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UTAH STATE HOSPITAL

MARK I. PAYNE BUILDING PROGRAM

[ARCHITECTURAL PROGRAM]

07.29.2011

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MHTN PROJECT #2011530

ACKNOWLEDGEMENTS

THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THE DEVELOPMENT OF THE UTAH STATE HOSPITAL MARK I. PAYNE BUILDING PROGRAM

CORE COMMITTEE

Utah State Division of Facilities and Construction Management (DFCM)
Jim Russell, Program Director

Utah State Department of Human Services
Keith Davis, Director of Administrative Support

Utah State Division of Substance Abuse and Mental Health
Lana Stohl, Director

Utah State Hospital
Dallas Earnshaw, Superintendent
Peggy Grusendorf, Assistant Superintendent
Kendall Johnson, Director of Facilities

UTAH STATE HOSPITAL PROGRAMMING INPUT

Bruce Bishop, ADT
Joni Lance, Clinics
Brian Clarine, Clinics
Jonathan Frank, DDS, Clinics
Jonathon Lewis, DDS, Clinics
Bert Beddoes, Facilities
Val Bonnet, Facilities
Todd Smith, Facilities
Tim Morganson, Food Services
Mareen Sorensen, Food Services
Romona Zellers, Housekeeping
Jill Hill, IT
Mark Curtis, IT
Tonya Smith, Medical Records
Gaye Bluemel, Nursing Services
Barbara Peterson, Nursing/Staff Education
Kris Wisdom, Nursing/Staff Education
Craig Berntsen, Pharmacy
Karma Belcher, Pharmacy
Susan Lindberg, Pharmacy
Jordan Reimschussel, Pharmacy
Kevin Whipple, Pharmacy
Isaac Thomas, Quality Resources
Debra Asay, Quality Resources
Marlow Plumb, Quality Resources
Ryan Taylor, Quality Resources
Carmen Negron, Sunrise
Midge Patrick, Volunteer Services
Shawna Peterson, Volunteer Services

DESIGN CONSULTANT TEAM

MHTN Architects, Inc.
Kyle Taft, AIA, LEED AP, Principal-in-Charge
Margareta Hjorth-Vlasic, Program Architect
Sarah Miller, AIA, IIDA, LEED AP, Program Architect
Glen Beckstead, ASPE, Cost Estimator

Reaveley Engineers & Associates (Structural)
Ron Reaveley, SE

Colvin Engineering Associates (Mechanical)
Steve Connor, PE, LEED AP

Ken Garner Engineering (Electrical)
Ken Garner, PE

Great Basin Engineering North (Civil & Site Survey)
Dave Waldron, SE
Christian Michaelson, PE

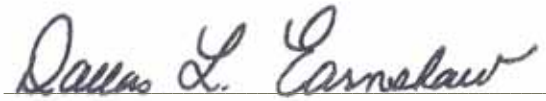
Gordon Spilker Huber Geotechnical Consultants, Inc.
Bill Gordon

APPROVALS

WE HAVE REVIEWED THE UTAH STATE HOSPITAL MARK I. PAYNE BUILDING PROGRAM AND WARRANT THAT IT ADEQUATELY REPRESENTS OUR REQUEST FOR A FACILITY TO FULFILL OUR MISSION AND PROGRAMMATIC NEEDS ALL APPROPRIATE PARTIES REPRESENTING THE DIVISION HAVE REVIEWED IT FOR COMPLETENESS AND ACCURACY.

August 4, 2011

Keith Davis, Director of Administrative Support — Utah Department of Human Services, Bureau of Administrative Support — Date



August 4, 2011

Dallas Earnshaw, Superintendent — Utah State Hospital — Date

August 4, 2011

Jim Russell, Project Manager — Utah Department of Administrative Services, Division of Facilities Construction & Management — Date

1: EXECUTIVE SUMMARY

In spring 2011, the Utah State Legislature approved funding for the design and construction of two new buildings for the Utah State Hospital. They are the Mark I. Payne Building, a medical services building, and the Pediatric Facility, a 72-bed residential facility for children and youth ages 6-17.

The two buildings will be combined in a single design and construction project, but their needs are described in two separate program documents. This document contains the programmatic needs for the Mark I. Payne Building, which will provide medical services, staff education and other critical support functions for all patients and staff on the Utah State Hospital campus. The building's components are listed below, with their net and gross square foot amounts:

ID NO.	PROGRAM/SERVICE	NSF	GSF	
A100	ADT (Admissions, Discharges & Transfers)	1,024	1,633	
A200	Volunteer Services	2,446	3,736	
A300	Medical Records	1,663	2,668	
A400	IT	886	1,430	
A500	E-Chart Support Services	180	285	
A600	Quality Resources	496	816	
A700	Sunrise	1,830	2,896	
A800	Clinics	1,497	2,404	
A900	Central Supply	1,090	1,645	
A1000	Pharmacy	1,860	3,027	
A1100	Staff Education	2,950	4,483	
A1200	Common Areas	3,180	4,643	
TOTAL		19,102	29,666	(65% efficiency)

Site

The Mark I. Payne Building will be located south of Center Street, east of the new Pediatric Facility which is part of this project. The two new buildings will share a parking lot which will be located between them.

Entire Project Scope

The entire project will include the following:

1. Buildings. Construction of the Mark I. Payne Building (29,666 GSF) and Pediatric Facility (85,946 GSF) for a total of 115,611 GSF.

2. Outdoor Elements. Construction of surface parking for both buildings (approximately 170 spaces). Construction of two secure outdoor courtyards (one paved, one sodded) for each of the Pediatric Facility's three residential units. Construction of a playground.

3. Demolition. Demolition of three existing State Hospital buildings, which the new buildings will replace: the Medical Services Building, the Youth Center, and the Beesley Building. Demolition of several existing roadways and parking areas that serve the existing buildings that are being replaced.

4. Utilities. Extension of the existing Center Street utility tunnel to the west, to service this project.

5. Add Alternates. The project should include the following as add alternates (numbers 31, 17 and 28 on the master plan, respectively): a recreation/restroom/storage pavilion; multi-purpose recreation and sports fields; a softball field.

Project Cost

The program cost opinion is summarized below. The cost opinion is in July 2011 dollars.

Mark I. Payne Building	$6.10 million	$201 per GSF
Pediatric Facility	$15.99 million	$187 per GSF
Total	$22.10 million	$191 per GSF
Demolition Costs	$302,000	
Total Construction	$22.4 million	

This project has been programmed according to need, per the direction of Utah State DFCM. As programmed, the project cost opinion is $2.0 million (10%) over the project construction budget of $20.4 million.

PROJECT VISION STATEMENT

Project participants expressed their goals for the new Mark I. Payne Building and the Pediatric Facility at the first on-site programming workshop. The goals are summarized below.

The Mark I. Payne Building and Pediatric Facility will be a project that…

Community / Culture

- Expresses respect for patients, family members and staff in its design, recognizing that all people have a need for dignity, privacy and autonomy.
- Provides an environment supportive of patients' recovery, with spaces that are bright and hopeful, and those that allow for quiet and privacy.
- Feels like a home, with home-like gathering spaces and a warm and welcoming appearance.
- Provides easy and welcoming visitor spaces, and warm and friendly spaces for parent / child visits.
- Welcomes all people with fully-accessible designs and pathways from parking areas to building interiors.

Design / Aesthetics

- Maximizes natural light and exterior views throughout. Abundant windows, clerestories and skylights should brighten interior spaces for patients and staff. Windows should be operable where and if possible.
- Creates a warm, peaceful environment that promotes healing. The interior should be comfortable, with a clean, modern appearance.
- Uses color as a tool to create a warm and soothing environment. Color use must be age and gender appropriate, for the children, adolescents, and adults who will inhabit the buildings.
- Welcomes visitors with attractive and inviting entry / waiting areas. Visitor furnishings should be comfortable in addition to being durable.
- Displays art as part of an aesthetic strategy that will benefit both patients and staff.
- Incorporates artificial lighting that is adequate in amount for function and security, but that also enhances aesthetics and atmosphere.
- Considers amenities such as water features, rooftop gardens or designated areas for plants the building.

Environment / Sustainability

- Reduces its environmental impact through day-lighting and low-water landscaping, and considers on-site energy generation.

Exterior Architectural Image

- Is modern, attractive, and pleasing in appearance yet secure.
- Welcomes visitors with an understandable and easy-to-access entry, and a bright, inviting lobby.
- Blends well with the State Hospital campus, with strong consideration for brick as an exterior material.
- Preserves, to the greatest extent possible, the existing orchard and deer habitat.
- Is softened by surrounding landscaping and gardens. Building interior views should look out to the orchards and greenery.

Functions / Services

- Is highly functional, with beneficial adjacencies, and easy way-finding and access.
- Consolidates functional areas, particularly those accessed by visitors and volunteers.
- Supports patients, staff and visitors by providing the following spaces and amenities (list is not all-inclusive):

1. An adequate quantity of separated patient and staff restrooms. The buildings should have staff shower / locker rooms.
2. A staff break room that is pleasant, and that has refrigerators, microwaves and ice.
3. Adequate storage space in all functional areas, and especially in Central Supply.
4. Conference rooms.
5. Flexible and sufficiently-sized staff training space.
6. Administrative offices with good proximity and visual access to patient residential units.
7. Patient recreation space: separate outdoor courtyards for each residential unit, and large, multifunctional indoor spaces.
8. Residential units that support flexibility in census capacity, with adequate separation between units, and that allow for smaller patient groupings.
9. Patient spaces such as comfort rooms, phone rooms, sensory rooms, time-out rooms, seclusion rooms and redirection rooms. These spaces must be thoughtfully designed for maximum functionality and patient support.

10. Residential unit kitchens large enough for having visitors and learning cooking skills.
11. Family-support spaces such as parent education facilities and family suites designed for overnight visits.
12. Well-designed classrooms and teacher support spaces.
13. An Audiology room with adequate sound separation.
14. A play therapy room with an observation space.
15. Well-designed clinics with proper equipment and adequate storage space.

Operations / Maintenance

- Is easy to clean, maintain and operate. The building must be of sound construction with easily accessible utilities. Flooring in patient areas should be primarily easily-cleaned hard surfaces.
- Has a well-designed, high-functioning and quiet mechanical system.
- Locates noisy equipment such as emergency generators away from occupied building areas.
- Uses electronic locks and card keys throughout.
- Provides adequately-sized and conveniently located custodial and operations space, to support easy maintenance.
- Incorporates convenient and clearly-understood service access large enough for typical building delivery vehicles.
- Provides parking areas oriented for safe usage during winter, and configured for easy snow and ice removal. Parking areas must be separated from irrigated landscape areas.
- Encourages participation by locating easily accessible recycling stations throughout.

Process / Budget

- Welcomes open, frequent communication and input from project stakeholders throughout programming and design.
- Uses high-quality materials and systems that are durable and long-lasting.

Safety / Security

- Prioritizes safety and security for patients, staff and visitors in all building areas.
- Eases supervision through its layout, with private rooms for all patients and clear visibility into all patient areas from the central nursing station.
- Promotes safety though adequate lighting levels from both natural and artificial sources.
- Incorporates hardened, destruction-resistant materials and vandal-resistant security fixtures.
- Recognizes the importance of doors and appropriate hardware / locking mechanisms in providing safety.
- Increases safety through up-to-date technology, including security cameras and remote-controlled door hardware / locking mechanisms.
- Provides appropriate space, equipment and technology to ensure the security of patient records, while allowing convenient access.

Site / Master Plan

- Configures the buildings to preserve as much orchard as possible.
- Considers a greenhouse, for the immediate project, or master-planned for the future.
- Incorporates secure outdoor courtyards with child-friendly designs that support pediatric patients' need for a high degree of physical activity.
- Plans visitor and staff parking in adequate quantities and highly-functional locations.

Technology

- Incorporates state-of-the-art technology, with adequate infrastructure and capacity for today and the future.
- Offers amenities such as wireless LAN and WAN access, built-in AV in conference rooms, and teleconferencing, videoconferencing, and telemedicine capabilities.
- Supports communication through an effective intercom system and electronic community outreach capacity.
- Uses Provo School District classroom and technology guidelines for classroom design.
- Supports patients with TV's or monitors in the clinic waiting room and in the dental operatory ceiling.

PROGRAMMING PROCESS

The programming process took place from April through July 2011. The project was guided by a Core Committee which included representatives from DFCM (Utah State Division of Facilities Construction & Management), the Utah State Department of Human Services, and the Utah State Hospital. Programming input was obtained from the Core Committee as well as representatives of the programs and services that will occupy the buildings.

The process included the following:

- **Input on project goals** in an initial kick-off meeting with administrators and future building occupants.
- **Space needs questionnaires**, distributed to programs and services representatives.
- **Interviews with program component representatives** regarding space needs.
- Meetings regarding **utility and infrastructure needs** for the project.
- **A preliminary project summary** which compared programmatic space needs and cost projections with project budget.
- **Detailed documentation**, which was reviewed and approved by the Department of Human Services, Utah State Hospital and DFCM project team members.

2: SITE / CIVIL

SITE / CIVIL ANALYSIS

Site Location

The site of the proposed Mark I Payne Building and the Pediatric Facility Building is just south of Center Street in Provo Utah on the existing Utah State Hospital Campus.

From Interstate 15, take the Center Street Exit and proceed east along Center Street in Provo through the Central Business District, around the round-a-bout at 700 East and stay on Center Street. The approximate addresses of the two buildings are 1200 East Center Street for the Pediatric Facility Building and 1300 East Center Street for the Mark I Payne Building.

The site and its relationship to the surroundings are illustrated on Figure 1.

Figure 1: Site Location Map

Existing Site Circulation

Vehicular Access

The primary vehicular access to the site is from Center Street. This road is a two lane road with median and access locations and ends at the front of the administration building. Smaller roads branch and connect to Center Street. Some of these connections are shown on Figure 1. Two bus routes are close to the site. Route 833 runs along center Street to 700 East Street or about 5-6 blocks west of the site. Route 832 runs along North Seven Peaks Boulevard. The intersection of North Seven Peaks Boulevard and Center Street is shown on the upper left hand corner of Figure 1. This will place a bus about 1-3 blocks from the project site.

Pedestrian Access

Sidewalks are provided on both sides of Center Street with limited sidewalks on the campus. Some of these walks are shown on Figure 1.

EXISTING SITE CONDITIONS & PROGRAM REQUIREMENTS

Climate

The climate of Provo City ranges from winter cold low temperatures of about 3 degrees below zero to summer temperatures of about 103 degrees. Average temperatures are much milder than the extremes. The building design must incorporate and mitigate the climatic environment at the Utah State Hospital.

Views

Views to the north and south are primarily residential neighborhoods. Views to the east are of the Wasatch Mountains. The Utah State Hospital is set near the toe of the mountains. This near proximity provides clean unobstructed views of the mountains from most of the east facing areas. The views to the west are of the city with Lake Mountain to the far west.

Open Spaces Emergency Access

Open spaces around the facility are critical for access, pedestrian egress, fire access, emergency vehicle access, and for aesthetics. Several possible building configurations were discussed with Utah State Hospital. The general configuration shown in Figure 1 is the generally preferred layout. As part of the design, parking, fire access, walks and access to Center Street will need to be designed. Emergency access to the construction area and existing buildings must be maintained.

Construction Access & Staging

Figure 1 shows the location of the two proposed buildings with respect to the existing buildings. All of the existing buildings will remain in operation while the new buildings are being constructed. Construction access and staging will require special design consideration due to the close proximity of the existing Youth Center and Beesley Building, which are located directly adjacent to the proposed new buildings. Construction access and staging must be placed so that the existing facilities are still operational. Construction staging will likely be located south of the proposed Pediatric Facility.

As part of the construction documents, the following areas of concern and priority should be discussed and solutions made available:

	Temperature					Precipiation (inches)						Wind	
	Means			Extreeme		Precipiation			Snowfall			Average	Max
	Max	Min	Avg	Max	Min	Mean	Max	Min	Mean	Snow Days		SPD	SPD
Jan	32	13	22	55	-3	1.88	4.6	0.03	13.9	12		2.8	14.6
Feb	48	27	38	65	11	1.79	3.93	0.21	11.6	9		3.7	12.8
Mar	61	35	48	79	13	1.9	3.61	0.54	6.2	6		5.4	16.1
Apr	67	41	54	87	31	1.92	4.69	0.18	3.4	4		6	17.2
May	78	48	63	90	36	2.12	5.11	0.15	0.3	1		5.6	19
Jun	90	55	72	99	41	1.14	4.14	0.05	0	0		5.1	14.3
Jul	98	65	81	103	58	0.82	2.8	0	0	0		4.8	9.8
Aug	94	63	79	102	55	1.05	4.38	0.02	0	0		5	13.1
Sep	82	52	67	96	32	1.44	6.53	0.03	0	0		4.4	14.6
Oct	67	41	54	82	28	2.01	5.05	0.06	0.8	1		4.2	15.7
Nov	58	32	45	73	20	1.72	4.2	0.14	7.8	6		3.4	15.3
Dec	37	23	30	50	21	1.96	6	0.15	12.1	11		3.2	17.6
ANNUAL	67.6	41.3	54.5			19.74	36.97	10.65	56.1				

Table 1 Provo City Climate Report

1. The location and number of vehicles on the site pertaining to the construction of the project should be handled in a clean and orderly fashion.

2. Construction access and haul routes to the site must be planned. Center Street is a full width road but travels through the Central Business District and is narrow and is very busy. Prior to reaching the Central Business District, Center Street travels through a largely residential neighborhood. Based on this, alternate access routes to and from the site should be considered.

3. Continued safe access for vehicles along Center Street to the rest of the Utah State Hospital must be maintained.

4. Continued safe access for pedestrians must be maintained.

5. Fire truck access along Center Street, to the existing facilities and to the proposed facilities must be maintained at all times. This may require some temporary roads until permanent drives are constructed.

Soils Report

The preliminary soils report for this project based on 13 borings indicates the following: In four of the borings, there is silty clay fill 1-3 feet thick. This undocumented fill should be removed if under a building pad. If the fill is under paving, the top 12-inchs of fill should be scarified and compacted to not less than 95% of its maximum dry density prior to continued site work taking place. Under the fill and in the rest of the borings, the surface is a soft to medium still silty clay. With depth, the soils do not appear to be collapsible. Ground water was found during drilling to be about 15-feet down. The expected groundwater elevation is between 10 feet and 15-feet deep depending on the time of year and moisture level for the year. The site is susceptible to some reduction in bearing pressure during a seismic event. Differential settlements of about an inch are anticipated for a significant seismic event. Site retaining walls, if required, should be designed with a bearing pressure of about 1500 pounds per square foot. The design engineer should review the final geotechnical report. The bearing pressure may be increased to about 2500 pounds per square foot depending on lab tests being performed by the geotechnical engineer. Site fill should match the requirements indicated in the geotechnical report and should generally be a well graded granular material with a maximum size of 6-inches and not more than 30% passing the number 200 sieve. All site fill should be plasticity index of less than 6. The site fill should be compacted to not less than 95% of maximum dry density and within 2% of optimum moisture content. Soft soils may be bridged with the use of cobbles tamped into soft clays if found. Geofabric may also be used to stabilize soft soils if found. Grading should be done so that water flows away from the buildings. The locations of detention areas and bioswales and percolation areas should be placed to reduce significant water percolation down to the footings and foundation systems of the buildings and the utility tunnel. A preliminary recommendation for the concrete and asphalt paving is provided below. These values should be verified with the final geotechnical report.

Material	Asphalt Paving		Concrete Paving		
	Standard (inches)	Heavy Duty (inches)	Sidwalks (inches)	Drives (inches)	Fire Lane (inches)
Sub Base	0	0	0	6	6
Road Base	7	8	6	6	6
Pavement	2.5	3	4	6	6

All of the paving will be on properly prepared subgrades. Sub base will generally be site fill material. Road Base will be similar to APWA standard specification for 1-inch minus road base. The pavements will be similar to APWA standard specifications for ¾" minus non-rut asphalt paving and ¾" concrete paving with 4000 psi strength and about 4% air.

Topographic Survey

A topographical survey has been provided for the project. A copy of this survey is shown on Figure 2. The site has a fall of about 40 feet from the southeast to the northwest. The average slope in this area is about 2.7 percent. Prior to beginning work on the project, the design engineer must get an electronic copy of the survey with spot elevations from DFCM or from Great Basin Engineering North. The design engineer must determine that sufficient topographical data is provided or the design engineer must do their own topographical survey particularly if the buildings are moved from the areas shown on Figure 1 to areas outside of the area where the topographical survey was performed.

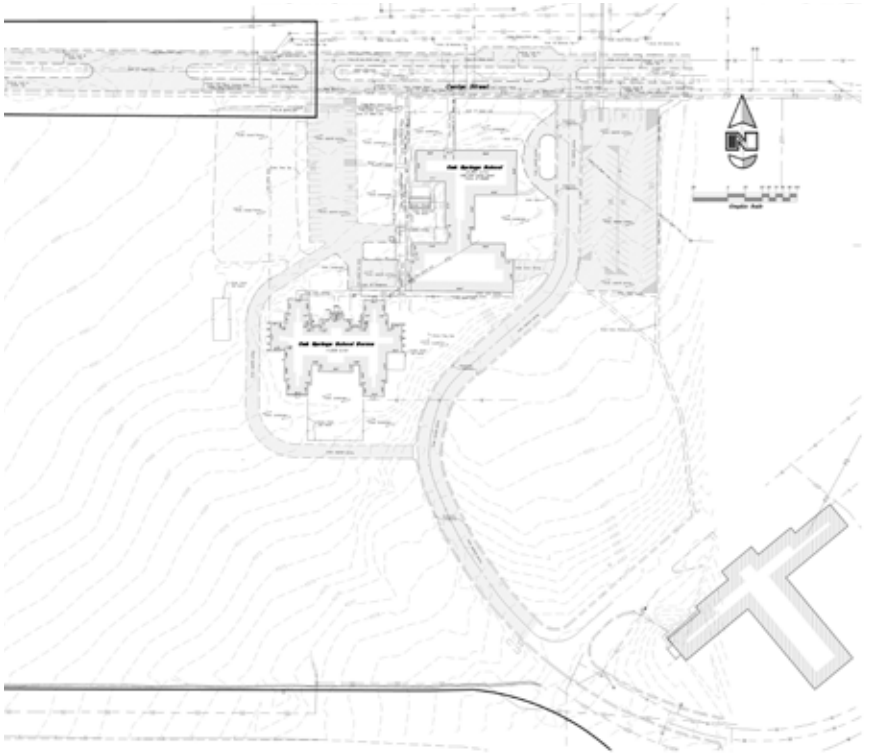


Figure 2: Topographical Survey

Building Demolition & Coordination

The existing Youth Center and Beesly Building will be demolished after the new pediatric care facility has been completed and staff and students have been relocated to the new facility. The Mark I Payne Building will be under construction while the Pediatric Facility is also under construction. Extra care will be required to keep the existing Youth Center and Beesly Building operational during construction of the new building in close proximity. This will require temporary parking, temporary drop off areas for staff and students as well as deliveries to the existing facility. Once the new Pediatric Facility has been constructed, the old buildings will be demolished along with temporary facilities that will not be associated with the new Mark I Payne Building. Temporary drives and walks may be incorporated into the Mark I Payne Building Project as long as they are constructed as new full depth appurtenances such as asphalt paving, walks, and drives and meet the standards for new construction.

Easements, Roads & Zoning

The Utah State Hospital is set in a 311 acre campus that includes part of Sections 5, 6, 7, and 8 of Township 7 South Range 3 East. The overall dimensions are shown on the ALTA Survey. The overall campus has nineteen plotable easements. These are shown on the ALTA. Most of these plotable easements are located east and south of the proposed project. The exception to this is an easement in favor of Utah Power and Light that covers about 80 acres and is for power and phone lines. This blanket easement covers the location for the Mark I Payne Building, covers the two existing buildings, and extends west to cover most of the gravel parking lot. The easement is for construction and maintenance of power lines. There are no overhead power lines in this location so this easement is not being exercised at this time.

The road right of way is also shown. Provo city right of way for Center Street ends at about the west side of the parking lot for the dorm rooms as shown in the title report. According to the owner, this portion of Center Street was conveyed to the hospital when the right of way for Slate Canyon Road was traded to Provo City. This has not yet been recorded but should be finished before construction starts. East of this point, Center Street is owned by Utah State Hospital. The north part of Slate Canyon Drive is shown on the bottom part of Figure 3. This road is currently under construction. For this project, access to Slate Canyon should be considered as part of the design for fire access and possibly for utility connections. Utility lines in this road are unknown at this time.

The design engineer shall also verify that the proposed buildings are not located closer than the required minimum setback from the road rights of way. The Utah State Hospital is set in the PF Zone. The front yard setback is 10-feet in this zone unless the building height is more than 35-feet. If the building is more than 35-feet, the setback must be equal to or more than the height of the building. The side yard and rear yard setbacks are zero feet unless abutting a neighboring zone such as residential. In this case, the proposed Pediatric Building is abutting a public street to the north (Center Street) and Slate Canyon Drive (under construction) on the rear and west side. Based on this, the use of a 10-foot setback on all sides is justified. According to the zoning for this

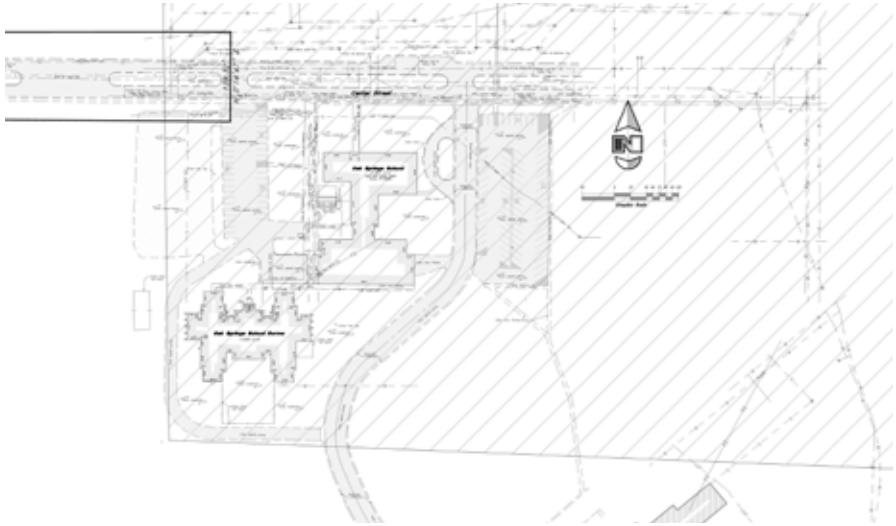


Figure 3: Site with Easements

area, no parking is allowed in the required front yard setback area that abuts a public street. The minimum distance between buildings is 10-feet. The maximum lot coverage is 60%. Parking and drives are required in accordance with Chapter 14.37 of the Provo City Code. Even though the zoning will allow smaller setbacks, it is recommended to place the buildings off the roads with at least a 30-foot setback to keep the placement in harmony with the rest of the campus.

The parking for the site needs to be provided such that adequate parking is available. According to Provo City Zoning, parking ratios will vary depending on how the facility is classified. It is not recommended to follow the Provo City parking ordinance as the ordinance will result is excessive parking. For this project, it is recommended that the design engineer and architect with the owner determine number of staff that will be at each facility on the highest shift and provide one parking stall per staff, provide some additional parking for visitors and extra staff, and the required handicap parking.

SITE UTILITIES

Relocations

There are several utilities that cross the project site. The design engineer needs to confirm with Utah State Hospital which utility lines can be capped and eliminated and which utility lines must be relocated. Some of the lines in the proximity of the construction are water, sewer, irrigation, underground power, and fiber lines. If the lines are to be capped, they should be capped at the main line connection where possible or at the property line if not possible to get to the main line. The eliminated pipe line should be removed and the excavation backfilled with acceptable soils to not less than 95% compaction unless further excavation will take place. If the utility is to be relocated, the new utility lines must be installed and be commissioned prior to the old line being removed from service.

Culinary Water

An existing culinary water line is located about in the middle of the south half of the divided road (East Bound). The water line in front of the proposed Pediatric Facility is the old line. Its size is assumed to be 8-inches. A new line begins at about the cross over northwest of the existing Pediatric Facility and continues East. This line was constructed in about 2004 and is 8-inch diameter. Other lines in the area are an 8-inch line that connects to the well house. The design engineer shall verify that the existing water system has sufficient pressure and flow for the proposed project. The engineer shall also show connections for water line looping. The proposed Pediatric Facility will be about 85,500 square feet. This building is expected to have about a 3500 gallon per minute fire flow requirement and at least 4 fire hydrants. The Mark I Payne Building will be about 29,500 square feet and will have a fire flow requirement of about 2000 gallons per minute and

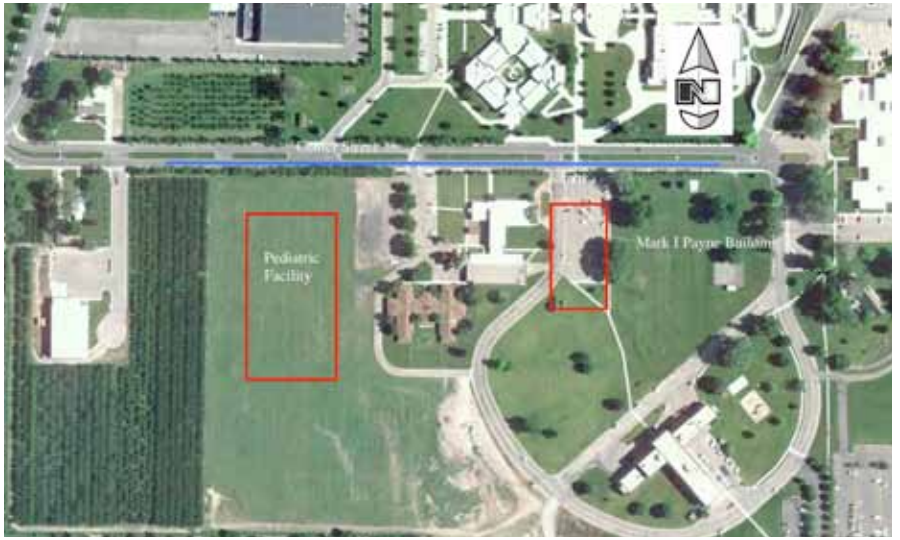


Figure 4: Water System

at least 2 fire hydrants. The design engineer shall provide to DFCM a copy of the fire flow model during schematic design that shows that this facility will have adequate fire protection. A copy of the existing water system is shown on Figure

Sanitary Sewer

The sanitary sewer for the project will most likely be routed to the sanitary sewer that is located about 20 feet south of the south sidewalk south of Center Street. There is also an 8-inch line shown in the median of Center Street. There are also several additional sanitary sewer lines north of Center Street. These line, north of Center Street are not shown on Figure 5. Prior to beginning design, the design engineer must confirm with Provo City and Utah State Hospital which sewer line will be used for the new buildings. The existing sewer lines are shown on the Figure 5. The 8-inch sewer has an average depth of about 7.8-feet. The 12-inch sewer has an average depth of about 5.3-feet.

Figure 5 also shows the approximate location of the sewer service for the Beesly Building. The sewer service to the Youth Center is not shown but is estimated to be along the west side of the building and tied to the 12-inch sewer line to the north. The figure also shows a 6-inch line located under the northern portion of the proposed Mark I Payne Building. The design engineer must verify if this sewer is in use for the Medical Services Building. At the time of the survey, the surveyor noted that this line had no flow so is use for the Medical Services Building is doubtful but must be verified. If it is used, then it must be routed around the proposed Mark I Payne Building prior to the new construction. It is anticipated that the service to the Pediatric Facility and the Mark I Payne Building will be towards the north into the 12-inch line. If the 12-inch line is not deep enough, it is recommended that the sewer lateral chase the 12-inch line further to the west to get depth as necessary rather than cutting into the road to access the 8-inch line if the 12-inch is allowed by the owner.

Figure 5: Sanitary Sewer Lines

Figure 6: Storm Drain & Irrigation Pipes

Storm Drain

There is a storm drain line in Center Street. It is located about 2.5-feet south of the north lip of gutter. The size of this storm drain line is unknown. All of the manholes that have been viewed are full of soil. The depth of the storm drain is unknown. The nearest storm drain is located at the corner of Center Street and 7 Peaks Boulevard. At this corner, the survey shows a 12-inch storm drain line coming from the east along Center Street that may connect to the storm drain manholes found to be full of soil. For this project it is anticipated that a single detention pond will be created northwest of the proposed Pediatric Facility. The storm water from the two facilities will be routed to this detention pond. Due to security reasons, the detention pond should be placed underground. As part of the design, the engineer shall verify that the proposed design meets the requirements for LEED as well as for Provo City. This will require a reduction in the amount of storm water leaving the site. This can be done with the use of retention basins and bioswales as part of the storm drain design. Prior to connection to the pipes that lead into the city system, a storm water cleaning device must be installed. Historically, Provo City has accepted just about any storm water cleaning device as long as it is properly sized and properly installed. Figure 6 shows the storm drain line in Center Street. The design engineer shall verify if this line can be cleaned and placed into service or if the new storm drainage system will be connected to the storm drain at the intersection.

LEED SS 6.1 and SS6.1 Points

A sustainable design is a key part of this project. There are several LEED points that are typically assigned to the civil engineer. These include the storm water quality point and the storm water quantity point.

The design engineer shall verify that the current site is less than 50% imperviousness. As such, the quantity point requires that the amount of storm water leaving the site be no more than the storm water previously leaving the site for the 2-year 24 hour storm. To accomplish this, part of the storm water can be percolated into the ground. It is expected that overall a net reduction in landscaping will be about 50,000 square feet. Percolation into the ground must be coordinated with the geotechnical report and with the owner. It is understood that the groundwater in the

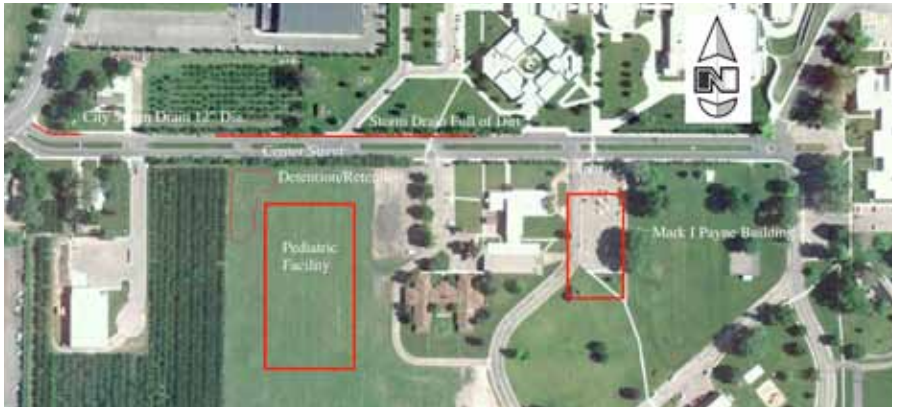


Figure 6 - Storm Drain

area is somewhat shallow. It is not advisable to add excessive amounts of storm water to the soil only to have it be collected and be piped from land drains around the various tunnels.

The other LEED point, storm water quality requires that the design be set so that 80% removal of total suspended solids takes place for 80% of the storm water leaving the site. This goal can be accomplished with the use bioswales, hydrodynamic separators, and filtration. The design engineer should select the most economical method to clean the storm water prior to the storm water leaving the site that still meets the needs of the proposed buildings, Provo City, and rest of the adjacent campus.

Irrigation Lines

There are several irrigation lines that service the landscape areas around the project. Some of these are pressure irrigation lines and others appear to be gravity flood irrigation lines. The landscape design architect shall verify what irrigation lines can be capped and which irrigation lines shall be relocated. He shall coordinate this information with the civil engineer. In addition to the

irrigation lines, there are a number of irrigation components such as control boxes and control wires. The landscape design architect shall coordinate with Utah State Hospital the locations and relocations of any control boxes and control wires. This information shall be coordinated with the civil engineer.

Gas Lines

There is a 2" gas line located about 350 feet west of the proposed Pediatric Facility. The mechanical and civil engineer should coordinate with Questar Gas to determine the available capacity of this line. This information should be used as part of the design for the new buildings if a gas service is needed. It is anticipated that the heating for the buildings will be from the central plant.

Site Electrical & Telecommunications

See the electrical engineer's narrative for site electrical and telecommunications. The site civil shall coordinate the locations of site electrical equipment and routing with the electrical engineer.

Figure 6 - Storm Drain

PROPOSED SITE CONSIDERATIONS

Elevations

The proposed structures will be set so that they are above existing drives so that they are not flooded during a 100-year storm event. The Mark I Payne Building will have a finish floor of about 4571. The proposed Pediatric Facility will have a finish floor of about 4561. Care must be taken to set the proposed building elevations so that any connections to the existing building can be made without ramps. The elevation of connection points to existing curb & gutter, walks, and paving shall be verified by the design engineer. The site elevations range from about 4554.5 to about 4593.9. The building elevations must be set so that access to Center Street, the various campus roads, and pedestrian access can be maintained and connections to the various buildings can be maintained.

Based on the open nature of the site, site retaining walls are not anticipated. If it is discovered in the design process that site retaining is needed, the design team shall coordinate the retaining wall design with the geotechnical engineer.

Service Access

The proposed site and existing building access will be along the existing drives and existing Center Street. The walks in the fire lanes must be designed for H20 loading. The service drives that continue to the existing buildings must also be sized for this heavy duty loading. During construction, the access to the various buildings surrounding the project must be kept open. Based on the locations of the various walks, it is probable that temporary walks and drives may be required.

Seismic Design

The proposed Mark I Payne Building is located about 1700 feet west of the Provo segment of the Wasatch Fault. The proposed Pediatric Facility is approximately an additional 800 feet west. Both of these facilities are very close to the fault line. The recommendations in the geotechnical report must be followed for seismic design. As part of the civil design, isolation valves in the water and gas lines should be installed at tees and connections to allow damaged pipes to be shut off in case of damage from a large earthquake.

3A: ARCHITECTURAL

INTRODUCTION

From its creation in 1885 through the present day, the Utah State Hospital has provided treatment and care to the mentally ill in Utah. Its current role is to support community mental health centers around the State and to provide in-patient care for those requiring a more structured setting. At the current time, nearly 350 beds are provided to serve men and women, boys and girls, from ages 6 through geriatric age.

Several of the older but needed facilities on campus have aged and deteriorated to the point that they are unsafe and repair is merely a Band-Aid on a severed artery. In order to serve the campus population and provide the high level of care for which it is known, the Utah State Hospital is undertaking a project to construct two new facilities that will replace three older, worn-out buildings. One of the new facilities will be the Mark I. Payne Building, which will replace the existing deteriorated and cramped Medical Services Building. The second new building will be the Pediatric Facility, which will contain residential and school facilities for 72 patients from 6 to 18 years old.

Figure 1. The currently suggested locations for the new Mark I. Payne Building and Pediatric Facility, with new shared parking located between them.

GENERAL CONSIDERATIONS

The new Mark I. Payne Building will be a single story facility with no basement. It will occupy approximately 30,000 gross square feet. The building will house multiple campus-wide programs and services: dental and medical clinics needed for patient care, Medical Records, ADT (Admissions, Discharges, Transfers), Volunteer Services, IT, Quality Resources, Central Supply, the Pharmacy, the Sunrise substance abuse treatment program, and Staff Education facilities.

This new facility will be constructed on the State Hospital campus south of Center Street, east of the existing Youth Center and Beesley Building. The new Pediatric Facility will be constructed south of Center Street to the west of the new Mark I. Payne Building. A shared parking lot to serve staff and visitors will be constructed between the two new buildings, at or near the current location of the Youth Center.

PARKING

The new parking lot will have approximately 170 parking stalls for staff and visitors for the new facilities. The 170 stalls is sufficient for overlap parking needed during staff shift changes, and will also provide overflow staff parking for the existing Rampton Buildings north of Center Street.

UTILITIES

As shown in the Figures 1 and 2, existing utilities run in a tunnel under Center Street. The tunnel currently dead ends at the Beesley Building and serves the Youth Center as well. The existing tunnel that runs along Center Street west of the Youth Center will be demolished as part of this project. A new section of tunnel will be constructed, running from the point of demolition west to serve the new Pediatric Facility. A new branch of the tunnel will run south to serve the new Mark I. Payne Building. See Section 2, Site/Civil Considerations, for more detailed utility information.

NEW PROVO CITY ROAD

Figure 1 shows a new Provo City road that is currently being constructed on campus property recently deeded to the City. As shown, the road begins on Center Street at the west end of campus and follows the west property border, then runs east along the south property border until it exits the campus at 300 South and 1350 East. This will create a new campus south entry / exit point. A roundabout will be created at the new south entry.

Figure 2. Existing buildings and roads to be demolished after construction of the new facilities.

EXISTING ELEMENTS TO BE DEMOLISHED

The new Mark I. Payne Building and Pediatric Facility are replacing services currently operating in three existing State Hospital facilities: the Medical Services Building, the Youth Center, and the Beesley Building. These buildings and their associated campus roads will be demolished as part of this project, once the new facilities are complete and occupied.

The internal road that loops east around the existing Beesley Building and Youth Center, and connects with the roadway running west of the existing Medical Services Building, will be demolished. The road running immediately west of the existing Medical Services Building will also be demolished. The road that loops east of the current Medical Services Building will remain to service the existing Adult Forensic Building, and will be linked to the new road being constructed by the City.

DEMOLITION PHASING

The State Hospital is considering a phased demolition of the existing buildings, as noted below:

1. The Mark I. Payne Building and Pediatric Facility are constructed concurrently while all existing buildings remain in operation.

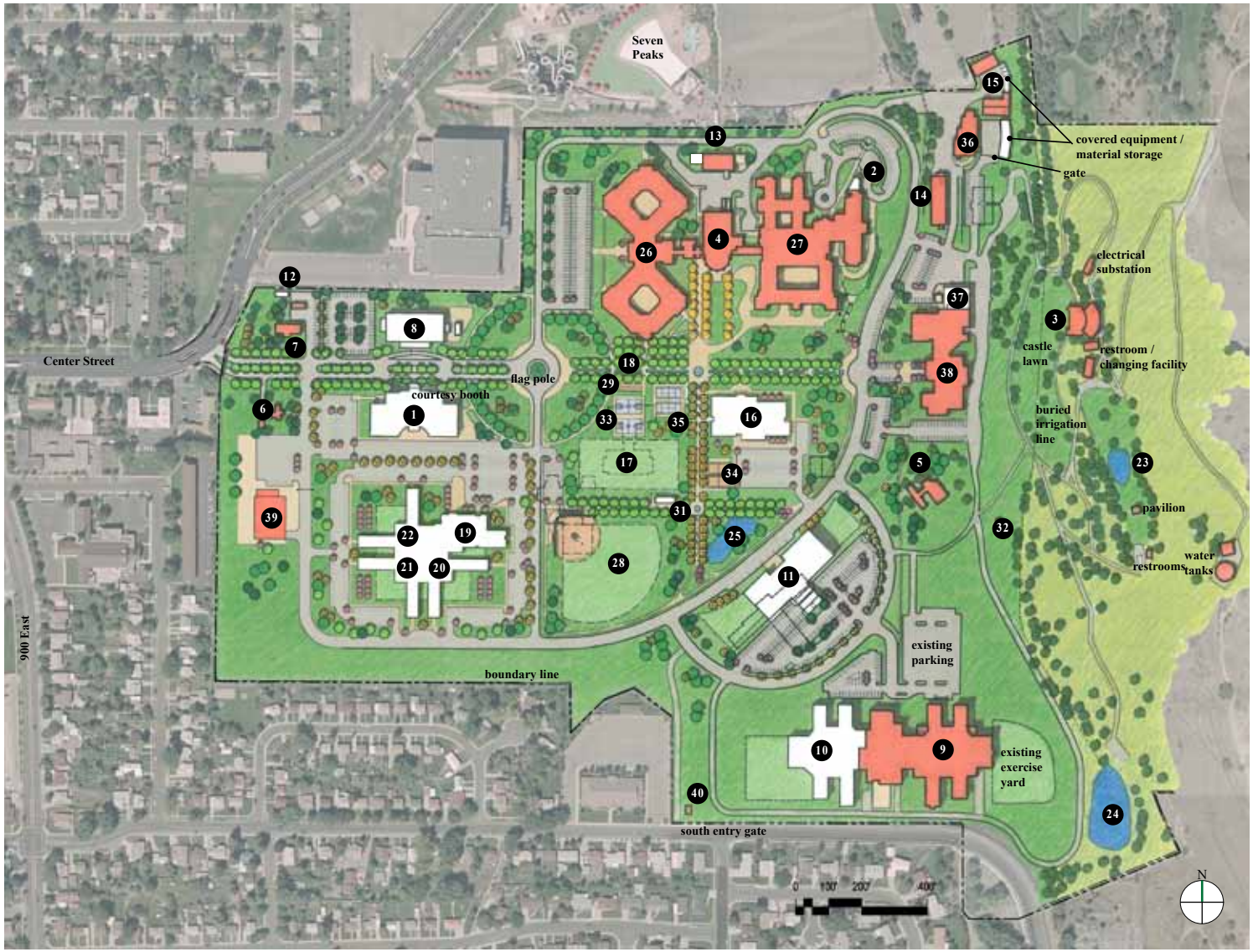
2. Immediately after construction completion, the occupants of the existing Beesley Building and Youth Center (Girls Youth Residential Unit and Adolescent School) move into the new Pediatric Facility and the two existing buildings are demolished.

3. The new parking lot is constructed between the two new facilities, on the site of the Beesley Building and Youth Center.

4. The open house / ribbon cutting ceremony for the new facilities takes place.

5. All additional occupants move into the new facilities.

6. The existing Medical Services Building is demolished.



1. Administration Building, New
2. Admissions/Discharge/ Transfer Offices (ADT), Addition
3. Amphitheater / Castle, Existing

4. Cafeteria / Kitchen, Existing
5. Chapel, Existing
6. Cottage, Existing

7. Excel House, Remodel
8. Education Building, New

9. Forensic, Adult, Existing
10. Forensic, Adult, Addition
11. Forensic, Youth, New

12. Greenhouse, New
13. Heating Plant, Addition
14. Laundry & Recreational Therapy Storage, Existing

15. Maintenance Building & Storage #4, Existing
16. Medical Services Building, New
17. Multi-Purpose Fields, New

18. Pedestrian Plaza, New

Pediatric Residential & School Facility

19. Pediatric School / Cafeteria / Offices / Acute Treatment, New
20. Children's Housing Unit, New
21. Adolescent Girls Housing, New
22. Adolescent Boys Housing, New

23. Pond, Existing
24. Pond, Irrigation, Existing
25. Pond, Irrigation, New

26. Rampton I, Existing
27. Rampton II, Existing

28. Recreation, Softball Field, New
29. Recreation, Horseshoe Pits (2), New
30. Recreation, Soccer Field, New
31. Recreation, Restroom & Storage Pavilion, New
32. Recreation, Ropes Course, Existing
33. Recreation, Sport Courts (2), New
34. Recreation, Sand Volleyball Courts (2), New
35. Recreation, Tennis Courts (2), New

36. Support Services Building, Existing
37. Treatment Center, Addition
38. Treatment Center, Remodel
39. Warehouse Building, Existing
40. Well Pumphouse, Existing

Control arm with card reader / call box

Figure 3. Utah State Hospital 2010 Master Plan Update.

UTAH STATE HOSPITAL MASTER PLAN

The Utah State Hospital hopes to minimize the amount of campus square footage needed for the new buildings and associated parking in order to preserve the existing orchards, retain as much open space as possible for play fields, and maintain the pleasant ambiance that exists on campus.

The Utah State Hospital Master Plan (Figure 3) shows the approximate locations of the current project's buildings, as envisioned in 2010. Current thinking has shifted the building locations, particularly that of the Pediatric Facility, for two reasons: to avoid constructing in the orchard area and to minimize the necessary lengthening of the Center Street utility tunnel, which will be very costly. The image shows the master-planned termination of Center Street to the west of the Rampton I Building, with a roundabout at the new eastern terminus. The portion of Center Street east of the roundabout is shown to become a pedestrian walkway. Per the master plan, vehicular access to the Mark I. Payne Medical Services Building was from a looping road south and east of the building, while the campus interior became a pedestrian zone. In the future, the master plan will need to be adjusted according to the plan of the current project, but it would be beneficial if the long-range ideas represented in the master plan were considered during initial siting and planning of the two new buildings.

PROJECT ADD-ALTERNATES

The master plan also shows several outdoor facilities that are to be included in the current project as bid add-alternates. (When planned as part of this project, the locations of these facilities will differ from those shown in the master plan.) The add-alternate facilities are, in order of priority:

- #32: a recreation, restroom, and storage pavilion for up to 100 people
- #17: multipurpose recreation and sports fields
- #28: a softball field

BUILDING CODE & PERFORMANCE REQUIREMENTS

The new building is expected to follow the 2009 Edition of the International Building Code and associated amendments from the State Fire Marshal's Office of the Department of Public Safety. The State of Utah Division of Facilities Construction and Management will be the Authority Having Jurisdiction over the project.

The State Hospital is accredited by JCAHO (the Joint Commission on Accreditation of Healthcare Facilities Organization). The new facilities must comply with Joint Commission standards to assure continued accreditation of the Hospital.

The Utah Department of Health, Bureau of Health Facility Licensing, has created a set of rules that govern healthcare facilities in the State. These are the State of Utah Health Facility Rules. Within these rules, other guidelines are adopted including the Guidelines for Design and Construction of Hospital and Health Care Facilities, including the Appendix, 2001 edition (Guidelines). It should be noted that the Bureau of Health Facility Licensing is contemplating adoption of the 2010 Guidelines. The edition of the Guidelines that will govern the design and construction of the facilities are those Guidelines that are in effect at the time the project is reviewed for code approval by the Authorities Having Jurisdiction.

As with all new buildings built under the jurisdiction of the State DFCM, the new Mark I. Payne Building is expected to be designed and built to achieve LEED Silver Certification.

In considering the various strategies to achieve a LEED Rating, the true goal of sustainability – reducing the impact our built environment has on the natural world – should not be lost.

The State and Utah State Hospital facilities managers are extremely interested in constructing a building that has significantly lower life cycle operation costs as well as lower life cycle maintenance costs. This may require that first costs be a bit higher in order to achieve true life cycle benefits.

Figure 4. Cast concrete panel on the existing Medical Services Building.

Design of this building must give due consideration to the site factors found in the site survey, site geotechnical study, and seismic maps. Other sections of this program, including the site / civil and structural narratives, have more to say about these criteria and how they might be accommodated within the design. The site survey and site geotechnical study are included in the appendix.

It should be noted that the State Hospital has committed to use Hilti products to create fire seals around piping, ducts, etc. This helps the campus maintain all fire penetration seals with a common product. Permission will be required from the Director of DFCM to specify a single source product, but precedence exists for this.

DESIGN CONSIDERATIONS

The new Mark I. Payne Medical Services Building will be highly visible from the eastern portion of Center Street on the Hospital campus. The new building presents an opportunity to create a warm, friendly and inviting image for the campus. It will be important for the design of this facility to provide a "front door" image to both Center Street as well as the new parking lot to its west. The design of the new building must avoid exposing a service side to the public right of way and parking areas.

The exterior design image of this facility should project an appearance of professional service while avoiding an institutional feel. Appropriate amounts of exterior glass will be expected, with solar orientation playing a role in the amount, location and types of glazing. Incorporation of natural light and windows will need to be balanced with security considerations for the Pharmacy, Central Stores, and Medical Records areas of the building.

In keeping with other facilities on the campus, a masonry exterior is expected. This will not only unify the campus, but will also provide a finish that is durable and easy to maintain, helping to reduce life cycle maintenance costs.

The existing Medical Services Building which is being replaced by the new Mark I. Payne Building has a cast concrete panel of a pharmacy / medical symbol (see Figure 4). If feasible, the Hospital would like this to be re-used in the design and construction of the new Mark I. Payne building.

The comfort and safety of the staff and patients are of critical importance in overall design considerations. In addition to natural light, comfortable and warm finishes are requested for the building interior spaces. A modern yet professional medical facility would be an appropriate style for the building interior. In non-patient areas, this functionality can be achieved by using principles of design suitable for any state-of-the-art modern medical services building.

Areas of the building where patients have unsupervised access, such as patient restrooms, will be designed using vandal and suicide resistant finishes and details appropriate for a modern psychiatric medical services facility and as approved by the Utah State Hospital. Finishes in these areas could include: walls of honed or painted concrete masonry block, or block with ceramic tile finishes; stained concrete or ceramic tile floors; and impact resistant gypsum board ceilings. In addition to finishes, fixtures and building elements must be suicide resistive and approved by the Utah State Hospital.

SAFETY AND SECURITY CONSIDERATIONS

Patient safety is critical in this facility, as with all other facilities on campus. Areas where patients may be unsupervised should be durable and constructed in a way that discourages and resists vandalism, injury and suicide. Proper fixtures and finishes, as proposed by the design team and approved by State Hospital project representatives, will be required to assure correct and safe functionality of these spaces. Some specific safety and security considerations for patient-access spaces are listed below (the list is not all-inclusive):

1. Visibility & Sightlines. Spaces should be planned with consideration for sightlines and clear visibility, avoiding alcoves or blind spots.

2. Corners. Concrete block or other hard-surface interior walls should have radiused / rounded corners, rather than sharp corners or edges.

3. Finishes. Finishes must be very durable, and easy to clean and maintain. Finish elements that could potentially be peeled off or removed, such as rubber wall base,should not be used. Ceilings should generally be gypsum board, with acoustic tile used only in areas where patients are accompanied / well-supervised. Glass must be safety glazing or covered with polycarbonate.

4. Doors. Patient-access spaces should generally be designed with doors that swing out of the room, to discourage barricading. Doors should be installed with continuous hinges with an anti-ligature design. Any door closers must be either integral to the door panel or installed on and visible only from the corridor side. Door handles must be an anti-ligature design.

5. Toilet / Shower Rooms. Toilet / shower rooms should have suicide-resistive elements such as fixtures that cannot provide a ligature attachment opportunity. The piping below sinks must be enclosed by construction that is inaccessible to patients. The Hospital currently encases piping in a cabinet of plastic-faced material, fastened with tamper-proof screws.

6. Mirrors. Mirrors must be of unbreakable material (polycarbonate, stainless steel, chrome-plated steel, specialized glass products, etc.).

7. Fixtures, Furniture & Equipment Security. All fixtures and equipment must be securely attached / bolted to walls, floor and/or ceiling. Consideration should be given to using furniture can either be attached to the building structure, or will be difficult for patients to pick up, move or use as a weapon. All should be very sturdy and easily cleaned. All drawers and cabinets should be locking and cabinet pulls should be recessed or of a closed type.

8. Electrical, Lighting, Mechanical Elements. All equipment in patient spaces must be tamper-resistant, have polycarbonate rather than glass elements, and incorporate specialized safety and security features that will discourage vandalism or injury to self / others. Light fixtures must not allow access to lamps.

BUILDING ORGANIZATION

In keeping with its multi-functional nature, the Mark I. Payne Building will have several access points and functional areas as noted below and in the overall adjacency diagram (see Figure 5). The adjacency diagram is not intended to represent a building layout, but rather to indicate beneficial adjacencies of the building's program elements.

Public/Visitor. The Visitor Entry (also considered the main entry) will need to be easy for first-time building visitors to locate. It must be adjacent to the new parking area, with handicap accessible stalls readily available to accommodate the elderly volunteers that will use this entrance. The visitor entry will provide access to Volunteer Services (in particular the Quilting Room) and Medical Records. It must also be adjacent to ADT, as the ADT Secretary will have visual access into the lobby to provide visitor oversight and assistance. The visitor lobby will contain a drop box for donated items, which must be moved to the Volunteer Services Clothing Center at the end of each day. This area must contain public toilet rooms.

Patient. The Patient Entry will provide access to the Clinics, the Sunrise substance abuse program, and the Volunteer Services Clothing Center. Patient toilet rooms must be available in this area. This entry requires limited parking, for staff and for vehicles transporting patients to these programs and services.

Staff. The Staff Entry should be adjacent to a high number of parking stalls, to accommodate the large quantities of staff that will participate in Staff Education three out of every four weeks. In addition to Staff Education facilities, the staff entry will provide access to the Pharmacy, Medical Records and Central Supply. This area, in particular Staff Education, must have easy access to staff toilet rooms.

ADT. Another entry will be required that provides direct access to ADT (Admissions). This must be a low visibility entry that will support the privacy of patients as they arrive at the State Hospital to be admitted. This entry will require limited parking, for the Hospital van used to transport patients, as well as vehicles that bring patients to the Hospital. Although low-visibility, this entrance must be easy for first-time visitors to locate and access.

During design, consideration should be given to incorporating access control between the different areas of the building (i.e. controlling visitor and patient access to staff areas).

VESTIBULES

Each building entry must be constructed with a code-required vestibule, to provide a transition zone from the outdoors to building interior conditioned space. These will be designed with glass walls to provide clear visibility for people entering and exiting the building. The floor surface will be walk-off mat.

In the Mark I. Payne Building, the patient entry vestibule will function as a sally port. It must accommodate one staff member and two to three patients (or one patient in a wheelchair) between doors, as one door closes and locks, and the second door opens.

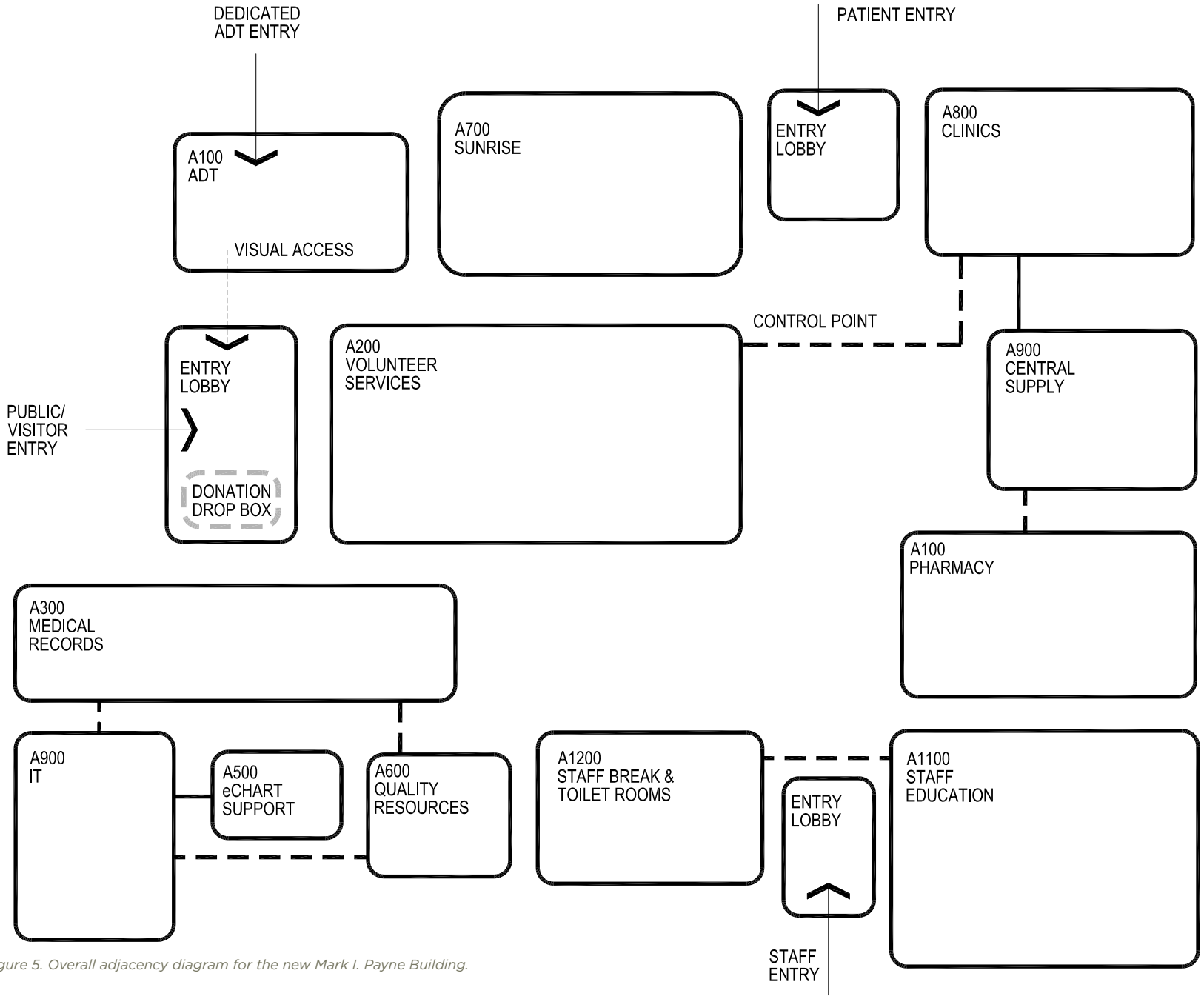


Figure 5. Overall adjacency diagram for the new Mark I. Payne Building.

TOILET ROOMS

The building will require different sets of toilet rooms for the three primary user groups in the building (public/visitors, patients, staff). The total required toilet quantity will be determined by code and must be divided as needed among the different toilet rooms. The staff toilet rooms that will be located adjacent to the Staff Education spaces will require a minimum of three toilets / urinals each, in order to accommodate the large volume of staff using these facilities during breaks in training sessions.

Some of the building's program elements have internal toilet rooms, for the safety and convenience of staff and patients, as noted below:

Area	Space Name (Toilet Quantity)
ADT	Patient Toilet/Shower Room (1)
Clinics	Patient Unisex Toilet Room (1)
Clinics	Staff Unisex Toilet Room (1)
Pharmacy	Staff Toilet Room (1)
Common	Doctor's Room (1)

The internal toilet rooms above are listed in the program. General visitor, staff and patient toilet rooms are not listed in the program, but are part of the overall building grossing factor.

OFFICE SPACES

The building's offices have been programmed without interior sidelights or windows except where needed for specific functions. All private offices must lock. All storage components within offices or open office workstations, such as file cabinets, drawer units and upper storage bins, must lock. Each office or workstation should be provided with a coat hook.

ACOUSTIC CONSIDERATIONS

Acoustic considerations must be given to private offices and clinic rooms where patient confidentiality must be maintained. Extending walls to deck with appropriate acoustic seals at tops and bottoms of walls and penetrations is an acceptable acoustic solution in these private locations.

Since the facility will accommodate a variety of spaces in close proximity to one another, and some spaces will generate more noise than others, importance must be given to acoustic isolation between noisy and quiet spaces. Adjacencies can also play a supportive role in separating noisy and quiet areas.

3B: STRUCTURAL

INTRODUCTION

The structural design for this project should provide a building system which will integrate with the program requirements for space layout, as well as with the architectural and building service needs, while meeting current code standards for vertical and horizontal load carrying capacity. Special considerations shall be given to enable future flexibility of interior spaces such that the major structural elements do not impose significant restrictions to future space planning. The level of user comfort as determined by the acoustic and vibration sensitivity of the structure also should be addressed.

GENERAL

The structural parameters which can significantly affect the overall performance and budget of this facility must be completely understood. Such parameters include the open uncluttered site, flexibility for space planning, vibration mitigation, and lateral design loads. The preliminary site specific Geotechnical investigation can be found in Appendix XX?.

Good communication with the Owner and Owner's representative will result in meeting the expectations and user desires for the structure with respect to both vertical and lateral loads. It is important to realize that code force levels represent the minimum requirements for safety. A strong emphasis on sustainable design should also be incorporated into the design process. The structure should utilize materials that are readily available and can be procured in a reasonable fashion. Consideration should be given to the availability of skilled labor in each particular material type.

Care should be given to the thermal expansion properties of the structural framing members.

Different areas of the building could require different levels of vibration control. Column spacing and roof framing system structural choices can economically address vibration issues.

GEOTECHNICAL CRITERIA

Gordon Spilker Huber Geotechnical Consultants have completed a Project Geotechnical Report dated July 22, 2011. The results of the geotechnical study indicate that groundwater was encountered approximately 13 feet below grade within the depths explored at the time of drilling.

The site is suitable for the proposed development provided the recommendations of this report are properly complied with. Spread footings founded on undisturbed native soils and / or structural fill are recommended for foundation support. The footings can be proportioned for a net allowable soil bearing pressure of 1,500 psf. In Borings B-7, and B-9 through B-12, fill was encountered to depths ranging from one to three and one-half feet. All existing fill at the site must be removed from below the building footprint and 5 feet beyond.

Once the final building size, configuration, structural system, number of levels above grade, and column loads have been decided, the project structural engineer and geotechnical consultant shall review the following items to make sure the assumptions and recommendations in the Preliminary Geotechnical Report conform with the final proposed design of the facility with regards to:

- Soil bearing capacity
- Structural fill requirements
- Potential differential settlements
- Potential for expansion or collapse of soils due to moisture changes
- Liquefaction potential
- Groundwater restrictions
- Seismic considerations, coefficients, fault traces, etc.
- Lateral bearing pressures – active and passive
- Alternate foundation systems
- Pavement sections

A final Geotechnical Investigation/Report shall be commissioned by the Owner if building loads or other considerations resulting from the proposed building design differ significantly from those assumed for the Preliminary Soils Investigation.

Groundwater is anticipated to be a factor in the final design because of below grade connecting utility tunnels. No basements are anticipated. Additionally no active seismic faults pass though the site area. The nearest active seismic fault is the Provo section of the Wasatch Fault, approximately one-quarter to one half of a mile to the east of the site. Frost protection is 30 inches minimum.

DESIGN CRITERIA

The 2009 international Building Code will be used as the minimum code and standard for this project, including the current editions of the standards referenced by the 2009 International Building Code. This project shall conform to the latest DFCM Design Standards for Structural Engineering. The design criteria and material strengths are to be clearly shown on the final structural documents. Following are minimum required structural design criteria and material strengths. These criteria and strengths will continue to be evaluated as the design evolves. This building is to be classified as Occupancy Category III per the IBC 2009 Building Code.

Floor Live Loads:

Office, Administration ..... 80 psf
Classrooms, Patient Rooms ..... 40 psf
Corridors and Lobbies at first floor ..... 100 psf
High Density File Storage Areas ..... 250 psf

Roof Live Loads (Snow):

Snow Ground Load ..... Pg=43 psf
Snow Important Factor ..... 1=1.10
Exposure Factor ..... Ce=1.0
Thermal Factor ..... Cr=1.0
Rain on Snow Surcharge ..... 5 psf

Snowdrift accumulation at valleys, parapets, offsets in roofs, and adjacent to penthouse locations shall be considered.

Wind Loads:

Equivalent Wind Speed ..... 90 mph
Exposure Type C
Importance Factor 1.15

Exposure "C" shall be used for elements and components including the exterior window/wall systems.

Seismic Loads:

Short Period Mapped Acceleration ..... Ss=1.255
Long Period Mapped Acceleration ..... S1=0.528
Soil Site Class D [If natural period of structural lateral force resisting system is 0.5 seconds or less]
Short Period Site Coefficient ..... Fa=1.0
Long Period Site Coefficient ..... Fv=1.5
Seismic Importance Factor ..... 1=1.25

Working Stresses for Materials:

Concrete (28 day strength min.):
Footings ..... 4,500 psi
Foundation Walls ..... 4,500 psi
Slab on Grade (Interior) ..... 3,000 psi
Slab on Grade (Exterior) ..... 4,000 psi
Structural Suspended Slabs ..... 4,000 psi
Columns ..... 4,000 psi
Reinforcing Steel: ASTM 615 Grade 60, Fy = 60 ksi
Structural Steel: Wide Flange Shapes ASTM A992 (Fy = 50 ksi)
Other Shapes and Plates, A -36 (Fy = 36 ksi)
Steel Tube Columns ASTM A500 Grade B (Fy = 46 ksi)

Other minimum codes and standards that apply to the design of this project include current editions of the following:

AISC Code with Commentary
ACI 318 Code
AISI Cold Formed Steel Specifications
ANSI/AWS D1.1 Welding Code
SJI for Steel Joists and Girders
SDI for Steel Decking

GRAVITY FRAMING SYSTEMS

Ground Floor

The ground floor level of the structure is anticipated to be a concrete slab-on-grade. It is anticipated that a basement will not be programmed into this space. Should a basement be implemented, similar on grade assumptions as below can be utilized.

At all slab on grade locations, at least 6 inches of compacted engineered fill shall be placed below slabs. Connections to new utility tunnels may impact the ground floor design.

The slab-on-grade shall be designed to satisfy all requirements of the geotechnical report for the site. Care should be taken to minimize surface cracks as well as to prevent moisture from permeating from below the slab. Utility tunnels below grade connecting the various campus buildings are anticipated.

Water infiltration into existing below grade utility tunnels has been a significant problem at the campus. The project designers must include measures to prevent water infiltration into below grade utility tunnels and other below grade structures constructed under this project authorization.

Suspended Structural System Selection Cost Comparison

The structural systems chosen for the building shall be selected based upon the following criteria:

- A cost comparison of at least two structural systems shall be investigated. The comparison should be broken down in detail with each component of cost significance being listed separately.

- Various structural systems comparing building construction time, material availability, coordination of various trades, lead times for ordering materials, appearance, owner preference, maintenance costs, flexibility for future remodeling, and compatibility with surrounding buildings should be considered when choosing the final structural systems for the building.

- Damage to the building structure and its contents due to lateral earthquake and/or wind loads should be evaluated between various structural systems. Damage control to building non-structural systems is a pertinent and important consideration when selecting the building structural system. More rigid shear wall and/or braced frame lateral force resisting systems provide greater damage control to a building's non-structural systems than does a more flexible moment frame type lateral force resisting system.

Cost comparisons between structural systems should include interface costs between other building components such as architectural finishes, exterior enclosure systems, mechanical systems, and electrical systems. Life cycle costing methods shall be used where applicable. The least expensive structural solution may not prove to be the least expensive overall building cost.

FUTURE BUILDING EXPANSION

The structural design of the buildings for potential future horizontal and/or vertical expansions need not be considered at this time as future expansion is not currently contemplated.

LATERAL SYSTEMS

Typically, seismic loads will govern the lateral force resisting system design in the planned locality as compared to lateral wind loads. However, it is important that various elements of the structure be properly designed to resist the prevailing wind loads also. These elements may include overhangs, roof projections, exterior cladding systems, window millions, etc.

Seismic loads enter a building by way of ground accelerations. These ground accelerations are resisted by the lateral force resisting system of the building. Several different types of structural systems can satisfy these forces. The numbers of bays requiring braced frames and /or reinforced concrete or masonry shear walls are different for each system and building configuration. The building code restricts the minimum number in order to ensure appropriate redundancy.

The lateral resisting system of this structure will best be satisfied with either steel braced frames or reinforced concrete or masonry shear walls.

Steel braced frames or reinforced concrete or masonry shear walls should be located in strategic locations which not only optimize the structural design, but also does not adversely impact the architectural footprint and flow of the enclosed spaces.

PERIMETER WALL SYSTEMS

The interior or exterior walls systems will not be used to support gravity or lateral loads except at reinforced concrete or reinforced masonry wall locations and at designated braced frame locations. They will be designed to support those required loads specified in the building code with reference to lateral seismic and wind loads.

QUALITY CONTROL

Quality control can best be achieved through close coordination and communication between the design professionals and the construction team. All required testing and inspections for structural materials and processes are to be clearly identified on the contract documents.

SUSTAINABILITY

The referenced standard utilized in the development of sustainable design includes current editions of the LEED-NC for New Construction Reference Guide.

The structural systems utilized should take into consideration the Credits available in the Materials & Resources and Innovation in Design sections.

Materials & Resources

This section offers opportunities for the structural engineer to contribute to the sustainable design and resource management for this project. Close coordination with the General Contractor can result in the managing of construction waste, and the potential re-use of material on future stages of construction. Structural sizes can be standardized and result in multiple uses during construction.

The incorporation of reuse material and recycled material provides opportunities for construction savings as well as benefiting regional companies. These materials can include exterior brick, concrete masonry units, structural steel, and concrete mixes (fly ash quantities).

Perhaps the strongest effort should be in the efficiency of design. This will result in the need for less material. The efficient layout and use of structural materials can result in overall less structural steel, structural concrete, and impact to the existing site. Although there may not be Credit Points directly associated with this effort, the overall impact on society and the environment is a very important part of Sustainable Design.

Buildings designed to last well into the future are the very essence of sustainable design.

INNOVATION IN DESIGN

Opportunities for credits exist in this area if we exceed noted values in the Materials & Resources Section above. If a very aggressive Construction Waste program is instituted and we can divert 95% of waste, an additional Credit can be achieved. This would be very aggressive but potentially achievable.

Reducing the amount of building damage following a major seismic event also has potential for innovation credits.

3C: MECHANICAL

APPLICABLE CODES AND STANDARDS

Conform to the latest edition of the following codes and standards, or the requirements defined in this program, whichever is more restrictive:

International Building Code
2009 IBC
2009 IMC
2009 IPC
2009 IFC
2009 IECC

State of Utah Health Facility Rules, Rule R432
2001 edition of the Guidelines for Design and Construction of Hospital and Health Care Facilities
Division of Facilities Construction and Management (DFCM) Design Criteria, June, 2009

AVAILABLE UTILITIES

Culinary Water

Culinary water is available in Center Street, to the north.
Anticipated service size is 3"

Sanitary Sewer

Sanitary sewer is available in Center Street, to the north.
Anticipated service size is 8"

Storm Sewer

Storm sewer is piped to a subsurface system in Center Street to the north

Steam

Medium pressure (85 psig) steam is available in the utility tunnel in Center Street, but the tunnel must be extended south to serve this building.

Existing steam plant includes two each 600 hp Kewanee fire tube boilers, model H3S-600-602, and a single 300 hp Cleaver Brooks fire tube boiler, model CB700-300. The Kewanee boilers were recently overhauled.

The Kewanee boilers operate in lead-lag configuration, and a single boiler provides adequate pressure until outside air temperature falls below approximately 25°, when a second boiler is required.

No changes to the existing boiler plant are anticipated.

Anticipated demand is 1,000 lbh.

GENERAL REQUIREMENTS

Temperature

Outdoor design conditions: *(ASHRAE Fundamentals, Provo)*

Winter ..... 9°F (99.6%)

Summer ..... 94.6DB /62.4WB °F (0.4%)

Indoor design conditions:

	Temperature				Noise
	Summer		Winter		RC Mark II RC(N)
	Occupied	Unoccupied	Occupied	Unoccupied	
Corridor/Common	76	85	70	62	35-40
Private Offices	75	85	72	62	30-35
Open Offices / Shared Spaces	75	85	72	62	35-40
Conference Rooms	75	85	72	62	25-30
Classroom	75	85	72	62	25-30[1]
Clinic	74	85	74	62	25-30
Pharmacy	75	85	74	62	35-40
Public Restroom	75	85	72	62	n/a
Private Restroom	75	85	72	62	n/a
Kitchenette	75	85	72	62	40-45
Storage	80	85	65	62	n/a
Temp Control Storage	68	68	65	65	n/a
Print Shop	72	85	72	62	40-45
Computer Training	75	85	72	62	25-30
Lockers	76	85	72	62	n/a
Mechanical Rooms	78	85	65	60	n/a
Elevator Rooms	85	85	65	65	n/a

[1]For classrooms used for distance learning, RC(N) rating = 15-25

Hours of Operation

Day of Week	Occupied	Unoccupied
Mon - Fri	0700 - 1800	
Saturday		0000 - 2400
Sun/Holiday		0000 - 2400

Humidity

Humidity control is not required.

Project Documentation

Provide a design narrative that includes the following:

- Basis of design, including all information required to prepare the design
- System description, including operating parameters and assumptions
- A description of the methods used by the design team to achieve sustainability, including the integrated design process; and a description of the results, i.e. a description of the sustainable elements included in the design. Include in this section how the requirements of this program were met.
- Results of the energy simulation, with a design energy performance standard for the building.

Sustainability

DFCM will engage a separate Energy Specialist to perform an energy analysis of the project, according ASHRAE Standard 90.1-2007; Appendix G. The analysis will consider reducing energy consumption in each of the following categories: lighting, space cooling, space heating, pumps, heat rejection, ventilation fans, internal loads and external loads.

The design team will be required to attend a Design and Technology Charrette, to evaluate the building design and consider technologies, including but not limited to, daylighting, natural ventilation, evaporative cooling, demand-controlled ventilation, green roof, spectrally selective glazing, low flow faucets, and on-site renewable system(s).

The design team will also identify and evaluate the suitability of any potential incentives, policies or rebates for energy efficiency and renewables, offered by federal, state, or local authorities, as well as those offered by private entities and utility companies.

The energy analysis will be used, wholly or in part, for the basis of evaluating several energy related project requirements, referenced throughout the program document. These include demonstrating compliance with the Utah State Building Energy Efficiency Program's High Performance Building Standard – 2009 (as part of the DFCM design requirements) and estimating potential project incentives, as referenced above.

Potential measures include:

Envelope/Architectural

- Improved wall insulation
- Improved infiltration control
- Improved fenestration assembly U-factor
- Improved fenestration assembly SHGC
- Building and/or fenestration Shading
- Elevator motor efficiency

Electrical Systems & Process Loads

- Reduced Lighting Power Densities (LPD)
- Lighting Occupant Sensor Controls
- Daylighting Controls
- ENERGY STAR Rated Equipment (process load reduction)
- On-Site Renewable Energy

HVAC & Plumbing Systems

- Direct evaporative cooling
- Enhanced supply air fan efficiency
- Improved hydronic pump efficiency & variable speed pump control
- Improved Economizer Control
- Demand Control Ventilation (DCV)
- On-Site Renewable Energy

Plumbing Systems

- Low flow urinal
- Reduced flush W/C

Internal Loads

The following internal loads form the basis for load calculations:

Room Type	ASHRAE 62.1 Classification	People (Pers/ft²)	Ventilation (cfm/ft²)	OH Lights (Watts/ft²)	Equip (Watts/ft²)	Other
Corridor/Common	General: Corridors	0.000	0.078	0.5	0.00	
Private Offices	Office Building: Office Space	0.008	0.130	1.1	0.85	
Open Offices/Shared Space	Office Building: Office Space	0.005	0.111	1.1	0.75	
Conference Rooms	General: Conference/Meeting	0.050	0.403	1.3	0.10	DCV
Classroom	Education: Classroom (age 9 plus)	0.050	0.806	1.4	0.25	DCV
Clinic	Office Building: Office Space	0.013	0.243	1.5	1.00	
Pharmacy	Misc. Pharmacy (prep. area)	0.010	0.299	1.2	0.90	DCV
Public Restroom	Table 6-4: Toilets-public	0.000	n/a	0.9	0.00	Exhaust at the rate of 75 cfm/fixture
Private Restroom	Table 6-4: Toilets-private	0.000	n/a	0.9	0.00	Exhaust at the rate pf 75 cfm/fixture
Kitchenette	General: Break Rooms	0.025	0.241	1.1	1.25	Exhaust at the rate of 0.30 cfm/ft²
Storage	General: Storage	0.000	0.156	0.9	0.10	
Temp Control Storage	General: Storage	0.000	0.156	0.9	010	
Print Shop	Educational: Computer Lab	0.005	0.221	1.2	2.50	
Computer Training	Educational: Computer Lab	0.050	0.806	1.4	6.67	20 Computers/Monitors @ 100 w ea
Lockers	Table 6-4: Locker Rooms	0.025	0.600	0.6	0.15	Exhaust at the rate of 0.75 cfm/ft²
Mechanical Rooms	Misc: Electrical Equipment Rooms	0.000	0.078	1.5	tbd	
Elevator Rooms	Misc: Elevator Machine Rooms	0.000	0.156	1.5	tbd	Ventilate for temp/odor control

Note

Demand Controlled Ventilation (DCV) in zones with significant variation in occupant loading, or ventilation rates >0.30 cfm/ft2

Ventilation rate per ASHRAE 62.1-2007, increased by 30% for LEED EQ credit.

Lighting Power Density per ASHRAE 90.1-2007

Equipment Density per standard design practice

Ventilation/Indoor Air Quality

Comply with ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality, for minimum ventilation requirements. Reset the outdoor air intake flow and/or space or zone airflow as operating conditions change, in accordance with Section 6.2.7 of the Standard, for the zones noted as DCV in the internal load summary. Increase minimum ventilation flow rate 30% above ASHRAE Standard 62.1 minimum to achieve LEED Increased Ventilation credit.

Design a ventilation system that results in an air change effectiveness greater than or equal to 0.9 as determined by ASHRAE 129-1997. Follow recommended design approaches in ASHRAE 2009 Fundamentals, Chapter 32.

Develop and implement an IAQ Construction Management Plan that includes the use of high efficiency filters (Minimum Efficiency Reporting Value (MERV) = 8, as determined by ASHRAE 52.2-1999), at each return air grille for systems used during construction.

Provide MERV 5 pre-filters and MERV 13 final filters at central air handlers upon completion of project.

Commissioning

Reference DFCM Design Requirements for commissioning.
Coordinate with commissioning agent retained for the project, and comply with requirements for building commissioning detailed in DFCM Solicitation for Commissioning Services.

Measurement and Verification

Install continuous metering equipment for the following uses:

Steam	Condensate	Chilled Water
Condenser Water	Domestic cold water	Domestic hot water

Note that this level of Measurement and Verification may not be adequate for LEED credit.

SYSTEMS

General

Provide central station air handler with chilled water cooling coils and evaporative cooling media as required to meet minimum ventilation standards. Use backward-inclined centrifugal fans with variable speed control. Locate air handling equipment indoors, in a roof-mounted penthouse, with adequate service clearance.

Use VAV reheat boxes for all zones. Use minimum two row coils in perimeter zones, and single row coils in interior zones. Provide a ducted return air system, and use variable speed return/relief fans. At a minimum, use constant volume primary, variable volume secondary pumping for the heating water system, and variable volume primary-only pumping for chilled water. Use redundant pumps for all systems.

Provide HOA switches on all pumps and fans.

Approved water treatment provider is Power Engineering.

Preferred pump manufacturers are B&G, Grundfoss and Taco.

Provide full bypass on all variable speed drives

Steam

Serve building from campus steam system, with shut off valve and vents and drains as required. Extend steam from existing tunnel to building.

Locate building service, isolation valves and heat exchanger in basement mechanical room. Provide full-sized vent to outdoors.

Provide duplex electric condensate pump for condensate return.

Use schedule 40 pipe for steam supply, schedule 80 for condensate return.

Heating Hot Water

Generate building heating hot water through a shell and tube heat exchanger. Maximum allowable pressure drop on shell side of the heat exchanger is 8 ft w.c., and maximum water velocity is 7 fps.

Design heating water for 180°F supply, with 30°F temperature drop in the distribution system. Provide constant volume flow through heat exchanger, with variable volume secondary heating water distribution. Control secondary pump speed to maintain constant differential pressure setpoint.

Design heating water transport energy consumption as follows:

	Maximum Water Transport Energy	
	(bhp/1,000,000 Btuh)	(W/gpm)
Full Load	2.50	23.3
50% Load	1.15	10.7

Chilled Water

Generate chilled water from roof-mounted air-cooled chiller. Allowable manufacturers are Trane, Carrier and York.

Design the building side chilled water for 14°F temperature rise, using two-way control valves.

Anticipated peak load is 60 tons.

Circulate chilled water in a variable volume, primary-only system, operating pumps to maintain differential pressure, subject to minimum speed required to maintain minimum chiller flow requirements.

Provide chilled water buffer tank to limit chiller short-cycling, sized to limit run time to 15 minutes minimum.

Design the chilled water transport energy consumption as follows:

	Maximum Water Transport Energy	
	(bhp/ton)	(W/gpm)
Full Load	0.05	10.9
50% Load	0.04	8.7

Air Handler

Provide air handling capacity as follows:

4" double wall construction
40,000 cfm (estimated)
4.5" TSP
MERV 7 filter bank, face velocity = 375 fpm
MERV 13 filter bank, face velocity = 375 fpm
Multiple backward inclined, direct drive plenum fans, 10 hp maximum each
Chilled water coil: 5/8" diameter 0.035" thick tubes, 6 rows, 8 fpi, 450 fpm face velocity
Direct Evaporative Media: 12" CelDeck, stainless steel sump, 550 fpm face velocity.

Air Distribution

Document fan sizing calculations with zone by zone load calculations

Document critical path supply duct pressure loss, and show process used to review fittings and duct sizing in order to minimize fan pressure requirements.

Use automatic dampers on exhaust fans in lieu of barometric dampers.

Document that transport energy consumption meets the following criteria:

	Maximum Air Transport Energy (bhp/1,000,000 Btuh)
Full Load	1.0
50% Load	0.30

Require pressure testing of all duct systems in accordance with 2009 IMC

Provide zoning plan during schematic design review that indicates proposed zoning plan for review and approval by Hospital staff.

Do not use fan powered boxes.

All registers, grilles and diffusers in patient accessible areas are vandal and suicide resistant.

Miscellaneous

Provide independent cooling from a DX split system fan coil to each MDF/IDF room (three total). Anticipated load = 10,000 Btuh, sensible

Plumbing

Provide a two-stage PRV at the building water service entry.

Provide single reduced pressure principle backflow preventer building water service entry.

Distribute water in Type L copper piping.

Soften all water (hot and cold) except water used for human consumption (drinking fountains)

Waste piping is PVC below grade, cast iron above.

Generate hot water from the campus steam system, using a semi-instantaneous plate and frame heat exchanger and storage tank. Store at 140°F and distribute at 120°F, and mix for delivery at lavatories at 110°F max.

Locate mixing valves in an accessible location.

All plumbing fixtures must be reviewed and approved by USH staff.

Exposed piping is to be minimized, but if it is unavoidable, it is to be covered and inaccessible.

Lavatories are solid surface, integral with solid surface countertops. Faucets are anti-ligature, mechanical metering, with hot and cold connections, served by 110°F water

Water closets are wall mount, siphon jet, vitreous china, with 1.6/1.1 gpf automatic sensor flush valve recessed in wall, similar to Sloan Ecos 111.

Urinals are wall hung, vitreous china, with 0.125 gpf sensor flush valve, similar to Sloan Ecos 186.

Waterless urinals are not acceptable. Prove trap primers at all floor drains.

Provide hot and cold water hose bibb in mechanical room.

Design roof drainage per IPC rainfall intensity. Minimum roof drain / overflow drain size is 3"
Gravity flow all sewage – ejector is not permitted. A sump pump for clear water from the basement is acceptable.

Provide dental vacuum system in dental clinic.

Design roof drainage per IPC rainfall intensity. Minimum roof drain / overflow drain size is 3"

Gravity flow all sewage – ejector is not permitted. A sump pump for clear water from the basement is acceptable.

Provide dental vacuum system in dental clinic.

Fire Protection

Provide fire sprinkler protection throughout building. System to comply with NFPA, building official, IBC requirements and State of Utah Fire Marshal requirements.

A fire pump is not anticipated, because the flow and pressure requirements can likely be met from the campus system. The existing flow test is not current, and new fire flow analysis per DFCM criteria shall be conducted during the design phase.

Provide individual floor control assembly, including zone check assembly, at each floor.

Sprinkler Occupancy Hazard Classifications are as follows:

Office and Public Areas	Light Hazard
Service Areas	Ordinary Hazard, Group 1
Mechanical Equipment Rooms	Ordinary Hazard, Group 1
Building Service Areas	Ordinary Hazard, Group 1
Electrical Equipment Rooms	Ordinary Hazard, Group 1
General Storage Areas	Ordinary Hazard, Group 1

Minimum Density for Automatic-Sprinkler Piping Design: As follows: (Reduce Design areas with quick response heads when applicable and increase design area as required for pitched ceilings.

Light-Hazard Occupancy	0.10 gpm over 1500 ft^2 area
Ordinary-Hazard, Group 1 Occupancy	0.15 gpm over 1500 ft^2 area
Ordinary-Hazard, Group 2 Occupancy	0.20 gpm over 1500 ft^2 area
Special Occupancy Hazard	As determined by authorities having jurisdiction

Maximum Protection Area per Sprinkler: As follows (except as modified by authorities having jurisdiction)

Office Space:	225/400 ft^2
Storage Areas	130/400 ft^2
Mechanical Equipment Rooms	130 ft^2
Electrical Equipment Rooms	130 ft^2
Other Areas	According to NFPA 13 recommendations

Components and Installation: Capable of producing piping systems with 175-psig minimum working-pressure rating, unless otherwise indicated. All piping and components are Schedule 40 minimum, and of domestic manufacture.
Class I, standpipe system design shall be designed assuming 150 psi available at fire department connection. Pressure and required flow shall be provided by fire pumper truck.

Sprinkler heads shall be recessed in open areas, and vandal and suicide resistant similar to Tyco Raven in patient care areas

Controls

Provide BACnet compatible Direct Digital Control (DDC) system.

Approved controls vendor is Johnson Controls.

Provide written sequence of operation on drawings for all systems controlled by the DDC system. Provide graphical representation of sequence of operations on the Building Automation System graphics.

Label the areas served by air handlers and other fan systems on the BAS graphics.

Provide temperature sensors at airside inlet and outlet of all terminal units.

Provide sensor only at room thermostats. Occupants are not to have control of room temperature setpoints.

Provide UPS system for head end controller.

Assume 50 zones.

3D: ELECTRICAL

CODE REQUIREMENTS

The codes and laws that apply to the electrical systems are the latest versions of the following:

National Electric Code (NEC) 2008
International Energy Conservation Code (IECC) 2009
International Building Code (IBC) 2009
International Fire Code (IFC) 2009
International Mechanical Code (IMC) 2009
National Fire Code (NFPA) 72 2007
American's with Disabilities Act (ADA) 1991
ADA Application Guide (latest edition)
Underwriters Laboratories (UL)
State of Utah Fire Marshal's requirements R710-4
DFCM Design Guidelines (latest edition)

Note that Section 501.1 of IECC 2009 allows the substitution of ASHRAE/IESNA Standard 90.1 for Commercial Energy Efficiency standards.

Standard Requirements

The additional standards that apply to the electrical systems are the latest accepted versions of the following:

NFPA
ANSI standards as applicable
NEMA standards as applicable
IEEE standards as applicable
EIA/TIA standards as applicable to Information Technology
BICSI standards as applicable to Information Technology

Fire Alarm Requirements

For State buildings, smoke detectors are required in all corridors. It is recommended to have a manual fire alarm system with automatic smoke detection in this facility.

Any fan system over 2000 CFM would require a duct detector and fan shutdown upon detection, this requirement would be required regardless if other automatic or manual alarms were installed. The IMC requires smoke detection on fan systems, and fan shutdown.

Provide heat detectors in the kitchen area.

Provide a separate fire alarm control panel located in the main mechanical room or main electrical room. Provide an annunciator panel at the main entrance and additional annunciator panels located in each smoke zone or compartment of the building.

The existing campus fire alarm systems are mainly manufactured by Notifier. If possible, provide Notifier (or Fire-Lite) as the approved fire alarm system manufacturer.

Provide detailed shop drawings of the fire alarm system, including all smoke/firedamper locations, to the Hospital Fire Marshal as part of the submittal process. Include a one year test of the fire alarm system in the contractors bid.

Provide annunicator near the door that the fire department responds to as approved by the fire marshal. Provide communication link to the Heninger Building for 24 hour monitoring.

Power Services

Power for the Utah State Hospital originates from a substation on the east foothill, and a loop of medium voltage 12.47 kV cable runs around the facility. Pad Mounted Medium Voltage Switchgear are located near buildings, with fused ways feeding pad mounted transformers, servicing each building. Power bills confirm that the loop likely has available capacity for new construction, particularly when the youth center and the Beesley building are torn down. The loop is nearby the building site, and it is expected that the loop will be extended to the facilities.

For the Mark I Payne Building, there are two possibilities, one is feeding from the southeast, a transformer that originally fed the Hyde building is located in the lawn, providing opportunity for a future feed point, or for temporary power. The second option is to feed from the intersection near the Youth Center east along Center street to the new facility. Although a switch is currently installed feeding the Beesley and the Youth building, there is no spare way. Likely a new switch by this project will be required near Center street to extend the loop eastward.

All site manhole or pullbox access, in addition to switchgear and transformers shall be bolt down style with pentahead bolts.

The IECC and ASHRAE 90.1 rules required lighting loads will not exceed 1.1 watts per square foot using entire building method.
The service size shall contain a minimum of 30% spare capacity according to the DFCM design guidelines. It is expected that the Mark I Payne Building facility will be sized in the 19 watt/SF range (including spare capacity) for the service size.

The designer should choose either a 277/480 volt 3 phase service, or 120/208 volt 3 phase service, or both. By using two services, step down transformers will not be needed in the design inside the facility.

Power Service Accessories

Digital Metering equipment shall be provided at main service switchboard.

Transient Voltage Surge suppression shall be provided at the main switchboard and the emergency switchboard, and at other selected locations through the facility as determined by the design engineer.

Power Distribution

Electrical Panel locations shall be centrally located to minimize branch circuit distances, this saves material and minimizes voltage drop. No point in the building shall exceed 125 feet to the nearest electrical panel, preferably most circuits shall be less than 100 feet to the nearest panel.

All power distribution feeders shall be in conduit, with copper conductors. Utilize full size as possible to the largest mechanical loads, and centralized in the facility for efficiency, sustainability, and cost savings.

All outlet circuits shall have dedicated neutrals with single pole breakers. Shared neutrals with two and three pole breaker handles are not allowed.

All circuits shall be designed so there is no more than 5% maximum voltage drop from the main service entrance to the outlet or device. It is preferred that the feeder have no more than 2% voltage drop, and the branch circuit no more than 3% voltage drop, at maximum connected load. This may be accomplished by increasing wire size, or minimizing distance of the feeders and branch circuits, as appropriate.

Power panels for receptacle power shall be separate from panels feeding mechanical and lighting loads to allow for easy, separate metering as required by the IECC and/or USGBC LEED M&V points (if selected). Separation will also reduce harmonic transfer between building mechanical loads and receptacle power and can be considered part of the DFCM required Harmonic Mitigation Plan.

Emergency Power

Batteries are not allowed. A new, diesel generator will be required as part of the project. The generator will run egress lighting, and all information technology equipment inside the MDF/IDF rooms including HVAC inside the telecommunication rooms. Essential patient care medical equipment and lighting will also be required to be connected to the generator.

The generator may be located in the transformer yard area, screened from public view, yet accessible for fueling and maintenance from a paved driveway. Consideration shall be taken to control noise to at least 15 dB.

The tank shall have a minimum of 72 hours of backup fuel at 100% rated load.
A minimum of two ATS switches is required, one for life safety egress lighting, and the other for essential patient care medical equipment, and auxiliary equipment such as the telecommunications closets.

UPS System

It is expected that small, centrally located UPS system will be provided to feed power to the MDF and IDF rooms as part of construction package to backup telephone and data systems for the building. It shall be a permanent part of the building electrical systems and installed by the contractor. The UPS system will be backed up by the building diesel engine generator.

Power Quality & Harmonic Mitigation Plan

The design engineer shall detail a plan for power quality to meet the DFCM standards, including specifying low harmonic ballasts, harmonic filtering units for adjustable speed drives, power factor correction, and/or active harmonic filtering units. It should be noted that power factor correction in an individual building is not as important in a campus environment as long as the main substation power bill has no penalties paid to the power company. Testing of harmonics and power factor shall be required as part of the commissioning process.

Security Grade, Anti-suicide, Anti-vandalism measures

Electrical components in certain patient care areas should be tamper resistant, vandal resistant, and be considered anti-suicide. No component of the electrical or lighting system shall be able to aid a patient into committing suicide. For patient rooms, high security grade lighting is desired. For hallways and restrooms in patient areas, medium grade lighting is sufficient. Fixtures shall contain polycarbonate or layers of polycarbonate and vandal resistant acrylic to ensure strength. Recessed fixtures with tamper resistant access is preferred. Avoid wall mounted fixtures, unless they are located high on the wall adjacent to the ceiling.

Access screws shall be Torx with pin in the center. Phillips and straight blade access screws are not allowed.

Outlets

The number and location of outlets shall be coordinated with each space with users and comply with their needs and requirement.

Outlet coverplates in Patient areas shall be polycarbonate and shall be fastened with tamper resistant fasteners.

GFI outlets shall be provided for all vending machines and for break rooms, restrooms, roof outlets, and other locations within 6 feet of a sink.

Provide dedicated outlets for all copy machines, laser printers, vending outlets, microwaves, and other high-use equipment.

Provide at least one outlet in each storage and mechanical rooms where the room exceeds 20 square feet.

Provide hospital grade, tamper resistant, GFI outlets in all patient areas.

Lighting

Wherever possible, the designer shall utilize long life, energy efficient lighting solutions. Solid State LED sources that save energy are preferred for certain downlights. Four foot T8 or T5 fluorescent lamps, with electronic ballasts, are preferred for areas to be well illuminated. T8 lamps shall be premium, greater than 3100 lumens. T8 ballasts shall be premium, high efficiency, with ballast factor less than 0.8.

Do not use parabolic light fixtures. In patient accessible areas, provide security type light fixtures. Consider the use of basket type recessed light fixtures with clear polycarbonate lens.

Provide security lighting in the following types of spaces: ADT, patient changing rooms, group therapy, patient waiting rooms, patient toilet rooms, patient lobby.
Consider the use of indirect/direct, basket type, or high efficiency lens fixtures in staff administrative areas.

For smaller fixtures, compact triple tube fluorescent lamps are preferred if LED Solid state is not available or too expensive. Incandescent lamp sources shall not be used.

Solid state LED lighting technology is rapidly expanding and fixtures are getting better every year. They have relatively low efficacy (lumens per watt), but utilized lumens per watt (lumens usable outside of the fixture) is high due to the directional source. Solid State source efficacy is currently near 70-80 lumens /watt, compared to 105-110 lumens per watt for fluorescent sources, but utilized lumens in fluorescent can be as low as 40-60% of the created lumens. The lumens get absorbed within the fixtures during reflectance or inside the lamp wall, and cannot escape the fixture. This means that LED Solid State has lower wattage in many cases for the same replacement, particularly on smaller downlights, and cove lighting application. Color rendering of LED Solid state is also improving, with major advances in white LED.

LED solid state systems are encouraged if the project can afford them. Careful consideration of color rendering, matching of batches, and possible sample fixtures shall be presented to the owner for approval. Avoid the use of two separate manufacturer products in the same room.
Lighting solutions shall incorporate automated controls per the latest version of the energy code. This can be timeclock switching systems in public areas of the medical facility, and/or occupancy based switching systems in public and private areas. Dual technology occupancy sensors are preferred to help prevent false off and false on operation of the lights. Design Engineer shall include commissioning specifications in the design to commission all lighting control systems, and provide required owner training.

Consider using the existing campus METASYS system to control lighting in the areas which are not controlled by occupancy sensors.Continous dimming should be incorporated into the Sensory Room.

Daylighting controls may be considered in selected areas of the facility and are encouraged to reduce load on prime power sources.

Provide egress illumination and illuminated exit signs complying with all required codes. As a minimum, 1 footcandle shall be provided for all egress pathways. Higher levels of emergency egress should be considered in the patient room area, recommended at 2-5 footcandles. In addition, provide some illumination on backup generator power in public restrooms, mechanical rooms, electrical rooms, and communications closets.

Illumination levels shall follow the published guidelines of the Illumination Engineering Society, North America (IESNA), and its recommended practices.

Grounding

Provide grounding equipment conductors in all feeder and branch circuits. Conduit ground is not acceptable.

Provide grounding riser system for all telecommunications closets, complete with grounding bus bars.

Lightning Protection Systems
Lightning Protection systems may be considered. The design engineer shall run a lightning/storm risk analysis per the NFPA 780 requirements at the Schematic Design stage. Where the analysis states that a lightning protection system is recommended, budgets shall be reviewed prior to Design development to see if the system is desired by the owner.

Clocks
Not required.

Sustainable Principles
USGBC LEED silver is required for the facility. Design engineer shall select appropriate level of points to achieve the project goals but not break the budget.

It is desired that where economically feasible, sustainable practices and design shall be employed regardless of whether or not the practice obtains a LEED point. Many of the above system descriptions already use energy efficient design practices.

The lighting design for the Mark I Payne facility is targeting 25% better than code.

Transformers, where specified, shall be energy efficient and Energy Star or TP-1 complaint.

As stated previously there may be daylighting controls within some of the spaces adjacent to exterior windows and clerestories to take advantage of free and efficient daylight when available; The lighting layouts and fixture selections will aid in reducing light pollution from interior light sources as well as aid in reducing sky glow from exterior sources.

INFORMATION TECHNOLOGY

Telecommunications Service To New Facility
The telecommunications service runs along the tunnel down Center Street. The new Mark I Payne building can branch from the tunnel to the new facility. New fiber will need to be installed to the source at the Admin building or the Rampton building.

Telecommunications Trunklines Within New Facility
It is proposed that a new Main Distribution Frame rack (MDF) be located in each of the new buildings. The main room will contain the entrance protectors for any copper cable, plus the light interface units for the fiber systems, and will be a point to go from outside plant cable to interior grade cabling.

Telecommunication Mdf And Idf Room Requirements
All telecommunications rooms shall be on separate air conditioning to allow 24 hour, 7 day a week operation.

All MDF rooms shall have appropriate grounding, and grounding bus, tied back to the power service ground. Provide grounding jumpers to all metal raceways entering the closet. Provide spare holes on grounding bus.

Horizontal Workstation Cabling Requirements
Wiring shall consist of category 6 cabling to each phone/data outlet throughout the facility.

TV
A satellite TV broadband RF system is anticipated throughout the facility. Provide appropriate coaxial cable, amplifiers, taps, and other equipment for a complete system.

SECURITY

A highly visible perimeter should be maintained around the building, accomplished with proper lighting and landscape design that creates a secure environment.

Provide card access in select locations required by the owner. Door latches are preferred to be electric latch rather than electric strike.

Card Access and Security Systems

Card Access systems will be specified on select doors, including exterior doors, telecommunications MDF and IDF rooms.

CCTV cameras shall be provided for hallways leading to restrooms.
Also provide CCTV camera locations inside nearby exterior exits, near telecommunications MDF/IDF closets, and public gathering spaces and lobbies. In addition, CCTV cameras will be provided on the exterior, in weather housings, to view major sitelines of the exterior.

Contractor shall provide raceways with complete homeruns, j-hook method of wiring is not acceptable.

CCTV Exterior housings shall have power for weather accessories, defoggers and/or heaters to ensure a clear vision path.

BUILDING TECHNOLOGY & A/V

Designer shall coordinate all specifications and design with the owner.

All instructional areas, including labs, will contain appropriate facilities for Technology and A/V, as detailed below.

Additional Standards Requirements

The additional standards that apply to the Technology, in addition to codes and standards required for electrical systems are the latest versions of the following:

EIA/TIA 607 standards as applicable to A/V and Information Technology
BICSI standards as applicable to A/V and Information Technology
IEEE 208 standards as applicable

Note that the A/V and Media Integrator/Programmer must be CAIP Certified, and have a minimum of 5 years experience installing media equipment in an educational environment.

Basic A/V Systems

Basic Systems are normally specified in small conference rooms, smaller spaces needing A/V.

The Basic system consists of a fixed credenza, usually tied to a wall near the front of the room. The system would include laptop connections for an overhead projector, a DVD and/or Blu-Ray media player, and an amplifier with speakers either wall mount or overhead (overhead preferred). The control would be a simple 9 button panel, with volume control, and on-off of all sources. A wireless remote is also used for control.

Lighting control is NOT integrated in basic systems, and there is no touch screen panel. However, it is recommended that manual dimming controls be provided in these small spaces.

All conduits to have insulated bushings both ends, and contain no more than two 90 degree bends between pullboxes.

A/V must be installed separate from power and data cables.

Speakers are preferred to be distributed overhead.

Classroom Systems

The Classroom system consists of a interactive whiteboard, audio classroom sound enhancement system, and DVD/VCR/Tuner. In addition, the system would include laptop connections for an overhead projector, and speakers either wall mount or overhead (overhead preferred). The control would be a simple 9 button panel, with volume control, and on-off of all sources. A wireless remote is also used for control.

Lighting control is NOT integrated into the classroom system, and there is no touch screen panel. However, it is recommended that manual switched zone lighting be implemented to turn off lights near the screen when in A/V mode.

All conduits to have insulated bushings both ends, and contain no more than two 90 degree bends between pullboxes.

A/V must be installed separate from power and data cables.

Speakers are preferred to be distributed overhead.

Cable TV

A cable TV broadband RF system is anticipated throughout the facility, including to all classrooms, conferences, and Multipurpose Activity and Multipurpose Dining Room facilities. Provide appropriate coaxial cable, amplifiers, taps, and other equipment.

4: SPACE NEEDS

SPACE SUMMARY

This section contains the detailed space needs information for the new Mark I. Payne Building. At right is a summary of the needs for the entire building, broken down into major program categories. The following pages contain a spreadsheet page for each space category, listing the spaces for that group.

Following the space list spreadsheet are sub-sections for each space category, describing the detailed needs for that group, using narrative, adjacency diagrams for the group, and individual room data sheets and diagrams.

		NSF	DGSF	GSF
MARK I. PAYNE BUILDING				
A100	ADT	1,024	1,372	1,633
A200	Volunteer Services	2,446	3,139	3,736
A300	Medical Records	1,663	2,242	2,668
A400	IT	886	1,202	1,430
A500	eChart Support Services	180	239	285
A600	Quality Resources	496	686	816
A700	Sunrise	1,830	2,434	2,896
A800	Clinics	1,497	2,020	2,404
A900	Central Supply	1,090	1,383	1,645
A1000	Pharmacy	1,860	2,544	3,027
A1100	Staff Education	2,950	3,768	4,483
A1200	Common Areas	3,180	3,901	4,643
		19,102	24,929	**29,666**

DEFINITIONS

1 **NSF:** Net Square Feet, or the space inside surrounding walls or furniture panels.

2 **Wall/Circulation Factor:** Factor that accounts for area needed for surrounding walls / furniture panels and immediate circulation to a space. Varies according to space NSF.

3 **DGSF:** Department Gross Square Feet, or NSF plus the area needed for surrounding walls/furniture panels and immediate circulation (DGSF = NSF x Wall/Circ. Factor).

4 **Building Grossing Factor:** Factor that accounts for area needed for building common spaces (major circulation, stairs, elevators, toilet rooms, mechanical/electrical rooms and chases, custodial closets, exterior walls).

5 **GSF:** Gross Square Feet, or total building area measured from outside surfaces of exterior walls (GSF = DGSF x Building Grossing Factor).

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A100	**ADT**			**1,024**		**1,372**
A101	Entry/Interview	1	170	170	1.33	226
A102	Secretary Workstation	1	80	80	1.40	112
A103	Director Office	1	120	120	1.33	160
A104	Benefits Specialist Office	1	120	120	1.33	160
A105	DWS Medicaid Staff Office	1	120	120	1.33	160
A106	Transportation Specialist Workstation	1	64	64	1.40	90
A107	Kitchenette/Storage	1	100	100	1.33	133
A108	Work Room	1	100	100	1.33	133
A109	Patient Toilet/Shower Room	1	150	150	1.33	200
A200	**VOLUNTEER SERVICES**			**2,446**		**3,139**
A201	Clothing Display	1	700	700	1.25	875
A202	Changing Room	1	35	35	1.40	49
A203	New Clothing Storage	1	200	200	1.33	266
A204	Clothing Sort/Laundry	1	450	450	1.33	599
A205	Volunteer Storage	1	305	305	1.33	406
A206	Quilting Room	1	756	756	1.25	945

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A300	**MEDICAL RECORDS**			**1,663**		**2,242**
A301	Entry	1	150	150	1.33	200
A302	Receptionist	1	96	96	1.40	134
A303	Release of Information Technician	1	96	96	1.40	134
A304	Secretary	1	96	96	1.40	134
A305	Medical Records Workstation	1	64	64	1.40	90
A306	Work Room	1	120	120	1.33	160
A307	Unit Mailboxes	1	20	20	1.40	28
A308	Records Manager Office	1	120	120	1.33	160
A309	Print Shop	1	220	220	1.33	293
A310	Microfilm Reader	1	56	56	1.40	78
A311	Mobile Storage Unit	1	200	200	1.33	266
A312	Inactive Records	1	425	425	1.33	565
A400	**IT**			**886**		**1,202**
A401	Manager Office	1	150	150	1.33	200
A402	Developer Workstation	8	42	336	1.40	470
A403	Collaboration Space	2	110	220	1.33	293
A404	Desktop Support	1	180	180	1.33	239
A500	**E-CHART SUPPORT SERVICES**			**180**		**239**
A501	Shared Office	1	180	180	1.33	239

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A600	**QUALITY RESOURCES**			**496**		**686**
A601	Secretary Workstation	1	64	64	1.40	90
A602	Open Workstation	3	64	192	1.40	269
A603	Remote-Access Computer	1	20	20	1.40	28
A604	Work Room	1	100	100	1.40	140
A605	Director Office	1	120	120	1.33	160
A700	**SUNRISE**			**1,830**		**2,434**
A701	Entry	1	150	150	1.33	200
A702	Multifunction: Classroom Area	1	300	300	1.33	399
A703	Multifunction: Exercise Area	1	300	300	1.33	399
A704	Multifunction: Music/Group Therapy	1	300	300	1.33	399
A705	Group Therapy Room	1	180	180	1.33	239
A706	Director Office	1	120	120	1.33	160
A707	Staff Office	1	240	240	1.33	319
A708	Kitchenette	1	120	120	1.33	160
A709	Storage Room	1	120	120	1.33	160

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A800	**CLINICS**			**1,497**		**2,020**
A801	Waiting Room	1	200	200	1.33	266
A802	Clinics Mgr. Shared Office	1	120	120	1.33	160
A803	Dental Operatory	2	120	240	1.40	336
A804	Dental Lab	1	48	48	1.40	67
A805	Dental Panoramic X-ray	1	40	40	1.40	56
A806	Dental Office	1	100	100	1.33	133
A807	Sterilization & Storage	1	200	200	1.33	266
A808	Podiatry Office/Exam	1	150	150	1.33	200
A809	Optometry Office/Exam	1	150	150	1.33	200
A810	Neurology Office/Exam	1	165	165	1.33	219
A811	Patient Unisex Toilet Room	1	42	42	1.40	59
A812	Staff Unisex Toilet Room	1	42	42	1.40	59
A900	**CENTRAL SUPPLY**			**1,090**		**1,383**
A901	Storage	1	900	900	1.25	1,125
A902	Work Room	1	70	70	1.40	98
A903	Temperature-Controlled Storage	1	120	120	1.33	160

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A1000	**PHARMACY**			**1,860**		**2,544**
A1001	Waiting	1	90	90	1.40	126
A1002	Counter/Holding Area	1	36	36	1.40	50
A1003	Pharmacy Tech Station	4	36	144	1.40	202
A1004	Dispensing Station	4	42	168	1.40	235
A1005	Intern Station	1	30	30	1.40	42
A1006	AutoMed Station	2	80	160	1.40	224
A1007	Copy/Print/Fax	1	80	80	1.40	112
A1008	Pharmacy Shelving	1	120	120	1.33	160
A1009	Medications Storage	1	140	140	1.33	186
A1010	Library Shelving	1	60	60	1.40	84
A1011	Pharmacist Office	2	120	240	1.33	319
A1012	Pharmacy Director Office	1	120	120	1.33	160
A1013	Receiving/Processing	1	48	48	1.40	67
A1014	Current Files	1	42	42	1.40	59
A1015	Staff Toilet Room	1	42	42	1.40	59
A1016	Custodial Closet	1	20	20	1.40	28
A1017	Storage	1	80	80	1.40	112
A1018	Conference	1	240	240	1.33	319

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A1100	**STAFF EDUCATION**			**2,950**		**3,768**
A1101	Nurse Educator	2	120	240	1.33	319
A1102	APRN Office	1	120	120	1.33	160
A1103	Work Room/Storage	1	400	400	1.33	532
A1104	Classroom	2	675	1,350	1.25	1,688
A1105	Computer Training Room	1	600	600	1.25	750
A1106	Small Conference Room	1	240	240	1.33	319
A1200	**COMMON AREAS**			**3,180**		**3,901**
A1201	Building Entry/Lobby	1	1,600	1,600	1.15	1,840
A1202	Doctor's Bed/Sitting Room	1	200	200	1.33	266
A1203	Doctor's Bathroom	1	100	100	1.33	133
A1204	Office	4	120	480	1.33	638
A1205	Staff Break Room	1	500	500	1.25	625
A1206	Staff Shower/Locker	1	100	100	1.33	133
A1207	Custodial Storage	1	200	200	1.33	266
A1208	Custodial Closet	2	60			

A100: ADT

Hours of Operation

Monday – Friday, 8 AM – 5 PM

Security

ADT perimeter walls must extend to the structure above, with gypsum board on both sides. Because this is a patient-access space, doors to offices and other walled spaces should swing out for barricade resistance.

Functions

ADT manages the admissions, discharges and transfers of Utah State Hospital patients. Functions include:

- Patient admissions, including a patient interview attended by up to six people.
- Assisting patients in applying for benefits and / or establishing benefit eligibility.
- Serving snacks to incoming patients.
- Providing patients a private place to shower and change into clothing provided by the State Hospital.
- Providing transportation for discharging patients, off-campus consultations and on-campus patient appointments.
- Visual monitoring of the building's public entry lobby by the ADT Secretary, who must be able to observe people entering and assist them if needed.

Out of respect for patients' right to privacy, direct observation of the interviews by anyone not involved in the admission process must be avoided.

Location / Adjacency

Exterior Entry

ADT must have a direct exterior entry, or be located near one, to facilitate the entry process for new patients. Many patients arrive in shackles with the County Sheriff or by ambulance on a gurney. The building's ADT exterior entry point must be very easy for vehicle drivers to find. To preserve patient dignity, the entry point should be located for visual privacy from adjoining exterior or interior spaces.

The exterior entry should have an overhead cover to provide shelter from the weather, as well as an adjacent parking space for the van used for patient transportation. Parking or holding areas for sheriff's vehicles or ambulances transporting patients must be provided. The parking and exterior entrance pathway must be fully ADA-compliant, to accommodate patient wheelchairs and gurneys.

Medical Records and IT

ADT interfaces frequently with Medical Records and IT, so these offices should be adjacent.

Staff Amenities

ADT should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/Locker and staff parking area.

A100: ADT
SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A100	**ADT**			**1,024**		**1,372**
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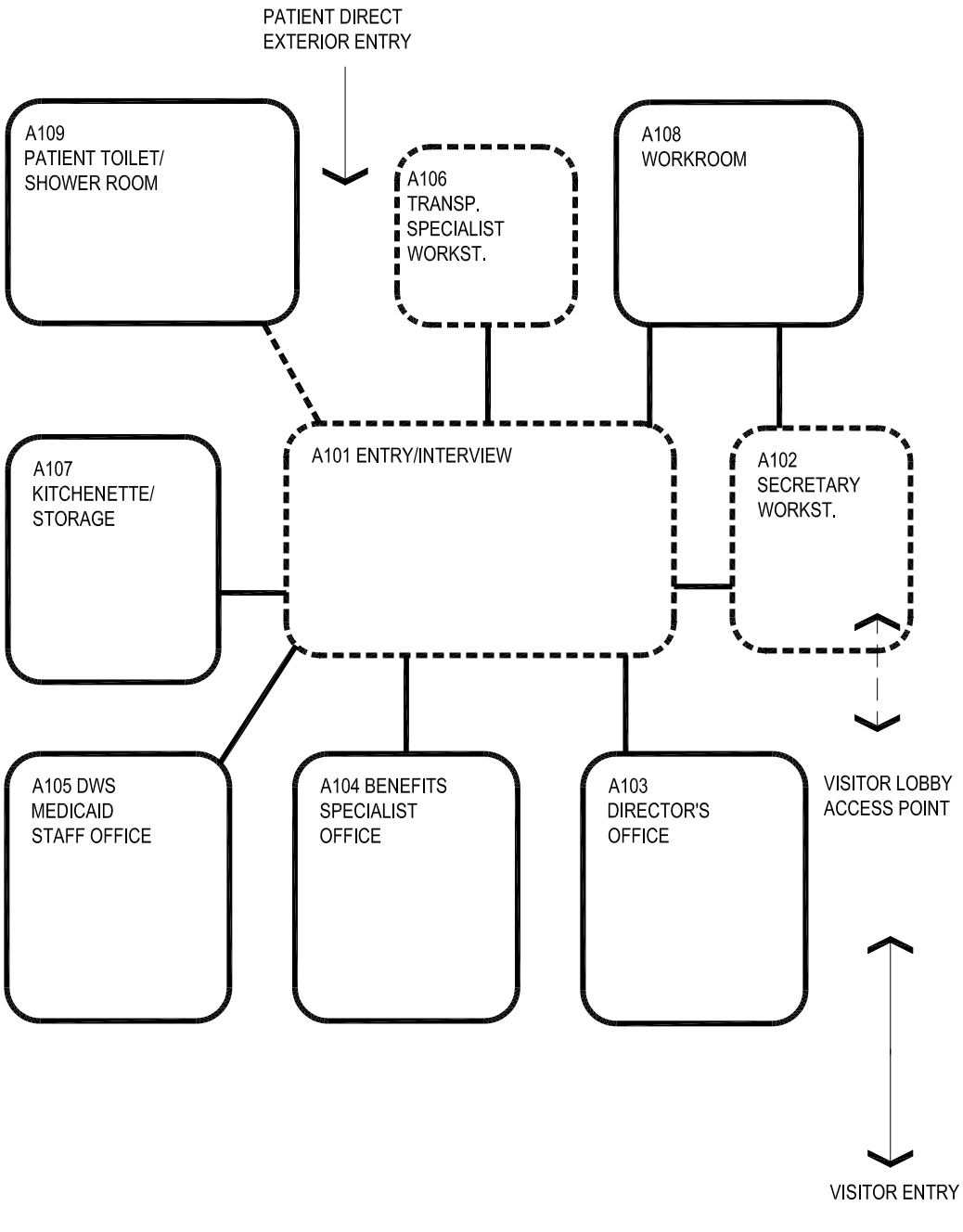
A105	DWS Medicaid Staff Office	1	120	120	1.33	160
A106	Transportation Specialist Workstation	1	64	64	1.40	90
A107	Kitchenette/Storage	1	100	100	1.33	133
A108	Work Room	1	100	100	1.33	133
A109	Patient Toilet/Shower Room	1	150	150	1.33	200



A100: ADT
ADJACENCY DIAGRAM

A101 ENTRY / INTERVIEW

AREA: 170 NSF

Occupants: Up to 6 people

Function: Entry point for Admissions, Discharge & Transfers office of Utah State Hospital. Patient admission process & interviews, attended by up to 6 people
Must accommodate wheelchairs & gurneys

Adjacency: Must either have a direct exterior entry for patient use within the ADT office, or be directly adjacent to a lobby or hallway with a direct exterior entry
Adjacent and open to Secretary Workstation
Adjacent to Kitchenette/Storage
Easy access to Patient Toilet / Shower Room

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired
Door: 3' x 7' wood door, locking

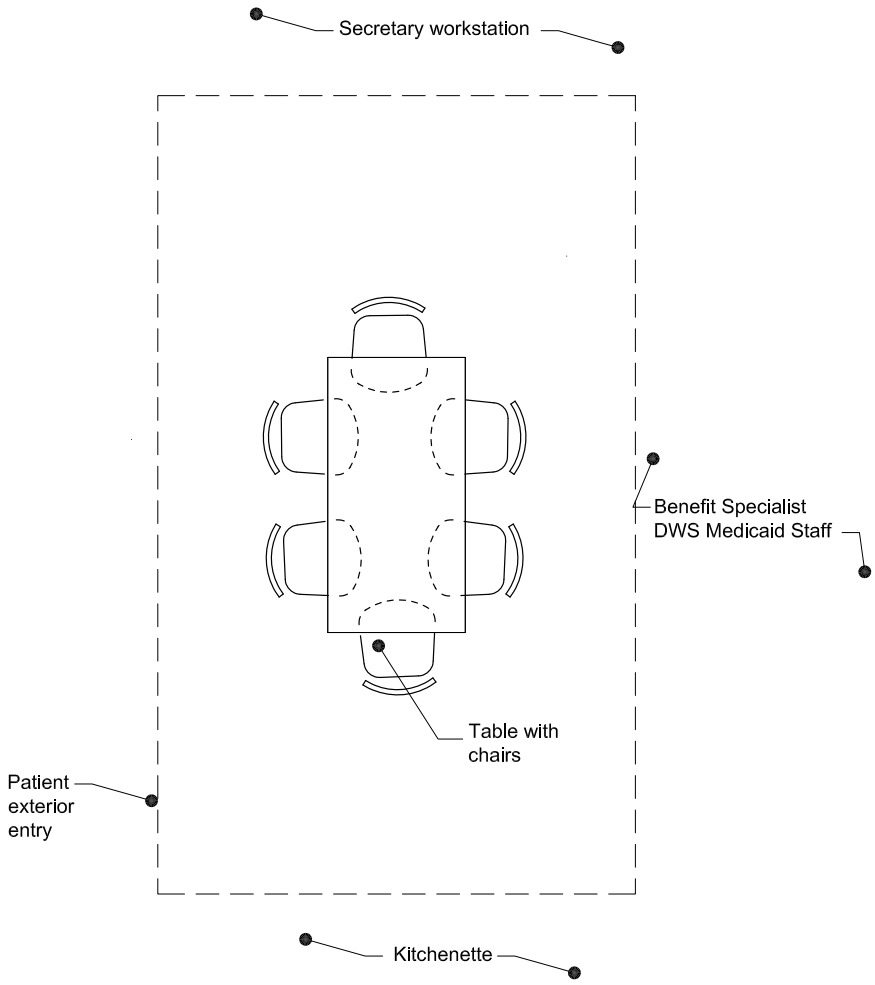
Equipment: None

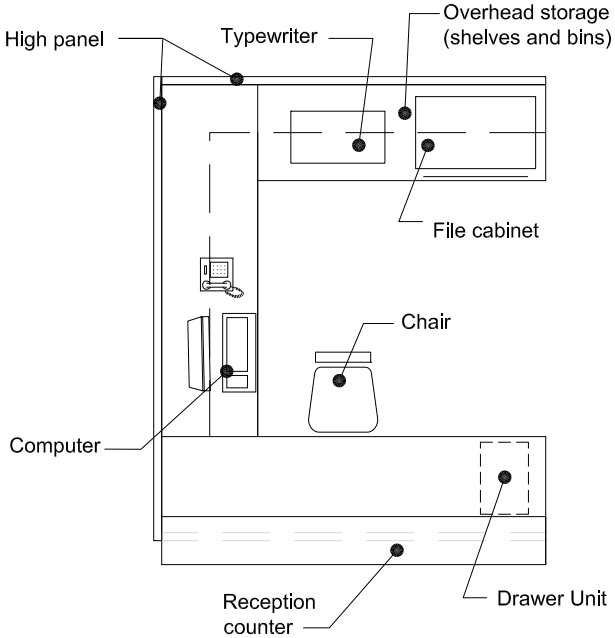
Furnishings: Table with 6 chairs

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes: Patient entry point must be out of sight of those not involved in the patient admitting process, to preserve patient privacy





A102 SECRETARY WORKSTATION

AREA: 80 NSF

Occupants: 1 occupant

Function: Open office workstation for Secretary, who provides office support for ADT, participates in ADT interviews and monitors main building lobby

Adjacency:
Adjacent & open to Entry / Interview
Visual & physical access to building main entry lobby
Adjacent to Work Room

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Interior window to building main entry lobby
Door: None

Equipment: Computer; telephone, typewriter

Furnishings:
U-shaped open office workstation with upper shelving/ storage bins and drawers
Desk chair
2-drawer lateral file cabinet

Mechanical: Shared HVAC zone

Electrical:
Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

A103 DIRECTOR OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for ADT Director who manages ADT office and processes

Adjacency: Near other ADT offices
Easily accessed from Entry / Interview

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

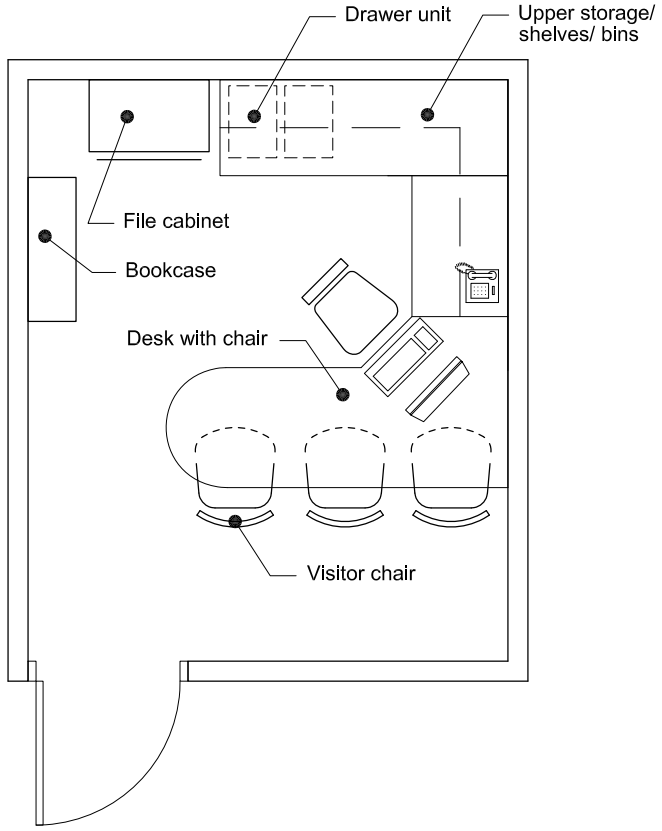
Equipment: Computer; telephone

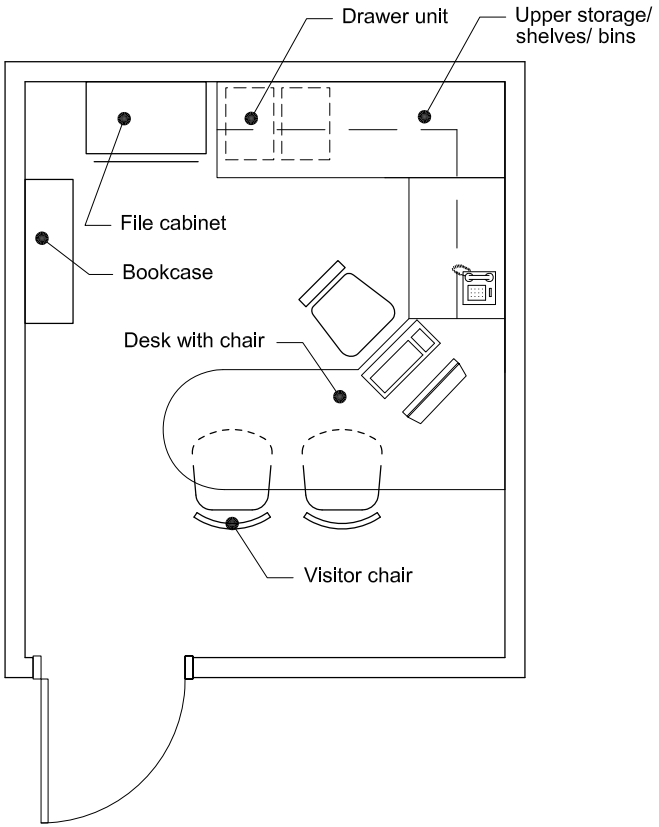
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
3 visitor chairs
Bookcase / file cabinet

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:





A104 BENEFITS SPECIALIST OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Benefits Specialist who assists patients with medical benefits issues

Adjacency: Easily accessed from Entry / Interview

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs
Bookcase
4-drawer file cabinet

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A105 DWS MEDICAID STAFF OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for DWS Medicaid staff, who assists patients with Medicaid issues

Adjacency: Easily accessed from Entry / Interview

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings
- **Door:** 3' x 7' wood door, locking

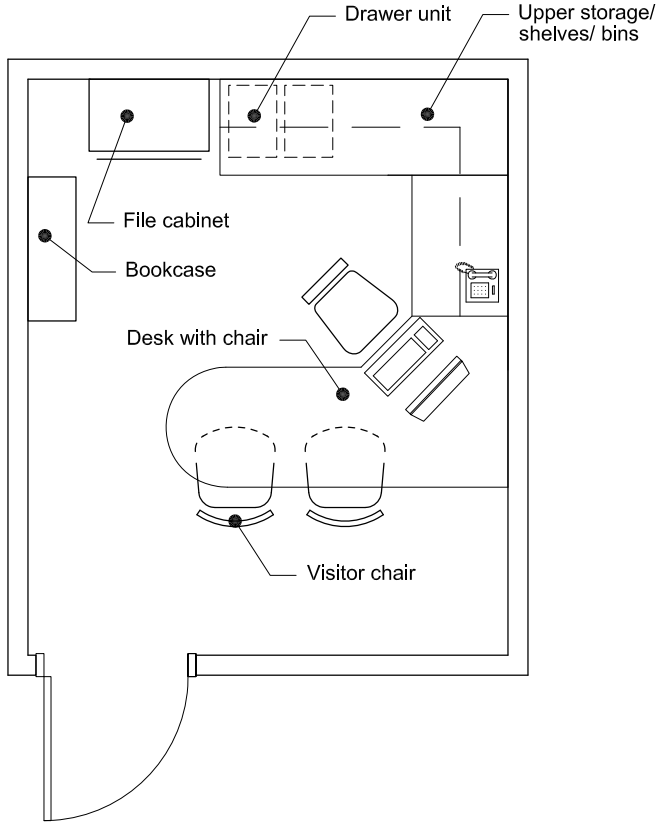
Equipment: Computer; telephone

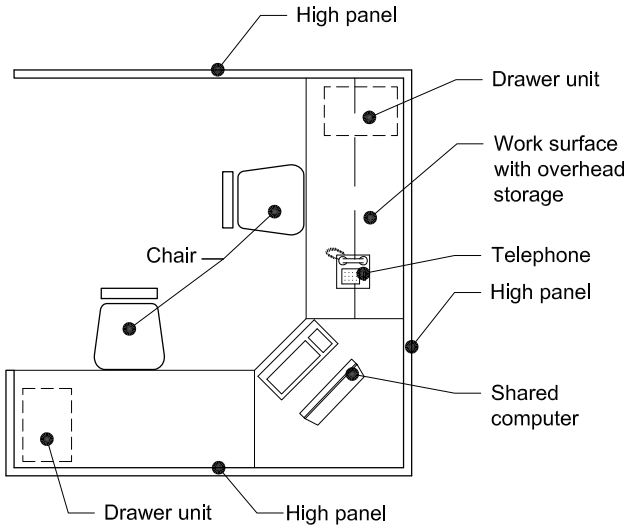
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs
Bookcase / file cabinet

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:





A106 TRANSPORT. SPECIALIST WORKSTATION

AREA: 64 NSF

Occupants: Up to 2 occupants

Function: Open office workstation shared by 2 Transportation Specialists, who provide patient transportation services, and spend approximately 1 hour / day in the office

Adjacency: Adjacent to Entry / Interview & Secretary Workstation

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in open office area
- **Door:** None

Equipment: Computer & telephone to be shared by 2 occupants

Furnishings: L-shaped open office workstation with computer area in the center, and 2 workspaces on either side with shelving above and drawer units below
2 desk chairs

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes:

A107 KITCHENETTE / STORAGE

AREA: 100 NSF

Occupants: None

Function: Food storage & preparation space for snacks given to patients as they are being interviewed for admission to the State Hospital; snacks served in Entry / Interview
Storage of new clothing given to patients who are being admitted to the State Hospital

Adjacency: Adjacent to Entry / Interview

Environment:

Floor: Hard-surface flooring (ceramic tile, VCT, linoleum, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None

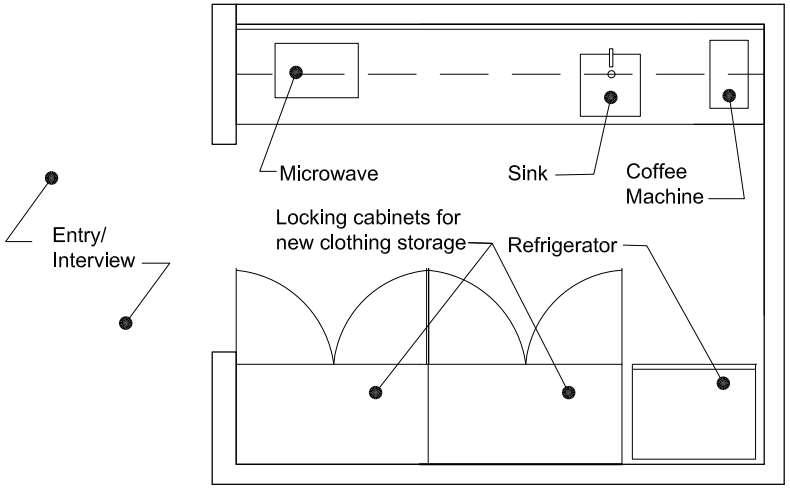
Equipment: Millwork countertop with storage cabinets/drawers below, storage cabinets above
Single compartment sink
Refrigerator, microwave oven, coffee machine
Millwork cabinets, locking, full-height and approximately 8' wide, for new clothing storage

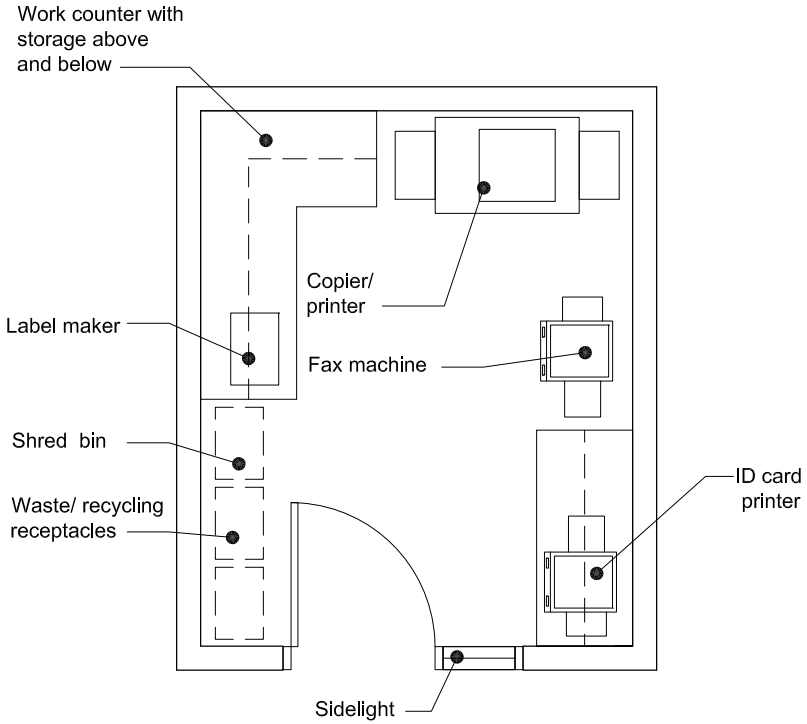
Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust
Water hook-up for refrigerator ice-maker

Electrical: Duplex electrical outlets per code
Electrical outlet above countertop
Electrical outlets as required for refrigerator, microwave, coffee machine
Compact fluorescent lighting

Notes: Countertops at 34" high to meet ADA





A108 WORK ROOM

AREA: 100 NSF

Occupants: None

Function:
Enclosed room for shared office equipment
Workspace for collating, assembling, especially materials for new patient charts
Workspace for making ID cards
Office supply storage

Adjacency:
Directly adjacent to Secretary Workstation
Central location within office space, easily accessible by all staff

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Sidelight at entry door
Doors: 3' x 7' wood door, locking

Equipment:
Copier / printer; floor-mount fax machine; ID card printer; label-maker
Millwork countertops with office supply storage cabinets and/or drawers above and below

Furnishings: Waste and recycling receptacles; shred bin

Mechanical:
Dedicated HVAC zone
Exhaust

Electrical:
Electrical wall outlets per code
Electrical and voice / data outlets for copier / printer, fax machine and telephone
Electrical outlets above countertop
Fluorescent parabolic lighting

Notes:

A109 PATIENT TOILET / SHOWER ROOM

AREA: 150 NSF

Occupants: Up to 2 people: patient and security officer

Function: Toilet and shower room facilities for use by incoming patients, who will be accompanied by a security officer

Adjacency: Private entry point within ADT office
Easily accessible from Entry / Interview

Environment:

Floor: Ceramic tile
Walls: Ceramic tile / painted gypsum board
Ceiling: Painted gypsum board; 9' height
Windows: None

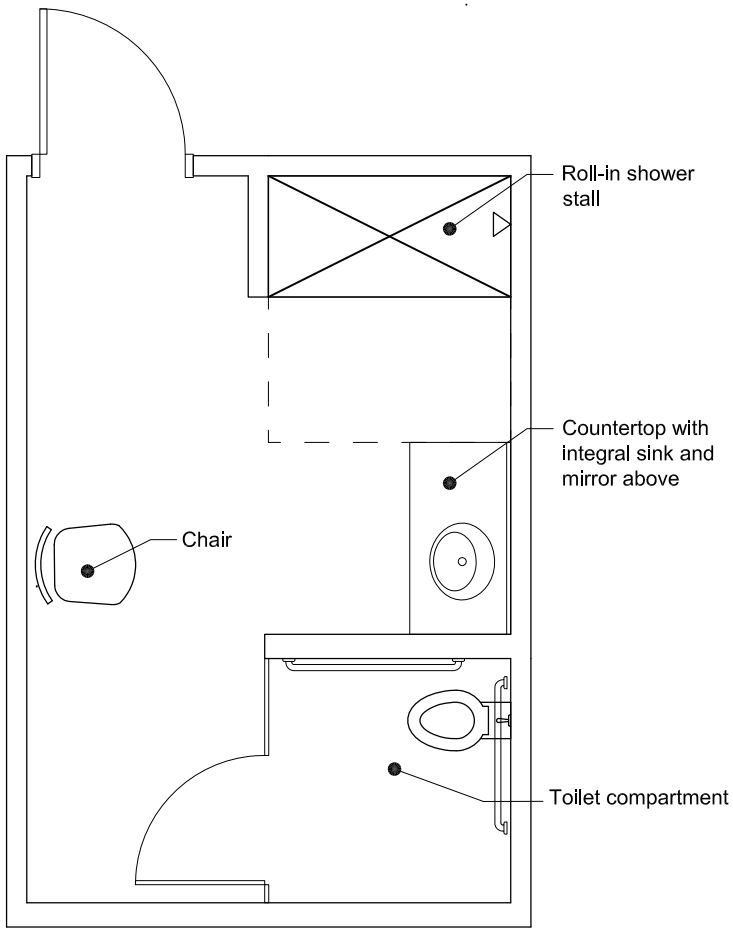
Equipment: Shower, shower-curtain rod and curtain; dressing cubicle with curtain
Toilet and enclosure (walls with toilet partition door / piano hinge)
Solid-surface countertop with integral sink, with mirror above
Toilet room accessories: robe hooks; grab bars; soap, paper towel & toilet tissue dispensers, etc.

Furnishings: Chair for security personnel

Mechanical: Dedicated HVAC zone with exhaust

Electrical: Duplex electrical outlets per code
Electrical outlets at lavatory

Notes: All fixtures & accessories must meet safety & security requirements for patient-access spaces – see Section 3, General Architectural Requirements



A200: VOLUNTEER SERVICES

Hours of Operation

Monday – Friday, 6 AM – 5 PM (varying hours within this time frame)

Security

Volunteer Services does not have any special security requirements.

Functions

Volunteer Services includes these specific functions:

- Managing the clothing donation drop box in the building's public lobby, including moving the drop box back and forth from the lobby to Volunteer Services Clothing Sort/Laundry room, where the clothing is received.
- Sorting, laundering and displaying donated clothing for selection by State Hospital patient, as well as staffing the Clothing Display room, where patients shop for and try on clothing.
- Managing new clothing that is purchased for use by patients on an as-needed basis.
- Managing additional donated items (recreational equipment, etc.)
- Making quilts, which are subsequently sold and the proceeds donated to the State Hospital.

Location / Adjacency

Patient Entry

Volunteer Services Clothing Center must be near building patient entry lobby. Clothing Sort/Laundry must have easy access to the Public Lobby, where the donation drop box will be located.

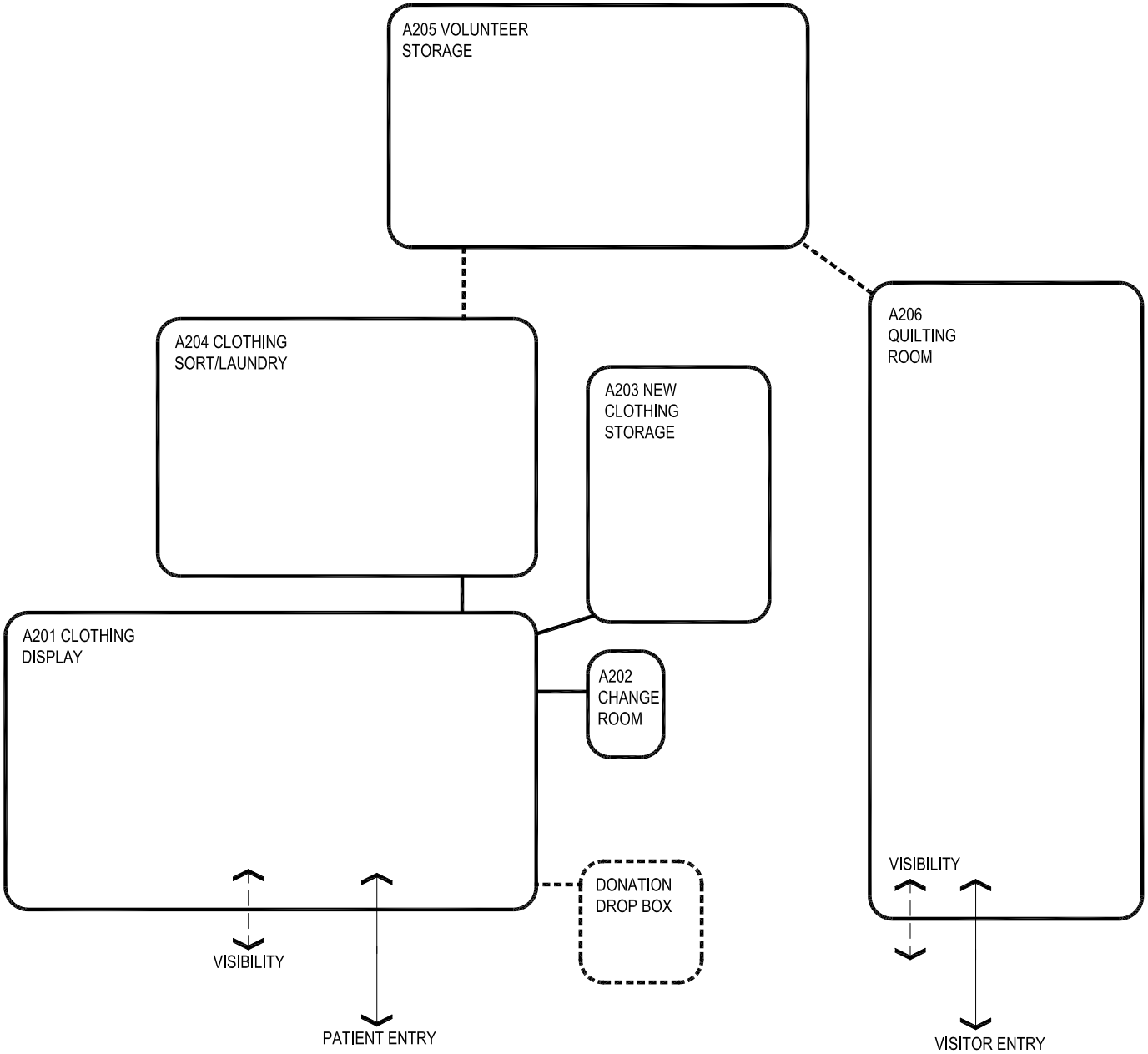
Public Entry / Lobby

Volunteer Services quilting room must be near the building's public lobby, with ADA-compliant public parking, to facilitate access by the high number of elderly volunteers.

Volunteer Services should have convenient access to the building's Staff Toilet Rooms, which will be used by volunteers.

A200: VOLUNTEER SERVICES
SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A200	**VOLUNTEER SERVICES**			**2,446**		**3,139**
A201	Clothing Display	1	700	700	1.25	875
A202	Changing Room	1	35	35	1.40	49
A203	New Clothing Storage	1	200	200	1.33	266
A204	Clothing Sort/Laundry	1	450	450	1.33	599
A205	Volunteer Storage	1	305	305	1.33	406
A206	Quilting Room	1	756	756	1.25	945



A200: VOLUNTEER SERVICES
ADJANCENCY DIAGRAM

A201 CLOTHING DISPLAY

AREA: 700 NSF

Occupants: Clothing Center volunteer(s); patients

Function: Display area for clothing available for selection by USH patients

Adjacency:
Easily accessible from building patient entry
Display area should be visible through glass storefront from patient lobby or main corridor
Access to Changing Room, Clothing Sort/Laundry, and New Clothing Storage are from this space

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Exterior windows with window coverings desired
Interior windows or sidelights to patient lobby/corridor
Door: Double 3' x 7' glass storefront entry door, locking

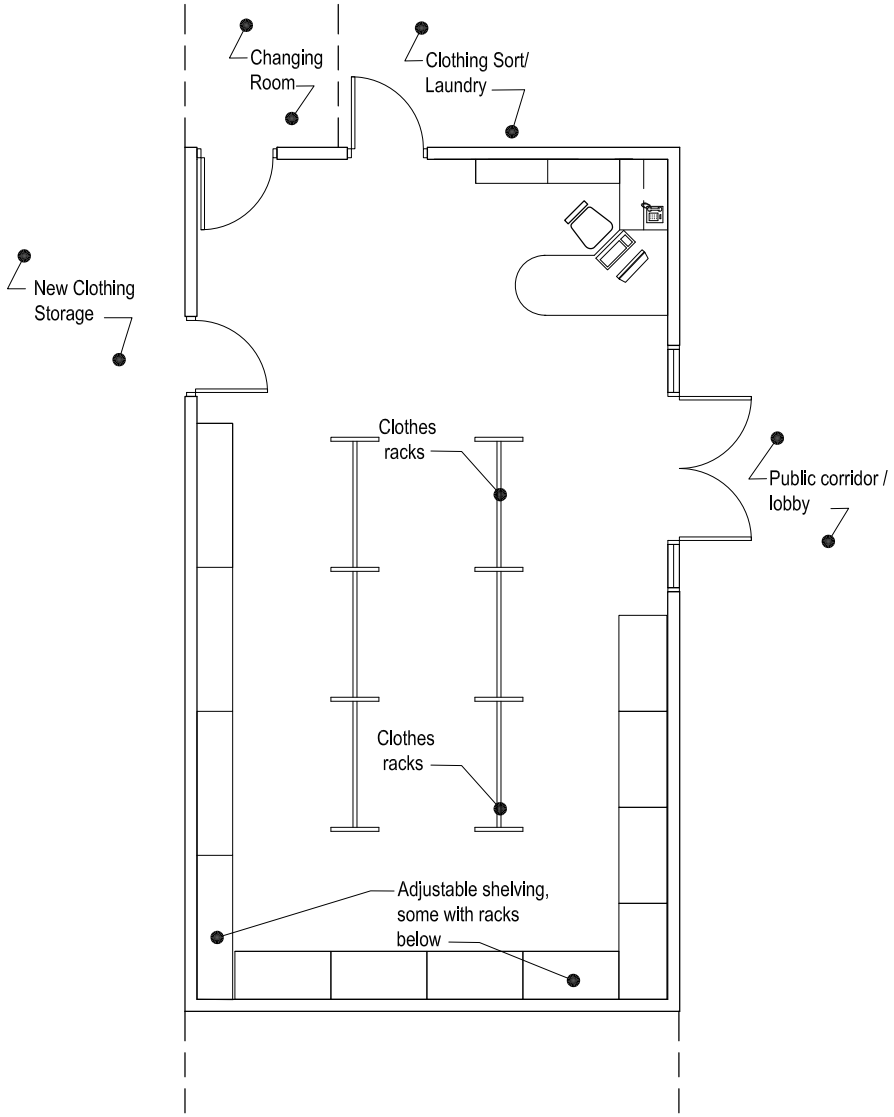
Equipment: Computer & telephone at Clothing Center volunteer workstation

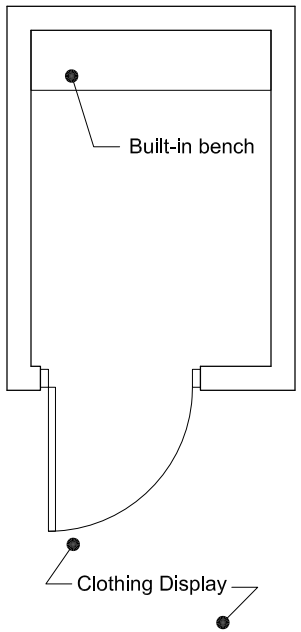
Furnishings: Clothing racks (existing, Owner-provided)
Small open office workstation or desk with chair, for use by volunteers

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets at volunteer desk / workstation, for computer, telephone, task lighting, and miscellaneous equipment
Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes: Aisles must be wide enough to accommodate wheelchairs and gurneys





A202 CHANGING ROOM

AREA: 35 NSF

Occupants: 1 occupant

Function: Enclosed room for patients to try on clothing

Adjacency: Accessed from Clothing Display

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9’ height
- **Windows:** None
- **Door:** 3’ x 7’ wood door

Equipment: Robe hooks
Wall-mounted mirror

Furnishings: Millwork bench, 18” D

Mechanical: Shared HVAC zone

Electrical: Compact fluorescent lighting

Notes: All fixtures & accessories must meet safety & security requirements for patient-access spaces – see Section 3, General Architectural Requirements

A203 NEW CLOTHING STORAGE

AREA: 200 NSF

Occupants: None

Function: Locking room for storage of new clothing available for use by patients (underwear, socks, jeans, shoes)

Adjacency: Accessed from Clothing Display
Near Clothing Sort/Laundry

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

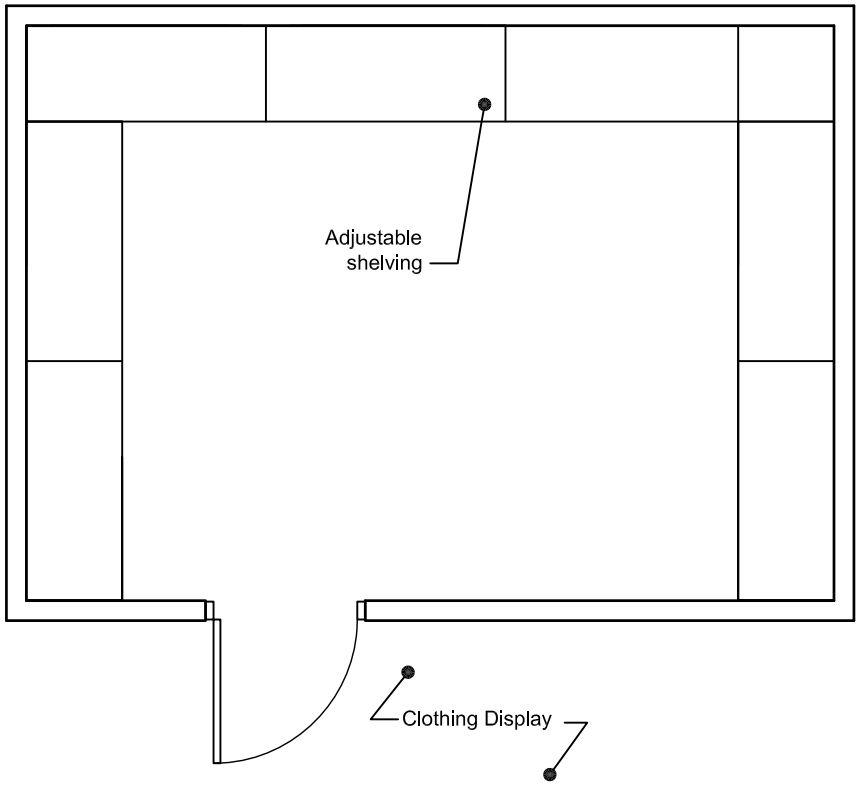
Equipment: None

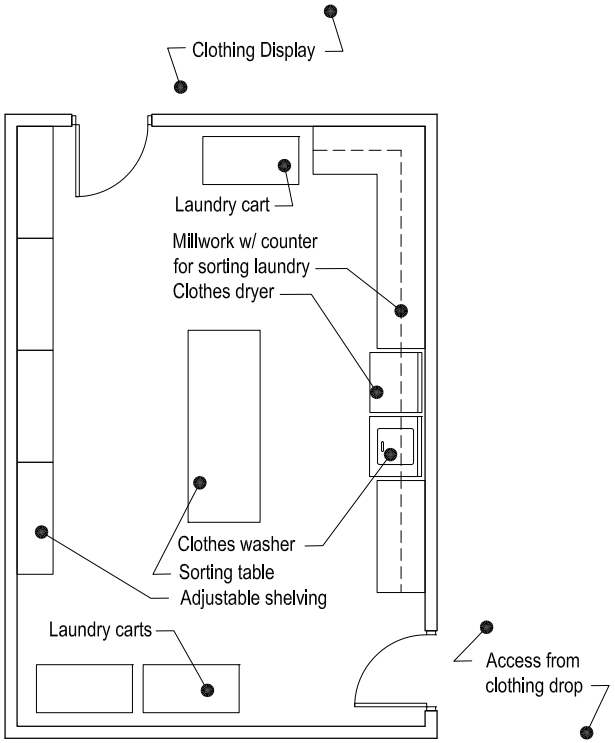
Furnishings: Open adjustable shelving for storage of new clothing, 12-18" D

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Fluorescent lighting

Notes:





A204 CLOTHING SORT/LAUNDRY

AREA: 450 NSF

Occupants: Clothing Center volunteers

Function: Room for sorting, laundering and folding incoming donated clothing

Adjacency:
Direct access to Clothing Display
Easily accessed from donated clothing drop-box location in building's public lobby

Environment:

Floor: Hard surface (VCT, stained concrete, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door(s), locking

Equipment:
Large-capacity residential clothes washer and dryer
Millwork countertops with storage cabinets above and below, for sorting and folding of clothing

Furnishings:
Open adjustable shelving units
Clothing hanging racks (existing, Owner-provided)
Sorting table, 8'L x 3'W

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:
Room layout must accommodate laundry carts used to move donated clothing
Door and room layout must accommodate laundry carts which are used to move donations from public lobby donation box into Volunteer Services
Equipment and furnishings, including sorting & folding areas, must be ADA-compliant

A205 VOLUNTEER STORAGE

AREA: 305 NSF

Occupants: None

Function: Locking room for storage of items used by volunteers (crafts, recreational items, Christmas decorations, etc.)

Adjacency: Near other Volunteer Services spaces, easily accessible by volunteers
Accessed from a back-of-house, low-visibility corridor

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' wood door, locking

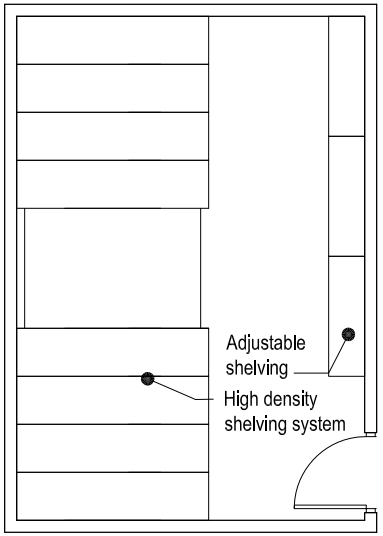
Equipment: None

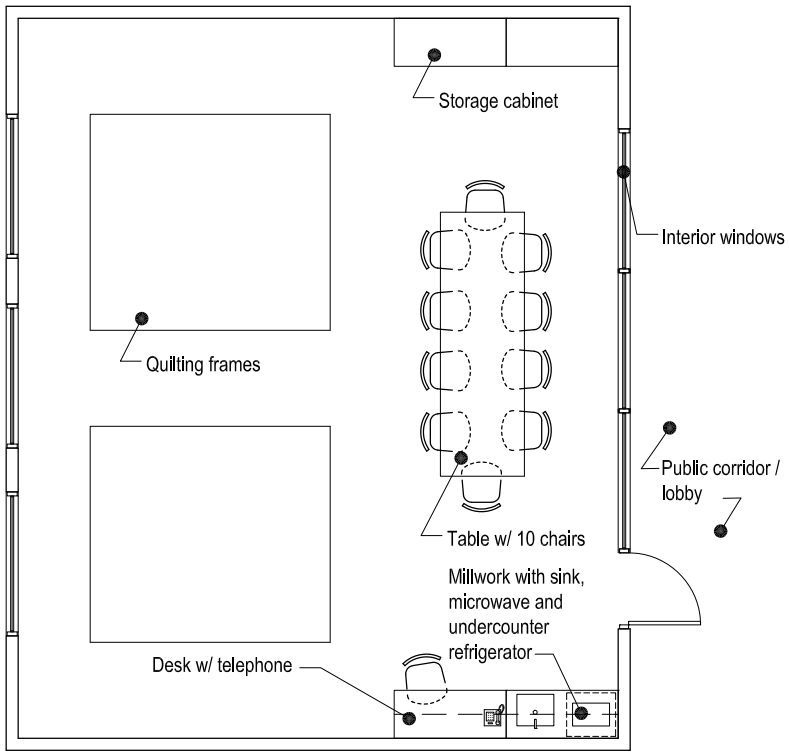
Furnishings: High-density storage shelving system with 24" deep adjustable shelving (bin storage)
Open adjustable shelving units, 18" deep

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Fluorescent lighting

Notes: Room requires some open floor space for storage bins and boxes





A206 QUILTING ROOM

AREA: 756 NSF

Occupants: USH volunteers, up to 12 at one time

Function:
Enclosed room for quilting and other volunteer activities
Lunch / break space for volunteers

Adjacency:
Easy access from ADA-compliant public entry & parking
Visible through glass storefront from public lobby / corridor
Easy access to staff toilet rooms
Near Clothing Center and Volunteer Storage

Environment:

Floor: Carpet

Walls: Painted gypsum board

Ceiling: Lay-in acoustic tile; 9' height

Windows: Exterior windows with window coverings desired
Interior windows / storefront to public lobby / corridor

Door: 3' x 7' wood or glass storefront entry door, locking

Equipment:
4' W millwork countertop with small, single-compartment sink; storage cabinets/drawers above & below; undercounter refrigerator
Microwave oven
8' L x 2' D full-height storage cabinet for quilting materials and supplies
Telephone (at desk)
12 wall-attached coat hooks

Furnishings:
2 king-size quilting frames, 9' x 10' (Owner-provided)
Desk and chair
8' L x 3' W table with 10 chairs

Mechanical: Dedicated HVAC zone with exhaust

Electrical:
Duplex electrical outlets per code
Electrical outlets above countertop, and as required for microwave and refrigerator
Electrical / telephone / data outlets at desk
Fluorescent parabolic lighting with high footcandle level suitable for quilting

Notes:

A300: MEDICAL RECORDS

Hours of Operation
Monday – Friday, 8 AM – 5 PM

Security
Medical Records' perimeter walls must extend to the structure above, with gypsum board on both sides.

Functions
Medical Records includes these specific functions:

- Managing current patient records, including facilitating State Hospital medical unit and public access to records.
- Managing and storing archived records for multiple State Hospital entities (Administration, Legal Services, Business Office, Pharmacy, Nursing, and Clinics including Dental).
- Printing, assembling and storing of State Hospital forms, training manuals, booklets, etc.

Location / Adjacency
Public Entry / Lobby
Medical Records must be easily accessible by public visitors.

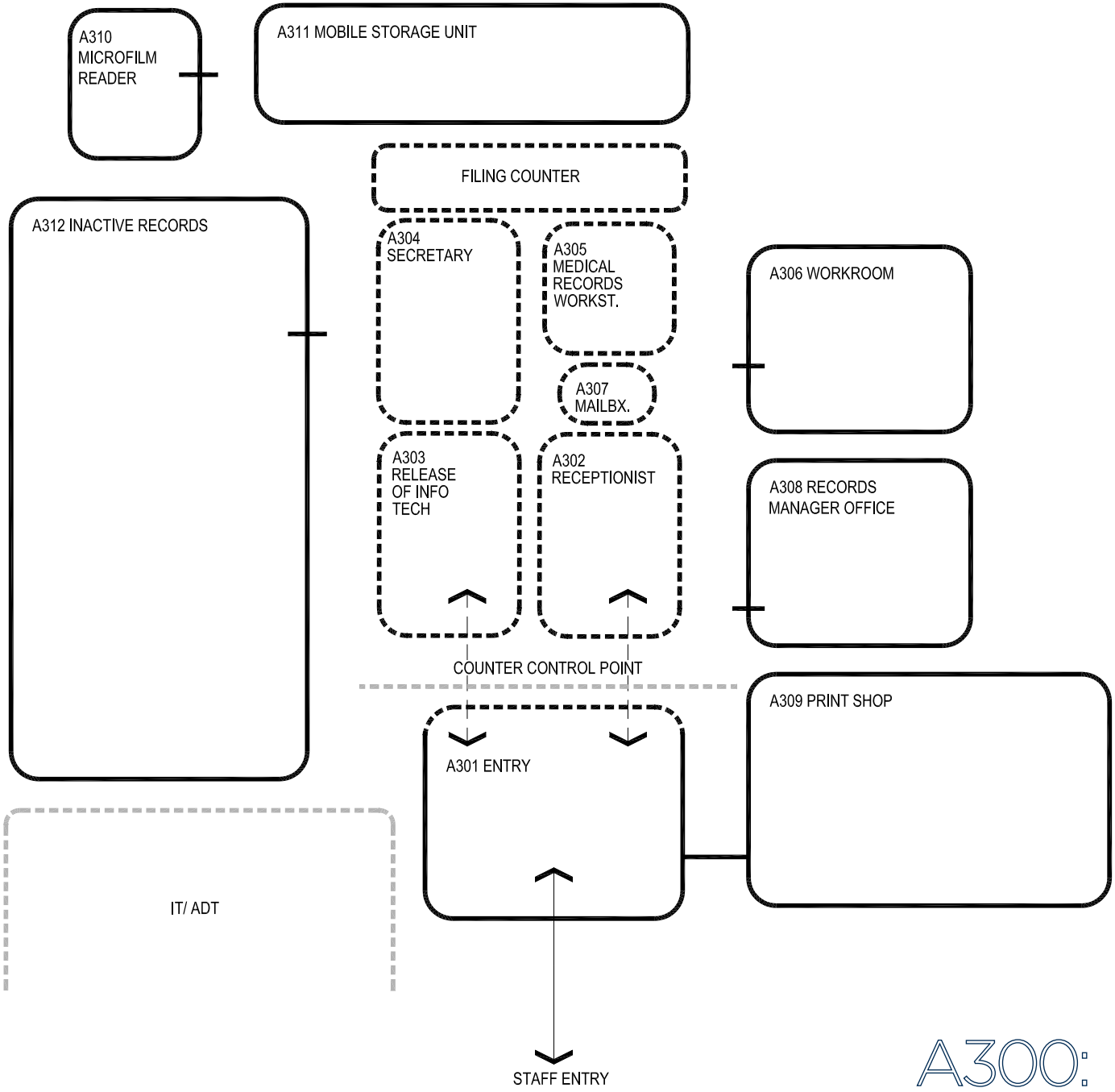
Staff Entry
Medical Records must be easily accessible by State Hospital staff. Staff visiting Medical Records are often going to Central Supply and the Pharmacy also, so it would be beneficial if these groups were located near each other.

IT & ADT
Medical Records interfaces with IT and ADT, so should be adjacent to these groups.

Staff Amenities
Medical Records should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/Locker and staff parking area.

A300: MEDICAL RECORDS
SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A300	**MEDICAL RECORDS**			**1,663**		**2,242**
A301	Entry	1	150	150	1.33	200
A302	Receptionist	1	96	96	1.40	134
A303	Release of Information Technician	1	96	96	1.40	134
A304	Secretary	1	96	96	1.40	134
A305	Medical Records Workstation	1	64	64	1.40	90
A306	Work Room	1	120	120	1.33	160
A307	Unit Mailboxes	1	20	20	1.40	28
A308	Records Manager Office	1	120	120	1.33	160
A309	Print Shop	1	220	220	1.33	293
A310	Microfilm Reader	1	56	56	1.40	78
A311	Mobile Storage Unit	1	200	200	1.33	266
A312	Inactive Records	1	425	425	1.33	565



A300: MEDICAL RECORDS
ADJACENCY DIAGRAM

A301 ENTRY

AREA: 150 NSF

Occupants: None

Function: Entry and waiting space for public and staff accessing Medical Records office and Print Shop

Adjacency: Near public and staff building entries
Directly adjacent to Medical Records open office area (Receptionist, Release of Information Tech., Secretary, Medical Records Workstation & Unit Mailboxes)
Print Shop accessed from this space

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired
Internal window / sidelight to public lobby / corridor, adjacent to entry door
Door: 3' x 7' wood door, locking

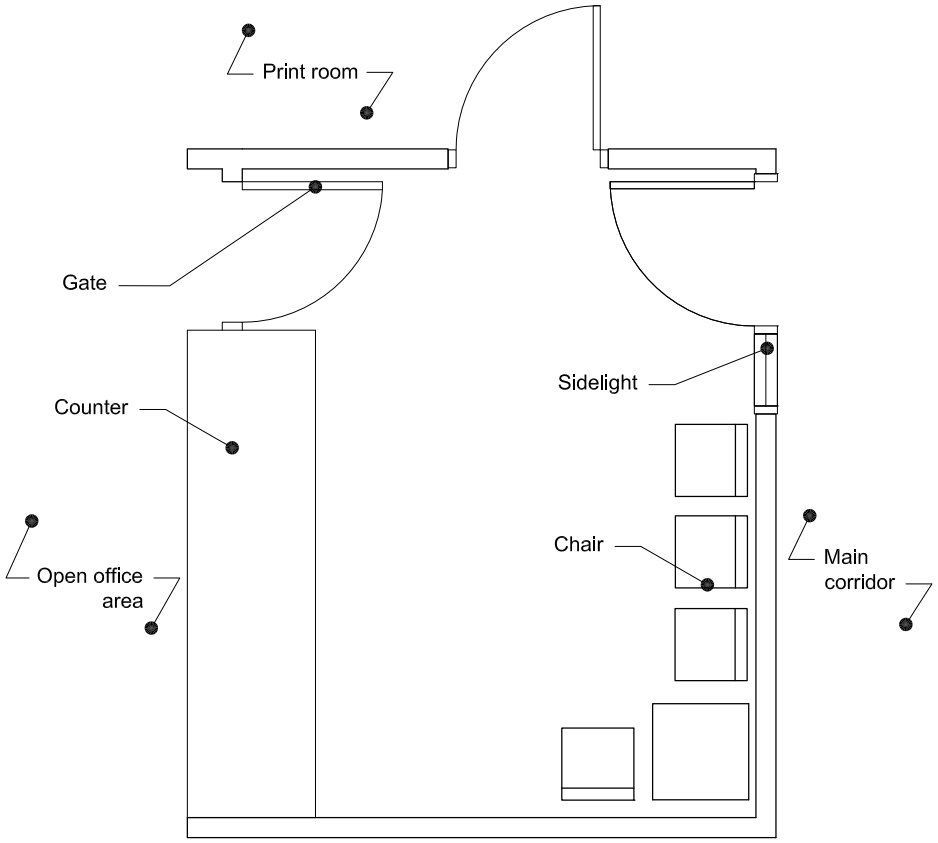
Equipment: Millwork countertop and gate to discourage access by the public beyond Entry area

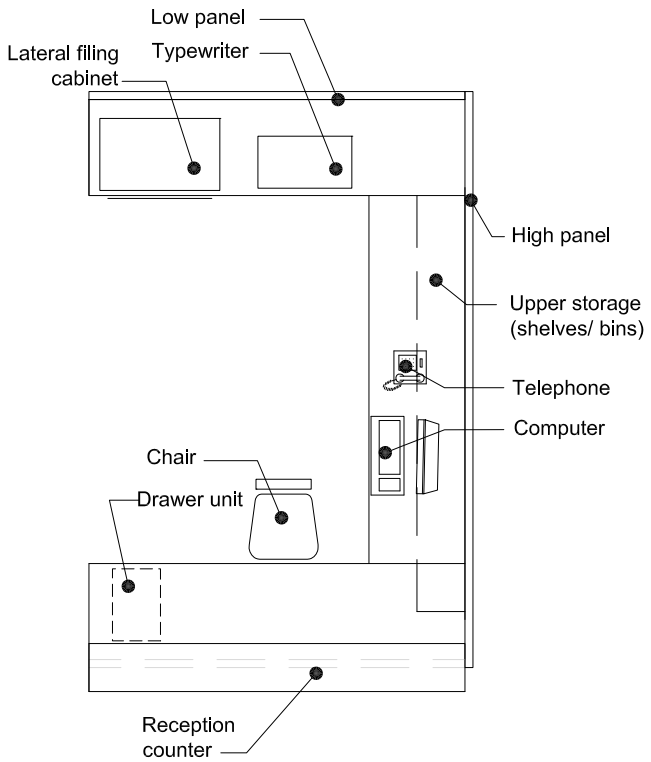
Furnishings: 4 waiting chairs; occasional table

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes:





A302 RECEPTIONIST

AREA: 96 NSF

Occupants: 1 occupant

Function: Open office workstation for Receptionist, who monitors the Entry and performs secretarial duties for Medical Records and other departments

Adjacency: Adjacent & open to Entry; behind millwork counter
Within open office area (Receptionist, Release of Information Tech., Secretary, Medical Records Workstation & Unit Mailboxes)

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Door: None

Equipment: Computer; telephone

Furnishings: U-shaped open office workstation with some low panels to allow visibility throughout open office area; 2 overhead storage bins; 1 drawer unit
Desk chair
2-drawer lateral file cabinet
Box and diagonal desk file accessories

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes: Worksurfaces and computer monitor must be out of view of public visitors

A303 RELEASE OF INFORMATION TECHNICIAN

AREA: 96 NSF

Occupants: 1 occupant

Function: Open office workstation for Release of Information Technician
Back-up reception function

Adjacency: Within open office area (Receptionist, Release of Information Tech., Secretary, Medical Records Workstation & Unit Mailboxes)

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Door: None

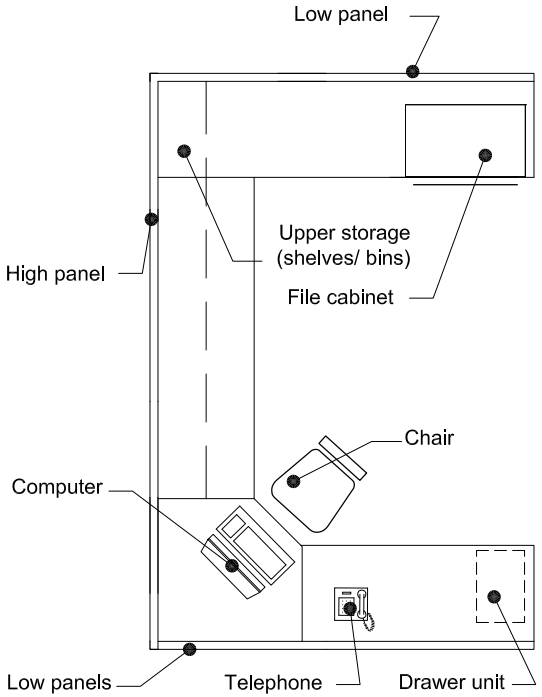
Equipment: Computer; telephone

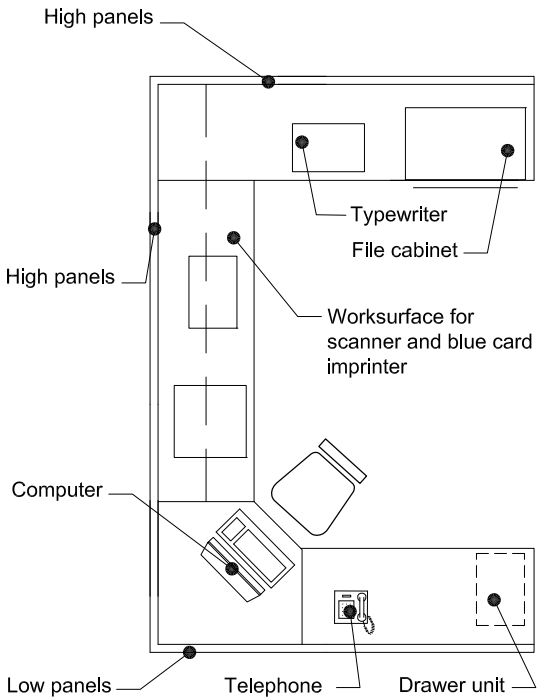
Furnishings: U-shaped open office workstation with some low panels to allow visibility throughout open office area; 2 overhead storage bins; 1 drawer unit
Desk chair
2-drawer lateral file cabinet
Box and diagonal desk file accessories

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes: Work papers and computer monitor must be out of view of public visitors





A304 SECRETARY

AREA: 96 NSF

Occupants: 1 occupant

Function: Open office workstation for Secretary, who scans documents; creates, reviews & files patient charts; performs secretarial duties for several departments
Back-up reception function

Adjacency: Within open office area (Receptionist, Release of Information Tech., Secretary, Medical Records Workstation & Unit Mailboxes)

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Door: None

Equipment: Computer; telephone; scanner; typewriter; blue card imprinter

Furnishings: U-shaped open office workstation with some low panels to allow visibility throughout open office area; 4 overhead storage bins; 1 drawer unit
Desk chair
2-drawer lateral file cabinet
Box and diagonal desk file accessories
Desk chair

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other equipment noted above
Fluorescent parabolic lighting

Notes: Worksurfaces and computer monitor must be out of view of public visitors

A305 MEDICAL RECORDS WORKSTATION

AREA: 64 NSF

Occupants: 1 occupant (temporary use)

Function: Open office workstation for temporary use by Disability Law Center and Mental Health Center liaisons to access records (electronic and paper)

Adjacency: Within open office area (Receptionist, Release of Information Tech., Secretary, Medical Records Workstation & Unit Mailboxes)
Must be visible to others in open office area

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in open office area
- **Door:** None

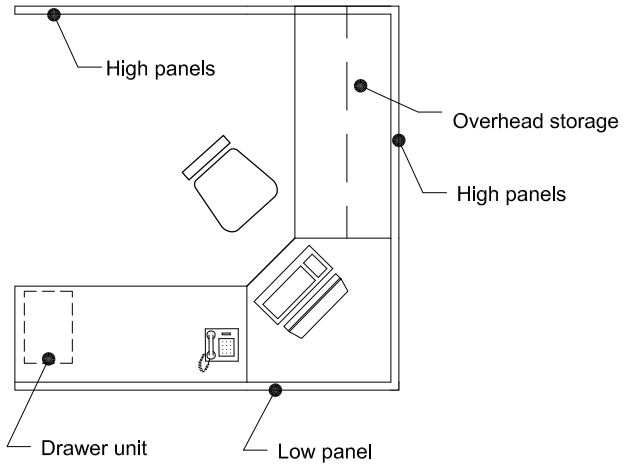
Equipment: Computer; telephone

Furnishings: L-shaped open office workstation with some low panels to allow visibility throughout open office area; 1 overhead storage bin; 1 drawer unit
Desk chair

Mechanical: Shared HVAC zone

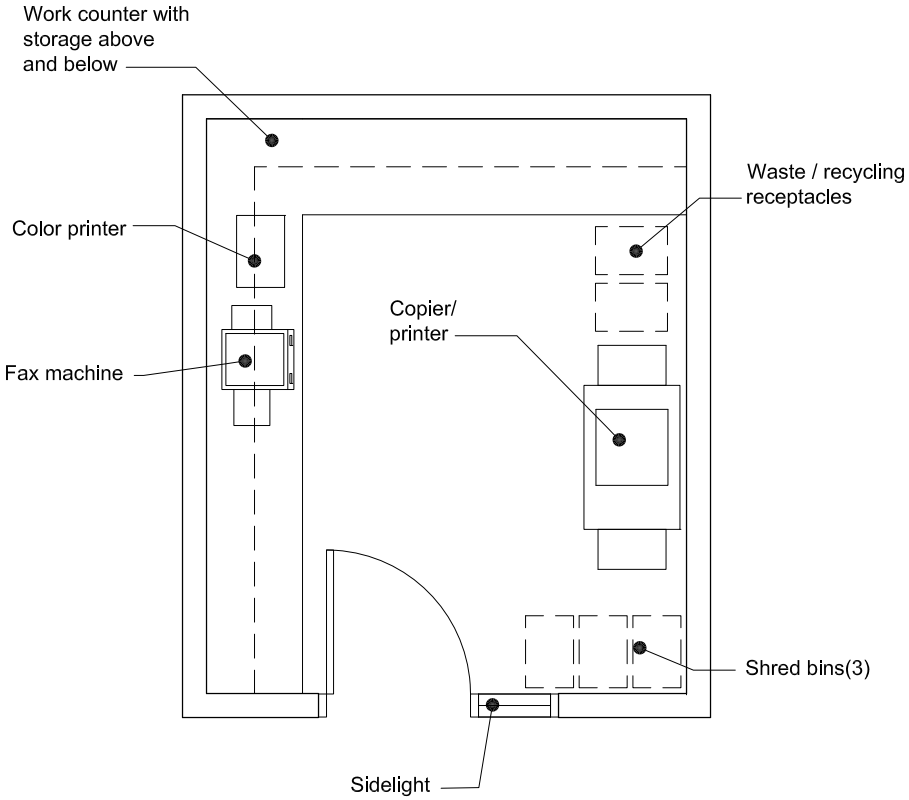
Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes: Work papers and computer monitor must be out of view of public visitors



A306 WORK ROOM

AREA: 120 NSF



Occupants: None

Function: Enclosed room for shared office equipment
Workspace for collating, assembling, etc.
Office supply storage

Adjacency: Accessed from open office area; easily accessible to all Medical Records staff

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Sidelight at entry door
- **Doors:** 3' x 7' wood door

Equipment: Copier / printer; color printer; fax machine; paper-cutter
Millwork countertops with office supply storage cabinets and/or drawers above and below

Furnishings: Waste and recycling receptacles; 3 shred bins

Mechanical: Dedicated HVAC zone
Exhaust

Electrical: Electrical wall outlets per code
Electrical and voice / data outlets for copier/printer, fax machine, other equipment as noted above
Electrical outlets above countertop
Fluorescent parabolic lighting

Notes:

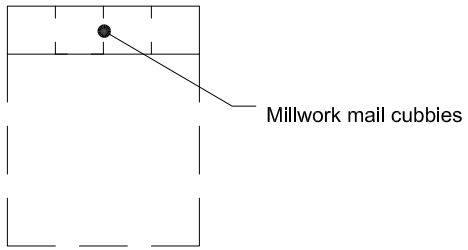
A307 UNIT MAILBOXES

AREA: 20 NSF

Occupants: None

Function: Open office space for unit / service area mailboxes, which is a holding area for patient charts until pick-up by unit/ service area employees

Adjacency: Within open office area (Receptionist, Release of Information Tech., Secretary, Medical Records Workstation & Unit Mailboxes)
Must be behind Entry counter, in controlled but easily accessible area



Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in open office area
- **Door:** None

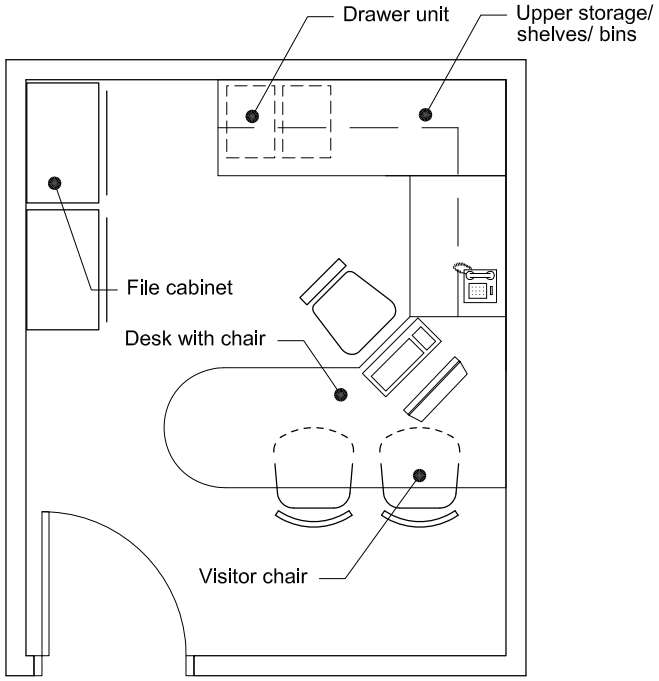
Equipment: Millwork cabinet with minimum of 12 mailbox cubbies; each cubby approximately 12" W x 12" H x 12" D

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Fluorescent parabolic lighting

Notes:



A308 RECORDS MANAGER OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Records Manager, who manages Medical Records area

Adjacency: At rear of, but with view into, open office area
Needs easy access to a color printer

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs
File cabinets

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A309 PRINT SHOP

AREA: 220 NSF

Occupants: None

Function: Enclosed room for equipment & supplies used to print & assemble USH forms, training manuals, booklets, etc.
Printing is done by Medical Records & Unit staff
Storage of approximately 160 types of printed forms
Storage of bulk copy paper (12 cases); colored paper & card stock (120 reams of different types & colors); other materials (glue, etc.)

Adjacency: Accessed through Entry area; outside of controlled-access area, for easy access by Unit staff

Environment:

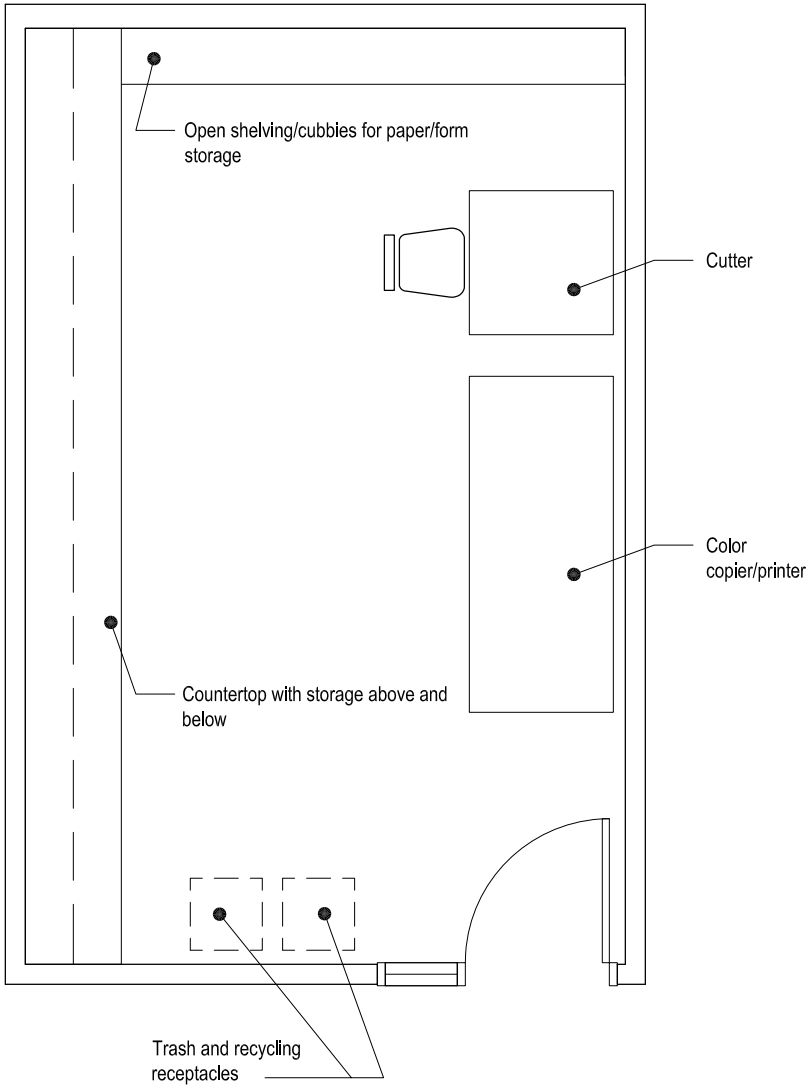
Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Sidelight at entry door
Doors: 3' x 7' wood door, locking

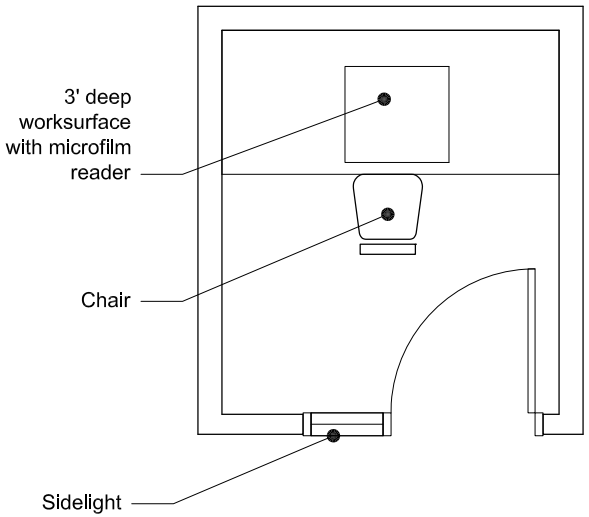
Equipment: 7'L x 3'D color copier / printer with finisher
Cutting machine, 3'W x 3'D x 5'H
Millwork countertops with open shelving and storage cabinets above, and open shelving and storage cabinets/drawers below

Furnishings: Waste and recycling receptacles
Chair at cutting machine

Mechanical: Dedicated HVAC zone
Exhaust

Electrical: Electrical wall outlets per code





A310 MICROFILM READER

AREA: 56 NSF

Occupants: None

Function: Enclosed room for counter-mount microfilm reader

Adjacency: Accessed from open office area
Near microfilm storage area of Mobile Storage Unit

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Sidelight at entry door
Doors: 3' x 7' wood door, locking

Equipment: Microfilm reader with associated computer
7'W x 3'D millwork countertop

Furnishings: Desk chair

Mechanical: Shared HVAC zone

Electrical: Electrical wall outlets per code
Electrical and voice / data outlets for microfilm reader and computer
Fluorescent parabolic lighting

Notes:

A311 MOBILE STORAGE UNIT

AREA: 200 NSF

Function: Open office area for existing, manual-operation, Medical Records mobile file storage shelving unit (storage of active records)

Adjacency: Mobile Storage Unit should be located at rear of open office area, easily accessible by Medical Record staff
Filing counter should be located adjacent to the Mobile Storage Unit, behind the open office area workstations

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: None

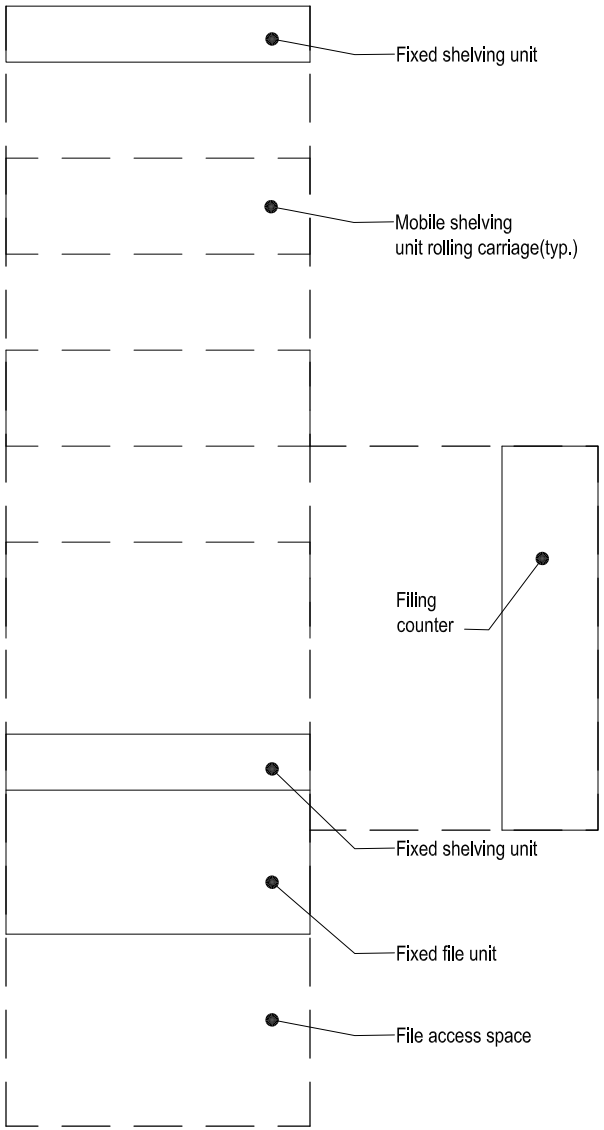
Equipment: Existing manual-operation mobile shelving unit with 5 rolling carriages; footprint is approximately 6'-4" W x 16'-6" L, plus 6'-4" W x 3' D fixed file unit with 4' D access space on the end (23'-4" L total)
8'L x 2'D filing counter (millwork or open office furniture) with open shelving above and below

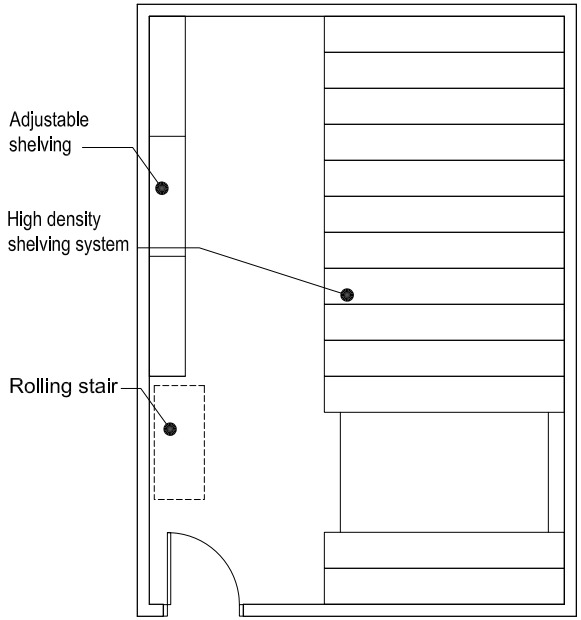
Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Fluorescent parabolic lighting, planned for mobile unit aisle ways; high footcandle level required

Notes:





A312 INACTIVE RECORDS

AREA: 425 NSF

Occupants: None

Function: Enclosed room for secure storage of inactive State Hospital records from multiple areas (Pharmacy, Dental, Administration, Nursing, Legal Services, Business Office, etc.)
Records are stored in boxes 11”H x 16”D x 12”W; desired capacity: 450 boxes

Adjacency: Accessed from Medical Records open office area

Environment:

Floor: Hard-surface flooring (sealed concrete, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10’ height
Windows: None
Doors: 3’ x 7’ wood door, locking

Equipment: High-density file storage unit with 18”D shelves; 8 shelves high
Rolling stair, 25”W x 57”D x 86”H

Furnishings: None

Mechanical: Minimal HVAC

Electrical: Electrical wall outlets per code
Compact fluorescent lighting

Notes: Current archive box approximate quantities:
Medical Records: 275
Pharmacy, Dental, Administration, Nursing, Legal Services, Business Office, Quality Resources: 175-box equivalent

A400: IT

Hours of Operation
Monday – Friday, 7 AM – 8 PM

Security
IT does not have any special security requirements. IT wil be a self-contained office space with a locking access door.

Functions
IT includes these specific functions:

- Software development and management for the entire Utah State Hospital campus.

- Computer hardware management for the entire State Hospital campus: receiving, set-up and testing of new computers; repair and maintenance of existing computers, printers and other hardware; storing of manuals, supplies and equipment required for computer maintenance and repair.

This group's work is very collaborative and involves a high amount of communication, brainstorming and spontaneous, stand-up meetings. To support this, their open workstations should be grouped in two clusters of four stations that are open to each other, with collaborative work space in the center.

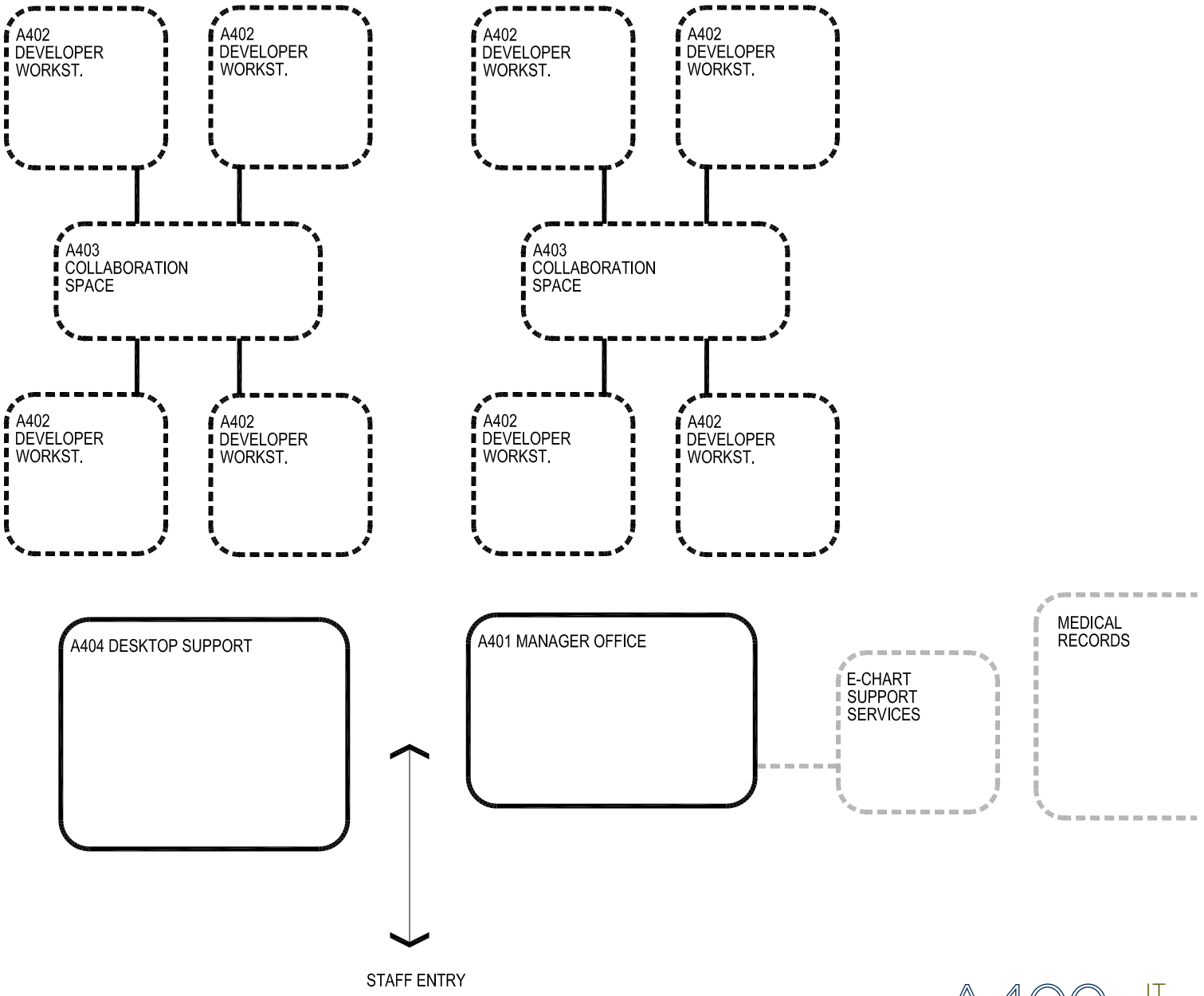
Location / Adjacency
Staff Entry
IT must have easy access to the building's staff entry, to facilitate frequent visits to other State Hospital buildings.

E-Chart Support Services, Medical Records & ADT
IT and these groups interface frequently, so should be adjacent.

Staff Amenities
IT should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/Locker and staff parking area.

A400: IT
SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A400	**IT**			**886**		**1,202**
A401	Manager Office	1	150	150	1.33	200
A402	Developer Workstation	8	42	336	1.40	470
A403	Collaboration Space	2	110	220	1.33	293
A404	Desktop Support	1	180	180	1.33	239



A400: IT ADJACENCY DIAGRAM

A401 MANAGER OFFICE

AREA: 150 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for IT Manager

Adjacency: Easy access to e-Chart Support Services
Near shared conference room

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

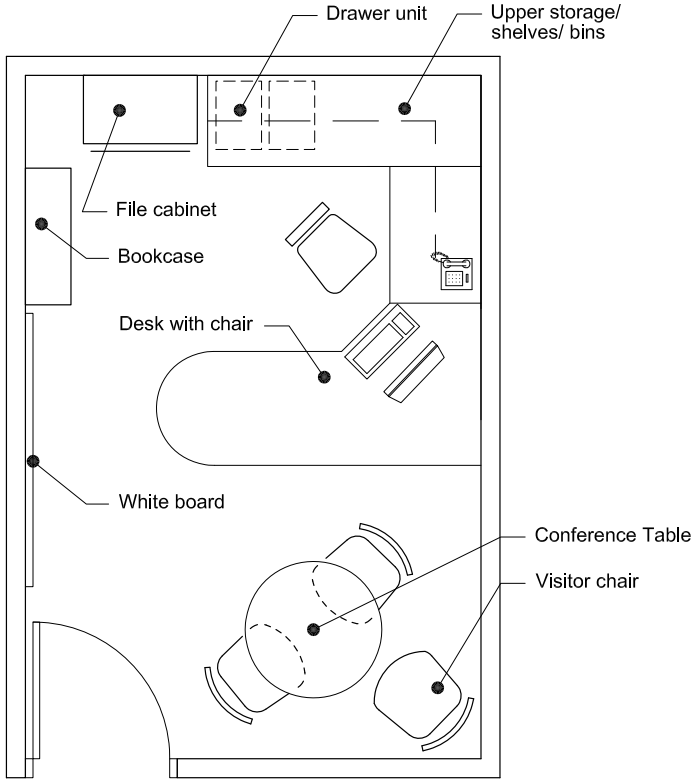
Equipment: Computer; telephone

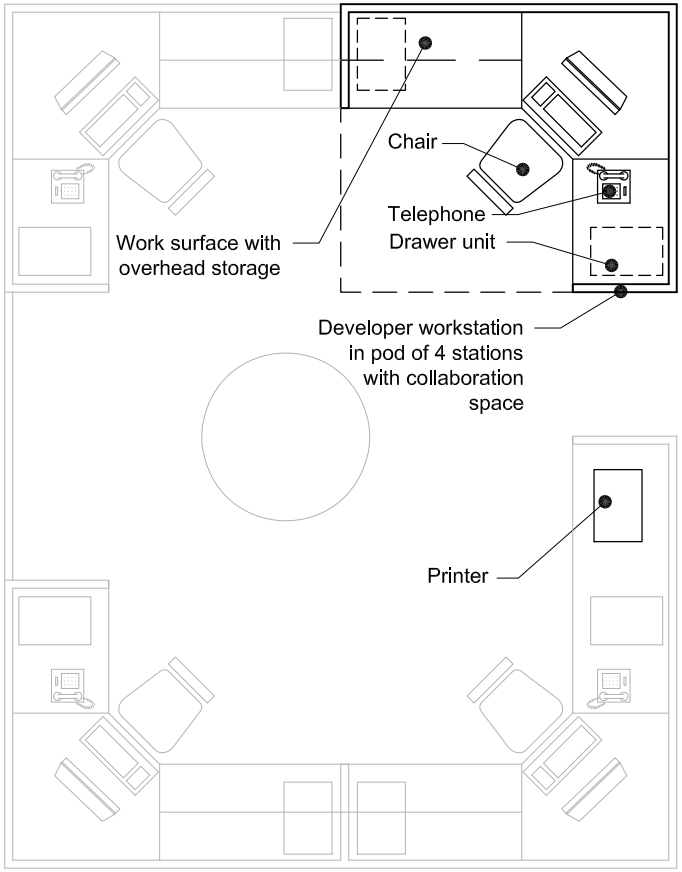
Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
36" diameter table
3 visitor chairs
6'W x 4'H white board
File cabinet

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:





A402 DEVELOPER WORKSTATION

AREA: 42 NSF

Occupants: 1 occupant (4 occupants per pod)

Function: Open office workstation for IT Developer

Adjacency: 8 Developer Workstations in IT open office area, arranged in pods of 4 workstations that are open to each other for easy communication and collaboration
Collaboration space added to each workstation pod
Adjacent to Manager Office and Desktop Support

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Door: None

Equipment: Computer; telephone

Furnishings: L-shaped open office workstation with shelving, storage bins, file drawers, box drawers
Desk chair

Mechanical: Shared HVAC zone

Electrical: Electrical outlets for computer, telephone, workstation task lighting and other miscellaneous equipment
2 sets of voice / data outlets per workstation
Fluorescent parabolic lighting

Notes:

A403 COLLABORATION SPACE

AREA: 100 NSF

Occupants: Developers (shared use)

Function: Space for informal meetings and discussions
Space for shared printer

Adjacency: 1 Collaboration Space integrated within each 4-workstation pod

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in open office area
- **Door:** None

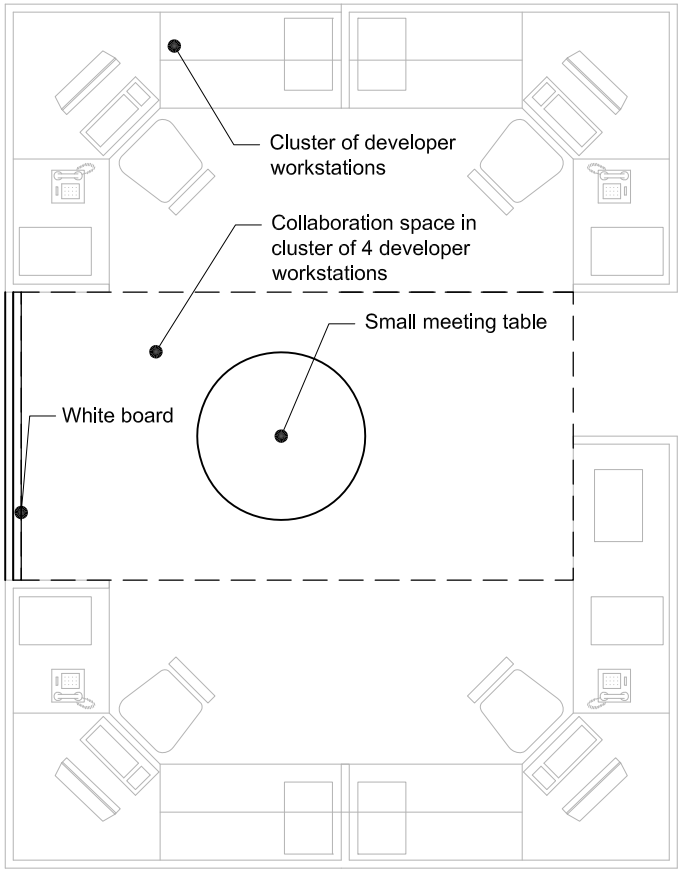
Equipment: Printer

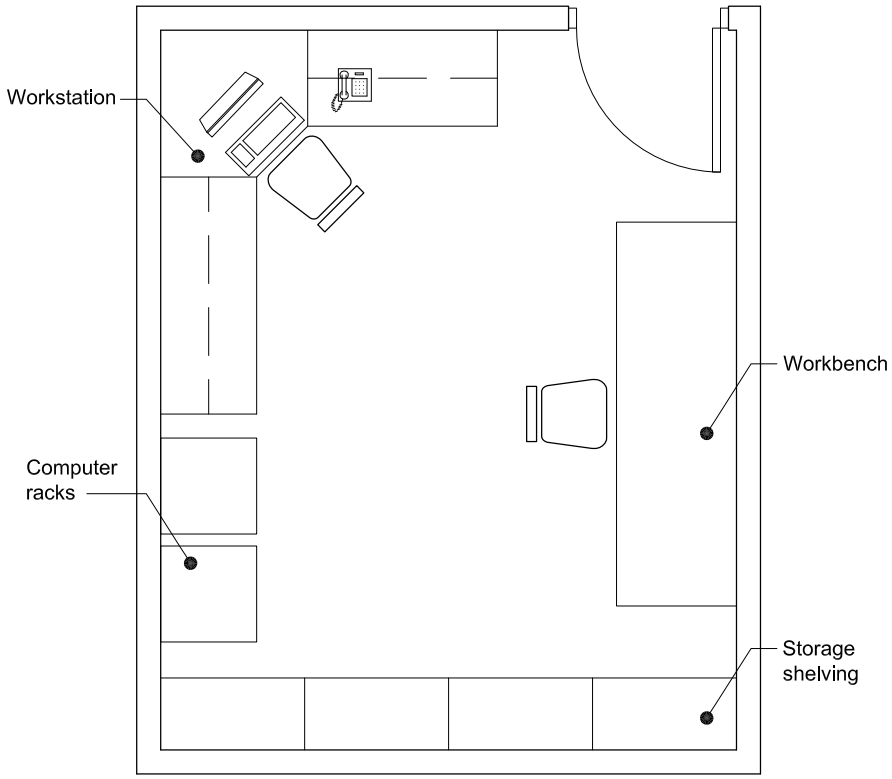
Furnishings: 42" diameter table
6' x 4' white board
Worksurface for shared printer

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for printer
Fluorescent parabolic lighting

Notes:





A404 DESKTOP SUPPORT

AREA: 180 NSF

Occupants: 1 Desktop Support staff person

Function: Enclosed room for Desktop Support staff desk space; work space for hardware set-up, repair & maintenance; hardware parts & supplies storage

Adjacency: Adjacent to other IT spaces
Easy access to exterior service entrance

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired
Doors: 3' x 7' wood door, locking

Equipment: Computer; telephone
Computer racks (2), 6'H x 2'W x 2'D

Furnishings: L-shaped open office workstation with shelving, storage bins, file drawers, box drawers
Desk chair
Work bench, 8' L x 30" D
Chair or stool for work bench
Open adjustable storage shelving for computer parts & supplies, 18" D

Mechanical: Shared HVAC zone

Electrical: Electrical outlets for computer, telephone, workstation task lighting and other miscellaneous equipment
2 sets of voice / data outlets per workstation
Electrical outlets above work bench
Fluorescent parabolic lighting

Notes:

A500: E-CHART SUPPORT SERVICES

Hours of Operation

Monday – Friday, 8 AM – 5 PM

Security

E-Chart Support Services does not have any special security requirements.

Functions

E-Chart Support Services includes these specific functions:

- Medical chart software development and support, used by the entire Utah State Hospital campus.

Location / Adjacency

IT & Medical Records

E-Chart Support Services and these groups interface frequently, so should be adjacent. IT is its most critical adjacency

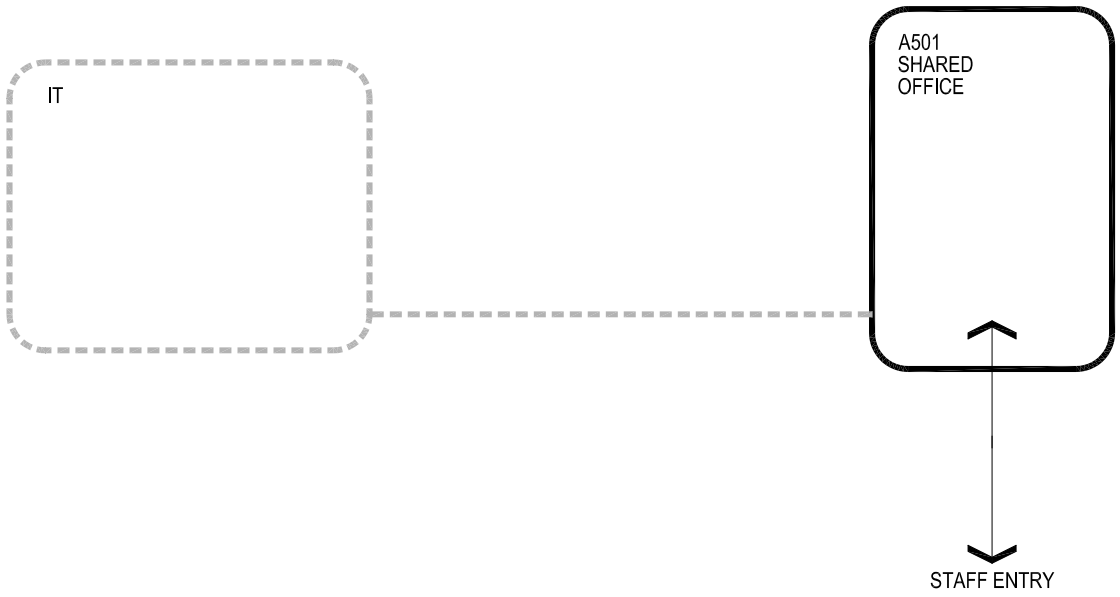
Staff Amenities

IT should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/Locker and staff parking area.

A500: E-CHART SUPPORT SERVICES

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A500	**E-CHART SUPPORT SERVICES**			**180**		**239**
A501	Shared Office	1	180	180	1.33	239



A500: E-CHART SUPPORT SERVICES

ADJACENCY DIAGRAM

A501 SHARED OFFICE

AREA: 180NSF

Occupants: 2 occupants, with up to 2 visitors

Function: Shared enclosed office for e-Chart staff

Adjacency: Near IT and Medical Records
Near Staff Education training spaces

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings
- **Door:** 3' x 7' wood door, locking

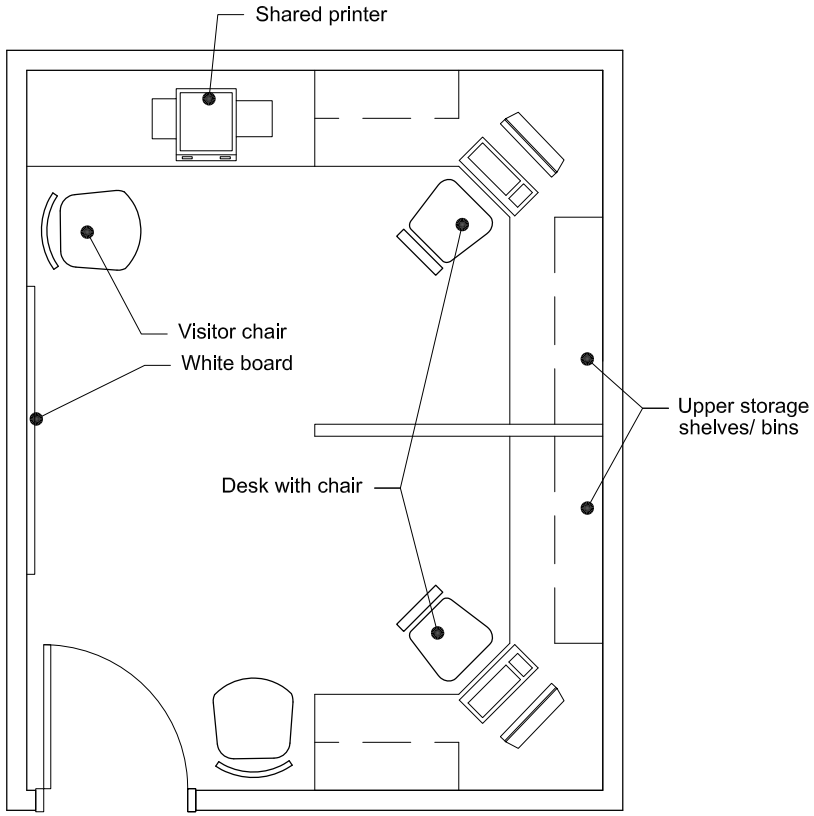
Equipment: 2 computers; 2 telephones
1 shared printer

Furnishings: 2 systems furniture L-shaped workstations with surrounding panels; shelves / bins above and drawer units, file cabinets below
2 desk chairs
2 visitor chairs
6'W x 4'H white board

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
4 sets of voice / data outlets (2 per workstation)
Fluorescent parabolic lighting

Notes: Both workstations must be able to see white board



A600: QUALITY RESOURCES

Hours of Operation
Monday – Friday, 8 AM – 5 PM

Security
Quality Resources does not have any special security requirements. Quality Resources will be a self-contained office space with a locking access door.

Functions
Quality Resources includes these specific functions:

- Review of State Hospital procedures for compliance with State of Utah, federal and other standards, regulations and requirements.
- Process and records audits.
- Tracking of four in-house quality initiative committees.
- Management and maintenance of a State of Utah Health Department remote-access computer, located in the Quality Resources office.

Location / Adjacency
Medical Records and IT
Quality Resources would benefit from being located near Medical Records and IT.

Staff Entry
Quality Resources should have easy access to the building's staff entry, to facilitate meetings with State Hospital executive staff in the Administration Building.

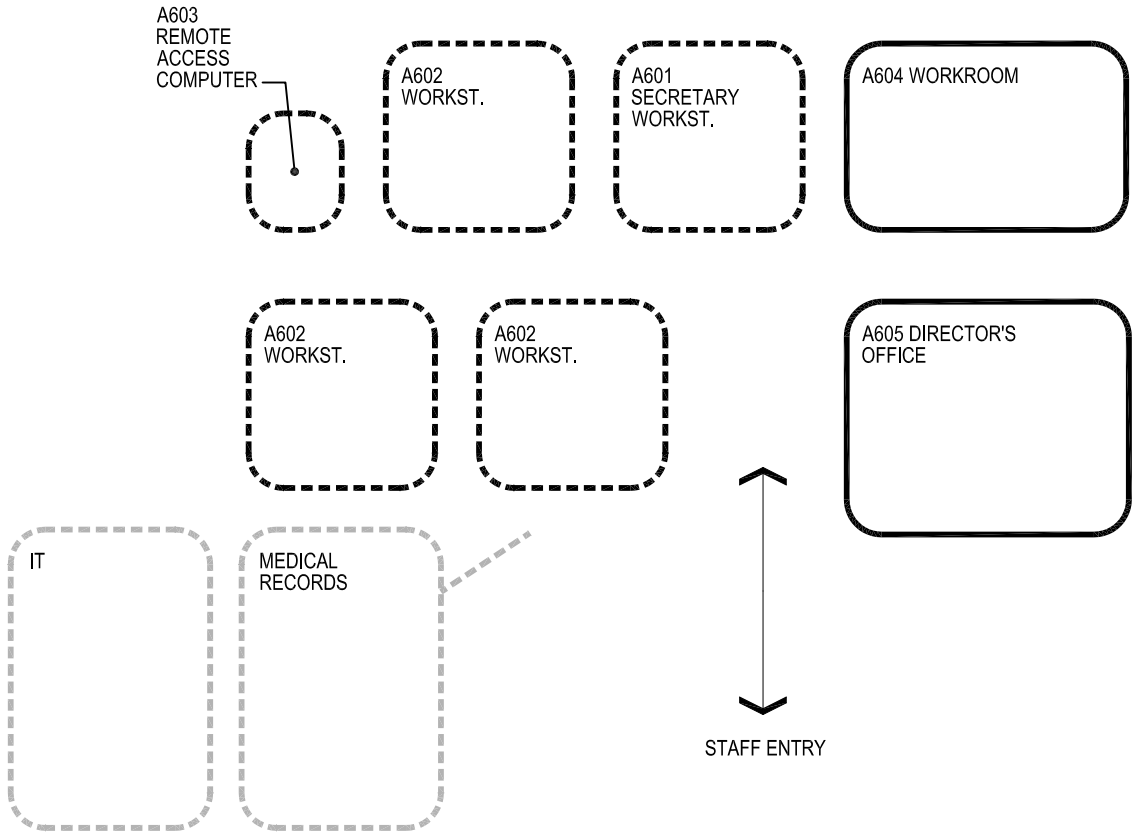
Conference Room
Quality Resources should be located near a conference room.

Staff Amenities
Quality Resources should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/Locker and staff parking area.

A600: QUALITY RESOURCES

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A600	**QUALITY RESOURCES**			**496**		**686**
A601	Secretary Workstation	1	64	64	1.40	90
A602	Open Workstation	3	64	192	1.40	269
A603	Remote-Access Computer	1	20	20	1.40	28
A604	Work Room	1	100	100	1.40	140
A605	Director Office	1	120	120	1.33	160



A600: QUALITY RESOURCES

ADJACENCY DIAGRAM

A601 SECRETARY WORKSTATION

AREA: 64 NSF

Occupants: 1 occupant

Function: Open office workstation for Quality Resources Secretary

Adjacency: Within Quality Resources open office area, near entry door

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Door: 3' x 7' wood entry door to Quality Resources, locking, adjacent to Secretary Workstation

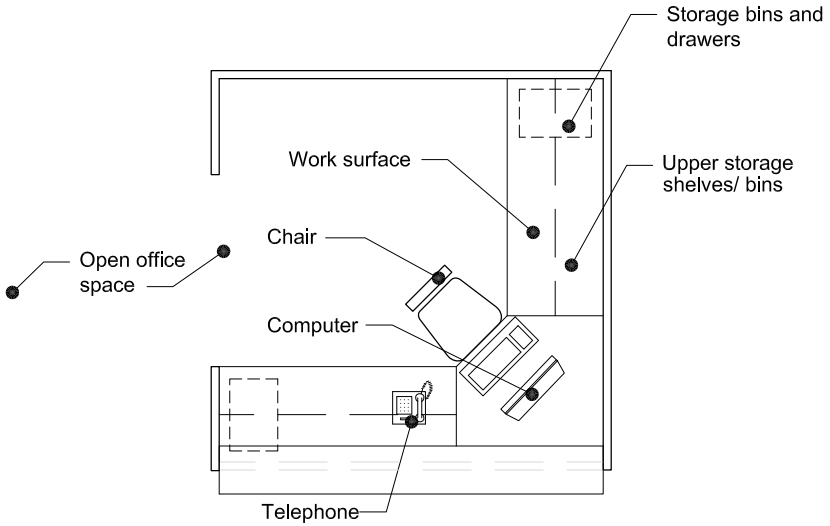
Equipment: Computer; telephone

Furnishings: L-shaped open office workstation with shelving, storage bins, drawers / file space, and transaction reception counter
Desk chair

Mechanical: Shared HVAC zone

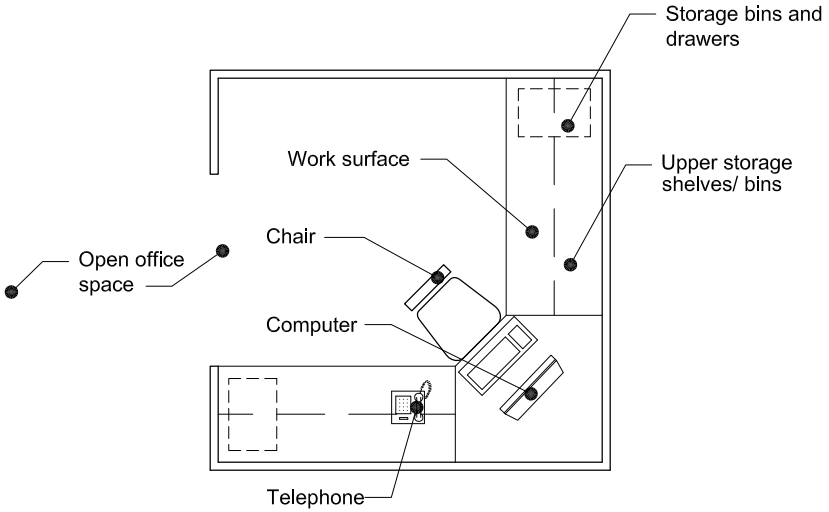
Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes:



A602 OPEN WORKSTATION

AREA: 64 NSF



Occupants: 1 occupant

Function: Open office workstation for Quality Resources staff member (Utilization Review Nurse-2, Research Analyst-1)

Adjacency: Within open office area made up of 4 open office workstations and the Remote-Access Computer
Easy access to a conference room

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in open office area
Door: None

Equipment: Computer; telephone

Furnishings: L-shaped open office workstation with shelving, storage bins, drawers / file space
Desk chair

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes:

A603 REMOTE-ACCESS COMPUTER

AREA: 20 NSF

Occupants: None

Function: Open office workstation for computer used occasionally by Quality Resources staff

Adjacency: Within open office area made up of 4 open office workstations and the Remote-Access Computer

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in open office area
- **Door:** None

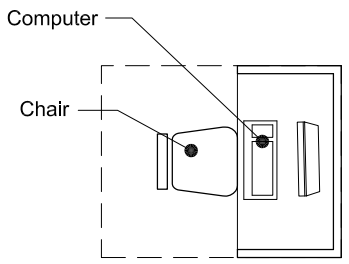
Equipment: Computer; telephone

Furnishings: Open office workstation
Desk chair

Mechanical: Shared HVAC zone

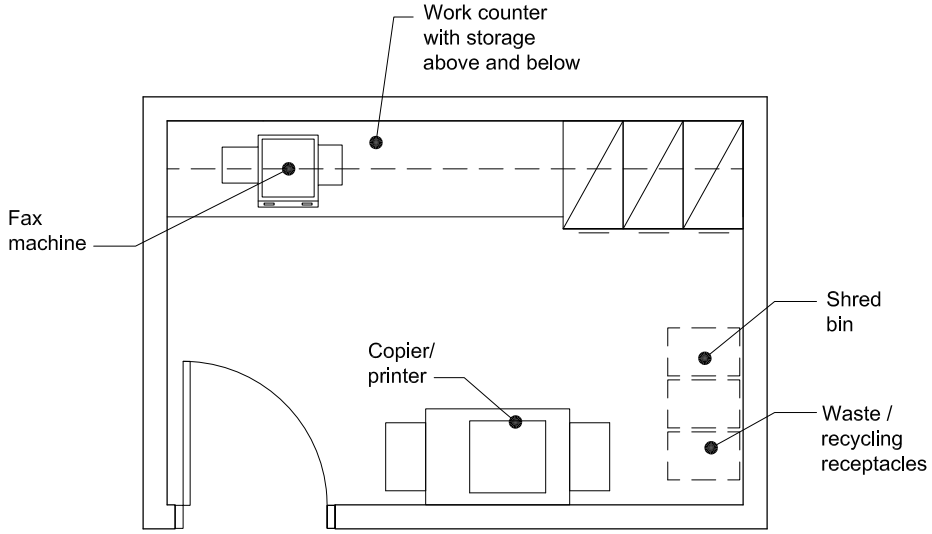
Electrical: Electrical and voice / data outlets for computer and telephone
Fluorescent parabolic lighting

Notes:



A604 WORK ROOM

AREA: 100 NSF



Occupants: None

Function: Enclosed room for shared office equipment
Office supply storage

Adjacency: Accessed from open office area; easily accessible to all Quality Resources staff

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Doors: 3' x 7' wood door, locking

Equipment: Copier / printer; fax machine
Millwork countertops with office supply storage cabinets and/or drawers above and below

Furnishings: 3 letter-size file cabinets
Waste and recycling receptacles
Shred bin

Mechanical: Dedicated HVAC zone
Exhaust

Electrical: Electrical wall outlets per code
Electrical and voice / data outlets for copier/printer, fax machine, other equipment as noted above
Electrical outlets above countertop
Fluorescent parabolic lighting

Notes:

A605 DIRECTOR OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Quality Resources Director, who manages QR area

Adjacency: Accessed from QR open office area
Easy access to a conference room

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

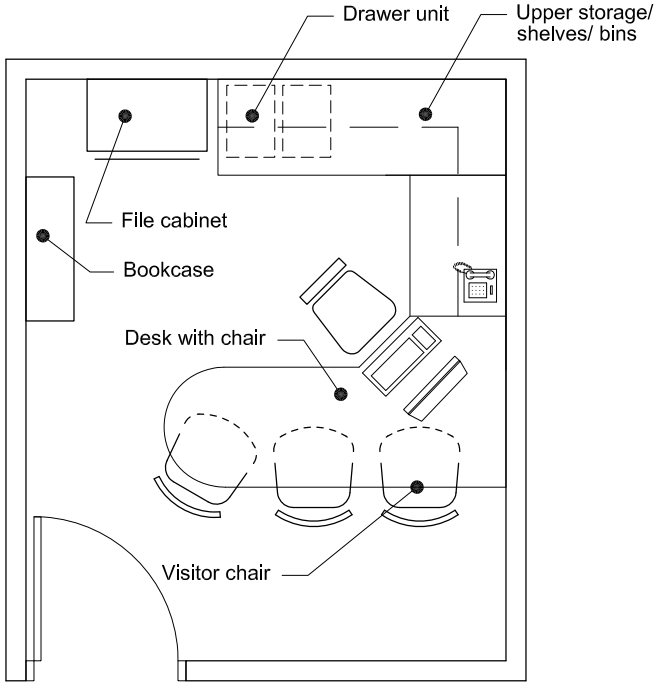
Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
3 visitor chairs
Bookcase(s) / file cabinet(s)

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:



A700: SUNRISE

Hours of Operation

Monday – Friday, 8 AM – 5 PM

Security

Sunrise perimeter walls must extend to the structure above, with gypsum board on both sides. Sunrise will require a secondary exit from its space, for the safety and security of staff working with a large number of patients.

Because this is a patient-access space, doors to offices and other walled spaces should swing out for barricade resistance.

Functions

Sunrise is a substance abuse treatment and support program for Utah State Hospital patients. Functions include:

- Group therapy, music therapy, crafts, exercise and other activities.
- Classes, lectures; coaching in daily living activities (cooking, etc.).
- Management and administration of the Sunrise program.

Sunrise will consist of a large, open space subdivided into three functional areas (classroom, exercise/experiential, and music/group therapy. The large open area will be separated from surrounding rooms by walls with a large amount of glass, allowing open visibility throughout the entire Sunrise area.

Location / Adjacency

Patient Entry

Sunrise should be located near the building's patient entry.

Patient Toilet Rooms

Sunrise should be located near Patient Toilet Rooms.

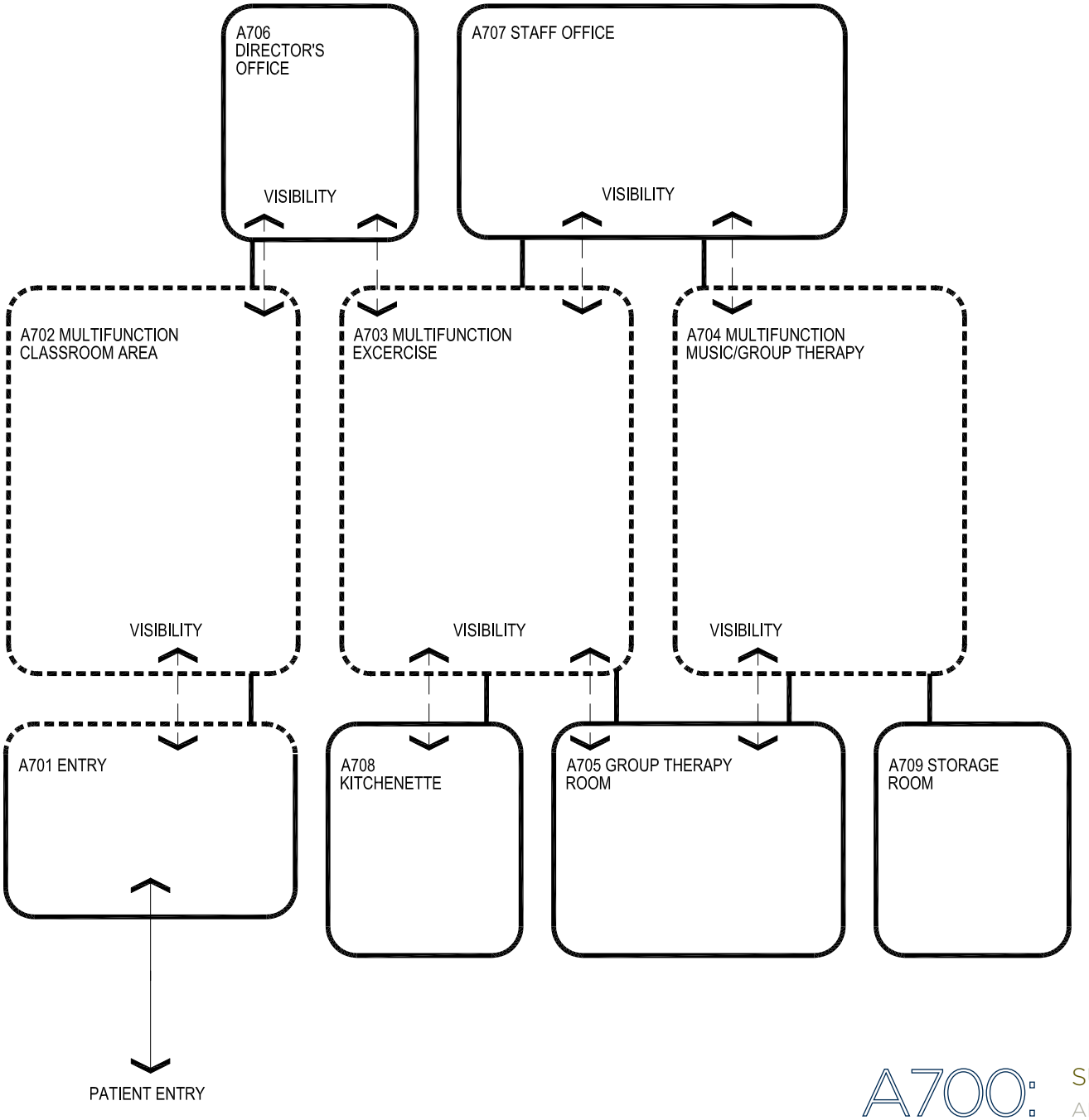
Staff Amenities

Sunrise should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/Locker and staff parking area.

A700: SUNRISE

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A700	**SUNRISE**			**1,830**		**2,434**
A701	Entry	1	150	150	1.33	200
A702	Multifunction: Classroom Area	1	300	300	1.33	399
A703	Multifunction: Exercise Area	1	300	300	1.33	399
A704	Multifunction: Music/Group Therapy	1	300	300	1.33	399
A705	Group Therapy Room	1	180	180	1.33	239
A706	Director Office	1	120	120	1.33	160
A707	Staff Office	1	240	240	1.33	319
A708	Kitchenette	1	120	120	1.33	160
A709	Storage Room	1	120	120	1.33	160



A700: SUNRISE
ADJACENCY DIAGRAM

A701 ENTRY

AREA: 150 NSF

Occupants: None

Function: Entry point for Sunrise, from main building corridor
Display space

Adjacency: Easy access from patient building entry point
Adjacent to Multifunction spaces
Adjacent to Director's Office
Easy access to patient toilet rooms

Environment:

Floor: Hard surface flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Exterior windows with window coverings desired
Interior window to building main entry lobby
Door: 3' x 7' wood door, locking

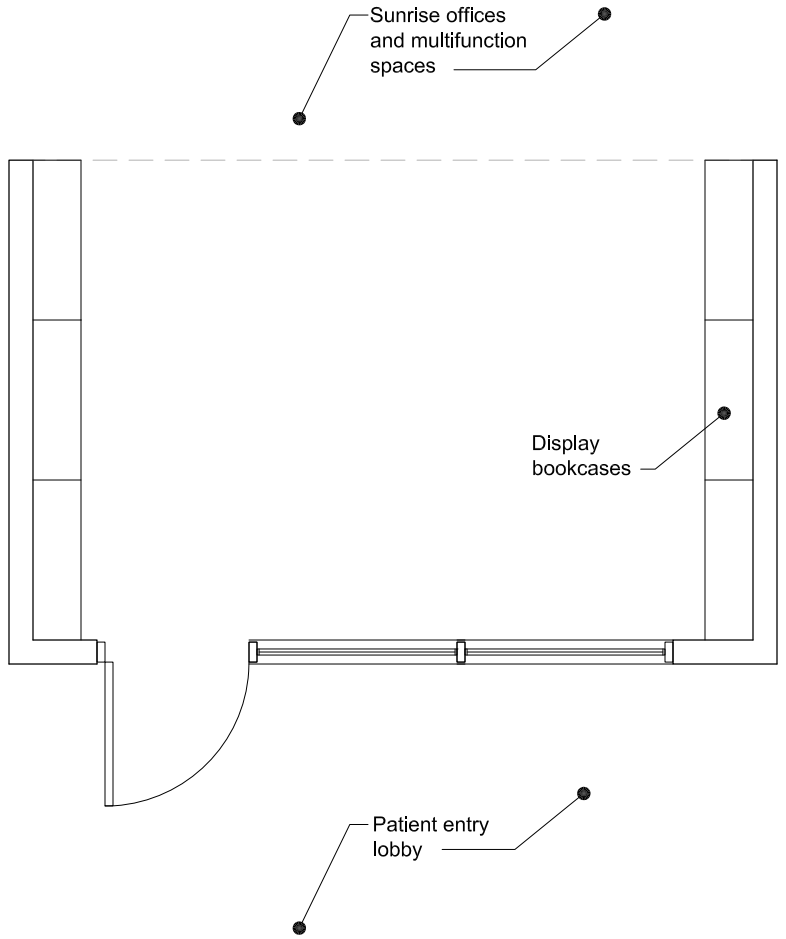
Equipment: None

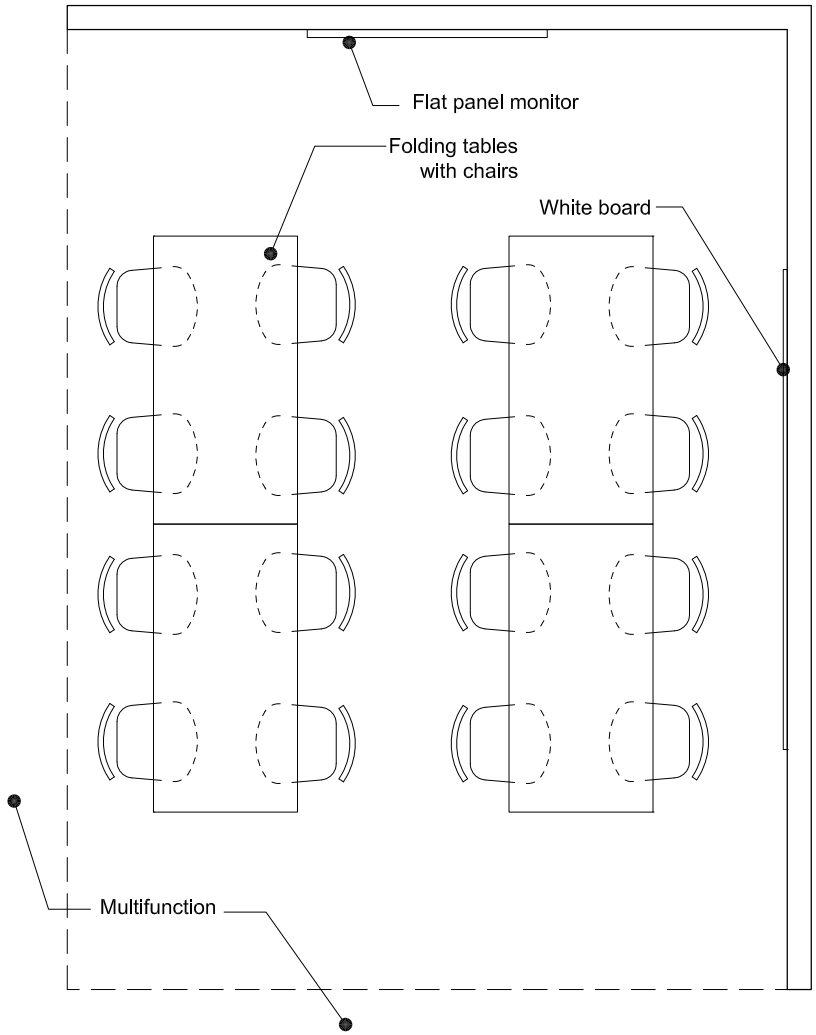
Furnishings: Display bookcases or shelving

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes:





A702 MULTIFUNCTION: CLASSROOM AREA

AREA: 300 NSF

Occupants: Up to 15 people

Function: One of three adjacent, open areas that make up the large multipurpose space which is the primary space within Sunrise
Used for classes, lectures, craft activities, etc.

Adjacency: Directly adjacent / open to two other multipurpose areas
Multipurpose space accessed from Entry

Environment:

Floor: Hard surface flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Exterior windows with window coverings desired
Interior windows to allow visibility from staff to patient areas
Door: None

Equipment: Wall-mounted, flat panel TV that can be used for presentations & educational sessions
AV control station

Furnishings: Folding tables with chairs for 16 people
8' x 4' white board

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Electrical and data outlets as needed for AV equipment
Fluorescent parabolic lighting

Notes:

A703 MULTIFUNCTION: EXERCISE AREA

AREA: 300 NSF

Occupants: Up to 15 people

Function: One of three adjacent, open areas that make up the large multipurpose space which is the primary space within Sunrise
Primary use: Exercise and other experiential activities (yoga, aerobics, stretching, etc.)
Secondary use: Classes, lectures, craft activities, etc.

Adjacency: Directly adjacent / open to two other multipurpose areas
Multipurpose space accessed from Entry

Environment:

Floor: Hard surface flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Exterior windows with window coverings desired
Interior windows to allow visibility from staff to patient areas
Door: None

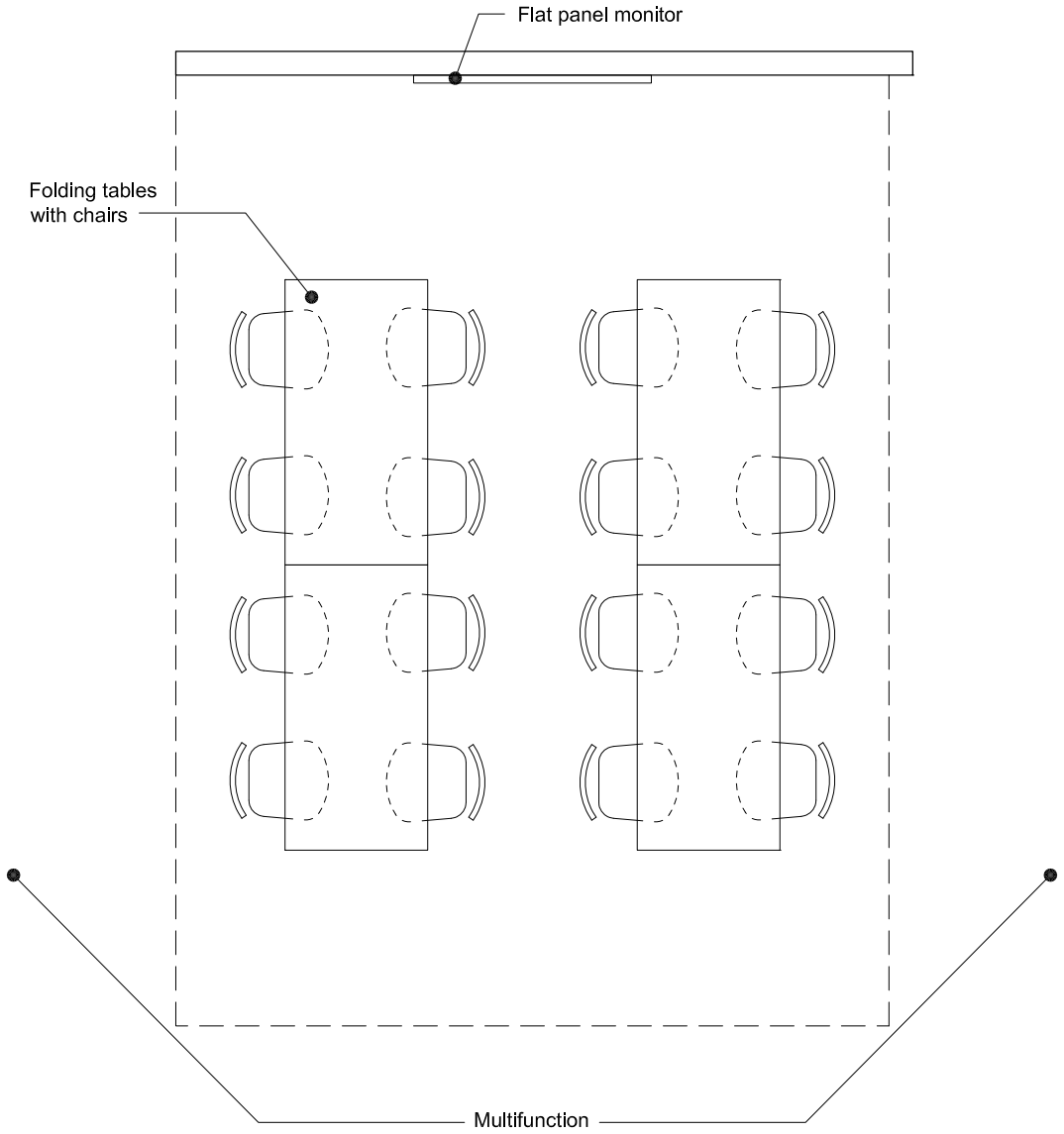
Equipment: Wall-mounted, flat panel TV that can be used for presentations & educational sessions
AV control station

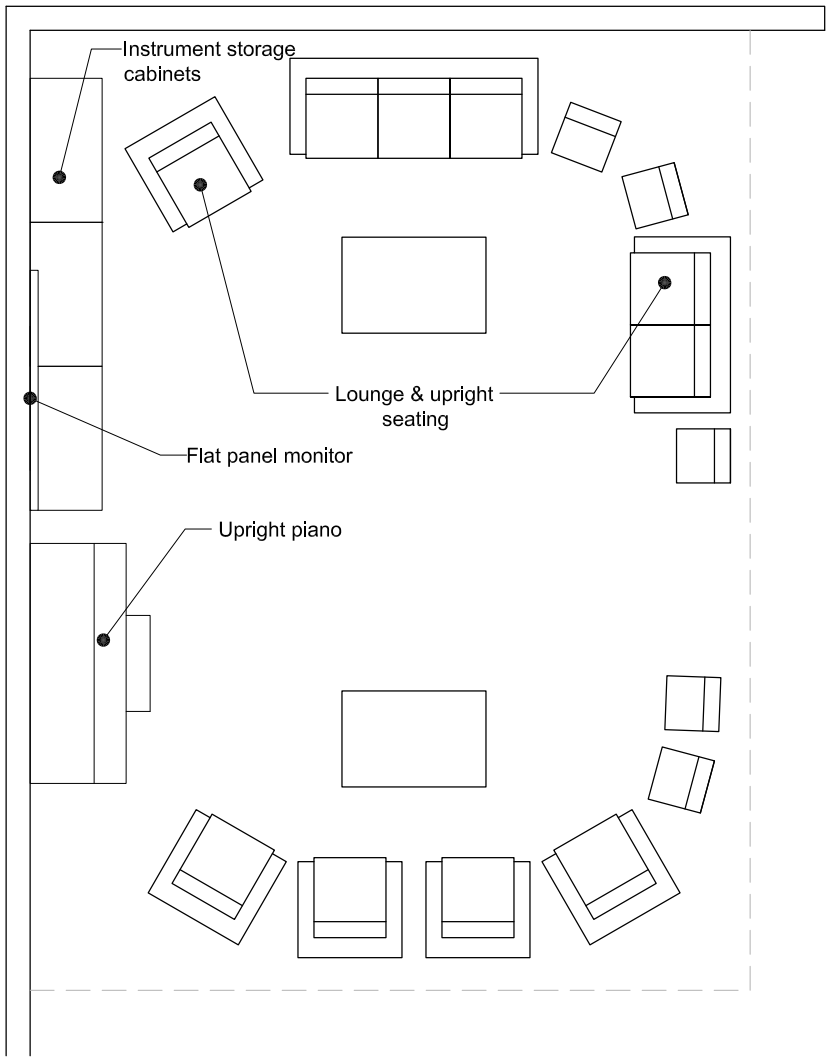
Furnishings: Folding tables with chairs for 16 people

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Electrical and data outlets as needed for AV equipment
Fluorescent parabolic lighting

Notes:





A704 MULTIFUNCTION: MUSIC/GROUP THERAPY

AREA: 300 NSF

Occupants: Up to 15 people

Function:
One of three adjacent, open areas that make up the large multipurpose space which is the primary space within Sunrise
Used for music therapy and group therapy
Room should be set up as a comfortable, home-like living room

Adjacency:
Directly adjacent / open to two other multipurpose areas
Multipurpose space accessed from Entry

Environment:

Floor: Hard surface flooring (stained concrete, sheet vinyl, VCT, etc.)

Walls: Painted gypsum board

Ceiling: Lay-in acoustic tile; 10' height

Windows:
Exterior windows with window coverings desired
Interior windows to allow visibility from staff to patient areas

Door: None

Equipment:
Wall-mounted, flat panel TV
AV control station

Furnishings:
Lounge furniture: sofas, chairs, occasional tables; upright piano; upright chairs; shelving or cabinets for instrument storage; circular arrangement of seating for group / music therapy; row seating for TV viewing
Note: all chairs should be upholstered and washable

Mechanical: Shared HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets as needed for AV equipment
Fluorescent parabolic lighting

Notes: Consider use of a movable partition to enclose this area

A705 GROUP THERAPY ROOM (TANK)

AREA: 180 NSF

Occupants: Up to 12 people

Function: Enclosed room for group therapy

Adjacency: Directly adjacent to / accessed from open multipurpose space

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings
  Interior windows into multipurpose space, to allow full visibility into Group Therapy
- **Door:** 3' x 7' wood door, locking

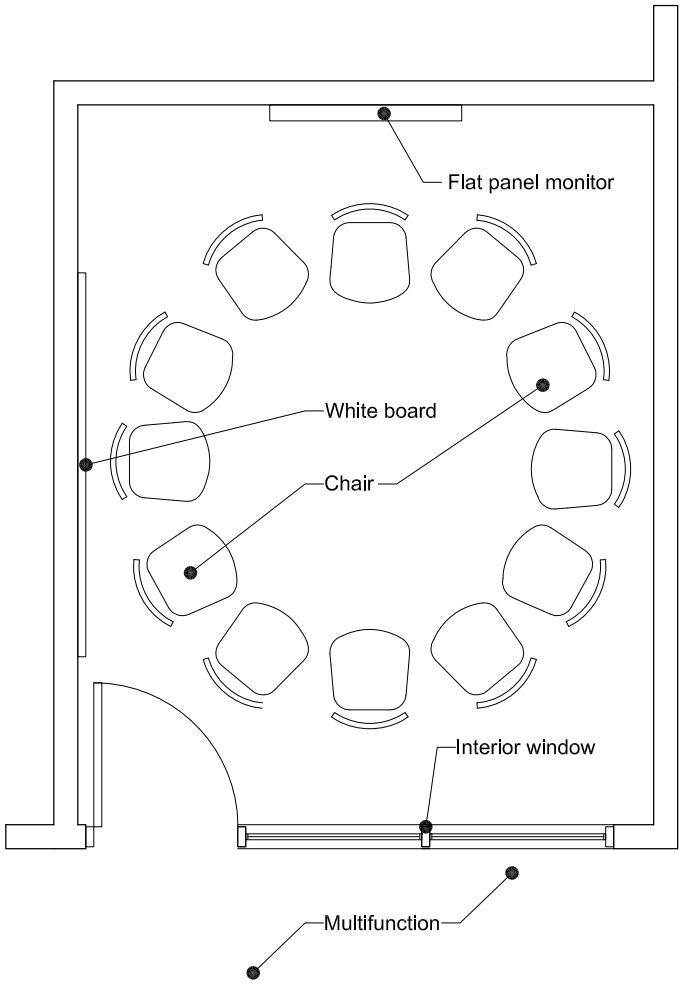
Equipment: Wall-mounted, flat panel TV

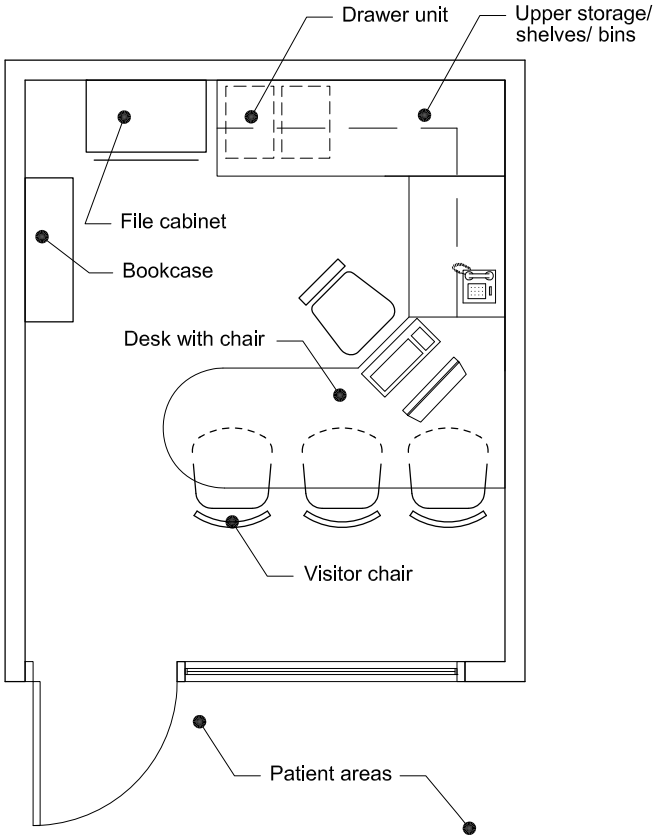
Furnishings: 12 chairs
8' x 4' white board

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for room use flexibility
Fluorescent parabolic lighting

Notes:





A706 DIRECTOR'S OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 3 visitors

Function: Private office for Sunrise Director, who administers the Sunrise program
Small meetings

Adjacency: Directly adjacent to / accessed from open multipurpose space, with visibility from office into patient areas
Easily accessed from Entry

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior windows into multipurpose space, to allow full visibility into patient areas
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
3 visitor chairs
Bookcases / cabinets

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

A707 STAFF OFFICE

AREA: 240 NSF

Occupants: 3 occupants

Function:
Shared office space for Sunrise staff and interns
Clerical and administrative functions: computer work, paper work, telephone calls, etc.
Interviews
Shared office equipment area

Adjacency:
Directly adjacent to / accessed from open multipurpose space, with visibility from office into patient areas
Easily accessed from Entry

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior windows into multipurpose space, to allow full visibility into patient areas
Door: 3' x 7' wood door, locking

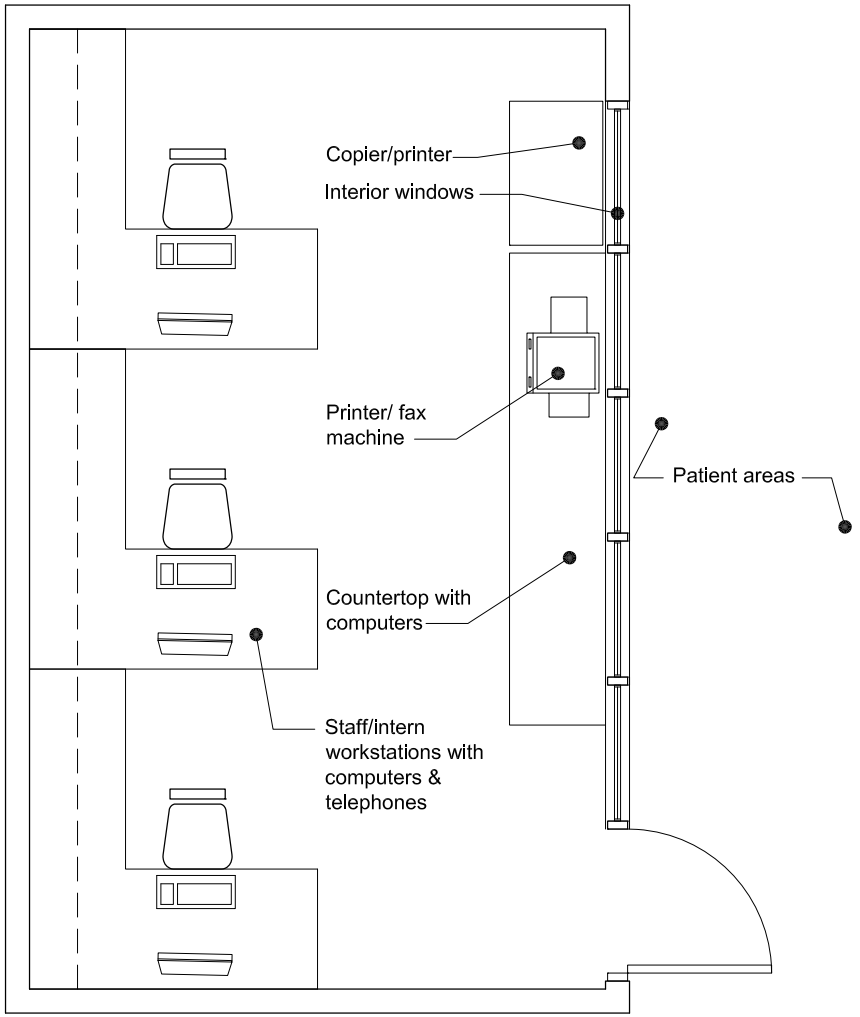
Equipment:
3 computers; 3 telephones; 1 printer/copier; 1 printer / fax machine
Millwork countertop for shared equipment

Furnishings:
3 L-shaped systems furniture workstations with partial panel enclosure; shelves/ bins above and drawer units below; located to allow visibility out of room
3 desk chairs

Mechanical: Shared HVAC zone

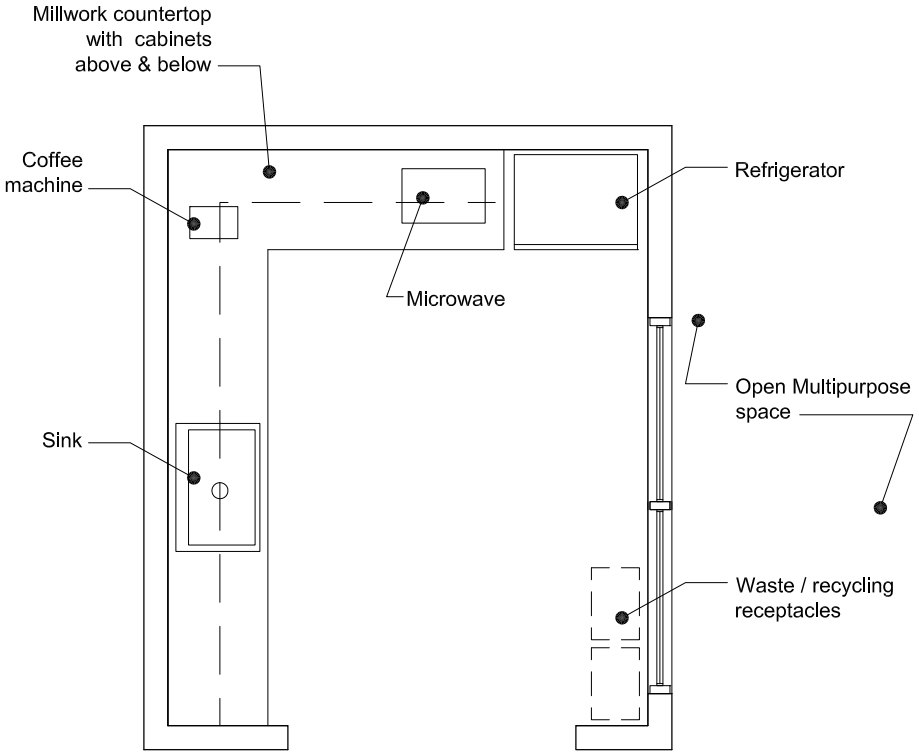
Electrical:
Duplex electrical outlets per code
Electrical and voice / data outlets for furniture and equipment as noted
Fluorescent parabolic lighting

Notes:



A708 KITCHENETTE

AREA: 120 NSF



Occupants: Up to 6 people

Function:
Clean-up for craft and gardening classes & activities
Teaching basic cooking skills to patients

Adjacency:
Directly adjacent to / accessed from open multipurpose space, with visibility from one space to another
Easily accessed from Entry

Environment:

Floor: Hard surface flooring (stained concrete, sheet vinyl, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Interior windows into multipurpose space, to allow visibility from one space to another

Equipment:
Millwork countertop with storage cabinets/drawers below, storage cabinets above
Large single-compartment kitchen sink with raised faucet
Refrigerator/freezer, microwave oven, coffee machine

Furnishings: Trash & recycling receptacles

Mechanical:
Dedicated HVAC zone with exhaust
Kitchen sink
Water hook-up for refrigerator ice-maker

Electrical:
Duplex electrical outlets per code
Electrical outlet above countertop
Electrical outlets as required for refrigerator, microwave, coffee machine
Compact fluorescent lighting

Notes: Countertops at 34" high to meet ADA

A709 STORAGE ROOM

AREA 120 NSF

Occupants: None

Function: Enclosed room for storage of materials and equipment used by Sunrise program

Adjacency: Easy access from Storage to multipurpose areas and Kitchenette

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Doors: 3' x 7' wood door, locking

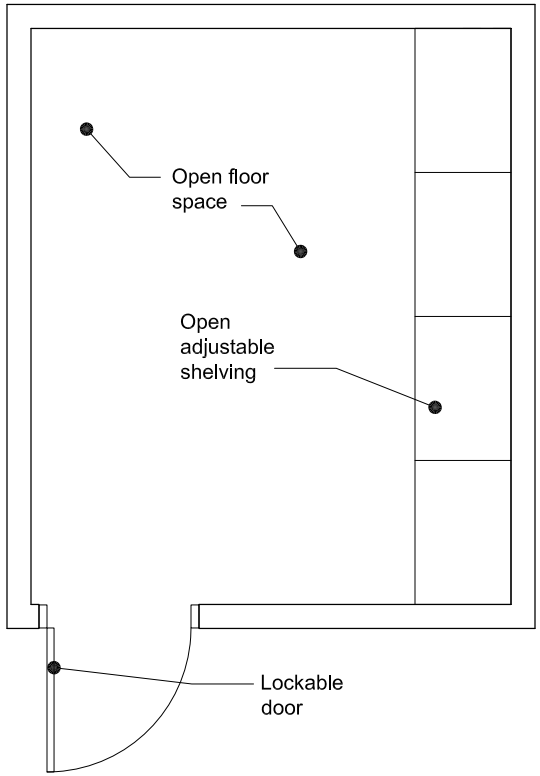
Equipment: None

Furnishings: Open adjustable shelving units in a portion of room

Mechanical: Minimal HVAC

Electrical: Electrical wall outlets per code
Fluorescent lighting

Notes: A portion of room should have open floor space for storage of furniture or large equipment



A800: CLINICS

Hours of Operation

Monday – Friday, 8 AM – 5 PM (general); individual clinics are scheduled during two to three designated times per month.

Security

Clinics perimeter walls must extend to the structure above, with gypsum board on both sides.

Because this is a patient-access space, doors to offices and other walled spaces should swing out for barricade resistance.

Some rooms will require special security features, as noted.

Controlled access will be required beyond the Waiting Room and Patient Toilet Room.

Functions

The Clinics program is responsible for on-campus medical services for State Hospital patients, in these areas: dental, podiatry, optometry and neurology. Clinics for each area are scheduled during set hours each month. The clinics provide examinations and basic care and procedures.

The Clinics area must have a 20' long hallway for neurologists to observe patients' walking gait.

Location / Adjacency

Patient Entry

Clinics should be located near the building's patient entry.

Central Supply

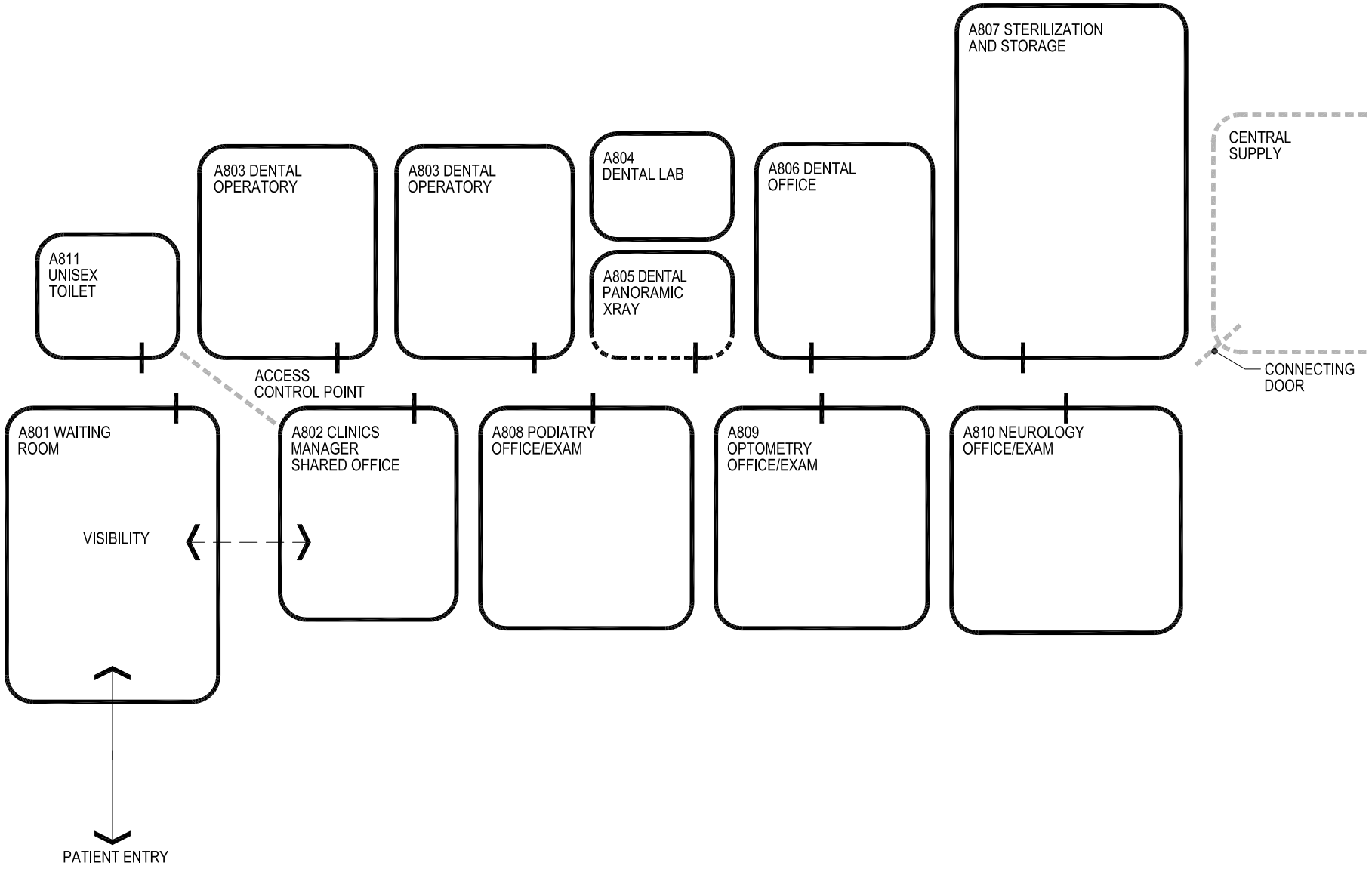
Clinics must have an internal doorway connecting with Central Supply, as both Clinics and Central Supply are managed by one State Hospital staff person.

Staff Amenities

Clinics should have convenient access to the building's Staff Break Room, Staff Shower/Locker and staff parking area.

A800: CLINICS
SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A800	**CLINICS**			**1,497**		**2,020**
A801	Waiting Room	1	200	200	1.33	266
A802	Clinics Mgr. Shared Office	1	120	120	1.33	160
A803	Dental Operatory	2	120	240	1.40	336
A804	Dental Lab	1	48	48	1.40	67
A805	Dental Panoramic X-ray	1	40	40	1.40	56
A806	Dental Office	1	100	100	1.33	133
A807	Sterilization & Storage	1	200	200	1.33	266
A808	Podiatry Office/Exam	1	150	150	1.33	200
A809	Optometry Office/Exam	1	150	150	1.33	200
A810	Neurology Office/Exam	1	165	165	1.33	219
A811	Patient Unisex Toilet Room	1	42	42	1.40	59
A812	Staff Unisex Toilet Room	1	42	42	1.40	59



A800: CLINICS
ADJACENCY DIAGRAM

A801 WAITING ROOM

AREA: 200 NSF

Occupants: Up to 12 people

Function:
Entry point for Clinics from main building corridor
Patient waiting area

Adjacency:
Easy access from patient building entry point
Easy access to Patient Unisex Toilet Room
Patient entry: ADT, Sunrise, Clinics
Staff entry: Clinics, Central Supply, Pharmacy

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Painted gypsum board; 9' height
Windows: Exterior windows with window coverings desired
Interior window to building corridor or patient entry lobby
Door: 3' x 7' wood entry door (from building corridor/lobby), locking
3' x 7' wood door between Waiting and clinic interior space; locking from clinic interior side

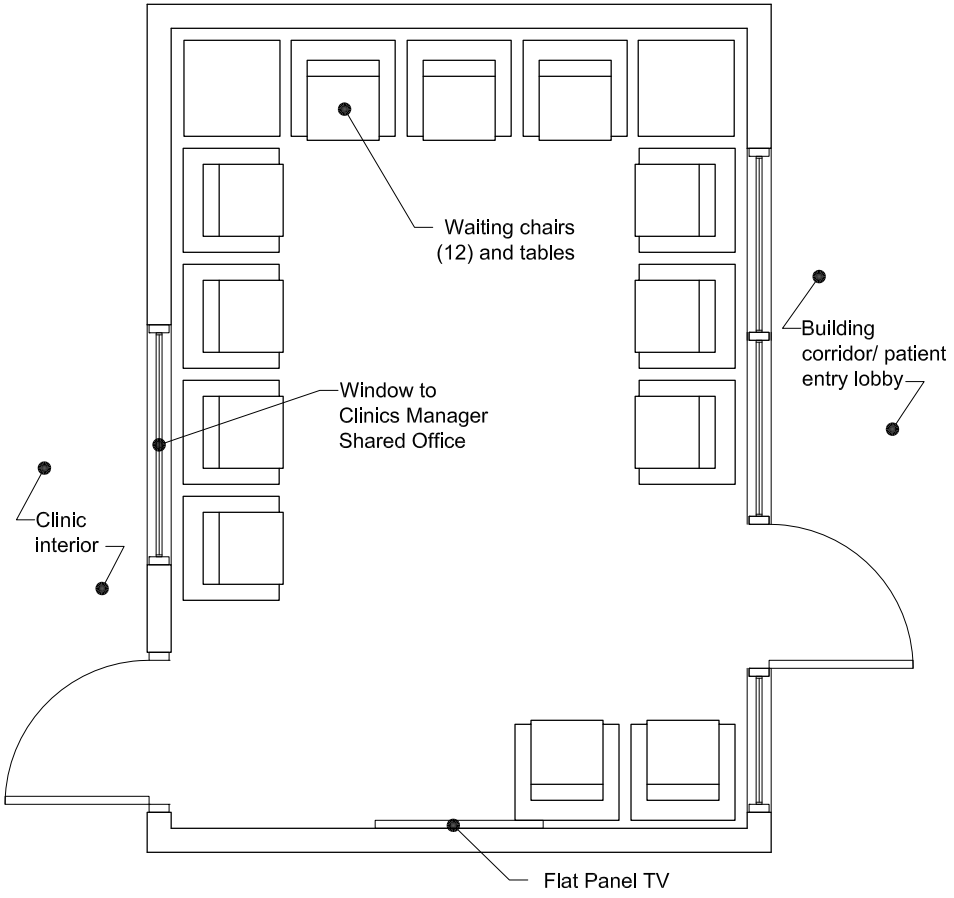
Equipment: Wall-mounted flat-panel TV; controls in Clinics Mgr. Shared Office

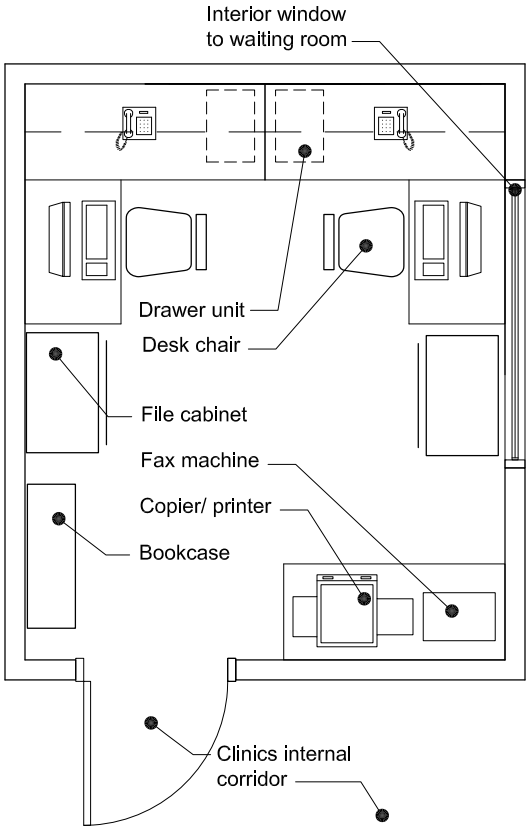
Furnishings: Waiting seating for 12 people; occasional tables

Mechanical:
Shared HVAC zone
Secure mechanical diffusers / grilles

Electrical:
Duplex electrical outlets per code
Electrical, voice / data and cable TV outlets for TV
Compact fluorescent lighting, secure

Notes:





A802 CLINICS MGR. SHARED OFFICE

AREA: 120 NSF

Occupants: 2 occupants (Clinics Manager & Clinics Psych Tech Aide)

Function:
Shared office space for Clinics administration
Shared office equipment area
Visual oversight of Waiting Room

Adjacency:
Adjacent to Waiting Room, but accessed from internal Clinics corridor
Easy access to all Clinic spaces
Direct access from Clinics to Central Supply through internal connecting doorway (Clinics Manager manages both Clinics and Central Supply)

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior window into Waiting Room, to allow visual oversight
Door: 3' x 7' wood door, locking

Equipment: 2 computers; 2 telephones; desktop printer/copier; fax machine

Furnishings:
2 desks
2 desk chairs
2 file cabinets
Bookcase

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
Electrical and voice / data outlets computers, telephones and other equipment noted
Fluorescent parabolic lighting

A803 DENTAL OPERATORY

AREA: 120 NSF

Occupants: Up to 4 people (patient, dentist, assistant, other)

Function: Enclosed room for general dental procedures

Adjacency: Accessed from internal Clinics corridor
Adjacent to other dental spaces

Environment:

Floor: Moisture-impervious flooring (stained concrete, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

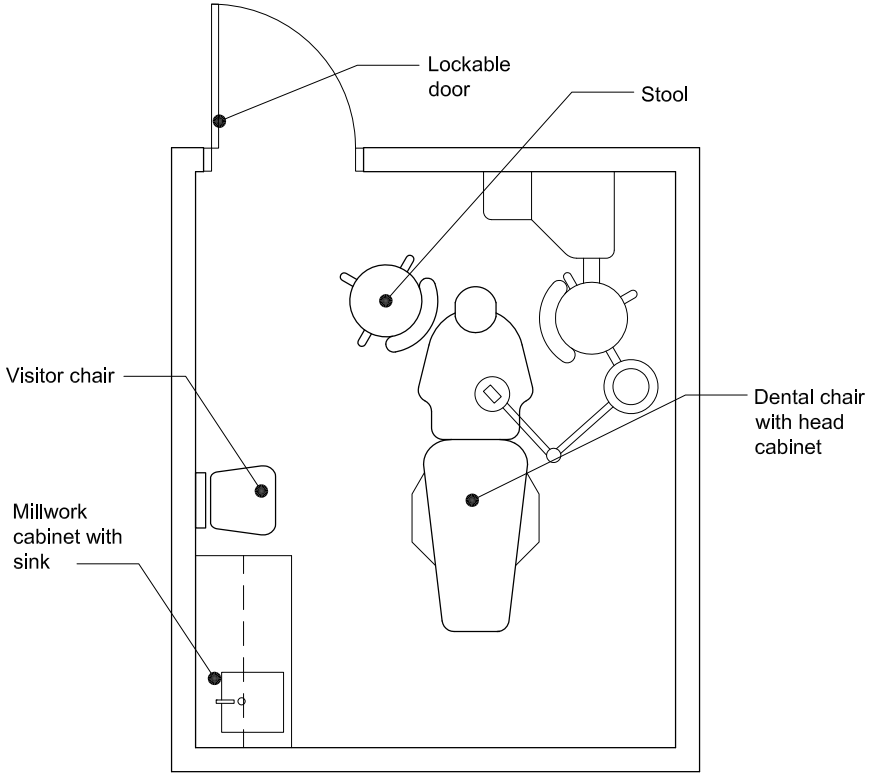
Equipment: Dental chair with head cabinet (rear-delivery system preferred)
Millwork storage cabinet with sink

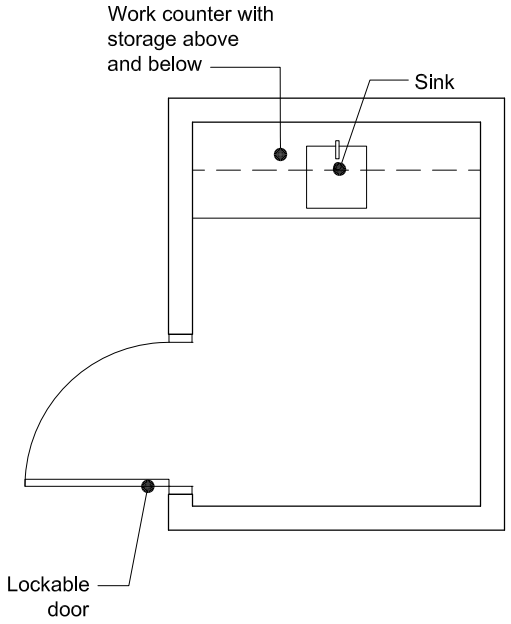
Furnishings: Stool with casters
Visitor chair

Mechanical: Shared HVAC zone
Dental utilities: Compressed air; vacuum; cold / hot water & drain needed at sink and dental head cabinet
Secure mechanical diffusers / grilles

Electrical: Duplex electrical outlets per code
Electrical and voice / data outlets as needed for dental equipment and utilities
Compact fluorescent lighting, secure

Notes: 2nd operatory is for future use; will not have equipment at initial building construction





A804 DENTAL LAB

AREA: 48 NSF

Occupants: None

Function: Enclosed room for instrument cleaning and minor dental lab work

Adjacency: Accessed from internal Clinics corridor
Adjacent to other dental spaces

Environment:

Floor: Moisture-impervious flooring (stained concrete, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

Equipment: Millwork countertop with single-compartment sink; storage cabinets above and storage cabinets / drawers below
Sonic cleaner

Furnishings: None

Mechanical: Shared HVAC zone
Cold / hot water and drain at sink

Electrical: Duplex electrical outlets per code
Electrical outlets above countertop
Electrical outlet for sonic cleaner
Fluorescent parabolic lighting

Notes:

A805 DENTAL PANORAMIC X-RAY

AREA: 40 NSF

Occupants: None

Function: Three-walled alcove, approximately 5’ x 8’, for panoramic x-ray equipment

Adjacency: Accessed from internal Clinics corridor
Adjacent to other dental spaces

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9’ height
Windows: None
Door: None

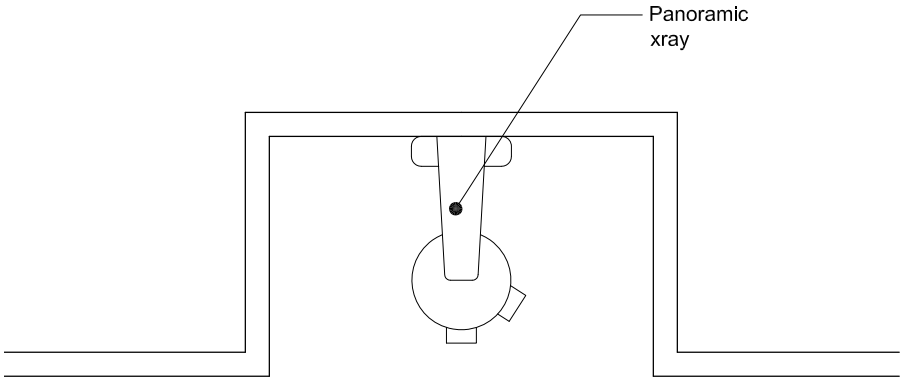
Equipment: Panoramic x-ray machine

Furnishings: None

Mechanical: Shared HVAC zone

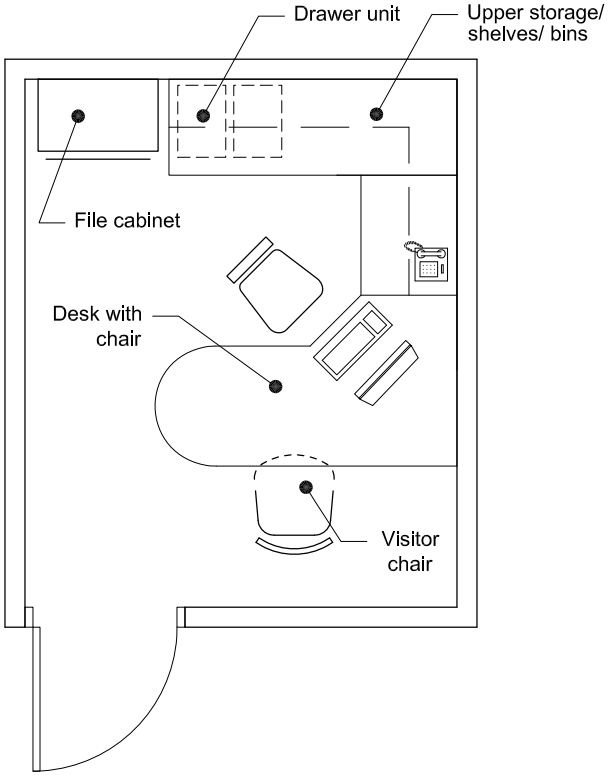
Electrical: Duplex electrical outlets per code
Electrical and voice / data outlets as required for x-ray machine
Fluorescent parabolic lighting

Notes:



A806 DENTAL OFFICE

AREA: 100 NSF



Occupants: 1 occupant, with up to 1 visitor

Function: Private office for dentist

Adjacency: Accessed from internal Clinics corridor
Adjacent to other dental spaces

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior window with window coverings desired
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings: Systems furniture desk with shelves / bins above and drawer units below
Desk chair
Visitor chair
Bookcase / file cabinet

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A807 STERILIZATION & STORAGE

AREA: 200 NSF

Occupants: None

Function: Enclosed room for sterilization of dental & podiatry equipment and instruments
Storage of dental, podiatry and general clinic supplies

Adjacency: Accessed from internal Clinics corridor
Adjacent to dental and podiatry spaces

Environment:

Floor: Moisture-impervious flooring (stained concrete, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

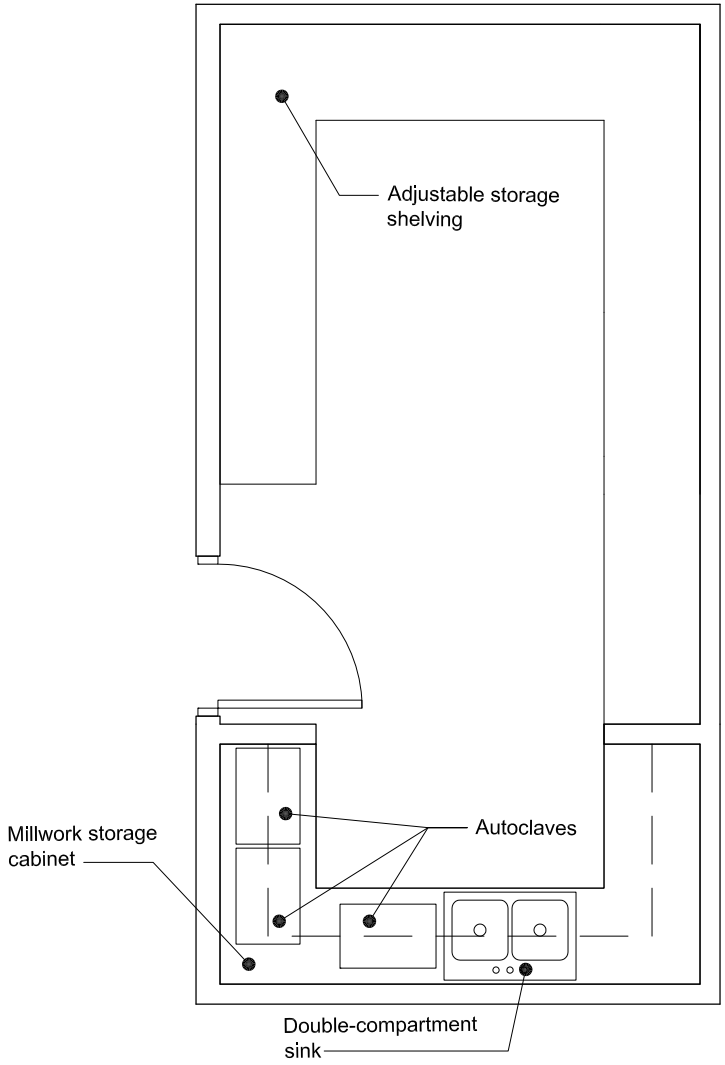
Equipment: Millwork with: stainless steel countertop; double-compartment stainless steel sink; storage cabinets above and storage cabinets / drawers below; cabinets set up in U-shaped configuration
2 STATIM 2000 autoclaves (16"W x 24"D x 6"H)
Tuttnauer autoclave 2540M (26"W x 24"D x 14"H)

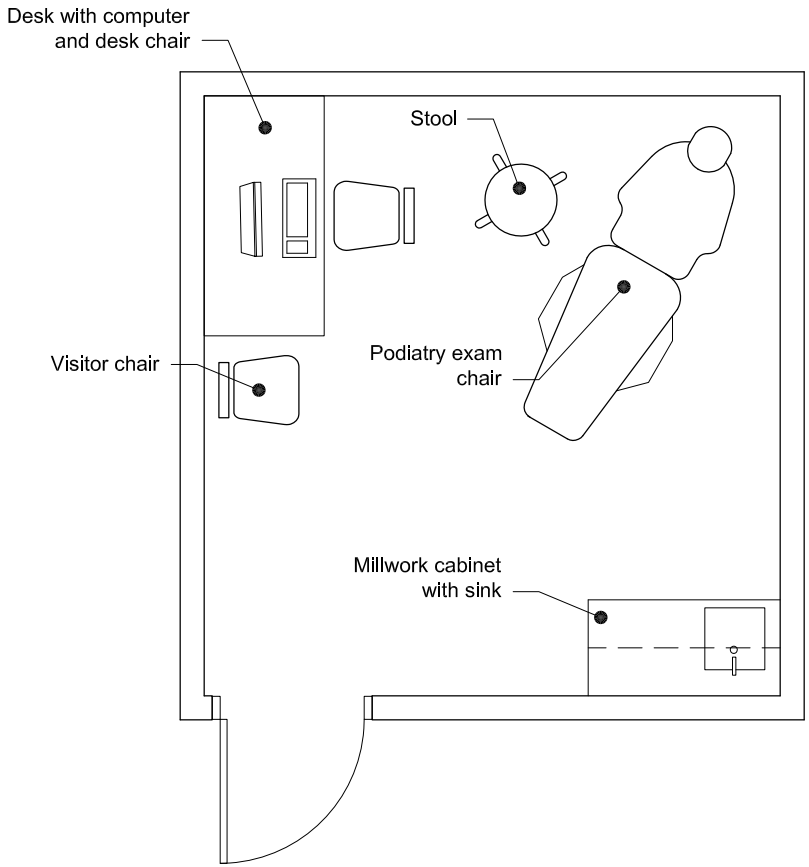
Furnishings: Adjustable steel storage shelving units; depths from 16" to 24"

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical and voice / data outlets as required for equipment
Fluorescent parabolic lighting

Notes: In sterilization area, cleaning process flow is from dirty side to clean side, with sink and sterilization equipment in center section of "U"





A808 PODIATRY OFFICE/EXAM

AREA: 150 NSF

Occupants: Up to 4 people (patient, podiatrist, assistant, other)

Function:
Enclosed room for podiatry exams and general procedures
Office space for podiatrist

Adjacency:
Accessed from internal Clinics corridor
Adjacent to Sterilization & Storage

Environment:

Floor: Moisture-impervious flooring (stained concrete, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

Equipment:
Exam chair
Millwork countertop / cabinet with hand-washing sink, and storage above and below
Computer & telephone

Furnishings:
Desk / computer surface
Desk chair
Stool with casters
Visitor chair

Mechanical:
Shared HVAC zone
Secure mechanical diffusers / grilles

Electrical:
Duplex electrical outlets per code
Electrical and voice / data outlets as needed for computer, telephone and other equipment
Compact fluorescent lighting, secure

Notes: New, updated equipment required

A809 OPTOMETRY OFFICE/EXAM

AREA: 150 NSF

Occupants: Up to 4 people (patient, optometrist, assistant, other)

Function:
Enclosed room for eye exams & 20' vision testing
Office space for optometrist

Adjacency:
Accessed from internal Clinics corridor
Adjacent to Sterilization & Storage

Environment:
- **Floor:** Moisture-impervious floor (stained concrete, VCT, etc.)
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' wood door, locking

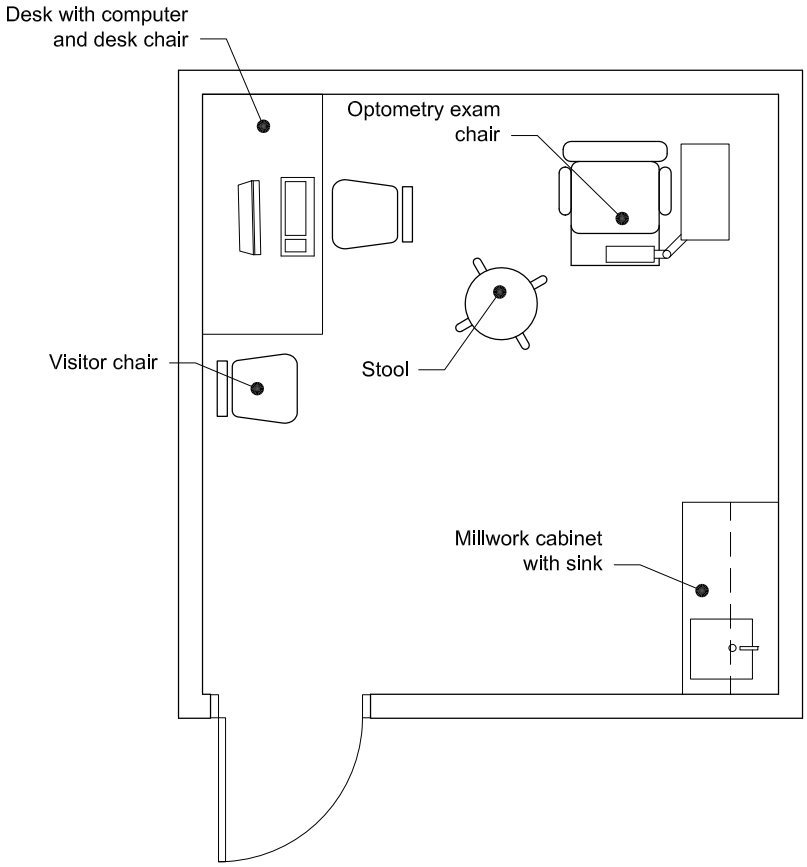
Equipment:
Eye exam equipment
Exam chair (new chair required)
Millwork countertop / cabinet with hand-washing sink, and storage above and below
Computer & telephone

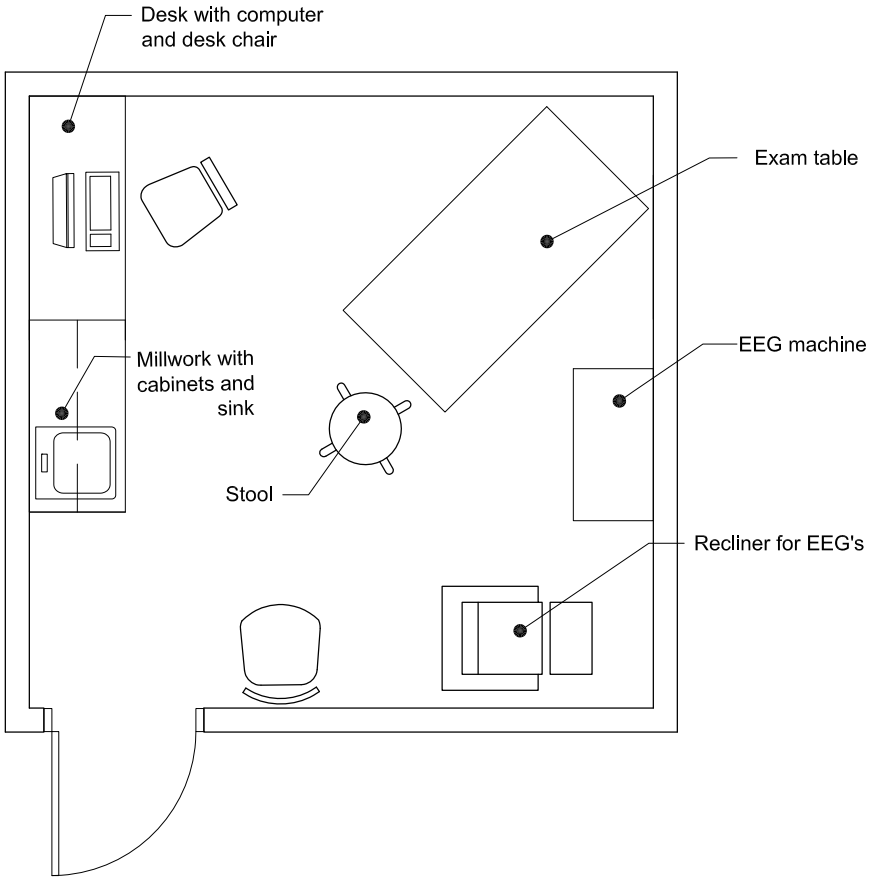
Furnishings:
Desk / computer surface
Desk chair; castered stool; visitor chair

Mechanical: Shared HVAC zone; secure mechanical diffusers/grilles

Electrical:
Duplex electrical outlets per code
Electrical and voice / data outlets as needed for computer, telephone and other equipment
Compact fluorescent lighting, secure; must be able to darken room for eye exams

Notes:
New, updated equipment required
Either room length or new computerized testing equipment must be used for 20' vision testing
Equipment wish list: Autorefractor / keratometer / topographer / wave front analyzer; non-contact tonometer; automatic visual field analyzer; computerized eye chart; digital retinal camera; OCT laser scanning





A810 NEUROLOGY OFFICE/EXAM

AREA: 165 NSF

Occupants: Up to 4 people (patient, neurologist, assistant, other)

Function: Enclosed room for neurological exams and consultations, and EEG testing
Office space for neurologist

Adjacency: Accessed from internal Clinics corridor

Environment:

Floor: Moisture-impervious flooring (stained concrete, VCT, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

Equipment: Exam table
Recliner (used for EEG testing)
Millwork countertop / cabinet with hand-washing sink, and storage above and below
EEG machine (20"W x 38"D x 5'H)
Computer & telephone

Furnishings: Desk
Desk chair
Stool with casters
Visitor chair

Mechanical: Shared HVAC zone
Secure mechanical diffusers / grilles

Electrical: Duplex electrical outlets per code
Electrical and voice / data outlets as needed for computer, telephone and other equipment
Compact fluorescent lighting, secure

Notes: Must have an adjacent 20'L hallway/space, for observing patient gait

A811 PATIENT UNISEX TOILET ROOM

AREA: 42 NSF

Occupants: 1 patient

Function: Single-user toilet room for use by patients visiting the Clinics

Adjacency: Private entry point within Clinics
Easily accessible from Waiting Room & exam rooms

Environment:

Floor: Ceramic tile
Walls: Ceramic tile / painted gypsum board
Ceiling: Painted gypsum board; 9' height
Windows: None
Door: 3' x 7' steel door, locking

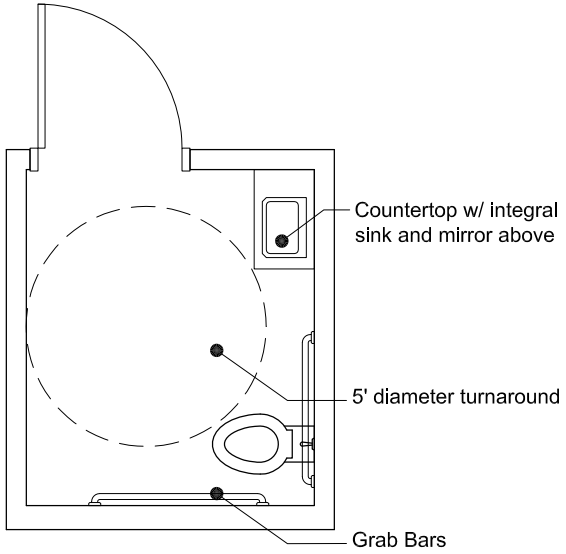
Equipment: Toilet
Solid-surface countertop with integral sink, with mirror above
Toilet room accessories: grab bars; soap, paper towel & toilet tissue dispensers, etc.

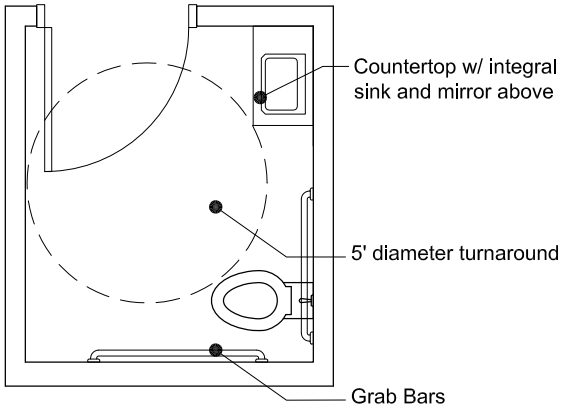
Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust
Secure mechanical diffusers / grilles

Electrical: No electrical outlets
Compact fluorescent lighting, secure

Notes: All fixtures & accessories must meet safety & security requirements for patient-access spaces – see Section 3, General Architectural Requirements





A812 STAFF TOILET ROOM

AREA: 42 NSF

Occupants: 1 staff member

Function: Single-user toilet room for use by Clinics staff

Adjacency: Private entry point within Clinics staff area

Environment:

Floor: Ceramic tile
Walls: Ceramic tile / painted gypsum board
Ceiling: Lay-in acoustic tile; 9’ height
Windows: None
Door: 3’ x 7’ steel door, locking

Equipment: Toilet
Solid-surface countertop with integral sink, with mirror above
Toilet room accessories: grab bars; soap, paper towel & toilet tissue dispensers, etc.

Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust

Electrical: Electrical outlets per code; outlet at countertop
Compact fluorescent lighting

Notes:

A900: CENTRAL SUPPLY

Hours of Operation

Monday – Friday, 8 AM – 5 PM

Security

Central Supply does not have any special security requirements.

Functions

Central Supply is responsible for ordering, storing and dispensing all medical supplies and equipment used throughout the State Hospital campus.

Central Supply is also the location for nursing staff secure after-hours access to medications.

Location / Adjacency

Clinics

Central Supply must have an internal door connecting with the Clinics area. Clinics and Central Supply are managed by one State Hospital staff person.

Pharmacy

Central Supply must be adjacent to the Pharmacy. The Pharmacy stocks the after-hour medications cabinet which will be located in Central Supply.

Staff Entry

Central Supply must be easily accessible by State Hospital staff. Staff visiting Central Supply are often going to Medical Records and the Pharmacy also, so it would be beneficial if these groups were located near each other.

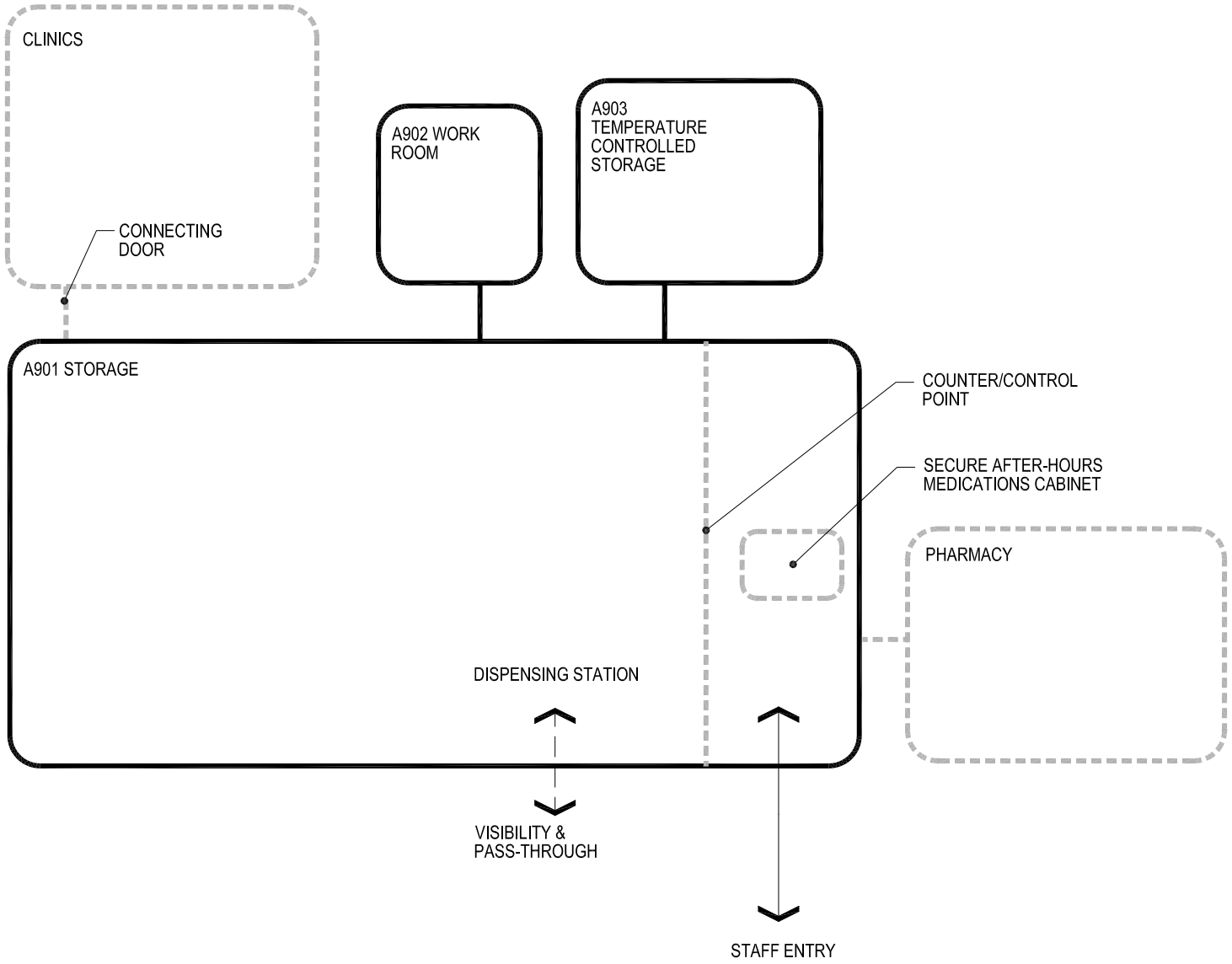
Staff Amenities

Central Supply should have convenient access to the building's Staff Break Room, Staff Toilet Rooms, Staff Shower/ Locker and staff parking area.

A900: CENTRAL SUPPLY

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A900	**CENTRAL SUPPLY**			**1,090**		**1,383**
A901	Storage	1	900	900	1.25	1,125
A902	Work Room	1	70	70	1.40	98
A903	Temperature-Controlled Storage	1	120	120	1.33	160



A900: CENTRAL SUPPLY
ADJACENCY DIAGRAM

A901 STORAGE

AREA: 900 NSF

Occupants: Clinics / Central Supply Manager (occasional)

Function:
Waiting / pick-up and dispensing station for medical supplies picked up by hospital staff
Storage of medical supplies and machines used throughout State Hospital campus

Adjacency:
Adjacent to Clinics, with direct Clinics access through internal connecting doorway (Clinics Manager manages both Clinics and Central Supply)
Adjacent to Pharmacy, for easy Pharmacy access to secure after-hours medications cabinet
Easily accessible from building staff entrance
Dispensing station with dispensing window to corridor
Work Room and Temperature-Controlled Storage accessed from Storage

Environment:

Floor: VCT
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Dispensing window to main corridor
Sidelight at entry door
Door: 3' x 7' wood door, locking

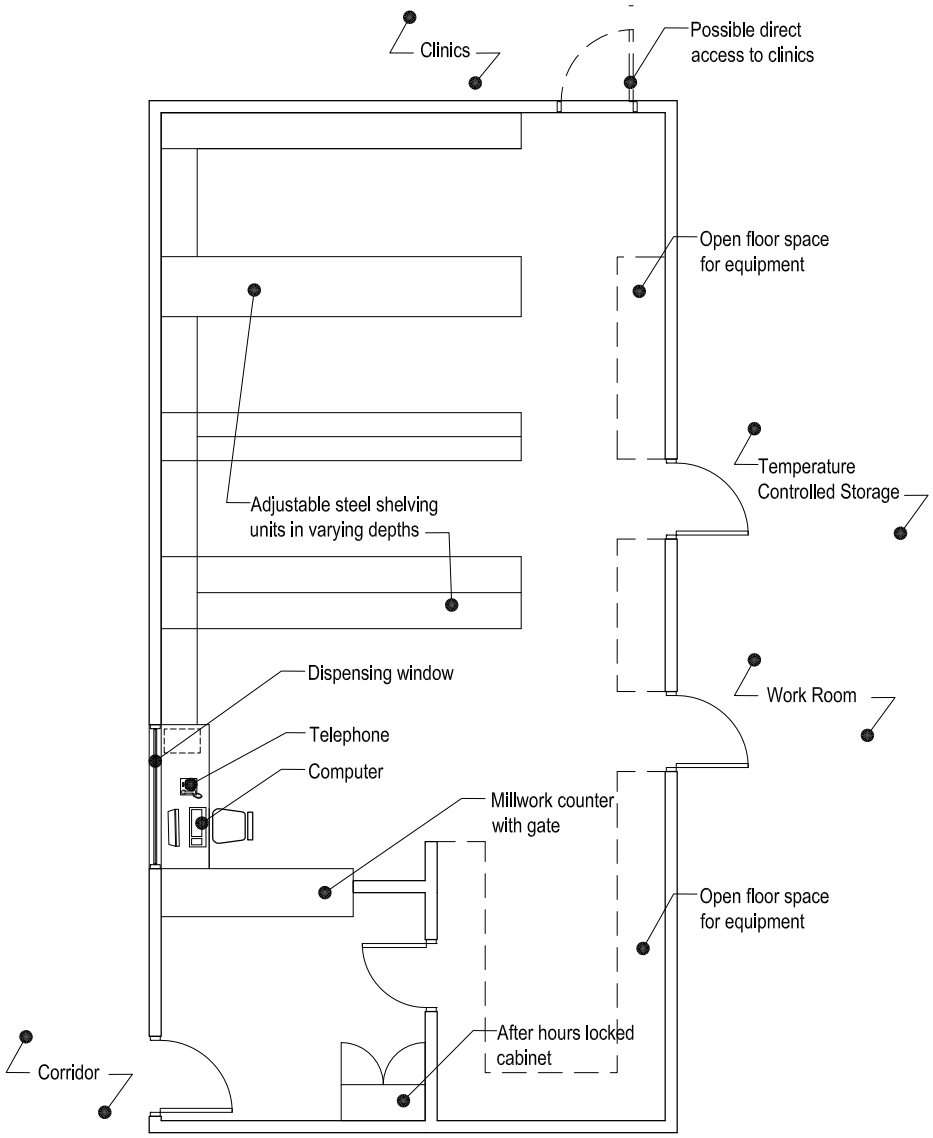
Equipment:
Millwork counter separating waiting / pick-up area from storage area behind
Computer and telephone

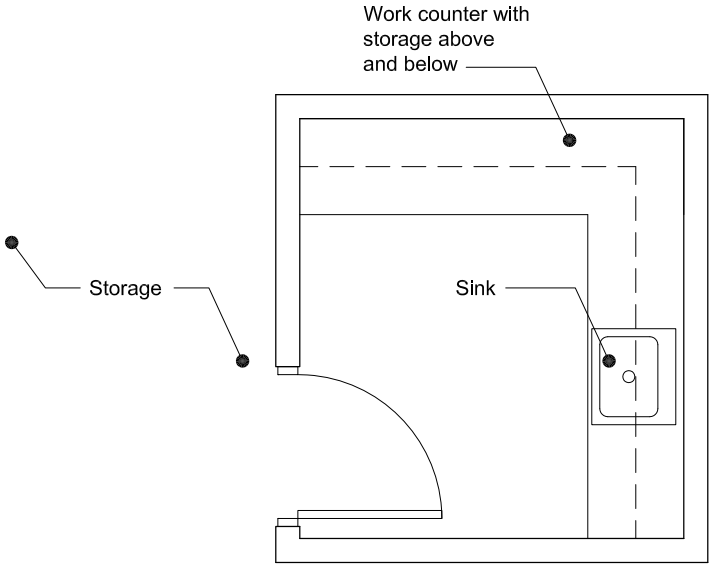
Furnishings:
Adjustable steel storage shelving units, in depths of 18", 24" and 30"
Secure after-hours medications cabinet (after-hours nursing access), 42"W x 18"D x 6'H

Mechanical: Minimal HVAC

Electrical:
Duplex electrical outlets per code
Electrical & voice/data outlets for computer & telephone
Fluorescent parabolic lighting at dispensing area
Fluorescent lighting in storage area

Notes:
Some open floor space is required for storage of carts, boxes, oxygen concentrators & electronic thermometers





A902 WORK ROOM

AREA: 70 NSF

Occupants: Central Supply Manager (occasional)

Function: Enclosed room for cleaning and minor repair of small equipment

Adjacency: Accessed from Storage
Adjacent to reception / dispensing station within Storage room

Environment:

Floor: VCT or other moisture-impervious flooring
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9’ height
Windows: None
Door: 3’ x 7’ wood door, locking

Equipment: 14’L x 2’D millwork countertops and cabinets with single-compartment sink, storage cabinets above and storage cabinets / drawers below

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Electrical outlets above countertop
Fluorescent parabolic lighting

Notes:

A903 TEMPERATURE-CONTROLLED STORAGE

AREA: 120 NSF

Occupants: None

Function: Storage of medical supplies that need to be kept within a temperature range of 65 to 68 degrees F.

Adjacency: Accessed from Storage
Adjacent to reception / dispensing station within Storage room

Environment:

- **Floor:** VCT
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' wood door, locking

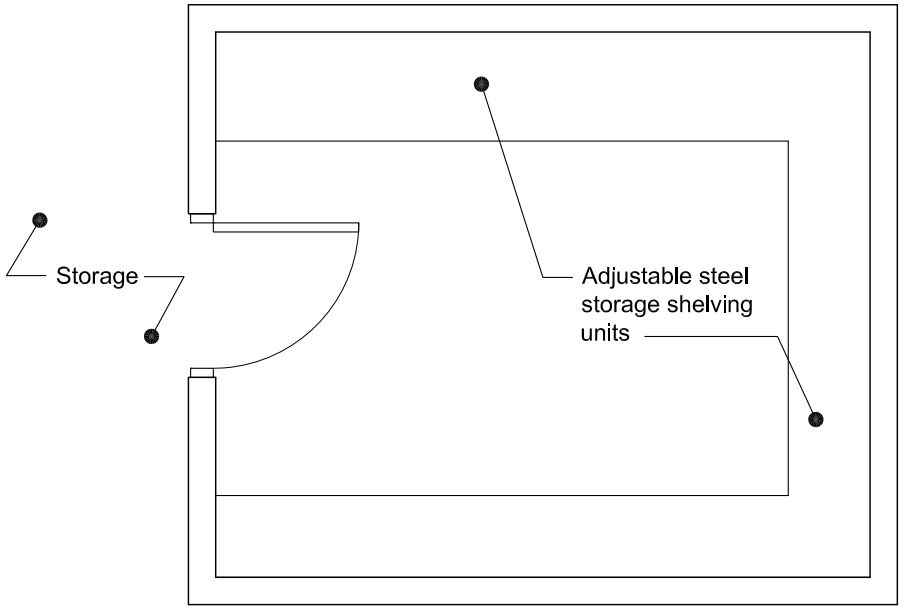
Equipment: None

Furnishings: Adjustable steel storage shelving units, in depths of 18 and 24"

Mechanical: Maintain temperature between 65 and 68 degrees F.

Electrical: Duplex electrical outlets per code
Fluorescent lighting

Notes: Many items are stored in 24"D storage tubs and 15"D open storage bins



A1000: PHARMACY

Hours of Operation
Monday – Friday, 8 AM – 6 PM

Security
Pharmacy perimeter walls must extend to the structure above, with gypsum board on both sides. The Pharmacy, including the waiting room, will have controlled access at all times.

Functions
The Pharmacy provides medications for all patients on the State Hospital campus. The Pharmacists monitor all incoming orders for medications and review all outgoing prescriptions. The Pharmacy Techs fill the orders, and receive and manage incoming bulk medications. The Pharmacy staff meet with visiting pharmaceutical representatives on a regular basis.

Configuration & Design
The Pharmacists' offices must be located together to facilitate internal consultations. Their offices should be somewhat separate from the main open area within the Pharmacy, to support concentration on the very detailed paperwork and record-keeping that is required. The Pharmacists are also required to interface frequently with the Pharmacy Techs, for consultations and for reviewing filled orders. Visual access from the Pharmacists' offices to the main, open Pharmacy Tech area is necessary to allow the Techs to signal the need for communicate and interaction.

The Pharmacy should be planned and configured for future flexibility, so it can easily meet the needs of changing technology and functionality. The Pharmacy must have a professional appearance, with particular attention paid to visitors' view in from the Waiting area pick-up window.

Location / Adjacency
Staff Entry
The Pharmacy must have easy access to the building's staff entrance, to facilitate the delivery of prescriptions several times per day by Pharmacy Technicians throughout the State Hospital campus. After-hours, nursing staff visit the Pharmacy to pick up prescriptions. When staff pick up prescriptions, they are often going to Central Supply also, so it would be beneficial if these groups were adjacent to each other.

Visitor Entry / Parking
The Pharmacy must be easily accessible from the visitor entry and parking, to facilitate visits from pharmaceutical representatives.

Low Visibility
The Pharmacy must be in a low-visibility location that is difficult for patients to access.

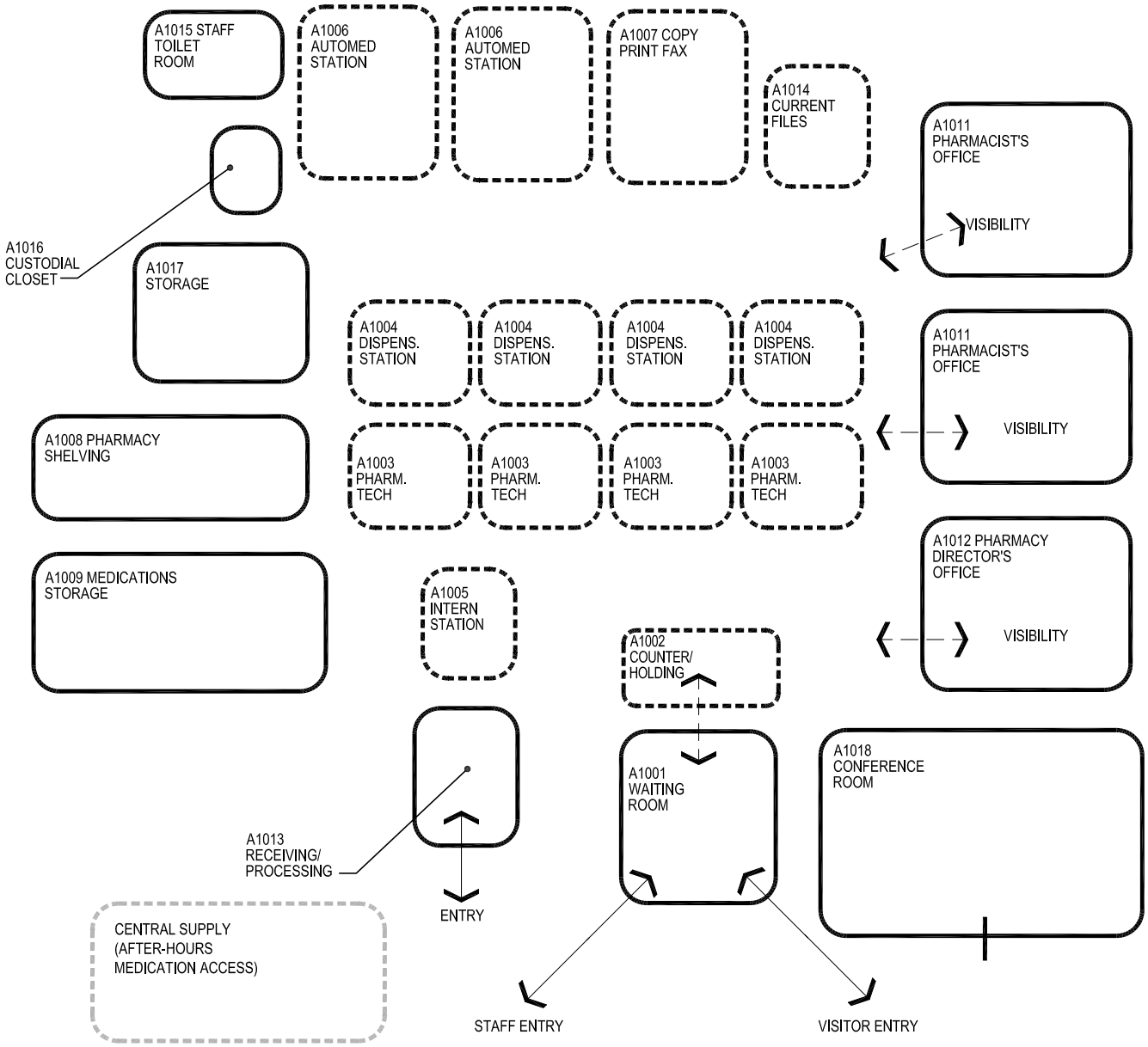
Central Supply
The Pharmacy requires frequent access to the Central Supply after-hours secure medications storage cabinet, and should be directly adjacent to Central Supply.

Staff Amenities
The Pharmacy should have convenient access to the building's Staff Break Room, Staff Shower/Locker and staff parking area.

A1000: PHARMACY

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A1000	**PHARMACY**			**1,860**		**2,544**
A1001	Waiting	1	90	90	1.40	126
A1002	Counter/Holding Area	1	36	36	1.40	50
A1003	Pharmacy Tech Station	4	36	144	1.40	202
A1004	Dispensing Station	4	42	168	1.40	235
A1005	Intern Station	1	30	30	1.40	42
A1006	AutoMed Station	2	80	160	1.40	224
A1007	Copy/Print/Fax	1	80	80	1.40	112
A1008	Pharmacy Shelving	1	120	120	1.33	160
A1009	Medications Storage	1	140	140	1.33	186
A1010	Library Shelving	1	60	60	1.40	84
A1011	Pharmacist Office	2	120	240	1.33	319
A1012	Pharmacy Director Office	1	120	120	1.33	160
A1013	Receiving/Processing	1	48	48	1.40	67
A1014	Current Files	1	42	42	1.40	59
A1015	Staff Toilet Room	1	42	42	1.40	59
A1016	Custodial Closet	1	20	20	1.40	28
A1017	Storage	1	80	80	1.40	112
A1018	Conference	1	240	240	1.33	319



A1000: PHARMACY
ADJACENCY DIAGRAM

A1001 WAITING

AREA: 90 NSF

Occupants: Up to 4 people

Function: Pharmacy entry, from main building corridor
Waiting and prescription pick-up area

Adjacency: Easily accessible from staff building entry point
Connecting space between main building corridor and Pharmacy Counter / Holding Area
Visual access required from Pharmacy Tech Stations to pick-up window & Waiting corridor entry door

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Sidelight at entry door; vision panel in door
Secure pick-up window connecting to Counter / Holding Area
Door: 3' x 7' wood entry door (from building corridor/lobby), locking (controlled access)
3' x 7' wood door between Waiting & Pharmacy interior, locking from Pharmacy interior (controlled access)

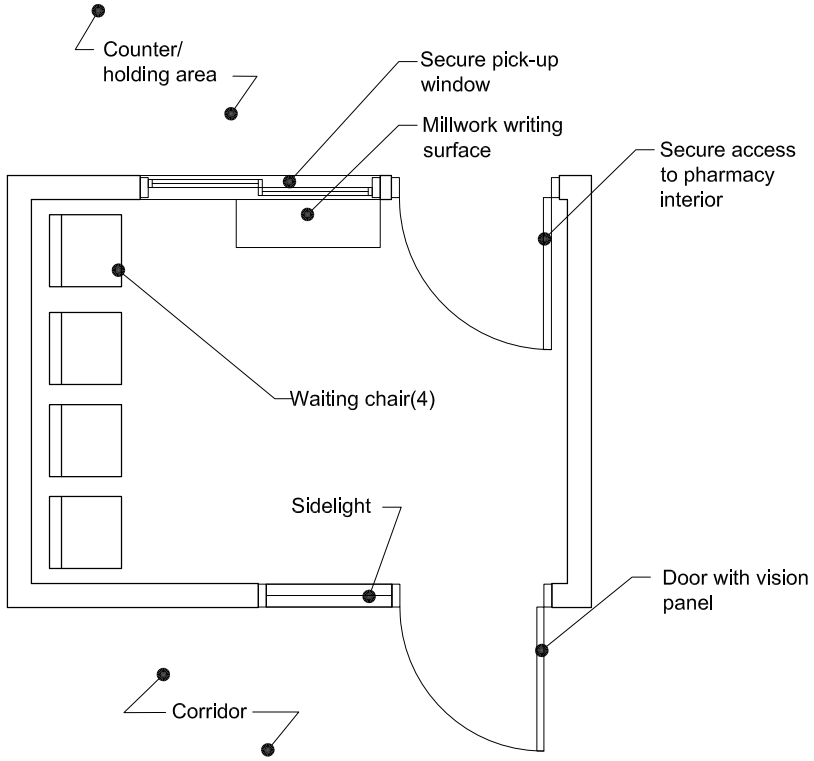
Equipment: Millwork counter / writing surface at pick-up window

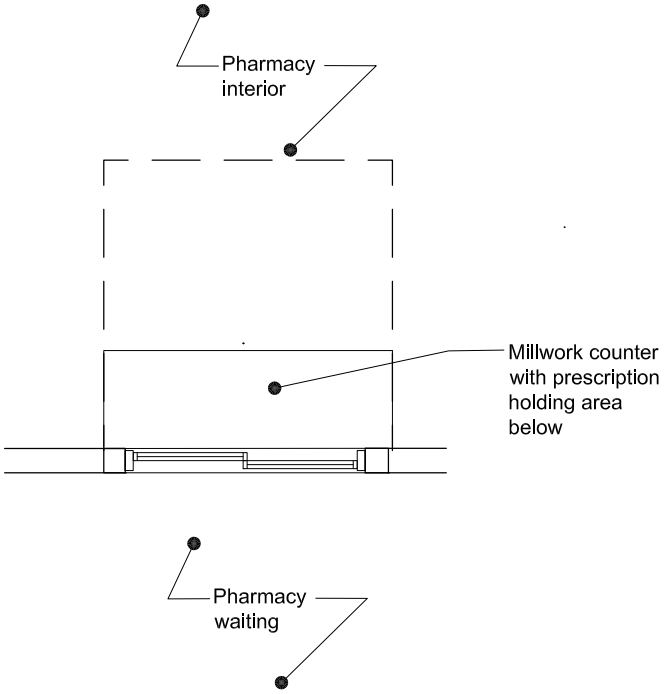
Furnishings: Waiting seating for 4 people

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes: Access in to Waiting from building corridor will be controlled from Pharmacy interior





A1002 COUNTER/HOLDING AREA

AREA: 36 NSF

Occupants: 1 person (Pharmacist or Pharmacy Tech) – temporary

Function: Holding area for prescriptions ready for pick-up
Dispensing of prescriptions through secure pick-up window

Adjacency: Directly adjacent to Waiting (separated by pick-up window)
Adjacent to Pharmacy open space; pick-up window visible from Pharmacy Tech Stations

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in Pharmacy open space
Secure pick-up window connecting to Waiting
Door: 3' x 7' wood door between Counter / Holding Area and Waiting, locking from Pharmacy interior

Equipment: Millwork counter, approximately 6'L x 2'D, with prescription holding area below

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes:

A1003 PHARMACY TECH STATION

AREA: 36 NSF

Occupants: 1 occupant (Pharmacy Tech)

Function: Open office workstation for Pharmacy Tech; paperwork, computer work, telephone calls

Adjacency: Within Pharmacy open space, with sightlines to pick-up window, Waiting and corridor beyond
Adjacent to Dispensing Station
Within sight of Pharmacist and Director offices

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in Pharmacy open space
- **Door:** None

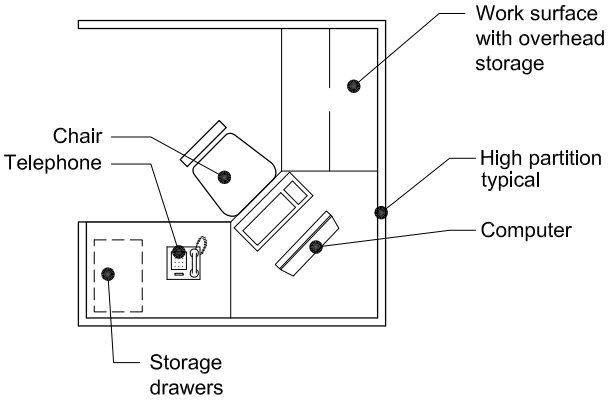
Equipment: Computer (24" monitor); telephone
1 shared-use, wall-mounted handwashing sink to be located in Pharmacy Tech Station area

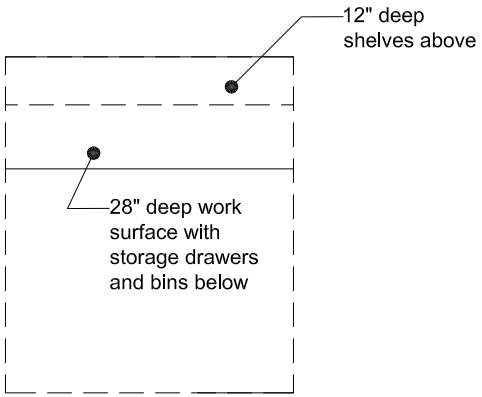
Furnishings: L-shaped open office workstation with shelving, storage bins, and drawers
Desk chair

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes: Each Pharmacy Tech will have a workstation and a dispensing station, which should be near each other
Computer monitors must be located for visual privacy





A1004 DISPENSING STATION

AREA: 42 NSF

Occupants: 1 occupant (Pharmacy Tech)

Function: Dispensing workstation for Pharmacy Tech; dispensing medications / filling prescriptions

Adjacency:
Within Pharmacy open space
Adjacent to Pharmacy Tech Station
Within sight of Pharmacist and Director offices

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in Pharmacy open space
- **Door:** None

Equipment: None

Furnishings: Pharmacy dispensing workstation: 6'W x 28"D x 29"H worksurface, with (4) 12"D open shelves above and storage drawers / bins below

Mechanical: Shared HVAC zone

Electrical:
Electrical outlets per code
Fluorescent parabolic lighting; high foot candle level required

Notes: Each Pharmacy Tech will have a workstation and a dispensing station, which should be near each other

A1005 INTERN STATION

AREA: 30 NSF

Occupants: 1 occupant (Pharmacy intern / student)

Function: Open office workstation shared by Pharmacy interns and students; paperwork, computer work, telephone calls

Adjacency: Within Pharmacy open space

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in Pharmacy open space
- **Door:** None

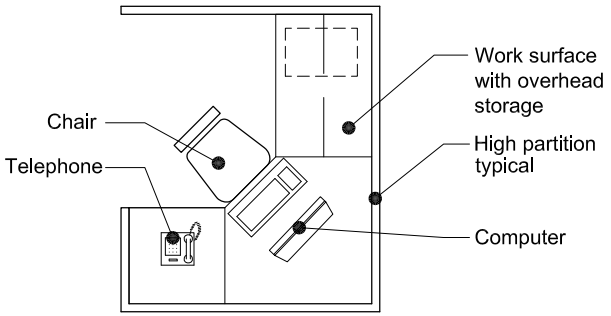
Equipment: Computer; telephone

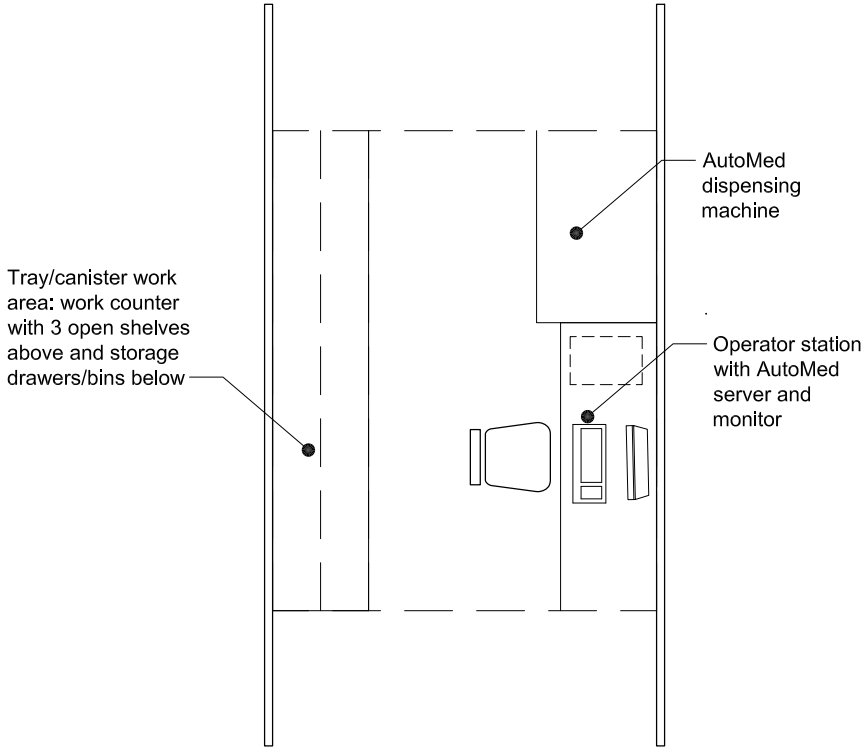
Furnishings: L-shaped open office workstation with shelving, storage bins, and drawers
Desk chair

Mechanical: Shared HVAC zone

Electrical: Electrical and voice / data outlets for computer, telephone, workstation task lighting, and other miscellaneous equipment
Fluorescent parabolic lighting

Notes:





A1006 AUTOMED STATION

AREA: 80 NSF

Occupants: 1 occupant (Pharmacy Tech or Pharmacist)

Function: Automated medication dispensing equipment and operator work area

Adjacency:
Within or adjacent to Pharmacy open space
Adjacent to Pharmacy Tech Stations
Within sight of Pharmacist and Director offices

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in Pharmacy open space
Door: None

Equipment:
AutoMed machine (41"W x 31"D x 80"H)
AutoMed server (20"L x 8"W x 17"H) with monitor
Operator computer

Furnishings:
Operator station: 4'-6' wide x 24"D x 39"H worksurface, with (3) 12"D open shelves above and storage drawers / bins below
Tray / canister work area: 8'-10'L x 24"D x 39"H worksurface with (3) 12"D open shelves above and storage drawers / bins below

Mechanical: Shared HVAC zone

Electrical:
Electrical outlets per code
Electrical and voice / data outlets for computers
Electrical and voice / data outlets for AutoMed equipment
Fluorescent parabolic lighting; high foot candle level required

Notes: AutoMed equipment is noise-generating and should be located to minimize noise impact on Pharmacy staff

A1007 COPY/PRINT/FAX

AREA: 80 NSF

Occupants: None

Function:
Open office space for shared office equipment
Workspace for collating & assembling
Office supply storage

Adjacency:
Within Pharmacy open space
Central location within office space, easily accessible by all staff

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in Pharmacy open space
Door: None

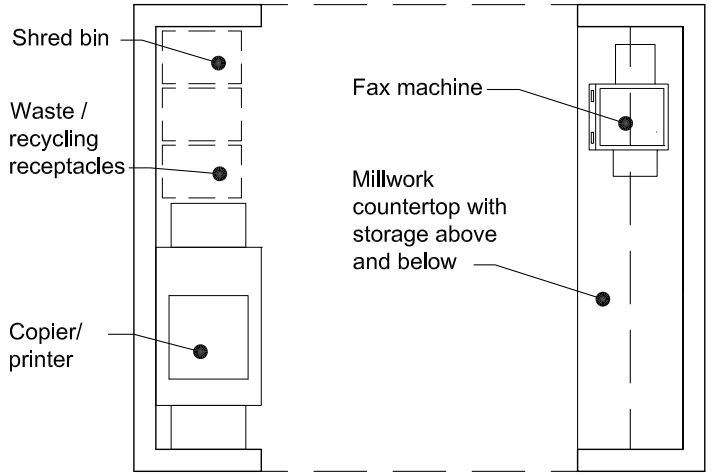
Equipment:
Copier / printer; fax machine
Millwork countertops with office supply storage cabinets and/or drawers above and below

Furnishings: Waste and recycling receptacles; shred bin

Mechanical:
Shared HVAC zone
Exhaust

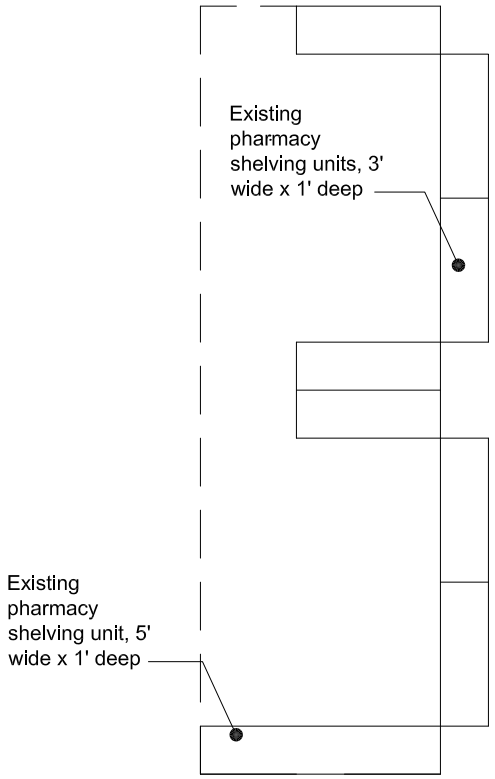
Electrical:
Electrical wall outlets per code
Electrical and voice / data outlets for copier / printer, and fax machine
Electrical outlets above countertop
Fluorescent parabolic lighting

Notes:



A1008 PHARMACY SHELVING

AREA: 120 NSF



Occupants: None

Function: Storage of immediate-access medications

Adjacency: Within or adjacent to Pharmacy open space
Adjacent to Dispensing Stations
Adjacent to Receiving / Processing

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Exterior windows with window coverings desired in Pharmacy open space
- **Door:** None

Equipment: None

Furnishings: Existing pharmacy shelving units: (7) 3'W x 1'D and (1) 5'W x 1'D

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Fluorescent parabolic lighting

Notes:

A1009 MEDICATIONS STORAGE

AREA: 140 NSF

Occupants: None

Function: Enclosed room for storage of bulk, expired, refrigerated medications and controlled substances

Adjacency:
Adjacent to Pharmacy open space
Adjacent to Pharmacy Shelving
Easily accessible to Receiving / Processing

Environment:

Floor: VCT
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

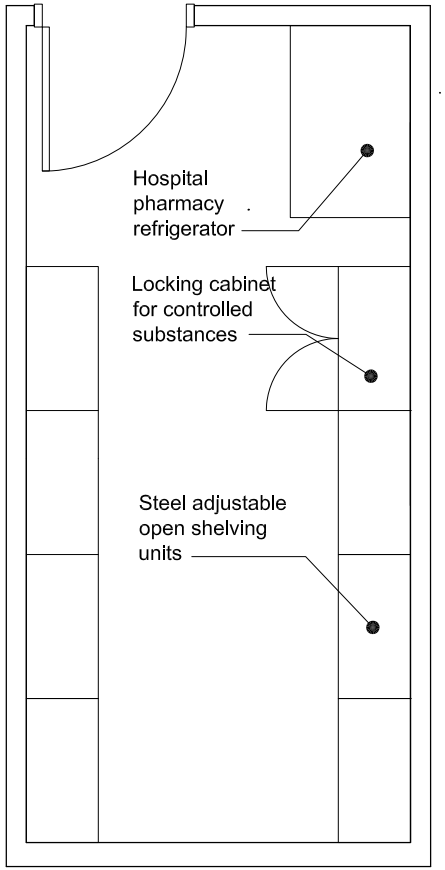
Equipment: Hospital pharmacy refrigerator / freezer, glass-fronted, approximately 4'W x 30"D

Furnishings:
Steel adjustable open shelving units, 18"D
Locking cabinet for controlled substances storage, 3'W x 2'D x 7'H

Mechanical: Minimal HVAC

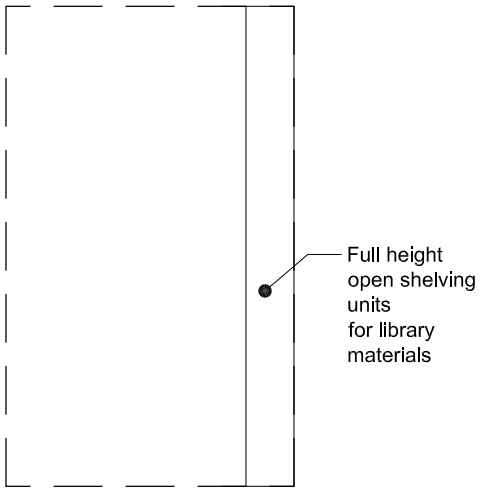
Electrical:
Electrical outlets per code
Fluorescent lighting

Notes:



A1010 LIBRARY SHELVING

AREA: 60 NSF



Occupants: None

Function: Storage / display of Pharmacy reference and professional resource materials

Adjacency: Within Pharmacy open space, adjacent to Pharmacist and Director's offices

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in Pharmacy open space
Door: None

Equipment: Millwork open shelving units, 10'L x 12"D x 7'H

Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Fluorescent parabolic lighting

Notes:

A1011 PHARMACIST OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Pharmacist; paperwork, computer work, research, telephone consultations

Adjacency: Pharmacist and Pharmacy Director offices together
Adjacent to Pharmacy open space
With sightlines to Pharmacy Tech Stations

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior window into Pharmacy open space
Door: 3' x 7' wood door, locking

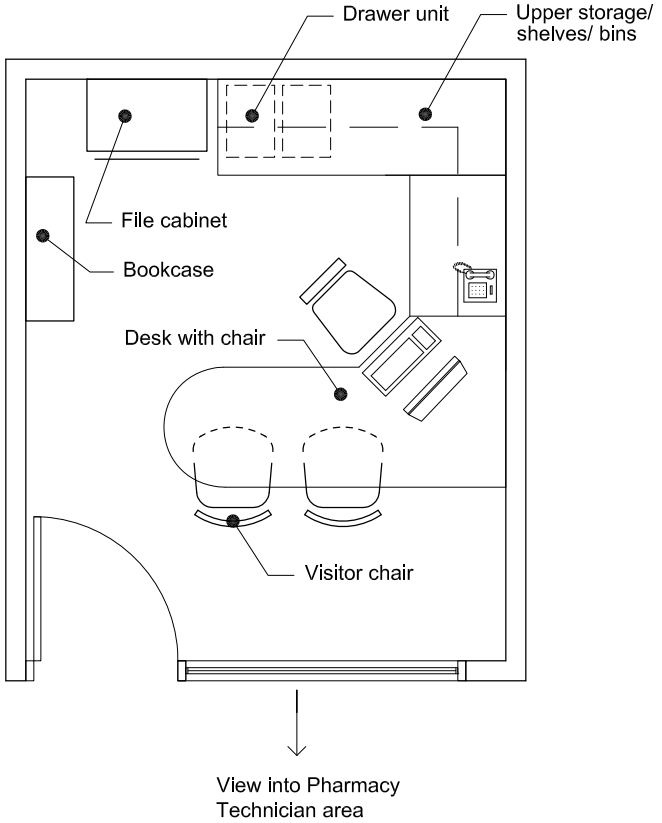
Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

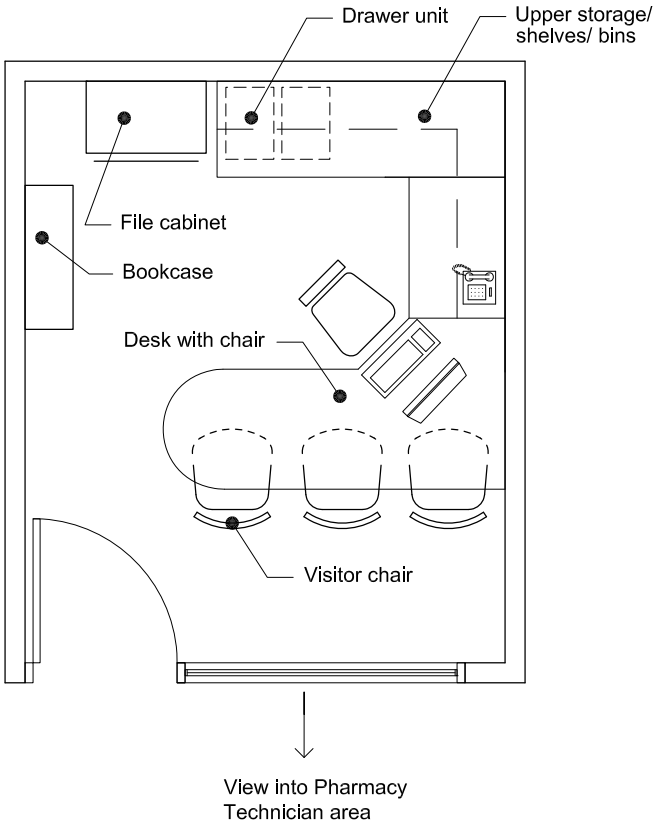
Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:



A1012 PHARMACY DIRECTOR OFFICE

AREA: 120 NSF



Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Pharmacy Director; paperwork, computer work, research, telephone consultations; staffing issues

Adjacency:
Pharmacist and Pharmacy Director offices together
Adjacent to Waiting and Pharmacy entry point
Adjacent to Pharmacy open space, with sightlines to Pharmacy Tech Stations
Easy access to Conference Room

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Interior window into Pharmacy open space
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings:
Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
3 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A1013 RECEIVING/PROCESSING

AREA: 48 NSF

Occupants: None

Function: Receiving, holding and processing area for incoming medications, which are received on a daily basis

Adjacency: Located at secure corridor entry point (secondary entry to Pharmacy)
Adjacent to Pharmacy Shelving
Easily accessible to Medications Storage

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: None
Door: 3' x 7' wood door, locking

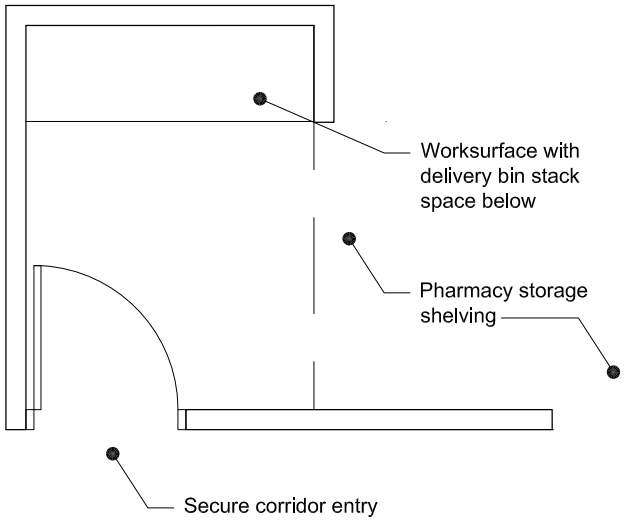
Equipment: Millwork countertop with delivery bin stack space below, minimum 6'W x 2'D

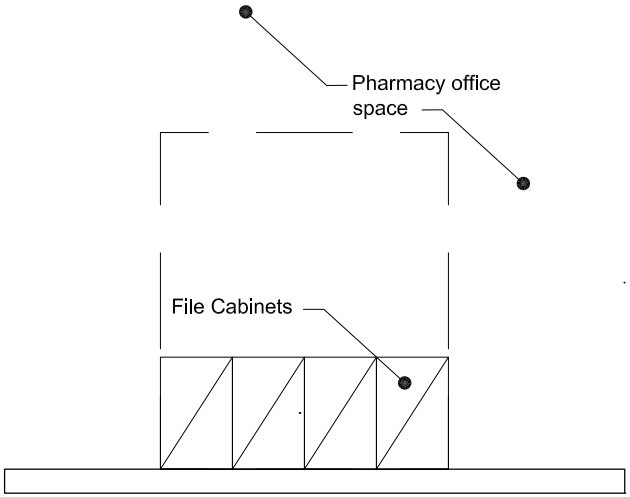
Furnishings: None

Mechanical: Shared HVAC zone

Electrical: Electrical outlets per code
Fluorescent parabolic lighting; high foot candle level required

Notes: 4-5 totes are received at one time





A1014 CURRENT FILES

AREA: 42 NSF

Occupants: None

Function: Open office space for shared files

Adjacency: Within Pharmacy open space
Central location within office space, easily accessible by all staff

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings desired in Pharmacy open space
Door: None

Equipment: None

Furnishings: 4 letter-size vertical file cabinets

Mechanical: Shared HVAC zone

Electrical: Electrical wall outlets per code
Fluorescent parabolic lighting

Notes:

A1015 STAFF TOILET ROOM

AREA: 42 NSF

Occupants: 1 Pharmacy staff member

Function: Single-user, unisex toilet room for use by Pharmacy staff, who at times are not able to leave the Pharmacy

Adjacency: Private entry point within Pharmacy
Easily accessible from Pharmacy open space

Environment:

Floor: Ceramic tile
Walls: Ceramic tile / painted gypsum board
Ceiling: Lay-in acoustic tile; 9’ height
Windows: None
Door: 3’ x 7’ wood door, locking

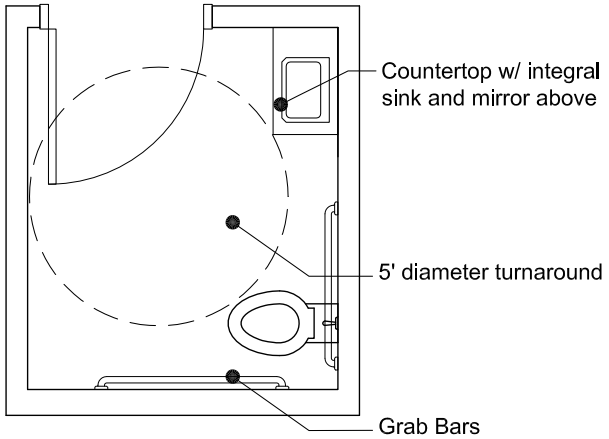
Equipment: Toilet
Solid-surface countertop with integral sink, with mirror above
Toilet room accessories: grab bars; soap, paper towel & toilet tissue dispensers, etc.

Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust

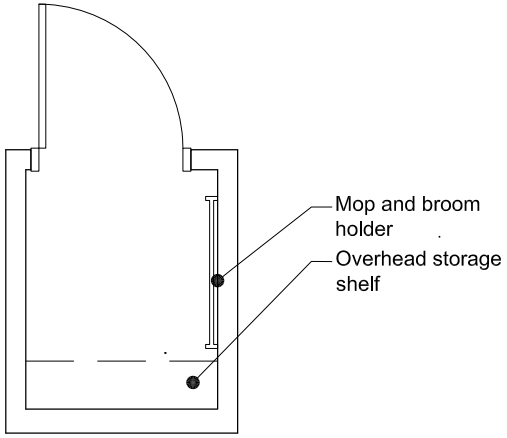
Electrical: Duplex electrical outlets per code
Electrical outlets at lavatory

Notes:



A1016 CUSTODIAL CLOSET

AREA: 20 NSF



Occupants: None

Function: Storage room for cleaning supplies and equipment (vacuum), for use by Pharmacy staff; hospital custodial staff are not allowed in the Pharmacy

Adjacency: Located in low-visibility area of Pharmacy

Environment:

Floor:	Sealed concrete
Walls:	Painted gypsum board
Ceiling:	Lay-in acoustic tile; 9’ height
Windows:	None
Door:	3’ x 7’ wood door, locking

Equipment: Mop and broom rack
Built-in overhead storage shelf

Furnishings: None

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code
Electrical outlets per code

Notes:

A1017 STORAGE

AREA: 80 NSF

Occupants: None

Function: Enclosed room for storage of bulk AutoMed supplies

Adjacency: Adjacent to AutoMed Stations

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9’ height
Windows: None
Door: 3’ x 7’ wood door, locking

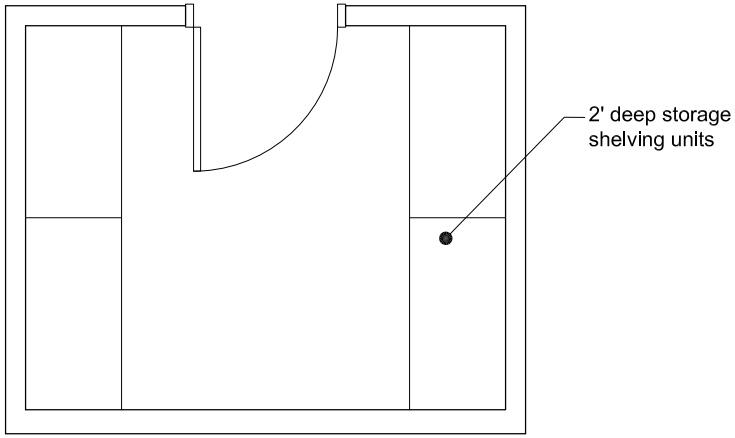
Equipment: None

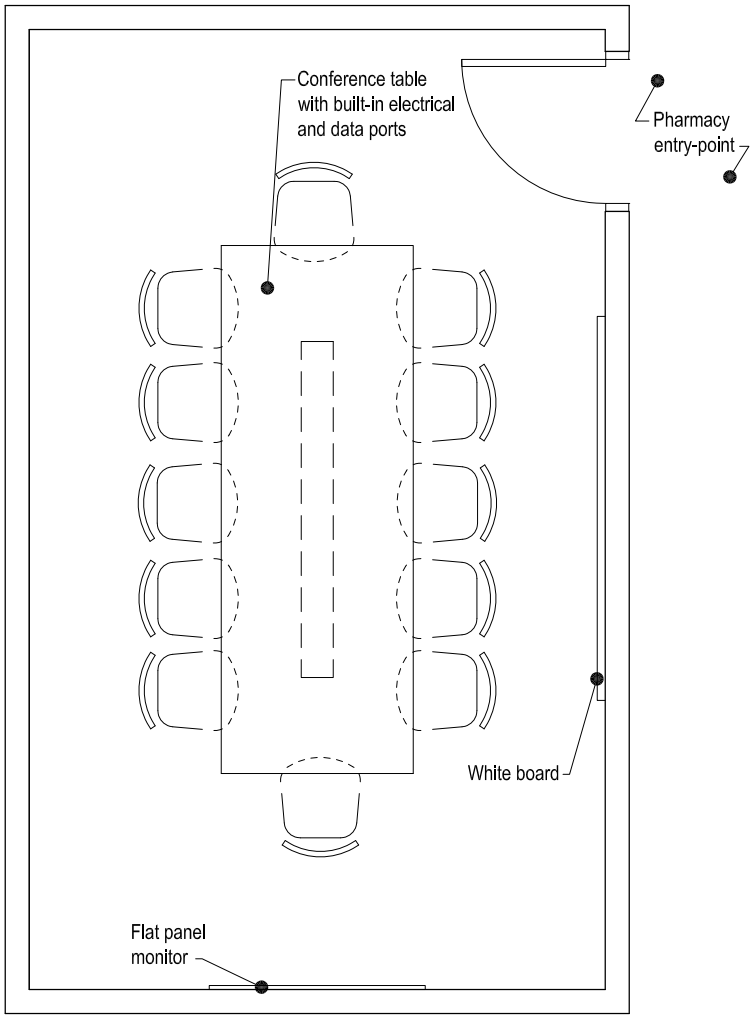
Furnishings: Steel adjustable open shelving units, 24”D

Mechanical: Minimal HVAC

Electrical: Electrical outlets per code
Fluorescent lighting

Notes:





A1018 CONFERENCE

AREA: 240 NSF

Occupants: Up to 12 people

Function:
Pharmacy consultations
Pharmacy rep meetings
Shared use by other building occupants

Adjacency: Directly adjacent to Pharmacy entry point, easily accessed by Pharmacy staff

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Sidelight at entry door, with blinds
- **Door:** 3' x 7' wood door, locking

Equipment:
Flat-panel monitor, wall-mounted
Equipment as needed for videoconferencing and telemedicine capability

Furnishings:
Table, 10'L x 4'W, with 12 chairs, with integral electrical & data ports
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets in floor, as source for table electrical and data outlets; coordinate with table pedestal locations
Electrical and data infrastructure needed for videoconferencing and telemedicine capability
Multiple preset light configurations to support AV use

Notes:

A1100: STAFF EDUCATION

Hours of Operation

Monday – Friday, 8 AM – 5 PM

Security

Staff Education does not have any special security requirements.

Functions

Staff Education:

- Provides orientation and training for new State Hospital staff.
- Provides continuing education for State Hospital staff, particularly nursing staff.
- Develops, prepares and stores materials used in educational sessions.

Configuration & Design

The two Classrooms, Computer Training Room and Small Conference Room will all be used during educational sessions and should be located near each other.

The Small Conference Room will be used by other building occupants and should be located for easy access by all.

The staff offices should be adjacent to the Work Room / Storage.

Location / Adjacency

Staff Entry / Parking

Staff Education must be easily accessible from the building's staff entry and parking. There should be a small prefunction space near the education and training spaces.

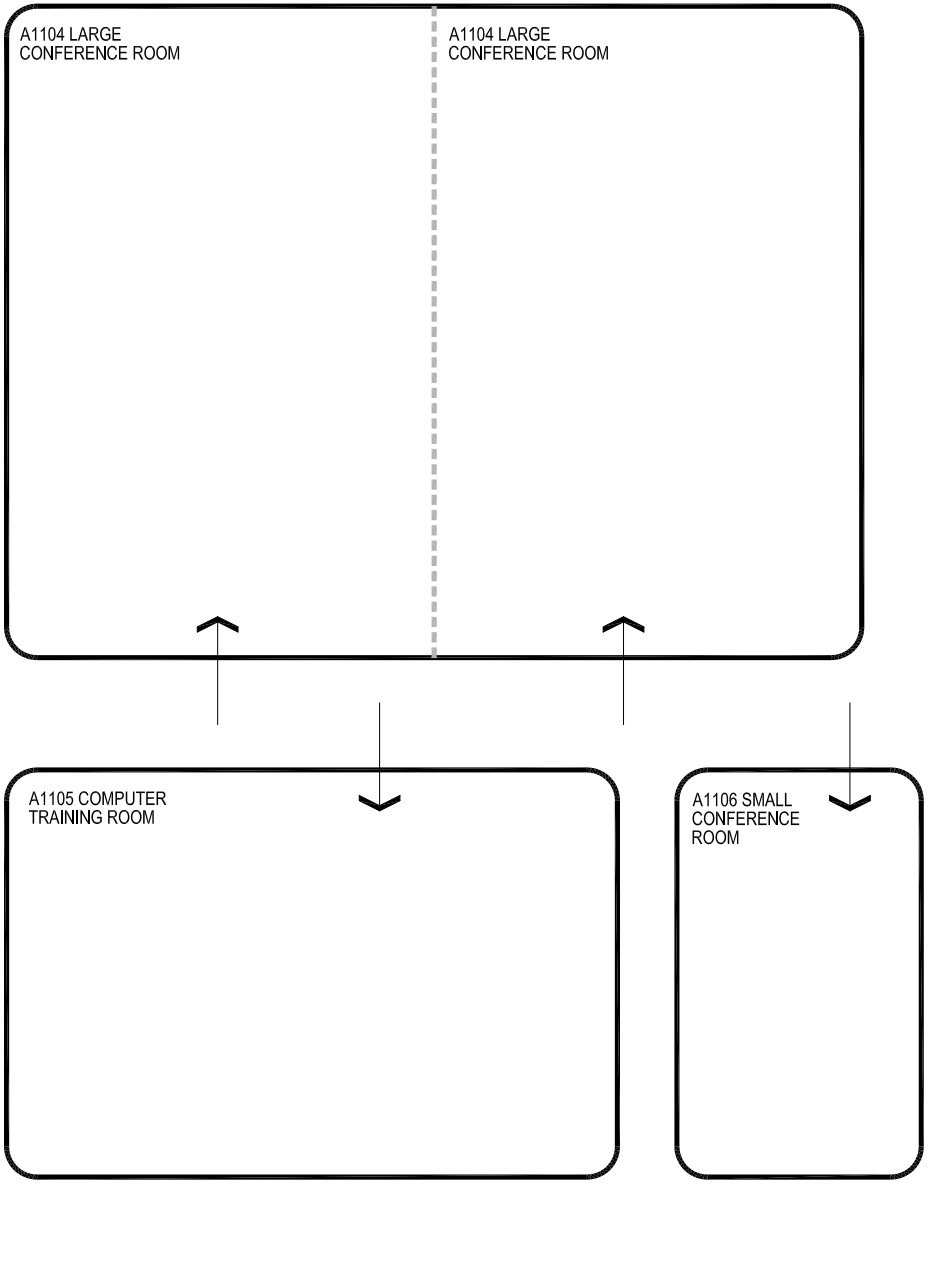
Staff Amenities

Staff Education should have adjacent access to staff toilet rooms with a minimum of three toilets / urinals each. It should also have convenient access to the staff break room.

A1100: STAFF EDUCATION

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A1100	**STAFF EDUCATION**			**2,950**		**3,768**
A1101	Nurse Educator	2	120	240	1.33	319
A1102	APRN Office	1	120	120	1.33	160
A1103	Work Room/Storage	1	400	400	1.33	532
A1104	Classroom	2	675	1,350	1.25	1,688
A1105	Computer Training Room	1	600	600	1.25	750
A1106	Small Conference Room	1	240	240	1.33	319



A1100: STAFF EDUCATION
ADJACENCY DIAGRAM

A1101 NURSE EDUCATOR

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for Nurse Educator; paperwork, computer work, research, educational session planning

Adjacency:
2 Nurse Educator offices together
Adjacent to Work Room / Storage
Easy access to education / training spaces

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

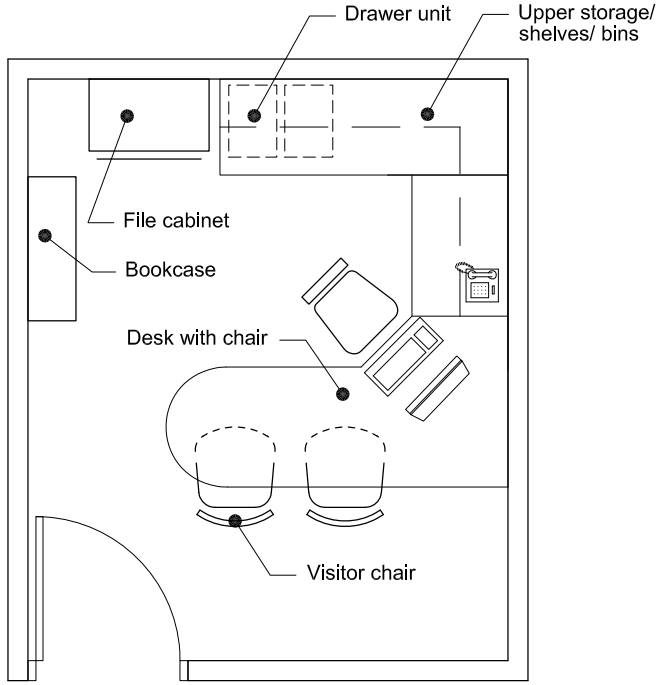
Equipment: Computer; telephone

Furnishings:
Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

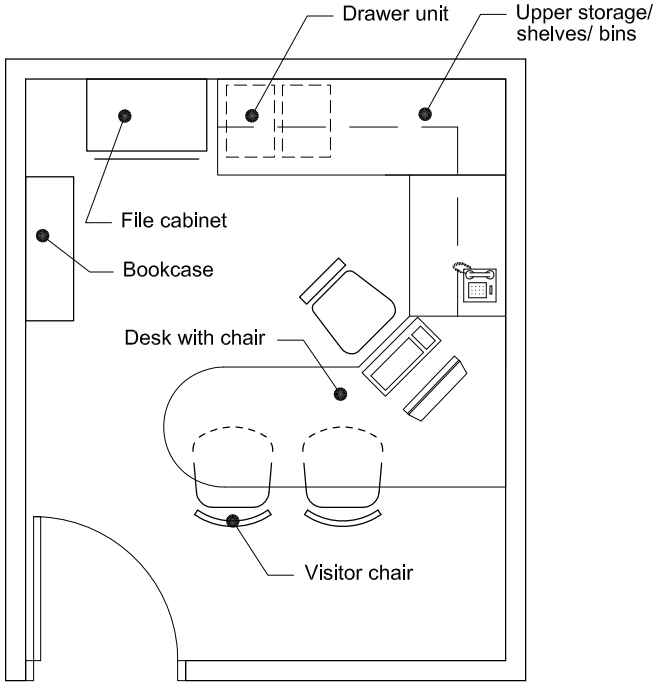
Electrical:
Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:



A1102 APRN OFFICE

AREA: 120 NSF



Occupants: 1 occupant, with up to 2 visitors

Function: Private office for APRN; paperwork, computer work, research

Adjacency:
Adjacent to Nurse Educator offices
Adjacent to Work Room / Storage
Easy access to education / training spaces

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings:
Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs
File cabinet / bookcase

Mechanical: Shared HVAC zone

Electrical:
Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A1103 WORK ROOM/STORAGE

AREA: 400 NSF

Occupants: None

Function:
Printing, copying, compiling, collating & assembling materials, especially materials used for staff education and training
Storage of printed materials, AV materials (DVD's, etc.) and equipment used in training (mannequins, IV pump & poles, feeding pumps & poles, CPR equipment, O2 tanks, crash carts, etc.)
Shared, temporary-use workspace for Staff Education staff
Records storage

Adjacency:
Near staff education and training rooms
Near Nurse Educator offices

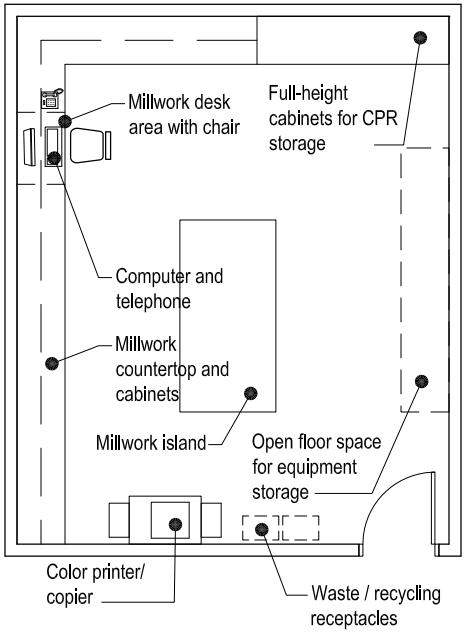
Environment:
- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** None
- **Door:** 3' x 7' wood door, locking

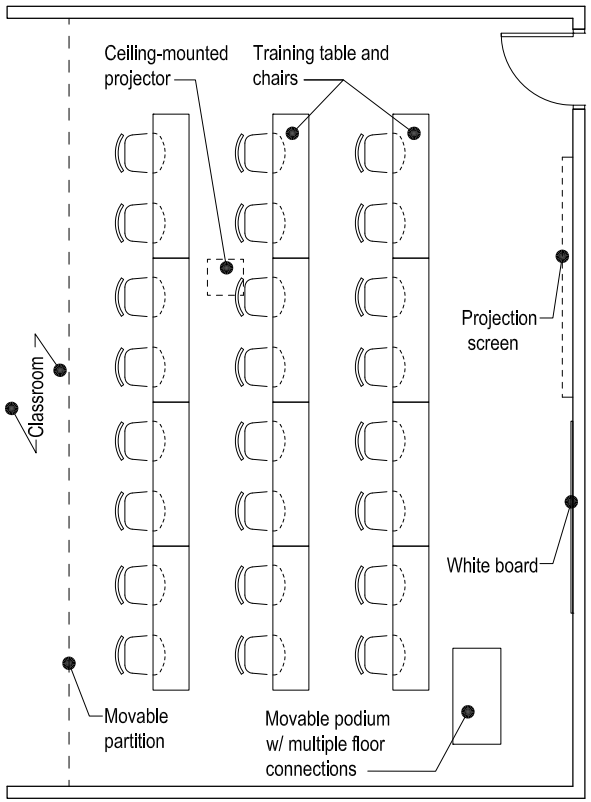
Equipment:
Color copier / printer
Computer; telephone
Millwork countertops & work island with storage cubbies, cabinets and/or drawers above and below; desk area in countertop
8'W full-height storage cabinets for CPR equipment

Furnishings:
Waste and recycling receptacles
Chair / stool at desk area

Mechanical:
Dedicated HVAC zone
Exhaust

Electrical:
Electrical wall outlets per code
Electrical and voice / data outlets for copier / printer, computer and telephone
Electrical outlets above countertop
Fluorescent parabolic lighting





A1104 CLASSROOM

AREA: 625 NSF

Occupants: Up to 25 people (24 students, 1 instructor)

Function: Staff orientation, training & ongoing education

Adjacency:
Separated from second Classroom by a movable partition
Near Computer Training and Small Conference Rooms
Easily accessed from a staff entrance and parking area
Near staff toilet and break rooms
Near Work Room / Storage

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10’ height
Windows: None
Door: 3’ x 7’ wood door, locking
Movable panel partition separating 2 Classrooms; STC 50; manual operation; with recessed pocket for stacked door

Equipment:
Ceiling-mounted projection screen, electric operation
Ceiling-mounted LCD projector
Instructor podium with AV controls; movable with multiple electrical / data connection points within room
Wireless microphone sound system

Furnishings:
12 tables, 6’L x 18”D, with 24 student chairs
White board, 8’L x 4’H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets for projector, screen, podium
Multiple preset lighting configurations to support the use of AV

Notes: Possible reuse of existing training tables

A1105 COMPUTER TRAINING ROOM

AREA: 600 NSF

Occupants: Up to 19 people (18 students, 1 instructor)

Function: Staff orientation, training & ongoing education

Adjacency:
Near Classrooms and Small Conference Room
Easily accessed from a staff entrance and parking area
Near staff toilet and break rooms
Near Work Room / Storage

Environment:

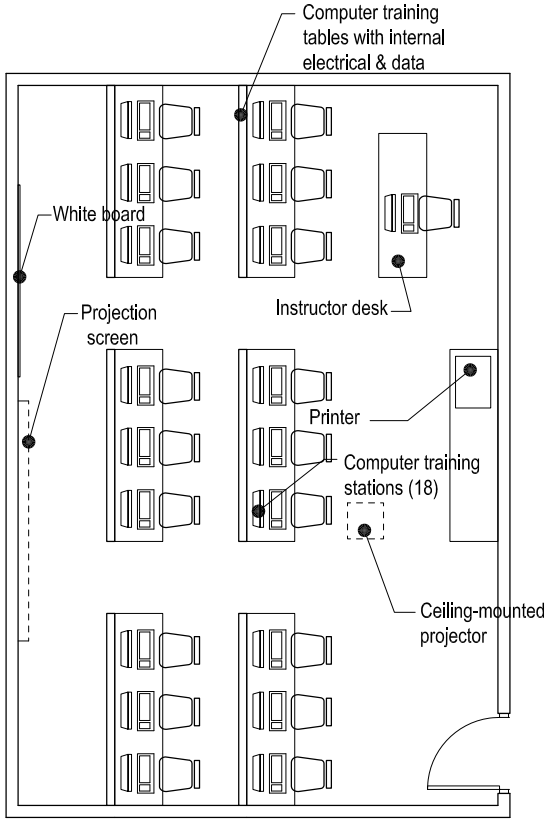
Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: None
Door: 3' x 7' wood door, locking

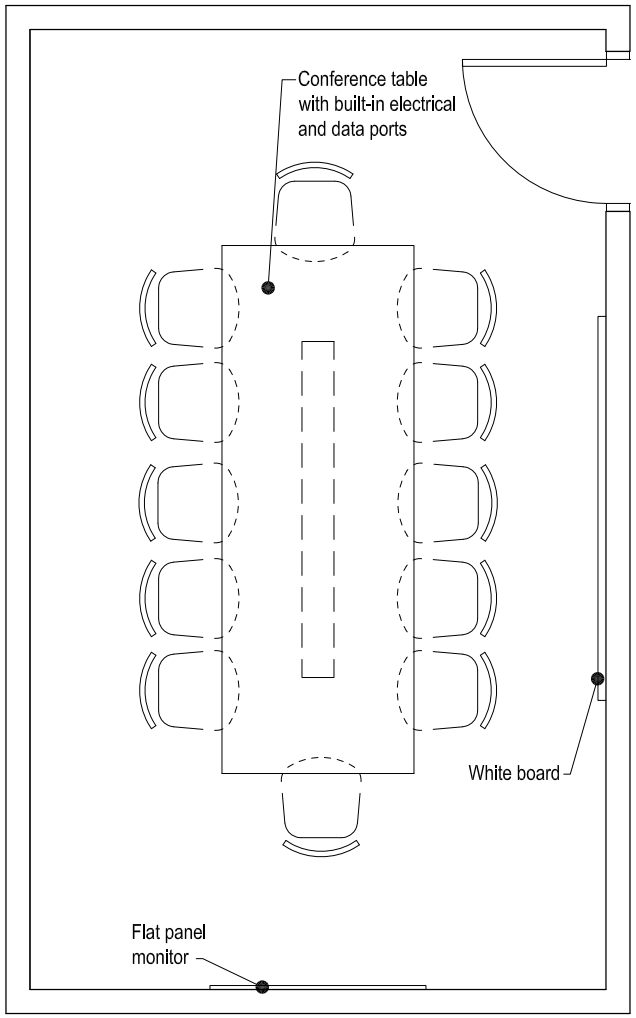
Equipment:
Ceiling-mounted projection screen, electric operation
Ceiling-mounted LCD projector
AV controls and telephone at instructor desk
Wireless microphone sound system
19 computers
Printer

Furnishings:
6 tables, 8'L x 2'D, with integral electrical & data outlets
18 student chairs
Instructor desk with chair
Worksurface or table for printer
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets for projector, screen, AV controls, telephone, computers, printer
Electrical and data outlets in floor or wall, as source for table electrical and data outlets; coordinate with table pedestal locations
Multiple preset lighting configurations to support the use





A1106 SMALL CONFERENCE ROOM

AREA: 240 NSF

Occupants: Up to 12 people

Function:
Staff orientation, training & ongoing education
Shared meeting use

Adjacency:
Near Classroom and Computer Training Room
Easily accessed from a staff entrance and parking area
Near staff toilet and break rooms
Near Work Room / Storage
Locate for easy shared use as meeting space

Environment:

- **Floor:** Carpet
- **Walls:** Painted gypsum board
- **Ceiling:** Lay-in acoustic tile; 9' height
- **Windows:** Sidelight at entry door, with blinds
- **Door:** 3' x 7' wood door, locking

Equipment:
Flat-panel monitor, wall-mounted
Equipment as needed for videoconferencing and telemedicine capability

Furnishings:
Table, 10'L x 4'W, with 12 chairs, with integral electrical & data ports
White board, 8'L x 4'H

Mechanical: Dedicated HVAC zone

Electrical:
Electrical outlets per code
Electrical and data outlets in floor, as source for table electrical and data outlets; coordinate with table pedestal locations
Electrical and data infrastructure needed for videoconferencing and telemedicine capability
Multiple preset light configurations to support AV use

A1200: COMMON AREAS

SPACE LIST

		Space Qty.	NSF/ Space	Total NSF	Wall/ Circ. Factor	DGSF
A1200	**COMMON AREAS**			**3,180**		**3,901**
A1201	Building Entry/Lobby	1	1,600	1,600	1.15	1,840
A1202	Doctor's Bed/Sitting Room	1	200	200	1.33	266
A1203	Doctor's Bathroom	1	100	100	1.33	133
A1204	Office	4	120	480	1.33	638
A1205	Staff Break Room	1	500	500	1.25	625
A1206	Staff Shower/Locker	1	100	100	1.33	133
A1207	Custodial Storage	1	200	200	1.33	266
A1208	Custodial Closet	2	60			

A1201 BUILDING LOBBY/ENTRY

AREA: 1,600 NSF

Occupants: Up to 40 people (total capacity for all lobbies)

Function: Square footage for building entry lobby space, to be divided among three exterior entries:
- Patient: Controlled-access entry, waiting, hang-out / lounge space
- Visitor: Entry, waiting, donation drop-off
- Staff: Entry, waiting, prefunction for Staff Education

Adjacency:
Patient Lobby: Volunteer Services Clothing Center, Sunrise, Clinics, patient toilet rooms
Visitor Lobby: ADT, Volunteer Services Quilting Room, Medical Records, public toilet rooms
Staff Lobby: Medical Records, Central Supply, Pharmacy, Staff Education, staff toilet rooms

Environment:

Floor: Hard surface flooring (i.e. stained concrete, ceramic tile)
Walls: CMU (patient); painted gypsum board (visitor, staff)
Ceiling: Lay-in acoustic tile & painted gypsum board (visitor & staff); painted gypsum board (patient); 10' height
Windows: Exterior windows with window coverings desired
Door: Glass storefront entry doors, locking

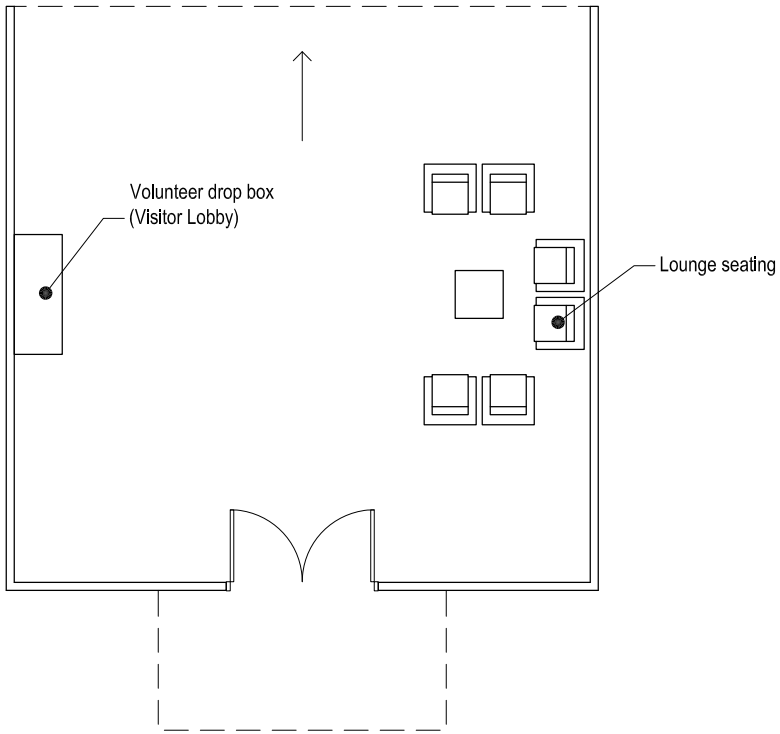
Equipment: Security cameras
Donation drop box (in Visitor Lobby; moved into Volunteer Services Sort/Laundry each evening)

Furnishings: Lounge seating, occasional tables

Mechanical: Shared HVAC zone

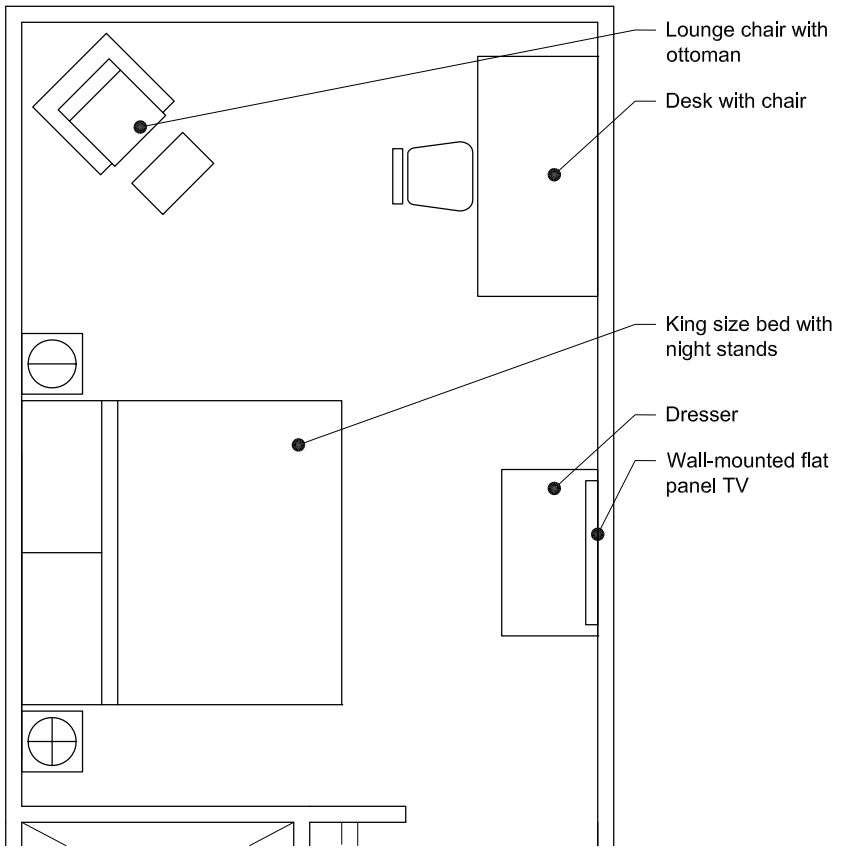
Electrical: Duplex electrical outlets per code
Fluorescent parabolic lighting

Notes: Each exterior entry will have glass-enclosed vestibule as a transition from exterior to interior space; patient lobby vestibule will have a sally-port / controlled-access function



A1202 DOCTOR'S BED/SITTING ROOM

AREA: 204 NSF



Occupants: 1 occupant, with up to 2 visitors

Function: Private office for flexible use by State Hospital visitors and temporary staff

Adjacency: Easily accessed from building visitor or staff entry
4 offices located together

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A1203 DOCTOR'S BATHROOM

AREA: 108 NSF

Occupants: 1 occupant

Function: Toilet and shower facilities for on-call visiting doctors staying for extended periods of time
Entry hallway to Doctor's Bed/Sitting Room
Open clothes closet alcove in entry hallway

Adjacency: Quiet location within building; near staff entrance
Bathroom accessed from Doctor's Bed/Sitting Room

Environment:

Floor: Ceramic tile-bathroom; carpet-entry hallway
Walls: Ceramic tile / painted gypsum board
Ceiling: Painted gypsum board; 8' height
Windows: None

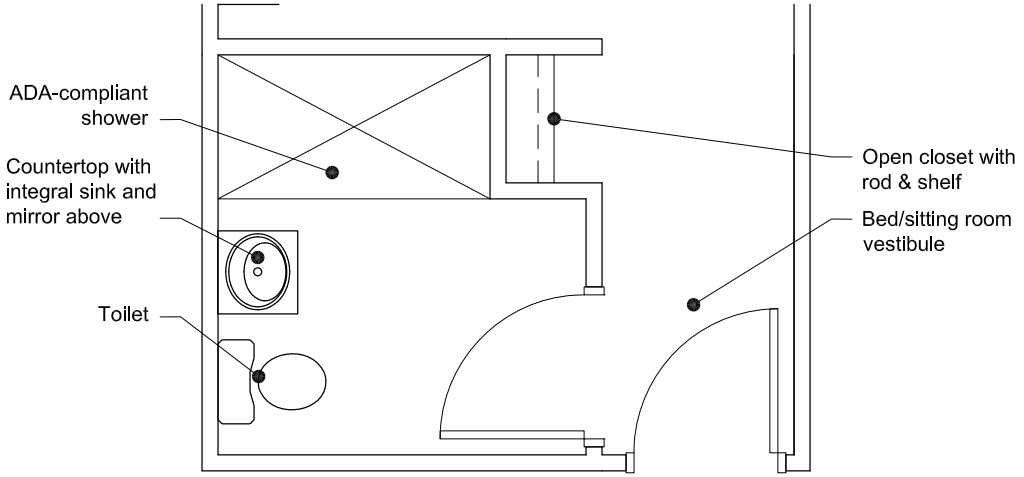
Equipment: Shower
Toilet
Solid-surface countertop with integral sink, with mirror above
Toilet room accessories: robe hooks; grab bars; soap, paper towel & toilet tissue dispensers, etc.
Clothes rode and shelf in closet alcove

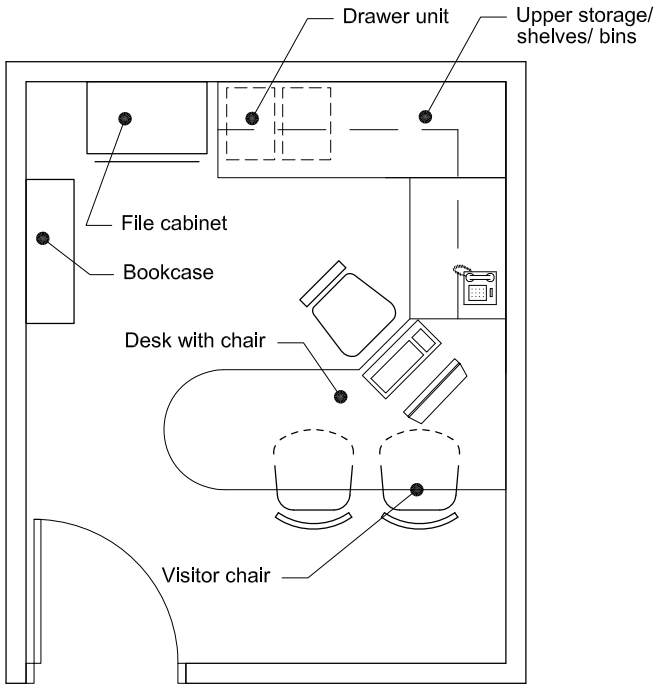
Furnishings: None

Mechanical: Dedicated HVAC zone with exhaust

Electrical: Duplex electrical outlets per code
Electrical outlets at lavatory

Notes: All spaces, fixtures & accessories must be ADA compliant





A1204 OFFICE

AREA: 120 NSF

Occupants: 1 occupant, with up to 2 visitors

Function: Private office for flexible use by State Hospital visitors and temporary staff

Adjacency: Easily accessed from building visitor or staff entry
4 offices located together

Environment:

Floor: Carpet
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 9' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

Equipment: Computer; telephone

Furnishings: Systems furniture U-shaped desk with shelves / bins above and drawer units below
Desk chair
2 visitor chairs

Mechanical: Shared HVAC zone

Electrical: Duplex electrical outlets per code
2 sets of voice / data outlets for furniture layout flexibility
Fluorescent parabolic lighting

Notes:

A1205 STAFF BREAK ROOM

AREA: 500 NSF

Occupants: Up to 20 people

Function: Break and lunch space for Utah State Hospital staff

Adjacency:
Near staff toilet rooms and Staff Shower/Locker
Near staff entry

Environment:

Floor: Hard-surface flooring (ceramic tile, VCT, linoleum, etc.)
Walls: Painted gypsum board
Ceiling: Lay-in acoustic tile; 10' height
Windows: Exterior windows with window coverings
Door: 3' x 7' wood door, locking

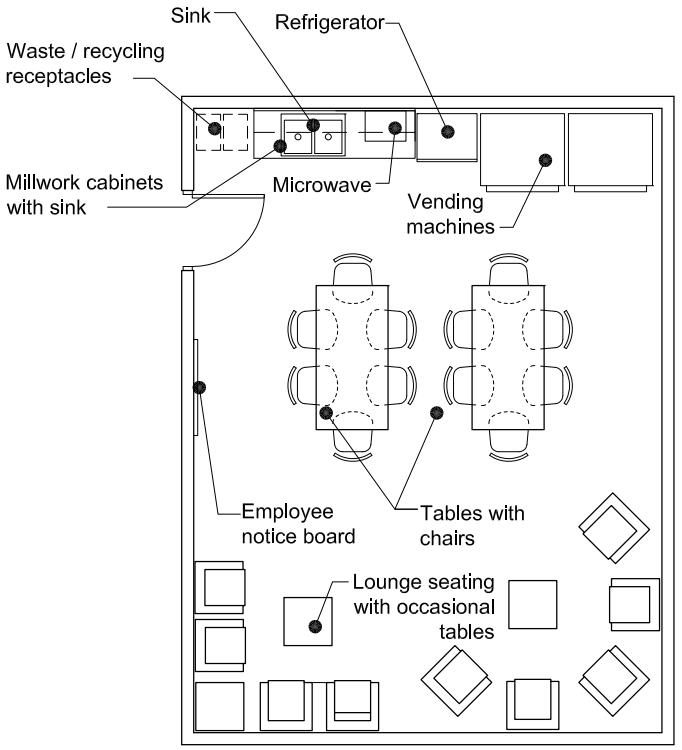
Equipment:
Millwork countertop with storage cabinets/drawers below, storage cabinets above
Double compartment kitchen sink
Refrigerator, microwave oven, coffee machine
2 vending machines

Furnishings:
(2) 6' x 3' tables with 6 chairs each
Lounge seating and occasional tables
Employee notice board

Mechanical:
Dedicated HVAC zone with exhaust
Water hook-up for refrigerator ice-maker

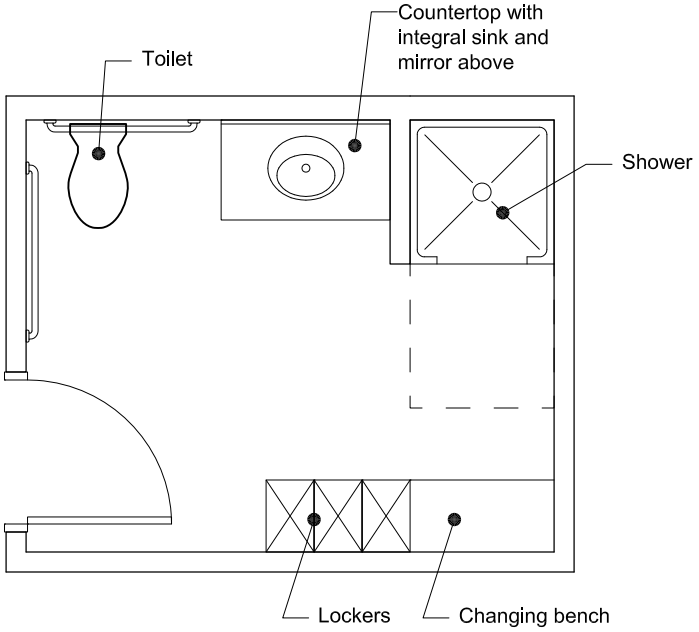
Electrical:
Duplex electrical outlets per code
Electrical outlet above countertop
Electrical outlets as required for refrigerator, microwave, coffee machine and vending machines
Compact fluorescent lighting

Notes: Countertops at 34" high to meet ADA



A1206 STAFF SHOWER / LOCKER ROOM

AREA: 100 NSF



Occupants: 1 occupant

Function: Single-user toilet & shower facilities for State Hospital staff

Adjacency: Near Staff Break Room
Near staff entry

Environment:

Floor: Ceramic tile
Walls: Ceramic tile / painted gypsum board
Ceiling: Painted gypsum board; 9' height
Windows: None

Equipment: Shower with rod and curtain
Toilet
Solid surface countertop with integral sink, with mirror above
Toilet room accessories: robe hooks; grab bars; soap, paper towel & toilet tissue dispensers, etc.
3 double-tier lockers, 12'W x 18"D
Millwork changing bench, 3'W x 18"D

Furnishings: Shower curtain

Mechanical: Dedicated HVAC zone with exhaust

Electrical: Duplex electrical outlets per code
Electrical outlets at vanity

Notes:

A1207 CUSTODIAL STORAGE

AREA: 200 NSF

Occupants: None

Function: Enclosed room for storage of custodial and maintenance supplies and equipment

Adjacency: Easy access from building service entrance
Central location within building, easily accessible to all custodial closets and building spaces

Environment:

Floor: Sealed concrete
Walls: Painted gypsum board or CMU
Ceiling: Open structure
Windows: None
Doors: 3' x 7' wood door, locking

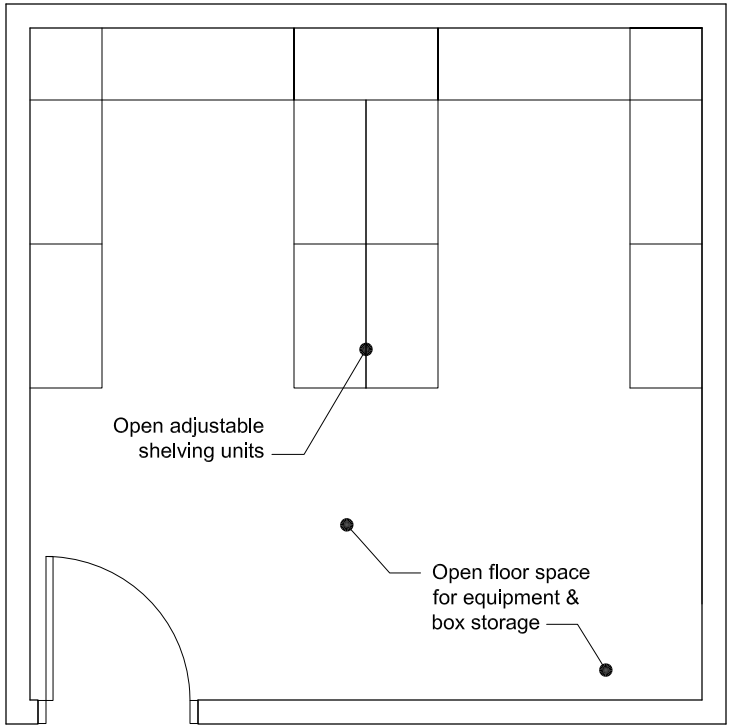
Equipment: Storage of housekeeping carts (38"L x 21"W) & equipment (burnishers & buffers: 3' sphere; extractors: 34"L x 16"W; wet vac: 24"L x 24"W)

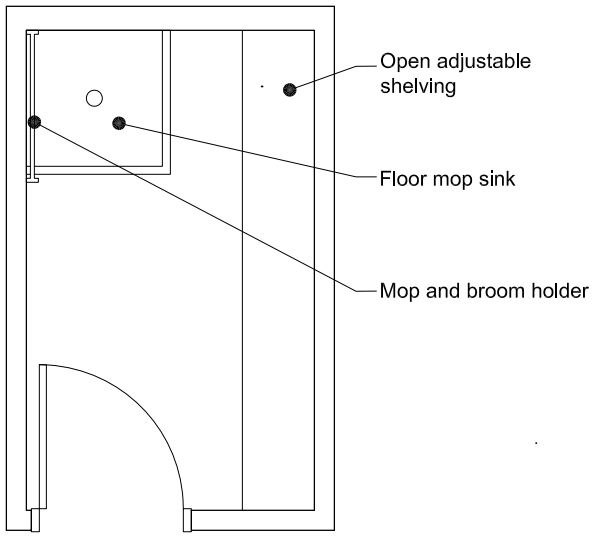
Furnishings: Adjustable steel open shelving units, 18"D

Mechanical: Minimal HVAC

Electrical: Electrical wall outlets per code
Electrical outlets as needed for charging maintenance equipment
Fluorescent lighting

Notes:





A1208 CUSTODIAL CLOSET

AREA: 60 NSF

Occupants: None

Function: Storage of custodial and maintenance supplies and equipment

Adjacency: 2 Custodial Closets should have centralized locations in two portions of building
Near toilet rooms

Environment:

Floor: Sealed concrete
Walls: Painted gypsum board or CMU
Ceiling: Open structure
Windows: None
Doors: 3’ x 7’ wood door, locking

Equipment: Floor mop sink
Mop and broom rack, 3’L
Heavy-duty, adjustable open shelving on wall standards
Storage of housekeeping carts (38”L x 21”W)

Furnishings: None

Mechanical: Minimal HVAC

Electrical: Duplex electrical outlets per code

Notes:

5: COST OPINION

A summary of the cost opinion for the Mark I. Payne Building and Pediatric Facility project is shown below. It is in July 2011 dollars.

Mark I. Payne Building	$6.10 million	$201 per GSF
Pediatric Facility	$15.99 million	$187 per GSF
Total	$22.10 million	$191 per GSF

Demolition Costs	$302,000
Total Construction	$22.4 million

A 16-division breakdown of the projected costs is on the following pages.

This project has been programmed according to need, per the direction of Utah State DFCM. As programmed, the project cost opinion is $2.0 million (10%) over the project construction budget of $20.4 million.

Utah State Hospital
Mark I. Payne Building & Pediatric Facility

July 19 2011

CONCEPTUAL COST OPINION
BY MHTN COST CONTROL - GLEN BECKSTEAD

MHTN ARCHITECTS

	Total Square Footage	Cost Per Square Foot	Total Construction
Mark I. Payne Medical Services Building	30,357	$201.07	$6,103,886
Pediatric Facility School	27,911	$183.57	$5,123,583
Pediatric Facility Residential Units	57,625	$188.59	$10,867,776
	115,893	$190.65	$22,095,244

This is not included in the program pricing but is needed for construction cost:

Demolition of Existing buildings	92,875	$3.25	$301,844
		Total Construction	**$22,397,088**

Utah State Hospital Mark I. Payne Building & Pediatric Facility
Mark I. Payne Building
CONCEPTUAL COST OPINION
BY MHTN COST CONTROL

Prep. Date
July 19 2011
Total GSF 30,357

MHTN ARCHITECTS

	COST PER SF		TOTAL
SITE WORK	$ 15.41		**$ 467,706**
CONCRETE	$ 8.54		**$ 259,381**
MASONRY / EXTERIOR SKIN	$ 11.28		**$ 342,442**
METALS	$ 15.22		**$ 462,139**
WOODS AND PLASTICS	$ 4.96		**$ 150,571**
THERMAL AND MOISTURE PROTECTION	$ 11.01		**$ 334,293**
DOORS AND WINDOWS	$ 10.71		**$ 325,043**
FINISH	$ 25.01		**$ 759,371**
SPECIALTIES	$ 5.92		**$ 179,681**
CONVEYING SYSTEMS	$ -		**$ -**
MECHANICAL	$ 40.65		**$ 1,233,946**
ELECTRICAL	$ 20.96		**$ 636,384**
	$ 169.68		**$ 5,150,958**
UNDEFINED BUILDING ELEMENTS	$ 16.97	10.00%	$ 515,096
GENERAL CONDITIONS	$ 6.79	4.00%	$ 206,038
BONDING	$ 1.70	1.00%	$ 51,510
PROFIT AND OVERHEAD	$ 5.94	3.50%	$ 180,284
CONSTRUCTION SUB TOTAL	**$ 201.07**		**$ 6,103,886**

DEMOLITION

GRASS AND IRRIGATION	17213 SF	$ 0.30	$ 5,164	
DEMOLITION OF BUILDINGS	92875 SF	$ 3.00	summary page	

EARTH WORK

CLEAR AND ROUGH GRADE	60713 SF	$ 0.25	$ 15,178
ALLOW FOR SITE CUT AND FILL	2249 CY	$ 9.00	$ 20,238
CUT WORK AT BUILDING FOOTINGS	336 CY	$ 12.00	$ 4,029
CUT WORK AT BUILDING FLOOR	2249 CY	$ 9.00	$ 20,238
BACK FILL AT FOOTINGS	235 CY	$ 12.00	$ 2,821
STRUCTURAL FILL UNDER FLOOR SLAB	1124 CY	$ 22.00	$ 24,735
HAUL OFF SITE	3373 CY	$ 8.00	$ 26,984

SITE IMPROVEMENTS

HARDSCAPE, PAVING	15178 SF	$ 4.50	$ 68,303
SOFTSCAPE, PLANTING	45535 SF	$ 2.50	$ 113,838
SITE EARTH RETAINING	60713 SF	$ 0.25	$ 15,178
SITE SPECIALTIES	60713 SF	$ 0.05	$ 3,036
PIPE BOLLARDS /ACCESS CONTROL	4 EA	$ 205.00	$ 820
GARBAGE ENCLOSURE	1 EA	$ 6,500.00	$ 6,500
TREES 3" ALLOW 1 PER 5000 SF SITE	20 EA	$ 300.00	$ 6,071

SITE UTILITIES

WATER DISTRIBUTION	150 LF	$ 65.00	$ 9,750
FIRE LINE DISTRIBUTION AND HYDRANTS	250 LF	$ 55.00	$ 13,750
UTILITIES TUNNEL FOR CAMPUS SYSTEM	0 LF	$ 1,900.00	$ -
STORM SEWER	250 LF	$ 55.00	$ 13,750
SEWER	150 LF	$ 65.00	$ 9,750
FIRE HYDRANT AND PIPING (ALLOW)	1 EA	$ 3,800.00	$ 2,307
SITE DRAINAGE PAVING ONLY	15178 EA	$ 0.50	$ 7,589
WATER METER AND VAULT	30357 SF	$ 0.20	$ 6,071
FOUNDATION DRAINAGE	963 LF	$ 26.00	$ 25,028
ELECTRICAL DISTRIBUTION	200 LF	$ 125.00	$ 25,000
GAS DISTRIBUTION	200 LF	$ 32.00	$ 6,400
SITE LIGHTING	30357 SF	$ 0.50	$ 15,178
			$ 467,706

CONCRETE

CONTINUOUS FOOTING	101 CY	$ 300.00	$ 30,200
SPOT FOOTINGS 4' X 4' X 12"	34 EA	$ 192.59	$ 6,496
INTERIOR FOOTINGS	15 CY	$ 300.00	$ 4,530
SLAB ON GRADE 4" W/BASE REINFORCED	30357 SF	$ 4.50	$ 136,605
FOUNDATION WALL 12" THICK	3624 SF	$ 22.00	$ 79,728
CONCRETE MECHANICAL PADS	304 SF	$ 6.00	$ 1,821
			$ 259,381

MASONRY / EXTERIOR FINISH

EXTERIOR FINISH (INFORMATION ABOVE)	10392 SF	$ 18.00	$ 187,054
PARAPET WALL 2' HIGH	1812 SF	$ 23.00	$ 41,676
INTERIOR MASONRY WALL (ALLOW) 25%	5692 SF	$ 18.00	$ 102,454
PRECAST OR BRICK SILL AT WINDOWS	609 LF	$ 18.50	$ 11,258
			$ 342,442

METALS

COLUMNS WF SHAPES	7.59 TON	$ 2,950.00	$ 22,388
SUSPENDED FLOOR STRUCTURE WF	0.00 TON	$ 2,950.00	$ -
ROOF STRUCTURE JOIST	113.84 TON	$ 2,950.00	$ 335,821
MISC. STEEL	1.52 TON	$ 2,950.00	$ 4,478
ROOF DECK	30357 SF	$ 2.50	$ 75,892
GALVANIZED ANGLE AT EXTERIOR WALL	906 LF	$ 14.00	$ 12,684
STEEL LADDER TO ROOF	16 LF	$ 88.00	$ 1,364
WALL CAP	906 LF	$ 10.50	$ 9,513
METAL STAIR AND RAILINGS	0 FLT	$ 15,500.00	$ -
			$ 462,139

WOOD AND PLASTICS

WALL PLATES BOLTED AND SHAPED	906 LF	$ 5.00	$ 4,530
ALLOW FOR HEADWALL SYSTEMS	64 LF	$ 745.00	$ 47,382
MISC. ROUGH CARPENTRY	30357 SF	$ 0.50	$ 15,178
FINISH CARPENTRY	30357 SF	$ 0.75	$ 22,768
MISC. CASEWORK	30357 SF	$ 2.00	$ 60,713
			$ 150,571

THERMAL AND MOISTURE PROTECTION

FOUNDATION INSULATION	3624	SF	$ 1.50	$	5,436
WATERPROOF AT FOUNDATION WALL	3624	SF	$ 2.00	$	7,248
WALL EXPANSION COVERS INT. & EXT.	31	LF	$ 88.00	$	2,728
EXTERIOR WALL INSULATION	10392	SF	$ 1.50	$	15,588
SPRAY ON STRUCTURAL FIREPROOF 20%	6071	SF	$ 3.00	$	18,214
SOUND INSULATION (ALLOW)	11384	SF	$ 0.50	$	5,692
ROOFING	30357	SF	$ 3.50	$	106,248
ROOF INSULATION RIGID	27321	SF	$ 4.00	$	109,284
ROOF CRICKETS	2732	SF	$ 2.50	$	6,830
ROOF HATCH	5	EA	$ 780.00	$	3,900
ROOFING SPECIALTIES	27321	SF	$ 0.25	$	6,830
ALLOW FOR ENTRY COVERS, complete	455	SF	$ 85.00	$	38,705
ALLOW FOR SEALANT	6071	LF	$ 1.25	$	7,589
				$	**334,293**

DOORS AND WINDOWS

DOORS EXTERIOR STORE FRONT AND SIDE LITE					
COMPLETE HARDWARE, 6' X 7'	4	EA	$ 3,200.00	$	12,800
DOORS INTERIOR WOOD OR HOLLOW METAL					
COMPLETE HARDWARE, PAINTED	71	EA	$ 980.00	$	69,185
POWER OPERATOR	8	EA	$ 1,100.00	$	8,800
ALLOW FOR CEILING ACCESS PANELS	6	EA	$ 150.00	$	828
INTERIOR GLASS AND GLAZING	228	SF	$ 35.00	$	7,969
GLASS AND GLAZING	3651	SF	$ 61.75	$	225,462
				$	**325,043**

FINISH

most gyp is impact resistant

EXTERIOR METAL STUDS 6" LOAD BEARING	10392	SF	$ 3.00	$	31,176
INTERIOR WALLS STUDS GYP. TWO SIDES	22768	SF	$ 7.00	$	159,373
GYP. SHEATHING AND BUILDING WRAP	10392	SF	$ 2.50	$	25,980
GYP FINISHED AT EXTERIOR WALL	10392	SF	$ 1.90	$	19,745
FLOOR FINISH CARPET AND BASE 15%	4554	SF	$ 3.56	$	16,190
FLOOR FINISH SHEET VINYL 60%	18214	SF	$ 7.00	$	127,498
FLOOR FINISH CERAMIC TILE 10%	3036	SF	$ 13.00	$	39,464
FLOOR FINISH V C T 10%	3036	SF	$ 2.00	$	6,071
FLOOR FINISH SPECIAL	385	SF	$ 10.00	$	3,846
WALL BUMPERS CORRIDORS (ALLOW)	1469	LF	$ 22.00	$	32,315
WALL FINISH UPGRADED 20% VINYL	4554	SF	$ 2.00	$	9,107
WALL FINISH CERAMIC TILE 5%	1138	SF	$ 14.00	$	15,937
WALL FINISH PAINT 65%	14799	SF	$ 0.55	$	8,139
WALL FINISH EPOXY	3036	SF	$ 1.00	$	3,036
WALL FINISH SPECIAL	1154	SF	$ 8.00	$	9,231
CEILING FINISH EXPOSED PAINTED 2%	607	SF	$ 1.50	$	911
CEILING SUSPENDED GYPSUM 70% not impac	21250	SF	$ 10.00	$	212,497
CEILING SUSPENDED GYPSUM 10% EPOXY	2125	SF	$ 8.00	$	17,000
CEILING FINISH LAY IN TILE 18%	5464	SF	$ 4.00	$	21,857
				$	**759,371**

SPECIALTIES

FIRE EXTINGUISHER IN CABINET	8	EA	$ 245.00	$	1,960
TOILET PARTITIONS / SPECIALTIES	8	EA	$ 1,250.00	$	9,486
JANITOR SHELVING	1	EA	$ 250.00	$	250
FULL SERVICE KITCHEN - EQUIPMENT	750	SF	$ 200.00	$	150,000
DOCK SPECIALTIES	30357	SF	$ 0.10	$	3,036
WINDOW SHADES AT 50% OF WINDOWS	1826	SF	$ 4.00	$	7,302
TRAFFIC MATT	128	SF	$ 18.00	$	2,304
SIGNAGE ALLOW 1 PER 500 SF	61	EA	$ 88.00	$	5,343
				$	**179,681**

CONVEYING SYSTEMS

	0				
ELEVATOR FULL SERVICE PASSENGER					
TYPE AND SPEED NEEDED	0	SF	$ 2.50	$	-
ADD FOR MORE THAN 2 FLOORS	0.0	SUM	$ 18,000.00	$	-
				$	**-**

MECHANICAL

PLUMBING	30357	EA	$ 5.00	$	151,783
SPECIAL SYSTEMS PLUMBING CHEMICAL					
GREASE AND OIL TRAP AT LAB AND FOOD	1	EA	$ 4,500.00	$	4,500
HVAC, FULL BUILDING SYSTEM	30357	SF	$ 32.00	$	971,414
FIRE SPRINKLER	30357	SF	$ 3.50	$	106,248
			$ 40.65	**$**	**1,233,946**

ELECTRICAL

POWER AND DISTRIBUTION	30357	SF	$ 4.00	$	121,427
BRANCH CONDUIT AND WIRE	30357	SF	$ 5.00	$	151,783
LIGHTING	30357	SF	$ 5.00	$	151,783
NURSE CALL SYSTEM	0	SF	$ 2.00	$	-
COMPUTER BASED PROJECTORS	1	EA	$ 7,500.00	$	7,500
SECURITY CAMERA SYSTEM (ALLOW)					
1 PER 5000 GSF	15	EA	$ 1,450.00	$	21,750
PHONE SYSTEM	30357	EA	$ 2.00	$	60,713
FIRE ALARM AND SPECIAL SYSTEMS	30357	SF	$ 2.00	$	60,713
SECURITY SYSTEMS	30357	SF	$ 2.00	$	60,713
			20.9635437	**$**	**636,384**

Utah State Hospital Mark I. Payne Building & Pediatric Facility			PREP. DATE	
Pediatric Facility School	Prep. Date		July 19 2011	
CONCEPTUAL COST OPINION	July 19 2011			
BY MHTN COST CONTROL	Total GSF		27,911	
	COST PER SF			**TOTAL**
SITE WORK	$ 15.69			**$ 437,881**
CONCRETE	$ 8.86			**$ 247,307**
MASONRY / EXTERIOR SKIN	$ 12.29			**$ 342,890**
METALS	$ 14.50			**$ 404,599**
WOODS AND PLASTICS	$ 3.41			**$ 95,055**
THERMAL AND MOISTURE PROTECTION	$ 11.04			**$ 308,203**
DOORS AND WINDOWS	$ 12.49			**$ 348,628**
FINISH	$ 23.39			**$ 652,785**
SPECIALTIES	$ 1.30			**$ 36,228**
CONVEYING SYSTEMS	$ -			**$ -**
MECHANICAL	$ 39.00			**$ 1,088,533**
ELECTRICAL	$ 19.78			**$ 552,061**
	$ 161.73			**$ 4,514,170**
UNDEFINED BUILDING ELEMENTS	$ 8.09		5.00%	$ 225,708
GENERAL CONDITIONS	$ 6.47		4.00%	$ 180,567
BONDING	$ 1.62		1.00%	$ 45,142
PROFIT AND OVERHEAD	$ 5.66		3.50%	$ 157,996
CONSTRUCTION SUB TOTAL	**$ 183.57**			**$ 5,123,583**

MHTN ARCHITECTS

DEMOLITION				
GRASS AND IRRIGATION	55822	SF	$ 0.29	$ 15,909
EARTH WORK				
CLEAR AND ROUGH GRADE	55822	SF	$ 0.24	$ 13,258
ALLOW FOR SITE CUT AND FILL	2067	CY	$ 8.55	$ 17,677
CUT WORK AT BUILDING FOOTINGS	321	CY	$ 11.40	$ 3,655
CUT WORK AT BUILDING FLOOR	2067	CY	$ 8.55	$ 17,677
BACK FILL AT FOOTINGS	224	CY	$ 11.40	$ 2,554
STRUCTURAL FILL UNDER FLOOR SLAB	1551	CY	$ 20.90	$ 32,408
HAUL OFF SITE	3101	CY	$ 7.60	$ 23,569
SITE IMPROVEMENTS				
HARDSCAPE, PAVING	13956	SF	$ 4.28	$ 59,660
SOFTSCAPE, PLANTING	41867	SF	$ 2.38	$ 99,433
SITE EARTH RETAINING	55822	SF	$ 0.24	$ 13,258
SITE SPECIALTIES	55822	SF	$ 0.05	$ 2,652
PIPE BOLLARDS /ACCESS CONTROL	4	EA	$ 194.75	$ 779
GARBAGE ENCLOSURE	1	EA	$ 6,175.00	$ 6,175
TREES 3" ALLOW 1 PER 5000 SF SITE	19	EA	$ 285.00	$ 5,303
SITE UTILITIES				
WATER DISTRIBUTION	150	LF	$ 61.75	$ 9,263
FIRE LINE DISTRIBUTION AND HYDRANTS	250	LF	$ 52.25	$ 13,063
UTILITIES TUNNEL FOR CAMPUS SYSTEM	0	LF	$ 1,805.00	$ -
STORM SEWER	250	LF	$ 52.25	$ 13,063
SEWER	150	LF	$ 61.75	$ 9,263
FIRE HYDRANT AND PIPING (ALLOW)	1	EA	$ 3,610.00	$ 2,015
SITE DRAINAGE PAVING ONLY	13956	EA	$ 0.48	$ 6,629
WATER METER AND VAULT	27911	SF	$ 0.19	$ 5,303
FOUNDATION DRAINAGE	923	LF	$ 24.70	$ 22,799
ELECTRICAL DISTRIBUTION	200	LF	$ 118.75	$ 23,750
GAS DISTRIBUTION	200	LF	$ 27.55	$ 5,510
SITE LIGHTING	27911	SF	$ 0.48	$ 13,258
				$ 437,881

CONCRETE

CONTINUOUS FOOTING	97 CY	$ 308.75	$	29,803
SPOT FOOTINGS 4' X 4' X 12"	31 EA	$ 192.59	$	5,973
INTERIOR FOOTINGS	14 CY	$ 308.75	$	4,470
SLAB ON GRADE 4" W/BASE REINFORCED	27911 SF	$ 4.28	$	119,320
LOADING DOCK STRUCTURE (ALLOW)	27911 SF	$ 0.48	$	13,258
FOUNDATION WALL 8" TO 12" THICK	3475 SF	$ 20.90	$	72,627
CONCRETE MECHANICAL PADS	279 SF	$ 6.65	$	1,856
			$	**247,307**

MASONRY / EXTERIOR FINISH

EXTERIOR FINISH (INFORMATION ABOVE)	9426 SF	$ 20.90	$	197,001
PARAPET WALL 2' HIGH	1737 SF	$ 25.65	$	44,567
INTERIOR MASONRY WALL (ALLOW) 25%	5233 SF	$ 17.10	$	89,490
PRECAST OR BRICK SILL AT WINDOWS	673 LF	$ 17.58	$	11,833
			$	**342,890**

METALS

COLUMNS WF SHAPES	6.98 TON	$ 2,802.50	$	19,555
SUSPENDED FLOOR STRUCTURE WF	0.00 TON	$ 2,802.50	$	-
ROOF STRUCTURE JOIST	104.67 TON	$ 2,802.50	$	293,328
MISC. STEEL	1.40 TON	$ 2,802.50	$	3,911
ROOF DECK	27911 SF	$ 2.38	$	66,289
GALVANIZED ANGLE AT EXTERIOR WALL	869 LF	$ 13.30	$	11,554
STEEL LADDER TO ROOF	16 LF	$ 83.60	$	1,296
WALL CAP	869 LF	$ 9.98	$	8,666
METAL STAIR AND RAILINGS	0 FLT	$ 14,725.00	$	-
			$	**404,599**

WOOD AND PLASTICS

WALL PLATES BOLTED AND SHAPED	869 LF	$ 4.75	$	4,344
MISC. ROUGH CARPENTRY	27911 SF	$ 0.48	$	13,956
FINISH CARPENTRY	27911 SF	$ 0.71	$	20,933
MISC. CASEWORK	27911 SF	$ 1.90	$	55,822
			$	**95,055**

THERMAL AND MOISTURE PROTECTION

FOUNDATION INSULATION	3475 SF	$ 1.43	$	5,212
WATERPROOF AT FOUNDATION WALL	3475 SF	$ 1.90	$	6,950
WALL EXPANSION COVERS INT. & EXT.	31 LF	$ 83.60	$	2,728
EXTERIOR WALL INSULATION	9426 SF	$ 1.43	$	14,139
SPRAY ON STRUCTURAL FIREPROOF 20%	5582 SF	$ 2.85	$	16,747
SOUND INSULATION (ALLOW)	10467 SF	$ 0.48	$	5,233
ROOFING	27911 SF	$ 3.33	$	97,689
ROOF INSULATION RIGID	25120 SF	$ 3.80	$	100,480
ROOF CRICKETS	2512 SF	$ 2.38	$	6,280
ROOF HATCH	5 EA	$ 741.00	$	3,900
ROOFING SPECIALTIES	25120 SF	$ 0.24	$	6,280
ALLOW FOR ENTRY COVERS, complete	419 SF	$ 80.75	$	35,587
ALLOW FOR SEALANT	5582 LF	$ 1.19	$	6,978
			$	**308,203**

DOORS AND WINDOWS

DOORS EXTERIOR STORE FRONT AND SIDE LITE				
COMPLETE HARDWARE, 6' X 7'	4 EA	$ 3,040.00	$	12,800
DOORS INTERIOR WOOD OR HOLLOW METAL				
COMPLETE HARDWARE, PAINTED	65 EA	$ 931.00	$	63,611
POWER OPERATOR	6 EA	$ 1,045.00	$	6,600
ALLOW FOR CEILING ACCESS PANELS	5 EA	$ 142.50	$	761
INTERIOR GLASS AND GLAZING	209 SF	$ 33.25	$	7,327
GLASS AND GLAZING	4040 SF	$ 60.56	$	257,528
			$	**348,628**

FINISH

most gyp is impact resistant

EXTERIOR METAL STUDS 6" LOAD BEARING	9426 SF	$ 2.85	$	28,278
INTERIOR WALLS STUDS GYP. TWO SIDES	20933 SF	$ 6.65	$	146,533
GYP. SHEATHING AND BUILDING WRAP	9426 SF	$ 2.38	$	23,565
GYP FINISHED AT EXTERIOR WALL	9426 SF	$ 1.90	$	18,852
FLOOR FINISH CARPET AND BASE 15%	4187 SF	$ 3.38	$	14,886
FLOOR FINISH SHEET VINYL 60%	16747 SF	$ 6.65	$	117,227
FLOOR FINISH CERAMIC TILE 10%	2791 SF	$ 12.35	$	36,284
FLOOR FINISH V C T 10%	2791 SF	$ 1.90	$	5,582
FLOOR FINISH SPECIAL	0 SF	$ 9.50	$	-
WALL BUMPERS CORRIDORS (ALLOW)	810 LF	$ 20.90	$	17,827
WALL FINISH UPGRADED 20% VINYL	4187 SF	$ 1.90	$	8,373
WALL FINISH CERAMIC TILE 5%	1047 SF	$ 13.30	$	14,653
WALL FINISH PAINT 65%	13607 SF	$ 0.52	$	7,484
WALL FINISH EPOXY	2791 SF	$ 0.95	$	2,791
WALL FINISH SPECIAL	0 SF	$ 7.60	$	-
CEILING FINISH EXPOSED PAINTED 2%	558 SF	$ 1.43	$	837
CEILING SUSPENDED GYPSUM 70%	19538 SF	$ 8.55	$	175,840
CEILING SUSPENDED GYPSUM 10% EPOXY	1954 SF	$ 6.65	$	13,676
CEILING FINISH LAY IN TILE 18%	5024 SF	$ 3.80	$	20,096
			$	**652,785**

SPECIALTIES					
FIRE EXTINGUISHER IN CABINET	8	EA	$ 232.75	$	1,960
TOILET PARTITIONS / SPECIALTIES	7	EA	$ 1,187.50	$	8,722
JANITOR SHELVING	1	EA	$ 237.50	$	250
MULTIPURPOSE EQUIPMENT	1	SUM	$ 9,500.00	$	10,000
DOCK SPECIALTIES	0	SF	$ 0.10	$	-
WINDOW SHADES AT 50% OF WINDOWS	2020	SF	$ 3.80	$	8,079
TRAFFIC MATT	128	SF	$ 17.10	$	2,304
SIGNAGE ALLOW 1 PER 500 SF	56	EA	$ 83.60	$	4,912
				$	**36,228**
CONVEYING SYSTEMS					
	0				
ELEVATOR FULL SERVICE PASSENGER TYPE AND SPEED NEEDED	0	SF	$ 2.38	$	-
ADD FOR MORE THAN 2 FLOORS	0.0	SUM	$ 17,100.00	$	-
				$	**-**
MECHANICAL					
PLUMBING	27911	EA	$ 3.00	$	83,733
SPECIAL SYSTEMS PLUMBING CHEMICAL GREASE AND OIL TRAP AT LAB AND FOOD	0	EA	$ 4,500.00	$	-
HVAC, FULL BUILDING SYSTEM	27911	SF	$ 32.00	$	893,155
FIRE SPRINKLER	27911	SF	$ 4.00	$	111,644
				$	**1,088,533**
ELECTRICAL					
POWER AND DISTRIBUTION	27911	SF	$ 4.00	$	111,644
BRANCH CONDUIT AND WIRE	27911	SF	$ 4.00	$	111,644
LIGHTING	27911	SF	$ 5.00	$	139,556
NURSE CALL SYSTEM	0	SF	$ 2.00	$	-
COMPUTER BASED PROJECTORS	0	EA	$ 7,500.00	$	-
SECURITY CAMERA SYSTEM (ALLOW) 1 PER 5000 GSF	15	EA	$ 1,450.00	$	21,750
PHONE SYSTEM	27911	EA	$ 2.00	$	55,822
FIRE ALARM AND SPECIAL SYSTEMS	27911	SF	$ 2.00	$	55,822
SECURITY SYSTEMS	27911	SF	$ 2.00	$	55,822
			19.77925963	**$**	**552,061**

Utah State Hospital Mark I. Payne Building & Pediatric Facility
Pediatric Facility Residential Units Prep. Date
CONCEPTUAL COST OPINION July 19 2011
BY MHTN COST CONTROL Total GSF 57,625

	COST PER SF		TOTAL
SITE WORK	$ 14.68		**$ 846,134**
CONCRETE	$ 8.59		**$ 494,991**
MASONRY / EXTERIOR SKIN	$ 10.03		**$ 577,753**
METALS	$ 15.00		**$ 864,489**
WOODS AND PLASTICS	$ 6.27		**$ 361,149**
THERMAL AND MOISTURE PROTECTION	$ 10.63		**$ 612,749**
DOORS AND WINDOWS	$ 10.31		**$ 594,288**
FINISH	$ 25.33		**$ 1,459,649**
SPECIALTIES	$ 1.44		**$ 82,962**
CONVEYING SYSTEMS	$ -		**$ -**
MECHANICAL	$ 37.73		**$ 2,174,450**
ELECTRICAL	$ 19.13		**$ 1,102,506**
	$ 159.15		**$ 9,171,119**
UNDEFINED BUILDING ELEMENTS	$ 15.92	10.00%	$ 917,112
GENERAL CONDITIONS	$ 6.37	4.00%	$ 366,845
BONDING	$ 1.59	1.00%	$ 91,711
PROFIT AND OVERHEAD	$ 5.57	3.50%	$ 320,989
CONSTRUCTION SUB TOTAL	**$ 188.59**		**$ 10,867,776**

DEMOLITION				
GRASS AND IRRIGATION	115251 SF	$ 0.30	$	34,575
EARTH WORK				
CLEAR AND ROUGH GRADE	115251 SF	$ 0.25	$	28,813
ALLOW FOR SITE CUT AND FILL	4269 CY	$ 9.00	$	38,417
CUT WORK AT BUILDING FOOTINGS	480 CY	$ 12.00	$	5,761
CUT WORK AT BUILDING FLOOR	4269 CY	$ 9.00	$	38,417
BACK FILL AT FOOTINGS	341 CY	$ 12.00	$	4,097
STRUCTURAL FILL UNDER FLOOR SLAB	3201 CY	$ 22.00	$	70,431
HAUL OFF SITE	6403 CY	$ 8.00	$	51,223
SITE IMPROVEMENTS				
HARDSCAPE, PAVING	28813 SF	$ 4.50	$	129,657
SOFTSCAPE, PLANTING	86438 SF	$ 2.50	$	216,095
SITE EARTH RETAINING	115251 SF	$ 0.25	$	28,813
SITE SPECIALTIES	115251 SF	$ 0.05	$	5,763
PIPE BOLLARDS /ACCESS CONTROL	4 EA	$ 205.00	$	820
GARBAGE ENCLOSURE	1 EA	$ 6,500.00	$	6,500
TREES 3" ALLOW 1 PER 5000 SF SITE	38 EA	$ 300.00	$	11,525
SITE UTILITIES				
WATER DISTRIBUTION	150 LF	$ 65.00	$	9,750
FIRE LINE DISTRIBUTION AND HYDRANTS	250 LF	$ 55.00	$	13,750
UTILITIES TUNNEL FOR CAMPUS SYSTEM	0 LF	$ 1,900.00	$	-
STORM SEWER	250 LF	$ 55.00	$	13,750
SEWER	150 LF	$ 65.00	$	9,750
FIRE HYDRANT AND PIPING (ALLOW)	2 EA	$ 3,800.00	$	7,600
SITE DRAINAGE PAVING ONLY	28813 EA	$ 0.50	$	14,406
WATER METER AND VAULT	57625 SF	$ 0.20	$	11,525
FOUNDATION DRAINAGE	1326 LF	$ 26.00	$	34,484
ELECTRICAL DISTRIBUTION	200 LF	$ 125.00	$	25,000
GAS DISTRIBUTION	200 LF	$ 32.00	$	6,400
SITE LIGHTING	57625 SF	$ 0.50	$	28,813
			$	**846,134**

CONCRETE				
CONTINUOUS FOOTING	139 CY	$ 325.00	$	45,077
SPOT FOOTINGS 4' X 4' X 12"	64 EA	$ 192.59	$	12,331
INTERIOR FOOTINGS	21 CY	$ 325.00	$	6,761
SLAB ON GRADE 4" W/BASE REINFORCED	57625 SF	$ 5.00	$	288,127
LOADING DOCK STRUCTURE (ALLOW)	57625 SF	$ 0.50	$	28,813
FOUNDATION WALL 8" TO 12" THICK	4993 SF	$ 22.00	$	109,848
CONCRETE MECHANICAL PADS	576 SF	$ 7.00	$	4,034
			$	**494,991**
MASONRY / EXTERIOR FINISH				
EXTERIOR FINISH (INFORMATION ABOVE)	13544 SF	$ 22.00	$	297,963
PARAPET WALL 2' HIGH	2497 SF	$ 27.00	$	67,407
INTERIOR MASONRY WALL (ALLOW) 25%	10805 SF	$ 18.00	$	194,486
PRECAST OR BRICK SILL AT WINDOWS	967 LF	$ 18.50	$	17,897
			$	**577,753**
METALS				
COLUMNS WF SHAPES	14.41 TON	$ 2,950.00	$	42,499
SUSPENDED FLOOR STRUCTURE WF	0.00 TON	$ 2,950.00	$	-
ROOF STRUCTURE JOIST	216.10 TON	$ 2,950.00	$	637,480
MISC. STEEL	2.88 TON	$ 2,950.00	$	8,500
ROOF DECK	57625 SF	$ 2.50	$	144,063
GALVANIZED ANGLE AT EXTERIOR WALL	1248 LF	$ 14.00	$	17,476
STEEL LADDER TO ROOF	16 LF	$ 88.00	$	1,364
WALL CAP	1248 LF	$ 10.50	$	13,107
METAL STAIR AND RAILINGS	0 FLT	$ 15,500.00	$	-
			$	**864,489**
WOOD AND PLASTICS				
WALL PLATES BOLTED AND SHAPED	1248 LF	$ 5.00	$	6,241
ALLOW FOR HEADWALL SYSTEMS	225 LF	$ 745.00	$	167,625
MISC. ROUGH CARPENTRY	57625 SF	$ 0.50	$	28,813
FINISH CARPENTRY	57625 SF	$ 0.75	$	43,219
MISC. CASEWORK	57625 SF	$ 2.00	$	115,251
			$	**361,149**

THERMAL AND MOISTURE PROTECTION

FOUNDATION INSULATION	4993	SF	$	1.50	$	7,490
WATERPROOF AT FOUNDATION WALL	4993	SF	$	2.00	$	9,986
WALL EXPANSION COVERS INT. & EXT.	31	LF	$	88.00	$	2,728
EXTERIOR WALL INSULATION	13544	SF	$	1.50	$	20,316
SPRAY ON STRUCTURAL FIREPROOF 20%	11525	SF	$	3.00	$	34,575
SOUND INSULATION (ALLOW)	21610	SF	$	0.50	$	10,805
ROOFING	57625	SF	$	3.50	$	201,689
ROOF INSULATION RIGID	51863	SF	$	4.00	$	207,451
ROOF CRICKETS	5186	SF	$	2.50	$	12,966
ROOF HATCH	5	EA	$	780.00	$	3,900
ROOFING SPECIALTIES	51863	SF	$	0.25	$	12,966
ALLOW FOR ENTRY COVERS, complete	864	SF	$	85.00	$	73,472
ALLOW FOR SEALANT	11525	LF	$	1.25	$	14,406
					$	**612,749**

DOORS AND WINDOWS

DOORS EXTERIOR STORE FRONT AND SIDE LITE						
COMPLETE HARDWARE, 6' X 7'	12	EA	$	3,200.00	$	38,400
DOORS INTERIOR WOOD OR HOLLOW METAL						
COMPLETE HARDWARE, PAINTED	134	EA	$	980.00	$	131,332
POWER OPERATOR	8	EA	$	1,100.00	$	8,800
ALLOW FOR CEILING ACCESS PANELS	10	EA	$	150.00	$	1,572
INTERIOR GLASS AND GLAZING	432	SF	$	35.00	$	15,127
GLASS AND GLAZING	5804	SF	$	68.75	$	399,058
					$	**594,288**

FINISH
most gyp is impact resistant

EXTERIOR METAL STUDS 6" LOAD BEARING	13544	SF	$	3.00	$	40,631
INTERIOR WALLS STUDS GYP. TWO SIDES	43219	SF	$	7.00	$	302,533
GYP. SHEATHING AND BUILDING WRAP	13544	SF	$	2.50	$	33,859
GYP FINISHED AT EXTERIOR WALL	13544	SF	$	2.00	$	27,088
FLOOR FINISH CARPET AND BASE 15%	8644	SF	$	3.56	$	30,734
FLOOR FINISH SHEET VINYL 60%	34575	SF	$	7.00	$	242,026
FLOOR FINISH CERAMIC TILE 10%	5763	SF	$	13.00	$	74,913
FLOOR FINISH V C T 10%	5763	SF	$	3.00	$	17,288
FLOOR FINISH SPECIAL	1250	SF	$	10.00	$	12,500
WALL BUMPERS CORRIDORS (ALLOW)	2788	LF	$	22.00	$	61,343
WALL FINISH UPGRADED 20% VINYL	8644	SF	$	2.00	$	17,288
WALL FINISH CERAMIC TILE 5%	2161	SF	$	14.00	$	30,253
WALL FINISH PAINT 65%	28092	SF	$	0.65	$	18,260
WALL FINISH EPOXY	5763	SF	$	1.00	$	5,763
WALL FINISH SPECIAL	3750	SF	$	8.00	$	30,000
CEILING FINISH EXPOSED PAINTED 2%	1153	SF	$	1.50	$	1,729
CEILING SUSPENDED GYPSUM 70% impact r	40338	SF	$	11.00	$	443,715
CEILING SUSPENDED GYPSUM 10% EPOXY	4034	SF	$	7.00	$	28,236
CEILING FINISH LAY IN TILE 18%	10373	SF	$	4.00	$	41,490
					$	**1,459,649**

SPECIALTIES

FIRE EXTINGUISHER IN CABINET	13	EA	$	245.00	$	3,185
TOILET PARTITIONS / SPECIALTIES	14	EA	$	1,250.00	$	18,008
JANITOR SHELVING	1	EA	$	250.00	$	250
KITCHEN - EQUIPMENT	750	SF	$	50.00	$	37,500
DOCK SPECIALTIES	0	SF	$	0.10	$	-
WINDOW SHADES AT 30% OF WINDOWS	1741	SF	$	4.00	$	6,965
TRAFFIC MATT	384	SF	$	18.00	$	6,912
SIGNAGE ALLOW 1 PER 500 SF	115	EA	$	88.00	$	10,142
					$	**82,962**

CONVEYING SYSTEMS

0

ELEVATOR FULL SERVICE PASSENGER						
TYPE AND SPEED NEEDED	0	SF	$	2.50	$	-
ADD FOR MORE THAN 2 FLOORS	0.0	SUM	$	18,000.00	$	-
					$	**-**

MECHANICAL

PLUMBING	57625	EA	$	4.00	$	230,501
SPECIAL SYSTEMS PLUMBING CHEMICAL						
GREASE AND OIL TRAP AT LAB AND FOOD	3	EA	$	4,500.00	$	13,500
HVAC, FULL BUILDING SYSTEM	57625	SF	$	30.00	$	1,728,760
FIRE SPRINKLER	57625	SF	$	3.50	$	201,689
					$	**2,174,450**

ELECTRICAL

POWER AND DISTRIBUTION	57625	SF	$	3.00	$	172,876
BRANCH CONDUIT AND WIRE	57625	SF	$	4.00	$	230,501
LIGHTING	57625	SF	$	5.00	$	288,127
NURSE CALL SYSTEM	0	SF	$	2.00	$	-
COMPUTER BASED PROJECTORS	0	EA	$	7,500.00	$	-
SECURITY CAMERA SYSTEM (ALLOW)						
1 PER 5000 GSF	45	EA	$	1,450.00	$	65,250
PHONE SYSTEM	57625	EA	$	2.00	$	115,251
FIRE ALARM AND SPECIAL SYSTEMS	57625	SF	$	2.00	$	115,251
SECURITY SYSTEMS	57625	SF	$	2.00	$	115,251
				19.13231449	**$**	**1,102,506**

6: APPENDIX

a. Speciality Products Information
b. Geotechnical Report
c. Site Survey
d. Existing Facility Photos

SPECIALTY PRODUCTS INFORMATION

These websites, along with the listed product information and input, were given to the programming consultants by State Hospital representatives during the programming process, for consideration during future project design phases.

All products and fixtures must be approved by State Hospital representatives before being used in the project.

Seclusion Suite Safety Padding.
http://www.goldmedalsafetypadding.com/

Push/Pull Latchset.
http://www.securingcosmos.com/shopexd.asp?id=99998

Toilet Room Products.
http://www.bradleycorp.com/products/appguide/security.jsp
(Shower heads used at State Hospital similar to those seen on this website.)

Toilet Paper Dispenser.
http://capecodsystemscompany1.tru-m.com/store/suicide-prevention-toilet-paper-dispenser,Product.asp

Faucet (may not be sufficiently suicide-resistant).
http://capecodsystemscompany1.tru-m.com/store/suicide-prevention-faucet,Product.asp

Sink Piping Enclosure Cabinets.
Constructed by UCI (Utah Correctional Industries).

Shower handle similar to those used at the State Hospital.
http://www.besafeprod.com/index.php?option=com_productdisplay&view=productdisplay&layout=category&Itemid=2

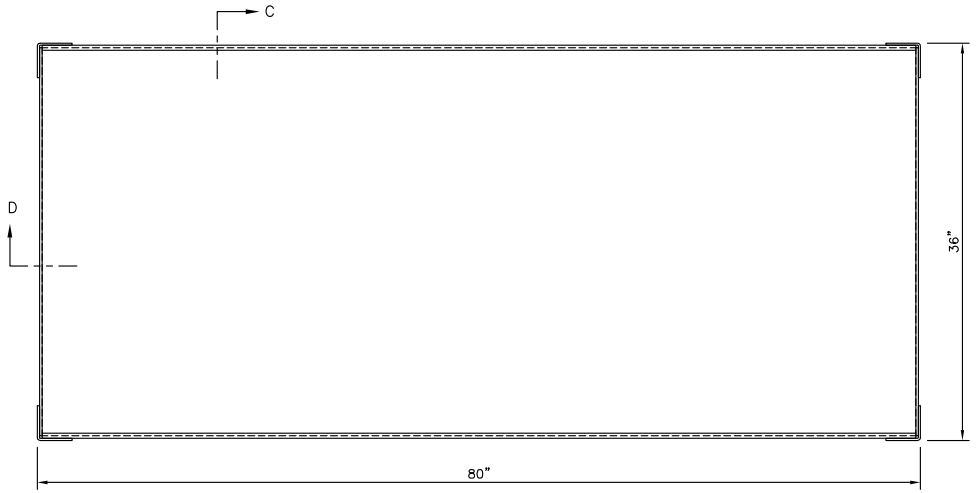
Toilet Room Fixture / Product Input:
- Stainless steel toilets/fixtures should only be used in the seclusion rooms.
- No integral seat on ceramic toilets.
- Consider flush valve covers for toilet piping.
- Shower curtains must be break away and must allow visibility about 18-24 inches above the floor.
- Grab bars must be suicide resistant.
- Mirrors: Consider glass for its image quality, but must be safety glass.
- No built-in trash receptacles; use free-standing rubber receptacles with paper liners.

Furniture (Cost may be an issue for some of these items).
http://www.moduform.com/
http://www.max-secure.com/daydining-room-furniture (Patient bedroom desk chair)
http://www.anchortex.com/norix/roto-mold-seating.htm (Patient bedroom desk chair)

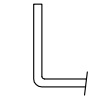
Floor Mount Bunk.
Chief Bunks offer the customer a durable welded design in three basic models: floor mount, wall mount and wall/floor mount. The pan size for this particular application, 36" x 80". Floor mount bunks have 10 gauge tapered, formed legs. The base plate is punched with a 7/16" diameter hole for floor anchorage. The top edge of the 2" pan lip is designed to rest 20" above the finished floor. Standard models have no penetrations in the pans however if desired this option is available. Bunk pans will be a formed 12 GA sheet, hemmed along the length and flanged at each end. Bunks will receive factory applied, baked on polyester powder finish coat, grey.
(*See Diagram on Page 6.4*)

Breakaway Clothes Hanging.
http://www.securingprisons.com/shopexd.asp?id=7350&maincat=609&subcat=610&dispcat=137

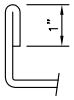
Collapsible Towel Hook.
http://www.securingprisons.com/shopexd.asp?id=2473&maincat=609&subcat=610&dispcat=53



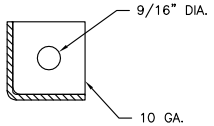
TOP VIEW



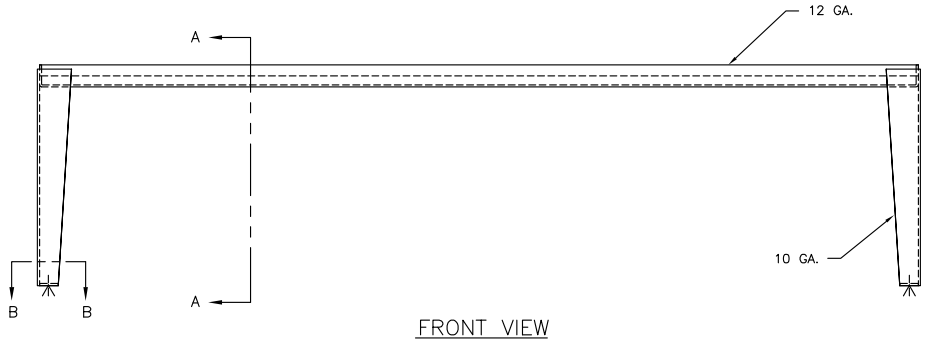
SECTION D



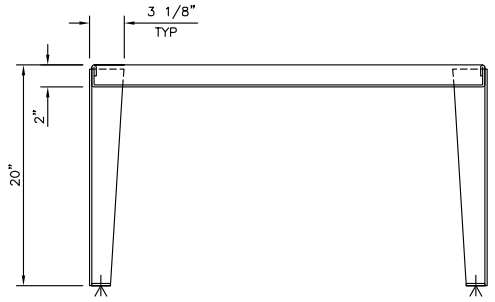
SECTION C



SECTION B–B



FRONT VIEW



SECTION A–A

JOB INFORMATION	ERECTION NOTES:	REVISIONS:			
PROJECT: UTAH STATE HOSPITAL QTY: 90 PAINT: CHIEF POWDER COAT ASA 61 GRAY	1. ALL DIMENSIONS NOMINAL. 2. ANCHOR BOLTS ARE BY INSTALLER.			DR BY: LEIGHR DATE : 29-Mar-2011 CK BY: DATE : DWG : B100NMOD SCALE :	BUNK – FLOOR MOUNTED 12 GA. NON–PERFORATED PAN (APPROVAL DRAWING) CORRECTIONAL PRODUCTS CHIEF CHIEF INDUSTRIES, INC. WEST HIGHWAY 30 - GRAND ISLAND, NEBRASKA 68801 UNIT NO: B100Nmod PAGE NO: 1

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REPORT
GEOTECHNICAL STUDY
PROPOSED MEDICAL SERVICES AND PEDIATRIC SCHOOL BUILDINGS
SOUTH END OF UTAH STATE HOSPITAL CAMPUS
(APPROXIMATELY 1300 EAST CENTER STREET)
PROVO, UTAH

Submitted To:

State of Utah - DFCM
4110 State Office Building
Salt Lake City, Utah 84114

Submitted By:

Gordon Spilker Huber Geotechnical Consultants, Inc.
473 West 4800 South
Salt Lake City, Utah 84123

July 22, 2011

Job No. 0128-076-11

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

July 22, 2011
Job No. 0128-076-11

State of Utah - DFCM
4110 State Office Building
Salt Lake City, Utah 84114

Attention: Mr. Jim Russell

Ladies and Gentlemen:

Re: Report
Geotechnical Study
Proposed Medical Services and Pediatric School Buildings
South end of Utah State Hospital Campus
(Approximately 1300 East Center Street)
Provo, Utah

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our geotechnical study performed at the site of the proposed Medical Services and Pediatric School Buildings, which is located at the south end of the Utah State Hospital Campus at approximately 1300 East Center Street in Provo, Utah. The general location of the site with respect to major topographic features and existing facilities, as of 1993, 1994, and 1998 is presented on Figure 1, Vicinity Map. A more detailed layout of the site showing the locations of existing and proposed structures, pavements, and roadways, is presented on Figure 2, Site Plan. The locations of the borings drilled in conjunction with this study are also presented on Figure 2.

During the course of this study, preliminary conclusions and recommendations to aid in the design of the proposed facility were presented in an interim report dated July 8, 2011[1].

[1] "Interim Report, Proposed Two One-Level Medical and Residential Buildings, South End of Utah State Hospital Campus, Provo, Utah," GSH Job No. 0128-076-11

Gordon Spilker Huber Geotechnical Consultants, Inc.
473 West 4800 South
Salt Lake City, Utah 84123
Tel: (801) 685-9190 Fax: (801) 685-2990
www.gshgeotech.com

1.2 OBJECTIVES AND SCOPE

The objectives and scope of our study were planned in discussions between Mr. Jim Russell of the State of Utah – DFCM, Ms. Sarah Miller of MHTN Architects, and Mr. Bill Gordon of Gordon Spilker Huber Geotechnical Consultants, Inc. (GSH).

In general, the objectives of this study were to:

1. Accurately define and evaluate the subsurface soil and groundwater conditions across the site.
2. Provide appropriate foundation, earthwork, pavement, and geoseismic recommendations to be utilized in the design and construction of the proposed facilities.

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

1. A field program consisting of the drilling, logging, and sampling of 13 borings.
2. A laboratory testing program.
3. An office program consisting of the correlation of available data, engineering analyses, and the preparation of this summary report.

1.3 AUTHORIZATION

Verbal authorization was provided by Mr. Russell after our Professional Services Agreement No. 11-0615 dated June 20, 2011 was reviewed.

1.4 PROFESSIONAL STATEMENTS

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

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

State of Utah - DFCM
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2. PROPOSED CONSTRUCTION

Two structures are planned for the site. Both structures will be of light steel-frame and masonry block construction and one-extend level in height. The floor slab will be established one to two feet above the existing site grade. The buildings will be approximately 30,000 and 80,000 square feet in plan dimension. The Youth Center and Beesley buildings, which are currently on-site, have been slated for demolition.

Structural loads will be transmitted down through columns and bearing walls to the supporting foundations. The structure will be lightly loaded. Maximum column and wall loads are anticipated to be on the order of 70 to 120 kips and 4 to 5 kips per lineal foot, respectively. At-grade floor slab loads will be relatively light, on the order 200 pounds per square foot.

Site development will require a minimal amount of earthwork in the form of site grading. We estimate that maximum cuts will be less than one to two feet and fills up to two to three feet to achieve design grades.

At-grade paved parking and roadway areas will be part of the overall development. Projected traffic within access roadways and loading areas will consist of a moderate volume of automobiles and light trucks and a light volume of medium- and heavy-weight trucks. In parking areas, projected traffic will consist of a light volume of automobiles and light trucks and occasional medium-weight trucks.

3. SITE INVESTIGATIONS

3.1 FIELD PROGRAM

In order to define and evaluate the subsurface soil and groundwater conditions, 13 borings were drilled throughout the site. The borings were drilled using a truck-mounted drill rig equipped with hollow-stem augers and extending to depths of 5 to 39 feet. Locations of the borings are presented on Figure 2.

The field portion of our study was under the direct control and continual supervision of an experienced member of our geotechnical staff. During the course of the drilling operations, a continuous log of the subsurface conditions encountered was maintained. In addition, relatively undisturbed and small disturbed samples of the typical soils encountered were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications have been supplemented by subsequent inspection and testing in our laboratory. Detailed graphical representation of the subsurface conditions encountered is presented on Figures 3A through 3M, Log of Borings. Soils were classified in accordance with the nomenclature described on Figure 4, Unified Soil Classification System.

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

Following completion of drilling operations, one and one-quarter-inch diameter slotted PVC pipe was installed in Borings B-1, B-2, B-4, B-9, and B-11 through B-13 in order to provide a means of monitoring the groundwater fluctuations.

3.2 LABORATORY TESTING

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

3.2.1 Moisture and Density Tests

To provide index parameters and to aid in correlating other test data, moisture and density tests were performed on selected undisturbed samples. The results of these tests are presented on the boring logs, Figures 3A through 3M.

3.2.2 Partial Gradation Tests

To aid in classifying the granular soils and to provide data for liquefaction analysis, partial gradation tests were performed. Results of the tests are tabulated below:

Boring No.	Depth (feet)	Percent Passing No. 200 Sieve	Soil Classification
B-1	20.5	24.8	SM
B-1	22.5	32.8	SM
B-1	33.0	13.2	SM

3.2.3 Consolidation Tests

To provide data necessary for our settlement analyses, a consolidation test was performed on each of five representative samples of the predominately fine-grained soils encountered.

The initial testing showed low strength and high compressibility characteristics. GSH then performed additional consolidation tests which showed slightly higher strength and lower

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compressibility characteristics. The test data shows that the fine-grained soils are slightly over-consolidated. When loaded below the over-consolidation pressure, these soils will exhibit moderate to high compressibility characteristics. Detailed results of the tests are maintained within our files and can be transmitted to you, upon your request.

3.2.4 pH and Soluble Sulfates Tests

To determine if the site soils will react detrimentally with concrete, pH and soluble sulfates tests were performed on each of two representative samples of the fill and native soils. The results of those tests are tabulated below:

Boring No.	Depth (feet)	Soil Classification	pH	Water Soluble Sulfate (mg/kg-dry)
B-1	2.5	CL	8.25	23.8

4. SITE CONDITIONS

4.1 SURFACE

The site of the proposed Medical Services and Pediatric School buildings is located at the south end of the Utah State Hospital Campus at approximately 1300 East Center Street in Provo, Utah. The site currently contains the Youth Center and Beesley buildings and associated pavements, which are slated for demolition. The site is bounded to the north, east, and west by buildings associated with the Utah State Hospital Campus. To the north is the Rampton I building and a pavilion; to the east is a grass field; to the south is a residential development; and to the west are the cottage and a warehouse. The site layout is shown on Figure 2.

The site is relatively flat with an overall relief of one to two feet sloping downward to the west/northwest. Vegetation at the western building site consists of ankle-high weeds and grasses. The eastern building site has been partially developed with the Youth Center and Beesley buildings and an asphalt concrete roadway and parking lot. The vegetation outside of the asphalt concrete consists of ankle-high weeds and grasses and occasional trees up to 20 feet in height.

4.2 SUBSURFACE SOIL

The soil conditions encountered in each of the borings, to the depths penetrated, were relatively similar. The upper two to three inches contain major roots and have been classified as topsoil. In Borings B-7 and B-9 through B-12, fill was encountered to depths ranging from one to three and one-half feet. The fill consists of silty clay with some fine to coarse sand and varying gravel content. The fills are medium dense, brown, moist, and will exhibit variable and, in most cases,

poor engineering characteristics. Unless test data is available to prove otherwise, these upper fills are considered to be non-engineered fill.

Underlying the fill in Borings B-7 and B-9 through B-12, and from the surface in Borings B-1 through B-6, B-8, and B-13, and extending to a depth of 20.0 feet in Boring B-1 and the maximum explored depths of 5.0 to 16.5 feet in Borings B-2 through B-13 is silty clay with varying fine sand and fine and coarse gravel content. The silty clay is soft to very stiff, brown, and moist to saturated. During laboratory testing, these soils exhibited low strength and moderate to high compressibility characteristics. Upon review of local geology, it has been determined that these soils are mud flow deposits and will have a reduced bearing capacity compared to the lacustrine deposit clays that GSH had originally anticipated.

Underlying the silty clay in Boring B-1 and extending to the maximum explored depth of 40 feet is silty fine sand. The sand is loose to medium dense, saturated, brown, and will exhibit high strength and low compressibility characteristics under the anticipated loading.

4.3 GROUNDWATER

Immediately following drilling operations, the groundwater was measured in each boring. On July 21, 2011, we returned to the site and measured the groundwater within the piezometers placed in the borings. Groundwater measurements are tabulated below:

Boring No.	Groundwater Depth (feet)	
	July 5 and 6, 2011*	July 21, 2011
B-1	17.0	14.3
B-2	No groundwater encountered to 14.5	No groundwater encountered to 14.5
B-3	No pipe installed	---
B-4	16.5	13.7
B-5	No pipe installed	---
B-6	No pipe installed	---
B-7	No pipe installed	---
B-8	No pipe installed	---
B-9	No groundwater encountered to 16.5	No groundwater encountered to 16.5
B-10	No pipe installed	---
B-11	No groundwater encountered to 15.5	No groundwater encountered to 15.5
B-12	14.5	No groundwater encountered to 14.5
B-13	14.0	15.3

* During drilling, not stabilized

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Seasonal and longer-term groundwater fluctuations on the order of one to one and one-half feet are projected, with the highest seasonal levels generally occurring during the late spring and early summer months.

5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The geotechnical aspects of the site that will most influence the design and construction of the proposed structures and pavements are:

1. The one to three and one-half feet of non-engineered fill encountered in Borings B-7 and B-9 through B-12. The fill, must be removed from beneath the footings of the proposed structures. The fill may remain beneath floor slabs.

2. The moderate to highly compressible silty clay soils encountered to a depth of 20 feet. Our analysis indicates that these soils are a mud flow deposit and can support a load of 1,500 pounds per square foot, but do not have the engineering characteristics that GSH had originally anticipated.

3. The potentially liquefiable sand layers encountered between 20 and 22 feet in Boring B-1. Our analysis indicates that this granular soil layer could liquefy under the design seismic event.

The proposed structures may be supported upon conventional spread and continuous wall foundations supported upon suitable natural soils and/or structural fill extending to suitable natural soils.

Liquefaction is discussed in more detail in Section 5.8.5, Liquefaction.

Under no circumstances shall the footings be established upon loose or disturbed soils, sod, rubbish, construction debris, non-engineered fill, other deleterious materials, frozen soils, or within ponded water.

Detailed discussions pertaining to earthwork, foundations, floor slabs, lateral resistance, pavements, and the geoseismic setting of the site are discussed in the following sections.

5.2 EARTHWORK

5.2.1 Site Preparation

Initial site preparation will consist of the demolition of the existing structures and pavements and the removal of any surface vegetation, topsoil, loose/disturbed surficial soils, non-engineered fills, and other deleterious materials from an area extending out at least five feet from the

perimeter of the proposed buildings and rigid pavements. Surficial loose/disturbed soil may remain in flexible pavement areas provided that the remaining soils do not contain deleterious materials and the upper 9 to 12 inches are scarified, moisture prepared, and recompacted to the requirements of structural fill.

Subsequent to the above operations and prior to the placement of footings or structural site grading fill, the exposed natural subgrade must be proofrolled by passing moderate-weight rubber tire-mounted construction equipment over the surface at least twice. If any loose, soft, or disturbed zones are encountered, they must be completely removed in footing and floor slab areas and replaced with granular structural fill. In pavement areas, unsuitable soils encountered during recompaction and proofrolling must be removed to a maximum depth of two feet and replaced with compacted granular structural fill.

5.2.2 Excavations

Groundwater is anticipated to be encountered at depths greater than 13 feet below the ground surface. Temporary construction excavations in cohesive soil, above or below the water table, not exceeding four feet in depth, may be constructed with near-vertical sideslopes. Temporary excavations up to eight feet deep in fine-grained cohesive soils and above or below the water table may be constructed with sideslopes no steeper than one-half horizontal to one vertical. Excavations deeper than eight feet are not anticipated at the site.

For granular (cohesionless) soils, temporary construction excavations, not exceeding four feet and above the water table, should be no steeper than one-half horizontal to one vertical. For excavations up to eight feet in granular soils and above the water table, the slopes should be no steeper than one horizontal to one vertical. Excavations encountering saturated cohesionless soils will be very difficult and will require very flat sideslopes and/or shoring and bracing.

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

5.2.3 Structural Fill

Structural fill is defined as all fill which will ultimately be subjected to structural loadings, such as imposed by footings, floor slabs, pavements, etc. Structural fill will be required as backfill over foundations and utilities, as site grading fill, dock-height fill, and as replacement fill below the building. Structural site grading fill is defined as fill placed over fairly large open areas to raise overall site grades.

All structural fill must be free of sod, organic material, rubbish, debris, frozen soil, and other deleterious materials. All imported fill should consist of a fairly well-graded mixtures of sand and gravel with the maximum fines content (material passing the No. 200 sieve) not exceeding 18 percent. The plasticity index of fine-grained soils, if used as site grading fill from on-site or imported sources, must not exceed 18 percent.

To stabilize soft subgrade conditions or where structural fill is required to be placed below a level one foot above the water table at the time of construction, a mixture of coarse gravels and cobbles and/or one and one-half- to two-inch gravel (stabilizing fill) should be utilized.

For structural site grading fill, the maximum particle size should generally not exceed four inches or two-thirds the thickness of the fill, whichever is less; although, occasional larger particles not exceeding eight inches in diameter may be incorporated if placed randomly in a manner such that "honeycombing" does not occur and the desired degree of compaction can be achieved. The maximum particle size within structural fill placed within confined areas should generally be restricted to two and one-half inches.

Fine-grained soils may be utilized as structural site grading fill if they meet the requirements as stated above. However, it should be noted that unless moisture control is maintained near optimum (typically within 2 percent of optimum), placement and compaction of the natural or imported fine-grained soils will be very difficult, if not impossible, during wet and cold periods of the year. The plasticity index of the silty clays should not exceed 18 percent.

Only granular soils are recommended as structural fill below foundations and in confined areas, such as backfill around foundations or within utility trenches.

Non-structural site grading fill is defined as all fill material not designated as structural fill and may consist of any cohesive or granular soils not containing excessive amounts of degradable material.

5.2.4 Fill Placement and Compaction

All structural fill shall be placed in lifts not exceeding eight inches in loose thickness. Structural fills shall be compacted in accordance with the percent of the maximum dry density as determined by the AASHTO[2] T-180 (ASTM[3] D-1557) compaction criteria in accordance with the table below:

Location	Total Fill Thickness (feet)	Minimum Percentage of Maximum Dry Density
Beneath an area extending at least 5 feet beyond the perimeter of the structure	0 to 10	95
Outside area defined above	0 to 5	90
Outside area defined above	5 to 10	95

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

Subsequent to stripping and prior to the placement of structural site grading fill, the subgrade shall be prepared as discussed in Section 5.2.1, Site Preparation, of this report. In confined areas, subgrade preparation should consist of the removal of all loose or disturbed soils.
Non-structural fill may be placed in lifts not exceeding 12 inches in loose thickness and compacted by passing construction, spreading, or hauling equipment over the surface at least twice.

5.2.5 Utility Trenches

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

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

On-site or imported fine-grained cohesive soils are not recommended for use as trench backfill.

5.3 SPREAD AND CONTINUOUS WALL FOUNDATIONS

5.3.1 Design Data

The results of our analyses indicate that the proposed structures may be supported upon conventional spread and/or continuous wall foundations established upon suitable natural soils and/or structural fill extending to suitable natural soil. For design, the following parameters are recommended:

Minimum Recommended Depth of Embedment for Frost Protection	- 30 inches
Minimum Recommended Depth of Embedment for Non-frost Conditions	- 15 inches
Recommended Minimum Width for Continuous Wall Footings	- 18 inches

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Minimum Recommended Width for Isolated Spread Footings	- 24 inches
Recommended Net Bearing Pressure for Real Load Conditions	- 1,500 pounds per square foot
Bearing Pressure Increase for Seismic Loading	- 50 percent

The term "net bearing pressure" refers to the pressure imposed by the portion of the structure located above lowest adjacent final grade. Therefore, the weight of the footing and backfill to lowest adjacent final grade need not be considered. Real loads are defined as the total of all dead plus frequently applied live loads. Total load includes all dead and live loads, including seismic and wind.

5.3.2 Installation

Under no circumstances should the footings be established upon loose or disturbed soils, sod, rubbish, construction debris, non-engineered fill, other deleterious materials, frozen soils, or within ponded water. If unsuitable soils are encountered, they must be removed and replaced with compacted structural fill. If granular structural fills become loose or disturbed, they must be recompacted to the requirements for structural fill.

The width of structural replacement fill below footings should be equal to the width of the footing plus one foot for each foot of fill thickness.

5.3.3 Settlements

Settlement of foundations designed and installed in accordance with the above recommendations and supporting maximum loads, as discussed in Section 2., Proposed Construction, should be on the order of one-half to five-eighths of an inch. Settlements will occur rapidly with approximately 50 to 60 percent of the quoted settlements occurring during construction.

5.4 LATERAL RESISTANCE

Lateral loads imposed upon foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footings and the supporting soils. In determining frictional resistance, a coefficient of 0.40 should be utilized for footings established upon natural soils or structural fills. Passive resistance provided by properly placed and compacted granular structural fill above the water table may be considered equivalent to a fluid with a density of 300 pounds per cubic foot. Below the water table, if encountered, this granular soil should be considered equivalent to a fluid with a density of 150 pounds per cubic foot.

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

5.5 FLOOR SLABS

Floor slabs may be placed directly upon properly prepared non-engineered fills, suitable natural soils, and/or granular structural fill extending to suitable natural soils. Topsoil is not considered suitable. To provide a capillary break, it is recommended that floor slabs be directly underlain by at least four inches of "free-draining" fill, such as "pea" gravel or three-quarters to one-inch minus clean gap-graded gravel. Settlements of lightly loaded floor slabs (less than 200 pounds per square foot) are anticipated to be less than one-quarter of an inch.

5.6 PAVEMENTS

The natural soils and/or properly prepared existing non-engineered fills will exhibit poor engineering characteristics when saturated or near saturated. Considering non-engineered fill as the subgrade soils and the projected traffic as discussed in Section 2., Proposed Construction, the following pavement sections are recommended:

Parking Areas

(Light Volume of Automobiles and Light Trucks,
Occasional Medium-Weight Trucks,
and No Heavy-Weight Trucks)
[1 equivalent 18-kip axle load per day]

Flexible:

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

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Rigid:

5.0 inches	Portland cement concrete (non-reinforced)
3.0 inches	Aggregate base course
Over	Properly prepared natural soils, properly prepared existing non-engineered fill*, and/or structural site grading fill extending to suitable natural soils.

* For more details on preparing non-engineered fill, see Section 5.2.1, Site Preparation

Primary Roadway Areas

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

Flexible:

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

Rigid:

5.5 inches	Portland cement concrete (non-reinforced)
4.0 inches	Aggregate base course
Over	Properly prepared natural soils, properly prepared existing non-engineered fill*, and/or structural site grading fill extending to suitable natural soils.

* For more details on preparing non-engineered fill, see Section 5.2.1, Site Preparation

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

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

5.7 CEMENT TYPES

Laboratory tests indicate that the site soils contain negligible amounts of water soluble sulfates. Therefore, all concrete which will be in contact with the site soils may be prepared using Type I or IA cement.

5.8 GEOSEISMIC SETTING

5.8.1 General

Utah municipalities adopted the International Building Code (IBC) 2009 on July 1, 2010. The IBC 2009 code determines the seismic hazard for a site based upon 2002 mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class. The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

The structures must be designed in accordance with the procedure presented in Section 1613, Earthquake Loads, of the IBC 2009 edition.

5.8.2 Faulting

Based upon our review of available literature, no active faults are known to pass through or immediately adjacent to the site. The site is located outside fault investigation zones identified by Utah County. The nearest active fault is the Provo section of the Wasatch Fault, approximately one-quarter to one-half of a mile east of the site.

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5.8.3 Soil Class

Due to the liquefaction concerns at the site for dynamic structural analysis, the Site Class F as defined in Table 1613.5.2, Site Class Definition of the IBC 2009 can be utilized. Without the liquefaction concerns, the site would be a Site Class D.

In accordance with ASCE 7-10, Section 20.3.1 Site Class F, for structures with fundamental periods of vibration equal to or less than 0.5 seconds, a site-specific study is not required. Additionally, ASCE 7-10, Section 20.3.1 indicates that the site class in this situation can be determined by the standard means. This places the site in a Site Class D for all structures with periods less than 0.5 seconds, which is anticipated to include the proposed structures at the site.

5.8.4 Ground Motions

The IBC 2009 code is based on 2002 USGS mapping, which provides values of short and long period accelerations for the Site Class B-C boundary for the Maximum Considered Earthquake (MCE). This Site Class B-C boundary represents a hypothetical bedrock surface and must be corrected for local soil conditions. The following table summarizes the peak horizontal and short and long period accelerations for a 2 percent in 50-year event and incorporates a soil amplification factor for a Site Class D soil profile. Based on the site latitude and longitude (40.2328 north and 111.6382 degrees west, respectively), the values for this site are tabulated below:

Spectral Acceleration Value, T Seconds	Site Class B-C Boundary [mapped values] (% g)	Site Class D [adjusted for site class effects] (% g)
Peak Ground Acceleration	50.1	50.1
0.2 Seconds, (Short Period Acceleration)	S_S = 125.2	S_{MS} = 125.2
1.0 Seconds (Long Period Acceleration)	S_1 = 52.5	S_{M1} = 78.8

The IBC 2009 code site accelerations are based on taking the above short and long period accelerations for the Maximum Considered Earthquake Event, and multiplying by two-thirds (⅔).

5.8.5 Liquefaction

Liquefaction is defined as the condition when saturated, loose, granular soils lose their support capabilities because of excessive pore water pressure which develops during a seismic event.

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Based on our analysis, the sands encountered in Boring B-1 from 20 to 22 feet could liquefy under the design seismic event. Settlements associated with the liquefaction could be on the order of one inch. The liquefaction zone, however, is not consistent laterally and is at depth; therefore, lateral spreading is not anticipated to be a concern. Due to the depth of the liquefiable layer, surface ground rupture is not anticipated.

Calculations were performed using the procedures described in the 2008 Soil Liquefaction During Earthquakes Monograph by Idriss and Boulanger[4].

5.9 Site Visits

Due to the presence and variable nature of non-engineered fills at the site, a qualified geotechnical engineer must verify that all non-engineered fills have been completely removed prior to the placement of structural site grading fills, or footings.

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

Respectfully submitted,

GSH Geotechnical Consultants, Inc.

Patrick R. Emery, P.E.
State of Utah No. 7941710
Project Geotechnical Engineer

Reviewed by:

William J. Gordon, P.E.
State of Utah No.146417
Senior Geotechnical Engineer

PRE/WKJ/jb

Encl. Figure 1, Vicinity Map
Figure 2, Site Plan
Figures 3A through 3M, Log of Borings
Figure 4, Unified Soil Classification System

Addressee (3 + email)
c: Ms. Sarah Miller (1 + email)
MHTN Architects
420 East South Temple, Suite 100
Salt Lake City, Utah 84111

REGISTERED PROFESSIONAL ENGINEER
PATRICK RYAN EMERY
STATE OF UTAH

4 Idriss, I. M., and Boulanger, R. W. (2008), Soil liquefaction during earthquakes: Monograph MNO-12, Earthquake Engineering Research Institute, Oakland, CA, 261 pp.

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FIGURE 1
VICINITY MAP

REFERENCE:
USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS
TITLED "PROVO, UTAH" AND "SPRINGVILLE, UTAH"
BOTH DATED 1998; "OREM, UTAH" DATED 1994; AND
"BRIDAL VEIL FALLS, UTAH" DATED 1993

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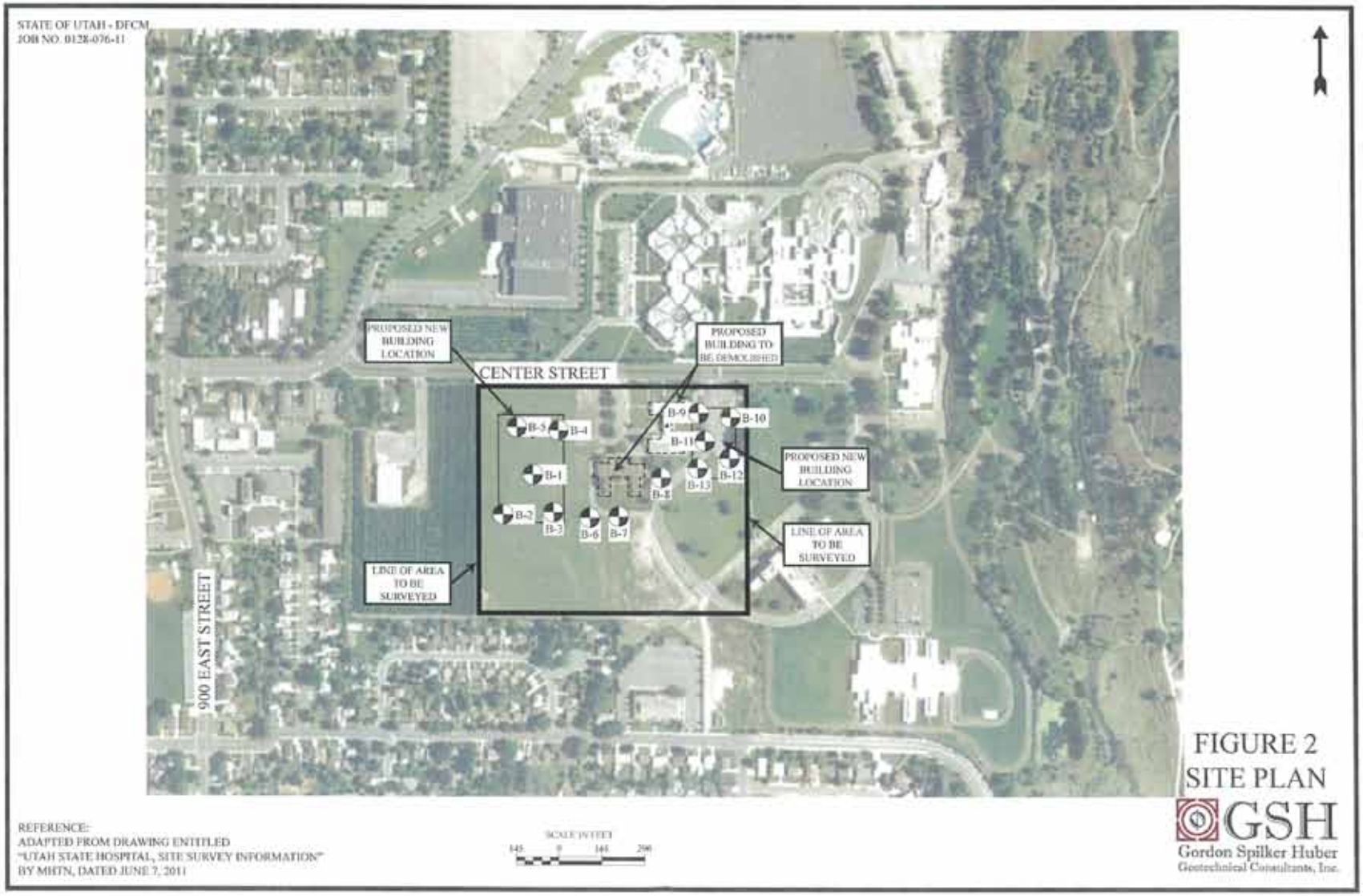
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PROPOSED NEW BUILDING LOCATION
CENTER STREET
PROPOSED BUILDING TO BE DEMOLISHED
B-5
B-4
B-9
B-10
B-11
B-1
B-12
B-8
B-13
B-2
B-3
B-6
B-7
PROPOSED NEW BUILDING LOCATION
LINE OF AREA TO BE SURVEYED
LINE OF AREA TO BE SURVEYED
900 EAST STREET
REFERENCE:
ADAPTED FROM DRAWING ENTITLED
"UTAH STATE HOSPITAL, SITE SURVEY INFORMATION"
BY MHTN, DATED JUNE 7, 2011
SCALE IN FEET
145
0
145
290
FIGURE 2
SITE PLAN
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BOREHOLE B-1

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Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-05-11 GSH Field Rep.: RJG
Water Level: 17.0' (07-05-11) 14.3' (07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand and trace fine gravel; rootholes; trace pinholes; major roots (topsoil) to 3"; brown with light brown mottling (CL)									loose to 3"-4" moist
				11		18.9		101			stiff
		grades with trace fine sand without rootholes and pinholes	5	22							
			10	18							
											saturated
			15	6		33.4		88			very moist
		SILTY FINE SAND brown (SM)	20	10		22.9	24.8	103			saturated loose
		grades with light oxidation		9			32.8				
			25								

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

FIGURE 3A

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BOREHOLE B-1

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Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-05-11 GSH Field Rep.: RJG
Water Level: 17.0' (07-05-11) 14.3' (07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		grades with occasional layers up to 4" thick of silty clay with some fine sand; oxidation mottling	30	18							medium dense
		grades with fine to coarse sand with occasional to some fine and coarse gravel and trace silt; grayish-brown		19			13.2				
			35	25							
		Stopped drilling at 37.5'.	40								
		Stopped sampling at 39.0'.									
		Installed 1-1/4" diameter slotted PVC pipe to 39.0'.	45								
			50								

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

FIGURE 3A (con't)

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BOREHOLE B-2

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Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-05-11 GSH Field Rep.: RJG
Water Level: No groundwater encountered (07-05-11 & 07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand, trace organics, rootholes, and trace pinholes; major roots (topsoil) to 3"; brown (CL)									loose to 3"-4" moist
				10							medium stiff
		grades without pinholes and rootholes									
			5	16							stiff
		grades with trace fine sand									
				18							
			10								
				10							medium stiff
		Stopped drilling at 13.0'.	15								
		Stopped sampling at 14.5'.									
		Installed 1-1/4" diameter slotted PVC pipe to 14.5'.									
		No groundwater encountered at time of drilling.	20								
			25								

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

FIGURE 3B

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BOREHOLE B-3

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Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-05-11 GSH Field Rep.: RJG
Water Level: 15.5' (07-05-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand and occasional fine gravel; major roots (topsoil) to 3"; brown (CL)									loose to 3"-4" moist
											medium stiff
		grades with some fine and coarse gravel		23							very stiff
			5								
		grades to silty clay with some fine sand		14							stiff
		grades with trace fine sand		16		22.9		97			
			10								
				10							very moist
			15								saturated
		Stopped drilling at 14.0'.									
		Stopped sampling at 15.5'.									
		No groundwater encountered at time of drilling.	20								
			25								

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

FIGURE 3C

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Salt Lake City, Utah 84123

BOREHOLE B-4

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Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-05-11 GSH Field Rep.: RJG
Water Level: 16.5' (07-05-11) 13.7' (07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand and trace organics; major roots (topsoil) to 3"; brown (CL)									loose to 3"-4" moist
				12		19.9		92			stiff
			5	15							
		grades with trace fine sand	10	15							
		grades with occasional layers up to 1" thick of clayey fine sand	15	8							saturated medium stiff very moist
		Stopped drilling at 15.0'. Stopped sampling at 16.5'. Installed 1-1/4" diameter slotted PVC pipe to 16.5'. No groundwater encountered at time of drilling.	20 25								

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

FIGURE 3D

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-5

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-05-11 GSH Field Rep.: RJG
Water Level: 14.5' (07-05-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand, trace organics, major roots (topsoil) to 3"; brown with light mottling (CL)									loose to 3"-4" moist
				15							stiff
		grades brown	5	11		21.7		102			
		grades with trace fine sand		15							
			10								
				7							very moist medium stiff saturated
		Stopped drilling at 13.0'. Stopped sampling at 14.5'.	15 20 25								

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

FIGURE 3E

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-6

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-06-11 GSH Field Rep.: RJG
Water Level: No groundwater encountered (07-06-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand, trace organics, and occasional fine and coarse gravel; major roots (topsoil) to 3"; brown (CL)									loose to 3"-4" moist
											"stiff"
			5								
		Stopped drilling at 5.0'.									
		Stopped sampling at 4.5'.									
		No groundwater encountered at time of drilling.									
			10								
			15								
			20								
			25								

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

FIGURE 3F

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-7

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-06-11 GSH Field Rep.: RJG
Water Level: No groundwater encountered (07-06-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand and occasional fine and coarse gravel; major roots (topsoil) to 3"; brown (CL/GC)									loose to 3"-4" moist
											"stiff"
		SILTY CLAY with some fine sand and occasional fine gravel; brown (CL)									
			5								
		Stopped drilling at 5.0'.									
		Stopped sampling at 5.0'.									
		No groundwater encountered at time of drilling.									
			10								
			15								
			20								
			25								

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

FIGURE 3G

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-8

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-06-11 GSH Field Rep.: RJG
Water Level: No groundwater encountered (07-06-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY with some fine sand and occasional fine and coarse gravel; major roots (topsoil) to 3"; brown (CL)									loose to 3"-4" moist
											very moist "medium stiff"
			5								
		Stopped drilling at 5.0'. Stopped sampling at 5.0'. No groundwater encountered at time of drilling.	10								
			15								
			20								
			25								

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

FIGURE 3H

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-9

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-06-11 GSH Field Rep.: RJG
Water Level: No groundwater encountered (07-06-11 & 07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		SILTY CLAY, FILL with some fine sand and some fine and coarse gravel; major roots (topsoil) to 3"; brown (CL-FILL)									loose to 3"-4" moist
				15		17.4		114			stiff
		SILTY CLAY with trace fine sand and occasional fine gravel; brown (CL)	5								
				4		24.5		94			very moist
		grades without fine gravel	10								
				8		24.3		95			medium stiff
			15								
				8							
		Stopped drilling at 15.0'. Stopped sampling at 16.5'. Installed 1-1/4" diameter slotted PVC pipe to 16.5'. No groundwater encountered at time of drilling.	20								
			25								

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

FIGURE 3I

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-10

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Project No.: 0128-076-11
Location: S End of UT State Hospital Campus, Provo, Utah
Client: State of Utah - DFCM
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Date Drilled: 07-06-11
GSH Field Rep.: RJG
Elevation: ---
Water Level: No groundwater encountered (07-06-11)
Remarks:

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		4" ASPHALT CONCRETE PAVEMENT									
		7" SILTY FINE TO COARSE SAND (ROADBASE), FILL with some fine gravel; brown (SM/GM-FILL)									moist
		CLAYEY FINE AND COARSE GRAVEL, FILL brown (GM-FILL)		6							medium dense moist medium stiff
		SILTY CLAY with some fine sand; brown (CL)									
		grades with some fine and coarse gravel	5	4							soft
		grades with trace fine sand and occasional fine gravel		7		15.9		96			very moist medium stiff
		grades without fine gravel	10	12							stiff
		Stopped drilling at 13.0'.	15								
		Stopped sampling at 14.5'.									
		No groundwater encountered at time of drilling.	20								
			25								

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

FIGURE 3J

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-11

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Project No.: 0128-076-11
Location: S End of UT State Hospital Campus, Provo, Utah
Client: State of Utah - DFCM
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Date Drilled: 07-06-11
GSH Field Rep.: RJG
Elevation: ---
Water Level: No groundwater encountered (07-06-11 & 07-21-11)
Remarks:

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		4" ASPHALT CONCRETE PAVEMENT									
		7" SILTY FINE TO COARSE SAND (ROADBASE), FILL with some fine gravel; brown (SM/GM-FILL)									
		SILTY CLAY with some fine sand and fine and coarse gravel; brown (CL)		6		7.8		158			moist medium stiff
		grades with occasional to some fine and coarse gravel	5	12							stiff
		grades with silty clay with some fine sand	10	9							medium stiff
		grades with trace fine sand	15	8							very moist to saturated
		Stopped drilling at 14.0'.									
		Stopped sampling at 15.5'.									
		Installed 1-1/4" diameter slotted PVC pipe to 15.5'.									
		No groundwater encountered at time of drilling.	20								
			25								

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

FIGURE 3K

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-12

Page: 1 of 1

Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-06-11 GSH Field Rep.: RJG
Water Level: 14.5' (07-06-11) No groundwater encountered (07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								
		4" ASPHALT CONCRETE PAVEMENT									
		7" SILTY FINE TO COARSE SAND (ROADBASE), FILL with some fine gravel; brown (SM/GM-FILL)									
		SILTY CLAY with some fine sand and occasional fine and coarse gravel; brown (CL)		4		21.5		102			very moist soft
			5	7		18.2		104			medium stiff
		grades with some fine and coarse gravel		7							
			10								
		grades silty clay with some fine sand		4							very moist to saturated
											saturated
		Stopped drilling at 13.0'.	15								
		Stopped sampling at 14.5'.									
		Installed 1-1/4" diameter slotted PVC pipe to 14.5'.	20								
			25								

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

FIGURE 3L

Gordon Spilker Huber Geotechnical Consultants, Inc.
Salt Lake City, Utah 84123

BOREHOLE B-13

Page: 1 of 1

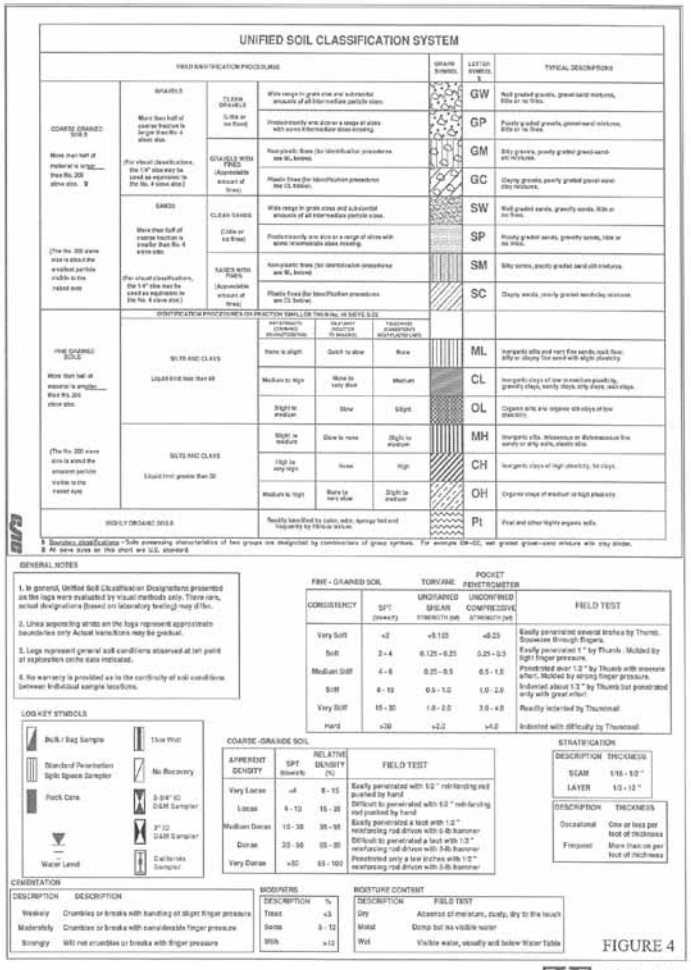
Project Name: Prop Med Svcs & Ped School Buildings
Location: S End of UT State Hospital Campus, Provo, Utah
Drilling Method: 3-3/4" ID Hollow-Stem Auger
Elevation: ---
Remarks:

Project No.: 0128-076-11
Client: State of Utah - DFCM
Date Drilled: 07-06-11 GSH Field Rep.: RJG
Water Level: 14.0' (07-06-11) 15.3' (07-21-11)

Graphical Log	Water Level	DESCRIPTION	DEPTH FT.	BLOWS/FT	SAMPLE SYMBOL	MOISTURE (%)	% PASSING 200	DRY DENSITY (PCF)	Liquid Limit (%)	Plastic Limit (%)	REMARKS
		Ground Surface	0								loose to 3"-4" moist
		SILTY CLAY with some fine sand and occasional fine and coarse gravel; major roots (topsoil) to 4"; brown (CL)		5		19.6		107			very moist soft
			5	6		17.3		103			medium stiff
		grades without fine and coarse gravel	10	5		28.9		92			soft
		grades with trace fine sand		4		30.9		89			saturated
		Stopped drilling at 15.0'.	15								
		Stopped sampling at 16.5'.									
		Installed 1-1/4" diameter slotted PVC pipe to 16.5'.	20								
		No groundwater encountered at time of drilling.									
			25								

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

FIGURE 3M



UNIFIED SOIL CLASSIFICATION SYSTEM

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

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

GENERAL NOTES

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

FINE - GRAINED SOIL

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

LOG KEY SYMBOLS

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

COARSE - GRAINED SOIL

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

STRATIFICATION

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

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

CEMENTATION

DESCRIPTION	DESCRIPTION
Weakly	Crumbles or breaks with handling or slight finger pressure.
Moderately	Crumbles or breaks with considerable finger pressure.
Strongly	Will not crumble or break with finger pressure.

MODIFIERS

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

MOISTURE CONTENT

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

FIGURE 4

GSH
Gordon Spilker Huber
Geotechnical Consultants, Inc.

PENDING

The programming process included tours of existing State Hospital facilities. This appendix section includes photographs of some of the existing spaces and equipment seen during the tours.

For the Mark I. Payne Building, the photos were taken in the existing Medical Services Building.

A205 Volunteer Services Storage

A201 Volunteer Services Clothing Display

A203 Volunteer Services Clothing Storage

A309 Medical Records Color Copier/Printer

A309 Medical Records Cutter

A309 Medical Records Print Shop Paper & Forms Storage

A310 Medical Records Microfilm Reader

A311 Medical Records Storage Fixed File Unit

A312 Medical Records Mobile Storage Unit

A312 Medical Records Inactive Records

A404 IT Desktop Support

A404 IT Desktop Support

A701 Sunrise Entry Display

A704 Sunrise Music - Group Therapy Space

A810 Clinics EEG Testing Machine

A901 Central Supply Storage

A901 Central Supply Storage

A901 Central Supply Storage

A1003 Pharmacy Tech Station

A1006 AutoMed Station

A1008 Pharmacy Shelving

A1008 Pharmacy Shelving

A1010 Pharmacy Library Shelving