OUTLETS
- DEDICATED EXHAUST SYSTEM
- COMPRESSED AIR FOR PNEUMATIC PUMPS
- CONTAINMENT SUMP

COMPONENTS:

1. 1,400 GAL FLUID COMPARTMENT TANK - NEW FLUIDS
 - * 10W-30 OIL
 - * 50W OIL
 - * 30W OIL
 - * HYDRAULIC FLUID
2. 6,500 GAL FLUID COMPARTMENT TANK - WASTE FLUIDS
 - * 500 GAL WASTE OIL
 - * 150 GAS WASTE ANTI-FREEZE
3. PNEUMATIC FLUID DISTRIBUTION PUMP
4. REDUX, 300 GAL TOTES (3 TOTAL)
5. 55 GAL - NEW FLUIDS (EACH FLUID EQUIPPED W TROLLEY CART, HOSE REEL & PNEUMATIC DRUM PUMP)
 - * 15W-40 OIL
 - * WINDSHIELD WASHER FLUID
 - * GEAR OIL X 2
 - * ANTI-FREEZE FLUID
 - * TRANSMISSION FLUID
6. MISC. DRUM STORAGE FOR HAZARDOUS WASTE
7. 6' x 3' STORAGE SHELVEING, 5 GAL BUCKETS
8. FLUID STORAGE RM SUMP (SECONDARY CONTAINMENT)



PUMP MAINTENANCE SHOP 400 SF
1/8" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

FLOORS: SEALED CONCRETE

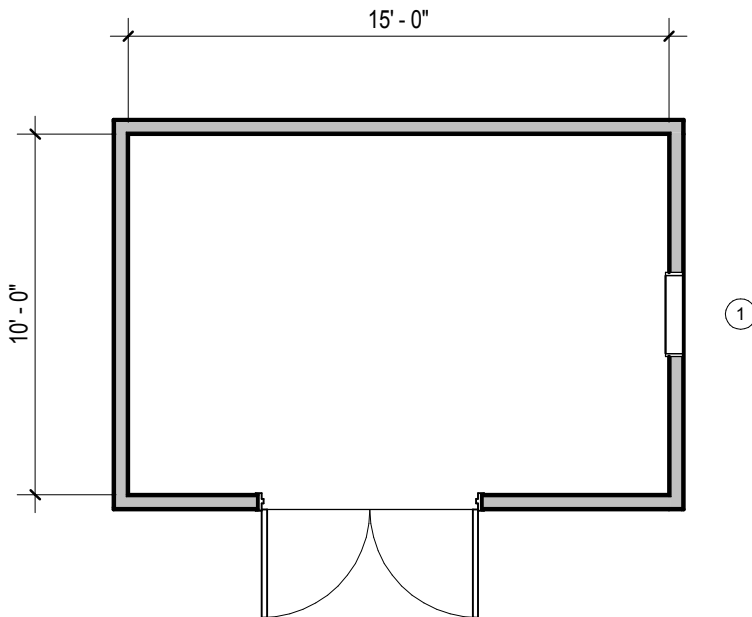
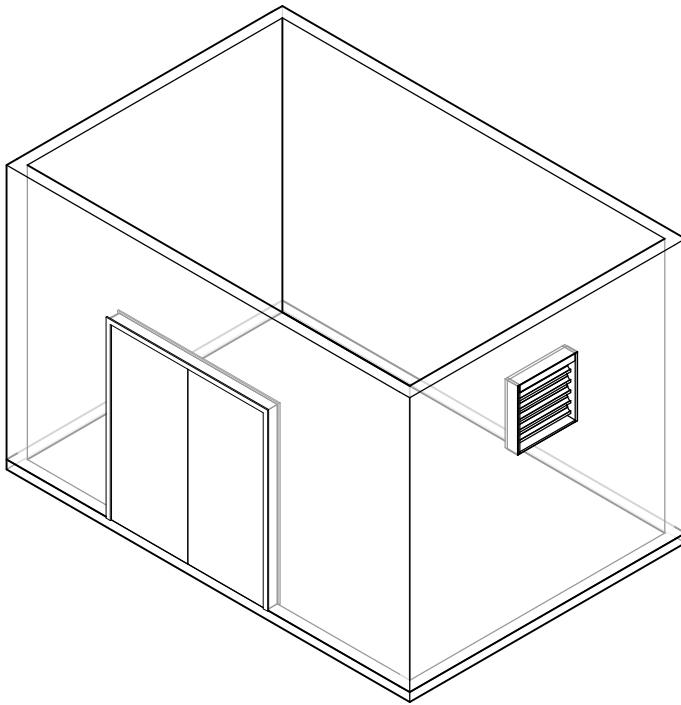
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS
- SPECIALTY EQUIPMENT ELECTRICAL OUTLETS

COMPONENTS:

1. (11) 48" W X 24" D UTILITY SHELVING
2. (2) WORK BENCH
3. ROLL-UP DOOR
4. PORTABLE WELDING CART

DRAFT



COMPRESSOR ROOM - 150 SF
 3/16" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

FLOORS: SEALED CONCRETE

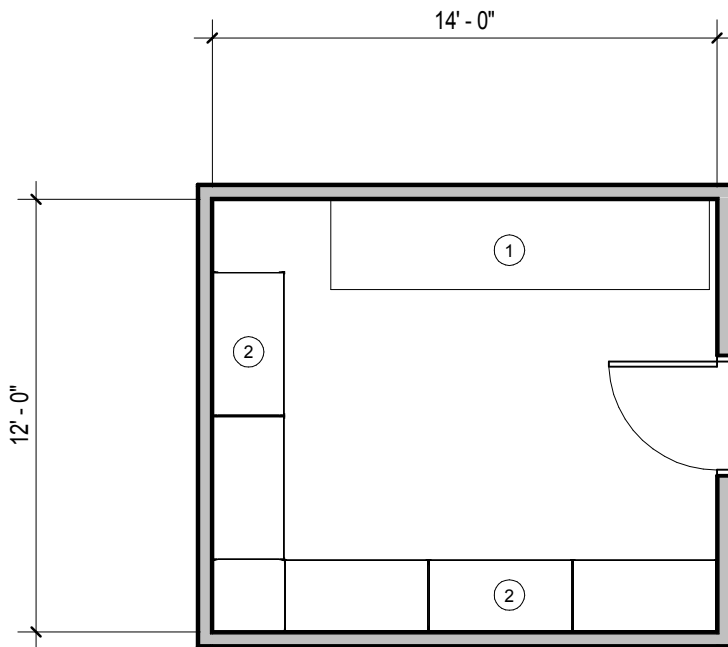
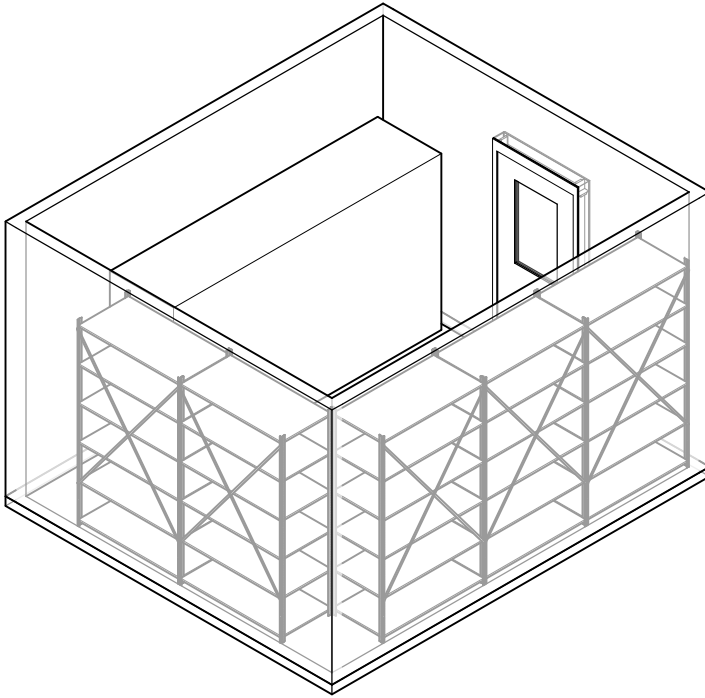
MEP/DATA REQUIREMENTS:

- HEATING
- DUPLEX ELECTRICAL OUTLETS
- SPECIALTY ELECTRICAL OUTLETS

COMPONENTS:

1. LOUVER

DRAFT



PARTS STORAGE - 168 SF
 $\frac{3}{16}" = 1'-0"$

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

FLOORS: SEALED CONCRETE

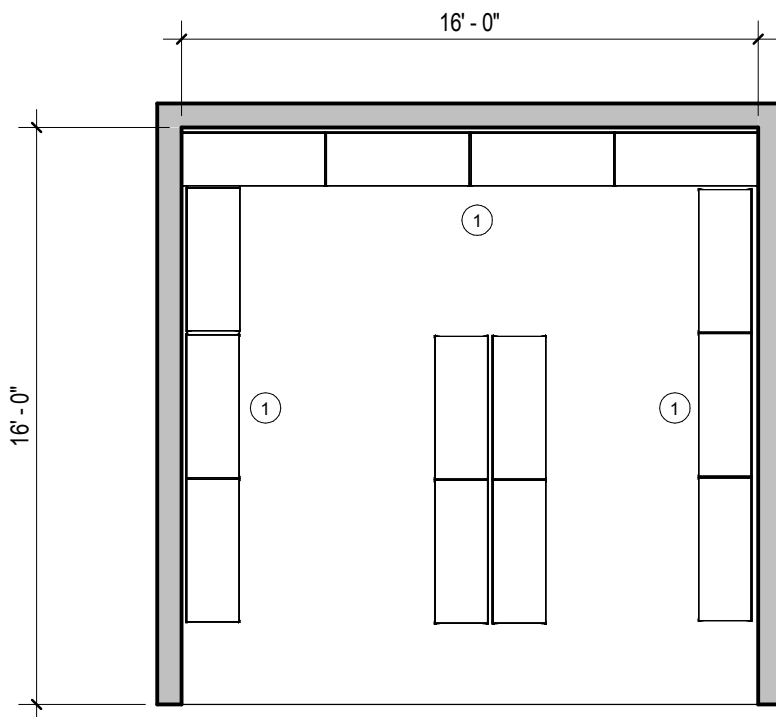
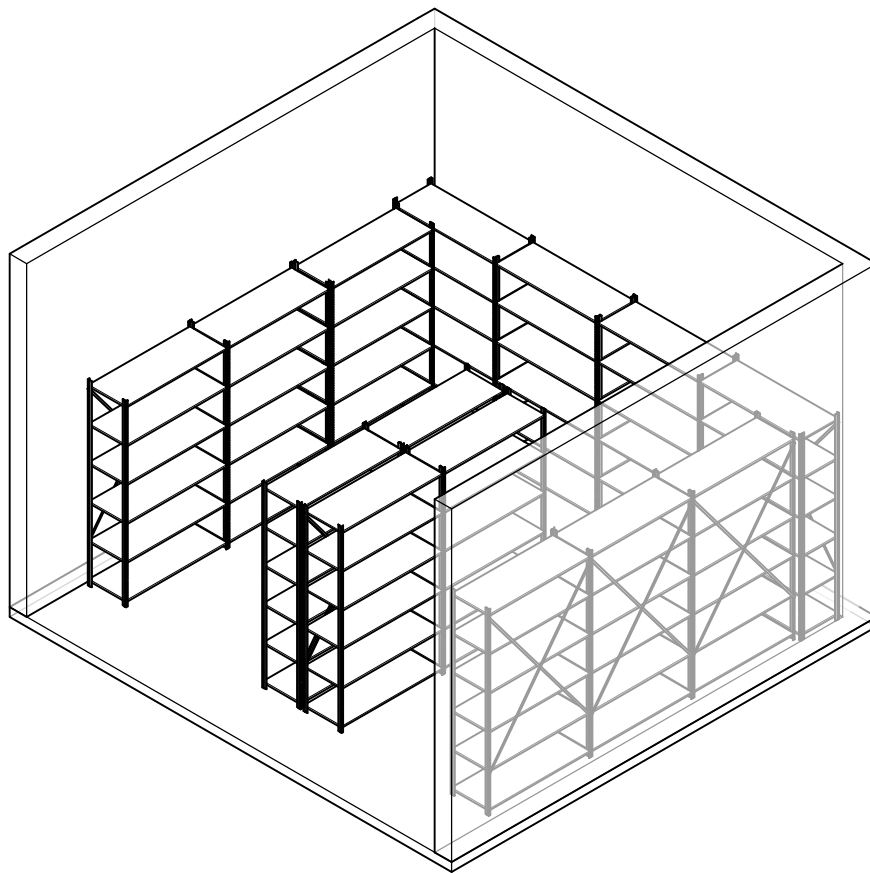
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. GAS STORAGE LOCKER
 - * OXYGEN
 - * ACETYLENE
 - * NITROGEN
 - * PROPANE
2. STORAGE SHELVING

DRAFT



MEZZANINE STORAGE - 256 SF
 $3/16" = 1'-0"$

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

FLOORS: RESILIENT FLOORING

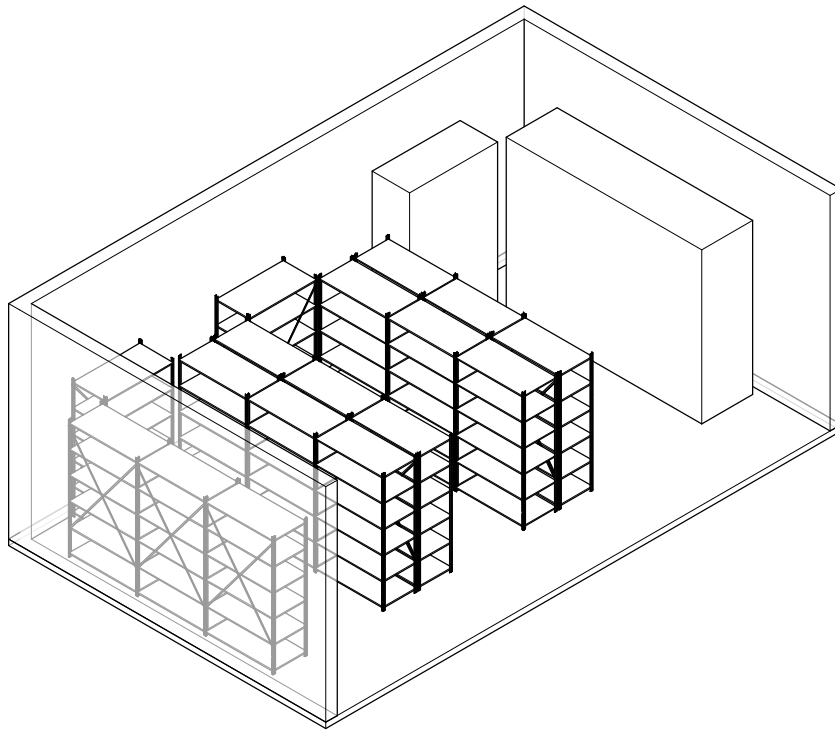
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- COMPRESSED AIR PROVISIONS
- DUPLEX ELECTRICAL OUTLETS
- DATA OUTLET JACKS

COMPONENTS:

1. UTILITY SHELVING

DRAFT



ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

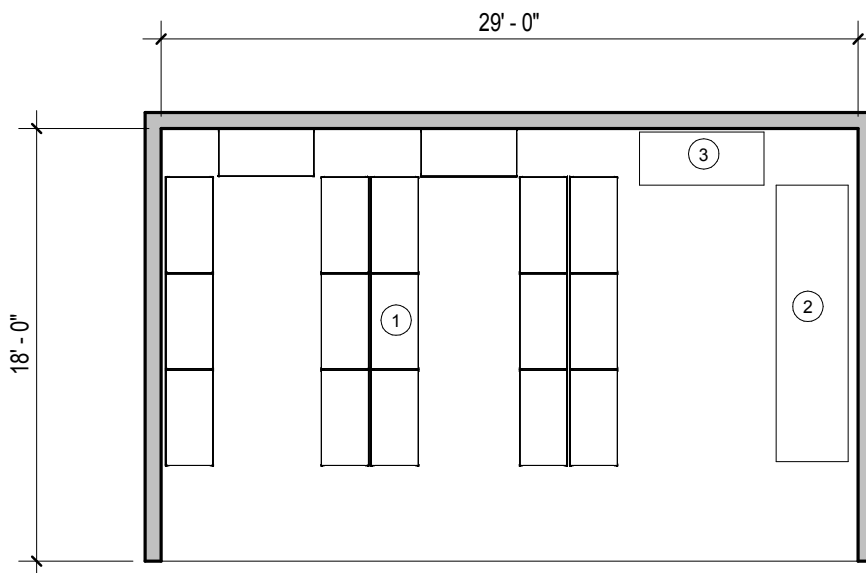
FLOORS: SEALED CONCRETE

MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

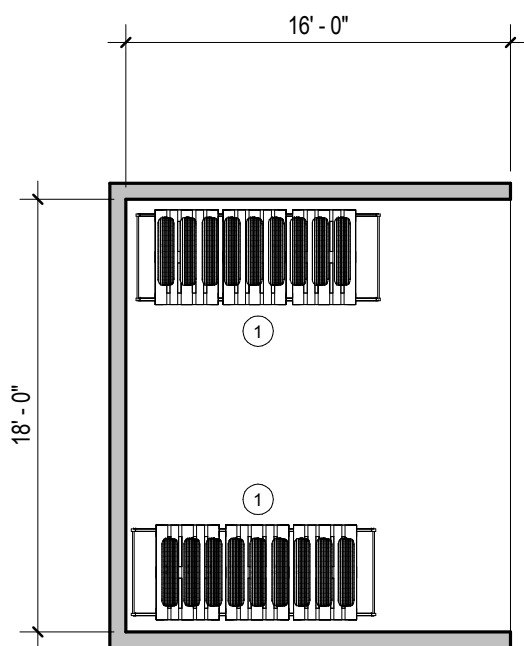
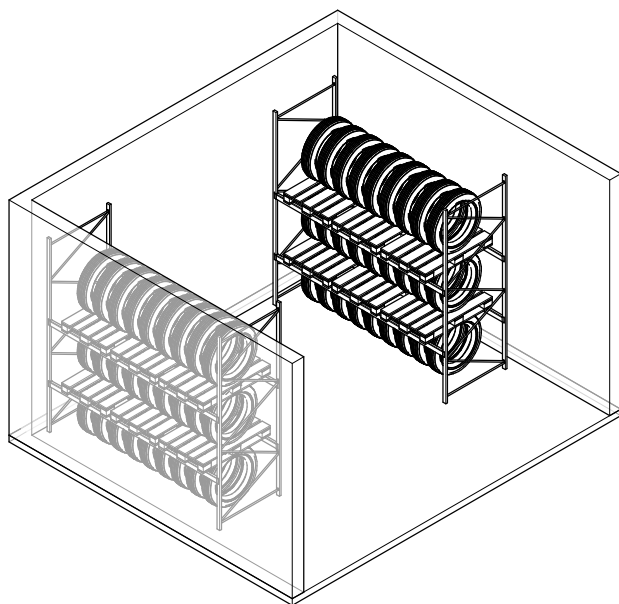
1. PARTS SHELVING AREA
2. STORAGE CABINET
3. MISC. CUBBY STORAGE LOCKER



MEZZANINE PARTS STORAGE - 522 SF

1/8" = 1'-0"

DRAFT



MEZZANINE TIRE STORAGE - 288 SF
 $1/8" = 1'-0"$

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

FLOORS: SEALED CONCRETE

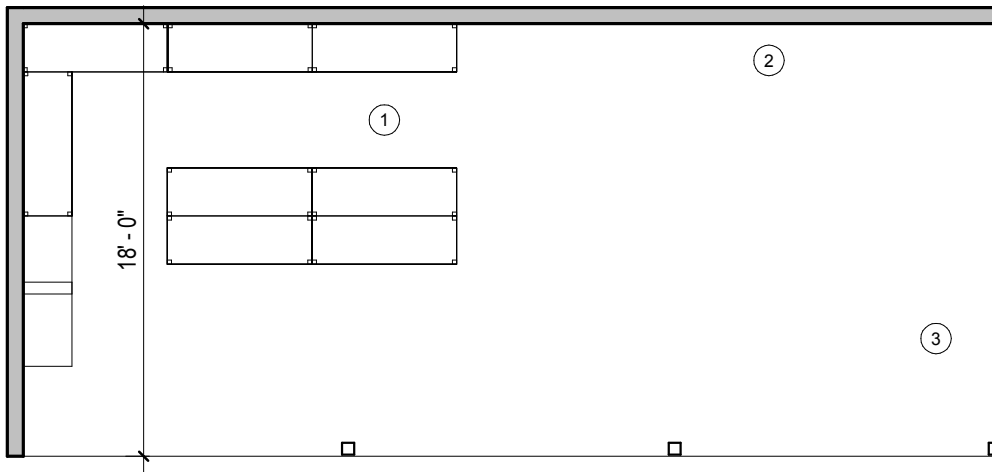
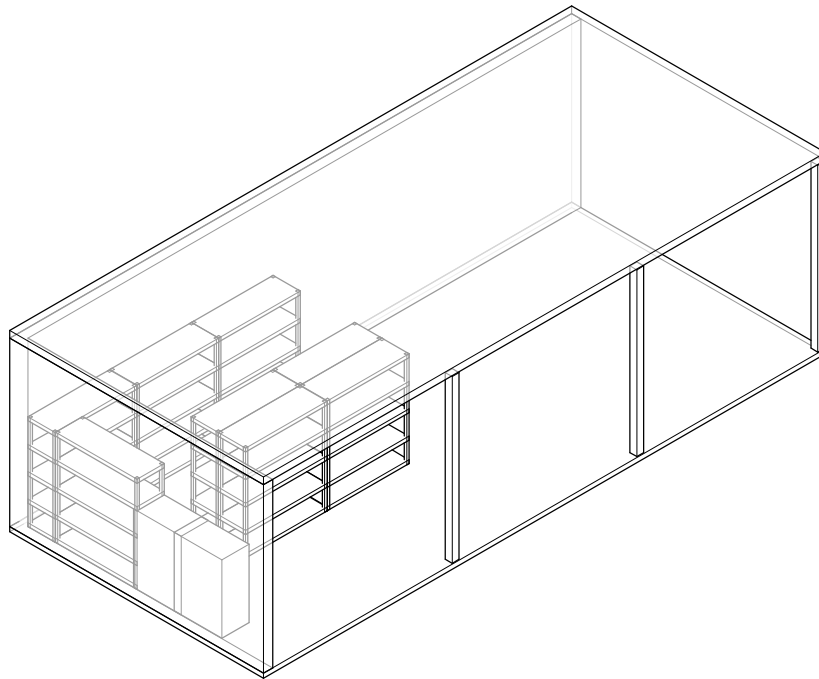
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS
- DATA OUTLET JACKS

COMPONENTS:

1. TIRE STORAGE RACKS
 (TIRE INFLATION CAGE, TIRE CHANGER, TIRE BALANCER IN MAINTENANCE BAYS)
 OVERSIZE LOADER TIRES STORED IN VEHICLE STORAGE BAYS

DRAFT



EXTERIOR CANOPY STORAGE - 720 SF

1/8" = 1'-0"

ROOM FINISHES:

CEILING: ROOF CANOPY

WALLS: -

FLOORS: SEALED CONCRETE

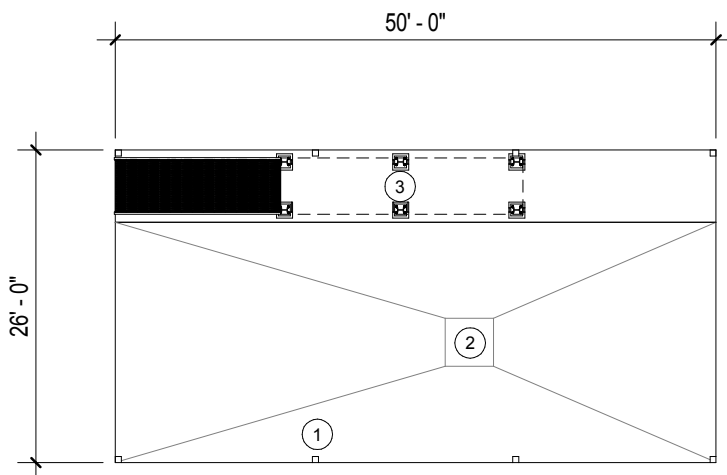
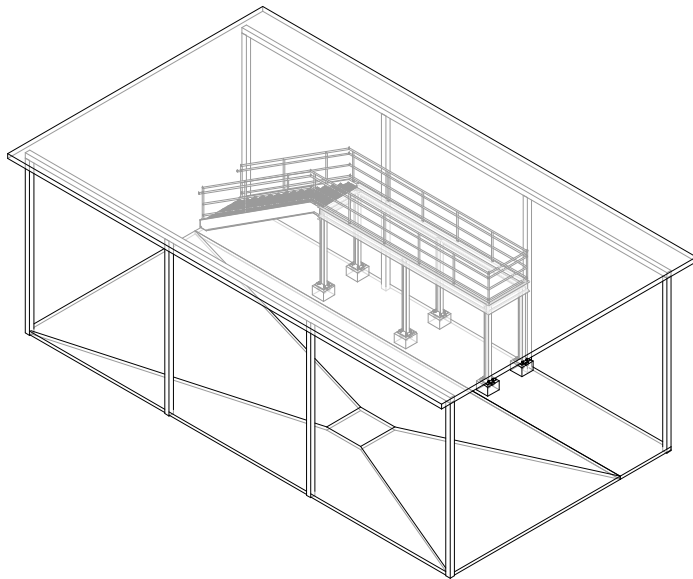
MEP/DATA REQUIREMENTS:

- UNHEATED COVERED ENCLOSURE
- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. (10) 72" W X 24" D UTILITY SHELVING
2. COVERED OUTDOOR STORAGE
 - * SNOWPLOWS
 - * LAWNMOWER ATTACHMENTS
 - * MISC. MATERIALS
3. BUCKET CUTTING-TEETH STORAGE AREA

DRAFT



EXTERIOR WASH BAY - 1,300 SF
 $1/16" = 1'-0"$

ROOM FINISHES:

CEILING: STEEL CANOPY

WALLS: N/A

FLOORS: SEALED CONCRETE,
SLOPE TO DRAIN

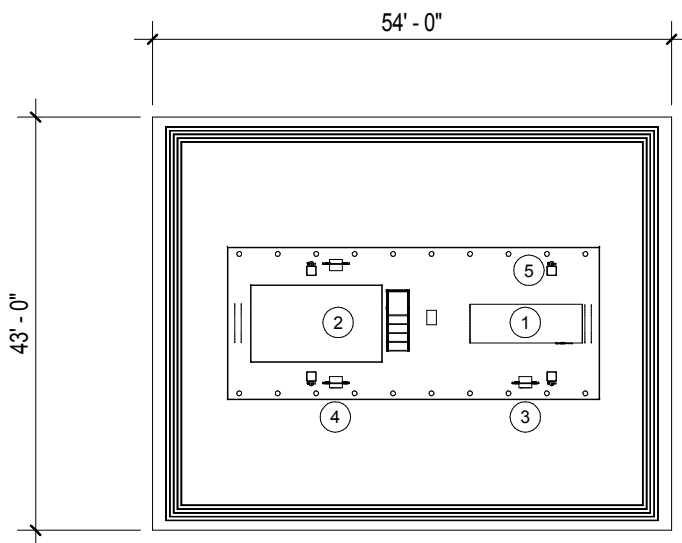
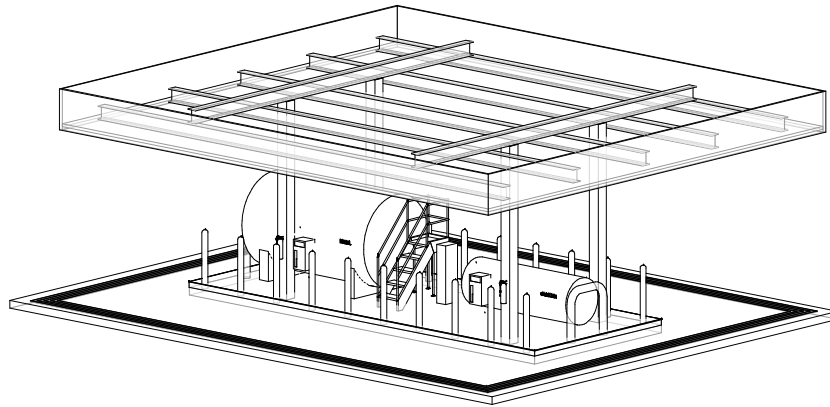
MEP/DATA REQUIREMENTS:

- GFI ELECTRICAL OUTLETS
- 1.5" WATER SUPPLY (FROST-PROOF)

COMPONENTS:

1. STEEL CANOPY
2. DRAIN TO INTERCEPTOR
3. CATWALK

DRAFT



FUEL ISLAND

1" = 20'-0"

ROOM FINISHES:

CEILING: STEEL CANOPY

WALLS: N/A

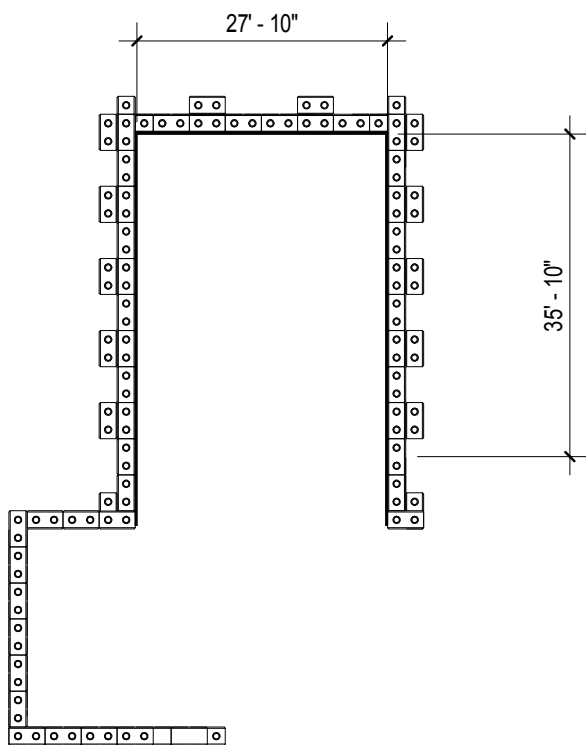
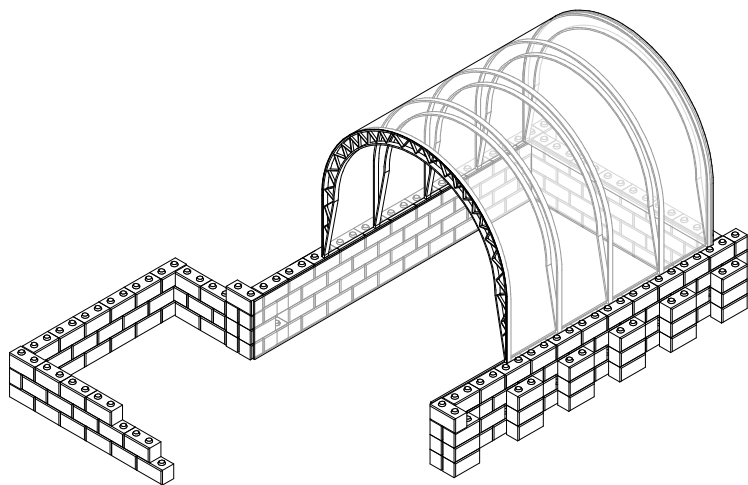
FLOORS: SEALED CONCRETE

MEP/DATA REQUIREMENTS:

COMPONENTS:

1. 1,000 GALLON GASOLINE FUEL TANK
2. 5,000 GALLON DIESEL FUEL TANK
3. (1) GASOLINE PUMP
4. (2) DIESEL PUMP
5. CANOPY SUPPORT

DRAFT



SALT SHED - FABRIC STRUCTURE
 3/64" = 1'-0"

ROOM FINISHES:

CEILING: FABRIC

WALLS: CONCRETE BLOCK

FLOORS:

MEP/DATA REQUIREMENTS:

-

COMPONENTS:

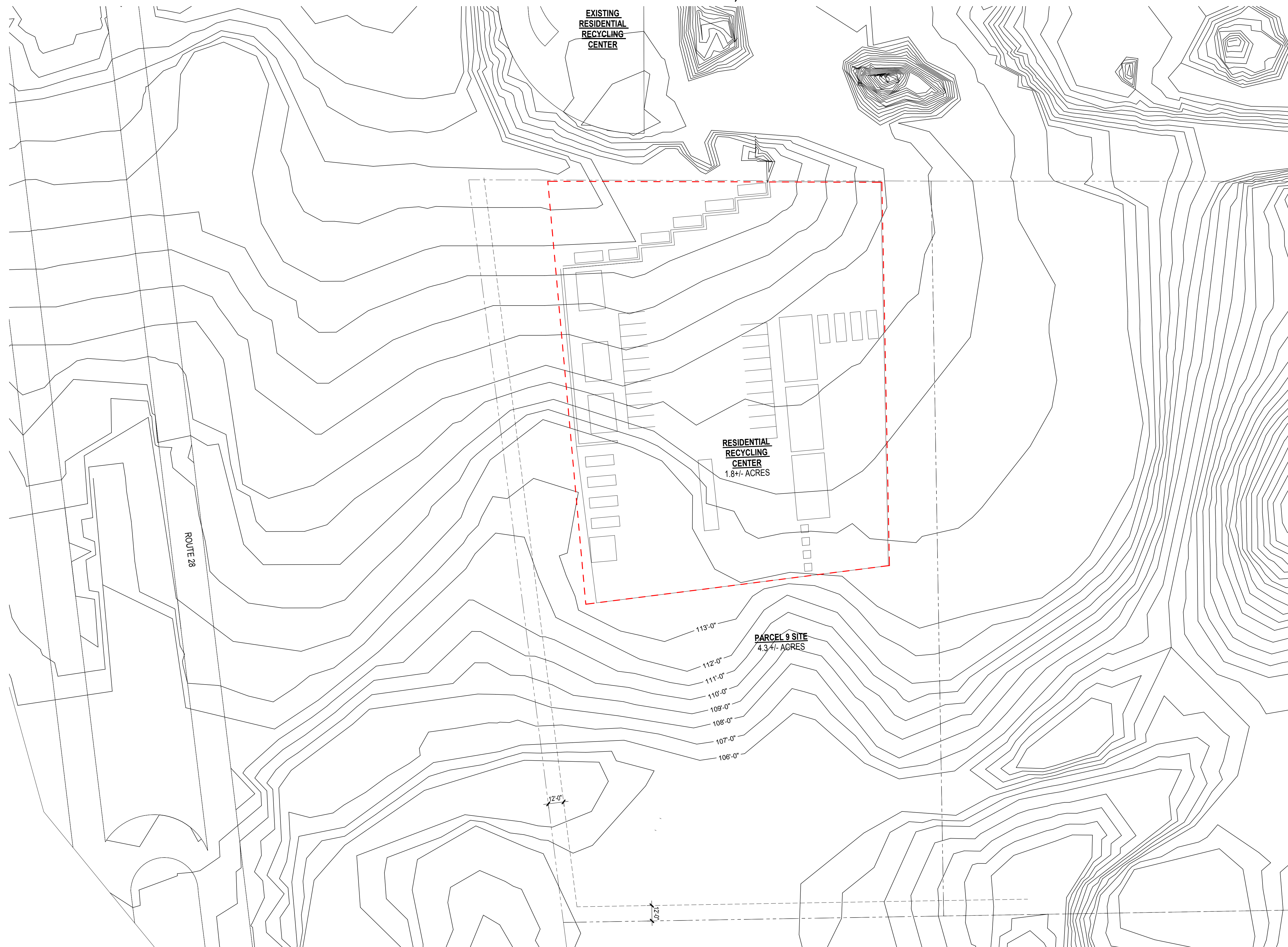
1. 100~150 TON SALT STORAGE
2. 4'-0" HIGH PUSH WALLS

DRAFT

Appendix E

Existing Site Plan

Integrated Solid Waste Management Facility
201 MacArthur Boulevard
Bourne, MA 02532



Weston & Sampson

Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON

www.westonandsampson.com

SITE PLAN - EXISTING

EX1

Appendix F

Site Concepts A1 & A2

SITE CONCEPT A1 BEING REVISED

Integrated Solid Waste Management Facility
201 MacArthur Boulevard
Bourne, MA 02532



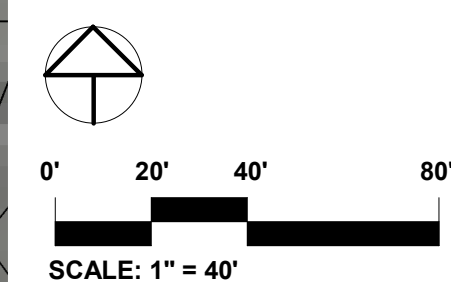
Weston & Sampson[®]

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SITE CONCEPT A2

A2



Appendix G

Site Concepts B1 & B2

Integrated Solid Waste Management Facility

201 MacArthur Boulevard

Bourne, MA 02532



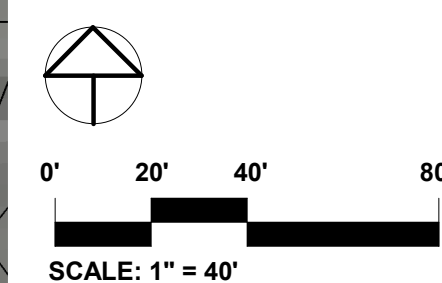
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SITE CONCEPT B1

B1



Integrated Solid Waste Management Facility

201 MacArthur Boulevard

Bourne, MA 02532

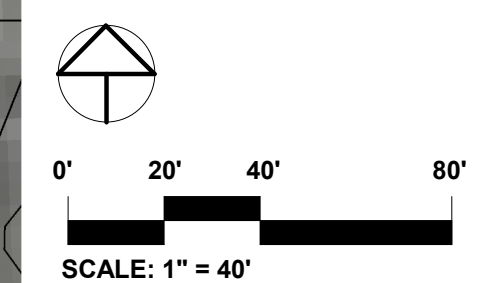


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SITE CONCEPT B2



B2

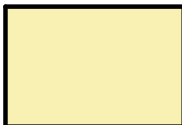
Appendix H

Site Concepts A3 & A4

Integrated Solid Waste Management Facility
201 MacArthur Boulevard
Bourne, MA 02532



LEGEND:



ADMIN OFFICES & OFFICE SUPPORT



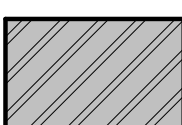
EMPLOYEE FACILITIES

**VEHICLE STORAGE - INDOOR**

VEHICLE MAINTENANCE



OUTDOOR COVERED AREA



FUEL ISLAND



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SITE CONCEPT A3

A3



0' 20' 40' 80'

SCALE: 1" = 40'

SITE CONCEPT A4 BEING REVISED

Appendix I

Site Concept A5

Integrated Solid Waste Management Facility
201 MacArthur Boulevard
Bourne, MA 02532



LEGEND:

- ADMIN OFFICES & OFFICE SUPPORT
- EMPLOYEE FACILITIES
- VEHICLE STORAGE - INDOOR
- VEHICLE MAINTENANCE
- OUTDOOR COVERED AREA
- FUEL ISLAND



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SITE CONCEPT A5



0' 20' 40' 80'
SCALE: 1" = 40'

A5

Appendix J

MassSave New Construction Summary



Commercial New Construction or Major Renovation Program Overview



Choose Your Path to Generate Energy Savings and Reduce Carbon

The Sponsors of Mass Save can help make your new construction or major renovation project a high performing, energy efficient and low carbon building. We have technical experts and financial incentives to help bring your project to the next level of energy efficiency. Whether your goal is to design an all-electric Net Zero building, or, to simply incorporate more efficient systems into the design of your building, we have a pathway for you.

The earlier you engage, the deeper the energy savings potential

Connect with the Sponsors of Mass Save early in your project's design timeline to unlock opportunities for cost savings, technical support and optimal energy efficiency. Building owner incentives are available to help cover the incremental construction and design service costs associated with including energy efficient equipment and systems in your project.

By starting with us in your project's feasibility or conceptual design phase, your project team can achieve deep energy savings, and even net zero status, minimizing future energy use and carbon. We can also help you set an energy use intensity (EUI) target – which is much like a “miles per gallon” metric. It helps keep the project on an energy budget and can be used to evaluate your building's actual or predicted performance over time or compared to other, similar buildings.

There is a pathway for every project

Mass Save Sponsors offer the highest incentives for projects with the lowest EUIs and greatest levels of decarbonization.

Path 1. Net Zero and Low EUI Buildings (10,000 sf or greater)

Receive expert net zero building technical assistance and the highest new construction/major renovation project incentives available. Set an ultra-low EUI and save. We provide support through a post occupancy period to help you make sure the building performs at the level you expect.

Path 2. Whole Building Energy Use Intensity (EUI) Reduction Approach (50,000 sf or greater)

In this path for larger, complex building projects, your incentives will be greater with the lowest design EUIs. We offer technical support and energy modeling services to help you succeed.

Path 3: High Performance Buildings

For whole building projects of any size where customers do not wish to set and pursue an EUI target, projects that are not whole buildings (e.g., tenant fit outs, open air parking garages), projects that are process-load heavy buildings (e.g., cannabis, industrial), and projects where customers are only interested in one-off measures.

Receive technical assistance and financial incentives for implementing energy efficient technology and equipment.

About Mass Save:

Mass Save® is a collaborative of Massachusetts' natural gas and electric utilities and energy efficiency service providers including Berkshire Gas, Blackstone Gas, Cape Light Compact, Columbia Gas, Eversource, Liberty Utilities, National Grid, and Unitil. We empower residents, businesses, and communities to make energy efficient upgrades by offering a wide range of services, rebates, incentives, trainings, and information.

WE ARE MASS SAVE®:



EVERSOURCE



nationalgrid



SUMMARY OF PATH INCENTIVES

PATH 1: NET ZERO/LOW EUI BUILDINGS

Customer Incentives

Construction Incentive	up to \$2.00/sf
Post Occupancy Incentive	\$1.50/sf
Space Heating Heat Pump Adder*	
• Air Source Heat Pumps:	\$800/ton
• Variable Refrigerant Flow (VRF):	\$1,200/ton
• Ground Source Heat Pumps:	\$4,500/ton
ZNE Or PH Certification Incentive	\$3,000
Technical Assistance For Net Zero Expert Consultant Services	50% of fee up to \$10,000
Verification Incentive	50% of fee up to \$10,000

PATH 2: WHOLE BUILDING EUI REDUCTION APPROACH

Customer Incentives

Incentive rate range (based on EUI % reduction)	\$0.35/sf - \$1.25/sf
Space Heating Heat Pump Adder*	
• Air Source Heat Pumps:	\$800/ton
• Variable Refrigerant Flow (VRF):	\$1,200/ton
• Ground Source Heat Pumps:	\$4,500/ton
Technical Assistance	up to 75% cost share (capped at \$20,000 per Sponsor)
Verification Incentive	50% of fee up to \$10,000

PATH 3: HIGH PERFORMANCE BUILDINGS

Customer Incentives

Custom: Envelope, lighting controls, unitary HVAC (RTU, AC), high efficiency chillers, energy recovery, demand control ventilation, variable flow kitchen hoods, DHW heaters, low flow water fixtures and other custom measures	\$0.35/kWh \$2.00/therm
Prescriptive: variable frequency drives	Current program rate
Space Heating Heat Pump*	
• Air Source Heat Pumps:	\$800/ton
• Variable Refrigerant Flow (VRF):	\$1,200/ton
• Ground Source Heat Pumps:	\$4,500/ton

*Refers to nominal heating capacity (btu/h) at AHRI conditions divided by 12,000. The heat pump adder is available for equipment that transfers heat from a source outside of the building (i.e., outside air or a ground loop) for space heating purposes. For ground source heat pump projects, the capacity of the ground loop is used instead of the capacity of the heat pump. Equipment must be used as a primary heating source to qualify.

Go to masssave.com/en/business/programs-and-services/new-construction-and-major-renovations to learn more about the pathways.

Click on the [Our Sponsors](#) link at the top of the page to enter your zip code and identify your Mass Save Sponsors.

About Mass Save:

Mass Save® is a collaborative of Massachusetts' natural gas and electric utilities and energy efficiency service providers including Berkshire Gas, Blackstone Gas, Cape Light Compact, Columbia Gas, Eversource, Liberty Utilities, National Grid, and Unitil. We empower residents, businesses, and communities to make energy efficient upgrades by offering a wide range of services, rebates, incentives, trainings, and information.

WE ARE MASS SAVE®:



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Appendix K

Opinion of Probable Total Project Cost

Town of Bourne		Weston & Sampson		
New Integrated Solid Waste Management Facility		Costs per SF base on Year:		2023
New Building Construction		Size (SF)	Cost/SF	Cost
Administration -Offices/ Office Support		3,525	\$ 525	\$ 1,850,625
Employee Facilities		3,421	\$ 550	\$ 1,881,550
Basement Storage Area w/ vertical circulation		3,421	\$ 250	\$ 855,250
Vehicle Maintenance (not including equipment)		7,070	\$ 575	\$ 4,065,250
Shops		2,016	\$ 575	\$ 1,159,200
Assumed Mezzanine Areas		2,000	\$ 200	\$ 400,000
Open Canopy Storage (SF)		832	\$ 250	\$ 208,000
Wash Pad Canopy		1,300	\$ 300	\$ 390,000
Vehicle/Equipment Storage		4,200	\$ 325	\$ 1,365,000
Sub-total before net-zero sustainable design				\$ 12,174,875
Upgrade to net-zero construction type - Allowance				\$ 852,241
New Construction Building Size and Cost Subtotals:		27,785		\$ 13,027,116
Building Cost per SF:		\$ 469		
Industrial Equipment		Size (SF)	Unit Price	
	QTY	(Insert "X" below if applicable)		
- Manual Wash Equipment w/ tight tank	1	X	\$ 105,000	\$ 105,000
- Two Post vehicle lift (18,000 lb capacity minimum)	1	X	\$ 65,000	\$ 65,000
- Bridge Crane	1	X	\$ 110,000	\$ 110,000
- Overhead Fluid Distribution and Waste Fluid Collection System	1	X	\$ 135,000	\$ 135,000
- Miscellaneous Shop and Support Equipment	1	X	\$ 75,000	\$ 75,000
- Storage Shelving / Benches / Racks	1	X	\$ 55,000	\$ 55,000
- Exhaust Removal System	2	X	\$ 35,000	\$ 70,000
Industrial Equipment Subtotal:				\$ 615,000
Fuel System		Size (SF)	Cost/SF	
	QTY	(Insert "X" below if applicable)		
- New Aboveground Tanks (6,000 gal)	1	X	\$ 125,000	\$ 125,000
- Equipment (pumps, dispensers, fuel management, tank monitoring, etc)	1	X	\$ 275,000	\$ 275,000
- Fuel Island Canopy	1	X	\$ 115,000	\$ 115,000
- Fuel Island Fire Suppression	1		\$ 70,000	
- Concrete tank pad & drive pad	1	X	\$ 65,000	\$ 65,000
- Fuel Island Electrical	1	X	\$ 55,000	\$ 55,000
Fuel System Subtotal:				\$ 635,000
Site Development		Size (Acres)	Cost/Acre	
Site Development (acres) (assumes level site with no contamination, existing structures/utilities, etc.)		2	\$ 550,000	\$ 1,100,000
		(Insert "X" below if applicable)		
Salt Shed		X	\$ 300,000	\$ 300,000
Total Site Work:				\$ 1,400,000
Escalation and Design Contingency				
Subtotal Bldg, Equip. & Site:			\$	15,677,116
Design Contingency (10%):			\$	1,567,712
Escalation (8%) to: 2024			\$	1,379,586
Escalation (6%) to: 2025			\$	1,117,465
Escalation (4%) to: 2026				
Total Escalation & Design Contingency:				\$ 4,064,763
Total Construction:			\$	19,741,879
Total Construction Cost/SF:			\$	711
Owner's Soft Costs				
A&E Fees (design, bid, const.)		(Assume 10% of Const. Value)	\$	1,974,188
A&E Special Services		(Assume 1.5% of Const. Value)	\$	296,128
Owner's Project Manager Fees		(Assume 4% of Const. Value)	\$	789,675
Furnishings (FFE)		Allowance	\$	200,000
Communication. / Low Voltage System		Allowance	\$	150,000
Printing Cost - Advertisement		Allowance	\$	10,000
Legal Costs		Allowance	\$	50,000
Utility Backcharges		Allowance	\$	100,000
Commissioning		Allowance	\$	65,000
Moving Costs		Allowance	\$	40,000
Construction Tests & Inspections		Allowance	\$	80,000
Owner's Contingency		Allowance	\$	400,000
Construction Contingency (6%)		Allowance	\$	1,184,513
Total Soft Costs:				\$ 5,339,504
OPINION OF PROBABLE TOTAL PROJECT COST (rounded)				\$ 25,080,000